PURINA®

PRO PLAN®

VETERINARY PRODUCT AND CLINICAL NUTRITION MANUAL

CONTENTS

11th Edition 2022

This booklet is for veterinary surgeons.

Please note that the nutritional values shown here – although they are the most up to date ones – are given only for information.

Please note that all indications for PURINA® Veterinary Diets mentioned in this brochure are for the dietary support of the dog (or cat) with the listed condition and do not preclude appropriate medical management.

The veterinary diets should be used under veterinary supervision.

"COMMITTED TO HELPING OWNERS AND THEIR PETS SHARE A LONG, HEALTHY LIFE TOGETHER"

At Nestlé PURINA® PetCare, our **vision** is to lead the world in **enriching the lives of cats and dogs, together with their owners**. Ground-breaking discoveries in canine and feline nutrition help us **develop innovative new products** and make important advances in pet health and well-being – many having redefined the pet industry's nutritional standards.

For nearly a century, PURINA® has been a pioneer in pet health science.

Nestlé PURINA®'s global team include specialists in **Nutrition, Veterinarians, Behaviourists, Immunologists, Chemists, Molecular biologists, Food scientists, Palatability experts, Genomics specialists**

spread over **5 continents** – North America (Missouri, Alaska), South America (Argentina, Brazil), Europe (France, Switzerland), Asia (China) and Oceania (Australia)

PURINA® has been a pioneer in the science of pet health, leading breakthroughs that have redefined the industry's understanding of pet nutrition. PURINA® has also published more than 500 papers in scientific journals, and currently has 7,700 granted and pending patents worldwide.

Our ultimate goal is to understand and improve every aspect of the pet's overall health and well-being.

At Nestlé PURINA®, we are devoted to enriching and enhancing the lives of pets and their owners. We cannot achieve this vision without you, the veterinary surgeon, whose mission is not only to prevent, treat and care for your canine and feline patients but also to mentor, advise and ultimately help support owners in providing the best nutrition for their beloved pets.

Together we can enable owners to **provide optimal care and nutrition** for their cats and dogs and to help them live long and healthy lives.

PURINA®

PURINA® HISTORY AND GREATEST INNOVATIONS

1894

William H. Danforth founds Purina in 1894. He initially produces feed for farm animals, but Danforth aims higher to build a company that will provide the best and purest nutrition for companion animals in a convenient, easy-to-use form.

1902

The Purina we know today reflects the coming together of three established pet care businesses: Purina, Spillers and Friskies.

1926

Purina is the first to open a research centre dedicated to pet nutrition in Gray Sumit, Missouri, USA. A scientific approach can now be taken to researching pets' nutritional needs, supported by feeding studies and nutrition trials.

1961 + 1962

1st Pet food company to add taurine to dry cat foods, Friskies® Cat Food.

1st Extruded dry cat food, Friskies® Cat Food.

1991

PURINA® CAT CHOW® Special Care, the first cat food to receive FDA (US Food and Drug Administration) approval for urinary tract health claim in cats.

1992

PURINA® PRO PLAN® VETERINARY DIETS OM OBESITY MANAGEMENT™ – first diet to use high protein levels to help maintain lean body mass during weight loss.

1927

1st Complete dog food, WINALOT®

1929

1st Bone shaped biscuit, BONIO®

1957

1st Extruded dog food, PURINA® Dog Chow®

1993

Purina creates the first widely used and scientifically validated Body Condition Score system.

1994

PURINA® PRO PLAN® VETERINARY DIETS EN GASTROINTESTINAL™ – first diet to incorporate Medium Chain Triglycerides (MCTs) in canine diets to help in the nutritional management of dogs with gastrointestinal disease.

1998

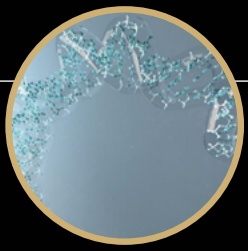
PURINA® PRO PLAN® VETERINARY DIETS HA HYPOALLERGENIC™ – first diet to use low molecular weight protein nutrition which helps diagnose and manage the clinical signs of food allergy in dogs.

1998

FRISKIES® Digestion – first diet to use prebiotics, incorporating chicory root, a natural, rich source of the prebiotic inulin to promote balanced intestinal microflora.

1999

Purina establishes the world's first and only Canine Reference Family DNA Distribution Centre, providing assistance to top researcher mapping the canine genome.



2000

PURINA® PRO PLAN® VETERINARY DIETS DM DIABETES MANAGEMENT™ – first diet with high protein and low carbohydrate content for the dietary management of cats with diabetes (patented 2001).

2005

PURINA® PRO PLAN® – first diet to use colostrum to help support the natural defences of puppies and kittens. HEALTHY START including bovine colostrum enhances specific immune response to vaccination and promotes local immunity.

2006

PURINA® PRO PLAN® ADULT 7+ with LONGEVIS® – first and only cat food clinically proven to extend a mature cat's healthy lifespan.

PURINA® PRO PLAN® FORTIFLORA® the first probiotic supplement, containing the SF68® strain exclusive to Purina, clinically proven to promote intestinal health and balance.

2010

PURINA® PRO PLAN® Senior+ with AGE DEFENCE – first canine maintenance diet to include Medium Chain Triglycerides (MCTs) clinically proven to improve cognitive function in older dogs.

2000

1st diet to use fibre in cat food to help manage hairballs in cats.

2001

Purina conducts the first longevity study to demonstrate the health benefits of maintaining lean body condition in dogs.

2004

PURINA® PRO PLAN® JM JOINT MANAGEMENT™ – first diet formulated to help improve mobility in arthritic dogs through the use of omega 3 fatty acids.

2017

Purina's collaboration with the Royal Veterinary College, London leads to the first diet clinically proven to improve canine cognitive function.

2018

With a solid foundation of science, Purina launches the Purina Institute, a global professional organization with a mission to advance nutritional science to help pets live better, longer lives.

PURINA Institute
Advancing Science for Pet Health

2019

The Canine Cognitive Assessment Scale (CCAS) is the first tool grading the possible changes in dog's behaviour as a consequence of ageing.

2020

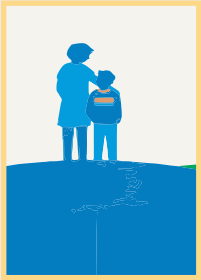
Nestlé Purina launches PURINA® PRO PLAN® LIVECLEAR®, a diet with the potential to transform how people manage cat allergens.

The first diet PURINA® PRO PLAN® VETERINARY DIETS CC CardioCare™ using a cardiac protection blend with MCTs that improve energy use, supports cardiac function and helps to support hearts with compromised mitral valve function.

Nestlé Purina launch PURINA® PRO PLAN® Hydra Care™, a new concept in hydration for cats.

CREATING RICHER LIVES FOR PETS AND THE PEOPLE WHO LOVE THEM

Our 10 commitments bring to life our core belief that when people and pets bond, life becomes richer – for pets, the people who love them and the communities in which they live.



FOR INDIVIDUALS, FAMILIES & PETS

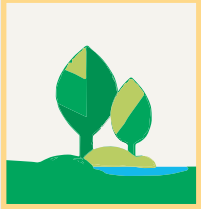
Enabling healthier and happier lives through brands, products and services:

- Innovate to improve pets' health and well being
- Promote transparency across our product portfolio
- Remove artificial colourants from our products
- Help reduce the risk of pet obesity

FOR OUR COMMUNITIES

Connecting pets and people to enrich their lives:

- Promote pet adoption
- Promote pets in the workplace
- Promote responsible pet ownership programmes for children
- Create jobs for young people across Europe



FOR THE PLANET

Stewarding resources for future generations:

- Improve the environmental performance of our packaging
- Implement responsible sourcing

WHEN PETS AND PEOPLE BOND, LIFE BECOMES RICHER
#WeAreBetterWithPets

At Purina we are driven by our promise to provide high-quality pet food in a sustainable way by sourcing responsibly, reducing the environmental impact of our manufacturing processes, creating products with game-changing new ingredients and innovating to make our packaging reusable or recyclable.

Sourcing & Regenerative Agriculture

We're focused on offering pet food made with responsibly sourced ingredients. We are working closely with farmers, suppliers and communities to support regenerative agriculture methods that aim to conserve and restore farmland.

Manufacturing & Logistics

We aim to provide high quality pet food, while at the same time ensuring a sustainable approach to our manufacturing processes and logistics. We're embedding sustainable practices throughout our operations – from purchasing 100% renewable energy for all of our Purina factories producing products for EMENA to improving the efficiency of our transport and distribution.

Product portfolio

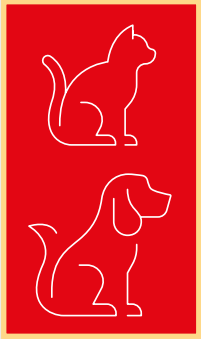
We're developing innovative products with game-changing ingredients to help us make better use of our planet's resources. We're diversifying the protein sources in our pet food by reviewing the balance of animal and plant-based proteins and exploring the use of surplus ingredients from other food and beverage industries.

Packaging

We're working to make 100% of our packaging recyclable or reusable by 2025 and to reduce the use of virgin plastics by 30% during the same time period, making sure that the plastics we do use are recyclable or reusable. Currently, 78% of our packaging is designed to be recyclable.

OUR COMMITMENT TO INNOVATION

We are fully committed to investing in the development of new breakthrough technologies that can both be applied to our diets and further advance the scientific knowledge of canine nutrition and feline specific metabolism, including:



Metabonomics

Metabonomics, the systematic kinetic study of the unique chemical fingerprints from specific cellular processes.

Driven by our ultimate goal to continually improve every aspect of the dog's overall health and well being, we are fully committed and dedicated to driving innovation in veterinary nutritional science to enable your clients to provide the optimal care and nutrition to their dogs and help them live long, healthy lives.

RSS

RSS (relative super-saturation) analysis to provide the most advanced and sensitive assessment for measuring urine mineral saturation and predicting crystal formation.

ST/OX

PURINA®'s unique **ST/OX urinary security**.

Partnership with ISFM
(International Society of Feline Medicine)

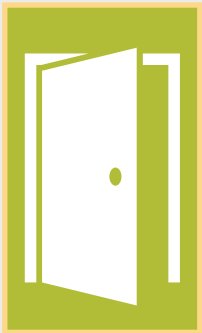
isfm
the veterinary division of International cat care
ISFM recognises NESTLE PURINA's nutritional contribution to feline well-being

PROMOTING TRANSPARENCY ACROSS OUR PRODUCT PORTFOLIO

Our materiality study highlighted that pet lovers today are scrutinizing brands and products. They want to know what goes into our products and the more information, the better. We have recognized that whilst we already share product information, it is not always as easy as it should be for pet lovers to understand.

OUR GOAL

At Purina, nutritional information is something we want everyone to be able to access and understand. We believe in empowering consumers to make informed choices so are committed to providing comprehensive and transparent information and advice. Our goal is to provide consumers with easy to access, accurate and transparent information on our pet food products.



OUR INITIATIVES

We work with pet food nutrition specialists, authorities and industry bodies to provide sustained and, where appropriate, independent information for customers so they can feel confident that they have the knowledge they need to make their own decisions. We also have a factory open door initiative allowing consumers and stakeholders to understand how we manufacture our pet food. Plus, we have made great progress via our social and online platforms and with our Consumer Engagement teams, where we provide information and advice for pet owners. During 2019/20, we received 275,460 contacts with customers.

OUR ACHIEVEMENTS TO DATE

2019 – based on the most frequent questions we received on our pet food we created **Your Questions Matter** to help answer those frequently asked questions.
http://www.purina.eu/your-questions-matter

2020 – we launched **Every Ingredient Has a Purpose** to allow consumers to see a more detailed breakdown of the ingredients uses and what their purpose is.
www.purina.eu/ingredients

FEEDING GUIDES

The feeding tables provided on the back of our packs and in this guide serve as a guideline for daily feeding amounts for a theoretical average cat or dog. So, while these tables are useful as a starting point, each cat or dog should be considered as an individual and the feeding amounts may need to be increased or decreased according to their personal needs. To help provide a more exact guide to how much to feed each pet, we have developed two different tools, for pet owners and veterinarians.

This is a sample daily feeding quantity table for an adult canine from PURINA® PRO PLAN® VETERINARY DIETS EN Gastrointestinal™

ADULT MAINTENANCE				
Body weight (kg)	Daily feeding quantities		Dry + Wet (mixed feeding)	
	Dry (g/day)	Can/day	Dry (g/day)	Can/day
2.5	70	½	30	⅓
5	110	1	50	½
10	175	1 ½	50	1
15	230	1 ¾	105	1
25	325	2 ⅔	200	1
35	405	3 ¼	280	1
45	480	3 ¾	355	1
70	645	5 ¼	395	2

For dogs over 70kg: for each additional 5kg of body weight, feed an additional 35g of dry pet food. For dogs over 70 kg, add ⅓ can for each 5 kg of body weight. When feeding dry and wet Canine EN, for each addition of 200g wet, reduce by 60g dry kibble. Fresh clean drinking water should always be available.

DAILY PORTION CALCULATOR

This tool is provided in a QR code on the back of every pack included in this guide and serves to give a more accurate recommendation to pet owners. It considers the size of the breed, the exact weight and age and the activity level to provide a specific feeding amount for that particular pet. We recommend adjusting the daily portion according to the dog or cat's activity level, physical condition and individual needs to keep them in an ideal body condition.

TAILORED FEEDING CALCULATOR

This tool is included as part of our online platform, the Vet Center, and it is specific for in clinic use for nurses or veterinary professionals. The Tailored Feeding Calculator gives an even more tailored feeding recommendation, taking into account multiple inputs such as breed, weight, age, gender, reproductive status, body condition score and clinical diagnosis. This calculator can provide you with weight adjustment or hospitalization feeding programs, as well as recommendations for mixed feeding, including dry food, wet food, snacks and complementary pet food. You can share the personalised PDF output with this information with the pet owner to help keep track of their pet's feeding amounts and weight.

PURINA VetCenter

www.vet-center.eu

WHAT CLINICAL SIGNS ARE PRESENT?

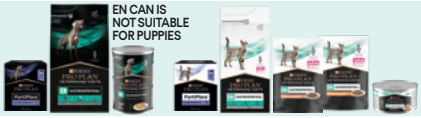
- ACUTE OR CHRONIC DIARRHOEA
- WEIGHT LOSS
- VOMITING
- ABDOMINAL PAIN

MAJOR GI CONDITION

PUPPY* | KITTEN + ADULT DOG | CAT

IS THERE A SUSPECTED GASTROINTESTINAL CONDITION?

EN GASTROINTESTINAL
FortiFlora
CANINE & FELINE

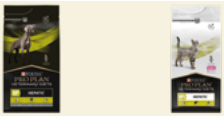


IS THERE A SUSPECTED FOOD ALLERGY OR INTOLERANCE?

HA HYPOALLERGENIC
CANINE & FELINE

IS THERE A SUSPECTED HEPATIC DISEASE?

HP HEPATIC
CANINE & FELINE



HAS THE CONDITION RESOLVED?

*For puppies under 4 months old, the only suitable product is EN Gastrointestinal™ Dry. HA Hypoallergenic™ is only suitable for puppies over 4 months and HP Hepatic™ is not suitable for puppies.

Please note that all indications for PURINA® Veterinary Diets mentioned on this brochure are for the dietary support of the dog (or cat) with the listed condition and do not preclude appropriate medical management. The veterinary diets should be used under veterinary supervision.

EPISODES OF SOFT STOOLS

MINOR DIGESTIVE SENSITIVITIES

MINOR GI MANIFESTATIONS

TRANSITION TO PRO PLAN® EXPERT CARE NUTRITION FOR SENSITIVE DIGESTION

DOG

SENSITIVE DIGESTION

PURINA® PRO PLAN® EXPERT CARE NUTRITION DIGESTION CARE

FortiFlora

PURINA® PRO PLAN® FORTIFLORA® IS A PROBIOTIC THAT HELPS SUPPORT INTESTINAL HEALTH AND BALANCE. THIS COMPLEMENTARY PET FOOD IS ADEQUATE FOR ALL AGES.

WHAT CLINICAL SIGNS ARE PRESENT?

PRURITUS

SKIN LESIONS

MAJOR SKIN CONDITION

IS THERE A SUSPECTED FOOD ALLERGY OR INTOLERANCE?

YES

DIET TRIAL WITH A HYDROLYSED DIET

4-6 WEEKS FOR GI SIGNS

9-10 WEEKS FOR DERMATOLOGICAL SIGNS

HA HYPOALLERGENIC
CANINE & FELINE

OR

DIET TRIAL WITH A NOVEL PROTEIN FOR DOGS

DRM DERMATOSIS
CANINE

NO

INFLAMMATORY SKIN DISEASE

DRM DERMATOSIS
CANINE

HAVE CLINICAL SIGNS IMPROVED?

YES

NO

CONSIDER PURINA® PRO PLAN® VETERINARY DIETS EN GASTROINTESTINAL™

EN GASTROINTESTINAL
CANINE & FELINE

Please note that all indications for PURINA® Veterinary Diets mentioned on this brochure are for the dietary support of the dog (or cat) with the listed condition and do not preclude appropriate medical management. The veterinary diets should be used under veterinary supervision.

POOR COAT QUALITY

DRY OR SENSITIVE SKIN

MINOR SKIN MANIFESTATION

DOG

SENSITIVE SKIN

PURINA® PRO PLAN® EXPERT CARE NUTRITION DERMA CARE ADULT AND SMALL & MINI

YES

PROLONG DIET TRIAL IF THERE IS ONLY A PARTIAL IMPROVEMENT

FEED PURINA® PRO PLAN® VETERINARY DIETS HA HYPOALLERGENIC™ LONG TERM

CHALLENGE WITH DIFFERENT PROTEINS TO GET A FINAL ALLERGY DIAGNOSIS

DEPENDING ON THE RESULTS

OR

OR Feed diet that doesn't contain identified allergen or related allergens long term

WEIGHT MANAGEMENT FOR OVERWEIGHT PETS

WHAT IS THE BCS OF THE PET?
BODY CONDITION SYSTEM (BCS) - SEE APPENDIX

BCS 6 OR +
THE PET IS OVERWEIGHT OR OBESE

HAS THE PET BEEN DIAGNOSED WITH DIABETES MELLITUS?

NO

PURINA® PRO PLAN® VETERINARY DIETS OM OBESITY MANAGEMENT™

OM OBESITY MANAGEMENT
CANINE & FELINE

FEED PRO PLAN® VETERINARY DIETS OM OBESITY MANAGEMENT™ UNTIL BCS = 5

HAS THE PET REACHED A HEALTHY BCS? BCS=5

YES

STAY ON PRO PLAN® VETERINARY DIETS OM OBESITY MANAGEMENT™ OR OM ST/OX OBESITY MANAGEMENT™ FOR AT LEAST 8 MONTHS* WITH CLOSE VETERINARY SUPERVISION

IF STILL SUCCESSFULLY MAINTAINING NORMAL WEIGHT AFTER 8 MONTHS* – GRADUAL TRANSITION TO MAINTENANCE DIETS (WITH CLOSE MONITORING OF WEIGHT)

YES

FOR DOGS, PURINA® PRO PLAN® VETERINARY DIETS DM DIABETES MANAGEMENT™ IS ALSO SUITABLE FOR WEIGHT MAINTENANCE AFTER WEIGHT LOSS

DM DIABETES
CANINE & FELINE

WEIGHT MANAGEMENT FOR OVERWEIGHT PETS

BCS 4-5 (DOGS) / 5 (CATS)

THE PET IS A NORMAL WEIGHT BUT THERE IS A HIGH RISK OF OBESITY

IF THE PET IS SPAYED OR NEUTERED

PURINA® PRO PLAN® FELINE EXPERT CARE NUTRITION STERILISED AND STERILISED 7+

IF THE PET IS INTACT BUT A HIGH RISK BREED OR INADEQUATE EXERCISE LEVELS

PURINA® PRO PLAN® CANINE EXPERT CARE NUTRITION LIGHT/STERILISED

PURINA® PRO PLAN® FELINE EXPERT CARE NUTRITION STERILISED

CONSULT FEEDING CALCULATOR FOR WEIGHT ADJUSTMENT PROGRAM AND PERSONALISED RATIONS.

***Why do we recommend an 8 month period on a veterinary diet before transitioning to a weight maintenance diet?**

New habits are hard to keep – and none more so than those relating to food! Research shows that habits relating to feeding take on average 66 days to form – but for some individuals they can take as long as 8 months. For this reason we recommend at least 8 months on a veterinary diet before transitioning to a weight maintenance diet. Keeping a pet at optimal weight for 8 months plus before making diet changes helps to entrench good feeding, exercise and treat habits. However, each individual is different, so pet owners will need your expert veterinary support to keep their pet slim for life.

IS THE CANINE PATIENT AGED 7 YEARS OR OLDER?

↓

YES

↓

CHECK THE CCAS AND FEED A DIET FOR SENIOR DOGS
CANINE COGNITIVE ASSESSMENT SCALE (CCAS) - SEE APPENDIX

WHAT IS THE SCORE FROM THE CCAS?

0-7	8-40	41-69
NORMAL AGEING DOGS	DOGS IDENTIFIED WITH AGE RELATED COGNITIVE DECLINE	
PURINA® PRO PLAN® EXPERT CARE NUTRITION ADULT 7+ 	PURINA® PRO PLAN® NEUROCARE™ NEUROCARE 	

RECOMMENDED **CANINE** CLINICAL DIETS AND FOLLOW-UP MAINTENANCE DIETS

Nutritional support of:	PURINA PRO PLAN VETERINARY DIETS and related products RECOMMENDED DIET	PURINA PRO PLAN EXPERT CARE NUTRITION POTENTIAL MAINTENANCE DIET AFTER RECOVERY
Age related cognitive decline	NC	Adult 7+
Allergies to food (dermatological or gastrointestinal)	HA	Small & Mini Derma Care, Adult Derma Care*
Atopy	DRM, HA	
Brain Function	NC	Adult 7+
Chronic cardiac insufficiency	CC, NF	
Chronic Renal Insufficiency	NF	
Colitis	OM, EN	Digestion Care
Constipation	OM	
Convalescence and peri-operative	CN, EN	
Copper metabolism disorder	HP	
Dermatitis associated with food allergy	DRM, HA	Small & Mini Derma Care, Adult Derma Care
Diabetes mellitus	DM, OM	Light / Sterilised
Diarrhoea	EN	Digestion Care
Elimination diet for food trials	HA	
Enteritis	EN	Digestion Care
Exocrine pancreatic insufficiency (EPI)	EN, HA	
Fibre responsive disease	OM	
Flea allergic dermatitis	DRM	Small & Mini Derma Care, Adult Derma Care
Food intolerance	DRM, HA	
Gastritis	EN	Digestion Care
Gastroenteritis associated with food allergy	HA	
Hepatic disease (without encephalopathy)	HP, EN	
Hepatic encephalopathy	HP, NF	
Hyperlipidaemia	EN, HA, OM	
Idiopathic cystitis	UR	
Inflammatory bowel disease (IBD)	DRM, EN, HA	Digestion Care
Joint mobility	JM	
Lymphangiectasia	EN, HA	
Malabsorption/maldigestion	EN, HA	Digestion Care
Malnutrition	CN, EN	
Obesity	OM	
Otitis externa	DRM	Small & Mini Derma Care, Adult Derma Care
Pancreatitis	EN	Digestion Care
Portosystemic shunt	HP	
Protein-losing enteropathy	HA	Digestion Care
Urolithiasis – calcium oxalate	NF***	
Urolithiasis – calcium phosphate	UR	
Urolithiasis – struvite	UR	
Urolithiasis – urate/cystine	NF***	

* Depending on the specific allergy. ** If the dog still needs to gain weight. *** Recommended mixed feeding for increasing urine dilution.

RECOMMENDED **FELINE** CLINICAL DIETS AND FOLLOW-UP MAINTENANCE DIETS

Nutritional support of:	PURINA PRO PLAN VETERINARY DIETS and related products RECOMMENDED DIET	PURINA PRO PLAN EXPERT CARE NUTRITION POTENTIAL MAINTENANCE DIET AFTER RECOVERY
Allergies to food (dermatological or gastrointestinal)	HA St/Ox	
Colitis	EN St/Ox	
Constipation	OM St/Ox	Sterilised, Sterilised 7+
Convalescence	CN, EN St/Ox	
Cholangitis/Cholestasis	HP St/Ox	
Chronic Renal Insufficiency – IRIS stages 1 & 2	NF Early Care*	
Chronic Renal Insufficiency – IRIS stages 3 & 4	NF Advanced Care*	
Dermatitis associated with food allergy	HA St/Ox	
Diabetes mellitus	DM St/Ox, OM St/Ox	Sterilised, Sterilised 7+
Diarrhoea	DM St/Ox, EN St/Ox, HA St/Ox	
Elimination diet for food trials	HA St/Ox	
Enteritis	EN St/Ox, DM St/Ox	
Exocrine pancreatic insufficiency (EPI)	HA St/Ox	
Food intolerance	EN St/Ox, HA St/Ox	
Gastroenteritis	EN St/Ox	
Hepatic disease (without encephalopathy)	EN St/Ox, HP St/Ox	
Hepatic encephalopathy	HP St/Ox	
Hyperlipidaemia	HA St/Ox, OM St/Ox	
Idiopathic cystitis	UR St/Ox	
Inflammatory bowel disease (IBD)	EN St/Ox, HA St/Ox	
Lymphangiectasia	HA St/Ox	
Malabsorption/maldigestion	EN St/Ox, HA St/Ox	
Malnutrition	CN	Sterilised
Obesity	OM St/Ox	Sterilised, Sterilised 7+
Pancreatitis	EN St/Ox, HA St/Ox	
Protein-losing enteropathy	HA St/Ox	
Portosystemic shunt	HP St/Ox	
Small intestinal bacterial overgrowth (SIBO)	HA St/Ox	
Urolithiasis – calcium oxalate	UR St/Ox***	
Urolithiasis – struvite	UR St/Ox***	
Urolithiasis – urate/cystine	NF St/Ox***	

* St/Ox: NF (canned). ** Depending on the specific allergy. *** Recommended mixed feeding with food for increasing urine dilution.

PURINA®
PRO PLAN®
VETERINARY DIETS

CANINE VETERINARY DIETS & RELATED PRODUCTS

CONTENTS

PURINA PRO PLAN VETERINARY DIETS

CANINE VETERINARY DIETS & RELATED PRODUCTS

To help you in your daily practice, we provide the **"average" nutrient values**, which are representative of what is in the product. These **may not always correspond to the labelling values** under "nutritional additives". For additives, the EU feed regulation requires that the "added" values be declared, which is different to the "average" content found in the product (representative of process losses and nutrients brought by the ingredients) (REGULATION (EC) No 767/2009).

CANINE CC CARDIOCARE™

Complete dietetic dry pet food for adult dogs for the support of heart function in the case of chronic cardiac insufficiency thanks to a restricted level of sodium.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Chronic cardiac insufficiency
- ✓ Mitral valve conditions (Myxomatous Mitral Valve Disease)
- ✓ Heart murmur
- ✗ Growth
- ✗ Gestation/lactation

3 kg

KEY BENEFITS

Cardiac function
Improves cardiac function in dogs with mitral heart murmur

Helps support cardiac insufficiency
Helps to support heart with compromised mitral valve function

Cardiac Nutritional Blend
Contains Cardiac Nutritional Blend composed of Amino Acids, omega-3 fatty acids, Medium Chain Triglyceride oil, minerals and vitamin E

ADDITIONAL BENEFITS & CHARACTERISTICS

Improved cardiac function
with 60% of dogs having reduction in left atrial size and 30% of dogs having a reduction in mitral valve regurgitation (heart murmur)[1]

Cardiac Nutritional Blend has been shown to
help to support a heart with compromised mitral valve function to slow the progression of mitral valve conditions at an early stage

Contains a Cardiac Nutritional Blend
including MCT oil, an alternative source of energy for myocytes

Contains Taurine to help support healthy cardiac function

Supports cardiac function from an early stage

1 Li Q, Heaney A, *et al.* Dietary intervention reduces left atrial enlargement in dogs with early preclinical myxamotous mitral valve disease: a blinded randomised controlled study in 36 dogs. *BMC Veterinary Research*. 2019; **15**:425.

COMPOSITION

Rice, dried chicken protein, corn, barley, corn protein meal, medium chain triglyceride (MCT) oil (5%), dried beet pulp, dried salmon protein, cellulose, fish oil, minerals, pork fat, digest.

KEY NUTRIENT VALUES*	
Protein	26.5%
Fat	15%
Carbohydrates	39%
Crude fibre	4.5%
Methionine	1.4%
Lysine	2.02%
Taurine	2000 mg/kg
Omega-3 fatty acids (EPA+DHA)	0.7%
Sodium	0.18%
Magnesium	0.15%
Potassium	0.6%
Metabolisable energy (ME)[1]	3687 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

PURINA® PRO PLAN® VETERINARY DIETS CC CardioCare™ is a complete dietetic pet food for adult dogs for the support of heart function in the case of chronic cardiac insufficiency. It is recommended that advice from a veterinarian be sought before use and before extending the period of use. The recommended period of use is initially up to 6 months.

ADULT	
Body weight (kg)	Daily feeding quantity (g/day)
2.5	70
5	110
10	175
15	230
25	325
35	410
45	485
70	650

For dogs over 70kg: for each additional 5kg of body weight, feed an additional 30g of dry pet food.
Fresh clean drinking water should be always available.

Heart murmurs can be a clinical finding in young dogs, and although they often subside with age, they can also be an early sign of heart disease.

A dog's heart beats about 60-120 times every minute, which means about a **billion beats in a lifetime**[1]. To make this huge effort, the **heart needs a consistent & uninterrupted supply of energy**. It is estimated that the heart needs almost 2 times as much energy as the brain[2]. Thousands of mitochondria are located in every heart cell, as they are the key cells that help to meet this high-energy demand.

Myxomatous mitral valve disease (MMVD) is the most common heart disease in dogs. It is characterized by a slowly progressive degeneration of the mitral valve, and is associated with alterations in energy metabolism, oxidative stress, inflammation, and in advanced stages, heart enlargement.

In the early stages, dogs show no outward signs of disease and can be considered as "healthy". For this reason, detecting dogs in the early stages of MMVD may help prevent disease progression[3].

Diet is a fundamental part of the management of dogs with a cardiac condition, together with medication and controlled physical activity in order to maintain an ideal body weight. The main goal of management is to slow the progression from early MMVD to Congestive heart failure; as once MMVD progresses to heart failure dogs have a much shorter life expectancy.

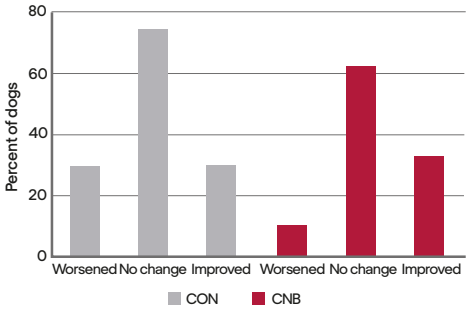
The innovative formula in PURINA® PRO PLAN® VETERINARY DIETS CC CardioCare™, contains a **Cardiac Nutritional Blend (CNB)** that helps support the heart with research demonstrating it to be helpful in slowing or reversing the progression of MMVD in the earliest stages of heart disease (B1 or B2)[4].

The CNB contains key amino acids (Methionine and Lysine) that are precursors of carnitine, a crucial transporter for fatty acids to get into mitochondria; medium-chain triglycerides (MCTs) which are an efficient alternative energy source; fish oil (omega-3 fatty acids) to help maximise natural anti-inflammatory processes and maintain heart rate and rhythm; Vitamin E with an antioxidant effect; and magnesium which binds ATP to deliver energy to the cardiac cells.

In the mentioned study[4], 60% of MMVD-CNB dogs showed improvement in left atrial enlargement determined by echocardiography, while 30% showed a reduction in mitral valve regurgitation.

Moreover, aortic root diameter (LA/Ao) and left atrial diameter (LAD) increased in MMVD-Control dogs by an average of 10% over baseline within this 6-month study; whereas MMVD-CNB dogs showed the opposite.

This is the **first dietary support** to successfully demonstrate that a blend of **nutrients effectively delayed or reversed the progression of MMVD** in dogs within early and preclinical stages.



CLINICAL ADVANTAGES WITH THE USE OF CANINE CC CARDIOCARE™

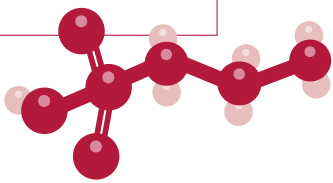
Contains a Cardiac Nutritional Blend, composed of Amino Acids, omega-3 fatty acids, Medium Chain Triglycerides, minerals and vitamin E that has been shown to help support hearts with compromised mitral valve function.

Improved cardiac function with 60% of dogs having reduction in left atrial size and 30% of dogs having a reduction in mitral valve regurgitation (heart murmur)[1].

Helps to support hearts with compromised mitral valve function

Contains a Cardiac Nutritional Blend with/including MCT oil as an alternative source of energy for myocytes.

Contains Taurine to help support healthy cardiac function.



1. Haskins S, Pascoe PJ, Ilkiw JE, Fudge J, Hopper K, Aldrich J. Reference cardiopulmonary values in normal dogs. *Comp Med.* 2005: **55**: 156-61.
2. Wang Z, Ying Z, Bosy-Westphal A, Zhang J, Schautz B, Later W, Heymsfield SB, Müller MJ. Specific metabolic rates of major organs and tissues across adulthood: evaluation by mechanistic model of resting energy expenditure. *The Am J Clin Nutr.* 2010: **92**: 1369-77.
3. Borgarelli M, Haggstrom J. Canine degenerative myxomatous mitral valve disease: Natural history, clinical presentation and therapy. *Vet Clin North Am Small Anim Pract.* 2010: **40**: 651-63.
4. Li Q, Heaney A, Langenfeld-McCoy N, Boler BV, Laflamme DP. Dietary intervention reduces left atrial enlargement in dogs with early preclinicla myxomatous mitral valve disease: a blinded randomized controlled study in 36 dogs. *BMC Vet Res.* 2019: **15**: 425.

CANINE CN CONVALESCENCE™

Complete dietetic wet pet food for dogs of all ages for nutritional restoration and convalescence.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Critical care nutritional support
- ✓ Peri-operative nutritional support
- ✓ Nutritional stress including
  - Lactation
  - Malnutrition
- ✗ Conditions associated with the need of a low protein diet (advanced stage of chronic renal insufficiency or hepatic encephalopathy) or low fat diet (fat malassimilation)

195 g

KEY BENEFITS

High concentrations of essential nutrients

High energy density to provide energy for recovery (60% energy from fat, 36% from protein)

High digestibility
formulated with highly digestible ingredients

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps ensure maximum compliance even in fussy anorectic and convalescing dogs
High palatability

Helps support wound healing and immune function
Increased zinc and arginine

Providing additional anti-oxidant support during recovery
Increased vitamin E

Helps maximise natural anti-inflammatory processes
Added omega-3 fatty acids

Can be used for all life stages
Suitable for use in puppies and pregnant or lactating bitches

COMPOSITION

Meat and animal derivatives (pork and turkey)*, fish and fish derivatives (salmon)*, minerals, fish oil*, sunflower oil*, corn starch, various sugars.

* Highly digestible ingredients

KEY NUTRIENT VALUES*	
Moisture	77%
Protein - Arginine - Taurine	10.9% 0.58% 2034 mg/kg
Fat - Omega-6 fatty acids - Omega-3 fatty acids	7.6% 1.26% 0.15%
Carbohydrate	0.9%
Crude fibre	0.1%
Zinc	4.3 mg/100g
Vitamin A	30805 IU/kg
Vitamin E	200 IU/kg
Metabolisable energy (ME)[1]	1134 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

PURINA® PRO PLAN® VETERINARY DIETS CN Convalescence™ Feline and Canine Formula is recommended until recovery or convalescence is complete. Warming food to room temperature can help enhance palatability. The product can be diluted with water (1:1) and mixed with a blender for tube feeding administration if desired.

When blended 1:1 with water, Feline and Canine CN Convalescence™ provides 0.56 kcal/ml and will readily pass through feeding tubes ≥ 14 French. For smaller tubes the mixture must first be passed through a fine sieve.

PUPPY GROWTH – AGE IN MONTHS					
Adult weight (kg)	1.5 – 3	4 – 5	6 – 8	9 – 11	12 +
	Daily feeding quantity (can/day)				
2.5	1	2 ⅔	1 ⅔	1 ⅓	1 ⅓
5	1 ⅓	2 ⅔	2 ½	2 ¼	2
10	2	3 ⅔	3 ¾	3 ⅓	3 ¼
15	2 ⅓	4 ⅔	5	4 ⅓	4
25	2 ¾	6	7 ⅔	7	6
35	3 ⅓	7	8	9 ⅓	7 ⅔
45	3 ⅔	7 ⅔	8 ¼	9 ¾	8 ⅓
70	5	9 ¾	11 ¾	14	11 ¾

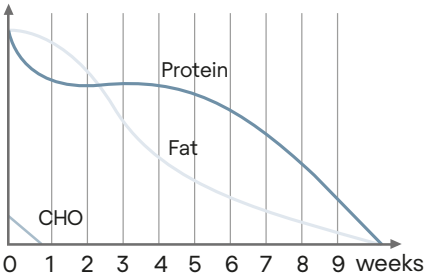
ADULT	
Body weight (kg)	Daily feeding quantity (can/day)
2.5	1 ¼
5	1 ¾
10	3
15	4
25	5 ½
35	6 ¾
45	8
70	11

For dogs over 70kg: for each additional 5kg of body weight, feed an additional ½ can of pet food.
Fresh clean drinking water should be always available.

The importance of adequate nutrition in hospitalized patients is increasingly being recognized[1,2,3]. Hypermetabolism and reduced appetite, often found in ill animals, predispose these patients to undernutrition[4].

Nutritional support in hospitalized patients is key to provide the required energy and nutrients, avoiding metabolic disorders and protein catabolism; and maintaining normal organ functions[4].

ENERGY STORAGE LOSSES DURING FASTING[7]



The **protein-energy malnutrition (PEM)** that can occur during the recovery period, can result in some adverse consequences including:

- Impaired immune responses
- Delayed healing
- Hypoproteinemia
- Muscle weakness
- Anaemia
- Increased morbidity and mortality

Early patient identification for nutritional support minimises PEM consequences. The following are generally recommended as indicators of patients that require support[5,6]:

- Anorexia for a minimum of 3 days
- Recent unintentional loss of >10% body weight
- Body condition score (BCS) of 3 out of 9 or less
- Inadequate/poor lean body weight
- Serious underlying disease (e.g. severe trauma, peritonitis, pancreatitis, major surgery)
- Direct protein loss (e.g. protein losing enteropathies, draining wounds)
- Poor wound healing, hypoalbuminaemia and lymphopenia

1. Brunetto MA, Gomes MOS, Andre MR, Teshima E, Gonçalves KNV, Pereira GT, *et al.* Effects of nutritional support on hospital outcome in dogs and cats. *J Vet Emerg Crit Care.* 2010: **20**:224–31.
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3. Molina J, Hervera M, Manzanilla EG, Torrente C, Villaverde C. Evaluation of the Prevalence and Risk Factors for Undernutrition in Hospitalized Dogs. *Front Vet Sci.* 2018: **29**: 205.
4. Chan DL. Nutritional requirements of the critically ill patient. *Clin Tech Small Anim Pract.* 2004: **19**:1–5.
5. Chan DL, Freeman LM. Nutrition in critical illness. *Vet Clin Small Pract.* 2006: **36**;1225-41.
6. Chan DL. The inappetent hospitalised cat: Clinical approach to maximising nutritional support. *J Fel Med Surg.* 2009: **11**: 925-33.
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CANINE DM
DIABETES MANAGEMENT™

Complete dry dietetic pet food for adult dogs for the regulation of glucose supply (diabetes mellitus).

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Diabetes mellitus
- ✓ Insulin-resistant dogs
- ✓ Weight maintenance after weight loss
- ✗ Not suitable during pregnancy, lactation and growth
- ✗ Chronic illness necessitating high energy intake

3 kg and 12 kg

KEY BENEFITS

Glucose control
formulated for the nutritional management of diabetes

Low level of carbohydrates
to help limit post-prandial hyperglycaemia

Contains **amylase inhibitor** from white bean extract to help reduce carbohydrate digestion

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps reduce blood glucose post-prandial fluctuation
Contains selected sources of dietary fibre and low glycaemic index carbohydrate sources

Helps reduce oxidative stress commonly found in diabetic patients
Contains antioxidants including vitamin E and C

Helps maintain joint mobility
Thanks to a source of chondroitin and glucosamine

Supports patient compliance
Thanks to good acceptance

COMPOSITION

Dried poultry protein, barley*, corn*, soya meal*, pea hulls*, corn protein meal*, pea protein, pork fat, digest, dried beet pulp*, cellulose, fish oil, minerals, white bean extract (0.1%, source of amylase inhibitor).

* Carbohydrate sources.

KEY NUTRIENT VALUES*	
Moisture	7.5%
Protein	37%
Fat - Omega-6 fatty acids - Omega-3 fatty acids	12% 2.1% 0.4%
Carbohydrate - Starch - Total sugars	29.5% 18.5% 1.5%
Crude fibre	7%
Vitamin E	481 IU/kg
Metabolisable energy (ME)[1]	3420 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

In controlled diabetics it is crucial that the transition from the dog's current diet to PURINA® PRO PLAN® VETERINARY DIETS DM Diabetes Management™ is under careful veterinary recommendation & supervision and that the blood glucose levels are closely monitored as insulin requirements may be reduced with this diet. The recommended period of use for the regulation of glucose supply is initially up to 6 months but this diet is complete and balanced for long term use under veterinary supervision. It is recommended that a veterinary surgeon's opinion be sought before use or before extending the period of use.

ADULT	
Body weight (kg)	Daily feeding quantity (g/day)
2.5	75
5	120
10	190
15	250
25	350
35	440
45	520
70	700

For dogs over 70kg: for each additional 5kg of body weight, feed an additional 30g of dry pet food.
Fresh clean drinking water should be always available.

The prevalence of diabetes mellitus is increasing: one study estimated a prevalence of 0.58% in dogs admitted to veterinary hospitals, a three-fold increase over a period of 29 years[1].

As some scientific data shows, feeding dogs exclusively balanced commercial dog food, keeping them in an ideal BCS, avoiding treats, and early spaying (in females), may be protective factors against diabetes mellitus development[2].

THE ROLE OF DIET IN THE MANAGEMENT OF CANINE DIABETES MELLITUS

Optimal management of canine diabetes mellitus always involves daily insulin therapy and a consistent schedule of insulin injections, meals and exercise. The primary goal of therapy is to minimise clinical signs, whilst avoiding clinically significant hypoglycaemia. Additional goals include achieving and maintaining normal body weight (as obesity contributes to insulin resistance), managing complications of diabetes such as hypercholesterolaemia and other lipid changes, and oxidative stress. Strategies with a low hypoglycaemia risk and decreased impact on owner lifestyle are desirable, and diet can be a key element within this[3].

The following dietary characteristics are recommended to help manage the disease[3-5].

A diet designed to help minimise post-prandial increases in blood glucose.

- Addition of alpha amylase inhibitors is clinically proven to reduce post-prandial glycaemic rise in dogs[6]
- Low GI complex carbohydrates such as barley and soya lead to a flatter more optimal post-prandial blood glucose curve than "High GI" carbohydrates such as rice
- Both soluble and insoluble fibre help reduce post-prandial hyperglycaemia
- Mixed fibres (maize, barley, soya, pea fibre) are better at controlling post-prandial hyperglycaemia in dogs than insoluble fibre (cellulose) alone[7]
- The diet should be low in simple carbohydrates and sugars

1. Niessen SJM, Hazuchova K, Powney SL, Guitian J, Niessen APM, Pion PD, Shaw JA, Church DB. (2017) The Big Pet Diabetes Survey: Perceived Frequency and Triggers for Euthanasia. *Vet Sci.* May 14;**4(2)**:27.
2. Pöppl AG, Carvalho de Carvalho GL, Vivian IF, Corbellini LG, Gonzales FHD. Canine *diabetes mellitus* risk factors: A matched case-control study. *Res Vet Sci.* 2017: **114**: 469-73.
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5. Nelson RW, Ihle SL, Lewis LD, Salisbury SK, Miller T, Bergdall V, *et al.* Effects of dietary fibre supplementations on glycaemic control in dogs with alloxan induced *diabetes mellitus*. *Am J Vet Res*; 1991: **52**:2060-66.
6. Layer P, Zinsmeister AR, DiMagno E. Effects of decreasing intraluminal amylase activity on starch digestion and post-prandial gastrointestinal function in humans. Gastroenterology 1986, **91**:41-8.
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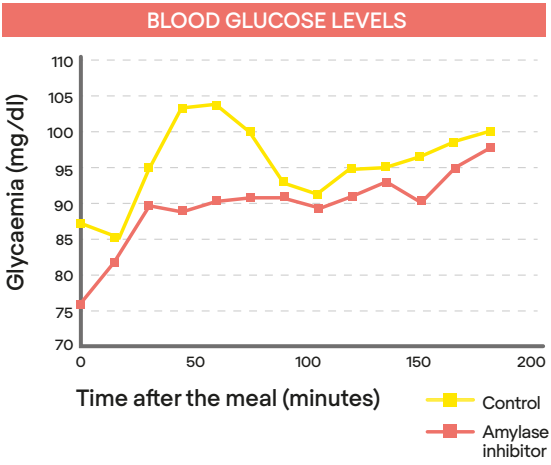
AMYLASE INHIBITOR FROM WHITE BEAN EXTRACT IS CLINICALLY PROVEN TO REDUCE POST-PRANDIAL GLYCAEMIC RISE IN DOGS

A placebo-controlled study in dogs revealed that those taking a phaseolamin (alpha-amylase inhibitor) enriched diet had substantially reduced post-prandial plasma glucose vs. control diet (without reduction of dietary carbohydrates)[8]. Consistency of intake, timing and size of meals is important to help maximise diabetic control in dogs.

Feeding a complete and balanced diet fed at consistent times in consistent quantities is crucial to maximise glycaemic control[9] (for example, 50% of the main meal ration fed in two equally sized meals at the same time each day). Ensuring the diet is highly palatable is key to ensuring predictable intake and should be a priority for appropriate diet selection[10].



8. Purina study: data on file.
9. Behrend E, Holford A, Lathan P, Rucinsky R, Schulman R. (2018) 2018 AAHA Diabetes Management Guidelines for Dogs and Cats. *J Am Anim Hosp Assoc.* Jan/Feb; **54(1)**:1-21.
10. Fleeman LM, Rand JS. (2001) Management of Canine Diabetes, Veterinary Clinics of North America: Small Animal Practice, Vol 31, Issue 5, 855-80.

CLINICAL ADVANTAGES WITH THE USE OF CANINE DM DIABETES MANAGEMENT

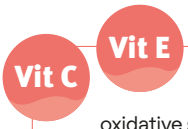
PURINA® PRO PLAN® VETERINARY DIETS DM Diabetes Management™ is specifically designed to meet the precise needs of dogs with diabetes mellitus:

Low carbohydrates – especially low in starch.

Complex (low glycaemic index) carbohydrates (barley, maize and soya). No rice or simple sugars known to cause a spike in the blood glucose curve.

Selected sources of dietary fibres to help improve glycaemic control.

Contains white bean extract – a source of alpha-amylase inhibitor (phaseolamin) from white bean extract clinically proven to limit carbohydrate absorption in dogs, help reduce carbohydrate digestion and reduce post-prandial plasma glucose.



Added antioxidant vitamins to help reduce oxidative stress commonly found in diabetic patients.

High protein diet to help support satiety and help dogs maintain optimal body weight after weight loss.

Other relevant literature:
- Barret ML, Udani JK. A proprietary alpha-amylase inhibitor from white bean (Phaseolus vulgaris): A review of clinical studies on weight loss and glycemic control. *Nutr J.* 2011: **10**: 24.
- Udani J, Singh BB. Blocking carbohydrate absorption and weight loss: a clinical trial using a proprietary fractionated white bean extract. *Altern Ther Health Mad.* 2007: **12**: 32-7.

Complete dietetic dry pet food for puppies and adult dogs for the support of skin function in the case of dermatosis and excessive loss of hair.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Inflammatory or allergic dermatoses
- ✓ Flea bite allergy
- ✓ Adverse reactions to food
- ✓ Otitis externa
- ✓ Skin construction and maintenance
- ✓ Inflammatory bowel disease (IBD)
- ✗ Conditions associated with hypercatabolic state (advanced heart failure, CRI IRIS stages 3 and 4).

1.5 kg, 3 kg and 12 kg

KEY BENEFITS

Skin support
Increased[1] levels of specific nutrients to help support skin health

Low antigen
Selected and limited number of protein sources to help minimise skin reactions to food

Omega-3 fatty acids
Increased[2] levels of omega-3 fatty acids, beneficial for skin health

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps support wound healing and immune function
High levels of arginine

Essential building blocks of collagen (principal component of the dermis)
Rich in proline, glycine, lysine and arginine

Helps support the cutaneous barrier function and helps prevent transepidermal water loss
High levels of omega-6 fatty acids

Contains novel protein sources
Rapeseed meal, pea protein and herring

Helps reduce eicosanoids associated with inflammation
High levels of EPA+DHA, switching the production of pro-inflammatory mediators towards non-inflammatory prostaglandins and leukotrienes

1. versus FEDIAF nutrition guidelines.
2. versus National Research Council nutrition guidelines.

COMPOSITION

Corn starch, rapeseed meal*, pea protein*, dried herring protein*, pork fat, digest*, fish oil, minerals, rapeseed oil. * Protein sources.

KEY NUTRIENT VALUES*			
Moisture	7.5%	Zinc	11.5 mg/100g
Protein	30%	Vitamin A	26015 IU/kg
- Lysine	2.11%	Vitamin E	300 IU/kg
- Methionine	0.58%		
- Cysteine	0.41%	B-vitamins	
Fat	18%	- Riboflavin B2	14.1 mg/kg
- Omega-6 fatty acids	2.5%	- Niacin B3	150.3 mg/kg
- Linoleic acid	2.3%	- Pantothenic acid B5	47.3 mg/kg
- Omega-3 fatty acids	1.4%	- Pyridoxin B6	16.8 mg/kg
- EPA (eicosapentaenoic acid)	0.6%	- Biotin B8	0.1 mg/kg
- DHA (docosahexaenoic acid)	0.5%	- Folic acid B9	5.0 mg/kg
Carbohydrate	35%	- Cobalamin B12	265.9 µg/kg
Crude fibre	2.5%	Metabolisable energy (ME)[1]	4002 kcal/Kg

* Typical analysis in the final product as fed. [1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

Depending on the individual condition, a gradual introduction of the new diet over a few days may be valuable. The recommended period of use is initially up to 2 months. Canine DRM Dermatosis™ provides complete and balanced nutrition for growth of puppies and maintenance of adult dogs.

PUPPY GROWTH – AGE IN MONTHS					
Adult weight (kg)	1.5 – 3	4 – 5	6 – 8	9 – 11	12 +
	Daily feeding quantity (g/day)				
2.5	55	85	85	75	70
5	80	130	135	125	110
10	105	195	210	185	180
15	130	255	275	245	230
25	150	330	420	380	330
35	185	385	445	515	420
45	200	405	455	535	460
70	280	530	645	775	645

ADULT	
Body weight (kg)	Daily feeding quantity (g/day)
2.5	65
5	100
10	165
15	215
25	300
35	375
45	445
70	600

For dogs over 70kg: for each additional 5kg of body weight, feed an additional 30g of dry pet food.
Fresh clean drinking water should be always available.

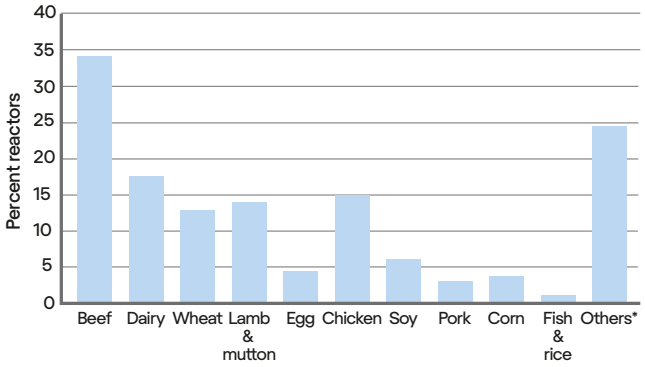
Allergic skin disease includes flea allergic dermatitis, atopic dermatitis, cutaneous adverse food reactions and contact allergies. It is thought to affect 10-30% of dogs[1] and is the third most common canine health condition[2]. Diet is crucial in providing nutrients to maintain epidermal integrity and optimise skin healing[3].

95% of each hair in a dog's coat is composed of protein[3], and other micronutrients also have key roles in supporting the skin[4].

FOOD ALLERGY

Food allergy (food hypersensitivity) is reported to contribute to up to 23% of non-seasonal allergic dermatoses[5].

COMMON FOOD ALLERGENS IN DOGS



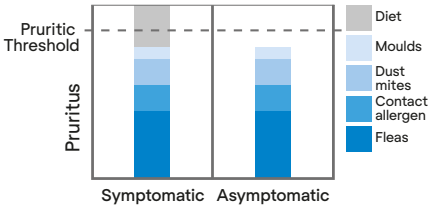
*Commercial foods in which the exact causative food allergen was not identified, e.g. corn, rice, biscuits, gluten.

This graph shows the most frequent allergens suspected of causing CAFRs (Canine Adverse Food Reactions) in dogs[6].

Atopic dermatitis is a genetically predisposed cutaneous hypersensitivity to environmental allergens, such as pollens, moulds and house dust mites.

The multiple allergies characteristic of many dogs with allergic skin disease appear to have an "additive effect" with cutaneous signs being manifested once a "threshold" has been reached. This means that managing one allergy (e.g. the food allergy) may reduce the "allergic threshold" such that signs of other concomitant allergies may no longer be manifested.

A PRURITIC DOG WITH CONCURRENT ATOPY AND FOOD ALLERGY MAY DROP BELOW THE PRURITIC THRESHOLD BY THE EFFECTIVE CONTROL OF ONLY ONE ALLERGEN[7]



CLINICAL ADVANTAGES WITH THE USE OF CANINE DRM DERMATOSIS™

PURINA® PRO PLAN® VETERINARY DIETS DRM Dermatosis™ is formulated to support canine dermatoses through:

A very **limited number of unusual protein sources** (herring, rapeseed and peas), specifically designed to minimise the risk of food reactions.

High levels of long chain omega-3 fatty acids (to maximise the natural anti-inflammatory process) and **omega-6** fatty acids (to promote a healthy epidermal barrier).

High levels of excellent quality protein to promote skin repair and maintenance, for fibroblast formation, and for collagen synthesis.

Added micronutrients to support the epidermal barrier and immune function including proline, glycine, lysine, arginine, zinc, omega-6 fatty acids and vitamin A.

1. Marsella R and De Benedetto A. Atopic Dermatitis in Animals and People: An Update mand Comparative Review. *Veterinary sciences* 2017; **4**: 37.
2. Llewellyn-Zaidi AM, Evans KM, O'Neill DG *et al.* Large-scale survey to estimate the prevalence of disorders for 192 Kennel Club registered breeds. *Canine Genetics and Epidemiology* 2017; **4**:8.
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4. Davenport gm, *et al.* The impact of nutrition on skin and hair coat. In: current research in dermatology. Proceedings from pre-congress symposium, 4th world congress of veterinary dermatology, san francisco, 2000; 4-9.
5. Fascetti A and Delaney S, Applied Veterinary Clinical Nutrition, 2012.
6. Mueller RS, Olivry T, Prélaud P. (2016) Critically appraised topic on adverse food reactions of companion animals (2): common food allergen sources in dogs and cats. BMC Veterinary Research Jan **12;**12:9.
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- Roudebush P. Adverse reactions to food: a clinical nutritionist's perspective. Proc 14th meeting of the American College of Veterinary Dermatology. 1998. pp 69-75.
- Campbell KL. Fatty acid supplementation and skin disease. *Vet Clin N Am Small Anim Pract.* 1990: **20**: 1475-86.
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- Rink L, Kirchner H. Zinc-altered immune function and cytokine production. *J Nutr.* 2000: **130**: 1407-11.
- Ihrke PJ, Goldschmidt MH. Vitamin A responsive dermatosis in the dog. *J Am Vet Med Assoc.* 1983: **182**: 687-90.
- Mueller RS, Olivry T, Prelaud P. Critically appraised topic on adverse food reactions of companion animals (2): common food allergen sources in dogs and cats. *BMC Vet Res.* 2016: **12**: 9.

CANINE EN GASTROINTESTINAL™

Complete dietetic pet food for puppies[1] and adult dogs, highly digestible, low fibre formulation for reduction of intestinal absorptive disorders, compensation for maldigestion and exocrine pancreatic insufficiency.

RECOMMENDED FOR

- ✓ Acute or chronic gastrointestinal disorders:
  - Acute or chronic diarrhoea
  - Gastroenteritis and colitis
  - Malabsorption and maldigestion
- ✓ Exocrine pancreatic insufficiency (EPI)
- ✓ Inflammatory bowel disease (IBD)
- ✓ Lymphangiectasia
- ✓ Pancreatitis
- ✓ Hyperlipidaemia
- ✓ Hepatic disease not associated with encephalopathy

400 g 1.5 kg, 5 kg and 12 kg

KEY BENEFITS

LOW FAT

Low fat* level to help minimise fat maldigestion

MEDIUM CHAIN FA

MCFAs
With a special fat source (coconut oil) high in Medium Chain Fatty Acids (MCFAs) for easy gut absorption

LOW RESIDUE

Low residue
Easy to digest ingredients to help reduce workload of the compromised gut

ADDITIONAL BENEFITS & CHARACTERISTICS

Improves microbial balance, stimulates the growth of beneficial bacteria and provides short-chain fatty acids for the enterocytes
Added prebiotics (purified inulin). Increased* levels of soluble fibre

Helps manage colitis associated with compromised mucosa and inflammation
Soluble fibres and omega-3 fatty acids

Promotes good faecal quality
Thanks to a balance of soluble and insoluble fibres

Promotes good patient compliance
High palatability

1. Dry formula only.
* Compared to the other products of the PURINA® PRO PLAN® VETERINARY DIETS range.

COMPOSITION (DRY)

Rice*, corn, pea protein*, dried poultry protein*, dried beet pulp, digest, soya protein, coconut oil* (4%), minerals, pork fat, mono and diglycerides, soya oil, fish oil, chicory inulin.

* Highly digestible ingredients.

COMPOSITION (CAN)

Pork heart, poultry liver and heart, egg powder, rice, minerals, coconut oil, cellulose powder.

KEY NUTRIENT VALUES*		
	Dry	Wet
Moisture	7.5%	72.5%
Protein	24%	8%
Fat - Omega-6 fatty acids - Omega-3 fatty acids - Medium chain fatty acids	10.5% 1.8% 0.3% 2%	4.9% 0.95% 0.03% 0.67%
Carbohydrate	50%	11.6%
Crude fibre	2%	0.8%
Soluble fibre	1.8%	0.2%
Insoluble fibre	5.6%	1.4%
Zinc	12 mg/100g	3.9 mg/100g
Copper	1.5 mg/100g	0.3 mg/100g
Vitamin E	486 IU/kg	134 IU/kg
Metabolisable energy (ME)[1]	3704 kcal/kg	1157 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

Depending on the individual condition, a gradual introduction of the new diet over a few days may be valuable. Feeding small quantities of food several times a day helps to optimise digestion and absorption. PURINA® PRO PLAN® VETERINARY DIETS EN Gastrointestinal™ provides complete and balanced nutrition for growth of puppies[†] and maintenance of adult dogs.

[†] Dry formula only.

PUPPY GROWTH – AGE IN MONTHS					
Adult weight (kg)	1.5 – 3	4 – 5	6 – 8	9 – 11	12 +
	Daily feeding quantity (g/day)				
2.5	60	90	95	85	75
5	85	140	145	135	120
10	110	210	225	200	195
15	145	275	300	265	245
25	160	355	450	410	355
35	200	420	485	560	455
45	215	440	490	580	490
70	300	575	700	835	695

ADULT MAINTENANCE				
Body weight (kg)	Daily feeding quantities		Dry + Wet (mixed feeding)	
	Dry (g/day)	Can/day	Dry (g/day)	Can/day
2.5	70	½	30	⅓
5	110	1	50	½
10	175	1 ½	50	1
15	230	1 ¾	105	1
25	325	2 ⅔	200	1
35	405	3 ¼	280	1
45	480	3 ¾	355	1
70	645	5 ¼	395	2

For dogs over 70kg: for each additional 5kg of body weight, feed an additional 35g of dry pet food. For dogs over 70 kg, add ⅓ can for each 5 kg of body weight. When feeding dry and wet Canine EN, for each addition of 200g wet, reduce by 60g dry kibble.

PROBLEMS OF FAT ASSIMILATION IN SMALL INTESTINAL DISEASE

Fat digestion and absorption is frequently impaired in small intestinal disease:

Typically 90% of dietary fats are long chain triglycerides (LCTs) whose digestion and absorption is complex.

Medium-chain fatty acids (MCFAs) are easily digested as only 2 steps are needed in the digestion process1.

Restriction of dietary fat levels in dogs with GI disease can therefore have several benefits such as:

- Avoiding delayed gastric emptying, which could promote vomiting
- Improved caloric intake by avoiding fat malassimilation
- Limiting the quantity of malabsorbed fats being fermented to hydroxylated fatty acids
- Limiting fat malabsorption associated with IBD, EPI, lymphangectasia, etc.

KEY DIGESTIVE STEPS IN FAT METABOLISM

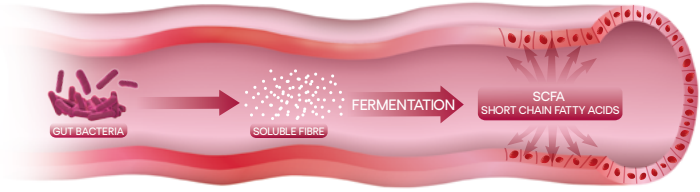
	LCTs	MCFAs
Hydrolysis by lipase	X	
Emulsification by bile salts	X	
Facilitated diffusion to membrane	X	
Membrane transport	X	X
Facilitated cytoplasmic transport	X	
Resynthesis of triglycerides	X	
Packing into chylomicrons	X	
Secretion into lymphatics		
Secretion directly into blood	X	X
Total steps to digest	8	2

Blood circulation

NUTRITIONAL MANAGEMENT OF COLITIS IN DOGS

Dietary management is extremely important in dogs with colitis[2,3]. A highly digestible diet containing a combination of both soluble and insoluble fibres is highly beneficial[4,5]:

- Insoluble fibres modify intestinal motility and transit times. These help motility in the colon by stimulation of both segmental and peristaltic contractions
- Soluble fibres are fermented with the production of short-chain fatty acids (SCFAs) that are preferentially used by colonocytes, and improve both the structure and function of the colon
- Bacterial fermentation of soluble fibre may also modify the flora in the colon, and help suppress the growth of pathogens such as Clostridia spp that can contribute to colitis



1. Rutz G.M., *et al.* Effects of exchange of dietary medium chain triglycerides for long-chain triglycerides on serum biochemical variables and subjectively assessed well-being of dogs with exocrine pancreatic insufficiency. Am. *J. Vet. Res.* 2004; **65**: 1293-1302.
2. Simpson JW. Diet and large intestinal disease in dogs and cats *J Nutr* 1998; **128**: 2717S-2722S.
3. Nelson RW, *et al.* Nutritional management of idiopathic chronic colitis in the dog. *J Vet Int Med* 2:133-137.
4. Hernot DC. *et al.* In vitro digestion characteristics of unprocessed and processed whole grains and their components. *J Agric Food Chem.* 2008; Nov 26; **56(22)**:10721-6.
5. Propst EL *et al.* A dose-response experiment evaluating the effects of oligofructose and inulin on nutrient digestibility, stool quality, and fecal protein catabolites in healthy adult dogs. *J Anim Sci.* 2003 Dec; **81(12)**:3057-66.

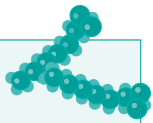
CLINICAL ADVANTAGES WITH THE USE OF CANINE EN GASTROINTESTINAL™

Key factors provided by PURINA® PRO PLAN® VETERINARY DIETS Canine EN Gastrointestinal™ in the management of enteropathies include:

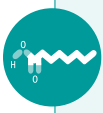
A strictly limited LCFA concentration in the diet, minimising the risk of fat malassimilation.

The low long-chain fatty acids (LCFAs) concentration also makes Canine EN Gastrointestinal™ excellent for management of EPI and hepatic diseases associated with reduced bile acid production.

Addition of moderate levels of medium-chain fatty acids (MCFAs) which require only two steps for digestion.



MCFAs can be efficiently utilised even when hepatic, pancreatic or intestinal function is compromised. This not only provides a readily absorbed source of fats, but also avoids an over-reliance on increased carbohydrates in the diet.



All components of Canine EN Gastrointestinal™ are highly digestible and the overall product has a high palatability – essential for managing small intestinal disease.

Added long-chain omega-3 fatty acids help to maximise natural anti-inflammatory processes.

Other relevant literature
- Davenport DJ, Remillard RL, Simpson KL, *et al.* Gastrointestinal and exocrine pancreatic disease. In Hand MS, Thatcher CD, Remillard RL *et al*, editors: Small animal clinical nutrition, 4th edition. Walsworth Publishing CO, Marceline, MO. 2000: 727.
- Bauer JE, Schenk PA. Nutritional Management of Hepatic Disease. *Vet Clin North Am Small Anim Pract*. 1989: **19**: 513-26.

CANINE FORTIFLORA®

Canine Probiotic. Complementary pet food for dogs and puppies to help support intestinal health and balance.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Gastrointestinal disturbance and loose stools associated with microflora imbalance
- ✓ Loose stools associated with stress, antibiotic use or diet change
- ✓ Reduction of flatulence in dogs
- ✓ Poor faecal quality in dogs of all ages (puppies, adult and senior)
- ✓ Palatability enhancement for dogs with poor appetite
- ✗ Dogs with specific food allergies

7 × 1 g sachets | 30 × 1 g sachets | 30 or 60 chews

KEY BENEFITS

SF68

Contains live lactic acid bacteria to help support intestinal health and balance. Contains a guaranteed level of a proprietary microencapsulated strain of viable probiotic (SF68) (5 × 10^8 CFU*/g). The microencapsulation process enhances stability, guaranteeing levels of live beneficial bacteria entering the gastrointestinal (GI) tract

IMMUNE SYSTEM

Proven to help promote a strong immune system and help support intestinal health and balance for dogs of all ages - Contains the lactic acid bacteria *Enterococcus faecium* (SF68), at levels proven to support intestinal health and microflora balance in dogs

GREAT TASTE

Great taste
Can be easily sprinkled on all dog foods with great acceptance

ADDITIONAL BENEFITS & CHARACTERISTICS

Highly palatable
PRO PLAN® FortiFlora® can also act as a palatability enhancer

Easy & convenient
Sachets can be easily sprinkled on all dogs food, once daily.
Chews are very convenient to use, to be given once a day, any time, anywhere.

Helps maintain good fecal quality
Can be used for GI disturbances associated with stress, antibiotic use or diet change

Helps reduce free radical damage
High levels of vitamins C and E

Safely used from weaning for puppies and for pregnant and lactating dogs

* CFU: Colony Forming Units.

COMPOSITION (SACHETS)

Meat and animal derivatives*, minerals.

* Pork and poultry.

COMPOSITION (CHEWS)

Meat and animal derivatives**, derivatives of vegetable origin, glycerol, yeasts, oils and fats, various sugars.

** Poultry and bovine gelatin.

Keep between **2 and 25°C.**

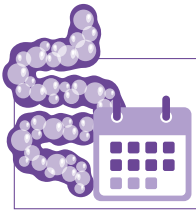
KEY NUTRIENT VALUES*		
	Sachet	Chew
Enterococcus faecium SF68 NCIMB 10415 (4b1705) Live microencapsulated microorganisms**	Minimum 5×10^8 CFU/g	Minimum 5×10^8 CFU/g
Protein	54%	29.5%
Fat	19%	12%
Crude fibre	1%	4.4%
Vitamin E	6445 IU/kg	4500 IU/kg
Vitamin C	1450 mg/kg	1500 IU/kg
Selenium	0.185 mg/100g	0.12 mg/100g
Metabolisable energy (ME)[1]	4354 kcal/kg	3790 kcal/kg

* Typical analysis in the final product as fed.
** Minimum guaranteed level at the end of shelf life.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

FortiFlora® can be **used daily** on a long-term basis.

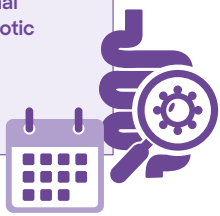
Give **FortiFlora® every day**, sprinkled on top of the regular food or as a chew, until at least 1 week after the **return to normal stool quality.**



To **reduce flatulence** in dogs, give **FortiFlora® every day** for at least 2 weeks.

To **improve immune system** function, give **FortiFlora® every day.**

When feeding **to restore intestinal microflora balance due to antibiotic use,** give **FortiFlora® every day** during the antibiotic course and until 1 week after the last dose of antibiotic.



CLINICAL ADVANTAGES WITH THE USE OF CANINE FORTIFLORA® IN DOGS

PRO PLAN® FortiFlora® Canine contains a strain of E. faecium (SF68) (4b1705) – a lactic acid bacterium that is recognised as a safe, "friendly" bacteria and valuable probiotic. A unique and proprietary microencapsulation technique ensures that the bacteria in Canine FortiFlora® remains viable and that the product can be used with confidence in its efficacy. In dogs, Nestlé PURINA® studies have confirmed that **feeding SF68**:

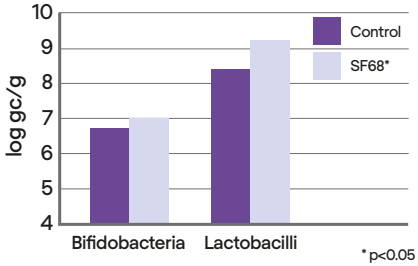
- Can **increase levels of the beneficial bacteria** bifidobacteria and lactobacilli in dogs[1,2]
- Can **decrease levels** of the potentially harmful bacteria *Clostridium perfringens* in dogs[2,3]
- **Can increase IgA in dogs[2,4] and cats[5]** IgA is produced and secreted in the intestine; therefore, increased IgA is a sign of a healthy, balanced intestine. Ingestion of SF68 has been proven to promote healthy immune function in dogs. IgA levels were increased and vaccination response prolonged in growing puppies fed SF68 from weaning to one year of age[4]
- Can increase IgA in neonatal puppies[2] and in adult dogs[6]
- Can lessen some of the associated clinical abnormalities associated to the use of certain antibiotics[7]

In clinical trials, SF68 has been shown to significantly improve faecal quality in puppies and stabilise intestinal flora by maintaining a higher diversity of the gut bacterial population.

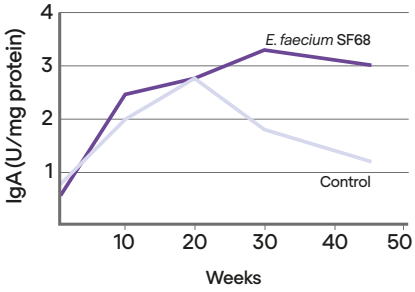
Nestlé PURINA® studies also show SF68 can **enhance faecal IgA production in puppies** and elderly dogs and even enhance systemic immune responses of puppies to vaccination[6].

SF68 INCREASED BENEFICIAL BACTERIA IN PUPPIES[1]

Change in faecal microflora in puppies fed SF68



SF68 IMPROVED FAECAL IgA MUCOSAL IMMUNE RESPONSE[4]



Based on these and other studies, Canine FortiFlora® can be recommended for dogs to support the **nutritional management of**:

- Gastrointestinal disturbance and loose stools associated with microflora imbalance
- Loose stools associated with stress, antibiotic use or diet change
- Poor faecal quality in dogs of all stages

Canine FortiFlora® may also play a role in helping stabilise and **restore the intestinal flora** after a disturbance.

1. Czarnecki-Maulden G. Internal report. Effect of *Enterococcus faecium* SF68 on fecal microflora in puppies. 2006.
2. Weiss M. Effect of *enterococcus faeceum* on the organism of newborn puppies. 2003. PhD Thesis. Ludwig-Maximilians-Universität München. 1-127.
3. Vahjen W, Manner K. The effect of a probiotic *Enterococcus faecium* product in diets of healthy dogs on bacteriological counts of Salmonella spp, Campylobacter spp. and Clostridium spp. in faeces. *Arch Anim Nutr.* 2003: **57**: 229-33.
4. Benyacoub J, Czarnecki-Maulden GL, Cavadini C, Sauthier T, Anderson RE, Schiffrin EJ, der Weid T. Supplementation of food with *Enterococcus faecium* (SF68) stimulates immune functions in young Dogs. *J Nutr.* 2003: **133**: 1158-62.
5. Czarnecki-Maulden G. Internal report. Effect of *Enterococcus faecium* SF68 on immune status and fecal microflora in kittens. 2006.
6. Czarnecki-Maulden G. Internal report. Effect of *Enterococcus faecium* SF68 dose on immune status in dogs – dose response trial. 2006.
7. Fenimore A, Martin L, & Lappin MR. (2017). Evaluation of metronidazole with and without *Enterococcus faecium* SF68 in shelter dogs with diarrhea. *Topics in Companion Animal Medicine*, **32**, 100-103.

Other relevant literature

- Wynn SG. Probiotics in veterinary medicine. *J Am Vet Med Assoc.* 2009: **234**: 606-13.
- Culligan EP, *et al.* Probiotics and gastrointestinal disease: successes, problems and future prospects. *Gut Pathog.* 2009: **1**: 19-31.
- Marteau PR, *et al.* Protection from gastrointestinal diseases with the use of probiotics. *Am J Clin Nutr* 2001; **73**;430-6.
- Kligler B, Cohrssen A. Probiotics. *Am Fam Phys.* 2008: **9**: 1073-8.

CANINE FORTIFLORA® PLUS

PROBIOTIC + PREBIOTIC – Complementary pet food for dogs and puppies to help maintain a healthy intestinal microbiome and long term health.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Gastrointestinal disturbance and loose stools associated with microflora imbalance
- ✓ Irregular bowel movements and poor faecal quality
- ✓ Helps ease the passage of faeces
- ✓ Reduce flatulence in dogs
- ✓ Loose stools associated with stress, diet change or antiobiotic use
- ✓ Helps promote immune system function
- ✗ Dogs with specific food allergies

30 × 1 g sachets

KEY BENEFITS

Proven Synbiotic action (of a probiotic & prebiotic) to help maintain a healthy intestinal microbiome
Contains prebiotic fibre (psyllium) and lactic acid bacteria (*E. faecium* SF68) at levels that stimulate the growth of specific bacteria to support a healthy intestinal microbiome

Contains the same guaranteed level of proprietary micro-encapsulated strain of live lactic acid bacteria SF68
(5×10^8 CFU*/sachet) as FortiFlora to help support intestinal health / microflora and promote a strong immune system

Contains a plant-based prebiotic fibre (psyllium)
to stimulate the growth of beneficial bacteria in the gut and nourish a healthy microbiome

ADDITIONAL BENEFITS & CHARACTERISTICS

Great taste
Can be easily sprinkled on dog food with great acceptance

Helps repopulate the intestine
with beneficial microorganisms

Help manage intestinal microbiome imbalance
as a result of fermentation thanks to the prebiotic fibre (psyllium)

Firms up faeces
thanks to water holding capacity of psyllium

Helps ease the passage of faeces

Helps support intestinal motility & regulatie intestinal transit
thanks to the inclusion of psyllium husk

Helps promote intestinal barrier integrity

Reduce flatulence in dogs
Psyllium has moderate fermentability, which means less gas production in the gut compared to other types of fibers

* CFU: Colony Forming Units.

COMPOSITION

Derivatives of vegetable origin (50% dried psyllium husk), meat and animal derivatives*, minerals.

* Pork and poultry.

Keep between **2 and 25°C.**

KEY NUTRIENT VALUES*	
Enterococcus faecium SF68 NCIMB 10415 (4b1705) Live microencapsulated microorganisms**	Minimum 5×10^8 CFU/g
Protein	28.5%
Fat	9.5%
Crude fibre	1.7%
Vitamin E	3211 IU/kg
Selenium	0.134 mg/100g
Metabolisable energy (ME)[1]	3767 kcal/kg

* Typical analysis in the final product as fed.
** Minimum guaranteed level at the end of shelf life.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

RECOMMENDED FOR	HOW IT WORKS	ADMINISTRATION GUIDELINES
Gastrointestinal Disturbances		
Gastrointestinal disturbances and loose stools associated with microbiome imbalance	Stimulates bacterial fermentation and favours the growth of beneficial bacteria, increasing microbiome diversity	Give 1 sachet of FortiFlora® PLUS every day, sprinkled on top of the regular food, until at least 7 days after the remission of the signs
Irregular bowel movements and poor faecal quality	Psyllium can help firm up stools and support intestinal motility thanks to water-holding capacity	
Helping ease the passage of faeces		
Reduction of flatulence in dogs	Psyllium is partially fermented which means less gas production compared with other fibres[3,4]	
Loose stools		
Loose stools associated with stress	Improves the survival and implantation of live beneficial bacteria in the gut, helping promote intestinal barrier integrity	Give 1 sachet of FortiFlora® PLUS every day, 3 days before the stressful event, during the whole period of stress and until at least 3 days after the end of the stress.
Loose stools associated with antibiotic use		Give 1 sachet of FortiFlora® PLUS every day during the antibiotic use and until 7 days after the last dose of antibiotic. For maximum efficacy, give Fortiflora® PLUS at least 3 hours before or after the antibiotic administration
Loose stools associated with diet change		Give 1 sachet of FortiFlora® PLUS a day, from 3 days before the start of the diet transition until 7 days after the pet has been fed entirely with the new diet
Immune function		
Loose stools associated with diet change	Supports the immune system at mucosal and systemic levels	Give 1 sachet of FortiFlora® PLUS every day, for at least 30 days
Palatability		
Palatability enhancement for pets with little appetite	Can be easily sprinkled on pets' food with great acceptance	Add 1 sachet of FortiFlora® PLUS daily to the regular food as long as palatability enhancement is required

Ground-breaking studies in humans and other mammals have implicated the **gut microbiome** in a range of physiologic processes that are **vital to host health**[1-4].

Purina scientists developed the **first study published** to demonstrate that the essential features of the **human gut microbiome are mirrored in adult dogs**[3] with **direct implications in their responses to diet**[3] and future developments to improve **pet's gut microbiome health**.

CLINICAL STUDIES SHOW THE BENEFITS OF USING FORTIFLORA® PLUS IN HELPING MAINTAIN GASTROINTESTINAL HEALTH

In vitro studies of cat and dog faecal samples combined with FortiFlora® PLUS showed a significant shift towards beneficial gut bacteria

(Nestlé Purina, internal data 2020)

- Microbial diversity (number of species and relative abundance present) significantly shifted towards beneficial bacteria such as Lactobacillus spp and Bifidobacteria spp
- Decreased intraluminal pH, which promotes a more favourable environment for the growth of beneficial bacteria

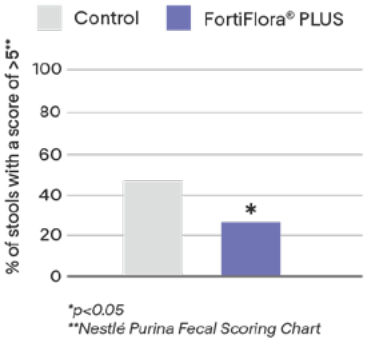
In healthy puppies, FortiFlora® PLUS increases gut microbiome diversity and abundance of beneficial gut bacteria (n=24)

(Nestlé Purina, internal data 2020)

- Increased microbial alpha (number of bacteria) and beta (beneficial bacteria) diversity
- Significantly increased abundance of Bacteroides, Alloprevotella, and Phascolarctobacterium spp. which are all bacteria associated with fibre fermentation and short-chain fatty acids (SCFA) production

Beneficial effects of FortiFlora® PLUS on healthy exercising dogs (n=40)

(Nestlé Purina, internal data 2020)



*p<0.05
**Nestlé Purina Fecal Scoring Chart

- After 2 months of supplementation, the average number of defecation events during training runs was significantly less for dogs receiving FortiFlora® PLUS
- Increased alpha and beta microbial diversity
- Tended to improve faecal scores during exercise

1. Eisenstein M. 2020. The hunt for a healthy microbiome. Nature vol 577.
2. Barko PC, McMichael MA, Swanson KS, *et al.* 2018. The gastrointestinal microbiome: a review. *J Vet Intern Med* **32:**9-25.
3. Coelho LP, Kultima JR, Costea PI, *et al.* 2018. Similarity of the dog and human gut microbiomes in gene content and response to diet. Microbiome, 6(72).
4. Pilla R, Suchodolski J. 2021. The Gut Microbiome of Dogs and Cats, and the Influence of Diet. *Vet. Clin. North Am. Small Anim* 31, 3.

CANINE HA HYPOALLERGENIC™

Complete dietetic pet food for puppies* and adult dogs for the reduction of ingredient and nutrient intolerances with hydrolysed protein and selected carbohydrate sources.

RECOMMENDED FOR

- ✓ Hydrolysed elimination diet for food trials
- ✓ Long-term management of food allergy
- ✓ Dermatitis and/or gastroenteritis associated with food allergy
- ✓ Inflammatory bowel disease (IBD)
- ✓ Food intolerance
- ✓ Exocrine pancreatic insufficiency (EPI)**
- ✓ Hyperlipidaemia**
- ✓ Lymphangiectasia**
- ✓ Malabsorption**
- ✓ Protein losing enteropathy
- ✓ Chronic diarrhoea (associated with food intolerance)
- ✓ Small Intestinal Bacterial Overgrowth (SIBO)**

400 g 1.3 kg, 3 kg and 11 kg

KEY BENEFITS

Single hydrolysed protein
with low molecular weight to help avoid allergic reactions

Purified carbohydrate sources
to help avoid allergic reactions

With omega-3 fatty acids
to help maximise natural anti-inflammatory processes

ADDITIONAL BENEFITS & CHARACTERISTICS

Provides a lipid energy source which is much easier to digest and absorb
Contains MCFA (medium-chain fatty acids)

Supports dogs with compromised GI function by ensuring improved nutrient absorption
Thanks to high protein, carbohydrate and fat digestibility

Helps maintain the epidermal integrity
Enhanced levels of zinc, omega-3 and -6 fatty acids and vitamin A

Helps ensure long-term compliance
Good palatability

Formulated for dogs of all life stages including puppies
Suitable for nutritional management during growth and maintenance from 16 weeks onwards

* Wet formula is suitable for puppies from 16 weeks onwards. ** Recommended uniquely for dry formula.

COMPOSITION (DRY)

Corn starch*, hydrolysed soya protein**, minerals, coconut oil, sugar*, rapeseed oil, cellulose, glycerine (from vegetable origin), soya oil, fish oil.

* Purified carbohydrate sources.
** Hydrolysed protein source.

COMPOSITION (CAN)

Pea starch, cellulose*, hydrolysed soya protein**, fish oil, soybean oil, minerals, various sugars*.

* Carbohydrate sources.
** Hydrolysed protein source.

KEY NUTRIENT VALUES*		
	Dry	Wet
Moisture	8%	74.3%
Protein	21%	6.2%
Fat - Omega-6 fatty acids - Omega-3 fatty acids - Medium chain fatty acids - EPA + DHA	10.5% 2% 0.5% 1.3% 0.10%	3.7% 0.89% 0.17% - 0.066%
Carbohydrate	51.5%	11.6%
Crude fibre	2%	2.1%
Taurine	1986 mg/kg	1204 mg/kg
Zinc	14.9 mg/100g	3.7 mg/100g
Vitamin A	21920 IU/kg	5309 IU/kg
Vitamin E	301 IU/kg	138 IU/kg
Metabolisable energy (ME)[1]	3638 kcal/kg	940 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

The recommended period of use is 3 to 8 weeks. If signs of intolerance disappear, this feed can be used initially up to one year. It is recommended that a veterinarian's opinion be sought before use and before extending the period of use.
Suitable for puppies from 4 months old.

PUPPY GROWTH – AGE IN MONTHS								
Adult weight (kg)	Dry				Wet			
	4	6	9	12	4	6	9	12
	Daily feeding quantity (g/day)				Daily feeding quantity (can/day)			
2.5	95	95	85	75	1	1	¾	¾
5	145	150	135	120	1 ⅓	1 ⅓	1 ⅓	1 ¼
10	215	230	200	195	2	2 ¼	2	2
15	280	300	265	250	2 ¾	3	2 ⅔	2 ⅓
25	360	455	415	360	3 ½	4 ⅓	4	3 ½
35	420	485	560	455	4	4 ¾	5 ½	4 ½
45	440	495	585	500	4 ⅓	4 ¾	5 ¾	5
70	580	705	840	700	5 ¾	7	8 ¼	6 ¾

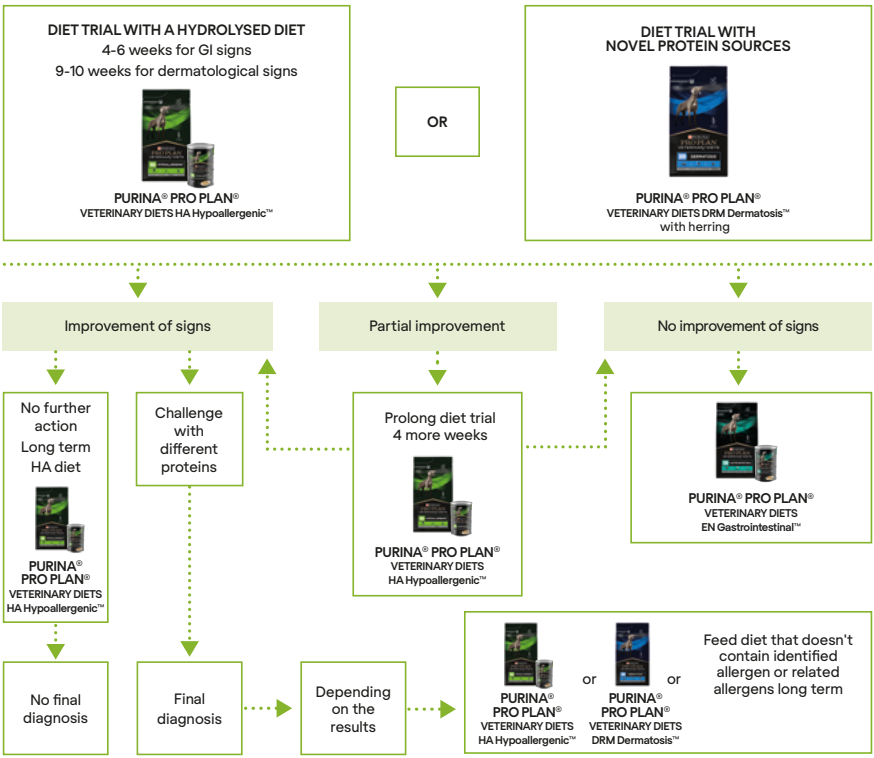
ADULT MAINTENANCE				
Body weight (kg)	Daily feeding quantities		Dry + Wet (mixed feeding)	
	Dry (g/day)	Can/day	Dry (g/day)	Can/day
2.5	70	¾	35	⅓
5	110	1	60	½
10	175	1 ¾	75	1
15	230	2 ⅓	130	1
25	325	3 ¼	225	1
35	410	4	310	1
45	485	4 ¾	385	1
70	650	6 ½	450	2

For dogs over 70 kg: for each additional 5 kg of body weight, feed an additional 30g of pet food or ⅓ can.
When feeding dry and wet Canine HA, for each addition of 200g wet, reduce by 50g dry kibble.

The diagnosis of cutaneous adverse food reactions (CAFRs) in dogs relies on the performance of dietary restriction-provocation trials. Knowing the most common offending allergens in these species would help determine which food challenges should be performed first to faster confirm the diagnosis of CAFR[1]. As published by Olivry & Mueller (2017) the prevalence of CAFR in dogs is around 1 to 2% and among those with skin diseases, it ranges between 0 and 24%. The range of CAFR prevalence was similar in dogs with pruritus (9 to 40%), those with any type of allergic skin disease (8 to 62%) and in dogs diagnosed with atopic dermatitis (9 to 50%)[2].

A novel protein or hydrolysed diet containing a limited antigen content may help minimise adverse food reactions (AFRs) and be helpful both in the diagnosis and management of AFRs. It is important to note that the only way to accurately diagnose an AFR is an elimination diet trial; serology testing for food-specific IgE and IgG shows low repeatability and has a highly variable accuracy[1], and thus should not be routinely recommended.

DIAGNOSING FOOD INTOLERANCES



1. Mueller RS, Olivry T, Prélaud P. Critically appraised topic on adverse food reactions of companion animals (2): common food allergen sources in dogs and cats. *BMC Vet Res.* 2016: **12**: 9.
2. Olivry T, Mueller RS. Critically appraised topic on adverse food reactions of companion animals (3): prevalence of cutaneous adverse food reactions in dogs and cats. *BMC Vet Res.* 2017: **13**: 51.
3. Carlotti D. Food Allergy in Dogs and Cats: Current Dermatological Perspectives. 2017.

Food allergy (food hypersensitivity) is widely recognised in dogs, and results in clinical signs affecting the skin, gastrointestinal tract, or both. Food allergy is reported to be responsible for to up to 20-25% of cases of non-seasonal allergic dermatoses, and for many cases of gastroenteritis.

Food allergens are almost exclusively proteins or glycoproteins and in dogs the most commonly reported allergens are: beef, dairy products, chicken, and wheat[1]. The size and structure of the protein helps determine its ability to induce hypersensitivity:

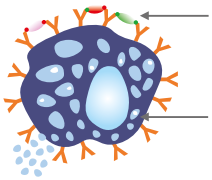
- Most allergens have a molecular weight above 20 000 Daltons – large enough to have sufficient complexity to interact with antibodies or T-cell receptors.
- Proteins also have to be small enough to pass through the mucosal barrier and are usually less than 70 000-80 000 Daltons.

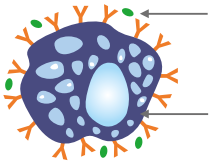
Excessive hydrolysis of proteins in hypoallergenic diets is not necessary as it might contribute to the risk of osmotic diarrhoea. The best approach to the diagnosis of canine food allergy is to use a food where the potential allergens have been broken down and denatured to render them harmless and non-immunologically reactive by hydrolysis. It is essential for an effective food trial that the diet used is fed exclusively.

CLINICAL ADVANTAGES WITH THE USE OF CANINE HA HYPOALLERGENIC™

PURINA® PRO PLAN® VETERINARY DIETS HA Hypoallergenic™ provides:

- A single protein source hydrolysed to **low molecular weights** – hydrolysing proteins to less than 18 000 Daltons helps render them immunologically inert, and alters their structure to further reduce antigenicity
- An **exceptional digestibility** of all ingredients to reduce the antigenic load and help manage any GI signs
- **Purified starch source and sucrose**, from which virtually all intact protein has been removed. This dramatically reduces the risk of allergic responses
- **Long-chain omega-3 fatty acids** to help reduce inflammatory responses. These are incorporated into cell membranes in place of a proportion of arachidonic acid, long-chain omega-3 fatty acids subsequently compete with arachidonic acid as a substrate for eicosanoid production and thereby **maximise the natural anti-inflammatory process**





Other relevant literature:
- Tapp T, Griffin C, Rosenkrantz W, Muse R, Boord M. Comparison of a commercial limited-antigen diet versus home-prepared diets in the diagnosis of canine adverse food reaction. *Vet Therapeutics*. 2002: **3**: 244-51.
- Hall EJ, Simpson KW. Diseases of the small intestine: dietary sensitivity. In Ettinger SJ, Feldman EC (eds). Textbook of Veterinary Internal Medicine, 5th edition. W. B. Saunders Co, Philadelphia. 2000: 1230-3.
- Marks SL, Laflamme DP, McAloose D. Dietary trial using a commercial hypoallergenic diet containing hydrolyzed protein for dogs with inflammatory bowel disease. *Vet Therapeutics*. 2002: **3**: 109-18.

CANINE HP HEPATIC™

Complete dietetic dry pet food for puppies* and adult dogs for support of liver function in case of chronic liver insufficiency and for reduction of copper in the liver in cases of accumulation.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Liver Failure/Disease
- ✓ Hepatitis
- ✓ Portosystemic shunt
- ✓ Copper metabolism disorder
- ✓ Piroplasmosis/babesiosis
- ✓ Leptospirosis
- ✓ Leishmaniasis
- ✓ Hepatic encephalopathy

- ✗ Not suitable during pregnancy and growth in puppies before 14 weeks of age
- ✗ Pancreatitis
- ✗ Hyperlipidaemia

3 kg and 12 kg

KEY BENEFITS

Selected protein sources
to help reduce accumulation of toxins and maintain liver function

Restricted copper
to reduce hepatic copper accumulation

High energy content
to help maintain positive energy balance

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps maximise natural anti-flammatory processes
Long-chain omega-3 fatty acids from fish oil

Helps reduce ammonia production and reabsorption in the large intestine
Added prebiotic

Reduces the risk of onset of Hepatic Encephalopathy
Thanks to a moderate protein level from selected sources (62% plant, 33% egg)

Helps protect hepatic tissue and help slow progression of hepatic disease
Increased levels of antioxidants (Vit E and C)

Helps maintain a steady glucose supply
Added prebiotics and moderate carbohydrate level

An easy to digest fat source
Added Medium-Chain Fatty Acids

Helps counteract deficiency that may occur in liver disease
Added zinc

* For puppies over 14 weeks.

COMPOSITION

Corn*,**, dried egg*, soya meal*, dried beet pulp*, pork fat, digest*, minerals, fish oil, coconut oil, dried chicory root, cellulose.

* Protein sources.
** Highly digestible carbohydrate sources.

KEY NUTRIENT VALUES*	
Moisture	7.5%
Protein	19%
Fat - Omega-6 fatty acids - Omega-3 fatty acids	18% 2.4% 0.5%
Carbohydrate	45.4%
Sodium	0.21%
Linoleic acid	2.2%
Arachidonic acid	0.18%
Alpha linolenic	0.16%
DHA	0.12%
Crude fibre	3.5%
Vitamin E	471 IU/kg
Total Copper	0.5 mg/100g
Zinc	20.8 mg/100g
Metabolisable energy (ME)[1]	3903 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

Suitable for puppies from 4 months old. The recommended period of use is initially up to 6 months for copper reduction in liver and 4 months for chronic liver insufficiency.

PUPPY GROWTH – AGE IN MONTHS				
Adult weight (kg)	4	6	9	12
	Daily feeding quantity (g/day)			
2.5	95	85	80	70
5	135	140	125	115
10	200	215	185	180
15	275	300	270	235
25	335	425	385	335
35	395	455	525	425
45	415	465	545	465
70	455	660	790	745

ADULT MAINTENANCE	
Body weight (kg)	Daily feeding quantity (g/day)
2.5	65
5	105
10	165
15	215
25	305
35	385
45	455
70	610

For adult dogs over 70 kg: for each additional 5 kg of body weight, feed an additional 20 g of dry pet food.

Because the liver is central to the digestion, absorption, metabolism and storage of many nutrients, nutritional support is fundamental in the management of dogs with hepatic disease. The main characteristics that a diet should have for helping in the management of hepatic disease are:

HIGHLY PALATABLE HIGH ENERGY DIET

Chronic liver disease causes malnutrition due to impaired nutrient intake associated with anorexia and nausea, and due to maldigestion and malassimilation of food often associated with hepatic fibrosis and portal hypertension[1]. Malnutrition has been proven to have a significant negative impact on the outcome of hepatic patients[2] and preventing malnutrition and maintaining optimal body weight should be major nutritional goals of a hepatic diet. Adding **medium-chain fatty acids**, a form of fat which does not require bile salts or a fully functioning liver for its digestion and absorption is a good way of providing energy to dogs with hepatic disease.

REDUCE COPPER ACCUMULATION

The second goal in nutritionally managing canine liver disease should be to **reduce copper accumulation** in relevant cases. Diets low in copper are recommended for dog breeds known to be prone to hepatic copper accumulation (especially Bedlington terriers) and for dogs diagnosed with abnormal hepatic copper storage.

PROVIDE ADEQUATE PROTEIN TO PRESERVE MUSCLE MASS

Reduced liver function can also lead to a decline in stored hepatic glycogen and lipids, necessitating the catabolism of muscle protein in order to meet ongoing energy needs. Given that approximately 50% of body ammonia is temporarily stored in muscle and muscle is the primary site of ammonia detoxification outside the liver, muscle wasting can potentiate hyperammonaemia and hepatic encephalopathy[3]. Therefore another important goal of nutritional management of liver disease should be to **provide adequate protein to preserve muscle mass** while not exceeding the liver's capacity to prevent the accumulation of toxic metabolites and consequent hepatic encephalopathy. The protein source is also important. Dogs with portosystemic shunts may have longer survival and fewer clinical signs if fed vegetable or dairy based proteins[4]. Feeding dogs with PPS, a soya-based diet, has been shown to reduce fasting ammonia concentrations[5].

FACILITATE HEPATIC CELLULAR REGENERATION

A fourth goal when nutritionally managing canine hepatic disease should be to **facilitate hepatic cellular regeneration** by providing nutrients which are hepatoprotective (e.g. zinc[6]), ameliorate inflammation (e.g. long-chain omega-3 fatty acids[7]) and help reduce oxidative damage[6] (e.g. antioxidants such as vitamins C and E).

1. Center SA. Nutritional support for dogs and cats with hepatobiliary disease. *J Nutr* 1998. **128**:2733S-2746S.
2. Meyer HPT and Roudebush P. Hepatobiliary Disease In: Hand MS *et al* (eds). Small Animal Clinical Nutrition, 5th edition. *Mark Morris Institute, Topeka, KS*: 2010, 1155-1180.
3. Rothuizen J, *et al*. Inherited liver diseases: New findings in portosystemic shunts, hyperammonaemia syndromes, and copper toxicosis in Bedlington terriers. In: Proceedings 19th Annu Vet Forum. *Am Coll Vet Int Med*. 2001; Denver: 637- 639.
4. Condon RE. Effect of dietary protein on symptoms and survival in dogs with an Eck fistula. *Am J Surg* 1971. **121**:107-114.
5. Proot S, *et al*. Soy protein isolate versus meat-based low-protein diet for dogs with congenital portosystemic shunts. *J Vet Intern Med* 2009. **23**:794-800.
6. Meyer HPT and Roudebush P. Hepatobiliary Disease In: Hand MS *et al* (eds). Small Animal Clinical Nutrition, 5th edition. *Mark Morris Institute, Topeka, KS*: 2010, 1155-1180.
7. Scorletti E, Byrne CD. Omega-3 fatty acids, hepatic lipid metabolism, and nonalcoholic fatty liver disease. *Annu Rev Nutr*. 2013; **33**:231-4.

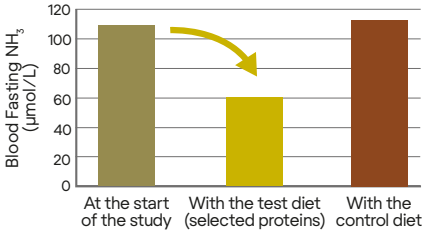
CLINICAL ADVANTAGES WITH THE USE OF CANINE HP HEPATIC™

PURINA® PRO PLAN® Canine HP Hepatic™ is specifically designed to meet the precise needs of dogs with liver disease:

Selected sources of protein and adapted levels to help reduce accumulation of toxins and maintain liver function.

- Moderate protein level (19%) to provide all the dog's amino acid needs to avoid catabolism which increases the risk of Hepatic Encephalopathy (HE)
- Sources of protein are soya meal, maize, egg and beet pulp (62% plant and 33% egg) to provide for dogs' needs whilst reducing risk of HE

EFFECT OF SELECTED DIETARY PROTEIN ON FASTING NH_3 IN DOGS SUFFERING FROM PORTO-SYSTEMIC SHUNT[5]



Low copper to reduce hepatic copper accumulation.

High energy density diet adapted to hypercatabolic state to help maintain body weight and prevent excessive tissue catabolism.

Medium Chain Fatty Acids to aid fat digestion.

Long chain omega-3 fatty acids **to counteract inflammation.**

Added dietary fibre and prebiotics (chicory root) to help reduce ammonia reabsorption and production in the large intestine.

Fortified with zinc to help reduce the risk of deficiency which may occur in liver disease.

Highly palatable to encourage consumption, promote good patient compliance and prevent malnutrition.

High levels of antioxidants (Vitamin C and E) to protect hepatic tissue and to slow progression of hepatic disease.

CANINE JM
JOINT MOBILITY™

Complete dry pet food for puppies, adult and senior dogs to help improve mobility, reduce joint inflammation mediators, and reduce oxidative stress and associated tissue damages.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Joint mobility
- ✓ Healthy dogs predisposed to joint disorders
- ✗ Renal Failure

3 kg and 12 kg

KEY BENEFITS

Joint support
Formulated to help support dogs with decreased joint mobility

Omega-3
Increased omega-3 fatty acids to help improve joint mobility

Antioxidants
Increased antioxidants vitamin E and C to help reduce oxidative stress

ADDITIONAL BENEFITS & CHARACTERISTICS

Clinically proven to improve dog's mobility and quality of life
In 45 dogs, PURINA® PRO PLAN® Canine JM™ alleviated the clinical signs in dogs afflicted by joint mobility disorders[1]

Helps maintain and achieve a lean body condition and reduce joint stress
High protein to calorie ratio and moderate fat levels

Support cartilage and joint health
High levels of antioxidants

Supports joint mobility across all canine life stages
Complete and balanced for all dog life stages

Nutritional solution for joint-sensitive breeds
Maintaining dogs in an ideal body condition and providing increased levels of omega-3 fatty acids has been proven to improve gait and mobility in sensitive breeds

1. Moreau M, Troncy E, Del Castillo JR, Bédard C, Gauvin D, Lussier B. Effects of feeding a high omega-3 fatty acids diet in dogs with naturally occurring osteoarthritis. *J Anim Physiol Anim Nutr* (Berl). 2013: **97**: 830-7.

COMPOSITION

Rice, dried salmon protein, dried poultry protein, wheat flour, soya protein powder, corn, dried egg, digest, fish oil, pea hulls, pork fat, minerals, cellulose.

KEY NUTRIENT VALUES*	
Moisture	7.5%
Protein	30%
Fat - Omega-6 fatty acids - Omega-3 fatty acids - EPA (eicosapentaenoic acid) - DHA (docosahexaenoic acid)	12% 1.6% 1.1% 0.32% 0.48%
Carbohydrate	41%
Crude fibre	2.5%
Glucosamine + chondroitin	2000 ppm
Vitamin E	814 IU/kg
Metabolisable energy (ME)[1]	3724 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

PURINA® PRO PLAN® JM Joint Mobility™ provides complete and balanced nutrition for all lifestages and weights. The recommended period of use is initially up to 3 months. For weight loss the indicated amounts should be given to initiate the weight loss program.

PUPPY GROWTH – AGE IN MONTHS						
Adult weight (kg)	1.5	4	6	9	12	24
	Daily feeding quantity (g/day)					
2.5	60	90	90	85	75	Adult
5	85	140	145	130	120	Adult
10	110	210	225	195	190	Adult
15	140	290	315	285	245	Adult
25	160	355	450	410	355	Adult
35	200	415	480	555	450	Adult
45	215	435	490	575	490	505
70	300	570	695	830	690	685

ADULT MAINTENANCE			
Body weight (kg)	Adult maintenance (g/day)	Adult weight loss (g/day)	Senior (g/day)
2.5	70	50	60
5	110	80	95
10	175	130	150
15	230	170	200
25	325	240	280
35	405	300	350
45	480	360	415
70	645	480	560

For dogs over 70 kg: for each additional 5 kg of body weight, feed an additional 30g, 20g or 25g of pet food for Adult Maintenance, Adult Weight Loss and Senior recommendation respectively.

Early dietary intervention is an important part of the recommended management of dogs with suboptimal mobility. Dietary interventions have been proven to improve radiographic signs of osteoarthritis and gait[2,4-10].

The **omega-6 fatty acid arachidonic acid** is the major substrate for the production of inflammatory eicosanoids under the influence of COX-1 and COX-2 enzymes.

This in turn may both **reduce joint inflammation**, and reduce cartilage degradation.

Although classified as "non-inflammatory", osteoarthritis can have a significant inflammatory component contributing to clinical signs and disease progression. Modifying this inflammation may have benefits in reducing cartilage degradation:

Providing enhanced levels of **omega-3 fatty acids** such as EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid) provides an alternative substrate for the action of the COX enzymes and results in production of less inflammatory or anti-inflammatory eicosanoids[3].

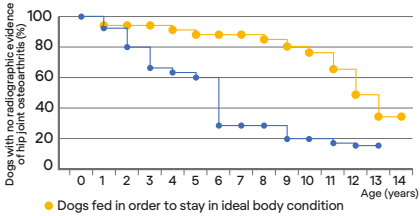
2. Hansen RA, Waldron MK, Allen K. Long chain n-3 PUFA improve biochemical parameters associated with canine osteoarthritis. Proc Am Oil Chem Soc meeting, Cincinatti. 2004. May 9-12.
3. Moreau M, Troncy E, Gauvin D, Lussier B. Effects of feeding a high omega-3 fatty acid diet on the pain-related disability in dogs with naturally occurring osteoarthritis. Osteoarthritis and Cartilage 2010; 18, Suppl. 2: S9-S44.
4. Burkholder WJ, Taylor L, Hulse DA. Weight loss to optimal body condition increases ground reactive force in dogs with osteoarthritis. In Proceedings Purina Nutrition Forum. 2000: 74.
5. Lawler DF, Larson BT, Ballam JM, Smith GK, Biery DN, Evans RH, *et al.* Diet restriction and ageing in the dog: major observations over two decades. *Br J Nutr.* 2008: **99**: 793-805.
6. Kealy RD, Lawler DF, Ballam JM, Lust G, Biery DN, Smith GK *et al.* Evaluation of the effect of limited food consumption on radiographic evidence of osteoarthritis in dogs. *J Am Vet Med Assoc.* 2000: **217**: 1678-80.
7. Kealy RD, Olsson SE, Monti KL, Lawler DF, Biery DN, Helms RW, *et al.* Effects of limited food consumption on the incidence of hip dysplasia in growing dogs. *J Am Vet Med Assoc.* 1992: **201**: 857-63.
8. Smith GK, Paster ER, Powers MY, Lawler DF, Biery DN, Shofer FS, *et al.* Lifelong diet restriction and radiographic evidence of osteoarthritis of the hip joint in dogs. *J Am Vet Med Assoc.* 2006: **226**: 690-3.
9. Jaswal S, Mehta HC, Sood AK, Kaur J. Antioxidant status in rheumatoid arthritis and role of antioxidant therapy. *Clin Chim Acta.* 2003: **338**: 123-9.
10. Nestlé Purina study on 146 osteoarthritic dogs. 2004.

CLINICAL ADVANTAGES WITH THE USE OF CANINE JM JOINT MOBILITY™

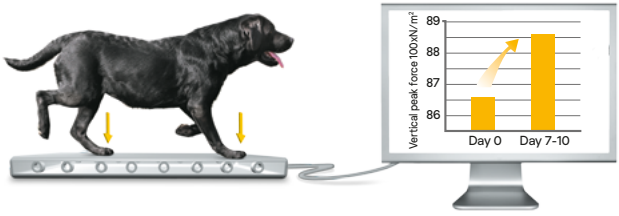
PURINA® PRO PLAN® JM Joint Mobility™ provides:

- **DHA and EPA, long-chain omega-3 fatty acids** which improve biomarkers of Canine OA[2], and significantly improve objective force plate gait analysis in dogs with osteoarthritis within 10 days
- **Feeding guidelines for weight maintenance** to help reduce stress on the joints. Weight control is vitally important and has been proven to improve the gait in dogs with OA[2] as well as help reduce and delay radiographic evidence of OA in predisposed breeds[4-9]
- **Glucosamine, chondroitin and antioxidants**, which may play a useful role in maintaining joint health[8]
- Canine JM Joint Mobility™ is clinically proven to improve dog's mobility and quality of life[9]
- **Significantly improved visible gait assessed** by both owner (90% noticed an improvement) and veterinarian (87% noticed an improvement in dog's quality of life)

THE IMPORTANCE OF BODY CONDITION ON THE INCIDENCE OF OSTEOARTHRITIS IN LABRADOR RETRIEVERS[9]



A 14-year Nestlé PURINA study has shown that dogs fed to retain a lean body condition show reduced prevalence and severity of osteoarthritis.



Biomechanical force platform with integrated balance. Speed between 1.7 an 2.1 m/s

Vertical peak force increased before and after long chain omega-3 fatty acids supplemented diet ($p \leq 0.08$).

1. Hansen RA, Waldron MK, Allen K. Long chain n-3 PUFA improve biochemical parameters associated with canine osteoarthritis. Proc Am Oil Chem Soc meeting, Cincinatti. 2004. May 9-12.
2. Moreau M, Troncy E, Gauvin D, Lussier B. Effects of feeding a high omega-3 fatty acid diet on the pain-related disability in dogs with naturally occurring osteoarthritis. Osteoarthritis and Cartilage 2010; 18, Suppl. 2: S9-S44.
3. Burkholder WJ, Taylor L, Hulse DA. Weight loss to optimal body condition increases ground reactive force in dogs with osteoarthritis. In Proceedings Purina Nutrition Forum. 2000: 74.
4. Lawler DF, Larson BT, Ballam JM, Smith GK, Biery DN, Evans RH, *et al.* Diet restriction and ageing in the dog: major observations over two decades. *Br J Nutr.* 2008: **99**: 793-805.
5. Kealy RD, Lawler DF, Ballam JM, Lust G, Biery DN, Smith GK *et al.* Evaluation of the effect of limited food consumption on radiographic evidence of osteoarthritis in dogs. *J Am Vet Med Assoc.* 2000: **217**: 1678-80.
6. Kealy RD, Olsson SE, Monti KL, Lawler DF, Biery DN, Helms RW, *et al.* Effects of limited food consumption on the incidence of hip dysplasia in growing dogs. *J Am Vet Med Assoc.* 1992: **201**: 857-63.
7. Smith GK, Paster ER, Powers MY, Lawler DF, Biery DN, Shofer FS, *et al.* Lifelong diet restriction and radiographic evidence of osteoarthritis of the hip joint in dogs. *J Am Vet Med Assoc.* 2006: **226**: 690-3.
8. Jaswal S, Mehta HC, Sood AK, Kaur J. Antioxidant status in rheumatoid arthritis and role of antioxidant therapy. *Clin Chim Acta.* 2003: **338**: 123-9.
9. Nestlé Purina study on 146 osteoarthritic dogs. 2004.

CANINE NC NEUROCARE™

A complete dry pet food for adult and senior dogs, containing medium chain triglyceride (MCT) oil and a specific combination of nutrients proven to have a beneficial effect on brain function.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Brain function
- ✓ Age-related cognitive decline
- ✗ Growth and reproduction
- ✗ Situations where a low fat diet or low protein diet is required

3 kg and 12 kg

KEY BENEFITS

Brain function
Formulated with MCT and neuroprotective nutrients, clinically proven to help enhance canine brain function

Cognitive function
Specially formulated to help support cognitive function in senior dogs. Visible results in 30 days

Containing MCTs (medium chain triglycerides)
Ketogenic diet providing an alternative source of energy for the brain

ADDITIONAL BENEFITS & CHARACTERISTICS

Help nutritionally support brain metabolism
Contains a specific combination of nutrients (Arginine, EPA+DHA, antioxidants, B-vitamins and selenium)

Helps support brain function
Added omega-3 fatty acids (EPA and DHA)

Helps reduce oxidative stress
Added antioxidants (Vitamins C and E, Selenium)

Provides an alternative source of energy for the brain, proven to support brain function
Our only canine diet to contain 6.5% added MCTs and B vitamins

COMPOSITION

Corn, dried poultry protein, wheat flour, dried salmon protein, medium chain triglycerides oil (6.5%), dried beet pulp, rice, dried egg, corn protein meal, digest, fish oil, minerals.

KEY NUTRIENT VALUES*	
Moisture	7.5%
Protein	30%
Fat - MCT	15% 6.5%
Carbohydrates	38.5%
Crude fibre	1.5%
EPA + DHA	0.4%
Vitamin E	519 IU/kg
Arginine	2.2%
Selenium	0.053 mg/100g
B vitamin	340.7 mg/kg
Metabolisable energy (ME)[1]	3919 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

PURINA® PRO PLAN® NC NeuroCare™ provides complete and balanced nutrition for adult and senior dogs for Brain function support and Age-related cognitive decline.

DAILY FEEDING QUANTITY		
Body weight (kg)	Adult maintenance (g/day)	Senior (g/day)
2.5	65	55
5	105	90
10	165	145
15	220	190
25	305	265
35	385	335
45	455	395
70	610	530

Glucose is the main obligatory energy substrate for the adult canine brain and is also very important for brain development[1].

In some special circumstances, canine brain metabolism changes, leading to reduced efficiency in utilisation of glucose as an energy source. In these situations, it is beneficial for the brain to be provided with alternative energy sources, for example in the form of fatty acids[2]. Fat is the most concentrated energy source available; however, the brain is limited in its ability to use long chain triglycerides (LCTs) as an energy source. Dietary **medium chain fatty acids (MCFAs)** from medium chain triglycerides (MCTs) can be readily oxidised to serve as an **alternate energy source (in the form of ketone bodies) for the brain** (Figure 1). MCTs are more efficiently digested and absorbed by the GI tract than LCTs, and the resulting MCFAs are more efficiently transported to the liver via the portal vein where they are converted to ketone bodies (Figure 2). Consequently diets rich in MCTs are considered more ketogenic than LCT-rich diets[2,3].

MCTs are not the only way that nutrition can support brain health. Other nutrients which support brain health in dogs include:

- Added **arginine**, supports healthy circulation, blood pressure and brain function
- Added **EPA and DHA** helps support brain function and helps to maximise natural anti-inflammatory processes
- Added **antioxidants** (Vitamins C and Selenium) to help reduce oxidative stress
- Added **B vitamins** help with energy metabolism and DNA maintenance

FIGURE 1. ENERGY METABOLISM IN THE BRAIN.

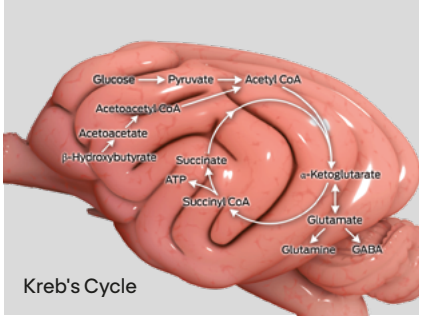
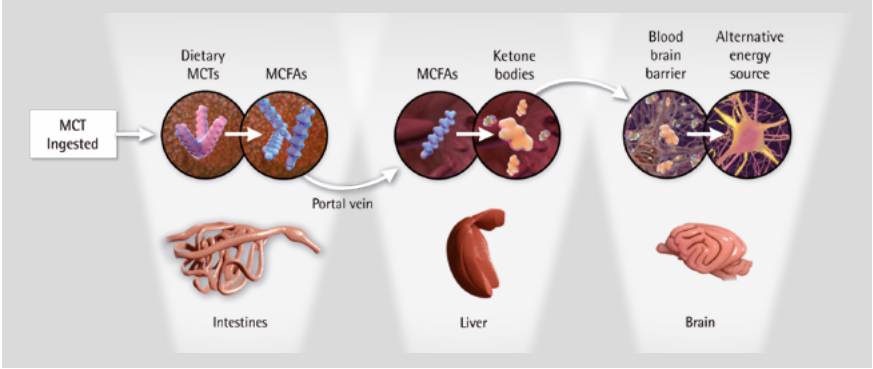


FIGURE 2. CONVERSION OF MCTS TO KETONE BODIES.



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2. Galazzo IB, Mattoli MV, Pizzini FB, De Vita E, Barnes A, Duncan JS, *et al.* Cerebral metabolism and perfusion in MR-negative individuals with refractory focal epilepsy assessed by simultaneous acquisition of 18F-FDG PET and arterial spin labeling. *NeuroImage Clinical.* 2016; **11**: 648-57.
3. Law TH, Davies ESS, Pan Y, Zanghi B, Want E, Volk HA, *et al.* A randomised trial of a medium-chain TAG diet as treatment for dogs with idiopathic epilepsy. *Br J Nutr.* 2015: **114**: 1438-47.

Cognitive dysfunction syndrome (CDS) is a common condition in senior dogs in which we see changes in brain metabolism. In a clinical study, a diet with inclusion of 6.5% MCTs and also a specific "Brain Protection Blend" – including B vitamins, antioxidants, omega-3 and arginine – was able to significantly improve all six categories of CDS signs in dogs in 90 days[4].

Different studies have evaluated the effects of supplementing diet with MCT oil in epileptic humans, dogs, and rodents, showing a significant reduced seizure frequency[5].

Anticonvulsant effects of MCFAs and MCTs of various compositions have been observed in several acute rodent models.

To date, several efficacy studies in dogs with idiopathic epilepsy fed with 5.5%-6.5% added MCT, have reported mean seizure frequency reduction. All dogs in these trials were considered drug non-responders to standard ASDs.

Remarkably, a nonblinded study evaluated a commercially available diet (PURINA® PRO PLAN® NC NeuroCare™, Nestlé PURINA®, St. Louis Missouri, USA) enriched with 6.5% MCT oil, as an adjunct to ASDs treatment, and found a reduction in seizure frequency by 33% over a 3-month period[6].

The mechanism of action of MCTs is not clearly known, but an MCTs diet has been shown to increase mitochondrial function and metabolic synthesis of polyunsaturated fatty acids (PUFA) in the canine brain. Additionally, MCT metabolites (decanoic acids -C10), can act as a non-competitive AMPA receptor promoting an anticonvulsant effect.

Diets enriched with MCTs appear to have benefits beyond epilepsy as well, as age-associated cerebral glucose hypometabolism may be correlated with age-cognitive disorders. Some evidence suggests that mixed MCTs may provide neuroprotective effects in rodents, dogs, and people with mild cognitive impairments.

4 Pan Y, Landsberg G, Mougeot I, Kelly S, Xu H, Bhatnagar S, Gardner CL, Milgram NW. Efficacy of a Therapeutic Diet on Dogs With Signs of Cognitive Dysfunction Syndrome (CDS): A Prospective Double Blinded Placebo Controlled Clinical Study. *Front Nutr.* 2018 Dec **12**;5:127.
5. Han FY, Conboy-Schmidt, Rybachuk G, Volk HA, et al. 2021. Dietary medium chain triglycerides for management of epilepsy: New data from human, dog, and rodent studies. *Epilepsia.* 00:1-17.
6. Molina J, Jean-Philippe C, Conboy L, *et al.* 2020. Efficacy of medium chain triglyceride oil dietary supplementation in reducing seizure frequency in dogs with idiopathic epilepsy without cluster seizures a non-blinded, prospective clinical trial. *Veterinary Record.* 187 (9).

CANINE NF RENAL FUNCTION™

Complete dietetic pet food for adult dogs for the support of renal function in case of chronic renal insufficiency, and for reduction of urate and cystine stones formation.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Chronic renal insufficiency
- ✓ Hepatic disease associated with encephalopathy
- ✓ Conditions that require restricted dietary sodium
- ✓ Reduction of urate[1], cystine[1] and calcium oxalate urinary stones formation
- ✓ Early stage of heart disease
- ✓ Renal failure associated to leishmaniasis
- ✗ Conditions that require high protein or phosphorus intake
- ✗ Not suitable for growth and reproduction

400 g 1.5 kg, 3 kg and 12 kg

KEY BENEFITS

Low level of phosphorus
to help slow the progression of chronic renal insufficiency

Restricted but high quality proteins
to help minimise loss of muscle and toxins formation

Omega-3 fatty acids
to help reduce renal hypertension and help support natural anti-inflammatory processes[1]

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps minimise the metabolic acidosis associated with renal insufficiency
Non acidifying diet

Helps manage calcium oxalate urolithiasis
Low level of calcium and vitamin D3. Non acidifying to promote a neutral urine pH (6.7 to 7.5)

Reduction of urate stones formation[1]
With low levels of purines. Low levels of high quality protein

Reduction of cystine stones formation[1]
Moderate level of sulphur amino acids. Urine alkalising properties. Low level of high quality protein

Helps with compliance in inappetent or anorexic patients and for long term use
Highly palatable for better acceptance

1. Dry Formula only.

COMPOSITION (DRY)

Corn*, rice*, dried egg*, dried whey*, pork fat, sugar, digest*, dried beet pulp*, minerals, soybean oil, fish oil.

* Protein sources.
Urine alkalising substance: calcium carbonate.

COMPOSITION (CAN)

Pork (liver, heart), turkey by products, rice flour, corn meal, egg powder, minerals, pork fat, fish oil, sunflower oil, various sugars.

KEY NUTRIENT VALUES*	Dry	Wet
Moisture	7.5%	72%
Protein - Total sulphur amino acids	13% 0.67%	6% -
Fat - Omega-6 fatty acids - Omega-3 fatty acids - EPA + DHA	14.5% 2.5% 0.4% 0.22%	7.2% 1.53% 0.12% 0.052%
Carbohydrates	58.5%	12.5%
Crude fibre	2%	0.2%
Calcium	0.75%	0.27%
Phosphorus	0.4%	0.12%
Potassium	0.8%	0.45%
Magnesium	0.09%	0.03%
Sodium	0.2%	0.09%
Chlorides	0.66%	0.36%
Sulfur	0.21%	0.12%
Vitamin E	305 IU/kg	144 IU/kg
Vitamin D_3	1429 IU/kg	278 IU/kg
Purines	0.06%	0.05%
Metabolisable energy (ME)[1]	3904 kcal/kg	1327 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

Dogs with chronic renal insufficiency should be fed PURINA® PRO PLAN® VETERINARY DIETS Canine NF Renal Function™ for life.

DAILY FEEDING QUANTITY				
Body weight (kg)	Dry (g/day)	Can/day	Dry + can combined	
			Dry (g/day)	Can/day
2.5	65	½	20	⅓
5	105	¾	35	½
10	165	1 ¼	30	1
15	220	1 ¾	80	1
25	310	2 ⅓	170	1
35	385	2 ¾	250	1
45	455	3 ¾	320	1
70	615	5	340	2

For dogs over 70 kg: for each additional 5 kg of body weight, feed an additional 25 g of dry pet food. When feeding dry and wet, for each addition of 100g Canine NF wet can, reduce by 35g dry kibble. For dogs over 70 kg, add ¼ can for each 5 kg of body weight.

The key therapeutic points in renal disease can be remembered by the acronym: **NEPHRONS**.

N	**Nutrition**
E	**Electrolytes**
P	**pH of blood (acid-base status); proteinuria**
H	**Hydration**
R	**Retention of wastes**
O	**Other renal insults – avoid**
N	**Neuroendocrine function – secondary hyperparathyroidism, hypoproliferative anemia, and hypertension**
S	**Serial monitoring – CRI is irreversible and progressive**

Dietary modification (Nutrition) is an important component of managing patients with CRI, and it involves more than just protein restriction. Diets formulated for use in patients with CRI are calorically dense, phosphorus and sodium restricted, have increased potassium and B vitamins, contain omega-3 fatty acids, contain soluble fibre, and are alkalinizing[1].

One main goal of nutritional support for a patient with CRI is maintenance of lean muscle mass and optimal body condition[1].

Apart from these primary goals, we also aim to achieve the following 2 objectives when feeding a dog with CRI:

SLOWING DISEASE PROGRESSION

- Phosphorus excretion is reduced in CRI, the adverse events of hyperphosphatemia in CRI include secondary hyperparathyroidism, calcium and vitamin D derangements, vascular calcification, and metabolic bone disorder[2]. This contributes to the progression of disease. **Dietary restriction of phosphorus** is vital in preserving renal structure and function and slowing the progression of renal damage[3]
- The **survival of dogs** with CRI is significantly **increased** by restricted phosphorus diets, and IRIS (International Renal Interest Society) recommends phosphate restriction starting at Stage 2 disease, with different realistic target serum concentrations[3]
- There is evidence in dogs that supplementation with **omega-3 fatty acids** may help reduce glomerular hypertension, increase renal blood flow and minimise renal inflammation thereby slowing progression of the disease[4]
- **Oxidative stress** may be harmful in CRI, and may contribute to the progression of canine CRI. This effect can be ameliorated by antioxidant supplementation, thus again helping to preserve renal function[5]

1. Bartges JW. Chronic kidney disease in dogs and cats. *Vet Clin North Am Small Anim Pract.* 2012: **42**: 669-92.
2. Slatopolsky E. The intact nephron hypothesis: the concept and its implications for phosphate management in CKD-related mineral and bone disorder. Kidney International Supplement 2011:S3-8.
3. International Renal Interest Society – www.iris-kidney.com
4. Brown SA, Finco DR, Brown CA. Is there a rile for dietary polyunsaturated fatty acid supplementation in canine renal disease? *J Nutr.* 1998: **128**: 2765-7.
5. Brown SA. Oxidative stress and chronic kidney disease. *Vet Clin Small Anim* 2008; **38**: 157-166.

IMPROVING CLINICAL SIGNS

- The declining GFR (glomerular filtration rate) in dogs with CRI leads to an accumulation of a wide variety of waste products that contribute to uraemic signs
- While **protein restriction** has no proven effect on progression of CRI, moderate reduction of non-essential amino acids will result in decreased production of uraemic toxins
- **Protein levels must be adequate** to supply the needs of the CRI patient to avoid catabolism of body proteins and an increased morbidity
- Addressing the **acid:base balance** is important as metabolic acidosis is common in CRI and can contribute to signs such as anorexia, lethargy, vomiting, weakness, and weight loss
- Sodium retention and extracellular volume expansion may occur with advanced CRI and may contribute to development of systemic hypertension. **Mild sodium restriction** may help reduce this risk
- Increased losses of **B vitamins** may occur with the diuresis associated with CRI, which may also contribute to clinical disease

CLINICAL ADVANTAGES WITH USE OF CANINE NF RENAL FUNCTION™ IN DOGS WITH CRI

PURINA® PRO PLAN® VETERINARY DIETS NF Renal Function™ is carefully formulated to provide for the specific needs in canine CRI:

- Restricted phosphate concentrations
- Controlled levels of high quality protein
- Added omega-3 fatty acids and antioxidants
- Added potassium citrate to combat acidosis
- Enhanced levels of B-complex vitamins
- Moderate sodium restriction

CANINE OM
OBESITY MANAGEMENT™

A complete dietetic pet food for adult dogs for the reduction of excessive body weight and for the regulation of glucose supply (diabetes mellitus).

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Obesity and weight management
- ✓ Weight loss for diabetic dogs
- ✓ Fibre-responsive diseases such as:
  - constipation
  - hyperlipidaemia
- ✓ Fibre-responsive colitis
- ✗ Not suitable for growth and reproduction
- ✗ Conditions associated with hypercatabolic state (advanced heart failure, CKD IRIS stages 3 and 4)

400 g 1.5 kg, 3 kg and 12 kg

KEY BENEFITS

HIGH PROTEIN

High protein level
to help promote loss of fat while maintaining muscle mass[1]

LOW KCAL

Low calorie diet to help with weight loss

GLUCOSE CONTROL

Glucose control
Low Glycaemic Index carbohydrate sources to help nutritionally manage diabetes mellitus[1]

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps promote effective and steady weight loss
Supported by a clinical trial on obese dogs*

Helps reduce caloric intake while maintaining satiety
High protein level and added fibre

Helps reduce post-prandial fluctuation in blood glucose
Low glycaemic index complex carbohydrate

Helps maintain optimal bodyweight after weight loss
The same diet can be fed for maintenance to reduce the risk of rebound obesity

1. Dry Formula only.
* Clinical trial on 42 dogs, using a high protein formula, Nestlé PURINA®, 1999.

COMPOSITION (DRY)

Corn*, soya meal*, dried poultry protein, barley*, wheat gluten, pea hulls*, cellulose, digest, minerals, pork fat.

* Carbohydrate sources.

COMPOSITION (CAN)

Pork heart and liver, poultry heart and liver, cellulose powder, flour rice, minerals, sugar.

KEY NUTRIENT VALUES*	Dry	Wet
Moisture	7.5%	78.5%
Protein	29%	8.7%
Fat - Linoleic acid	6% 1.5%	2.5% 0.5%
Carbohydrate - Starch - Total sugars	41% 23.1% 1.7%	3.7% 0.9% 0.9%
Crude fibre	10%	4.4%
Soluble fibre	1.6%	0.3%
Insoluble fibre	18.7%	5.5%
Vitamin E	300 IU/kg	73 IU/kg
Metabolisable energy (ME)[1]	2961 kcal/kg	568 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

The suggested daily food intake for weight loss is based on the dog's current weight, average caloric requirements and a desired weight loss of 1-2% of body weight per week. Daily food intake must be adjusted every 4 weeks. PURINA® PRO PLAN® VETERINARY DIETS OM Obesity Management™ can be fed long term for dogs prone to weight gain using the maintenance feeding quantities. In case of hyperlipidaemia the recommended period of use is initially up to 2 months.

FOR ADULT MAINTENANCE				
Body weight (kg)	Dry (g/day)	Can/ day	Dry + can combined	
			Dry (g/day)	Can/ day
2.5	75	¾	35	½
5	120	1⅓	45	1
10	190	2	115	1
15	250	2¾	175	1
25	355	3¾	200	2
35	440	4¾	290	2
45	525	5¾	370	2
70	705	8¼	475	3

FOR ADULT WEIGHT LOSS				
Body weight (kg)	Dry (g/day)	Can/ day	Dry + can combined	
			Dry (g/day)	Can/ day
2.5	60	¾	20	½
5	95	1¼	60	½
10	155	2	75	1
15	200	2⅔	125	1
25	285	3¾	130	2
35	355	4⅔	200	2
45	420	5½	265	2
70	565	7⅓	335	3

For each additional 5 kg of body weight, feed an additional 25 g of dry food or ⅓ of can per day for weight loss and feed an additional 30g of dry food or ½ of can per day for weight maintenance.

NUTRITIONAL MANAGEMENT OF OBESITY IN DOGS

Up to 50% or more of dogs are now estimated to be overweight or obese[1]. While some diseases (such as hypothyroidism and hyperadrenocorticism) predispose to obesity, in most cases the underlying cause is a mismatch between energy intake and energy expenditure. A wide variety of diseases are associated with obesity in dogs[1,2]. Nestlé PURINA® completed a lifelong study of dogs that provided crucial information showing excess bodyweight is detrimental to their longevity – in that study even moderately overweight dogs were at greater risk for earlier morbidity and a shortened lifespan[3].

Successful management of obesity in dogs usually combines use of a weight loss diet together with an increase in daily exercise. In addition feeding an increased number of smaller meals, whilst reducing the number of treats may be the most effective means of managing obesity. A recent study reports that dietary caloric restriction is more effective than physical activity, placing dietary management as the main way to help in obesity management[4].

CLINICAL ADVANTAGES WITH THE USE OF CANINE OM OBESITY MANAGEMENT™

PURINA® PRO PLAN® VETERINARY DIETS OM Obesity Management™ provides:

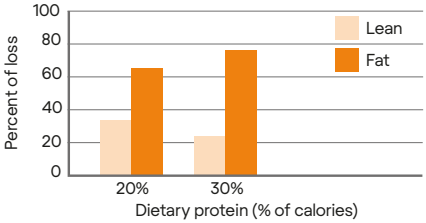
An increased protein level and a higher protein to calorie ratio, proven to preserve lean body mass during weight loss[5]. Dogs should be fed to encourage gradual weight loss with preservation of lean body mass, which reduces the risk of rebound weight gain.

A high nutrient:energy ratio to compensate for the reduced calorie intake.

A low fat level, which helps lower serum cholesterol levels and control hypercholesterolaemia and hyperlipidaemia.

Feeding guidelines based on the dog's starting weight, a reliable measure that aims to avoid an undesirable fast weight loss that can promote muscle loss.

INCREASED PROTEIN = INCREASED FAT LOSS IN DOGS[5]



In weight loss studies, increased dietary protein spared lean body mass and facilitated greater fat loss in dogs during weight loss.

Increased fibre to help improve satiety and reduce overall caloric intake.

Glucoregulation through a combination of high levels of complex carbohydrates and mixed fibre sources, combined with low levels of simple sugars.

1. Pet Food Manufacturers' Association (PFMA) Obesity Report 2019 'Pet obesity – 10 years on'.
2. Laflamme D. Understanding and managing obesity in dogs and cats. *Vet Clin Small Anim.* 2006: **36**: 1283-95.
3. Kealy RD, Lawler DF, Ballam JM, Mantz SL, Biery DN, Greeley EH, *et al.* Effects of diet restriction on life span and age-related changes in dogs. *J Am Vet Med Assoc.* 2002: **220**: 1315-20.
4. Chapman M, Woods GRT, Ladha C, Westgarth C, German AJ. An open-label randomised clinical trial to compare the efficacy of dietary caloric restriction and physical activity for weight loss in overweight pet dogs. *Vet J.* 2019 Jan; **243**:65-73.
5. Hannah SS, Laflamme DP. Increased Dietary Protein Spares Lean Body Mass during Weight Loss in Dogs. *J Vet Int Med.* 1998: **12**: 224.

Other relevant literature
- Bland IM, Guthrie-Jones A, Taylor RD, Hill J. Dog obesity: veterinary practices' and owners' opinions on cause and management. *Prev Vet Med.* 2010: **94**: 310-5.
- Rand JS, Fleeman LM, Farrow HA, Appleton DJ, Lederer R. Canine and feline *diabetes mellitus*: Nature or nurture. *J. Nutr.* 2004: **134**: 2072-80.

CANINE UR URINARY™

Complete dietetic dry pet food for adult dogs for the dissolution of struvite stones with urine acidifying properties and low level of magnesium.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Dissolution of sterile struvite stones
- ✓ Dissolution of bacterial-associated struvite stones in combination with appropriate antibiotics
- ✓ Prevention of recurrence of struvite uroliths
- ✓ Management of calcium phosphate uroliths (formation and recurrence)
- ✗ Simultaneous use of urine acidifiers
- ✗ Growth & reproduction

1.5 kg, 3 kg and 12 kg

KEY BENEFITS

Controlled pH
Promotes an acidic urine to help reduce urinary struvite stone formation and promote dissolution

Moderate protein
to help minimise substrate availability for urease-producing bacteria

Great taste
Highly palatable for long term feeding

ADDITIONAL BENEFITS & CHARACTERISTICS

Nutritional management of struvite uroliths
Controlled pH: formulated to promote an acidic urine
Moderate protein: minimise substrate availability for urease-producing bacteria

Supports the integrity of the urinary tract mucosa
Sources of glycoaminoglycans (GAGs), omega-3 and antioxidants

COMPOSITION

Corn, wheat flour, dried poultry protein, rice, pork fat, corn protein meal, digest, dried beet pulp, dried egg, minerals, fish oil.

Urine acidifying substances: calcium sulphate, phosphoric acid.

KEY NUTRIENT VALUES*	
Moisture	7.5%
Protein	22.0%
Fat	15.0%
Carbohydrate	49.1%
Crude fibre	1.5%
Calcium	0.70%
Phosphorus	0.70%
Sodium	0.20%
Potassium	0.70%
Magnesium	0.08%
Chloride	0.70%
Sulphur	0.3%
Vitamin E	305 IU/kg
Metabolisable energy (ME)[1]	3983 kcal/kg
Urinary pH	5.8 – 6.2

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

Increased water consumption can help dilute the urine and further decrease the risk of crystal formation. For dissolution of struvite stones, an initial feeding period of 5-12 weeks is recommended. For long-term use, an initial feeding period of up to 6 months is recommended, but the dog should be re-evaluated regularly as indicated by the underlying condition.

DAILY FEEDING QUANTITY	
Body weight (kg)	Daily feeding quantity (g/day)
2.5	65
5	105
10	165
15	215
25	300
35	380
45	445
70	600

The most common canine uroliths are composed of magnesium ammonium phosphate (struvite) or calcium oxalate[1,2]. The relative proportion of these two types of urolith have varied between different countries and over time but they account for more than 80% of all canine uroliths[3].

The aetiopathogenesis of urolithiasis remains incompletely understood – for uroliths to form and grow, the urine must be supersaturated with the relevant crystalloid materials. However, the fact that urine is commonly supersaturated in animals that never form uroliths illustrates that other factors are also important.

More than 70% of dogs with struvite uroliths have an associated urease-producing bacterial urinary tract infection (UTI)[3]. Eradication of the UTI is essential for adequate control of the disease.

VARIOUS FACTORS AFFECT THE RISK OF UROLITHIASIS

CLINICAL ADVANTAGES WITH THE USE OF CANINE UR URINARY™

Where a UTI is present, dietary therapy should always be combined with appropriate antibiotic therapy. The diet is specifically formulated to provide:

Urine with a target pH of 6.0 – this will help prevent the formation of new struvite crystals and uroliths, and help dissolve existing uroliths and crystals.

Undersaturation of phosphate and magnesium – by carefully controlling the content of the diet, Canine UR is designed to also undersaturate the urine for these two constituents.

Undersaturation of ammonium – by using a low quantity of high quality protein, there is reduced production of urea, the substrate for bacterial NH3 production in the urine.

1. Houston DM, Moore AEP, Favrin MG, Hoff B. Canine urolithiasis: a look at over 16 000 urolith submissions to the Canadian Veterinary Urolith Centre from February 1998 to April 2003. *Can Vet J.* 2004: **45**: 225-30.
2. Kopecny L, Palm CA, Segev G, Westropp JL. Urolithiasis in dogs: Evaluation of trends in urolith composition and risk factors (2006-2018). *J Vet Intern Med.* 2021 May; **35(3)**:1406-1415.
3. Osborne CA, Lulich JP, Kruger JM, Ulrich LK, Koehler LA. Analysis of 451,891 canine uroliths, feline uroliths, and feline urethral plugs from 1981 to 2007: perspectives from the Minnesota urolith center. *Vet Clin Small Anim.* 2008: **39**: 183-97.

Other relevant literature
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- Osborne CA, Lulich JP, Unger LK, *et al.* Canine and feline urolithiasis: relationship of etiopathogenesis to treatment and prevention. In: Canine and Feline Nephrology and Urology, eds Osborne CA, Finco DR. *Philadelphia: Lea and Febiger.* 1995: 798-888.
- Bartges JW, Osborne CA, Felice LJ, Allen TA, Brown C, Koehler LA, Bird KA, *et al.* Influence of four diets containing approximately 11% protein (dry weight) on uric acid, sodium urate and ammonium urate activity product ratios of healthy beagles. *Am J Vet res.* 1995: **56**: 60-5.
- Calabrò S, Tudisco R, Bianchi S, Grossi M, De Bonis A, Isabella Cutrignelli M. Management of struvite uroliths in dogs. *Br J Nutr.* 2011 Oct;106 Suppl 1:S191-3.

PURINA®
PRO PLAN®
VETERINARY DIETS

FELINE VETERINARY DIETS & RELATED PRODUCTS

CONTENTS

PURINA PRO PLAN VETERINARY DIETS

FELINE VETERINARY DIETS & RELATED PRODUCTS

To help you in your daily practice, we provide the **"average" nutrient values**, which are representative of what is in the product. These **may not always correspond to the labelling values** under "nutritional additives". For additives, the EU feed regulation requires that the "added" values be declared, which is different to the "average" content found in the product (representative of process losses and nutrients brought by the ingredients) (REGULATION (EC) No 767/2009).

FELINE CN CONVALESCENCE™

Complete dietetic wet pet food for cats of all ages for nutritional restoration and convalescence.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Critical care nutritional support
- ✓ Peri-operative nutritional support
- ✓ Nutritional stress including
  - Lactation
  - Malnutrition
  - Feline hepatic lipidosis
- ✗ Conditions associated with the need for a low protein diet (advanced stage of chronic renal insufficiency or hepatic encephalopathy) or low fat diet (fat malassimilation)

195g

KEY BENEFITS

High concentrations of essential nutrients

High energy density to provide energy for recovery (60% energy from fat, 36% from protein)

High digestibility
formulated with highly digestible ingredients

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps ensure maximum compliance even in fussy anorectic and convalescing cats
High palatability

Helps support wound healing and immune function
Increased zinc and arginine

Providing additional anti-oxidant support during recovery
Increased vitamin E

Helps promote natural anti-inflammatory processes
Added omega-3 fatty acids

Can be used for all life stages
Suitable for use in kittens and pregnant or lactating queens

COMPOSITION

Pork kidney*, liver*, lung and plasma, turkey, salmon*, sunflower oil*, minerals, corn starch, fish oil*, various sugars.

* Highly digestible ingredients

KEY NUTRIENT VALUES*	
Moisture	77%
Protein - Arginine - Taurine	10.9% 0.58% 2035 mg/kg
Fat - Omega-6 fatty acids - Omega-3 fatty acids	7.6% 1.26% 0.15%
Carbohydrate	0.9%
Crude fibre	0.1%
Zinc	4.3 mg/100g
Vitamin A	30805 IU/kg
Vitamin E	200 IU/kg
Metabolisable energy (ME)[1]	1121 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

PURINA® PRO PLAN® VETERINARY DIETS CN Convalescence™ Feline and Canine Formula is recommended until recovery or convalescence is complete. Warming food to room temperature can help enhance palatability. The product can be diluted with water (1:1) and mixed with a blender for tube feeding administration if desired.

When blended 1:1 with water, Feline and Canine CN Convalescence™ provides 0.56 kcal/ml and will readily pass through feeding tubes ≥ 14 French. For smaller tubes the mixture must first be passed through a fine sieve.

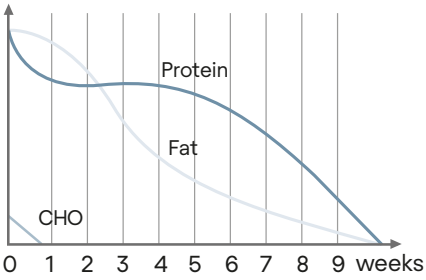
ADULT MAINTENANCE	
Body weight (kg)	Daily feeding quantity (can/day)
2	½
3	¾
4	1
5	1⅓
6	1½
7	2
8	2¼

KITTEN GROWTH	
Age (weeks)	Daily feeding quantity (can/day)
6 – 12	1 – 1¼
12 – 26	1¼ – 1⅓
26 – 52	1⅓ – 1¼

The importance of adequate nutrition in hospitalized patients is increasingly being recognised[1,2,3]. Hypermetabolism and reduced appetite, often found in ill animals, predispose these patients to undernutrition[4].

Nutritional support in hospitalized patients is key to provide the required energy and nutrients, avoiding metabolic disorders and protein catabolism; and maintaining normal organ functions[4].

ENERGY STORAGE LOSSES DURING FASTING[7]



The **protein-energy malnutrition (PEM)** that can occur during the recovery period, can result in some adverse consequences including:

- Impaired immune responses
- Delayed healing
- Hypoproteinaemia
- Muscle weakness
- Anaemia
- Increased morbidity and mortality

Early patient identification for nutritional support minimises PEM consequences. The following are generally recommended as indicators of patients that require support[5,6]:

- Anorexia for a minimum of 3 days
- Recent unintentional loss of >10% body weight
- Body condition score (BCS) of 3 out of 9 or less
- Inadequate/poor lean body weight
- Serious underlying disease (e.g. severe trauma, peritonitis, pancreatitis, major surgery)
- Direct protein loss (e.g. protein losing enteropathies, draining wounds)
- Poor wound healing, hypoalbuminaemia and lymphopenia

1. Brunetto MA, Gomes MOS, Andre MR, Teshima E, Gonçalves KNV, Pereira GT, *et al.* Effects of nutritional support on hospital outcome in dogs and cats. *J Vet Emerg Crit Care.* 2010: **20**:224–31.
2. Remillard RL, Darden DE, Michel KE, Marks SL, Buffington CA, Bunnell PR. An investigation of the relationship between caloric intake and outcome in hospitalized dogs. *Vet Ther.* 2001: **2**:301–10.
3. Molina J, Hervera M, Manzanilla EG, Torrente C, Villaverde C. Evaluation of the Prevalence and Risk Factors for Undernutrition in Hospitalized Dogs. *Front Vet Sci.* 2018: **29**: 205.
4. Chan DL. Nutritional requirements of the critically ill patient. *Vet Clin North Am Small Anim Pract.* 2004: **19**:1–5.
5. Chan DL. Freeman LM. Nutrition in critical illness. *Vet Clin Small Pract.* 2006: **36**;1225-41.
6. Chan DL. The inappetent hospitalised cat: Clinical approach to maximising nutritional support. *J Fel Med Surg.* 2009: **11**: 925-33.
7. Saker K, Remillard R, 2010, Chapter 25 Critical Care Nutrition and Enteral-Assisted Feeding, Small Animal Clinical Nutrition 5th Edition

FELINE DM ST/OX DIABETES MANAGEMENT™

Complete dietetic pet food for adult cats for the regulation of glucose supply (Diabetes mellitus) with low level of total sugars (mono- and disaccharides).

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Diabetes mellitus
- ✓ Enteritis
- ✓ Chronic diarrhoea
- ✗ Renal failure
- ✗ Hepatic encephalopathy
- ✗ Growth and reproduction

195 g 85 g 1.5 kg and 5 kg

KEY BENEFITS

Low in carbohydrates
to help reduce blood glucose variation

Clinically proven to help reduce insulin requirements
in diabetic cats

Increased vitamin E levels
to reduce oxidative stress

ADDITIONAL BENEFITS & CHARACTERISTICS

Regulates glucose formation
Provides protein as the main substrate to promote hepatic gluconeogenesis via hepatic metabolism of amino acids

Helps stimulate insulin secretion from pancreatic β-cells
Contains high levels of arginine to help stimulate insulin release

Suitable for diabetic cats prone to gain weight
Formulation adapted to allow weight loss with specific feeding guidelines

Helps to ensure patient compliance
Through use of high quality ingredients and good palatability

COMPOSITION (DRY)

Dried poultry protein, corn protein meal*, soya protein powder, corn starch*, pork fat, soya meal*, digest, minerals, dried yeast, fish oil.

*Carbohydrate sources.

COMPOSITION (CAN)

Pork heart, liver and kidney, poultry heart and liver, trout, salmon meal, cellulose, minerals, corn starch.

COMPOSITION (POUCHES)

With chicken:
Pork liver & kidney, trout, salmon and salmon meal, chicken (4%), greaves, plasma powder, cellulose powder, pork gelatine powder, corn starch.

With beef:
Pork liver & kidney, salmon and salmon meal, trout, beef (liver) (4%), chicken, greaves, plasma powder, cellulose powder, pork gelatine powder, corn starch.

KEY NUTRIENT VALUES*

	Dry	Wet	Pouches**
Moisture	6.5%	77.5%	77.7%
Protein	50%	13.8%	13%
- Arginine	2.9%	0.80%	0.7%
Fat	17%	4.9%	4.5%
- Essential fatty acids	2.0%	1.36%	1.36%
- Omega-6 fatty acids	2.0%	0.70%	0.37%
- Omega-3 fatty acids	0.47%	0.19%	0.27%
Carbohydrate	19%	1.0%	1.8%
- Starch	12.5%	0.4%	0.8%
- Total sugars	0.8%	<0.5%	<0.5%
Crude fibre	1.5%	0.6%	0.6%
Vitamin E	560 IU/kg	106 IU/kg	162 IU/kg
Metabolisable energy (ME)[1]	4189 kcal/kg	1017 kcal/kg	980 kcal/kg

* Typical analysis in the final product as fed. ** Average of the two varieties. [1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

It is important to closely monitor the cat's blood glucose levels during the first weeks of feeding PURINA® PRO PLAN® VETERINARY DIETS DM ST/OX Diabetes Management™ in order to adjust the insulin dosage. Feline DM ST/OX Diabetes Management™ can be fed for life if necessary. The recommended period of use is initially up to 6 months. Feline DM ST/OX Diabetes Management™ can also be used for weight loss and its formulation may increase satiety.

ADULT MAINTENANCE

Body weight (kg)	Daily feeding quantity						
	Dry only (g/day)	Wet only (can/day)	Wet only (pouch/day)	Dry + can combined		Dry + pouch combined	
				Dry (g/day)	Can/day	Dry (g/day)	Pouch/day
2	30	½	1⅓	15	¼	20	½
3	40	¾	2	15	½	30	½
4	55	1	2⅔	30	½	35	1
5	70	1⅓	3⅓	20	1	50	1
6	80	1⅔	4	35	1	60	1
7	95	2	4¾	50	1	75	1
8	105	2¼	5⅓	60	1	85	1

FOR ADULT WEIGHT LOSS

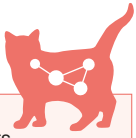
Body weight (kg)	Daily feeding quantity						
	Dry only (g/day)	Wet only (can/day)	Wet only (pouch/day)	Dry + can combined		Dry + pouch combined	
				Dry (g/day)	Can/day	Dry (g/day)	Pouch/day
2	25	½	1¼	10	¼	15	½
3	35	¾	1¾	10	½	15	1
4	50	1	2⅓	25	½	30	1
5	60	1¼	3	10	1	40	1
6	70	1½	3⅔	25	1	50	1
7	85	1¾	4¼	35	1	65	1
8	100	2	4¾	45	1	75	1

For adult maintenance for cats over 8kg, add ⅔ pouch per day, ¼ can or 10g PPVD DM™ ST/OX dry formula per each additional kg of body weight.

CLINICAL ADVANTAGES WITH THE USE OF FELINE DM ST/OX DIABETES MANAGEMENT™

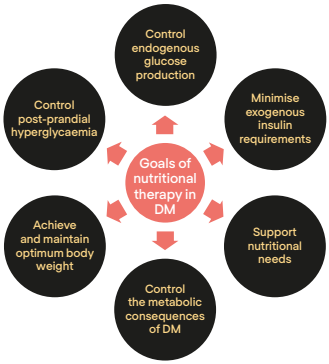
PURINA® PRO PLAN® VETERINARY DIETS DM ST/OX Diabetes Management™ is an ultra-low carbohydrate diet providing proven high efficacy in the nutritional support of cats with *diabetes mellitus* with the ability to improve glucoregulation, and induce remission of diabetes in a proportion of cats.

Since the feline metabolism is designed to derive most of their glucose needs from protein rather than carbohydrates, and because restriction of dietary carbohydrates can help control blood glucose and insulin concentrations, this has been used to provide very significant control of feline diabetes[1]. Studies have clearly shown that the very low carbohydrate, and relatively high protein and fat content of Feline DM ST/OX Diabetes Management™ can lead to[2]:

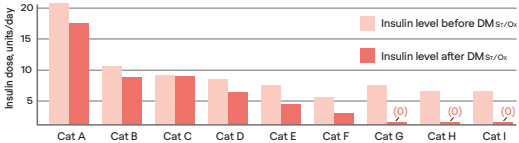


- **Improved clinical control** of diabetes mellitus.
- Significantly **reduced exogenous insulin** requirements.
- Significantly **increased rates of diabetic remission** (four-fold).
- Significantly **better control of diabetes** compared to the 'traditional' approach of a moderate carbohydrate diet combined with a high fibre content.

The use of Feline DM ST/OX Diabetes Management™ in cats with stable long-term diabetes has been shown to reduce insulin requirements by more than 50% on average, with up to 30% of cats going into diabetic remission[1].



CHANGE IN INSULIN DOSAGE IN DIABETIC CATS FED FELINE DM ST/OX



Insulin requirements decreased for 89% of cats completing this 8 week trial, from a mean of 4.8 U/day to 2.0 U/day. Three of the nine cats no longer required exogenous insulin at the end of the study.

CONTROL OF OBESITY

Managing obesity and maintaining optimum body weight is a vital part in the nutritional management of feline diabetes[2].

1. Frank G, Anderson W, Pazak H, Hodgkins E, Ballam J, Laflamme D. Use of a high-protein diet in the management of feline diabetes mellitus. *Vet Ther* 2001: **2**;238-246. Additional literature: *Veterinary Therapeutics* 2004: **5**;43-51.
2. Sparkes AH, Cannon M, Church D, Freeman L, Harvey A, Hoenig M, *et al.* ISFM consensus guidelines on the practical management of diabetes mellitus in cats. *J Feline Med Surg.* 2015: **17**:235-50.

Other relevant literature
- Rand JS, Marshall RD. Diabetes mellitus in cats. *Vet Clin Small Anim* 2006: **35**:211-224.
- Rand JS, *et al.* Canine and feline diabetes mellitus: Nature or nurture? *Journal of Nutrition* 2004: **134**;2072S-2080S.
- Webb CB and Falkowski L. Oxidative stress and innate immunity in feline patients with diabetes mellitus: the role of nutrition. *J Fel Med Surg* 2009: **11**;271-276.

FELINE EN ST/OX GASTROINTESTINAL™

Complete dietetic pet food for adult cats and kittens for reduction of intestinal absorptive disorders and nutritional restoration and convalescence.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Acute or chronic gastrointestinal disease:
  - Acute or chronic diarrhoea
  - Gastroenteritis and colitis
  - Malabsorption and/or maldigestion
  - Food intolerance
  - Inflammatory bowel disease
- ✓ Liver disease not associated with encephalopathy
- ✓ Convalescence
- ✗ Hepatic encephalopathy
- ✗ Renal failure

195 g 85 g 400 g, 1.5 kg and 5 kg

KEY BENEFITS

Low residue – easy to digest ingredients
to help reduce workload of the compromised gut

Limited number of protein sources*
to help minimise adverse intestinal reactions

Added prebiotic (chicory inulin)
to help improve intestinal health

ADDITIONAL BENEFITS & CHARACTERISTICS

Clinically proven to be effective in cases of chronic, non-specific diarrhoea
The unique formulation of Feline EN ST/OX Gastrointestinal™ has proven clinical efficacy

Regulation of GI transit and nutritional support for enterocytes
Specially formulated with a blend of insoluble and soluble fibres

Intestinal mucosal protection
Added bentonite with strong toxin adsorption capacity*

Helps patient compliance and is suitable for all life stages
Good palatability and formulated to support growth, reproduction and maintenance

Added fibre
Added insoluble fibres to help regulate digestive transit

Great taste
To satisfy patients with reduced appetite**

* Feline EN ST/OX Gastrointestinal dry only. ** Feline EN ST/OX Gastrointestinal can and pouches only.

COMPOSITION (DRY)

Soya protein powder*, dried chicken protein*, soya meal, corn starch*, pork fat*, digest, minerals, chicory inulin (1.2%), fish oil*.

* Highly digestible ingredients.

COMPOSITION (CAN)

Pork liver and kidney, turkey, rice, pork plasma, minerals, fish oil, cellulose powder, inulin.

COMPOSITION (POUCHES)

With chicken:
Pork (frozen liver & kidney, and dehydrated pork protein), chicken (4%), turkey, dried egg, rice flour, pea fibre, dried yeast, fish oil, minerals, various sugars.

With salmon:
Pork (frozen liver & kidney, and dehydrated pork protein), turkey, chicken, salmon (4%), dried egg, rice flour, pea fibre, dried yeast, fish oil, minerals, various sugars.

KEY NUTRIENT VALUES*

	Dry	Wet	Pouches**
Moisture	6.5%	77%	76.4%
Protein	40%	10.5%	11%
- Arginine	2.73%	0.76%	0.7%
Fat	20%	6.0%	6.3%
- Essential fatty acids	2%	1.36%	1.36%
- Omega-6 fatty acids	2.6%	0.69%	0.64%
- Omega-3 fatty acids	0.6%	0.14%	0.23%
Carbohydrate	23%	3.9%	3.5%
- Starch	12.5%	0.4%	0.8%
- Total sugars	0.8%	<0.5%	<0.5%
Crude fibre	2%	0.4%	0.6%
Vitamin E	608 IU/kg	229 IU/kg	311 IU/kg
Metabolisable energy (ME)[1]	4154 kcal/kg	1062 kcal/kg	1104 kcal/kg

* Typical analysis in the final product as fed. ** Average of the two varieties.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

To optimise nutrient digestion and absorption, the daily intake of PURINA® PRO PLAN® Feline EN ST/OX Gastrointestinal™ should be divided into several small meals. For kittens from 6 to 12 weeks, feed 50 to 60 g of dry food as per table below, and where necessary moisten with water until weaning is complete, then gradually reduce the added water.

Consider adding PRO PLAN® FortiFlora® Feline on top of this product as microflora imbalance can happen in cases of GI disturbances.

ADULT MAINTENANCE

Body weight (kg)	Daily feeding quantity						
	Dry only (g/day)	Wet only (can/day)	Wet only (pouch/day)	Dry + can combined		Dry + pouch combined	
				Dry (g/day)	Can/day	Dry (g/day)	Pouch/day
2	25	½	1	10	⅓	20	⅓
3	40	¾	1 ¾	15	½	30	½
4	55	1	2 ⅓	30	½	30	1
5	65	1 ⅓	3	20	1	45	1
6	80	1 ½	3 ½	30	1	60	1
7	95	2	4 ¼	45	1	75	1
8	110	2 ¼	4 ¾	60	1	85	1

For each additional 1 kg of body weight, feed an additional 15 g of dry food per day when only dry food is fed or ⅓ of can or ⅔ pouch per day when only wet food is fed or when feeding dry and wet can, for each addition of ⅓ Feline EN Wet can, reduce by 15g dry kibble.

KITTEN GROWTH

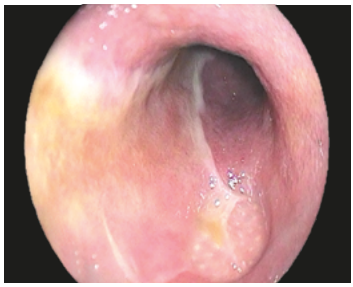
Age (weeks)	Daily feeding quantity				
	Dry (g/day)	Wet (can/day)	Wet (pouch/day)	Dry + pouch combined	
				Dry (g/day)	Pouch/day
6 – 12	50 – 60	1 – 1 ⅓	2 – 2 ¾	25 - 40	1
12 – 26	60 – 70	1 ⅓ – 1 ½	2 ¾ – 3	40 – 50	1
26 – 52	70 – 65	1 ½ – 1	3	50	1

THE ROLE OF DIET IN FELINE GI DISEASE

Clinical studies have suggested that 35-50% or more of cases of chronic diarrhoea in cats may be diet-responsive[1,2].

Management with an appropriate dietary change has huge potential for clinical benefits.

- Provide highly digestible nutrients with a low residue, to minimise complications associated with undigested food (e.g. osmotic diarrhoea, altered microflora)
- Further promote a healthy intestinal microflora by providing specific substrates to promote the growth of beneficial bacteria
- Prevent or limit exposure to dietary antigens and prevent or minimise adverse immunological reactions
- Limit exposure to ingredients that cause dietary sensitivity or intolerance (non-immunologically mediated adverse reactions)



© Dr B. Chekroun

- Provide an appropriate level of fibre to help maintain normal GI motility
- Provide nutritional support for the GI mucosa
- Meet the specific nutritional requirements of cats; and address the demands of GI disease, such as electrolyte loss, GI inflammation and weight loss caused by malassimilation

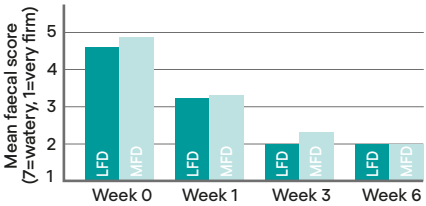
IMPACT OF FAT LEVEL IN A DIET DESIGNED TO MANAGE FELINE GI DISEASE

A highly digestible diet with moderately high fat levels presents numerous clinical advantages[3,4]:

- It is better adapted to the unique feline digestive physiology
- It better meets the nutritional needs of a cat with debilitating GI disease

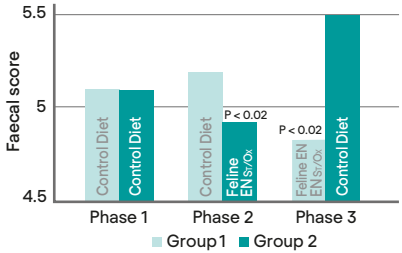
Although pancreatitis is increasingly recognised as a clinical entity in cats, the optimal diet to manage this disease in cats is unknown. Clinical improvement has been documented with or without fat restriction, and low fat diets may have no specific benefits in cats.

CHANGE IN FAECAL SCORES IN 60 CATS WITH CHRONIC DIARRHOEA FED A LOW (10% - LFD) OR MEDIUM (23% - MFD) FAT DIET[4]



Both diets were equally successful in improving faecal scores (P < 0.001).

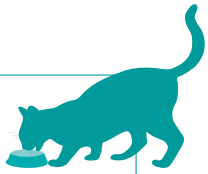
SIGNIFICANT IMPROVEMENT IN FAECAL SCORES IN 15 CATS WITH SEVERE AND CHRONIC DIARRHOEA[3]



1. Guilford WG, Jones BR, Markwell PJ, Arthur DG, Collett MG, Harte JG. Food sensitivity in cats with chronic idiopathic gastrointestinal problems. *J Vet Intern Med.* 2001: **15**;7-13.
2. Guilford WG, *et al.* Prevalence and causes of food sensitivity in cats with chronic pruritus, vomiting or diarrhoea. *J Nutr.* 1998: **128**; 2790S-2791S.
3. LaFlamme, DP, H. Xu, GL Long. Do cats with chronic diarrhoea benefit from a low fat diet? *ACVIM Proceedings.* 2007: p611.
4. LaFlamme, DP. Nestlé PURINA®, Effect of Diets Differing in Fat Content on Chronic Diarrhea in Cats – Laflamme data on file.

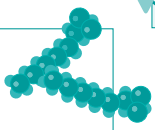
CLINICAL ADVANTAGES WITH THE USE OF FELINE EN ST/OX GASTROINTESTINAL™

PURINA® PRO PLAN® VETERINARY DIETS EN ST/OX Gastrointestinal™ provides proven efficacy in the management of feline diarrhoea with:



Outstanding digestibility for optimum nutritional support of the compromised GI tract.

Minimal food residues that may promote GI inflammation and undesirable bacterial growth.



Medium fat levels and highly digestible fat to help meet the specific needs of the cat.

Limited and highly digestible protein sources to restrict the exposure to dietary antigens in the GI tract.

Inulin – a true prebiotic:

- Helps maintain a healthy balance of microflora in the intestinal tract.
- Excellent source of short chain fatty acids that promote a healthy colonic mucosa.

Optimum levels of omega-3 and omega-6 fatty acids to help support natural anti-inflammatory responses.

Bentonite* (hydrated aluminium silicate) absorbs toxins and pathogens and improves the clinical signs of diarrhoea.

* Feline EN ST/OX dry only.

Feline Probiotic. Complementary pet food for cats and kittens to help support intestinal health and balance.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Gastrointestinal disturbance and loose stools associated with microflora imbalance
- ✓ Loose stools associated with stress, antibiotic use or diet change
- ✓ Poor faecal quality in cats of all ages from weaning
- ✓ Palatability enhancement for cats with poor appetite
- ✗ Cats with specific food allergies

7 × 1 g sachets | 30 × 1 g sachets | 30 or 60 chews

KEY BENEFITS

SF68

Contains a guaranteed level of a proprietary microencapsulated strain of viable probiotic (SF68) (5 × 10^8 CFU*/g).
The microencapsulation process enhances stability, guaranteeing levels of live beneficial bacteria entering the gastrointestinal (GI) tract

IMMUNE SYSTEM

Proven to help promote a strong immune system and help support intestinal health and balance for cats of all ages -
Contains the lactic acid bacteria *Enteroccus faecium* (SF68), at levels proven to support intestinal health and microflora balance in cats

GREAT TASTE

Great taste
Can be easily sprinkled on all cat foods with great acceptance

ADDITIONAL BENEFITS & CHARACTERISTICS

Highly palatable
Highly palatable formula – PRO PLAN® FortiFlora® can also act as a palatability enhancer

Easy & convenient
Sachets can be easily sprinkled on all cats food, once daily.
Chews are very convenient to use, to be given once a day, any time, anywhere.

Helps reduce free radicals
High levels of vitamins C and E

Helps maintain good faecal quality
Can be used for GI disturbances associated with stress, antibiotic use or diet change

Safely used from weaning for kittens and for pregnant and lactating cats

* CFU: Colony Forming Units.

COMPOSITION (SACHETS)

Meat and animal derivatives*, minerals.

* Pork and poultry.

COMPOSITION (CHEWS)

Meat and animal derivatives**, derivatives of vegetable origin, glycerol, yeasts, oils and fats, various sugars.

** Poultry and bovine gelatin.

Keep between **2 and 25°C.**

KEY NUTRIENT VALUES*		
	Sachet	Chew
Enterococcus faecium SF68 NCIMB 10415 (4b1705) Live microencapsulated microorganisms**	Minimum 5×10^8 CFU/g	Minimum 5×10^8 CFU/g
Protein	55%	28.7%
Fat	19%	12.5%
Crude fibre	1%	2.5%
Vitamin E	5344 IU/kg	5580 IU/kg
Vitamin C	1450 mg/kg	2800 IU/kg
Taurine	2480 mg/kg	5000 mg/kg
Selenium	-	0.13 mg/100g
Metabolisable energy (ME)[1]	4376 kcal/kg	3880 kcal/kg

* Typical analysis in the final product as fed.
** Minimum guaranteed level at the end of shelf life.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

FortiFlora® can be **used daily** on a long-term basis.

Give **FortiFlora® every day**, sprinkled on top of the regular food or as a chew, until at least 1 week after the **return to normal stool quality.**

To **improve immune system** function, give **FortiFlora® every day.**

When feeding **to restore intestinal microflora balance due to antibiotic use**, give **FortiFlora® every day** during the antibiotic course and until 1 week after the last dose of antibiotic.

CLINICAL ADVANTAGES WITH THE USE OF FELINE FORTIFLORA® IN CATS

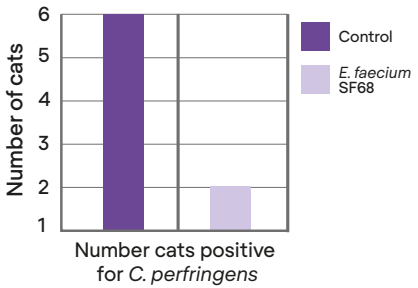
PRO PLAN® FortiFlora® Feline contains a strain of E. faecium (SF68) (4b1705) – a lactic acid bacterium that is recognised as a safe, "friendly" bacteria and valuable probiotic. A unique and proprietary microencapsulation technique ensures that the bacteria in Feline FortiFlora® remains viable and that the product can be used with confidence in its efficacy. In cats, Nestlé PURINA® studies have confirmed that **feeding SF68**:

- Has been seen to **increase levels of the beneficial bacteria** bifidobacteria in dogs[1]
- Can **decrease levels** of *Clostridium perfringens*[1] and has been seen to decrease the number of cats testing positive for Clostridium perfringens[2]
- Can **improve fecal consistency** in cats with chronic, intractable diarrhea[3]
- Can **prevent naturally occurring diarrhea** in kittens[4]
- Can **increase IgA in cats**[5] – sign of a healthy, balanced intestine.
- Can **lessen the morbidity associated with chronic FHV1 infection** in some cats, reducing the incidence of conjunctivitis[6]
- Can **lessen some of the associated clinical abnormalities** associated to antibiotics[7].

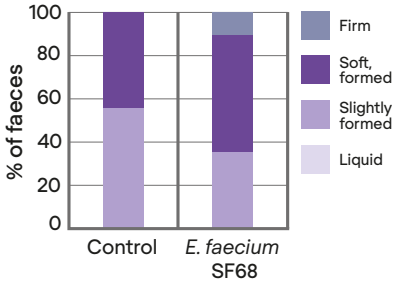
In clinical trials, SF68 has been shown to significantly improve faecal quality in cats with chronic non-specific diarrhoea and prevent and/or reduce the severity of diarrhoea in kittens.

In clinical trials, SF68 has been shown to significantly improve faecal quality in kittens and stabilise intestinal flora by maintaining a higher diversity of the gut bacterial population.

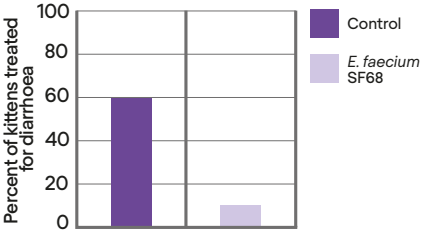
FAECAL *CLOSTRIDIUM PERFRINGENS* IN ADULT CATS[1]



SF68 IMPROVES FAECAL QUALITY IN CATS WITH CHRONIC DIARRHOEA[3]



SF68 PREVENTS DIARRHOEA OUTBREAKS IN KITTENS[4]



Kittens fed SF68 had lower incidence of spontaneous diarrhoea than controls

Based on these studies, PRO PLAN® FortiFlora® can be recommended for cats to support the **nutritional management of**:

- Gastrointestinal disturbance and loose stools associated with microflora imbalance
- Loose stools associated with stress, antibiotic use or diet change
- Poor faecal quality in cats of all stages (kitten, adult and senior)

Feline FortiFlora® may also have a role to play in other conditions to help stabilise and **restore the intestinal flora** after a disturbance:

- Chronic enteropathies, for example, inflammatory bowel disease
- Promoting optimal immune responses in health and disease

1. Vahjen and K. Manner. The effect of a probiotic Enterococcus faecium product in diets of healthy dogs on bacteriological counts of Salmonella spp., Campylobacter spp. and Clostridium spp. in faeces. *Arc Anim Nutr.* 2003. 57 **(3)**:229-33.
2. Rochat. Internal report. EU Dossier efficacy in cats. 1997
3. Czarnecki-Maulden. Internal report. 2006. Effect of Enterococcus faecium SF68 on chronic, intractable diarrhea in cats.
4. Czarnecki-Maulden. Internal report. 2006. Effect of Enterococcus faecium SF68 on prevention of naturally occurring diarrhea in kittens
5. Veir JK, Knorr R, Cavadini C, Sherrill SJ, Benyacoub J, Satyaraj E, & Lappin MR. (2007). Effect of supplementation with Enterococcus faecium (SF68) on immune function in cats. Veterinary Therapeutics, **8,** 229-238.
6. Lappin MR, Veir JK, Satyara JE, *et al.* 2009. Pilot study to evaluate the effect of oral supplementation of *Enterococcus faecium* SF68 on cats with latent feline herpesvirus-1. *J Feline Med Surg.* **11**:650–654.
7. Torres-Henderson C, Summers S, Suchodolski J, & Lappin MR. (2017). Effect of Enterococcus faecium strain SF68 on gastrointestinal signs and fecal microbiome in cats administered amoxicillin-clavulanate. Topics in Companion Animal Medicine, **32(3)**, 104-108.

Other relevant literature

- Wynn SG. Probiotics in veterinary medicine. *J Am Vet Med Assoc.* 2009: **234**;606-613.
- Culligan EP, Hill C, Sleator RD. Probiotics and gastrointestinal disease: successes, problems and future prospects. *Gut Pathog.* 2009: **1**;19-31.
- Marteau PR, de Vrese M, Cellier CJ, Schrezenmeir J. Protection from gastrointestinal diseases with the use of probiotics. *Am J Clin Nutr.* 2001: **73**; 430S-436S.
- Kligler B, Cohrssen A. Probiotics. *Am Fam Physician.* 2008: **9**; 1073-1078.

FELINE FORTIFLORA® PLUS

PROBIOTIC + PREBIOTIC – Complementary pet food for cats and kittens to help maintain a healthy intestinal microbiome and long term health.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Gastrointestinal disturbance and loose stools associated with microflora imbalance
- ✓ Irregular bowel movements and poor faecal quality
- ✓ Helps ease the passage of faeces
- ✓ Loose stools associated with stress, diet change or antiobiotic use
- ✓ Helps promote immune system function
- ✗ Cats with specific food allergies

30 × 1 g sachets

KEY BENEFITS

Proven Synbiotic action (of a probiotic & prebiotic) to help maintain a healthy intestinal microbiome
Contains prebiotic fibre (psyllium) and lactic acid bacteria (*E. faecium* SF68) at levels that stimulate the growth of specific bacteria to support a healthy intestinal microbiome

Contains the same guaranteed level of proprietary micro-encapsulated strain of live lactic acid bacteria SF68
(5×10^8 CFU*/sachet) as FortiFlora to help support intestinal health / microflora and promote a strong immune system

Contains a plant-based prebiotic fibre (psyllium)
to stimulate the growth of beneficial bacteria in the gut and nourish a healthy microbiome

ADDITIONAL BENEFITS & CHARACTERISTICS

Great taste
Can be easily sprinkled on cat food with great acceptance

Helps repopulate the intestine
with beneficial microorganisms

Help manage intestinal microbiome imbalance
as a result of fermentation thanks to the prebiotic fibre (psyllium)

Firms up faeces
thanks to water holding capacity of psyllium

Helps ease the passage of faeces

Helps support intestinal motility & regulatie intestinal transit
thanks to the inclusion of psyllium husk

Helps promote intestinal barrier integrity

* CFU: Colony Forming Units.

COMPOSITION

Meat and animal derivatives*, derivatives of vegetable origin (33% dried psyllium husk), minerals.

* Pork and poultry.

Keep between **2 and 25°C.**

KEY NUTRIENT VALUES*	
Enterococcus faecium SF68 NCIMB 10415 (4b1705) Live microencapsulated microorganisms**	Minimum 5×10^8 CFU/g
Protein	37.0%
Fat	12.5%
Crude fibre	1.5%
Vitamin E	3554 IU/kg
Taurine	4050 mg/kg
Selenium	0.149 mg/100g
Metabolisable energy (ME)[1]	3954 kcal/kg

* Typical analysis in the final product as fed.
** Minimum guaranteed level at the end of shelf life.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

RECOMMENDED FOR	HOW IT WORKS	ADMINISTRATION GUIDELINES
Gastrointestinal Disturbances		
Gastrointestinal disturbances and loose stools associated with microbiome imbalance	Stimulates bacterial fermentation and favours the growth of beneficial bacteria, increasing microbiome diversity	Give 1 sachet of FortiFlora® PLUS every day, sprinkled on top of the regular food, until at least 7 days after the remission of the signs
Irregular bowel movements and poor faecal quality	Psyllium can help firm up stools and support intestinal motility thanks to water-holding capacity	
Helping ease the passage of faeces		
Reduction of flatulence in dogs	Psyllium is partially fermented which means less gas production compared with other fibres[3,4]	
Loose stools		
Loose stools associated with stress	Improves the survival and implantation of live beneficial bacteria in the gut, helping promote intestinal barrier integrity	Give 1 sachet of FortiFlora® PLUS every day, 3 days before the stressful event, during the whole period of stress and until at least 3 days after the end of the stress.
Loose stools associated with antibiotic use		Give 1 sachet of FortiFlora® PLUS every day during the antibiotic use and until 7 days after the last dose of antibiotic. For maximum efficacy, give Fortiflora® PLUS at least 3 hours before or after the antibiotic administration
Loose stools associated with diet change		Give 1 sachet of FortiFlora® PLUS a day, from 3 days before the start of the diet transition until 7 days after the pet has been fed entirely with the new diet
Immune function		
Loose stools associated with diet change	Supports the immune system at mucosal and systemic levels	Give 1 sachet of FortiFlora® PLUS every day, for at least 30 days
Palatability		
Palatability enhancement for pets with little appetite	Can be easily sprinkled on pets' food with great acceptance	Add 1 sachet of FortiFlora® PLUS daily to the regular food as long as palatability enhancement is required

Ground-breaking studies in humans and other mammals have implicated the **gut microbiome** in a range of physiologic processes that are **vital to host health**[1-4].

Purina scientists developed the **first study published** to demonstrate that the essential features of the **human gut microbiome are mirrored in adult dogs**[3] with **direct implications in their responses to diet**[3] and future developments to improve **pet's gut microbiome health**.

CLINICAL STUDIES SHOW THE BENEFITS OF USING FORTIFLORA® PLUS IN HELPING MAINTAIN GASTROINTESTINAL HEALTH

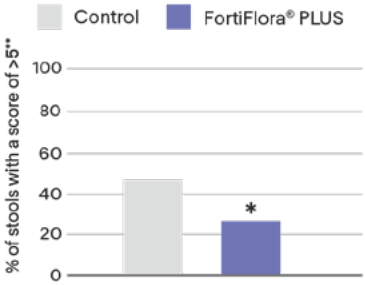
In vitro studies of cat and dog faecal samples combined with FortiFlora® PLUS showed a significant shift towards beneficial gut bacteria

(Nestlé Purina, internal data 2020)

- Microbial diversity (number of species and relative abundance present) significantly shifted towards beneficial bacteria such as Lactobacillus spp and Bifidobacteria spp
- Decreased intraluminal pH, which promotes a more favourable environment for the growth of beneficial bacteria

Effect of FortiFlora® PLUS can benefit in adult cats with pre-existing antibiotic-associated loose stools (n=8)

(Lappin M, et al. ACVIM Forum Proceedings 2020).



*p<0.05
**Nestlé Purina Fecal Scoring Chart

- Supplementation reduced severity of loose stools and numerically improved time to resolution
- 100% of cats administered FortiFlora® PLUS resulted in complete recovery from loose stools whereas 25% of cats on placebo didn't recover

1. Eisenstein M. 2020. The hunt for a healthy microbiome. Nature vol 577.
2. Barko PC, McMichael MA, Swanson KS, *et al.* 2018. The gastrointestinal microbiome: a review. *J Vet Intern Med* **32:**9-25.
3. Coelho LP, Kultima JR, Costea PI, *et al.* 2018. Similarity of the dog and human gut microbiomes in gene content and response to diet. Microbiome, 6(72).
4. Pilla R, Suchodolski J. 2021. The Gut Microbiome of Dogs and Cats, and the Influence of Diet. *Vet. Clin. North Am. Small Anim* 31, 3.

FELINE HA ST/OX HYPOALLERGENIC™

Complete dietetic pet food for kittens and adult cats for the reduction of ingredient and nutrient intolerances, formulated with hydrolysed protein sources.

RECOMMENDED FOR

- ✓ Cats with Adverse Food Reactions (AFR)
- ✓ Elimination diet for food trials
- ✓ Long-term management of food allergy
- ✓ Dermatitis and/or gastroenteritis associated with food allergy
- ✓ Inflammatory bowel disease (IBD)
- ✓ Food intolerance
- ✓ Exocrine pancreatic insufficiency (EPI)
- ✓ Hyperlipidaemia
- ✓ Lymphangiectasia
- ✓ Malabsorption
- ✓ Protein losing enteropathy
- ✓ Chronic diarrhoea (associated with food intolerance)
- ✓ Small intestinal bacterial overgrowth (SIBO)

325 g, 1.3 kg and 3.5 kg

KEY BENEFITS

Limited hydrolysed protein with low molecular weight
to help avoid allergic reactions

Purified carbohydrates
to help avoid allergic reactions

Great taste
Thanks to high quality ingredients and appetite booster

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps reduce inflammation associated with allergic reactions
Achieved through supplementation with omega-3 fatty acids

Helps maintain epidermal integrity
Specially formulated with a complex of nutrients: zinc, omega-3 and -6 fatty acids and vitamin A

Supports cats with compromised GI function
Very high protein digestibility and overall digestibility (>90%) to maximize nutrient absorption essential to supporting cats with compromised GI function

Helps minimise the development of struvite and oxalate uroliths
RSS metastable for struvite and oxalate (ST/Ox urinary security added benefit)

Neutralises free radicals produced in allergic/inflammatory reactions
Added vitamin E

COMPOSITION

Purified Rice starch*, Hydrolysed soya protein**, soybean oil, minerals, cellulose, hydrolysed digest**, pork fat, fish oil.

* Purified carbohydrate sources.
** Protein source.

KEY NUTRIENT VALUES*	
Moisture	6.5%
Protein	35%
Fat - Omega-6 fatty acids - Omega-3 fatty acids - EPA + DHA	10% 4.0% 0.7% 0.16%
Carbohydrate	37.5%
Crude fibre	3%
Vitamin E	561 IU/kg
Metabolisable energy (ME)[1]	3640 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

Elimination diet trial: where possible use either a short or no transition period, followed by exclusive feeding of PURINA® PRO PLAN® VETERINARY DIETS HA ST/OX Hypoallergenic™ for 8 to 10 weeks. In most cases, positive responses are likely to be seen within 3-6 weeks. If clinical signs resolve, and signs of intolerance disappear, this feed can be used initially up to one year.

The patient should be evaluated before extending the period of use.
Water should always be available.

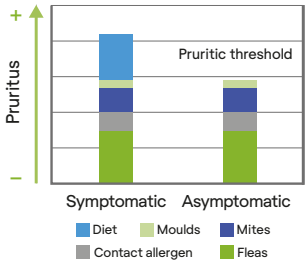
ADULT MAINTENANCE	
Body weight (kg)	Daily feeding quantity (g/day)
2	30
3	45
4	60
5	80
> 5	+ 15 g per additional kg of BW

KITTEN GROWTH	
Age (weeks)	Daily feeding quantity (g/day)
6 – 12	25 – 80
12 – 26	50 – 110
26 – 52	110 – 55

The diagnosis of **cutaneous adverse food reactions (CAFRs)** in cats relies on the performance of dietary restriction-provocation trials. Knowing the most common offending allergens in these species would help to determine which food challenges should be performed first in order to confirm the diagnosis of CAFR[1]. In a 2017 study in cats, the prevalence of CAFR was less than 1% (0.2%), while it was fairly homogeneous in cats with skin diseases (range: 3 to 6%), but higher in cats with pruritus (12 to 21%) than in cats with allergic skin disease (5 to 13%)[2].

Food allergy (dietary hypersensitivity) is an important cause of dermatological and gastrointestinal disease in cats[3]. Up to 30-50% of cats with chronic non-specific diarrhoea may also have either food allergy or food sensitivity[1,2]. Unfortunately, differentiating a true allergic response (dermatological or GI) from an intolerance or sensitivity (i.e. non-immunologically mediated reaction) can be difficult.

Food allergy is caused by a reaction to proteins or glycoproteins in the food, and in cats the **most commonly reported allergens are: beef, fish and chicken**[1]. Cats with food allergy may also have other concurrent hypersensitivities such as flea allergic dermatitis and atopy. Reducing or eliminating the food allergy component can help to reduce the 'allergic threshold' and help manage the other conditions too.



DIAGNOSIS OF FOOD ALLERGY

The diagnosis of food allergy relies on a food elimination trial[4,5], ideally followed by recurring signs on re-introduction of the original diet. Data suggests that the majority of proteins inducing an allergic response are in the region of 20-80 kDa in size. Hydrolysis of proteins to smaller, low molecular weight fractions is a potent means of reducing the antigenicity of a diet. Importantly, hydrolysis also reduces the antigenicity through altering protein structures[3]. The average MW of soy hydrolysate in Feline HA ST/OX is 15.6 kDa.

CLINICAL ADVANTAGES WITH THE USE OF FELINE HA ST/OX HYPOALLERGENIC™

The protein hydrolysate used in PURINA® PRO PLAN® VETERINARY DIETS HA Feline ST/OX Hypoallergenic™ dramatically reduces antigenicity by producing lower molecular weight peptides and by disrupting antigenic determinants. Protein hydrolysis is the most reliable way to produce a "hypoallergenic diet". Furthermore, Feline HA ST/OX Hypoallergenic provides:

A highly restricted source of proteins, with a highly purified carbohydrate source.

Enhanced essential fatty acid and vitamin E levels to help manage inflammation and enhance the cutaneous barrier.

PURINA® PRO PLAN® VETERINARY DIETS HA Feline ST/OX Hypoallergenic™ has been clinically proven to help avoid adverse reactions to food.

1. Mueller RS, Olivry T, Prélaud P. Critically appraised topic on adverse food reactions of companion animals (2): common food allergen sources in dogs and cats. *BMC Vet Res.* 2016:12:9.
2. Olivry T, Mueller RS. Critically appraised topic on adverse food reactions of companion animals (3): prevalence of cutaneous adverse food reactions in dogs and cats. *BMC Vet Res.* 2017:13:51.
3. Carlotti D. Food Allergy in Dogs and Cats: Current Dermatological Perspectives. 2017. http://www.ddlzagreb.hr/wp-content/uploads/2015/06/food-allergy-in-dogs-and-cats.pdf
4. Guilford WG, Jones BR, Markwell PJ, Arthur DG, Collet MG, Harte JG. Food sensitivity in cats with chronic idiopathic gastrointestinal problems. *J Vet Intern Med.* 2001: **15**;7-13.
5. Guilford WG, Markwell PJ, Jones BR, Harte JG, Wills JM. Prevalence and causes of food sensitivity in cats with chronic pruritus, vomiting or diarrhoea. *J Nutr.* 1998: **128**; 2790S-2791S.

Complementary pet food for adult cats formulated to increase water intake and urine dilution.

RECOMMENDED FOR & NOT RECOMMENDED FOR

✓ Cats who could benefit from additional water intake

The addition of PURINA® PRO PLAN® Hydra Care™ to the cat's diet can help increase water intake. These effects may offer benefits to cats in need of greater water consumption for their overall health.

85 g

KEY BENEFITS

INCREASED LIQUID INTAKE — **Shown to increase total water intake and promote hydration***

URINE DILUTION — **Help to Increase urine dilution**

GREAT TASTE — **Great taste**

ADDITIONAL BENEFITS & CHARACTERISTICS

Created to help cats consume on average 28% more liquid every day than water alone* and so help increase urine dilution

Specially formulated to help increase water intake and urine dilution

Shown to help decrease urine specific gravity and osmolality*

The formula will engage cats to happily lick it up due to its great taste

Offers a tasty, soft textured jelly which is served on its own, as an extra third bowl

* Compared to cats consuming only water in addition to dry feeding. Cats must consume at least 25 ml/kg of bodyweight daily for benefit.

COMPOSITION

Whey protein isolate powder, glycerol, digest, various sugars, potassium chloride.

KEY NUTRIENT VALUES*	
Moisture	94.5%
Protein	3.2%
Fat	0.22%
Crude ash	0.16%
Crude fibre	0.018%
Calcium	0.003%
Magnesium	0.0013%
Phosphorus	0.009%
Chloride	0.034%
Sodium	0.017%
Metabolisable energy (ME)[1]	222 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

PURINA® PRO PLAN® Hydra Care™ is a complementary pet food and offers a tasty, soft textured jelly which is served on its own, as an extra third bowl.

The formula will engage cats to happily lick it up due to its great taste, help increasing their total liquid intake and help decreasing urine specific gravity and osmolality.

- Shake well before feeding
- Feed 1 pouch per each 2 kg of body weight
- Low in calories: only 19 kcal per pouch
- Serve at room temperature
- Clean, fresh drinking water should always be available

Multiple studies have shown the benefits of providing cats with nutrient-enriched water. The products used in the following studies[1,2,3,4] have similar properties to PURINA® PRO PLAN® Hydra Care™.

INTRODUCTION

- While healthy cats are able to self-regulate the total water they require through drinking, a difference in the daily water-to-calorie intake ratio is observed depending on the type of food ingested. In general terms, cats drink less water when fed dry food, whereas when eating wet food, they ingest water through dietary moisture instead. These differences in water consumption may be relevant in cats suffering from Lower Urinary Tract Disease (LUTD) who would benefit from an increased total water intake and urine output[2].
- Different studies have evaluated the effects of nutrient-enriched water (NW) intake on measures of hydration. For instance, cats undertaking a dental cleaning, which required anesthesia, showed a significant increase (0.9%) of total body water (TBW) prior to intervention, when they were offered to drink NW compared to cats drinking only tap water (TW). After the procedure, NW cats appeared to be equally hydrated compared to cats administered intravenous (IV) fluids during the anesthesia or better hydrated in the case of no IV administration[3].
- We present three additional studies[1,2,4] which evaluated the effects of drinking NW on water intake and indices of hydration in healthy domestic cats fed with a dry kibble diet ad libitum.

METHODOLOGY

- The main study in the field was carried out by Zanghi BM, *et al.* (2017)[1]. It consisted of monitoring 18 healthy adult domestic shorthair cats fed ad libitum dry diets for 56 days. Firstly, during a one-week baseline period, all cats were offered TW as their only water source. Following the baseline week, 9 cats were offered only NW for 10 days and afterwards were offered both TW and NW in separate bowls and alternating locations, until the end of the study. The remaining 9 cats were offered only TW during the whole length of the study (Figure 1). Blood and urine samples were collected, and qualitative magnetic resonance imaging was performed to assess total body water, lean body mass and fat mass at intervals throughout the study.
- Similar methodology was applied in an internal Nestlé study[4] that consisted on monitoring 22 healthy adult domestic cats fed ad libitum dry diet for 27 days. Urinary and feces samples were collected during the study.
- For further evaluation in a complementary study run by Wils-Plotz *et al.* (2019)[2], two similar NW differing only in the gum content to influence liquid viscosity were analysed.

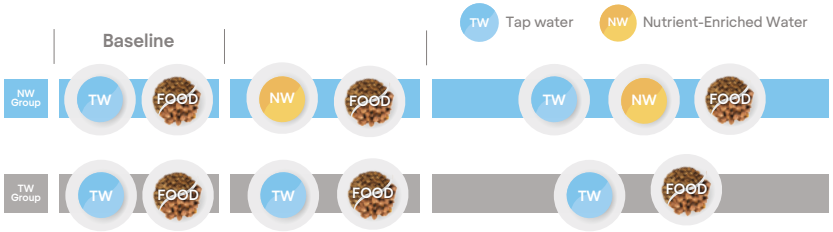


Figure 1. Graphical representation of the studies' methodology.

RESULTS

- In the first study[1], cats offered both TW and NW preferentially drank NW, and the higher liquid intake maintained a more dilute urine over the 2-months (Figure 2). Urine parameters were affected reflecting a greater hydration status such as **decreased urine specific gravity (33% lower); decreased urine osmolality (30% lower)**; light urine colour; and lower urinary concentration of phosphate, creatinine and urea nitrogen relative to baseline.

MEAN WEEKLY LIQUID INTAKE (VS. BASELINE). TAP (TW) VS NUTRIENT ENRICHED WATER (NW).

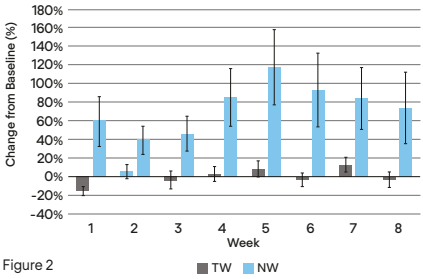


Figure 2

- The results from the Nestlé internal data[4] report also confirmed the previous results, increasing the total water intake by 27% in ml/day and decreasing by 12.5% the urinary osmolality.
- Results obtained in the complementary study[2] concluded that both types of NW regardless of gum content, increased similarly to the **total daily liquid intake (35.1 and 33.0 g/kg BW/d, respectively)** compared with cats drinking only **TW (25.8 g/kg BW/d)**, and significantly improved urine measures of hydration.

CLINICAL OUTCOMES

The consumption of nutrient-enriched water significantly affected urine parameters that reflected greater hydration status relative to the baseline:

- Decreased urine specific gravity[1,4]
- Decreased urine osmolality **(30% and 12.5% lower)**[4]
- Lighter urine colour[1]
- Improved daily water consumption[2,4]

Cats drinking nutrient-enriched water produced:

- **Higher daily urine volume compared to TW cats** (48% higher)[1] and 23.1 and 21.1 ml/kg/day increase in both types of NW study[2]
- **Glomerular filtration** rate did not differ significantly between the groups[1]
- The cat's **total body water**, lean body mass and fat mass remained stable[1]

CONCLUSIONS

Cats that drank a nutrient-enriched water had a higher daily water intake, increased urinary output, and improved measures of hydration compared to cats offered only tap water.

1. Zanghi BM, Gerheart L, Gardner CL. Effects of a nutrient-enriched water on water intake and indices of hydration in healthy domestic cats fed a dry kibble diet. From Nestlé PURINA® Research. *Am J Vet Res.* 2018: **79**:733-44.
2. Wils-Plotz E, DeGeer S, Zanghi BM. Nutrient-enriched water supplements nutritionally support hydration in the domestic cat. From Nestlé PURINA® Research. 2019 ACVIM Forum Research Abstract Program.
3. Zanghi BM, McGivney C, Eirmann L, Barnes M. Hydration measures in cats during brief anesthesia: intravenous fluids versus pre-procedure water supplement ingestion. From Nestlé PURINA® Research. 2019 ACVIM Forum Research Abstract Program.
4. Colliard, *et al.* Nestlé Internal Report. 2019

FELINE HP ST/OX HEPATIC MANAGEMENT™

Complete dietetic dry pet food for adult cats for the support of liver function in the case of chronic liver insufficiency.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Liver Failure
- ✓ Cholangitis/Cholestasis/Hepatitis
- ✓ Portosystemic shunt
- ✓ Hepatobiliary neoplasia
- ✓ Hepatic copper accumulation
- ✓ Hepatic encephalopathy

- ✗ Pregnancy and growth
- ✗ Hyperlipidemia
- ✗ Hepatic lipidosis (except when associated with hepatic encephalopathy)

1.5 kg

KEY BENEFITS

High energy
To help maintain a positive energy balance

Adapted level of protein
To help reduce accumulation of toxins and maintain liver function

High palatability
To encourage consumption and prevent malnutrition

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps reduce ammonia reabsorption and production in the large intestine
Increased levels of dietary fibres. Added prebiotics

Low copper to reduce hepatic accumulation

Help counteract some nutritional deficiencies that may occur in chronic liver insufficiency
Increased zinc levels

Helps protect hepatic tissue and can help slow progression of chronic liver insufficiency
Contains antioxidant vitamins C and E

Long-chain omega-3 fatty acids to help maximise natural anti-inflammatory processes
0.55% of energy coming from EPA and DHA

COMPOSITION

Corn*, dried chicken protein*, pork fat, pea protein*, digest*, corn protein meal*, dried beet pulp*, dried chicory root, dried egg*, minerals, fish oil.

* Protein sources.

KEY NUTRIENT VALUES*	
Moisture	6.5%
Protein	28%
Fat - Omega-6 fatty acids - Omega-3 fatty acids	22% 3.1% 0.5%
Carbohydrate	35%
Crude fibre	2%
Vitamin E	609 IU/kg
Copper	0.5 mg/100g
Zinc	23.3 mg/100g
Linoleic acid	2.5%
Arachidonic acid	0.10%
Sodium	0.2%
Metabolisable energy (ME)[1]	4241 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

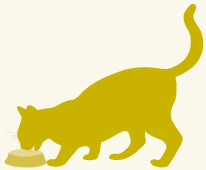
The recommended period of use is initially up to 4 months but the diet can be used in the long term basis, always under veterinary supervision. Water should always be available.

ADULT MAINTENANCE	
Body weight (kg)	Daily feeding quantity (g/day)
2	25
3	40
4	55
5	65
> 5	+ 15 g per additional kg of BW

THE ROLE OF DIET IN FELINE HEPATIC DISEASE

Because the liver is central to the digestion, absorption, metabolism and storage of many nutrients, nutritional support is fundamental in the management of cats with hepatic disease.

PROVISION OF A HIGHLY PALATABLE HIGH ENERGY DIET



Chronic liver insufficiency causes malnutrition due to impaired nutrient intake associated with anorexia and nausea, and due to maldigestion and malassimilation of food often associated with hepatic fibrosis and portal hypertension[1]. Malnutrition has been proven to have a significant negative impact on the outcome of hepatic patients[2] and preventing malnutrition and maintaining optimal body weight should be major nutritional goals of a hepatic diet. This is achieved by provision of a highly palatable high energy diet.

PROVIDE ADEQUATE PROTEIN TO PRESERVE MUSCLE MASS

Reduced liver function can also lead to a decline in stored hepatic glycogen and lipids- necessitating the catabolism of muscle protein in order to meet ongoing energy needs. Given that approximately 50% of body ammonia is temporarily stored in muscle, and muscle is the primary site of ammonia detoxification outside the liver, muscle wasting can potentiate hyperammonaemia and hepatic encephalopathy[3]. Therefore another important goal of nutritional management should be to provide adequate protein to preserve muscle mass while not exceeding the liver's capacity to prevent the accumulation of toxic metabolites and consequent hepatic encephalopathy.

FACILITATE HEPATIC CELLULAR REGENERATION

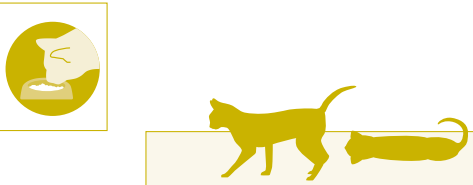
A third goal when nutritionally managing feline chronic liver insufficiency should be to facilitate hepatic cellular regeneration by providing nutrients which are hepatoprotective (e.g. zinc[4]), ameliorate inflammation (e.g. long chain omega-3 fatty acids[5]) and help reduce oxidative damage[6] (e.g. antioxidants such as vitamins C and E).

1. Center SA. Nutritional support for dogs and cats with hepatobiliary disease. *J Nutr.* 1998: **128**:2733S-46S.
2. Meyer HPT and Roudebush P. Hepatobiliary Disease In: Hand MS, *et al* (eds). Small Animal Clinical Nutrition, 5th edition. *Mark Morris Institute, Topeka, KS*: 2010, 1155-1180.
3. Rothuizen J, *et al*. Inherited liver diseases: New findings in portosystemic shunts, hyperammonaemia syndromes, and copper toxicosis in Bedlington terriers. In: Proceedings 19th Annu Vet Forum. *Am Coll Vet Int Med.* 2001; Denver: 637- 639
4. Meyer HPT, Roudebush P. Hepatobiliary Disease In: Hand MS *et al* (eds). Small Animal Clinical Nutrition, 5th edition. *Mark Morris Institute, Topeka, KS*: 2010, 1155-1180.
5. Scorletti E, Byrne CD. Omega-3 fatty acids, hepatic lipid metabolism, and nonalcoholic fatty liver disease. *Annu Rev Nutr.* 2013: **33**:231-48.
6. Center SA, Warner KL, Erb HN. Liver glutathione concentrations in dogs and cats with naturally occurring liver disease. *Am J Vet Res* 2002: **63**:1187-97.

CLINICAL ADVANTAGES WITH THE USE OF FELINE HP ST/OX HEPATIC MANAGEMENT™

Feline HP ST/OX Hepatic Management™ is specifically designed to meet the precise needs of cats with chronic liver insufficiency:

Highly palatable to encourage consumption, promote good patient compliance and prevent malnutrition.



High energy density diet adapted to hypercatabolic state to help maintain body weight and prevent excessive tissue catabolism.

Selected sources of protein and adapted levels to reduce accumulation of toxins and maintain liver function.

↓Cu **Low copper level** to reduce hepatic accumulation.

Added dietary fibre and prebiotics (chicory root) to help reduce ammonia reabsorption and production in the large intestine.

Antioxidants (Vitamin C and E) to help support hepatic tissue.

Vit E

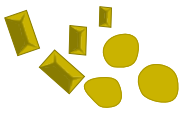
Vit C

Fortified with zinc to help reduce the risk of depletion which may occur in chronic liver insufficiency.

Zn

Ω3 **Long chain omega-3 fatty acids** to maximise natural anti-inflammatory process(es).

The reassurance of a diet that **reduces the risk of urinary calculus** formation.



FELINE NF
RENAL FUNCTION™ EARLY CARE

Complete dietetic dry pet food for adult cats for the support of renal function in case of early stages of feline chronic renal insufficiency (CRI).

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Help support early stages (IRIS stages 1 & 2) of chronic renal insufficiency
- ✓ Temporary renal insufficiency*
- ✓ The reduction of urate stones formation
- ✓ The support of heart function in the case of chronic cardiac insufficiency
- ✗ Not suitable for pregnancy, lactation and growth

IRIS STAGES 1 & 2

isfm

85 g | 1.5 kg and 5 kg

* The recommended period for use shall be two to four weeks.

KEY BENEFITS

MODERATE PROTEIN

Moderate amount of high quality protein
to support renal function from the early stages and help maintain an adequate muscle mass

EARLY RESTRICTED PHOSPHORUS

Early restricted level of phosphorus
to help slow the progression of chronic renal insufficiency

RENAL SUPPORTIVE FORMULA

With restricted level of phosphorus and added omega-3 fatty acids, potassium and antioxidants
to help assist with early kidney care

ADDITIONAL BENEFITS & CHARACTERISTICS

Specifically formulated to meet the needs of cats with early stages of CRI

High palatability for good acceptance

Dietary phosphorus restriction
to help slow the progression of CRI and minimise the risk of secondary nutritional hyperparathyroidism

Added potassium
to help reduce the risk of hypokalemia in CRI

Helps reduce the recurrence of uroliths (calcium oxalate) requiring urine alkalization

Minimizes formation of toxic uraemic compounds
by providing a moderate amount of amino acids

Helps maximise natural anti-inflammatory processes
thanks to omega-3 fatty acids

Added B-complex vitamins
to compensate loss through polyuria linked with CRI

Sources of fibre to promote good faecal consistency in cats with CRI

COMPOSITION (DRY)

Wheat flour*, corn*, rice*, wheat gluten*, soya meal*, corn protein meal*, pork fat, dried beet pulp, dried egg*, minerals, pea hulls, hydrolysed soya protein*, fish oil, digest*, yeast, xylose.

* Protein sources.

COMPOSITION (POUCH)

Pork (kidney, liver, meat, dehydrated protein), chicken 8%, dried egg, fish oil, sunflower oil, dried yeast, salmon, rice, cellulose, minerals, various sugars.

KEY NUTRIENT VALUES*

	Dry	Pouch
Moisture	6.5%	80%
Protein	29.0%	8.5%
Fat - Omega-6 fatty acids - Omega-3 fatty acids - EPA + DHA	12.0% 1.8% 0.3% 0.23%	6.6% 1.45% 0.22% 0.11%
Carbohydrates	44.5%	2.7%
Crude fibre	3.0%	0.5%
Calcium	0.6%	0.17%
Phosphorus	0.35%	0.11%
Potassium	0.8%	0.34%
Sodium	0.2%	0.07%
Vitamin A	25668 IU/kg	29450 IU/kg
Vitamin D_3	1261 IU/kg	422 IU/kg
Vitamin E	585 IU/kg	272 IU/kg
Taurine	1400 mg/kg	1230 mg/kg
Metabolisable energy (ME)[1]	3794 kcal/kg	994 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

The recommended period of use is initially up to 6 months. A gradual transition to a new diet may be especially helpful in cats with CRI. Cats with CRI that remain inappetent or anorexic cats should be assessed for nausea and uraemic gastritis. Warming the product to room temperature can enhance palatability for cats with a fussy appetite.

ADULT MAINTENANCE

Body weight (kg)	Daily feeding quantity			
	Dry only	Pouch only	Dry + pouch combined	
	Dry (g/day)	Pouch/day	Dry (g/day)	Pouch/day
2	30	1 1/3	20	1/3
3	45	2	30	1/2
4	60	2 3/4	35	1
5	75	3 1/3	50	1
> 5	+ 15 g/kg	+ 2/3 pouch/kg	+ 15 g/kg	1

FELINE NF
RENAL FUNCTION™ ADVANCED CARE

Complete dietetic dry pet food for adult cats for the support of renal function in case of advanced stages of feline chronic renal insufficiency (CRI)#.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Help support later stages (IRIS stages 3 & 4) of chronic renal insufficiency
- ✓ Temporary renal insufficiency*
- ✓ The reduction of urate stones formation
- ✓ The support of heart function in the case of chronic cardiac insufficiency
- ✗ Not suitable for pregnancy, lactation and growth

IRIS STAGES 3 & 4

isfm

ST/OX

195 g | 85 g | 1.5 kg and 5 kg

* The recommended period for use shall be two to four weeks.

#Under proper veterinary assessment, pet owners using current NF Renal Function™ can transition to NF Advanced Care™.

KEY BENEFITS

Restricted but high quality protein
to help minimise loss of muscle mass and toxin formation and restricted phosphorus to help slow the progression of chronic renal insufficiency

Increased levels of omega-3 fatty acids: with EPA and DHA
to help support kidney function in the advanced stages of renal insufficiency

Great taste to satisfy cats
with reduced appetite

ADDITIONAL BENEFITS & CHARACTERISTICS

Specifically formulated to meet the needs of cats with advanced stages of CRI

Dietary phosphorus restriction
to help slow the progression of CRI and minimise the risk of secondary nutritional hyperparathyroidism

Helps maximise natural anti-inflammatory processes
thanks to omega-3 fatty acids

Added potassium
to help reduce the risk of hypokalemia in CRI

Added B-complex vitamins
to replace loss through polyuria linked with the CRI

Helps reduce the risk of metabolic acidosis in CRI

Source of fibre to promote good faecal consistency in cats with CRI

Highly digestible formula to help cats with compromised GI function

COMPOSITION (DRY)

Wheat flour*, rice*, wheat gluten*, soya meal*, pork fat, corn protein meal*, corn*, dried beet pulp, dried egg*, fish oil, minerals, digest*, yeast, xylose.

* Protein sources.

COMPOSITION (CAN)

Pork liver, turkey, poultry heart and liver, salmon, pork fat, rice flour, minerals, sunflower oil, fish oil, various sugars.

COMPOSITION (POUCHES)

Salmon variety:
Pork (kidney, liver, meat, dehydrated protein, fat), chicken, salmon (6%), rice, wheat gluten, dried yeast, sunflower oil, fish oil, cellulose, minerals, various sugars.

Chicken variety:
Pork (kidney, liver, meat, dehydrated protein, fat), chicken (8%), salmon, rice, wheat gluten, dried yeast, sunflower oil, fish oil, cellulose, minerals, various sugars.

KEY NUTRIENT VALUES*

	Dry	Wet	Pouches**
Moisture	6.5%	79%	77.2%
Protein	28.0%	7.0%	7.2%
Fat - Omega-6 fatty acids - Omega-3 fatty acids - EPA + DHA	16.0% 2.0% 0.8% 0.6%	9.1% 2.03% 0.24% 0.14%	9.4% 1.32% 0.20% 0.14%
Carbohydrates	43.0%	2.9%	4.1%
Crude fibre	2.0%	0.02%	0.4%
Calcium	0.6%	0.23%	0.18%
Phosphorus	0.33%	0.09%	0.11%
Potassium	0.8%	0.44%	0.34%
Sodium	0.2%	0.06%	0.07%
Vitamin A	25509 IU/kg	75530 IU/kg	35296 IU/kg
Vitamin D_3	1523 IU/kg	282 IU/kg	368 IU/kg
Vitamin E	586 IU/kg	306 IU/kg	282 IU/kg
Taurine	1400 mg/kg	1470 mg/kg	1365 mg/kg
Metabolisable energy (ME)[1]	4067 kcal/kg	1152 kcal/kg	1221 kcal/kg

* Typical analysis in the final product as fed.
** Average of the two varieties.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

The recommended period of use is initially up to 6 months. A gradual transition to a new diet may be especially helpful in cats with CRI. Cats with CRI that remain inappetent or anorexic cats should be assessed for nausea and uraemic gastritis. Warming the product to room temperature can enhance palatability for cats with a fussy appetite.

ADULT MAINTENANCE

Body weight (kg)	Daily feeding quantity						
	Dry only	Pouch only	Dry + pouch combined		Can only	Dry + can combined	
	Dry (g/day)	Pouch/day	Dry (g/day)	Pouch/day	Cans/day	Dry (g/day)	Cans/day
2	30	1	10	⅓	½	10	⅓
3	40	1⅔	20	½	¾	10	½
4	55	2¼	30	1	1	10	¾
5	70	2¾	45	1	1¼	15	1
> 5	+ 15 g/kg	+ ½ pouch/kg	+ 15 g/kg	1	+ ¼ can/kg	+ 10 g/kg	1

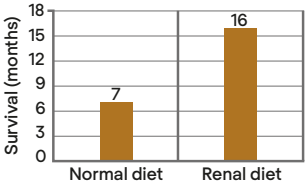
For each additional 1 kg of body weight, feed an additional ¼ of can per day when only wet food, and 15 g of dry food when only dry food fed. When feeding dry and wet can, for each addition of ⅓ Feline NF Can reduce by 20g dry kibble.

1 out of 3 cats over the age of 10 years will be diagnosed with CRI[1,2].

CRI is considered an irreversible condition, but with appropriate dietary intervention we can help to:

- Ameliorate or prevent clinical consequences of CRI and uremia;
- Slow progression of CRI and/or prolong survival;
- Minimize derangements of electrolyte, mineral, and acid-base balance;
- Maintain adequate nutrition[3].

DIETARY MANAGEMENT OF CRI SIGNIFICANTLY IMPROVES SURVIVAL IN CATS[4]



Survival (months) of cats with renal failure fed a conventional diet or commercial renal diet[4]

THE ROLE OF NUTRITION IN CRI

For most cats with CRI, dietary intervention represents the single most important therapeutic intervention[4-6]. As well as improving the quality of life for the cat, clinical studies have consistently shown that well-designed dietary intervention for cats with CRI has the power to help prolong survival and reduce adverse uraemic events[7].

Numerous studies have shown that veterinary diets specially formulated for renal conditions favour better clinical outcomes, improve quality of life, and can extend life span in cats, when compared to feeding maintenance diets[4,5,8,9].

The IRIS (International Renal Interest Society) board was created to help practitioners better diagnose, understand, and treat renal disease in cats and dogs. They have created an internationally recognized set of guidelines for classifying and treating renal insufficiency.

The staging system is not used to make a diagnosis but is used to facilitate appropriate treatment, monitoring, and further diagnostics[3].

Accurate staging of CRI is key in order to provide the right management to your feline patients at every stage.

1. Lulich JP, Osborne CA, O'Brien TD, *et al.* 1992. Feline renal failure: Questions, answers, questions. *Compendium of Continuing Education for Practicing Veterinarians,* **14(2),** 127-151.
2. ISFM Consensus guidelines on the diagnosis and management of Feline Chronic Kidney Disease. 2016. *J Fel Med and Surg.* **18,** 219–239
3. International Renal Interest Society. IRIS staging of CKD (modified 2019). Available at: http://www.iris-kidney.com/pdf/IRIS_Staging_of_CKD_modified_2019.pdf
4. Plantinga EA, Everts H, Kastelein AMC, Beynen AC. 2005. Retrospective study of the survival of cats with acquired chronic renal insufficiency offered different commercial diets. *Vet Rec.* **157:**185-87.
5. Elliott J, Rawlings JM, Markwell PJ, Barber PJ. 2000. Survival of cats with naturally occurring chronic renal failure: effect of dietary management. *J Small Anim Pract.* **41:**235-42.
6. Plotnick A. 2007. Feline chronic renal failure: long-term medical management. *Compend Contin Educ Vet.* **29:**342-50.
7. Polzin DJ, Churchill JA. 2016. Controversies in Veterinary Nephrology: Renal diets are Indicated for cats with international renal interest society chronic kidney disease stages 2 to 4: The Pro View. *Vet Clin North Am Small Anim Pract.* **46:**1049-65.
8. Cupp CJ, Kerr WW, Jean-Philippe C, *et al.* 2008. The role of nutritional interventions in the longevity and maintenance of long-term health in aging cats. *Int J App Res in Vet Med.* **6(2),** 69-81.
9. Ross SJ, Osborne CA, Kirk CA, *et al.* 2006. Clinical evaluation of dietary modification for treatment of spontaneous chronic kidney disease in cats. *Journal of the American Veterinary Medical Association,* **229(6):** 949-957.

IRIS STAGING AND NUTRITION

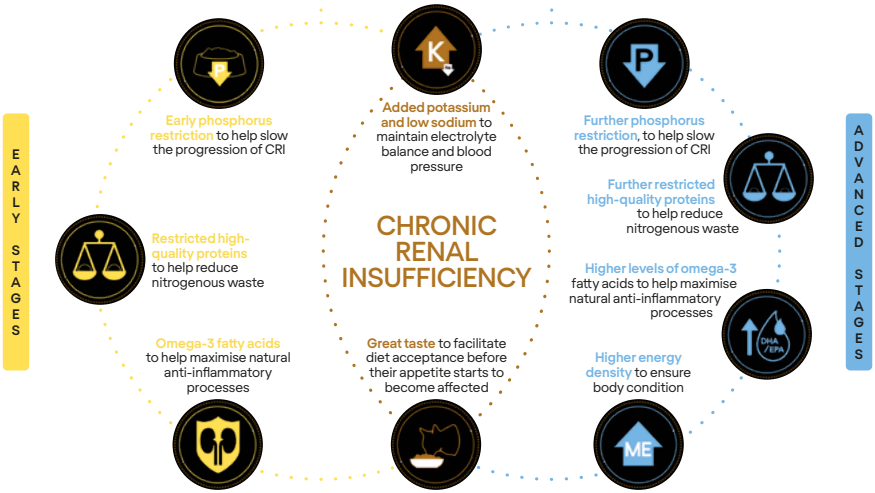
During the **earlier stages of CRI (IRIS 1 & 2),** the progressive damage to the kidney tissue is compensated by the undamaged nephrons thorugh hypertrophy and increased glomerular filtration rate (GFR). While, in the more **advanced stages (IRIS 3 & 4),** the compensative response cannot be maintained and over time the GFR declines to less than 30% and systemic signs of kidney failure, such as azotaemia, can be detected.

Nowadays renal diets offer different formulations depending on the progression of CRI and IRIS staging. The challenge is to balance the unique nutrient needs of cats, as strictly carnivorous, and the dietary modifications that will help ameliorate clinical signs and slow the progression of CRI.

NUTRITIONAL MODIFICATIONS AND BENEFITS OF DIETS SPECIALLY FORMULATED FOR RENAL CONDITIONS IN CATS[1,2,3,4,5,6]

Supporting kidney function through diet since early stages of CRI is important to help maintain balance of electrolytes, control calcium-phosphorus levels and help reduce nitrogenous waste products.

In advanced stages, the content of phosphorus and protein in the diet should be further restricted because the levels of excretion through urine decrease as the condition progresses.



CLINICAL ADVANTAGES WITH THE USE OF FELINE NF RENAL FUNCTION™

PRO PLAN® VETERINARY DIETS NF RENAL FUNCTION™ EARLY CARE	PRO PLAN® VETERINARY DIETS NF RENAL FUNCTION™ ADVANCED CARE
Early phosphorus restriction to help slow the progression of CRI	Further **phosphorus** restriction to help slow the progression of CRI
Moderate **high-quality proteins** to help reduce nitrogenous waste	Further restricted **high-quality proteins** to help reduce nitrogenous waste
Added **omega-3** fatty acids	Higher levels of **omega-3** fatty acids
Added **potassium** and reduced **sodium**	Added **potassium** and reduced **sodium**
	Higher **energy density** than Early Care to ensure maintenance of body condition

It is important to ensure that **patients will accept the diet and will eat it consistently from the early stages of CRI,** before their appetite starts to become affected as a consequence of uraemic toxins.

The **biological value of protein,** including a complete amino acid profile and high protein digestibility, is key to maintain lean muscle mass and maintain healthy weight at any stage of CRI.

1. Plantinga EA, Everts H, Kastelein AMC, *et al.* 2005. Retrospective study of the survival of cats with acquired chronic renal insufficiency offered different commercial diets. *Veterinary Record,* **157(7),** 185-187.
2. Ross SJ, Osborne CA, Kirk CA, *et al.* 2006. Clinical evaluation of dietary modification for treatment of spontaneous chronic kidney disease in cats. *Journal of the American Veterinary Medical Association,* **229(6):** 949-957.
3. Laflamme D, Backus R, Brown S, *et al.* 2020. A review of phosphorus homeostasis and the impact of different types and amounts of dietary phosphate on metabolism and renal health in cats. *J Vet Int Med.* **34(6),** 2187-2196.
4. Barber PJ, Rawlings JM, Markweu PJ, *et al.* 1999. Effect of dietary phosphate restriction on renal secondary hyperparathyroidism in the cat. *J Small Anim Pract.* **40(2):**62–70.
5. Syme HM, Markwell PJ, Pfeiffer D, *et al.* 2006. Survival of cats with naturally occurring chronic renal failure is related to severity of proteinuria. *J Vet Intern Med.* **20(3):**528–535.
6. Polzin D, Churchill J. 2016. Controversies in veterinary nephrology: renal diets are indicated for cats with international renal interest society chronic kidney disease stages 2 to 4: the pro view. *Vet Clin North Am Small Anim Pract.* **46(6):**1049–1065.

FELINE OM ST/OX OBESITY MANAGEMENT™

Complete dietetic pet food for adult cats for the reduction of excessive body weight, formulated with low energy density.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Obesity
- ✓ Constipation
- ✓ Hyperlipidaemia
- ✓ Diabetes mellitus in overweight cats
- ✗ Not suitable for growth and reproduction

85 g 350 g, 1.5 kg and 5 kg

KEY BENEFITS

High protein level to help promote loss of body fat while maintaining muscles mass

Low calorie diet
to help with weight loss

Urinary security
Helps minimise the occurrence of struvite and calcium oxalate urinary stones, more common in overweight cats

ADDITIONAL BENEFITS & CHARACTERISTICS

Proven effective solution for weight loss
Supported by clinical trials on obese cats

Helps maintain optimal body weight after weight loss
The same diet can be fed for maintenance to reduce the risk of rebound obesity

Helps reduce caloric intake while maintaining satiety
High level of protein and fibres

Helps support joint health which is commonly compromised in obese cats
Enriched with natural sources of glycosaminoglycans (GAGs) and omega-3 fatty acids

COMPOSITION (DRY)

Wheat gluten, corn protein meal, soya meal, dried poultry protein, wheat flour, pea hulls, cellulose, digest, minerals, soya protein powder, pork fat, fish oil, yeast, xylose.

COMPOSITION (POUCH)

Pork (liver, kidney, lung), chicken (4%), dehydrated salmon protein, dehydrated pork protein, pea fibre, flour rice, cellulose, corn starch, minerals.

KEY NUTRIENT VALUES*	Dry	Pouch
Moisture	6.5%	80.0%
Protein	48%	10.6%
Fat - Omega-6 fatty acids - Omega-3 fatty acids	8% 1.5% 0.4%	2.5% 0.23% 0.10%
Carbohydrate	22%	3.0%
Crude fibre	7.5%	1.4%
Taurine	1707 mg/kg	1806 mg/kg
Vitamin E	559 IU/kg	103 IU/kg
Metabolisable energy (ME)[1]	3428 kcal/kg	752 kcal/kg

* Typical analysis in the final product as fed.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

It is recommended that a veterinarian's opinion be sought before use or before extending the period of use. A transition period when starting the diet is advised and for an efficient weight loss or ideal weight maintenance, the recommended daily energy intake should not be exceeded. Recommended length of time: until target body weight is achieved and after if required to maintain target bodyweight. 1 pouch = 20g of Feline OM ST/OX Obesity Management™ dry.

The suggested daily food intake for weight loss is **based on the cat's starting weight**, average caloric requirements and a desired safe weight **loss of 1% body weight per week**. Daily food intake must be adjusted according to response, generally every 2-4 weeks. PURINA® PRO PLAN® VETERINARY DIETS OM ST/OX Obesity Management™ must be fed until target **Body Condition Score (BCS)** is achieved. Feline OM ST/OX Obesity Management can be fed long-term for cats prone to gain weight using the maintenance feeding quantities.

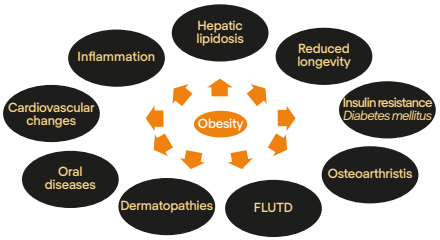
WEIGHT LOSS				
Body weight (kg)	Dry only (g/day)	Wet only (Pouch /day)	Dry + pouch	
			Dry (g/day)	Wet (pouch /day)
4	35	2	20	1
5	45	2 ½	25	1
6	55	3	35	1
7	65	3 ½	45	1
8	75	4	55	1
10	95	5	55	2

MAINTENANCE				
Body weight (kg)	Dry only (g/day)	Wet only (Pouch /day)	Dry + pouch	
			Dry (g/day)	Wet (pouch /day)
4	45	2 ½	30	1
5	60	3	40	1
6	70	3 ¾	50	1
7	80	4 ⅓	65	1
8	95	5	75	1
10	115	6 ⅔	80	2

For each additional 1 kg of body weight feed an additional 10g of dry food or ½ pouch for weight loss and feed an additional 10g of dry food or ⅔ pouch for weight maintenance.

Obesity and excess body weight has become a major problem in cats in many regions of the world, just as it is amongst human beings. Studies suggest that up to 40% of cats may be overweight, with up to 5-10% being classified as obese[1].

Numerous diseases have been linked with excess body weight in cats[2].



THE ROLE OF NUTRITION IN SUCCESSFUL WEIGHT LOSS

The goal is to encourage gradual weight loss, aiming for a reduction of approximately 1% body weight per week. This weight loss rate is more likely to result in long-term success and reduces or avoids complications such as hepatic lipidosis associated with rapid weight loss. Appropriate dietary management should include consideration of:

- Maintenance of lean body weight and loss of excess fat
- Using a diet with increased nutrient: calorie ratio to ensure proper nutrition in the face of reduced calorie intake
- Appropriate overall caloric restriction
- Enhanced satiety if possible to discourage excess consumption
- Excellent palatability to encourage owner compliance and maintain the important part of the human-animal bond associated with feeding

CLINICAL ADVANTAGES WITH THE USE OF FELINE OM ST/OX OBESITY MANAGEMENT ™

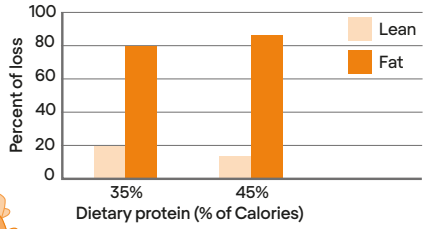
PURINA® PRO PLAN® VETERINARY DIETS OM ST/OX Obesity Management™ is characterised by:

High protein levels and high protein: calorie ratio that have been proven to minimise loss of lean weight and encourage loss of fat during weight loss in cats[3].

High protein levels that help reduce the oxidative stress during weight loss in cats[4].

High protein, low fat and high fibre levels that reduce caloric density leading to effective weight loss and may increase satiety.

INCREASED PROTEIN = INCREASED FAT LOSS IN CATS[3]



A diet suitable for both **weight loss** and **weight maintenance** in cats prone to obesity.

The reassurance of a diet that **reduces the risk of urinary calculus** formation.

1. German AJ. The growing problem of obesity in dogs and cats. *J Nutr.* 2006: **136**:1940-46.
2. Kienzle E, Bergler R. Human-animal relationship of owners of normal and overweight cats. *J Nutr.* 2006: **136**:1947-50.
3. Laflamme DP, Hannah SS. Increased dietary protein promotes fat loss and reduces loss of lean body mass during weight loss in cats. *Intern J Appl Res Vet Med.* 2005: **3**:62-68.
4. Tanner AE, Martin J, Thatcher CD, Saker KE. Nutritional amelioration of oxidative stress induced by obesity and acute weight loss. *Comp Cont Ed Pract Vet.* 2006: **28**:72.

Other relevant literature
- Laflamme DP. Understanding and managing obesity in dogs and cats. *Vet Clin North Am Small Anim Pract.* 2006: **36**:1283-95.
- Laflamme DP. Development and validation of a body condition score system for cats: a clinical tool. *Feline Pract.* 1997: **25**:13-18.

FELINE UR St/Ox URINARY™

Complete dietetic pet food for adult cats for the dissolution and reduction of recurrence of struvite stones. It is also formulated for the nutritional management of cats with lower urinary tract disease.

RECOMMENDED FOR & NOT RECOMMENDED FOR

- ✓ Dissolution of struvite uroliths
- ✓ Reduction of struvite urolith recurrence
- ✓ Helps reduction of oxalate urolith recurrence
- ✓ Idiopathic cystitis
  - Feline Lower Urinary Tract Disease (FLUTD)
- ✗ Not suitable for growth and reproduction
- ✗ Chronic renal insufficiency
- ✗ Other conditions associated with diuresis
- ✗ Fluid retention such as ascites and oedema

195 g | 85 g | 350 g, 1.5 kg and 5 kg

KEY BENEFITS

LOW RSS

With St/Ox urinary security to reduce the risk of urinary Struvite and Oxalate crystals and stone formation

STRUVITE DISSOLUTION

To help promote dissolution of urinary struvite stones

MODERATE KCAL

Moderate calories to help maintain ideal body weight

ADDITIONAL BENEFITS & CHARACTERISTICS

Helps minimise the occurrence of both struvite and calcium oxalate stones
Reduced urinary mineral concentrations

Helps to promote effective urine dilution reducing concentrations of minerals and irritants in the urine
Wet and dry diets both formulated to increase water intake

Helps support the bladder mucosal barrier
Natural source of glycosaminoglycans (GAGs) precursors

Help maximise natural anti-inflammatory processes
Source of omega-3 fatty acids

COMPOSITION (DRY)

Chicken variety:
Rice, wheat flour, dried poultry protein (16%, of which 50% chicken), corn protein meal, pea protein, dried egg, minerals, dried beet pulp, pork fat, digest, corn, fish oil.

Urine acidifying substance: phosphoric acid.

Ocean fish variety:
Rice, corn protein meal, wheat flour, dried poultry protein, soya protein, pea protein, corn, pork fat, dried salmon protein (4%), dried beet pulp, minerals, dried egg, digest, fish oil.

Urine acidifying substance: phosphoric acid.

COMPOSITION (CAN)

Pork kidney, liver & lung, turkey, poultry heart & liver, rice flour, cellulose, minerals, various sugars.

COMPOSITION (POUCHES)

Salmon variety:
Chicken, pork, salmon (7%), rice flour, minerals, cellulose, various sugars.

Urine acidifying substances: calcium sulphate, sodium bisulphate.

Chicken variety:
Chicken (17%), pork, salmon (4,5%), rice flour, minerals, cellulose, various sugars.

Urine acidifying substances: calcium sulphate, sodium bisulphate.

KEY NUTRIENT VALUES*

	Dry**	Wet (can)	Wet (pouch)**
Moisture	6.5%	80.8%	80.7%
Protein	35%	10%	9.5%
Fat	12%	5.0%	4.5%
Carbohydrate	37%	2.1%	2.1%
Crude fibre	1.5%	0.4%	0.6%
Calcium	0.9%	0.14%	0.16%
Phosphorus	0.9%	0.14%	0.16%
Sodium	1.2%	0.10%	0.36%
Potassium	0.7%	0.26%	0.15%
Magnesium	0.08%	0.02%	0.02%
Chloride	2.4%	0.22%	0.42%
Sulphur	0.3%	0.21%	0.20%
Taurine	1730 mg/kg	1788 mg/kg	1729 mg/kg
Vitamin E	605 IU/kg	143 IU/kg	164 IU/kg
Metabolisable energy (ME)[1]	3797 kcal/kg	906 kcal/kg	843 kcal/kg
RSS struvite	<1	<1	<1
RSS oxalate	<10	<10	<10
Urinary pH	6 – 6.3	6 – 6.3	6 – 6.3

* Typical analysis in the final product as fed. ** Average of the two varieties.
[1] Calculated following NRC 2006 equations.

FEEDING GUIDELINES

Recommended length of time for use: For dissolution of struvite stones, an initial feeding period of 5-12 weeks is recommended; for reduction of recurrence: initially up to 6 months. For long-term use, an initial feeding period of up to 6 months is recommended, but the cat should be re-evaluated regularly as indicated by the underlying condition.

DAILY FEEDING QUANTITY

Body weight (kg)	Daily feeding quantity						
	Dry only (g/day)	Wet only (can/day)	Wet only (pouch/day)	Dry + can combined		Dry + pouch combined	
				Dry (g/day)	Can/day	Dry (g/day)	Pouch/day
2	30	⅔	1 ½	10	½	25	⅓
3	45	1	2 ⅓	20	½	35	½
4	60	1 ⅓	3	15	1	40	1
5	75	1 ⅔	4	30	1	55	1
6	90	2	4 ⅔	40	1	70	1
7	105	2 ⅓	5 ½	55	1	85	1
8	120	2 ⅔	6 ¼	70	1	100	1

For each additional kg of body weight, feed an additional 15 g of dry food or ⅓ of can or ¾ pouch per day.
When feeding dry and wet can, for each addition of ¼ Feline UR wet can, reduce by 10g dry kibble.

GENERAL PRINCIPLES FOR THE MANAGEMENT OF URINARY STONES

1. Surgical removal or dietary dissolution of the stones with PURINA® PRO PLAN® VETERINARY DIETS UR St/Ox Urinary™*.
2. Quantitative analysis of the stones to determine future management.
3. Eliminate and manage the recurrence of urinary tract infections or other underlying conditions that may contribute to stone formation.
4. Encourage water consumption. This increases urine output and lowers the urinary concentration of mineral components.

GUIDELINES FOR REDUCING THE RISK OF URINARY STONE RECURRENCE

Urinary stones form as a result of varying combinations of underlying risk factors, many of which are uncontrollable inherent metabolic or genetic factors. Surgical removal of stones does not eliminate the underlying metabolic risk factors. Therefore, it is important to attempt to control as many external risk factors as possible. For cats with urolithiasis, the right nutrition can promote a specific targeted pH (between 6 and 6.3) to help dissolve struvite stones and crystals and can also prevent the formation of calcium oxalate. It is also key to ensure dilution of the urine, which can be achieved through additional hydration such as feeding wet food.

STRUVITE STONES (MAGNESIUM AMMONIUM PHOSPHATE) IN CATS

1. Feed a mildly acidifying diet formulated to produce a relative supersaturation (RSS) below 1 (such as Feline UR St/Ox Urinary™) to enable the dissolution of the struvite.
2. Culture the urine and administer appropriate antibiotic therapy if indicated. Most cases of struvite stones in cats are not associated with primary infection, but may result in a secondary infection.
3. Increase water consumption. Feline UR St/Ox Urinary™ promotes increased water intake and increased urine volume.

CALCIUM OXALATE STONES IN CATS (RECURRENCE PREVENTION)

1. IncreaseIncrease water consumption. Feline UR St/Ox Urinary™ promotes increased water intake and increased urine volume.
2. Avoid over-restriction of dietary magnesium. Magnesium is a natural inhibitor of calcium oxalate stones.
3. Feed a diet, such as Feline UR St/Ox Urinary™, that results in urine that is at least metastable for calcium oxalate (assessed by RSS).
4. If hypercalcemia is present, identify and eliminate the cause.

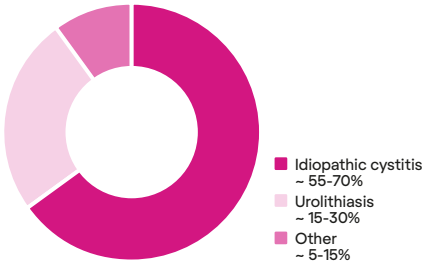
URATE STONES IN CATS

1. Rule out or correct portosystemic shunt if present.
2. Feed a low purine diet.

* Struvite stones.

The two most common causes of feline lower urinary tract disease (FLUTD) are idiopathic cystitis and urolithiasis, together accounting for up to 80-90% of cases[1]. Overall recurrence rates of up to 40-45% have been reported[1].

APPROXIMATE FREQUENCY OF CAUSES OF FLUTD[2,3,4]



FELINE IDIOPATHIC CYSTITIS

By definition, the cause of idiopathic cystitis in cats remains obscure, although both stress and abnormalities of the uroepithelial barrier have been reported. At present, the recommended approach to managing cats with recurrent idiopathic cystitis is[1]:

- Environmental enrichment
- Reduction of stress
- Encouraging water intake
- Additional medical therapy in refractory cases (which may include analgesics and amitriptyline)

FELINE UROLITHIASIS

Fundamental to urolith development is supersaturation of the urine with the calculogenic crystalloids – without this crystal and urolith formation will not occur.

Other factors that may play a role include genetics, age, concurrent diseases, gender, and urine composition of various promoters and inhibitors of crystal formation.

Calculogenic crystalloids may be present in urine in one of three concentration ranges:

- **Supersaturation:** if the crystalloid concentration falls in this zone, spontaneous crystal formation and growth may occur
- **Metastable saturation:** concentrations in this zone will not permit spontaneous crystallisation, although growth of pre-formed crystals is possible
- **Undersaturation:** in this zone the urine is undersaturated and crystal dissolution may occur

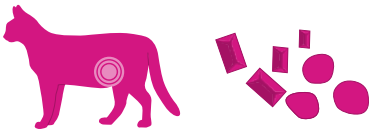
There are two types of urolith: struvite (magnesium ammonium phosphate) and calcium oxalate, which account for 80% or more of all feline uroliths. Today, the prevalence of struvite and oxalate uroliths are similar. While the development of struvite uroliths is sensitive to urine pH (the crystalloids being much less soluble in alkaline urine), the development of oxalate crystals is much less influenced by urine pH.

1. Hostutler RA, Chew DJ, DiBartola SP. Recent concepts in feline lower urinary tract disease. *Vet Clin Small Anim* 2005: **35**;147-70.
2. Torres-Henderson C, Bunkers J, Contreras ET, Cross E, Lappin MR. Use of PURINA® PRO PLAN® VETERINARY DIETS UR Urinary St/Ox to Dissolve Struvite Cystoliths. *Top Companion Anim Med.* 2017: **32(2)**:49-54.
3. Picavet P, *et al.* Analysis of 4495 canine and feline uroliths in the Benelux. A retrospective study: 1994-2004. *J Anim Physiol Anim Nutr(Berl).* 2007: **91;**247-51.
4. Cannon AB, *et al.* Evaluation of trends in urolith composition in cats: 5,230 cases (1985-2004). *J Am Vet Med Assoc.* 2007: **231;**570-6.

CLINICAL ADVANTAGES WITH THE USE OF FELINE UR ST/OX URINARY™

PURINA® PRO PLAN® VETERINARY DIETS UR ST/OX Urinary™ has been specifically designed to **benefit cats with FLUTD –** promoting a higher volume and lower concentration of urine, urine with a low RSS for both struvite and oxalate.

One study[2] reported the efficacy of feeding PURINA® PRO PLAN® VETERINARY DIETS UR ST/OX Urinary™ for the dissolution of struvite uroliths in cats with naturally occurring disease. The results of the study suggest that feeding PURINA® PRO PLAN® VETERINARY DIETS UR ST/OX Urinary™ can **successfully dissolve cystoliths** that are likely struvite and may lessen the risk of recurrence of struvite and calcium oxalate uroliths.

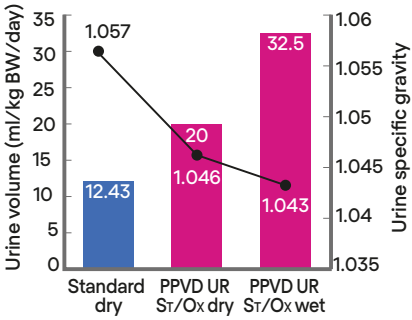


IDIOPATHIC CYSTITIS

Feline UR ST/OX Urinary™ provides:

- a moderate and proven safe salt content (1.2% as fed) in the dry formulation to encourage an increased urine volume
- increased urine volume and decreased urine specific gravity (SG), to promote more frequent urination and a lower concentration of substances that may irritate the urothelium
- added omega-3 fatty acids and natural GAGs, that may help to reduce bladder inflammation and support the integrity of the bladder lining

URINE SG AND VOLUME IN CATS FED FELINE UR ST/OX[2]



STRUVITE AND OXALATE UROLITHIASIS

PURINA® PRO PLAN® VETERINARY DIETS UR ST/OX Urinary™ contains reduced fat and optimum protein levels to help prevent obesity, a known risk factor for urolithiasis. Tested with RSS Feline UR ST/OX Urinary promotes a urine:

- undersaturated for struvite, producing an environment where struvite crystals and stones can dissolve, and where their formation is prevented,
- in the low metastable range for calcium oxalate – an environment that should prevent *de novo* crystallisation and greatly reduce the risk of any crystal/stone growth,
- in a controlled pH range (6.0-6.3), ideal for managing struvite crystalluria and not detrimental to oxalate.

Other relevant literature
- Picavet P, Detilleux J, Verschuren S, Sparkes A, Lulich J, Osborne C *et al.* Analysis of 4495 canine and feline uroliths in the Benelux. A retrospective study: 1994-2004. *J Anim Physiol Anim Nutr(Berl).* 2007: **91**:247-51.
- Cannon AB, Westropp JL, Ruby AL, Kass PH. Evaluation of trends in urolith composition in cats: 5,230 cases (1985-2004). *J Am Vet Med Assoc.* 2007: **231**:570-6.

PURINA PRO PLAN EXPERT CARE NUTRITION

CANINE EXPERT CARE NUTRITION

CONTENTS

To help you in your daily practice, we provide the **"average" nutrient values**, which are representative of what is in the product. These **may not always correspond to the labelling values** under "nutritional additives". For additives, the EU feed regulation requires that the "added" values be declared, which is different to the "average" content found in the product (representative of process losses and nutrients brought by the ingredients) (REGULATION (EC) No 767/2009).

PURINA® PRO PLAN® EXPERT CARE NUTRITION WITH ACTI-PROTECT™. THE LINK BETWEEN IMMUNITY AND NUTRITION AT EVERY LIFE STAGE

All PURINA® PRO PLAN® EXPERT CARE NUTRITION formulas are enriched with **ACTI-PROTECT™**, containing bovine colostrum. PURINA®'s research studies have proven that nutritional supplementation with bovine colostrum can help **support pet's local and systemic immune responses** whilst contributing to a **balanced intestinal microbiota**, not just after birth but also throughout all their life stages.

During their lives, pets experience significant events that may pose a challenge to their immune status. Therefore, the Expert Care Nutrition range with ACTI-PROTECT™ offers health support through immunonutrition at every life stage:

- The "immunity gap" is a critical window during which puppies have not yet developed a fully functional immune system and the antibodies acquired from maternal colostrum start decreasing. Feeding a diet containing bovine colostrum may help bridge this gap and provide protection during this critical period of development[1]
- Stressful situations during growth can lead to suppression of the immune system and alterations in their gastrointestinal tract[2,3]. Feeding a diet containing bovine colostrum can benefit young pets by strengthening their overall health during their first year of life
- Feeding a diet containing bovine colostrum can help adult pets to cope with daily environmental stressors, changes in feeding behaviour and health challenges[4,5]. Also, it can help support older pets whose immune systems can be weakened by age

* PURINA®'s colostrum supplier controls the IgG content of each colostrum ingredient. Lactoferrin is measured sporadically and known to be found in colostrum based on literature.

1. Chastant S, Mila H. 2019. Passive immune transfer in puppies. *Animal Reproduction Science*. **207**:162-170.
2. Gore AM, Satyaraj E, Labuda J, Engler R, Sun P, Kerr W and Conboy-Schmidt L. 2021. Supplementation of Diets With Bovine Colostrum Influences Immune and Gut Function in Kittens. *Front. Vet. Sci.* **8**:675712.
3. Giffard CJ, Mitsuro SM, Markwell PJ, *et al.* 2004. Benefits of Bovine Colostrum on Fecal Quality in Recently Weaned Puppies. *Journal of Nutrition*. **134**:2126S-2127S.
4. Satyaraj E, Reynolds A, Pelker R, *et al.* 2013. Supplementation of diets with bovine colostrum influences immune function in dogs. *British Journal of Nutrition*. **110(12)**: 2216-2221.
5. Bailey MT, Dowd ES, Parry MA, *et al.* 2010. Stressor Exposure Disrupts Commensal Microbial Populations in the Intestines and Leads to Increased Colonization by Citrobacter rodentium. *Infection and Immunity*. 1509-1519.

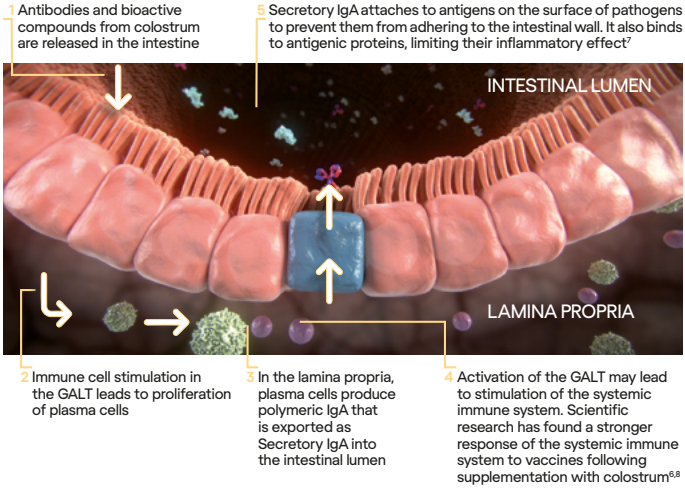
HOW COLOSTRUM INFLUENCES THE IMMUNE SYSTEM AND SUPPORTS INTESTINAL HOMEOSTASIS

The gut-associated lymphoid tissue (GALT), which contains more than 70% of all immune cells in the body[1], is a vital first line of defence, together with the intestinal barrier. The GALT is very closely related to the intestinal barrier, which is colonised by the gut microbiota and is crucial to maintain a healthy intestinal homeostasis[2].

The gut microbiota is also involved in many host life-processes, such as energy requirement, metabolism, immunologic activity, and neuro-behavioural development[3]. However, many factors can affect the gut microbiota composition, including diet, age, medication, illness and stress[3].

Research has proven that, upon reaching the gut, the rich amount of immunoglobulins in colostrum stimulate the immune cells of the intestinal tract[4]. This process is followed by a local release of IgA which may help to balance the gut microbiota through both the maintenance of non-invasive commensal bacteria and increasing gut microbiota diversity[5]. Moreover, the activation of the GALT can lead to the stimulation of the systemic immune system[4].

The bioactive compounds found in bovine colostrum* may help support immunity and enhance gut microbiota stability through different mechanisms:



* PURINA®'s colostrum supplier controls the IgG content of each colostrum ingredient. Lactoferrin is measured sporadically and known to be found in colostrum based on literature.

1. Vighi G, Marcucci F, Sensi L, *et al.* 2008. Allergy and the gastrointestinal system. *Clinical and Experimental Immunology,* 153(Suppl 1): 3–6.
2. Farré R, Fiorani M, Rahiman SA, *et al.* 2020. Intestinal Permeability, Inflammation and the Role of Nutrients. *Nutrients,* (12)-1185.
3. Purchiaroni F, Tortora A, Gabrielli M, *et al.* 2013. The role of intestinal microbiota and the immune system. *European Review for Medical and Pharmacological Sciences.* **17**: 323–333.
4. Satyaraj E. 2011. Emerging Paradigms in Immunonutrition. *Topics in Companion Animal Medicine.* **26(1)**:25-32
5. Gutzeit C, Magri G, Cerutti A. 2014. Intestinal IgA production and its role in host-microbe interaction. *Immunology review,* **260(1)**:76-85.
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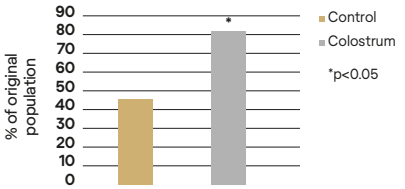
8. Gore A. Beneficial Effects of Natural Antibodies in Cats. Nestlé PURINA® PetCare Internal Report. 2010.

SUPPLEMENTATION OF DIETS WITH BOVINE COLOSTRUM INFLUENCES IMMUNE FUNCTION IN DOGS[1]

METHOD

- 24 adult dogs
- During an 8 week long pre-test phase, all dogs were fed the same control diet
- At the end of the pre-test phase all dogs were given a canine distemper virus (CDV) vaccine
- A 40 week test phase followed where all dogs continued on the same control diet, but half were supplemented with bovine colostrum
- Blood and faecal samples were collected every 4 weeks

Figure 1
MEASURE OF MICROFLORA STABILITY



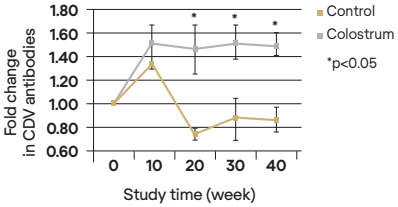
During stress, dogs fed a colostrum-supplemented diet had more stable gut microflora

RESULTS

Dogs who were fed a diet with supplemented colostrum showed:

- Increased intestinal microflora diversity
- Increased microflora stability following stress (Figure 1)
- Increased SIgA (secretory IgA) in faeces
- Greater and longer lasting antibody levels following the CDV vaccine (Figure 2)
- No increase in levels of inflammatory C-reactive protein despite the enhanced immunity to the CDV vaccine proving there was no over-stimulation of the immune system

Figure 2
CDV VACCINE RESPONSE



CDV antibody levels were higher in dogs fed a colostrum-supplemented vs. a control diet

1. Satyaraj E, Reynolds A, Pelker R, *et al.* 2013. Supplementation of diets with bovine colostrum influences immune function in dogs. *British Journal of Nutrition*. **110(12)**: 2216-2221.

ACTI-PROTECT™ PUPPY SMALL & MINI

Complete dry pet food for small and mini size puppies, rich in lamb.
Also suitable for gestating / lactating bitches.

KEY BENEFITS

- Contains fish oil, a source of DHA, essential for healthy brain and vision development
- Contains beet pulp, a prebiotic scientifically proven to increase bifidobacteria for a better gut microflora balance
- Helps maintain good faecal quality during weaning periods
- Contains bentonite – a clay that binds excess water, which in combination with other fibre sources will help improve faecal quality
- A combination of key nutrients that helps to support healthy joints for your puppy's active lifestyle

3kg

Helps strengthen puppies immune response up to 50% more

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality lamb (including lungs and liver) (20%), dried poultry protein, rice, soya meal, animal fats, dried beet pulp (5.5%), corn protein meal, corn grits, corn, dried egg, minerals, fish oil (1%), digest, dried colostrum (0.1%).

KEY NUTRIENT VALUES*			
Moisture	8%	Calcium	1.52%
Protein	34%	Phosphorus	1.04%
Fat	21%	Vitamin D_3	1090 IU/kg
- Omega-6	1.84%	Vitamin A	18924 IU/kg
- Omega-3	0.36%	Vitamin E	214 IU/kg
- DHA	0.05%	Vitamin C	60 mg/kg
- EPA + DHA	0.19%		
Carbohydrate	26.5%	Metabolisable energy (ME)[1]	4.1 kcal/g
Crude fibre	2.5%		

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY				
Adult weight (kg)	Puppy age (months)			
	1.5 – 3	4 – 5	6 – 8	9 – 12
1	30 – 45	50 – 45	45 – 40	40 – 35
3	60 – 90	95 – 100	95 – 85	80
6	85 – 135	145 – 150	150 – 135	130 – 125
10	100 – 175	190 – 205	205 – 180	175

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3kg and 10kg

Helps strengthen puppies immune response up to 50% more

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality lamb (including lungs and liver) (20%), dried poultry protein, corn, rice, soya meal, animal fats, dried beet pulp (5.5%), digest, dried egg, minerals, fish oil (0.8%), dried colostrum (0.1%).

KEY NUTRIENT VALUES*

Moisture	8%	Calcium	1.36%
Protein	30%	Phosphorus	0.96%
Fat	19%	Vitamin D_3	1068 IU/kg
- Omega-6	1.78%	Vitamin A	19357 IU/kg
- Omega-3	0.32%	Vitamin E	215 IU/kg
- DHA	0.05%	Vitamin C	60 mg/kg
- EPA + DHA	0.17%	Metabolisable energy (ME)[1]	3.99 kcal/g
Carbohydrate	32.5%		
Crude fibre	2.5%		

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY

Adult weight (kg)	Puppy age (months)				
	1.5 – 3	4 – 5	6 – 8	9 – 11	12 – 24
1	30 – 45	50	50 – 40	40	40 – Adult
5	80 – 125	130 – 135	135 – 115	125 – 115	115 – Adult
10	105 – 180	195 – 210	210 – 180	185 – 180	180 – Adult
15	130 – 230	270 – 290	295 – 280	265 – 250	230 – Adult
20	145 – 270	325 – 355	360 – 345	325 – 305	280 – Adult
25	150 – 300	330 – 385	420 – 400	380 – 360	330 – Adult
35	185 – 310	390 – 420	450 – 495	515 – 480	420 – 415
45	200 – 305	405 – 435	455 – 505	540 – 515	460 – 475
60	250 – 400	480 – 540	585 – 660	700 – 660	580 – 575
70	280 – 450	535 – 600	650 – 730	775 – 730	645 – 640

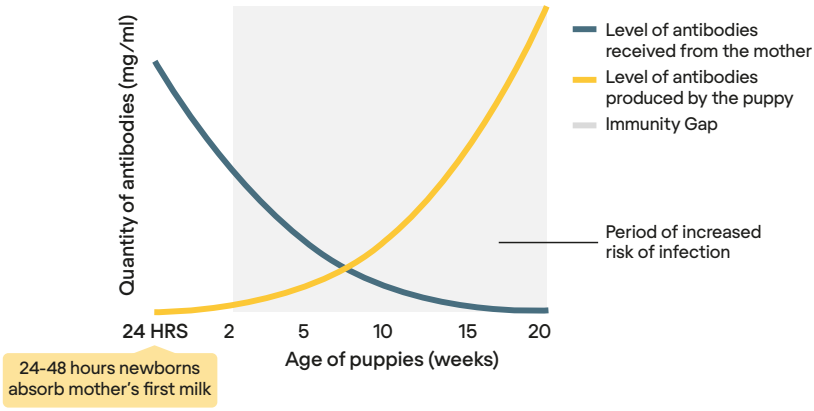
PURINA® PRO PLAN® EXPERT CARE NUTRITION Puppy and **PURINA® PRO PLAN® EXPERT CARE NUTRITION Puppy Small & Mini** are complete pet foods suitable both for puppies, during weaning and growth, and for pregnant and lactating bitches.

Both recipes are specially formulated for **total dental care**, with a combination of vitamins and minerals for strong teeth and healthy gums. They also contain fish oil, a source of **DHA**, which is essential for brain and vision development[1].

PURINA® PRO PLAN® EXPERT CARE NUTRITION Puppy and **PURINA® PRO PLAN® EXPERT CARE NUTRITION Puppy Small & Mini** also include **bentonite**, which is a natural clay that helps support the production of firm stools. It binds intestinal waste products, harmful bacteria and toxins carrying them harmlessly out in the stool and protecting the intestinal mucosa[2,3]. Additionally, bentonite absorbs excess water in the colon, helping to firm up the stools. They also contain **beet pulp**, which is a prebiotic, providing soluble fibres which help support gastrointestinal health, increasing short chain fatty acid production and producing higher levels of Lactobacilli in the faeces[4].

PURINA® PRO PLAN® EXPERT CARE NUTRITION Puppy and **PURINA® PRO PLAN® EXPERT CARE NUTRITION Puppy Small & Mini** are enriched with ACTI-PROTECT™, containing bovine colostrum. As previously explained, nutritional supplementation with bovine colostrum is scientifically proven to enhance puppies immune response and optimise gut microbiota balance.

For the newborns, maternal colostrum is key during their first 24-48h as it supports their immune systems while they are still maturing, by transferring passive immunity from the mother. Nutritional supplementation with bovine colostrum can help support puppies immune systems during the "immunity gap" – a critical window during which puppies have not yet developed a fully functional immune system and the passive immunity acquired from maternal colostrum starts decreasing.



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ACTI-PROTECT™ ADULT SMALL & MINI

Complete dry pet food for small and mini size adult dogs, rich in chicken

KEY BENEFITS

- **Specifically adapted nutrient concentration to support the fast metabolism of small dogs**
- **A combination of omega 3 fatty acids and high protein levels help to support healthy joints**
- **Total dental care – formulated with nutrients for strong teeth and healthy gums**
  It also contains a calcium binder proven[1] to help reduce tartar accumulation by 36%
- **Helps to keep your dog's coat beautifully shiny from root to tip**

1.5 kg, 3 kg and 7 kg

Helps strengthen dogs immune response up to 50% more

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality chicken (including back and chest) (20%), wheat, dried poultry protein, corn, rice, animal fats, soya meal, digest, dried beet pulp, corn protein meal, wheat gluten, minerals, dried egg, fish oil, yeast, dried colostrum (0.1%).

KEY NUTRIENT VALUES*			
Moisture	8%	Calcium	1.37%
Protein	28%	Phosphorus	1.03%
Fat - Omega-6 - Omega-3	17% 2.18% 0.4%	Vitamin D_3	1169 IU/kg
		Vitamin A	25035 IU/kg
Carbohydrate	37%	Vitamin E	474 IU/kg
Crude fibre	2.5%	Metabolisable energy (ME)[1]	3.91 kcal/g

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY		
Dog weight (kg)	Up to 1 h activity	1 to 3 h activity
1	35	40
3	75	85
6	120	135
10	165	190

1. Cupp C. Internal report. *Dental efficacy trial.* 2004.

Complete dry pet food for adult dogs, rich in chicken.

KEY BENEFITS

- A combination of omega 3 fatty acids and high protein levels help to support healthy joints
- Superior nutrients absorption
- Total dental care – formulated with nutrients for strong teeth and healthy gums
- Helps to keep your dog's coat beautifully shiny from root to tip

3 kg and 10 kg

Helps strengthen dogs immune response up to 50% more

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality chicken (including back and chest) (20%), wheat, dried poultry protein, corn, rice, animal fats, digest, dried beet pulp, soya meal, corn protein meal, wheat gluten, minerals, dried egg, fish oil, dried colostrum (0.1%).

KEY NUTRIENT VALUES*			
Moisture	8%	Calcium	1.31%
Protein	26%	Phosphorus	0.88%
Fat - Omega-6 - Omega-3	16% 2.07% 0.4%	Vitamin D_3	1008 IU/kg
		Vitamin A	17867 IU/kg
Carbohydrate	40.5%	Vitamin E	475 IU/kg
Crude fibre	2.5%	Metabolisable energy (ME)[1]	3.88 kcal/g

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

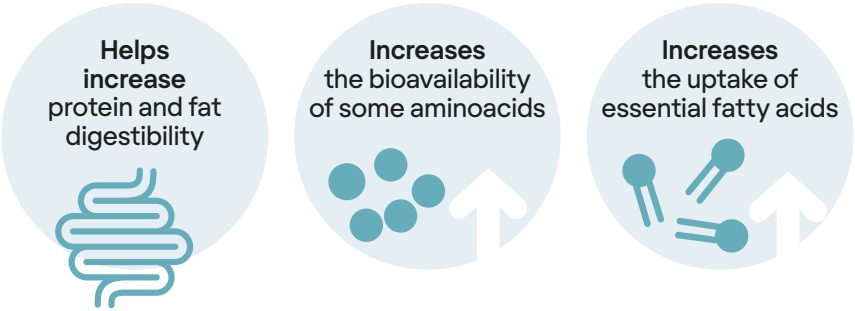
FEEDING GUIDELINES

GRAMS PER DAY		
Dog weight (kg)	Up to 1 h activity	1 to 3 h activity
1	35	40
5	105	120
10	170	190
15	220	250
20	265	305
25	310	355
35	390	445
45	460	525
60	555	635
70	620	705

The adult products are specially formulated to deliver superior nutrition thanks to **PURINA®**'s special cooking and extrusion process.

PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult and PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult Small & Mini use these proprietary proceses to include **20% frozen chicken** in their formulas. The use of high quality pieces of chicken at optimal levels can help increase digestibility and bioavailability of some essential amino acids and fatty acids.

Protein is required in canine diets to provide all the essential amino acids needed and the nitrogen for the synthesis of non-essential amino acids and proteins, other nitrogenous compounds, and as a source of energy. An optimal level of



bioavailable amino acids from high quality protein sources is essential for dogs to maintain lean body mass and strengthen muscles while supporting a healthy skin and coat. A diet rich in high-quality protein also helps support the immune system and the underpinning function of all vital organs.

PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult Small & Mini and PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult both provide **total dental care** and are formulated with a combination of nutrients for strong teeth and healthy gums[1,2,3]. The Small and Mini products contain a calcium chelator TSPP, proven to help reduce tartar build-up by 36% by reducing calcium deposition on teeth. Both adult formulas also contain a combination of nutrients, including omega 3 fatty acids and high protein levels, that help to support **healthy joints**.

The Small & Mini formula also has a specifically adapted nutrient concentration to support the **fast metabolism** of smaller dogs with an increased energy density and higher levels of B vitamins to help the body to release this energy more efficiently[4].

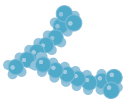
Additionally, this range includes **ACTI-PROTECT™**, with bovine colostrum, proven to support immune response and to support intestinal microbiota diversity and stability, as explained previously.

1. Burwasser P, Hill TJ. 1939, The effect of hard and soft diets on the gingival tissues of dogs. *J Dent Res* **18**:389-393
2. Anti-inflammatory properties of long chain omega-3 fatty acids, Purina Technical Paper on Fatty Acids.
3. N-3 polyunsaturated fatty acid effect in periodontal disease: state of art and possible mechanisms involved. By Rafaelli *et al.*, Int. J. Immunpathol. *Pharmacol.*, Vol.21, no. 2, 261-266, 2008.
4. JR Speakman, A van Acker and EJ Harper. Age-related changes in the metabolism and body composition of three dog breeds and their relationship to life expectancy. *Aging Cell* (2003) 2, pp265–275.

An internal scientific report[1] illustrates the effects of the Purina proprietary technology on higher protein and fat digestibility, better absorption of essential fatty acid and higher bioavailability of some limiting amino acids. Two studies were performed; Study 1 to determine if feeding adult dogs a diet formulated with frozen fresh chicken (chicken) compared to poultry meal (PM) was associated with differences in protein and amino acid digestibility and bioavailability. Study 2 to investigate the optimal level of chicken inclusion in an adult maintenance diet.

HELPS INCREASE PROTEIN AND FAT DIGESTIBILITY

When comparing dogs fed an otherwise identical diet containing either fresh frozen chicken (FFC) or poultry meal (PM) as their only source of animal protein, protein and fat digestibility were significantly better in dogs fed FFC.



Protein and fat digestibility were significantly higher in the chicken diet compared to the PM diet.

INCREASES THE BIOAVAILABILITY OF AMINO ACIDS

In the same study the dogs fed the diet containing fresh frozen chicken had significantly higher postprandial blood lysine and arginine levels indicative of greater bioavailability of these essential amino acids in the FFC fed dogs.

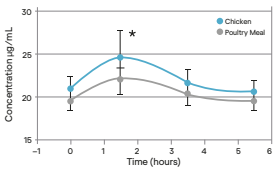
INCREASES THE BODY'S UPTAKE OF ESSENTIAL FATTY ACIDS

In the second study[1], dogs were fed a 25% protein diet containing either 0% or 14% chicken fresh frozen chicken (the balance of protein being supplied by PM). Uptake of the essential fatty acid linoleic acid was significantly higher in the 14% chicken diet due to a better fatty acid profile of this diet (higher linoleic acid content).

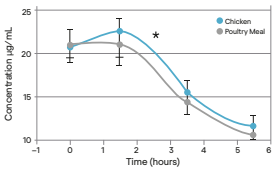
HELPS DOGS RESPOND BETTER TO ENVIRONMENTAL STRESS

In the same study, dogs fed the 14% fresh frozen chicken diet were better able to maintain their body weight in periods of extreme cold weather. This clearly shows the long term health benefit of providing highly bioavailable essential amino acids and fatty acids in the diet of dogs.

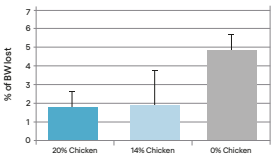
BLOOD ARGININE



BLOOD LYSINE



BODY WEIGHT LOST



1. Bouthegourd *et al.*, Nestlé Internal Report, 2015, PURINA® report on the impact of inclusion of frozen chicken in dog food on digestibility, bioavailability and body weight maintenance.

ACTI-PROTECT™
ADULT SMALL & MINI DERMA CARE

Complete dry pet food for small and mini size adult dogs with sensitive skin, rich in salmon.

Formulated without wheat gluten

KEY BENEFITS

- Maintains healthy skin thanks to a combination of nutrients such as B-vitamins and zinc
- A combination of omega 3 fatty acids and high protein levels help to support healthy joints
- Total dental care – formulated with nutrients for strong teeth and healthy gums
- Contains selected sources of protein to help reduce possible skin reactions of sensitive dogs associated with food sensitivity
- Includes a special blend of skin-specific nutrients to maintain healthy skin and preserve glossy coat

1.5 kg, 3 kg and 7 kg

Helps strengthen dogs immune response up to 50% more

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality salmon* (including head, bone, meat) (18%), rice*, corn protein meal*, dried salmon protein*, soya meal*, corn*, animal fats, corn starch, dried beet pulp*, minerals, dried vegetable fibre, soybean oil, digest, dried egg*, fish oil, dried colostrum (0.1%)
* Protein sources.

KEY NUTRIENT VALUES*			
Moisture	8%	Phosphorus	0.84%
Protein	30%	Zinc	17.6 mg/kg
Fat	18%	Vitamin D_3	1618 IU/kg
- Omega-6	2.0%	Vitamin A	23500 IU/kg
- Omega-3	1.0%	Vitamin B (total)	287 mg/kg
- DHA	0.37%	Vitamin E	487 IU/kg
- EPA + DHA	0.58%	Vitamin C	70 mg/kg
Carbohydrate	33.5%	Metabolisable energy (ME)[1]	3.93 kcal/g
Crude fibre	3%		
Calcium	1.6%		

* Typical analysis in the final product as fed. [1] Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY		
Dog weight (kg)	Up to 1 h activity	1 to 3 h activity
1	35	40
3	75	85
6	120	135
10	165	190

ACTI-PROTECT™ ADULT DERMA CARE

Complete dry pet food for adult dogs with sensitive skin, rich in salmon.

Formulated without wheat gluten

KEY BENEFITS

- Maintains healthy skin thanks to a combination of nutrients such as B-vitamins and zinc
- A combination of omega 3 fatty acids and high protein levels help to support healthy joints
- Total dental care – formulated with nutrients for strong teeth and healthy gums
- Contains selected sources of protein to help reduce possible skin reactions of sensitive dogs associated with food sensitivity
- Includes a special blend of skin-specific nutrients to maintain healthy skin and preserve glossy coat

3 kg and 10 kg

Helps strengthen dogs immune response up to 50% more

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality salmon* (including head, bone, meat) (17%), rice*, corn protein meal*, dried salmon protein*, soya meal*, corn grits, animal fats, dried beet pulp*, digest, corn*, corn starch, dried vegetable fibre, soybean oil, dried egg*, minerals, fish oil, dried colostrum (0.1%) *Protein sources.

KEY NUTRIENT VALUES*

Moisture	8%	Phosphorus	0.84%
Protein	29%	Zinc	18.9 mg/kg
Fat	18%	Vitamin D_3	1610 IU/kg
- Omega-6	2.5%	Vitamin A	23747 IU/kg
- Omega-3	1.0%	Vitamin B (total)	364 mg/kg
- DHA	0.34%	Vitamin E	486 IU/kg
- EPA + DHA	0.54%	Vitamin C	70 mg/kg
Carbohydrate	35%	Metabolisable energy (ME)[1]	3.94 kcal/g
Crude fibre	3%		
Calcium	1.03%		

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY

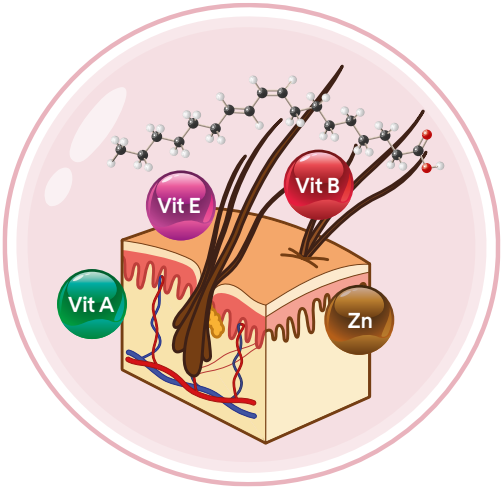
Dog weight (kg)	Up to 1 h activity	1 to 3 h activity
1	35	40
5	105	120
10	165	190
15	215	250
20	260	300
25	305	350
35	380	435
45	450	515
60	550	625
70	610	695

PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult Small & Mini Derma Care and PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult Derma Care are specially formulated with a specific **combination of essential nutrients (linoleic acid, zinc and vitamins A, B and E) clinically proven to support skin health in sensitive dogs. The high tolerance formula, with 80% of animal protein coming from salmon**, and without wheat gluten in the formulation, helps reduce possible skin discomfort in sensitive dogs.

Both diets are specially formulated with the **antioxidants vitamin E and C**. Oxidative stress plays a role in the development of skin discomfort. It has been shown that increasing amounts of vitamin E in foods for dogs leads to increases in serum and cutaneous concentrations of vitamin E which are likely to benefit skin and coat health of dogs as well as supporting the immune system[1].

In a study done by Purina's scientists[2], dogs fed a diet containing the blend of **increased linoleic acid, zinc and Vitamins A, B and E** had their skin and coat evaluated over a 5-month period, both subjectively by 30 panellist judges and objectively using sensory analysis and biophysical and dermatological evaluations. Panellists scored the dogs' skin and coat on many parameters including odour, coat shininess and softness, shedding and presence or absence of dandruff. Skin biophysical parameters investigated included transepidermal water loss, skin pH and corneometry (skin hydration status). In addition, general health and blood and faecal parameters were regularly checked.

Results showed that **dogs fed the blend had significantly improved skin and coat condition**: increased coat shininess and softness, improved skin hydration score and elasticity, reduced transepidermal water loss, increased blood, skin and sebum linoleic acid content and reduced inflammation. This blend is incorporated in all PRO PLAN® diets for dogs with sensitive skin.



1. Jewell DE, Yu S and Joshi DK. 2002. Effects of serum vitamin E levels on skin vitamin E levels in dogs and cats. *Vet Ther*; **3(3)**: 235- 43).
2. Report study by L. Young & G. Bache. "Minimum nutrient and digestibility requirements to use "Proven to support healthy skin and beautiful coat".

ACTI-PROTECT™ ADULT DIGESTION CARE

Complete dry pet food for adult dogs with sensitive digestion, rich in lamb.

Formulated without wheat gluten

KEY BENEFITS

- Highly digestible formula specifically adapted for dogs prone to intermittent loose stools
- Contains beet pulp, a prebiotic scientifically proven to increase bifidobacteria for a better gut microflora balance
- Contains bentonite, a clay, that binds excess water, and in combination with fibre sources helps improve faecal quality
- Helps maintain healthy teeth and gums

3 kg and 10 kg

Helps strengthen dogs immune response up to 50% more

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality lamb (including lungs and liver) (19%), corn, dried poultry protein, corn grits, rice, animal fats, soya meal, dried beet pulp (5.5%), corn protein meal, digest, minerals, dried egg, fish oil, dried colostrum (0.1%).

KEY NUTRIENT VALUES*			
Moisture	8%	Calcium	1.45%
Protein	26%	Phosphorus	0.81%
Fat	16%	Vitamin D_3	995 IU/kg
- Omega-6	1.64%	Vitamin A	18919 IU/kg
- Omega-3	0.23%	Vitamin E	473 IU/kg
- DHA	0.04%	Vitamin C	70 mg/kg
Carbohydrate	40%	Metabolisable energy (ME)[1]	3.86 kcal/g
Crude fibre	2.5%		

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

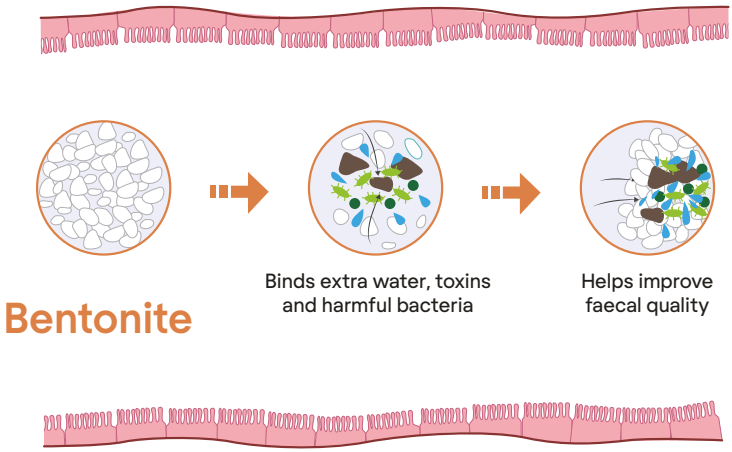
GRAMS PER DAY		
Dog weight (kg)	Up to 1 h activity	1 to 3 h activity
1	35	40
5	105	120
10	170	195
15	220	255
20	270	305
25	310	355
35	390	445
45	460	530
60	560	640
70	620	710

Some dogs have a sensitive digestion without any specific identifiable cause. Delicate digestion results in frequent digestive upsets, poorly formed stools and a high sensitivity to a change in diet. Due to the inclusion of **beet pulp**, as a **prebiotic**, this formula can provide a healthier gut microflora balance as an increase of soluble fibres in the diet can increase the level of Lactobacilli and the level of short chain fatty acids in faeces[1]. PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult Digestion Care helps support digestive health and helps promote the production of firmer stools.

The high digestibility of the ingredients facilitates dogs' digestive processes and promotes adequate faecal quality. **The high digestibility also encourages high levels of nutrient absorption and helps minimise dietary load on the sensitive gut.**

It is formulated with lamb as a highly digestible protein source and highly digestible carbohydrate sources such as rice and corn. The inclusion of beet pulp also provides soluble fibres which can have a positive impact on digestive transit time and feacal score[2] and can increase the level of beneficial bacteria including bifidobacteria to support a healthier gut microflora balance.

PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult Digestion Care also includes **bentonite**, a natural clay that helps support the production of firm stools[3]. It can absorb important quantities of intestinal waste products and gas, harmful bacteria and toxins, carrying them harmlessly out in the stool and protecting the intestinal mucosa. Additionally, bentonite absorbs excess water in the colon, helping to firm up the stools.



1. Middelbos IS, Fastinger ND, Fahey GC Jr. 2007. Evaluation of fermentable oligosaccharides in diets fed to dogs in comparison to fiber standards. *J Anim Sci;* **85(11)**:3033-44.
2. Fahey GC Jr, Merchen NR, Corbin JE, Hamilton AK, Serbe KA, Hirakawa DA. 1990. Dietary fiber for dogs: II. Iso-total dietary fiber (TDF) additions of divergent fiber sources to dog diets and their effects on nutrient intake, digestibility, metabolizable energy and digesta mean retention time. *J Anim Sci;* **68(12)**:4229-35.
3. Ducrotte P, Dapoigny M, Bonaz B, Siproudhis L. 2005. Symptomatic efficacy of beidellitic montmorillonite in irritable bowel syndrome: a randomized, controlled trial. *Aliment Pharmacol Ther;* **21(4)**:435-444.

ACTI-PROTECT™ ADULT LIGHT / STERILISED

Complete dry pet food for overweight or sterilised adult dogs, rich in chicken.

KEY BENEFITS

- Helps prevent future weight gain through lean body maintenance, encouraging calorie burning
- High protein level to support healthy joints
- Helps reduce the feeling of hunger and promotes satiety thanks to high protein content, complex carbohydrates and adequate fibre levels
- Helps support healthy weight loss and maintain lean body mass during weight loss and after sterilisation
- Total dental care – formulated with nutrients for strong teeth and healthy gums

3 kg and 10 kg

Helps strengthen dogs immune response

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality chicken (including back and chest) (15%), wheat, dried poultry protein, rice, corn, dried beet pulp, soya meal, corn protein meal, digest, minerals, corn grits, wheat gluten, fish oil, animal fats, dried colostrum (0.1%).

KEY NUTRIENT VALUES*			
Moisture	8%	Phosphorus	0.91%
Protein	27%	Vitamin D_3	1154 IU/kg
Fat	9%	Vitamin A	21276 IU/kg
- Omega-6	1.42%	Vitamin E	241 IU/kg
- Omega-3	0.3%	Vitamin C	60 mg/kg
Carbohydrate	45%	Taurine	1313 mg/kg
Crude fibre	3.5%	Metabolisable energy (ME)[1]	3.47 kcal/g
Calcium	1.57%		

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY			
Dog weight (kg)	Maintenance	Sterilised	Weight Loss
1	40	35	30
10	185	165	140
25	345	300	260
35	435	380	325
45	515	445	385
70	690	600	515

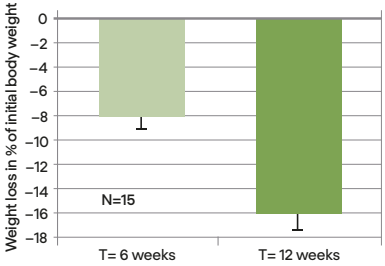
PURINA® PRO PLAN® EXPERT CARE NUTRITION Light / Sterilised includes **cardio supportive nutrients. Taurine, L-carnitine and omega-3 long chain fatty acids** are included in the recipe due to their supportive effects on the heart and blood vessels and thus also help with exercise tolerance.

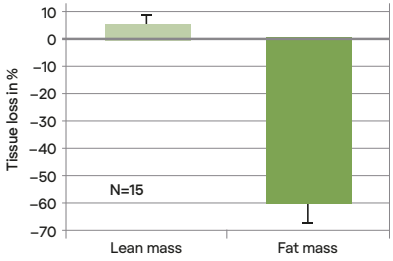
PURINA® PRO PLAN® EXPERT CARE NUTRITION Light / Sterilised is proven to promote **healthy weight loss and maintain lean body mass** during weight loss, thanks to high protein content, high fibre levels and reduced fat levels[1]. It also **helps to minimise future weight gain** through lean body maintenance, encouraging calorie burning and a steady and healthy weight loss.

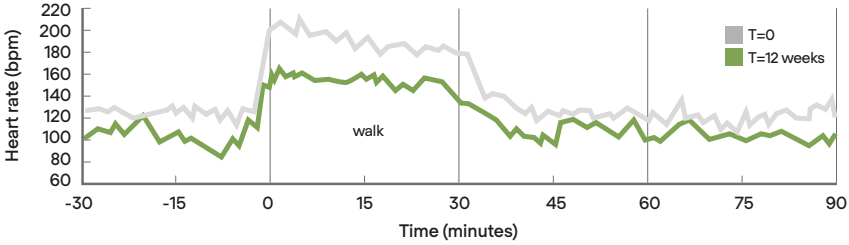
The formula is proven to **specifically target fat mass loss** while maintaining lean body mass. At the same time, it helps reduce the feeling of hunger by promoting satiety due to the high protein content, complex carbohydrates and adequate fibre level.

A PURINA® study[1] in 15 overweight dogs showed that after 12 weeks of being fed PURINA® PRO PLAN® Light/Sterilised, in combination with a daily walk:

- 16% weight loss was achieved
- A reduction of 60% of fat tissue in 12 weeks
- Blood triglyceride levels significantly decreased
- Heart rate was reduced by 21% both at rest and during exercise.







Also, **PURINA® PRO PLAN® EXPERT CARE NUTRITION Light / Sterilised** is formulated with wheat and corn as sources of complex carbohydrates with a moderate glycaemic index for a more steady release of energy after meal ingestion[2]. Beet pulp is included at a high level for its content in both soluble and insoluble fibres that help in managing gastric emptying and energy substrates absorption[3].

1. German AJ, Holden SL, Bissot T, Morris PJ, Biourge V. A high protein high fibre diet improves weight loss in obese dogs. *Vet J*. 2010 Mar; **183(3)**:294-7. Epub 2009 Jan 12.
2. Carol AC, Takura FS, de-Olivieira LD, Teshima E, Jememias JT, Brunetto MA, and Prada F. 2008. Effect of six carbohydrate sources on dog diet digestibility and post-prandial glucose and insulin response. *J Animal Physiology and Animal Nutrition*, **92**; 326-336.
3. Massimino SP, McBurney MI, Field CJ, Thomson ABRR, Keelan M, Hayek MG, Sunvold GD. 1998. Fermentable dietary fiber increases GLP-1 secretion and improves glucose homeostasis despite increased intestinal glucose transport activity in healthy dogs. *J Nutr*, **128**;1786-1793.

ACTI-PROTECT™ ADULT 7+

Complete dry pet food for adult dogs aged from 7 onwards, rich in chicken.

KEY BENEFITS

- Supplies the brain with an alternative energy source to support a good cognitive function, helping increasing activity levels, liveliness and interaction in playtime of older dogs
- Proven to help support cognitive function and increase activity levels
- A combination of key nutrients – such as omega 3 fatty acids, high protein levels that help to support healthy joints
- Total dental care – formulated with nutrients for strong teeth and healthy gums

3 kg and 10 kg

Helps strengthen dogs immune response

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality chicken (including back and chest) (16%), dried poultry protein, wheat, rice, corn, corn protein meal, vegetable oil fractions (5.5%), dried beet pulp, soya meal, minerals, wheat gluten, animal fats, fish oil, digest, dried colostrum (0.1%).

KEY NUTRIENT VALUES*			
Moisture	8%	Phosphorus	0.93%
Protein	29%	Vitamin D_3	1147 IU/kg
Fat - Omega-6 - Omega-3	15% 1.46% 0.3%	Vitamin A	21885 IU/kg
		Vitamin E	561 IU/kg
Carbohydrate	38.5%	Vitamin C	83 mg/kg
Crude fibre	2%	Metabolisable energy (ME)[1]	3.86 kcal/g

* Typical analysis in the final product as fed. [1] Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY		
Dog weight (kg)	Up to 1 h activity	1 to 3 h activity
1	30	35
5	90	105
10	145	170
15	190	220
20	235	270
25	270	310
35	340	390
45	400	460
60	485	560
70	540	620

PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult 7+ contains 5.5% Medium Chain Triglycerides (MCTs), in the form of fractioned botanical oils, that can support cognitive function in older dogs[1], as found in a study conducted by Nestlé PURINA® Research and Development teams together with the Royal Veterinary College.

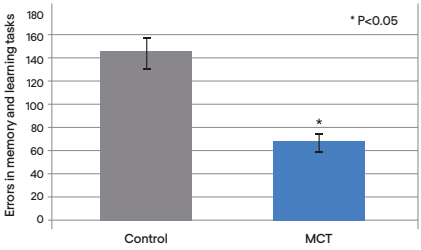
Dogs over seven years of age have significant but often sub-clinical changes in brain function. Research has shown that typically, from seven years of age, canine neurones gradually lose the ability to use glucose as an energy source[2]. MCTs are converted into aceto-acetate and beta-hydroxybutyrate by the liver; these ketone metabolites are then used by brain neurons as an alternative energy source for cellular function.

A study from Nestlé PURINA® has proven that feeding MCTs to dogs:

- **Helps improve memory and interactivity in older dogs**
- **Helps increase the ability of a senior dog to adapt and cope with changes**
- **Increases a senior dog's attention span and alertness**

PURINA® PRO PLAN® EXPERT CARE NUTRITION Adult 7+ also supports healthy ageing by the inclusion of the antioxidants, vitamin E and C for the elderly immune system. The formula provides total oral care (with reduced tartar build up) thanks to the natural brushing effect (small crunchy kibble) on teeth and the inclusion of vitamin D, calcium and phosphorus. It also contains EPA, an omega-3 fatty acid, and glucosamine to help support joint health and mobility in older dogs.

DOGS FED MCTS HAD IMPROVED COGNITIVE FUNCTION AS MEASURED DURING MEMORY AND LEARNING TASKS BY SUPPLYING THE BRAIN WITH AN ALTERNATIVE ENERGY SOURCE



1. Pan Y, Larson BT, *et al.* 2010. Brit J Nutr: Dietary supplementation with medium-chain TAG has long-lasting cognition-enhancing effects in aged dog. *Brit J Nutr;* **103**: 1746-1754.
2. London *et al.* 1983. Regional cerebral metabolic rate for glucose in Beagle dogs of different ages. *Neurobiol Aging;* **4(2)**:121-126.

Complementary pet food for adult dogs (from 12 months old).

KEY BENEFITS

- Scientifically proven to help reduce tartar build up & plaque formation
- Enriched with cloves, known for its soothing properties
- Effective cleaning action including hard-to-reach premolars and molars
- With a chewy porous texture and distinct ridges that massage the gums

DEVELOPED BY VETERINARIANS

The VOHC® is recognised worldwide; products trialled according to VOHC® protocols are awarded the VOHC® Seal of Acceptance following data review by veterinary dental experts.

COMPOSITION & KEY NUTRIENTS

COMPOSITION

Cereals*, glycerol, minerals, yeasts*, meat and animal derivatives, oils and fats, derivatives of vegetable origin* (cloves* 0.25%).
*Natural ingredients.

KEY NUTRIENT VALUES*			
Moisture	14.5%	Crude fibre	1.5%
Protein	6.2%	Crude ash	6.0%
Fat contents	2.2%	Calcium	1.1%

* Typical analysis in the final product as fed.

FEEDING GUIDELINES

DAILY FEEDING QUANTITY	
Body weight (kg)	Sticks per day
Expert Care Nutrition Dental Care for Small Dog (7-12 kg)	1 stick per day*
Expert Care Nutrition Dental Care for Medium Dog (12-25 kg)	1 stick per day*
Expert Care Nutrition Dental Care for Large Dog (25-40 kg)	1 stick per day*

* Fresh drinking water should always be available.
Supervise when giving your dog a treat.
For optimal health, respect the feeding guide and exercise your dog daily.

PURINA PRO PLAN EXPERT CARE NUTRITION

FELINE EXPERT CARE NUTRITION

FELINE EXPERT CARE NUTRITION

To help you in your daily practice, we provide the **"average" nutrient values**, which are representative of what is in the product. These **may not always correspond to the labelling values** under "nutritional additives". For additives, the EU feed regulation requires that the "added" values be declared, which is different to the "average" content found in the product (representative of process losses and nutrients brought by the ingredients) (REGULATION (EC) No 767/2009).

PURINA® PRO PLAN® EXPERT CARE NUTRITION WITH ACTI-PROTECT™. THE LINK BETWEEN IMMUNITY AND NUTRITION AT EVERY LIFE STAGE

All PURINA® PRO PLAN® EXPERT CARE NUTRITION formulas are enriched with **ACTI-PROTECT™**, containing bovine colostrum. PURINA®'s research studies have proven that nutritional supplementation with colostrum can help **support pet's local and systemic immune responses** whilst contributing to a **balanced intestinal microbiota**, not just after birth but also throughout all their life stages.

During their lives, pets experience significant events that may pose a challenge to their immune status. Therefore, the Expert Care Nutrition range with ACTI-PROTECT™ offers health support through immunonutrition at every life stage:

- The "immunity gap" is a critical window during which kittens have not yet developed a fully functional immune system and the antibodies acquired from maternal colostrum start decreasing. Feeding a diet containing bovine colostrum may help bridge this gap and provide protection during this critical period of development[1]
- Stressful situations during growth can lead to suppression of the immune system and alterations in their gastrointestinal tract[2,3]. Feeding a diet containing bovine colostrum can benefit young pets by strengthening their overall health during their first year of life
- Feeding a diet containing bovine colostrum can help adult pets to cope with daily environmental stressors, changes in feeding behaviour and health challenges[4,5]. Also, it can help support older pets whose immune systems can be weakened by age

* PURINA®'s colostrum supplier controls the IgG content of each colostrum ingredient. Lactoferrin is measured sporadically and known to be found in colostrum based on literature.

1. Chastant S, Mila H. 2019. Passive immune transfer in puppies. *Animal Reproduction Science*. **207**:162-170.
2. Gore AM, Satyaraj E, Labuda J, Engler R, Sun P, Kerr W and Conboy-Schmidt L. 2021. Supplementation of Diets With Bovine Colostrum Influences Immune and Gut Function in Kittens. Front. *Vet. Sci*. **8**:675712.
3. Giffard CJ, Mitsuro SM, Markwell PJ, *et al*. 2004. Benefits of Bovine Colostrum on Fecal Quality in Recently Weaned Puppies. *Journal of Nutrition*. **134**: 2126S-2127S.
4. Satyaraj E, Reynolds A, Pelker R, *et al*. 2013. Supplementation of diets with bovine colostrum influences immune function in dogs. *British Journal of Nutrition*. **110(12)**: 2216-2221.
5. Bailey MT, Dowd ES, Parry MA, *et al*. 2010. Stressor Exposure Disrupts Commensal Microbial Populations in the Intestines and Leads to Increased Colonization by Citrobacter rodentium. *Infection and Immunity*. 1509-1519.

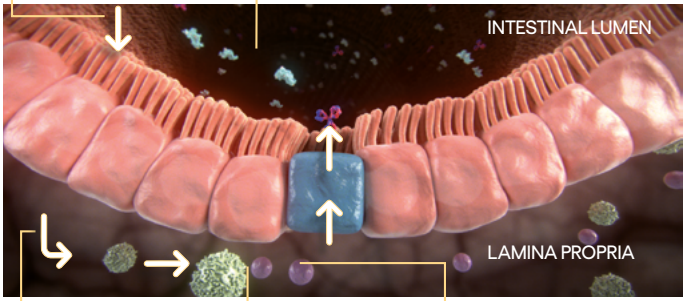
HOW COLOSTRUM INFLUENCES THE IMMUNE SYSTEM AND SUPPORTS INTESTINAL HOMEOSTASIS

The gut-associated lymphoid tissue (GALT), which contains more than 70% of all immune cells in the body[1], is a vital first line of defence, together with the intestinal barrier. The GALT is very closely related to the intestinal barrier, which is colonised by the gut microbiota and is crucial to maintain a healthy intestinal homeostasis[2].

The gut microbiota is also involved in many host life-processes, such as energy requirement, metabolism, immunologic activity, and neuro-behavioural development[3]. However, many factors can affect the gut microbiota composition, including diet, age, medication, illness and stress[4].

Research has proven that, upon reaching the gut, the rich amount of immunoglobulins in colostrum stimulate the immune cells of the intestinal tract[5]. This process is followed by a local release of IgA which may help to balance the gut microbiota through both the maintenance of non-invasive commensal bacteria and increasing gut microbiota diversity[6]. Moreover, the activation of the GALT can lead to the stimulation of the systemic immune system[5].

The bioactive compounds found in bovine colostrum* may help support immunity and enhance gut microbiota stability through different mechanisms:



* PURINA®'s colostrum supplier controls the IgG content of each colostrum ingredient. Lactoferrin is measured sporadically and known to be found in colostrum based on literature.

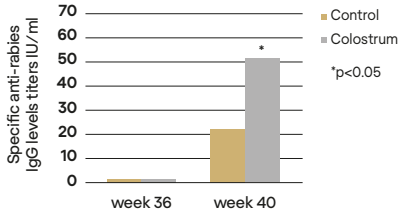
1. Vighi G, Marcucci F, Sensi L, *et al.* 2008. Allergy and the gastrointestinal system. *Clinical and Experimental Immunology,* 153(Suppl 1): 3–6.
2. Farré R, Fiorani M, Rahiman SA, *et al.* 2020. Intestinal Permeability, Inflammation and the Role of Nutrients. *Nutrients,* (12)-1185.
3. Mondo E, Marliani G, Accorsi PA, *et al.* 2019. Role of gut microbiota in dog and cat's health and diseases. *Open Veterinary Journal,* **9(3)**: 253-258.
4. Purchiaroni F, Tortora A, Gabrielli M, *et al.* 2013. The role of intestinal microbiota and the immune system. *European Review for Medical and Pharmacological Sciences.* **17**: 323–333.
5. Satyaraj E. 2011. Emerging Paradigms in Immunonutrition. *Topics in Companion Animal Medicine.* **26(1)**:25-32.
6. Gutzeit C, Magri G, Cerutti A. 2014. Intestinal IgA production and its role in host-microbe interaction. *Immunology review,* **260(1)**:76-85
7. Satyaraj E, Reynolds A, Pelker R, *et al.* 2013. Supplementation of diets with bovine colostrum influences immune function in dogs. *British Journal of Nutrition;* **110(12)** 1-6.
8. Mantis NJ, Rol N, Corthesy B. 2011. Secretory IgA's complex roles in immunity and mucosal homeostasis in the gut. *Mucosal Immunol;* **4**, 603-611.
9. Gore A. Beneficial Effects of Natural Antibodies in Cats. Nestlé PURINA® PetCare Internal Report. 2010.

BENEFICIAL EFFECTS OF NATURAL ANTIBODIES IN CATS[1]

METHOD

- 24 kittens at 12 weeks of age
- During the 44 week study, all kittens were fed the same control diet but half were supplemented with bovine colostrum
- All kittens received a feline rabies vaccine at week 0 and a booster vaccination at week 38

Figure 3
ANTIBODY LEVEL IN RESPONSE TO VACCINATION



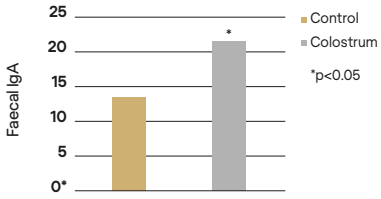
Higher antibody titres following vaccination in kittens supplemented with colostrom

RESULTS

Cats supplemented with **colostrum** showed

- Greater and faster **antibody level** in response to vaccination (Figure 3)
- **Increased faecal IgA** levels (Figure 4)
- Increased **microflora stability** after a stressful situation
- No increase in levels of inflammatory Serum Amyloid A (SAA) protein despite the stronger immune response to the feline rabies vaccine

Figure 4
COLOSTRUM ENHANCED LOCAL IMMUNITY



Higher faecal IgA levels demonstrated in group supplemented with colostrum compared to control group

1. Gore AM, Satyaraj E, Labuda J, Engler R, Sun P, Kerr W and Conboy-Schmidt L. 2021. Supplementation of Diets With Bovine Colostrum Influences Immune and Gut Function in Kittens. Front. *Vet. Sci.* **8**:675712.

ACTI-PROTECT™ KITTEN

Complete dry pet food for kittens, rich in turkey.
Also recommended for pregnant and nursing queens.

KEY BENEFITS

- Suitable for neutered kittens
- With colostrum to enhance immune response and improve digestive health
- Helps support healthy vision and brain development thanks to essential nutrients such as DHA
- Supports healthy bone – and muscle-growth thanks to minerals and high level of protein

1.5 kg

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality turkey (including back and chest) (20%), dried poultry protein, rice, wheat gluten, animal fats, corn, corn protein meal, pea protein, corn starch, dried egg, minerals, digest, yeast, fish oil, dried colostrum (0.1%).

KEY NUTRIENT VALUES*

Moisture	6%	Phosphorus	1.12%
Protein	40%	Vitamin D_3	1165 IU/kg
Fat	20%	Vitamin A	26550 IU/kg
- Omega-6	2.51%	Vitamin E	597 IU/kg
- Omega-3	0.26%	Vitamin C	70 mg/kg
- DHA	0.02%	Taurine	1778 mg/kg
Carbohydrate	26%	Metabolisable energy (ME)[1]	4.27 kcal/g
Crude fibre	1%		
Calcium	1.35%		

* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY

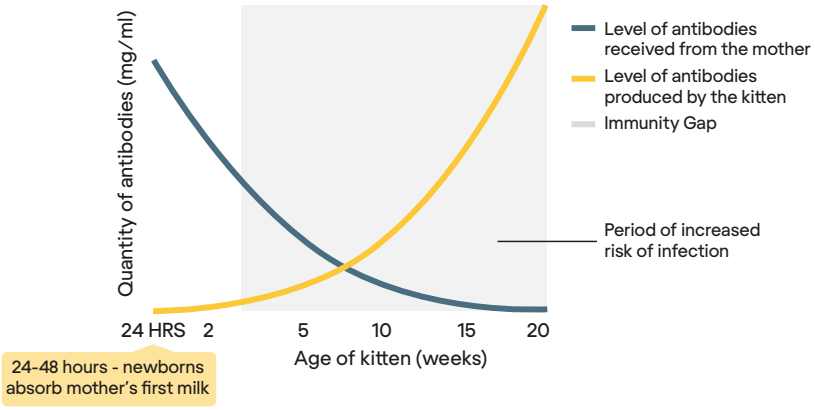
Age (weeks)	Kitten	Sterilised kitten
6 – 12	45 – 60	Not recommended
12 – 26	60 – 70	60 – 70
26 – 52	70	60

For pregnancy, feed a minimum of 70 g/day, for lactation feed a minimum of 105 g/day or *ad libitum*

PURINA® PRO PLAN® EXPERT CARE NUTRITION Kitten contains fish oil, a source of DHA, which is essential for brain and vision development[1]. High levels of protein and an appropriate mineral content help support bone and muscle growth. This dry pet food is suitable for neutered kittens, and for pregnant and lactating queens.

PURINA® PRO PLAN® EXPERT CARE NUTRITION Kitten is enriched with ACTI-PROTECT™, containing bovine colostrum. As previously explained, nutritional supplementation with bovine colostrum is scientifically proven to enhance kittens' immune response and optimise gut microbiota balance.

For newborns, maternal colostrum is key during their first 24-48h as it supports their immune systems while they are still maturing, by transferring passive immunity from the mother. Nutritional supplementation with bovine colostrum can help support kittens' immune systems during the "immunity gap" – a critical window during which kittens have not yet developed a fully functional immune system and the passive immunity acquired from maternal colostrum starts decreasing.



1. Heinemann KM, Waldron MK, Bigley KE, Lees GE, & Bauer JE. 2005. Long-chain (n-3) polyunsaturated fatty acids are more efficient than α-linoleic acid in improving electroretinogram responses of puppies exposed during gestation, lactation and weaning. *Journal of Nutrition*, 135, 1960–1966.

ACTI-PROTECT™ STERILISED

Complete dry pet food for adult neutered / spayed cats, rich in salmon and rich in turkey.

KEY BENEFITS

- Helps maintain lean body mass after sterilisation
- Helps maintain urinary tract health in neutered cats
- Helps protect teeth from plaque and tartar build-up. It contains a special mineral with calcium binding properties proven to reduce tartar accumulation by 41%#
- With colostrum to enhance immune response and improve digestive health
- Contains a protective combination of nutrients which help support the cat's kidney function and help slow down the ageing process

1.5kg, 3kg and 7 kg (turkey flavour only)

Cupp C. Internal report. Dental efficacy trial. 2004.

COMPOSITION & KEY NUTRIENTS

COMPOSITION

Salmon: High quality salmon (including head, bone, meat) (20%), dried poultry protein, rice, corn protein meal, wheat gluten, corn, wheat middlings, cellulose, dried egg, minerals, animal fats, digest, yeast, fish oil, dried colostrum (0.1%).

Turkey: High quality turkey (including back and chest) (20%), dried poultry protein, rice, corn protein meal, corn, wheat gluten, wheat middlings, cellulose, dried egg, minerals, fish oil, animal fats, digest, yeast, dried colostrum (0.1%).

KEY NUTRIENT VALUES*

	Rich in salmon	Rich in turkey
Moisture	6%	6%
Protein	41%	41%
Fat - Omega-6 - Omega-3	12% 1.37% 0.53%	12% 1.86% 0.38%
Carbohydrate	29.5%	29.5%
Crude fibre	4%	4%
Calcium	1.32%	1.33%

	Rich in salmon	Rich in turkey
Phosphorus	1.14%	1.13%
Vitamin D_3	1537 IU/kg	1226 IU/kg
Vitamin A	23639 IU/kg	24890 IU/kg
Vitamin E	593 IU/kg	578 IU/kg
Vitamin C	70 mg/kg	70 mg/kg
Taurine	1826 mg/kg	1837 mg/kg
Metabolisable energy (ME)[1]	3.76 kcal/g	3.76 kcal/g

* Typical analysis in the final product as fed. [1] Calculated using NRC 2006.

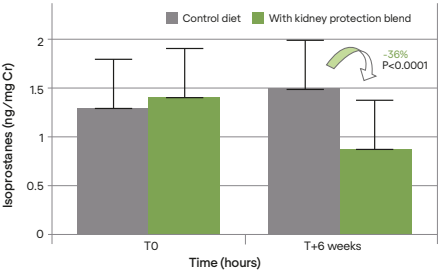
FEEDING GUIDELINES

GRAMS PER DAY

Cat weight (kg)	Quantity
2	25
4	55
6	80
8	105

Kidney disease is common in cats – it is in fact the most common clinical diagnosis in middle aged to older cats and is present in 10 to 30% of patients presented to veterinary clinics[1]. For this reason, PURINA® PRO PLAN® EXPERT CARE NUTRITION Sterilised Adult contains a combination of nutrients **(antioxidants, omega-3 fatty acids and arginine)** which help support the cat's kidney function and help slow down the ageing process.

The antioxidant support of this combination of nutrients is measured by the isoprostanes level in blood, which are precise oxidative markers, produced by the body. Isoprostane production increases in conditions causing oxidative stress (like kidney disease). Some isoprostanes have a direct negative effect on renal health by inducing renal vasoconstriction and increasing pre-glomerular vascular resistance, thus leading to a reduction in glomerular filtration rate and renal blood flow.
In a clinical study, cats fed a diet containing this combination of nutrients exhibited a significant reduction in urine isoprostanes compared to the control group within 6 weeks[2].



PURINA® PRO PLAN® EXPERT CARE NUTRITION Sterilised Adult contains:

- **Antioxidants, Vitamins C and E and ß-carotene** shown to have supportive effects on the kidney. Neutralising free radicals in the kidney reduces cellular damage associated with oxidative metabolism
- **Omega-3 fatty acids** such as eicosapentaenoic acid (EPA) shown to have a positive effect on kidney haemodynamics (blood flow) and glomerular filtration rate (GFR) and are anti-inflammatory[3].
  Studies show that
  - Healthy cats fed a diet with high omega-3 fatty acids have an increase in renal blood flow and GFR compared to when they are fed a diet high in omega-6 fatty acids
  - High intake of EPA leads to increased renal vasodilation and reduced inflammation (pro-inflammatory mediators are decreased)[4]
- **Arginine** is an essential amino acid in cats. It is a precursor to nitric oxide (NO). Arginine and NO are both involved in the control of renal vascular tone, maintenance of renal blood flow and maintenance of GFR. Arginine is proven to be renoprotective in many species

The kibbles in this diet have a crunchy texture and a special coating containing minerals, including TetraSodiumPyroPhosphate, (TSPP, a calcium chelator) that help to keep teeth clean, proven to reduce tartar build-up by 41%. This reduction in tartar accumulation can help minimise gingivitis, helping keep gums healthy.

1. CA Elliott, JA Schmiedt, CW & Brown SA. 2016. Chronic kidney disease in aged cats: Clinical features, morphology, and proposed pathogeneses. *Veterinary Pathology,* **53(2),** 309-326.
2. Oxidative stress, antioxidants, and assessment of oxidative stress in dogs and cats, Maureen A. McMichael, JAVMA, Vol 231, No. 5, September 1, 2007.
3. Internal Purina Research, 2006. Effects of a nutrients blend on renal health parameters in 40 cats during 3 months
4. Plantinga EA, Hovenier R and Beynen AC. 2005. *Veterinary Research Communications* **29(4):** 281-286

ACTI-PROTECT™ STERILISED 7+

Complete dry pet food for senior neutered / spayed cats, rich in turkey.

KEY BENEFITS

- Helps support key vital functions in cats over 7 years old
- Helps to maintain a healthy body weight
- Helps with reduced thinning of the skin generally seen in older cats
- Helps protect teeth from plaque and tartar build-up. It contains a special mineral with calcium binding properties proven to reduce tartar accumulation by 41%#
- Patented formulation proven to extend healthy lifespan and improve quality of life##
- With colostrum to enhance immune response and improve digestive health
- Helps support cats kidney function and slow down the ageing process

1.5 kg

Cupp C. Internal report. Dental efficacy trial. 2004.
European Patent EP1637041B1 (France, Germany, Italy, Netherlands, Russia, Spain, UK)

COMPOSITION & KEY NUTRIENTS

COMPOSITION

High quality turkey (including back and chest) (14%), corn protein meal, rice, dried poultry protein, soya meal, wheat gluten, wheat, wheat middlings, corn starch, dried egg, animal fats, dried chicory root, soybean oil, minerals, cellulose, fish oil, digest, yeast, dried colostrum (0.1%).

KEY NUTRIENT VALUES*			
Moisture	6%	Phosphorus	0.8%
Protein	40%	Vitamin D_3	1142 IU/kg
Fat - Omega-6 - Omega-3	13% 2.40% 0.4%	Vitamin A	24035 IU/kg
		Vitamin E	1282 IU/kg
Carbohydrate	31.5%	Vitamin C	70 mg/kg
Crude fibre	3%	Taurine	1900 mg/kg
Calcium	0.89%	Metabolisable energy (ME)[1]	3.88 kcal/g

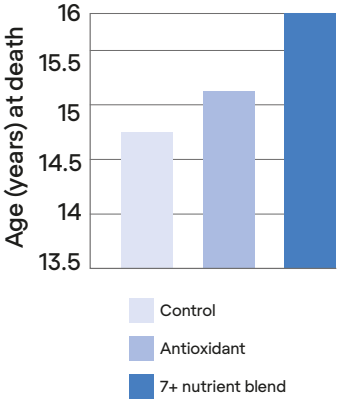
* Typical analysis in the final product as fed. [1]Calculated using NRC 2006.

FEEDING GUIDELINES

GRAMS PER DAY	
Cat weight (kg)	Quantity
2	25
4	50
6	75
8	105

PURINA® PRO PLAN® EXPERT CARE NUTRITION Sterilised 7+ includes a proprietary combination of antioxidants (vitamin E and beta-carotenes), prebiotic (chicory) and omega-6 and 3 fatty acids proven to extend the healthy life of mature cats by one year on average when fed exclusively, and support key vital functions (immune, renal & digestion) in cats over 7 years old[1,2].

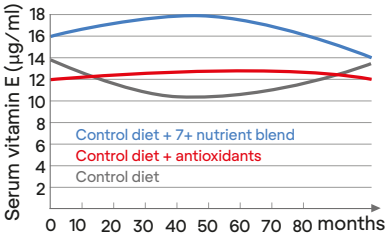
- Help support red blood cell levels and hematocrit
- Supports vitamin E absorption and circulating levels, which helps maintain the immune system function



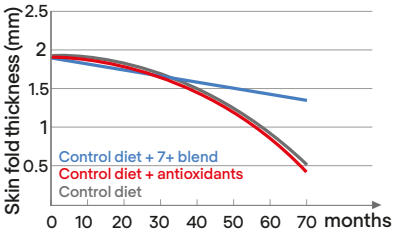
These cats also exhibited stronger indices of health such as:

- Reduced thinning of the skin generally seen in older cats
- Maintenance of a healthy body weight and body protein stores
- Maintenance of a healthy gut flora balance

Measurable effects can be seen within three months of starting to feed the diet



7+ blend helps strengthen the immune system and maintain healthy cell function by enhancing vitamin E bioavailability.



Cats exclusively fed on 7+ blend better maintained a normal adult skin fold thickness into their geriatric years that was up to twice that of cats fed on either of the other two diets.

1. Cupp C, Kerr W, Jean-Philippe C, *et al.* 2008. The role of nutritional interventions in the longevity and maintenance of long-term health in ageing cats. *Intern J Appl Res Vet Med;* **6(2),** 69-81.
2. Cupp C, Jean-Philippe C, Kerr W, *et al.* 2006. Effect of nutritional interventions on longevity in senior cats. *Intern J Appl Res Vet Med;* **4(1)**, 34-50.

PURINA®
PRO PLAN®

APPENDIX

APPENDIX

BODY CONDITION SYSTEM

- Dog
- Cat

CANINE COGNITIVE ASSESSMENT SCALE (CCAS

TYPICAL ANALYSIS

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

CANINE
- Canine Dry typical analysis – As fed
- Canine Dry typical analysis – Dry matter
- Canine Dry typical analysis – Per 100 kcal
- Canine Wet typical analysis – As fed
- Canine Wet typical analysis – Dry matter
- Canine Wet typical analysis – Per 100 kcal

FELINE
- Feline Dry typical analysis – As fed
- Feline Dry typical analysis – Dry matter
- Feline Dry typical analysis – Per 100 kcal
- Feline Wet typical analysis – As fed
- Feline Wet typical analysis – Dry matter
- Feline Wet typical analysis – Per 100 kcal

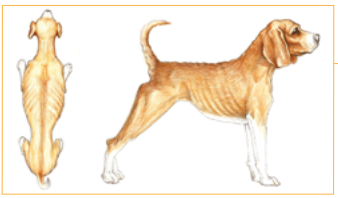
PURINA® PRO PLAN® EXPERT CARE NUTRITION

CANINE
- Canine Dry typical analysis – As fed
- Canine Dry typical analysis – Dry matter
- Canine Dry typical analysis – Per 100 kcal

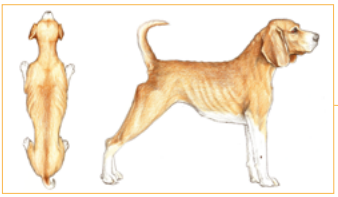
FELINE
- Feline Dry typical analysis – As fed
- Feline Dry typical analysis – Dry matter
- Feline Dry typical analysis – Per 100 kcal

LINKS

TOO THIN



1 Ribs, lumbar vertebrae, pelvic bones and all bony prominences evident from a distance. No discernible body fat. Obvious loss of muscle mass.



2 Ribs, lumbar vertebrae and pelvic bones easily visible. No palpable fat. Some evidence of other bony prominence. Minimal loss of muscle mass.

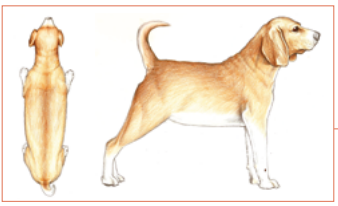
3 Ribs easily palpated and may be visible with no palpable fat. Tops of lumbar vertebrae visible. Pelvic bones becoming prominent. Obvious waist and abdominal tuck.

IDEAL

4 Ribs easily palpable, with minimal fat covering. Waist easily noted, viewed from above. Abdominal tuck evident.

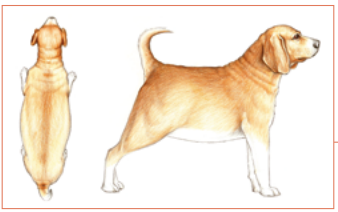
5 Ribs palpable without excess fat covering. Waist observed behind ribs when viewed from above. Abdomen tucked up when viewed from side.

TOO HEAVY



6 Ribs palpable with slight excess fat covering. Waist is discernible viewed from above but is not prominent. Abdominal tuck apparent.

7 Ribs palpable with difficulty; heavy fat cover. Noticeable fat deposits over lumbar area and base of tail. Waist absent or barely visible. Abdominal tuck may be present.

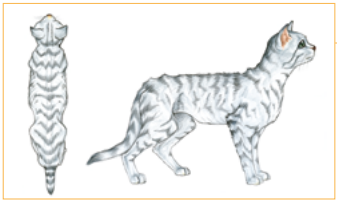


8 Ribs not palpable under very heavy fat cover, or palpable only with significant pressure. Heavy fat deposits over lumbar area and base of tail. Waist absent. No abdominal tuck. Obvious abdominal distention may be present.

9 Massive fat deposits over thorax, spine and base of tail. Waist and abdominal tuck absent. Fat deposits on neck and limbs. Obvious abdominal distention.

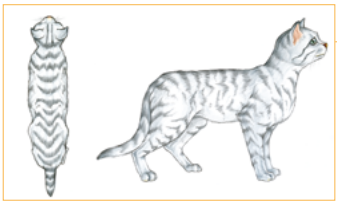
The BODY CONDITION SYSTEM was developed at the Nestlé Purina Pet Care Center and has been validated as documented in the following publications:
- Laflamme DP. Development and Validation of a Body Condition Score System for Dogs. *Canine Practice* July/August 1997; **22**: 10-15.
- Mawby DI *et al.* Comparison of Various Methods for Estimating Body Fat in Dogs. *J Am Anim Hosp Assoc* 2004; **40**: 109–114.
- German AJ *et al.* A Simple, Reliable Tool for Owners to Assess the Body Condition of Their Dog or Cat. *J. Nutr.* 2006; **136**: 2031S–2033S.
- German AJ *et al.* Comparison of a Bioimpedance Monitor with Dual-energy X-ray Absorptiometry for Noninvasive Estimation of Percentage Body Fat in Dogs. *AJVR* April 2010; Vol 71, No. 4.

TOO THIN



1 Ribs visible on shorthaired cats. No palpable fat. Severe abdominal tuck. Lumbar vertebrae and wing of ilia easily palpated.

2 Ribs easily visible on shorthaired cats. Lumbar vertebrae obvious with minimal muscle mass. Pronounced abdominal tuck. No palpable fat.



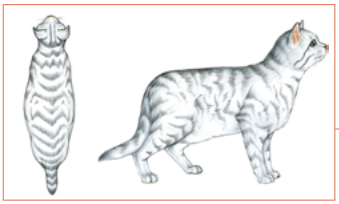
3 Ribs easily palpable with minimal fat covering. Lumbar vertebrae obvious. Obvious waist behind ribs. Minimal abdominal fat.

4 Ribs palpable with minimal fat covering. Noticeable waist behind ribs. Slight abdominal tuck. Abdominal fat pad absent.

IDEAL

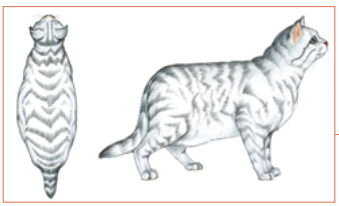
5 Well-proportioned. Observe waist behind ribs. Ribs palpable with slight fat covering. Abdominal fat pad minimal.

TOO HEAVY



6 Ribs palpable with slight excess fat covering. Waist and abdominal fat pad distinguishable but not obvious. Abdominal tuck absent.

7 Ribs not easily palpated with moderate fat covering. Waist poorly discernible. Obvious rounding of abdomen. Moderate abdominal fat pad.



8 Ribs not palpable with excess fat covering. Waist absent. Obvious rounding of abdomen with prominent abdominal fat pad. Fat deposits present over lumbar area.

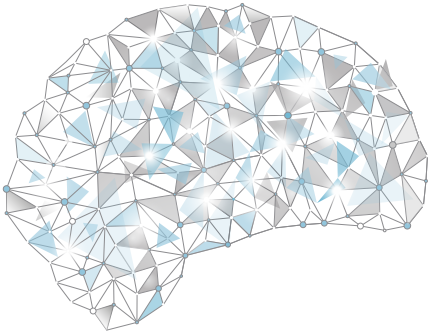
9 Ribs not palpable under heavy fat cover. Heavy fat deposits over lumbar area, face and limbs. Distention of abdomen with no waist. Extensive abdominal fat deposits.

The BODY CONDITION SYSTEM was developed at the Nestlé Purina Pet Care Center and has been validated as documented in the following publications:
- Laflamme DP. Development and Validation of a Body Condition Score System for Cats: A Clinical Tool. *Feline Practice* 1997; **25**: 13-17.
- German AJ *et al.* A Simple, Reliable Tool for Owners to Assess the Body Condition of Their Dog or Cat. *J. Nutr.* 2006; **136**: 2031S–2033S.
- Bjornvad CR *et al.* Evaluation of a Nine-point Body Condition Scoring System in Physically Inactive Pet Cats. *AJVR* April 2011; Vol 72, No. 4.

CANINE COGNITIVE ASSESSMENT SCALE (CCAS)

Developed by CAWEC for PURINA®

If you've noticed changes in multiple behavioural categories, be sure to talk to your veterinarian about the health of your pet's aging brain.



The following questionnaire is designed to evaluate the possible changes of the behaviour of your dog as a consequence of ageing. CCAS helps owners and veterinarians to identify the behaviours that indicate changes in your dog's mental activity.

Please, describe only what you have seen in the last 6 months.
If you cannot answer a question for some reason, please leave it blank.

Please indicate how often your dog shows each of the following behaviours

0	1	2	3
Never	Once a month	Once a week	Almost everyday

D DISORIENTATION (SCORE X2)	Score
1 Stares intently where there is nothing visible	
2 Does not remember its way back home	
3 Gets stuck behind objects or furniture	
4 Stays on the wrong side of the door	
5 Does not respond to certain stimuli to which it used to respond (for example, doorbell)	
6 Does not give any signal when it wants to go out	

S DISORIENTATION (SCORE X2)	
7 Walks during the night (without an obvious reason), when it did not used to do this	
8 Vocalises (barks, whines) during the night (without an obvious reason), when it did not use to do this	

Please complete the assessment on other side.

CAWEC COMPANION ANIMAL WELFARE EDUCATION CENTRE

*Modified from Landsberg G, Mad'ari A, Zika N 2017.
Canine and Feline Dementia. Molecular basis, diagnostic and therapy.
Springer International Publishing, Switzerland.

		Score
S	**SOCIAL INTERACTIONS**	
9	Does not recognise familiar people	
10	Does not recognise familiar animals	
11	Shows more signs of fear or aggression towards people and/or other dogs than it used to	
L	**LEARNING AND MEMORY**	
12	Urinates and/or defecates in new (inappropriate) places (when it did not use to do it)	
13	Finds it difficult to respond to previously learned commands	
A	**ACTIVITY LEVEL**	
14	Is less active or playful than it used to be	
15	Shows repetitive behaviours (chases own tail, snaps at 'invisible' flies, etc.)	
16	Walks without obvious purpose	
A	**ANXIETY**	
17	Shows more signs of anxiety when separated from its owners than before (main signs of anxiety are shaking, shivering or trembling, excessive salivation, restlessness/agitation/pacing, whining, loss of appetite)	
	Total	

Once this form is completed, your veterinarian will help you to interpret the results and to establish the most adequate management strategy for your dog, if needed.

0-7	8-40	41-69
Normal ageing	Mild cognitive impairment	Severe cognitive impairment

CAWEC is an Organisation made up of diplomates from the European College of Animal Welfare and Behavioral Medicine. CAWEC is part of the Animal Welfare group in the Veterinary School of the Universitat Autònoma de Barcelona (UAB).

CAWEC COMPANION ANIMAL WELFARE EDUCATION CENTRE

CANINE DRY
TYPICAL ANALYSIS

AS FED

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	CC	DM	DRM	EN	FortiFlora	FortiFlora PLUS
		Dry					
Moisture	%	7.5	7.5	7.5	7.5	3.5	4.6
Crude Protein	%	26.5	37.0	30.0	24.0	54.0	28.5
Crude Fat	%	15.0	12.0	18.0	10.5	19.0	9.5
Carbohydrates	%	39.0	29.5	35.0	50.0	14.0	48.7
Crude Fibre	%	4.5	7.0	2.5	2.0	1.0	1.7
Crude Ash	%	7.5	7.0	7.0	6.0	8.5	7.0
MINERALS							
Calcium	%	1.56	1.53	1.20	1.32	0.70	0.47
Phosphorus	%	0.80	1.06	1.00	0.88	0.65	0.36
Magnesium	%	0.15	0.15	0.17	0.11	0.04	0.04
Sodium	%	0.18	0.24	0.43	0.30	0.80	0.46
Potassium	%	0.60	0.65	0.65	0.65	0.65	0.86
Chloride	%	0.78	0.30	0.80	1.06	0.65	0.24
Iron	mg/100g	23.7	36.0	23.2	19.4	127.0	84.8
Copper	mg/100g	2.1	2.0	2.2	1.5	12.5	6.5
Zinc	mg/100g	18.0	16.5	11.5	12.0	104.5	55.7
Manganese	mg/100g	7.0	5.5	4.9	4.8	40.0	20.9
Selenium	mg/100g	0.046	0.046	0.052	0.027	0.185	0.134
Iodine	mg/100g	0.317	0.260	0.152	0.184	1.700	0.905
VITAMINS (all vitamin levels are average)							
Vitamin A	IU/kg	26540	19096	26015	22373	-	-
Vitamin D_3	IU/kg	1250	978	1342	927	-	-
Vitamin E	IU/kg	903	481	300	486	6445	3211
Vitamin K	mg/kg	0.18	0.16	0.19	0.19	-	-
Vitamin B_1	mg/kg	28.0	28.7	32.6	33.6	-	-
Vitamin B_2	mg/kg	12.8	15.1	14.1	15.0	-	-
Vitamin B_3	mg/kg	161.1	163.9	150.3	173.6	-	-
Vitamin B_5	mg/kg	45.4	44.3	47.3	52.9	-	-
Vitamin B_6	mg/kg	14.7	16.0	16.8	17.0	-	-
Vitamin B_8	mg/kg	0.2	0.3	0.1	0.2	-	-
Vitamin B_9	mg/kg	4.3	4.9	5.0	5.2	-	-
Vitamin B_{12}	µg/kg	260.6	284.4	265.9	280.7	-	-
Choline	mg/kg	1814	1666	1985	1831	-	-
Taurine	mg/kg	2000	2135	1341	329	-	-
ESSENTIAL FATTY ACIDS							
Linoleic acid	%	1.3	2.0	2.3	1.7	-	-
Arachidonic acid	%	0.11	0.15	0.18	0.04	-	-
EPA & DHA	%	0.70	0.21	1.10	0.12	-	-
DHA	%	0.32	0.09	0.50	0.05	-	-
Omega 3 (ω-3)	%	0.8	0.4	1.4	0.3	-	-
Omega 6 (ω-6)	%	1.4	2.1	2.5	1.8	-	-
ENERGY							
Metabolizable Energy Calculated Modified Atwater	kcal/kg	3568	3348	3805	3483	3995	3510
Metabolisable Energy Calculated NRC 2006	kcal/kg	3687	3420	4002	3704	4354	3767
Energy from protein**	%	26	39	28	24	47	28
Energy from fat**	%	36	30	40	26	40	23
Energy from carbohydrates**	%	38	31	32	50	12	49

**Calculated by Modified Atwater

CANINE DRY TYPICAL ANALYSIS

AS FED

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	HA	HP	JM	NC	NF	OM	UR
		Dry						
Moisture	%	8.0	7.5	7.5	7.5	7.5	7.5	7.5
Crude Protein	%	21.0	19.0	30.0	30.0	13.0	29.0	22.0
Crude Fat	%	10.5	18.0	12.0	15.0	14.5	6.0	15.0
Carbohydrates	%	51.5	45.4	41.0	38.5	58.5	41.0	49.1
Crude Fibre	%	2.0	3.5	2.5	1.5	2.0	10.0	1.5
Crude Ash	%	6.0	6.0	7.0	7.5	4.5	6.5	4.9
MINERALS								
Calcium	%	1.11	0.94	1.50	1.67	0.75	1.35	0.70
Phosphorus	%	0.99	0.83	1.14	1.06	0.40	0.87	0.70
Magnesium	%	0.04	0.11	0.14	0.11	0.09	0.14	0.08
Sodium	%	0.39	0.21	0.37	0.33	0.20	0.24	0.20
Potassium	%	0.72	0.75	0.95	0.74	0.80	0.67	0.70
Chloride	%	0.85	0.60	0.70	0.64	0.66	0.36	0.70
Iron	mg/100g	19.1	9.5	26.9	26.1	24.7	33.4	28.1
Copper	mg/100g	1.9	0.5	2.0	2.0	2.4	2.1	2.3
Zinc	mg/100g	14.9	20.8	18.7	18.3	20.7	16.6	19.0
Manganese	mg/100g	5.9	1.5	6.3	6.3	8.2	5.9	7.2
Selenium	mg/100g	0.017	0.036	0.048	0.053	0.030	0.035	0.038
Iodine	mg/100g	0.237	0.254	0.302	0.301	0.322	0.248	0.315
VITAMINS (all vitamin levels are average)								
Vitamin A	IU/kg	21920	20331	19309	31243	20084	21581	23041
Vitamin D_3	IU/kg	973	1721	1657	1426	1429	949	1045
Vitamin E	IU/kg	301	471	814	519	305	300	305
Vitamin K	mg/kg	0.19	0.06	0.16	0.20	0.17	0.18	0.16
Vitamin B_1	mg/kg	32.8	14.5	29.0	34.4	29.3	32.0	28.4
Vitamin B_2	mg/kg	14.0	13.6	14.0	17.7	13.3	14.8	14.4
Vitamin B_3	mg/kg	149.7	77.9	165.7	194.9	140.9	161.2	158.2
Vitamin B_5	mg/kg	47.3	37.9	47.5	55.0	46.2	46.7	45.0
Vitamin B_6	mg/kg	16.8	12.3	15.0	18.4	14.7	17.2	17.6
Vitamin B_8	mg/kg	0.2	0.0	0.2	0.3	0.1	0.2	0.2
Vitamin B_9	mg/kg	5.2	3.3	4.6	5.8	4.5	5.1	4.7
Vitamin B_{12}	µg/kg	263.8	139.2	256.0	332.7	233.0	279.7	263.4
Choline	mg/kg	2749	5521	2611	2137	2964	1856	1893
Taurine	mg/kg	1986	-	1402	1488	-	563	786
ESSENTIAL FATTY ACIDS								
Linoleic acid	%	2.0	2.2	1.4	1.5	2.4	1.5	2.0
Arachidonic acid	%	0.01	0.18	0.11	0.10	0.13	0.05	0.21
EPA & DHA	%	0.10	0.29	0.80	0.40	0.22	0.00	0.23
DHA	%	0.09	0.12	0.48	0.24	0.10	0.00	0.10
Omega 3 (ω-3)	%	0.5	0.5	1.1	0.6	0.4	0.1	0.4
Omega 6 (ω-6)	%	2.0	2.4	1.6	1.6	2.5	1.5	2.2
ENERGY								
Metabolizable Energy Calculated Modified Atwater	kcal/kg	3430	3784	3505	3673	3735	2960	3764
Metabolisable Energy Calculated NRC 2006	kcal/kg	3638	3903	3724	3919	3904	2961	3983
Energy from protein**	%	21	18	30	29	12	34	20
Energy from fat**	%	26	40	29	35	33	17	34
Energy from carbohydrates**	%	53	42	41	37	55	48	46

**Calculated by Modified Atwater

CANINE DRY
TYPICAL ANALYSIS

DRY MATTER

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	CC	DM	DRM	EN	FortiFlora	FortiFlora PLUS
		Dry					
Dry Matter	%	93	93	93	93	97	95
Crude Protein	%	28.6	40.0	32.4	25.9	56.0	29.9
Crude Fat	%	16.2	13.0	19.5	11.4	19.7	10.0
Carbohydrates	%	42.2	31.9	37.8	54.1	14.5	51.0
Crude Fibre	%	4.9	7.6	2.7	2.2	1.0	1.8
Crude Ash	%	8.1	7.6	7.6	6.5	8.8	7.3
MINERALS							
Calcium	%	1.69	1.66	1.30	1.42	0.73	0.49
Phosphorus	%	0.86	1.14	1.08	0.95	0.67	0.38
Magnesium	%	0.16	0.16	0.19	0.12	0.04	0.04
Sodium	%	0.19	0.26	0.47	0.32	0.83	0.49
Potassium	%	0.65	0.71	0.71	0.70	0.67	0.90
Chloride	%	0.84	0.32	0.86	1.14	0.67	0.25
Iron	mg/100g	25.6	38.9	25.1	20.9	131.6	88.9
Copper	mg/100g	2.3	2.2	2.4	1.6	13.0	6.8
Zinc	mg/100g	19.4	17.9	12.4	13.0	108.3	58.3
Manganese	mg/100g	7.5	6.0	5.3	5.1	41.5	21.9
Selenium	mg/100g	0.050	0.050	0.056	0.030	0.192	0.141
Iodine	mg/100g	0.343	0.282	0.165	0.199	1.762	0.949
VITAMINS (all vitamin levels are average)							
Vitamin A	IU/kg	28691	20644	28124	24187	-	-
Vitamin D_3	IU/kg	1352	1057	1451	1002	-	-
Vitamin E	IU/kg	976	520	325	526	6679	3366
Vitamin K	mg/kg	0.20	0.18	0.21	0.21	-	-
Vitamin B_1	mg/kg	30.3	31.1	35.3	36.3	-	-
Vitamin B_2	mg/kg	13.8	16.3	15.2	16.2	-	-
Vitamin B_3	mg/kg	174	177	162	187.7	-	-
Vitamin B_5	mg/kg	49	48	51	57.2	-	-
Vitamin B_6	mg/kg	16	17	18	18.4	-	-
Vitamin B_8	mg/kg	0.17	0.27	0.12	0.2	-	-
Vitamin B_9	mg/kg	4.69	5.32	5.39	5.7	-	-
Vitamin B_{12}	µg/kg	281.74	307.41	287.51	303.5	-	-
Choline	mg/kg	1961	1801	2146	1979	-	-
Taurine	mg/kg	2162	2308	1449	356	-	-
ESSENTIAL FATTY ACIDS							
Linoleic acid	%	1.42	2.16	2.49	1.89	-	-
Arachidonic acid	%	0.12	0.16	0.19	0.04	-	-
EPA & DHA	%	0.76	0.22	1.19	0.13	-	-
DHA	%	0.35	0.09	0.54	0.06	-	-
Omega 3 (ω-3)	%	0.91	0.43	1.51	0.34	-	-
Omega 6 (ω-6)	%	1.54	2.32	2.73	1.93	-	-
ENERGY							
Metabolizable Energy Calculated Modified Atwater	kcal/kg	3857	3619	4114	3765	4140	3679
Metabolisable Energy Calculated NRC 2006	kcal/kg	3986	3697	4326	4004	4512	3949

CANINE DRY TYPICAL ANALYSIS

DRY MATTER

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

		HA	HP	JM	NC	NF	OM	UR
NUTRIENT	**Unit**	Dry						
Dry Matter	%	92	93	93	93	93	93	93
Crude Protein	%	22.8	20.5	32.4	32.4	14.1	31.4	23.8
Crude Fat	%	11.4	19.5	13.0	16.2	15.7	6.5	16.2
Carbohydrates	%	56.0	49.1	44.3	41.6	63.2	44.3	53.1
Crude Fibre	%	2.2	3.8	2.7	1.6	2.2	10.8	1.6
Crude Ash	%	6.5	6.5	7.6	8.1	4.9	7.0	5.3
MINERALS								
Calcium	%	1.20	1.02	1.62	1.80	0.81	1.46	0.76
Phosphorus	%	1.08	0.90	1.24	1.15	0.43	0.94	0.76
Magnesium	%	0.04	0.12	0.15	0.11	0.09	0.15	0.09
Sodium	%	0.43	0.23	0.40	0.36	0.22	0.26	0.22
Potassium	%	0.78	0.81	1.03	0.80	0.86	0.72	0.76
Chloride	%	0.93	0.64	0.76	0.69	0.71	0.39	0.76
Iron	mg/100g	20.7	10.2	29.1	28.2	26.7	36.1	30.3
Copper	mg/100g	2.1	0.5	2.2	2.1	2.6	2.2	2.5
Zinc	mg/100g	16.2	22.5	20.2	19.8	22.4	17.9	20.5
Manganese	mg/100g	6.4	1.6	6.8	6.9	8.9	6.3	7.8
Selenium	mg/100g	0.018	0.039	0.052	0.057	0.032	0.038	0.041
Iodine	mg/100g	0.258	0.275	0.327	0.326	0.348	0.268	0.341
VITAMINS (all vitamin levels are average)								
Vitamin A	IU/kg	23826	21980	20874	33776	21712	23331	24909
Vitamin D_3	IU/kg	1058	1861	1791	1542	1544	1026	1130
Vitamin E	IU/kg	327	509	880	561	330	324	329
Vitamin K	mg/kg	0.21	0.06	0.18	0.22	0.18	0.19	0.18
Vitamin B_1	mg/kg	35.7	15.7	31.4	37.2	31.7	34.6	30.7
Vitamin B_2	mg/kg	15.2	14.7	15.1	19.1	14.4	16.0	15.5
Vitamin B_3	mg/kg	163	84	179	211	152	174	171
Vitamin B_5	mg/kg	51	41	51	59	50	50	49
Vitamin B_6	mg/kg	18	13	16	20	16	19	19
Vitamin B_8	mg/kg	0.19	0.04	0.21	0.28	0.13	0.20	0.25
Vitamin B_9	mg/kg	5.69	3.51	4.95	6.31	4.85	5.53	5.10
Vitamin B_{12}	µg/kg	286.79	150.50	276.75	359.65	251.93	302.40	284.73
Choline	mg/kg	2988	5969	2823	2310	3204	2006	2046
Taurine	mg/kg	2159	-	1516	1608	-	608	850
ESSENTIAL FATTY ACIDS								
Linoleic acid	%	2.17	2.37	1.56	1.61	2.61	1.58	2.11
Arachidonic acid	%	0.01	0.20	0.12	0.11	0.14	0.06	0.22
EPA & DHA	%	0.11	0.31	0.86	0.43	0.24	0.00	0.25
DHA	%	0.10	0.13	0.52	0.26	0.11	0.00	0.11
Omega 3 (ω-3)	%	0.54	0.49	1.24	0.66	0.43	0.11	0.43
Omega 6 (ω-6)	%	2.17	2.57	1.68	1.72	2.70	1.63	2.34
ENERGY								
Metabolizable Energy Calculated Modified Atwater	kcal/kg	3728	4091	3789	3970	4038	3200	4069
Metabolisable Energy Calculated NRC 2006	kcal/kg	3954	4220	4026	4236	4221	3201	4306

CANINE DRY
TYPICAL ANALYSIS

PER 100 KCAL

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	CC	DM	DRM	EN	FortiFlora	FortiFlora PLUS
		Dry					
Crude Protein	g	7.2	10.8	7.5	6.5	12.4	7.6
Crude Fat	g	4.1	3.5	4.5	2.8	4.4	2.5
Carbohydrates	g	10.6	8.6	8.7	13.5	3.2	12.9
Crude Fibre	g	1.2	2.0	0.6	0.5	0.2	0.5
Crude Ash	g	2.0	2.0	1.7	1.6	2.0	1.9
MINERALS							
Calcium	g	0.4	0.4	0.3	0.4	0.2	0.1
Phosphorus	g	0.2	0.3	0.2	0.2	0.1	0.1
Magnesium	g	0.04	0.04	0.04	0.03	0.01	0.01
Sodium	g	0.0	0.1	0.1	0.1	0.2	0.1
Potassium	g	0.16	0.19	0.16	0.18	0.15	0.23
Chloride	g	0.2	0.1	0.2	0.3	0.1	0.1
Iron	mg	6.43	10.53	5.79	5.23	29.17	22.50
Copper	mg	0.56	0.58	0.55	0.40	2.87	1.72
Zinc	mg	4.87	4.83	2.88	3.24	24.00	14.77
Manganese	mg	1.89	1.62	1.22	1.28	9.19	5.56
Selenium	mg	0.01	0.01	0.01	0.01	0.04	0.04
Iodine	mg	0.09	0.08	0.04	0.05	0.39	0.24
VITAMINS (all vitamin levels are average)							
Vitamin A	IU	720	558	650	604	-	-
Vitamin D_3	IU	34	29	34	25	-	-
Vitamin E	IU	24.5	14.1	7.5	13.1	148.0	85.2
Vitamin K	mg	0.0	0.0	0.0	0.0	-	-
Vitamin B_1	mg	0.76	0.84	0.82	0.91	-	-
Vitamin B_2	mg	0.35	0.44	0.35	0.40	-	-
Vitamin B_3	mg	4.4	4.8	3.8	4.7	-	-
Vitamin B_5	mg	1.23	1.29	1.18	1.43	-	-
Vitamin B_6	mg	0.40	0.47	0.42	0.46	-	-
Vitamin B_8	mg	0.00	0.01	0.00	0.00	-	-
Vitamin B_9	mg	0.12	0.14	0.12	0.14	-	-
Vitamin B_{12}	µg	7.1	8.3	6.6	7.6	-	-
Choline	mg	49	49	50	49	-	-
Taurine	mg	54	62	33	9	-	-
ESSENTIAL FATTY ACIDS							
Linoleic acid	g	0.36	0.59	0.57	0.47	-	-
Arachidonic acid	g	0.03	0.04	0.04	0.01	-	-
EPA & DHA	g	0.19	0.06	0.27	0.03	-	-
DHA	g	0.09	0.03	0.12	0.01	-	-
Omega 3 (ω-3)	g	0.23	0.12	0.35	0.09	-	-
Omega 6 (ω-6)	g	0.39	0.63	0.63	0.48	-	-

CANINE DRY TYPICAL ANALYSIS

PER 100 KCAL

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	HA	HP	JM	NC	NF	OM	UR
		Dry						
Crude Protein	g	5.8	4.9	8.1	7.7	3.3	9.8	5.5
Crude Fat	g	2.9	4.6	3.2	3.8	3.7	2.0	3.8
Carbohydrates	g	14.2	11.6	11.0	9.8	15.0	13.8	12.3
Crude Fibre	g	0.5	0.9	0.7	0.4	0.5	3.4	0.4
Crude Ash	g	1.6	1.5	1.9	1.9	1.2	2.2	1.2
MINERALS								
Calcium	g	0.3	0.2	0.4	0.4	0.2	0.5	0.2
Phosphorus	g	0.3	0.2	0.3	0.3	0.1	0.3	0.2
Magnesium	g	0.01	0.03	0.04	0.03	0.02	0.05	0.02
Sodium	g	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Potassium	g	0.20	0.19	0.26	0.19	0.20	0.23	0.18
Chloride	g	0.2	0.2	0.2	0.2	0.2	0.1	0.2
Iron	mg	5.25	2.43	7.22	6.65	6.33	11.27	7.04
Copper	mg	0.53	0.13	0.55	0.50	0.61	0.70	0.58
Zinc	mg	4.10	5.33	5.02	4.66	5.30	5.59	4.76
Manganese	mg	1.62	0.38	1.69	1.62	2.11	1.98	1.81
Selenium	mg	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Iodine	mg	0.07	0.07	0.08	0.08	0.08	0.08	0.08
VITAMINS (all vitamin levels are average)								
Vitamin A	IU	603	521	518	797	514	729	578
Vitamin D_3	IU	27	44	44	36	37	32	26
Vitamin E	IU	8.3	12.1	21.8	13.3	7.8	10.1	7.6
Vitamin K	mg	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vitamin B_1	mg	0.90	0.37	0.78	0.88	0.75	1.08	0.71
Vitamin B_2	mg	0.38	0.35	0.38	0.45	0.34	0.50	0.36
Vitamin B_3	mg	4.1	2.0	4.4	5.0	3.6	5.4	4.0
Vitamin B_5	mg	1.30	0.97	1.27	1.40	1.18	1.58	1.13
Vitamin B_6	mg	0.46	0.31	0.40	0.47	0.38	0.58	0.44
Vitamin B_8	mg	0.00	0.00	0.01	0.01	0.00	0.01	0.01
Vitamin B_9	mg	0.14	0.08	0.12	0.15	0.11	0.17	0.12
Vitamin B_{12}	µg	7.3	3.6	6.9	8.5	6.0	9.4	6.6
Choline	mg	76	141	70	55	76	63	48
Taurine	mg	55	1	38	38	0	19	20
ESSENTIAL FATTY ACIDS								
Linoleic acid	g	0.55	0.56	0.39	0.38	0.62	0.49	0.49
Arachidonic acid	g	0.00	0.05	0.03	0.03	0.03	0.02	0.05
EPA & DHA	g	0.03	0.07	0.21	0.10	0.06	0.00	0.06
DHA	g	0.02	0.03	0.13	0.06	0.03	0.00	0.03
Omega 3 (ω-3)	g	0.14	0.12	0.31	0.16	0.10	0.03	0.10
Omega 6 (ω-6)	g	0.55	0.61	0.42	0.41	0.64	0.51	0.54

CANINE WET TYPICAL ANALYSIS

AS FED

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

		CN	EN	HA	NF	OM
NUTRIENT	Unit	Can				
Moisture	%	77.0	72.5	74.3	72.0	78.5
Crude Protein	%	10.9	8.0	6.2	6.0	8.7
Crude Fat	%	7.6	4.9	3.7	7.2	2.5
Carbohydrates	%	0.9	11.6	11.6	12.5	3.7
Crude Fibre	%	0.1	0.8	2.1	0.2	4.4
Crude Ash	%	3.5	2.2	2.1	2.1	2.2
MINERALS						
Calcium	%	0.44	0.33	0.25	0.27	0.25
Phosphorus	%	0.38	0.23	0.24	0.12	0.16
Magnesium	%	0.03	0.04	0.02	0.03	0.02
Sodium	%	0.36	0.12	0.10	0.09	0.25
Potassium	%	0.35	0.32	0.36	0.45	0.26
Chloride	%	0.41	0.34	0.33	0.36	0.34
Iron	mg/100g	5.3	3.9	3.0	6.4	6.2
Copper	mg/100g	0.5	0.3	0.3	0.6	0.5
Zinc	mg/100g	4.3	3.9	3.7	4.4	3.2
Manganese	mg/100g	0.3	0.4	0.5	0.4	0.2
Selenium	mg/100g	0.040	0.005	0.011	0.011	0.012
Iodine	mg/100g	0.060	0.058	0.074	0.063	0.034
VITAMINS (all vitamin levels are average)						
Vitamin A	IU/kg	30805	12337	5309	49565	52777
Vitamin D_3	IU/kg	290	305	164	278	114
Vitamin E	IU/kg	200	134	138	144	73
Vitamin K	mg/kg	0.03	0.09	54.75	57.13	0.05
Vitamin B_1	mg/kg	10.6	11.9	11.3	12.6	6.9
Vitamin B_2	mg/kg	6.7	5.5	2.4	7.2	8.2
Vitamin B_3	mg/kg	47.1	41.7	21.2	49.7	46.6
Vitamin B_5	mg/kg	15.5	13.8	6.0	17.4	17.5
Vitamin B_6	mg/kg	2.9	2.3	1.7	2.6	2.1
Vitamin B_8	mg/kg	0.2	0.1	0.1	0.1	0.1
Vitamin B_9	mg/kg	0.6	0.7	0.5	0.7	0.6
Vitamin B_{12}	µg/kg	48.31	28.64	14.05	57.82	55.58
Choline	mg/kg	2440	1184	522	1182	974
Taurine	mg/kg	2035	934	1204	833	664
ESSENTIAL FATTY ACIDS						
Linoleic acid	%	1.6	0.8	0.9	1.3	0.5
EPA & DHA	%	0.100	0.001	0.066	0.052	0.001
DHA	%	0.050	0.001	0.017	0.021	0.000
Omega 3 (ω-3)	%	0.15	0.03	0.17	0.12	0.02
Omega 6 (ω-6)	%	1.26	0.95	0.89	1.53	0.73
ENERGY						
Metabolizable Energy Calculated Modified Atwater	kcal/kg	1059	1103	938	1260	647
Metabolisable Energy Calculated NRC 2006	kcal/kg	1134	1157	940	1327	568
Energy from protein**	%	36	25	23	17	47
Energy from fat**	%	61	38	34	49	33
Energy from carbohydrates**	%	3	37	43	35	20

**Calculated by Modified Atwater

CANINE WET
TYPICAL ANALYSIS

DRY MATTER

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

		CN	EN	HA	NF	OM
NUTRIENT	Unit	Can				
Dry matter	%	23	28	26	28	22
Crude Protein	%	47.4	29.1	24.1	21.4	40.5
Crude Fat	%	33.0	17.8	14.4	25.7	11.6
Carbohydrates	%	4.0	42.2	45.1	44.7	17.2
Crude Fibre	%	0.4	2.9	8.2	0.6	20.5
Crude Ash	%	15.2	8.0	8.2	7.5	10.2
MINERALS						
Calcium	%	1.91	1.19	0.99	0.96	1.16
Phosphorus	%	1.65	0.84	0.92	0.43	0.75
Magnesium	%	0.13	0.13	0.08	0.12	0.09
Sodium	%	1.57	0.43	0.40	0.32	1.17
Potassium	%	1.52	1.15	1.42	1.61	1.20
Chloride	%	1.78	1.23	1.29	1.29	1.57
Iron	mg/100g	23.0	14.3	11.8	23.0	28.6
Copper	mg/100g	2.0	1.0	1.2	2.1	2.4
Zinc	mg/100g	18.7	14.1	14.3	15.7	15.0
Manganese	mg/100g	1.3	1.6	2.1	1.5	1.1
Selenium	mg/100g	0.174	0.018	0.043	0.038	0.055
Iodine	mg/100g	0.261	0.210	0.288	0.224	0.158
VITAMINS (all vitamin levels are average)						
Vitamin A	IU/kg	133935	44862	20656	177017	245474
Vitamin D_3	IU/kg	1259	1109	639	993	530
Vitamin E	IU/kg	870	487	538	515	340
Vitamin K	mg/kg	0.13	0.33	213.04	204.02	0.22
Vitamin B_1	mg/kg	46.0	43.3	44.1	45.0	32.3
Vitamin B_2	mg/kg	29.2	20.1	9.4	25.6	38.3
Vitamin B_3	mg/kg	205	151.7	83	177	217
Vitamin B_5	mg/kg	67	50.1	23	62	82
Vitamin B_6	mg/kg	12	8.3	7	9	10
Vitamin B_8	mg/kg	0.68	0.5	0.22	0.29	0.47
Vitamin B_9	mg/kg	2.68	2.5	1.86	2.66	2.85
Vitamin B_{12}	µg/kg	210.05	104.15	54.66	206.50	258.51
Choline	mg/kg	10607	4304	2032	4223	4530
Taurine	mg/kg	8846	3397	4684	2975	3089
ESSENTIAL FATTY ACIDS						
Linoleic acid	%	7.0	2.9	3.6	4.6	2.4
EPA & DHA	%	0.435	0.004	0.255	0.185	0.003
DHA	%	0.217	0.004	0.067	0.075	0.002
Omega 3 (ω-3)	%	0.65	0.10	0.70	0.42	0.08
Omega 6 (ω-6)	%	5.48	3.44	3.62	5.46	3.39
ENERGY						
Metabolizable Energy Calculated Modified Atwater	kcal/kg	4606	4009	3648	4501	3007
Metabolisable Energy Calculated NRC 2006	kcal/kg	4933	4208	3656	4741	2641

CANINE WET TYPICAL ANALYSIS

PER 100 KCAL

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

		CN	EN	HA	NF	OM
NUTRIENT	Unit	Can				
Crude Protein	g	9.6	6.9	6.6	4.5	15.3
Crude Fat	g	6.7	4.2	3.9	5.4	4.4
Carbohydrates	g	0.8	10.0	12.3	9.4	6.5
Crude Fibre	g	0.1	0.7	2.2	0.1	7.7
Crude Ash	g	3.1	1.9	2.2	1.6	3.9
MINERALS						
Calcium	g	0.39	0.28	0.27	0.20	0.44
Phosphorus	g	0.33	0.20	0.25	0.09	0.29
Magnesium	g	0.03	0.03	0.02	0.03	0.03
Sodium	g	0.32	0.10	0.11	0.07	0.44
Potassium	g	0.31	0.27	0.39	0.34	0.45
Chloride	g	0.36	0.29	0.35	0.27	0.60
Iron	mg	4.7	3.4	3.2	4.9	10.8
Copper	mg	0.4	0.2	0.3	0.4	0.9
Zinc	mg	3.8	3.3	3.9	3.3	5.7
Manganese	mg	0.3	0.4	0.6	0.3	0.4
Selenium	mg	0.035	0.004	0.012	0.008	0.021
Iodine	mg	0.053	0.050	0.079	0.047	0.060
VITAMINS (all vitamin levels are average)						
Vitamin A	IU	2715	1066	565	3734	9294
Vitamin D_3	IU	26	26	17	21	20
Vitamin E	IU	18	12	15	11	13
Vitamin K	mg	0.0	0.0	5.8	4.3	0.0
Vitamin B_1	mg	0.9	1.0	1.2	0.9	1.2
Vitamin B_2	mg	0.59	0.48	0.26	0.54	1.45
Vitamin B_3	mg	4.2	3.6	2.3	3.7	8.2
Vitamin B_5	mg	1.4	1.2	0.6	1.3	3.1
Vitamin B_6	mg	0.25	0.20	0.18	0.20	0.37
Vitamin B_8	mg	0.01	0.01	0.01	0.01	0.02
Vitamin B_9	mg	0.05	0.06	0.05	0.06	0.11
Vitamin B_{12}	µg	4.3	2.5	1.5	4.4	9.8
Choline	mg	215	102	56	89	171
Taurine	mg	179	81	128	63	117
ESSENTIAL FATTY ACIDS						
Linoleic acid	g	1.4	0.7	1.0	1.0	0.9
EPA & DHA	g	0.088	0.001	0.070	0.039	0.001
DHA	g	0.044	0.001	0.018	0.016	0.001
Omega 3 (ω-3)	g	0.13	0.02	0.19	0.09	0.03
Omega 6 (ω-6)	g	1.11	0.82	0.99	1.15	1.28

FELINE DRY
TYPICAL ANALYSIS

AS FED

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

DM EN FortiFlora FortiFlora PLUS HA HP NF NF OM UR

NUTRIENT	Unit	Dry									
Moisture	%	6.5	6.5	3.5	4.1	6.5	6.5	6.5	6.5	6.5	6.5
Crude Protein	%	50.0	40.0	55.0	37.0	35.0	28.0	29.0	28.0	48.0	35.0
Crude Fat	%	17.0	20.0	19.0	12.5	10.0	22.0	12.0	16.0	8.0	12.0
Carbohydrates	%	19.0	23.0	13.5	37.9	37.5	35.0	44.5	43.0	22.0	37.0
Crude Fibre	%	1.5	2.0	1.0	1.5	3.0	2.0	3.0	2.0	7.5	1.5
Crude Ash	%	8.0	8.5	8.0	7.0	8.0	6.5	5.0	4.5	8.0	8.0
MINERALS											
Calcium	%	1.25	1.50	0.44	0.39	1.24	1.02	0.60	0.60	1.19	0.90
Phosphorus	%	1.25	1.30	0.67	0.48	1.11	0.76	0.35	0.33	0.95	0.90
Magnesium	%	0.09	0.09	0.08	0.05	0.11	0.10	0.09	0.08	0.12	0.08
Sodium	%	0.66	0.54	0.80	0.60	0.81	0.20	0.20	0.20	0.42	1.20
Potassium	%	0.96	0.71	0.66	0.85	0.85	0.82	0.80	0.80	0.79	0.70
Chloride	%	0.93	0.63	0.66	0.30	0.88	0.74	0.64	0.80	0.57	2.40
Iron	mg/100g	35.9	24.5	84.2	76.9	26.1	13.0	23.6	23.6	33.7	26.0
Copper	mg/100g	2.5	2.1	7.9	5.6	2.6	0.5	2.0	2.2	2.1	1.9
Zinc	mg/100g	18.2	15.1	64.6	47.6	19.7	23.3	15.2	17.0	15.8	14.7
Manganese	mg/100g	5.8	4.8	24.3	16.9	7.8	1.7	6.0	6.6	5.3	5.3
Selenium	mg/100g	0.047	0.032	0.139	0.149	0.022	0.052	0.029	0.031	0.040	0.038
Iodine	mg/100g	0.313	0.251	1.027	0.756	0.307	0.347	0.225	0.257	0.242	0.241
VITAMINS (all vitamin levels are average)											
Vitamin A	IU/kg	23151	36901	-	-	34212	33739	25668	25509	26167	27794
Vitamin D_3	IU/kg	1005	1244	-	-	935	1686	1261	1523	1170	1238
Vitamin E	IU/kg	560	608	5344	3554	561	609	585	586	559	605
Vitamin K	mg/kg	0.17	0.26	-	-	0.19	0.14	0.20	0.20	0.20	0.17
Vitamin B_1	mg/kg	29.6	41	-	-	32	25	35	34	35	31
Vitamin B_2	mg/kg	17.8	18	-	-	14	19	15	15	17	16
Vitamin B_3	mg/kg	187.6	208	-	-	147	150	171	171	190	176
Vitamin B_5	mg/kg	48.2	62	-	-	49	57	52	52	52	49
Vitamin B_6	mg/kg	23.4	22	-	-	17	17	19	19	21	20
Vitamin B_8	mg/kg	0.4	0.21	-	-	0.22	0.11	0.16	0.16	0.26	0.26
Vitamin B_9	mg/kg	5.6	6.61	-	-	5.30	4.95	5.34	5.31	5.66	5.04
Vitamin B_{12}	µg/kg	312.4	367.01	-	-	258.08	261.23	274.55	274.55	305.88	283.38
Choline	mg/kg	4061	2870	-	-	3559	3265	2569	2870	2276	3701
Taurine	mg/kg	2251	1837	2480	4050	1688	3205	1400	1400	1707	1789
ESSENTIAL FATTY ACIDS											
Linoleic acid	%	2.20	2.3	-	-	4.5	2.8	1.6	1.8	1.4	1.8
Arachidonic acid	%	0.26	0.32	-	-	0.06	0.10	0.15	0.20	0.08	0.16
EPA & DHA	%	0.18	0.28	-	-	0.16	0.26	0.23	0.60	0.25	0.28
DHA	%	0.08	0.13	-	-	0.07	0.12	0.10	0.27	0.11	0.14
Omega 3 (ω-3)	%	0.47	0.6	-	-	0.7	0.5	0.3	0.8	0.4	0.5
Omega 6 (ω-6)	%	2.00	2.6	-	-	4.0	3.1	1.8	2.0	1.5	2.0
ENERGY											
Metabolizable Energy Calculated Modified Atwater	kcal/kg	3860	3905	4013	3684	3388	4075	3593	3845	3130	3540
Metabolisable Energy Calculated NRC 2006	kcal/kg	4189	4154	4376	3954	3640	4214	3794	4067	3428	3816
Energy from protein**	%	45	36	48	35	36	24	28	25	54	35
Energy from fat**	%	37	44	40	29	25	46	28	35	22	29
Energy from carbohydrates**	%	17	21	12	36	39	30	43	39	25	37

* Average of the two varieties. **Calculated by Modified Atwater

FELINE DRY
TYPICAL ANALYSIS

DRY MATTER

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	DM	EN	FortiFlora	FortiFlora PLUS	HA	HP	NF	NF	OM	UR
		Dry									
Dry matter	%	94	94	97	96	94	94	93.5	93.5	94	94
Crude Protein	%	53.5	42.8	57.0	38.6	37.4	29.9	31.0	29.9	51.3	37.4
Crude Fat	%	18.2	21.4	19.7	13.0	10.7	23.5	12.8	17.1	8.6	12.8
Carbohydrates	%	20.3	24.6	14.0	39.5	40.1	37.4	47.6	46.0	23.5	39.6
Crude Fibre	%	1.6	2.1	1.0	1.6	3.2	2.1	3.2	2.1	8.0	1.6
Crude Ash	%	8.6	9.1	8.3	7.3	8.6	7.0	5.3	4.8	8.6	8.6
MINERALS											
Calcium	%	1.34	1.60	0.46	0.40	1.32	1.10	0.64	0.64	1.28	0.96
Phosphorus	%	1.34	1.39	0.69	0.50	1.18	0.82	0.37	0.35	1.01	0.96
Magnesium	%	0.10	0.10	0.05	0.05	0.11	0.10	0.10	0.08	0.13	0.09
Sodium	%	0.70	0.57	0.83	0.62	0.87	0.21	0.21	0.21	0.45	1.28
Potassium	%	1.03	0.76	0.68	0.89	0.91	0.88	0.86	0.86	0.84	0.75
Chloride	%	0.99	0.67	0.68	0.31	0.94	0.79	0.68	0.86	0.61	2.57
Iron	mg/100g	38.4	26.2	87.2	80.2	28.0	13.9	25.2	25.2	36.0	27.8
Copper	mg/100g	2.7	2.3	8.2	5.8	2.8	0.5	2.1	2.4	2.3	2.0
Zinc	mg/100g	19.4	16.2	67.0	49.7	21.1	24.9	16.3	18.2	16.9	15.7
Manganese	mg/100g	6.2	5.1	25.2	17.6	8.3	1.8	6.4	7.1	5.7	5.7
Selenium	mg/100g	0.050	0.034	0.144	0.155	0.023	0.055	0.031	0.033	0.043	0.041
Iodine	mg/100g	0.334	0.268	1.064	0.789	0.329	0.371	0.240	0.275	0.259	0.258
VITAMINS (all vitamin levels are average)											
Vitamin A	IU/kg	24760	39466	-	-	36590	36085	27453	27282	27986	29726
Vitamin D_3	IU/kg	1075	1330	-	-	1000	1803	1349	1629	1252	1324
Vitamin E	IU/kg	599	650	5538	3706	600	652	626	627	598	648
Vitamin K	mg/kg	0.18	0.28	-	-	0.20	0.15	0.21	0.21	0.21	0.19
Vitamin B_1	mg/kg	31.6	44.0	-	-	34.6	26.4	37	36.8	37.3	32.7
Vitamin B_2	mg/kg	19.1	19.6	-	-	15.4	20.7	15.9	15.9	18.0	16.8
Vitamin B_3	mg/kg	201	223	-	-	157	160	183	183	204	188
Vitamin B_5	mg/kg	52	66	-	-	52	61	55	55	56	53
Vitamin B_6	mg/kg	25	24	-	-	18	19	20	20	23	21
Vitamin B_8	mg/kg	0.43	0.23	-	-	0.23	0.12	0.17	0.17	0.27	0.28
Vitamin B_9	mg/kg	5.99	7.07	-	-	5.66	5.30	5.72	5.68	6.05	5.39
Vitamin B_{12}	µg/kg	334.16	392.53	-	-	276.02	279.39	293.63	293.63	327.15	303.08
Choline	mg/kg	4343	3070	-	-	3806	3492	2747	3069	2435	3958
Taurine	mg/kg	2408	1965	-	-	1805	3427	1497	1497	1826	1604
ESSENTIAL FATTY ACIDS											
Linoleic acid	%	2.35	2.44	-	-	4.81	2.99	1.7	1.9	1.48	1.92
Arachidonic acid	%	0.28	0.34	-	-	0.06	0.11	0.16	0.22	0.09	0.17
EPA & DHA	%	0.19	0.30	-	-	0.17	0.28	0.24	0.64	0.27	0.30
DHA	%	0.08	0.13	-	-	0.07	0.12	0.10	0.28	0.11	0.14
Omega 3 (ω-3)	%	0.50	0.68	-	-	0.78	0.58	0.3	0.9	0.39	0.50
Omega 6 (ω-6)	%	2.14	2.78	-	-	4.28	3.32	1.9	2.1	1.57	2.08
ENERGY											
Metabolizable Energy Calculated Modified Atwater	kcal/kg	4128	4176	4158	3842	3623	4358	3842	4112	3348	3786
Metabolisable Energy Calculated NRC 2006	kcal/kg	4473	4443	4535	4123	3868	4573	4058	4350	3472	4081

FELINE DRY
TYPICAL ANALYSIS

PER 100 KCAL

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	DM	EN	FortiFlora	FortiFlora PLUS	HA	HP	NF	NF	OM	UR
		Dry									
Crude Protein	g	12.0	9.6	12.6	9.4	9.7	6.5	7.6	6.9	14.8	9.2
Crude Fat	g	4.1	4.8	4.3	3.2	2.8	5.1	3.2	3.9	2.5	3.1
Carbohydrates	g	4.5	5.5	3.1	9.6	10.4	8.2	11.7	10.6	6.8	9.7
Crude Fibre	g	0.4	0.5	0.2	0.4	0.8	0.5	0.8	0.5	2.3	0.4
Crude Ash	g	1.9	2.0	1.8	1.8	2.2	1.5	1.3	1.1	2.5	2.1
MINERALS											
Calcium	g	0.30	0.36	0.10	0.10	0.34	0.24	0.16	0.15	0.37	0.24
Phosphorus	g	0.30	0.31	0.15	0.12	0.31	0.18	0.09	0.08	0.29	0.24
Magnesium	g	0.02	0.02	0.01	0.01	0.03	0.02	0.02	0.02	0.04	0.02
Sodium	g	0.16	0.13	0.18	0.15	0.23	0.05	0.05	0.05	0.13	0.31
Potassium	g	0.23	0.17	0.15	0.21	0.24	0.19	0.21	0.20	0.24	0.18
Chloride	g	0.22	0.15	0.15	0.08	0.24	0.17	0.17	0.20	0.18	0.63
Iron	mg	8.59	5.89	19.23	19.46	7.23	3.04	6.2	5.8	10.37	6.82
Copper	mg	0.60	0.51	1.81	1.41	0.72	0.12	0.5	0.5	0.66	0.49
Zinc	mg	4.34	3.65	14.77	12.05	5.45	5.45	4.0	4.2	4.87	3.83
Manganese	mg	1.39	1.15	5.55	4.27	2.15	0.40	1.6	1.6	1.64	1.39
Selenium	mg	0.01	0.01	0.03	0.04	0.01	0.01	0.008	0.008	0.01	0.01
Iodine	mg	0.07	0.06	0.23	0.19	0.09	0.08	0.059	0.063	0.07	0.07
VITAMINS (all vitamin levels are average)											
Vitamin A	IU	553	889	-	-	940	796	676	632	763	732.0
Vitamin D_3	IU	24	30	-	-	26	40	33	38	34	33.0
Vitamin E	IU	13	15	122	90	15	14	15	15	16	16.0
Vitamin K	mg	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	0.0
Vitamin B_1	mg	0.71	0.99	-	-	0.89	0.58	0.91	0.85	1.02	0.81
Vitamin B_2	mg	0.43	0.44	-	-	0.40	0.46	0.39	0.37	0.49	0.42
Vitamin B_3	mg	4.5	5.0	-	-	4.0	3.5	4.5	4.2	5.6	4.6
Vitamin B_5	mg	1.2	1.5	-	-	1.3	1.3	1.4	1.3	1.5	1.3
Vitamin B_6	mg	0.56	0.54	-	-	0.45	0.41	0.49	0.46	0.61	0.52
Vitamin B_8	mg	0.0	0.0	-	-	0.0	0.0	0.0	0.0	0.0	0.0
Vitamin B_9	mg	0.13	0.16	-	-	0.15	0.12	0.14	0.13	0.16	0.13
Vitamin B_{12}	µg	7.5	8.8	-	-	7.1	6.2	7.2	6.8	8.9	7.5
Choline	mg	97	69	-	-	98	77	68	71	66	98
Taurine	mg	54	44	-	-	46	76	37	35	50	48
ESSENTIAL FATTY ACIDS											
Linoleic acid	g	0.53	0.55	-	-	1.24	0.65	0.4	0.4	0.43	0.47
Arachidonic acid	g	0.06	0.08	-	-	0.02	0.02	0.04	0.05	0.03	0.04
EPA & DHA	g	0.04	0.07	-	-	0.04	0.06	0.06	0.15	0.08	0.08
DHA	g	0.02	0.03	-	-	0.02	0.03	0.03	0.07	0.03	0.04
Omega 3 (ω-3)	g	0.11	0.15	-	-	0.20	0.13	0.1	0.2	0.11	0.12
Omega 6 (ω-6)	g	0.48	0.63	-	-	1.11	0.73	0.5	0.5	0.45	0.51

* Average of the two varieties.

FELINE WET
TYPICAL ANALYSIS

AS FED

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

		CN	DM	EN	NF	UR	DM	EN	HC	NF	NF	OM	UR
NUTRIENT	**Unit**	**Can**					**Pouch**						
Moisture	%	77.0	77.5	77.0	79.0	80.8	77.7	76.4	94.5	78.7	77.2	80.0	80.7
Crude Protein	%	10.9	13.8	10.5	7.0	10.0	13.9	11.0	3.2	8.7	7.3	10.6	9.5
Crude Fat	%	7.6	4.9	6.0	9.0	5.0	4.5	6.3	0.2	6.3	9.5	2.5	4.5
Carbohydrates	%	0.9	1.0	3.9	3.2	2.1	1.4	3.5	1.9	4.3	4.2	3.0	2.1
Crude Fibre	%	0.1	0.6	0.4	0.0	0.4	0.1	0.6	0.0	0.5	0.4	1.4	0.6
Crude Ash	%	3.5	2.2	2.2	1.8	1.7	2.5	2.2	0.2	1.5	1.6	2.5	2.6
MINERALS													
Calcium	%	0.44	0.31	0.26	0.22	0.22	0.42	0.31	0.00	0.17	0.22	0.34	0.26
Phosphorus	%	0.38	0.29	0.26	0.11	0.18	0.35	0.26	0.01	0.12	0.14	0.28	0.22
Magnesium	%	0.03	0.03	0.03	0.03	0.02	0.03	0.03	0.00	0.03	0.03	0.03	0.03
Sodium	%	0.36	0.13	0.16	0.07	0.12	0.21	0.18	0.02	0.07	0.08	0.28	0.34
Potassium	%	0.35	0.34	0.36	0.44	0.29	0.27	0.23	0.04	0.40	0.35	0.30	0.23
Chloride	%	0.41	0.25	0.27	0.35	0.22	0.27	0.17	0.03	0.23	0.20	0.27	0.35
Iron	mg/100g	5.3	6.2	7.3	5.6	5.9	5.4	7.2	0.0	5.9	4.1	7.5	6.4
Copper	mg/100g	0.5	0.5	0.7	0.5	0.5	0.5	0.4	0.0	0.5	0.4	0.4	0.4
Zinc	mg/100g	4.3	4.5	4.6	4.8	3.6	3.8	4.4	0.0	4.6	4.0	3.6	3.3
Manganese	mg/100g	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.0	0.6	0.4	0.3	0.3
Selenium	mg/100g	0.040	0.033	0.050	0.011	0.040	0.033	0.019	0.001	0.020	0.015	0.030	0.023
Iodine	mg/100g	0.060	0.062	0.053	0.080	0.046	0.057	0.065	0.000	0.121	0.088	0.060	0.061
VITAMINS (all vitamin levels are average)													
Vitamin A	IU/kg	30805	40421	59530	72536	48305	51378	22302	10	36908	30686	32814	27289
Vitamin D_3	IU/kg	290	326	300	412	196	507	468	0	458	423	228	272
Vitamin E	IU/kg	200	106	229	324	143	283	311	0	296	270	103	164
Vitamin K	mg/kg	0.06	0.08	0.06	0.23	0.06	0.10	0.07	0.00	0.17	0.16	0.05	0.04
Vitamin B_1	mg/kg	10.6	9.6	10.1	38.2	7.7	20.6	12.8	0.0	35.4	32.4	9.0	12.9
Vitamin B_2	mg/kg	6.7	8.3	9.1	9.0	7.3	7.5	5.7	0.0	8.2	6.9	5.9	5.0
Vitamin B_3	mg/kg	47.1	54.6	56.4	69.3	45.7	56.4	45.4	0.0	61.3	57.1	40.8	38.1
Vitamin B_5	mg/kg	15.5	18.8	20.7	22.6	16.6	17.7	13.3	0.0	18.8	17.0	13.0	11.7
Vitamin B_6	mg/kg	2.9	2.6	3.2	4.9	2.7	3.3	2.6	0.0	3.8	3.7	2.2	2.1
Vitamin B_8	mg/kg	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.2	0.1	0.1	0.1
Vitamin B_9	mg/kg	0.6	0.9	0.8	1.2	0.9	0.7	0.7	0.0	0.9	0.9	0.5	0.5
Vitamin B_{12}	µg/kg	48.31	58.25	69.77	61.77	55.71	68.78	39.28	0.00	57.22	43.35	44.22	39.15
Choline	mg/kg	2440	766	833	843	955	899	1367	0	1232	877	739	712
Taurine	mg/kg	2035	2298	1893	1470	1788	1991	1896	45	1518	1221	1806	1729
ESSENTIAL FATTY ACIDS													
Linoleic acid	%	1.6	0.7	0.8	1.7	0.8	0.4	0.8	0.1	1.3	1.2	0.2	0.4
EPA & DHA	%	0.100	0.168	0.084	0.149	0.001	0.323	0.188	0.000	0.117	0.153	0.032	0.081
DHA	%	0.050	0.111	0.036	0.078	0.001	0.169	0.088	0.000	0.061	0.091	0.021	0.052
Omega 3 (ω-3)	%	0.15	0.19	0.14	0.22	0.04	0.36	0.23	0.00	0.14	0.23	0.05	0.10
Omega 6 (ω-6)	%	1.26	0.70	0.69	1.93	0.68	0.51	0.64	0.06	1.35	1.36	0.23	0.36
ENERGY													
Metabolizable Energy Calculated Modified Atwater	kcal/kg	1059	935	1014	1121	849	916	1043	197	991	602	689	789
Metabolisable Energy Calculated NRC 2006	kcal/kg	1121	1017	1062	1155	906	1009	1104	222	1036	1232	752	843
Energy from protein**	%	36	52	36	22	41	53	37	57	31	21	54	42
Energy from fat**	%	61	45	50	68	50	42	51	9	54	67	31	49
Energy from carbohydrates**	%	3	3.75	13	9.93	9	5	12	34	15	12	15	9

* Average of the two varieties. **Calculated by Modified Atwater.

FELINE WET TYPICAL ANALYSIS

DRY MATTER

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

CN DM EN NF UR DM EN HC NF NF OM UR

NUTRIENT	Unit	Can					Pouch						
Dry matter	%	23.0	22.5	23.0	21.0	19.2	22.3	23.6	5.5	21.3	22.9	20.0	19.3
Crude Protein	%	47.4	61.3	45.7	33.3	52.1	62.3	46.6	58.2	40.8	32.0	53.0	49.2
Crude Fat	%	33.0	21.8	26.1	42.9	26.0	20.2	26.7	4.0	29.6	41.4	12.5	23.3
Carbohydrates	%	4.0	4.4	17.0	15.1	10.9	6.1	14.8	34.6	20.2	18.2	15.0	10.9
Crude Fibre	%	0.4	2.7	1.7	0.1	2.1	0.2	2.5	0.3	2.3	1.8	7.0	3.1
Crude Ash	%	15.2	9.8	9.6	8.6	8.9	11.2	9.3	2.9	7.0	6.8	12.5	13.5
MINERALS													
Calcium	%	1.91	1.38	1.14	1.04	1.15	1.87	1.30	0.05	0.80	0.95	1.69	1.34
Phosphorus	%	1.65	1.27	1.12	0.53	0.94	1.56	1.09	0.16	0.56	0.61	1.42	1.13
Magnesium	%	0.13	0.14	0.11	0.13	0.11	0.15	0.14	0.02	0.14	0.13	0.17	0.14
Sodium	%	1.57	0.59	0.67	0.33	0.61	0.94	0.78	0.31	0.35	0.34	1.42	1.75
Potassium	%	1.52	1.49	1.57	2.07	1.49	1.22	0.99	0.70	1.87	1.52	1.50	1.20
Chloride	%	1.78	1.09	1.15	1.65	1.14	1.20	0.72	0.63	1.06	0.88	1.34	1.82
Iron	mg/100g	23.0	27.5	31.6	26.9	30.8	24.0	30.4	0.0	27.7	17.8	37.5	33.1
Copper	mg/100g	2.0	2.2	2.9	2.2	2.5	2.3	1.8	0.2	2.1	1.7	2.1	2.0
Zinc	mg/100g	18.7	20.0	19.9	22.8	18.8	17.0	18.6	0.0	21.6	17.4	18.2	17.0
Manganese	mg/100g	1.3	1.6	1.5	2.1	1.3	1.4	1.6	0.0	2.7	1.9	1.5	1.5
Selenium	mg/100g	0.174	0.145	0.217	0.054	0.207	0.147	0.077	0.019	0.096	0.066	0.150	0.118
Iodine	mg/100g	0.261	0.276	0.232	0.381	0.241	0.259	0.276	0.000	0.568	0.387	0.298	0.314
VITAMINS (all vitamin levels are average)													
Vitamin A	IU/kg	133935	179649	258824	345410	251588	230392	94501	189	173275	134316	164072	141396
Vitamin D_3	IU/kg	1259	1450	1306	1960	1023	2270	1983	0	2152	1852	1142	1407
Vitamin E	IU/kg	870	470	994	1543	743	1271	1317	0	1390	1182	516	849
Vitamin K	mg/kg	0.26	0.34	0.25	1.08	0.34	0.46	0.31	0.00	0.80	0.69	0.26	0.19
Vitamin B_1	mg/kg	46.0	42.9	44.1	181.7	40.0	92.1	54.3	0.0	166.1	141.7	45.0	66.9
Vitamin B_2	mg/kg	29.2	37.0	39.6	42.6	37.9	33.3	24.2	0.0	38.5	30.1	29.3	25.9
Vitamin B_3	mg/kg	205	243	245	330	238	253	193	0	288	250	204	198
Vitamin B_5	mg/kg	67	84	90	108	87	79	57	0	88	74	65	60
Vitamin B_6	mg/kg	12	11	14	23	14	15	11	0	18	16	11	11
Vitamin B_8	mg/kg	0.68	0.89	0.83	0.97	1.16	0.76	0.47	0.00	0.78	0.58	0.59	0.52
Vitamin B_9	mg/kg	2.68	3.89	3.39	5.74	4.43	2.83	3.15	0.00	4.33	3.69	2.74	2.58
Vitamin B_{12}	µg/kg	210.05	258.87	303.34	294.14	290.15	308.33	166.43	0.00	268.65	189.71	221.09	202.83
Choline	mg/kg	10607	3405	3623	4015	4976	4029	5789	0	5785	3746	3694	3689
Taurine	mg/kg	8846	10212	8230	7000	9311	8926	8032	826	7128	5344	9030	8959
ESSENTIAL FATTY ACIDS													
Linoleic acid	%	7.0	3.3	3.5	8.3	4.1	1.8	3.3	1.2	6.0	5.0	1.2	2.0
EPA & DHA	%	0.435	0.745	0.367	0.708	0.004	1.445	0.711	0.000	0.551	0.670	0.159	0.417
DHA	%	0.217	0.493	0.155	0.372	0.003	0.756	0.371	0.000	0.285	0.396	0.103	0.269
Omega 3 (ω-3)	%	0.65	0.84	0.59	1.06	0.20	1.62	0.98	0.02	0.67	1.00	0.23	0.51
Omega 6 (ω-6)	%	5.48	3.11	2.98	9.19	3.54	2.26	2.71	1.06	6.34	5.78	1.13	1.85
ENERGY													
Metabolizable Energy Calculated Modified Atwater	kcal/kg	4606	4153	4409	5340	4419	4109	4419	3587	4650	5270	3443	4085
Metabolisable Energy Calculated NRC 2006	kcal/kg	4876	4519	4676	5498	4720	4525	4677	4041	4863	5389	3759	4365

* Average of the two varieties.

FELINE WET TYPICAL ANALYSIS

PER 100 KCAL

PURINA® PRO PLAN® VETERINARY DIETS AND RELATED PRODUCTS

NUTRIENT	Unit	CN (Can)	DM (Can)	EN (Can)	NF (Can)	UR (Can)	DM (Pouch)	EN (Pouch)	HC (Pouch)	NF (Pouch)	NF (Pouch)	OM (Pouch)	UR (Pouch)
Crude Protein	g	9.7	13.6	9.8	6.1	11.0	13.8	10.0	14.4	8.4	5.9	14.1	11.3
Crude Fat	g	6.8	4.8	5.6	7.8	5.5	4.5	5.7	1.0	6.1	7.7	3.3	5.3
Carbohydrates	g	0.8	1.0	3.6	2.8	2.3	1.3	3.2	8.6	4.2	3.4	4.0	2.5
Crude Fibre	g	0.1	0.6	0.4	0.0	0.4	0.0	0.5	0.1	0.5	0.3	1.9	0.7
Crude Ash	g	3.1	2.2	2.0	1.6	1.9	2.5	2.0	0.7	1.4	1.3	3.3	3.1
MINERALS													
Calcium	g	0.39	0.31	0.24	0.19	0.24	0.42	0.28	0.01	0.17	0.18	0.45	0.31
Phosphorus	g	0.34	0.28	0.24	0.10	0.20	0.35	0.24	0.04	0.12	0.12	0.38	0.26
Magnesium	g	0.03	0.03	0.02	0.02	0.02	0.03	0.03	0.16	0.03	0.02	0.04	0.03
Sodium	g	0.32	0.13	0.14	0.06	0.13	0.21	0.17	0.01	0.07	0.06	0.38	0.40
Potassium	g	0.31	0.33	0.34	0.38	0.32	0.27	0.21	0.17	0.38	0.28	0.40	0.28
Chloride	g	0.37	0.24	0.25	0.30	0.24	0.27	0.15	0.08	0.22	0.16	0.36	0.42
Iron	mg	4.7	6.1	6.8	4.9	6.5	5.3	6.5	0.0	5.7	3.3	10.0	7.6
Copper	mg	0.4	0.5	0.6	0.4	0.5	0.5	0.4	0.0	0.4	0.3	0.6	0.5
Zinc	mg	3.8	4.4	4.3	4.2	4.0	3.8	4.0	0.0	4.4	3.2	4.8	3.9
Manganese	mg	0.3	0.4	0.3	0.4	0.3	0.3	0.4	0.0	0.5	0.4	0.4	0.4
Selenium	mg	0.036	0.032	0.046	0.010	0.044	0.033	0.017	0.000	0.020	0.012	0.040	0.027
Iodine	mg	0.054	0.061	0.050	0.069	0.051	0.058	0.059	0.005	0.117	0.072	0.079	0.072
VITAMINS (all vitamin levels are average)													
Vitamin A	IU	2747	3975	5535	6282	5330	5091	2021	3895	3563	2493	4365	3239
Vitamin D_3	IU	26	32	28	36	22	50	43	27	44	34	30	32
Vitamin E	IU	18	10	21	28	16	28	28	21	29	22	14	19
Vitamin K	mg	0.01	0	0.01	0	0	0	0.01	0.00	0	0	0	0
Vitamin B_1	mg	0.94	0.95	0.94	3.31	0.85	2.04	1.16	2.16	3.41	2.63	1.20	1.53
Vitamin B_2	mg	0.60	0.82	0.85	0.78	0.80	0.74	0.52	0.70	0.79	0.56	0.78	0.60
Vitamin B_3	mg	4.2	5.4	5.2	6.0	5.0	5.6	4.1	4.8	5.9	4.6	5.4	4.5
Vitamin B_5	mg	1.4	1.9	1.9	2.0	1.8	1.8	1.2	1.5	1.8	1.4	1.7	1.4
Vitamin B_6	mg	0.26	0.25	0.30	0.42	0.30	0.33	0.24	0.26	0.37	0.30	0.29	0.25
Vitamin B_8	mg	0.01	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.01	0.02	0.01
Vitamin B_9	mg	0.06	0.09	0.07	0.10	0.09	0.07	0.07	0.07	0.09	0.07	0.07	0.06
Vitamin B_{12}	µg	4.3	5.7	6.5	5.3	6.1	6.8	3.6	5.0	5.5	3.6	5.9	4.7
Choline	mg	218	75	77	73	105	89	124	88	119	72	98	85
Taurine	mg	181	226	176	127	197	198	172	214	147	100	240	205
ESSENTIAL FATTY ACIDS													
Linoleic acid	g	1.4	0.7	0.7	1.5	0.9	0.4	0.7	0.3	1.2	0.9	0.3	0.5
EPA & DHA	g	0.089	0.165	0.078	0.129	0.001	0.320	0.170	0.000	0.113	0.125	0.042	0.096
DHA	g	0.045	0.109	0.033	0.068	0.001	0.167	0.032	0.000	0.059	0.074	0.027	0.062
Omega 3 (ω-3)	g	0.13	0.19	0.13	0.19	0.04	0.36	0.21	0.00	0.14	0.19	0.06	0.12
Omega 6 (ω-6)	g	1.12	0.69	0.64	1.67	0.75	0.50	0.58	0.26	1.30	1.08	0.30	0.43

* Average of the two varieties.

CANINE DRY
TYPICAL ANALYSIS

AS FED

PURINA® PRO PLAN® EXPERT CARE NUTRITION

NUTRIENT	Unit	ACTI-PROTECT™ PUPPY Small & Mini Lamb	ACTI-PROTECT™ PUPPY Lamb	ACTI-PROTECT™ ADULT Small & Mini Chicken	ACTI-PROTECT™ ADULT Small & Mini DERMA CARE Salmon	ACTI-PROTECT™ ADULT Chicken	ACTI-PROTECT™ ADULT DERMA CARE Salmon	ACTI-PROTECT™ ADULT DIGESTION CARE Lamb	ACTI-PROTECT™ ADULT LIGHT/ STERILISED Chicken	ACTI-PROTECT™ ADULT 7+ Chicken
Moisture	%	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Crude Protein	%	34.0	30.0	28.0	30.0	26.0	29.0	26.0	27.0	29.0
Crude Fat	%	21.0	19.0	17.0	18.0	16.0	18.0	16.0	9.0	15.0
Carbohydrates	%	26.5	32.5	37.0	33.5	40.5	35.0	40.0	45.0	38.5
Crude Fibre	%	2.5	2.5	2.5	3.0	2.5	3.0	2.5	3.5	2.0
Crude Ash	%	8.0	8.0	7.5	7.5	7.0	7.0	7.5	7.5	7.5
MINERALS										
Calcium	%	1.52	1.36	1.37	1.60	1.31	1.03	1.45	1.57	1.50
Phosphorus	%	1.04	0.96	1.03	0.84	0.88	0.84	0.81	0.91	0.93
Magnesium	%	0.12	0.12	0.11	0.12	0.11	0.12	0.11	0.13	0.11
Sodium	%	0.39	0.44	0.57	0.49	0.40	0.43	0.41	0.42	0.42
Potassium	%	0.74	0.70	0.68	0.69	0.64	0.66	0.63	0.71	0.72
Chloride	%	0.68	0.69	0.73	0.78	0.73	0.54	0.70	0.72	0.84
Iron	mg/100g	28.4	27.2	24.2	22.6	25.2	25.1	27.5	26.8	24.9
Copper	mg/100g	2.1	2.0	2.0	2.1	2.1	2.3	2.2	2.2	2.1
Zinc	mg/100g	16.8	16.4	17.1	17.6	18.5	18.9	18.2	17.4	17.6
Manganese	mg/100g	5.6	5.6	6.5	6.4	7.2	6.9	6.6	6.9	6.7
Selenium	mg/100g	0.043	0.042	0.043	0.043	0.042	0.043	0.042	0.043	0.042
Iodine	mg/100g	0.256	0.252	0.258	0.278	0.283	0.299	0.285	0.262	0.269
VITAMINS (all vitamin levels are average)										
Vitamin A	IU/kg	18924	19357	25035	23500	17867	23747	18919	21276	21885
Vitamin D_3	IU/kg	1090	1068	1169	1618	1008	1610	995	1154	1147
Vitamin E	IU/kg	214	215	474	487	475	486	473	241	561
Vitamin K	mg/kg	0.16	0.16	0.18	0.20	0.15	0.20	0.16	0.18	0.19
Vitamin C	mg/kg	60	60	70	70	70	70	70	60	83
Vitamin B_1	mg/kg	28.5	28.4	32.2	34.9	26.8	35.4	27.7	31.9	32.9
Vitamin B_2	mg/kg	15.0	15.0	15.9	15.7	13.1	15.9	14.1	15.0	15.8
Vitamin B_3	mg/kg	171	167	187	200	158	199	158	178	189
Vitamin B_5	mg/kg	48	47	53	57	44	57	45	51	53
Vitamin B_6	mg/kg	16	16	18	20	15	21	15	18	18
Vitamin B_8	mg/kg	0.23	0.22	0.23	0.19	0.21	0.18	0.19	0.21	0.24
Vitamin B_9	mg/kg	4.81	4.83	5.38	5.35	4.44	5.42	4.62	5.16	5.39
Vitamin B_{12}	mg/kg	0.28	0.28	0.29	0.29	0.24	0.29	0.26	0.28	0.30
Choline	mg/kg	2172	1999	1878	2297	1867	2317	1839	2071	2103
Taurine	mg/kg	1021	1015	902	1032	808	931	787	1313	841
ESSENTIAL FATTY ACIDS										
Linoleic acid	%	2.19	2.15	2.70	2.07	2.58	2.18	2.01	1.82	1.86
EPA & DHA	%	0.19	0.17	0.17	0.58	0.16	0.54	0.10	0.21	0.16
DHA	%	0.05	0.05	0.07	0.37	0.07	0.34	0.04	0.09	0.07
Omega 3 (ω-3)	%	0.36	0.32	0.40	1.00	0.40	1.00	0.23	0.30	0.30
Omega 6 (ω-6)	%	1.84	1.78	2.18	2.00	2.07	2.50	1.64	1.42	1.46
ENERGY										
Metabolisable Energy Calculated NRC 2006	kcal/kg	4100	3993	3912	3927	3876	3941	3858	3470	3859
Energy from protein**	%	30	28	26	28	25	27	25	29	28
Energy from fat**	%	46	42	39	41	37	41	37	23	35
Energy from carbohydrates**	%	24	30	35	31	38	32	38	48	37

**Calculated by Modified Atwater.

CANINE DRY TYPICAL ANALYSIS

DRY MATTER

PURINA® PRO PLAN® EXPERT CARE NUTRITION

NUTRIENT	Unit	ACTI-PROTECT™ PUPPY Small & Mini Lamb	ACTI-PROTECT™ PUPPY Lamb	ACTI-PROTECT™ ADULT Small & Mini Chicken	ACTI-PROTECT™ ADULT Small & Mini DERMA CARE Salmon	ACTI-PROTECT™ ADULT Chicken	ACTI-PROTECT™ ADULT DERMA CARE Salmon	ACTI-PROTECT™ ADULT DIGESTION CARE Lamb	ACTI-PROTECT™ ADULT LIGHT/ STERILISED Chicken	ACTI-PROTECT™ ADULT 7+ Chicken
Dry Matter	%	92	92	92	92	92	92	92	92	92
Crude Protein	%	37.0	32.6	30.4	32.6	28.3	31.5	28.3	29.3	31.5
Crude Fat	%	22.8	20.7	18.5	19.6	17.4	19.6	17.4	9.8	16.3
Carbohydrates	%	28.8	35.3	40.2	36.4	44.0	38.0	43.5	48.9	41.8
Crude Fibre	%	2.7	2.7	2.7	3.3	2.7	3.3	2.7	3.8	2.2
Crude Ash	%	8.7	8.7	8.2	8.2	7.6	7.6	8.2	8.2	8.2
MINERALS										
Calcium	%	1.65	1.48	1.49	1.74	1.43	1.11	1.58	1.71	1.63
Phosphorus	%	1.13	1.04	1.12	0.92	0.95	0.91	0.88	0.99	1.01
Magnesium	%	0.13	0.13	0.12	0.13	0.12	0.13	0.12	0.14	0.12
Sodium	%	0.43	0.48	0.62	0.54	0.44	0.46	0.45	0.46	0.46
Potassium	%	0.80	0.76	0.74	0.75	0.70	0.72	0.69	0.77	0.79
Chloride	%	0.74	0.75	0.79	0.84	0.79	0.58	0.76	0.79	0.91
Iron	mg/100g	30.9	29.6	26.3	24.5	27.4	27.3	29.9	29.1	27.1
Copper	mg/100g	2.3	2.1	2.2	2.3	2.3	2.5	2.4	2.3	2.3
Zinc	mg/100g	18.2	17.9	18.6	19.2	20.1	20.6	19.8	18.9	19.2
Manganese	mg/100g	6.1	6.1	7.1	6.9	7.8	7.5	7.2	7.5	7.3
Selenium	mg/100g	0.047	0.046	0.046	0.047	0.046	0.046	0.046	0.047	0.046
Iodine	mg/100g	0.278	0.274	0.280	0.302	0.307	0.325	0.309	0.285	0.293
VITAMINS (all vitamin levels are average)										
Vitamin A	IU/kg	20569	21040	27212	25544	19421	25812	20564	23126	23789
Vitamin D_3	IU/kg	1184	1161	1271	1759	1096	1750	1081	1254	1247
Vitamin E	IU/kg	233	233	515	530	516	528	514	262	610
Vitamin K	mg/kg	0.18	0.18	0.20	0.22	0.16	0.22	0.17	0.20	0.20
Vitamin C	mg/kg	65	65	76	76	76	76	76	65	90
Vitamin B_1	mg/kg	31.0	30.9	35.0	37.9	29.1	38.5	30.2	34.7	35.7
Vitamin B_2	mg/kg	16.4	16.3	17.3	17.0	14.2	17.3	15.4	16.3	17.2
Vitamin B_3	mg/kg	186	181	203	217	172	216	172	194	205
Vitamin B_5	mg/kg	52	51	57	61	48	62	49	56	58
Vitamin B_6	mg/kg	18	17	20	22	16	22	16	19	20
Vitamin B_8	mg/kg	0.25	0.24	0.26	0.20	0.22	0.20	0.21	0.23	0.26
Vitamin B_9	mg/kg	5.23	5.25	5.84	5.81	4.82	5.89	5.02	5.61	5.86
Vitamin B_{12}	mg/kg	0.31	0.30	0.32	0.31	0.26	0.32	0.29	0.30	0.32
Choline	mg/kg	2361	2173	2041	2497	2029	2519	1999	2251	2286
Taurine	mg/kg	1109	1103	980	1122	878	1012	855	1427	915
ESSENTIAL FATTY ACIDS										
Linoleic acid	%	2.38	2.34	2.94	2.25	2.81	2.36	2.19	1.98	2.02
EPA & DHA	%	0.21	0.18	0.18	0.64	0.18	0.59	0.11	0.23	0.18
DHA	%	0.05	0.05	0.08	0.40	0.08	0.37	0.05	0.10	0.07
Omega 3 (ω-3)	%	0.39	0.35	0.43	1.09	0.43	1.09	0.24	0.33	0.33
Omega 6 (ω-6)	%	2.00	1.94	2.37	2.17	2.25	2.72	1.78	1.55	1.59
ENERGY										
Metabolisable Energy Calculated NRC 2006	kcal/kg	4457	4341	4252	4268	4213	4284	4194	3772	4195

CANINE DRY
TYPICAL ANALYSIS

PER 100 KCAL

PURINA® PRO PLAN® EXPERT CARE NUTRITION

NUTRIENT	Unit	ACTI-PROTECT™ PUPPY Small & Mini Lamb	ACTI-PROTECT™ PUPPY Lamb	ACTI-PROTECT™ ADULT Small & Mini Chicken	ACTI-PROTECT™ ADULT Small & Mini DERMA CARE Salmon	ACTI-PROTECT™ ADULT Chicken	ACTI-PROTECT™ ADULT DERMA CARE Salmon	ACTI-PROTECT™ ADULT DIGESTION CARE Lamb	ACTI-PROTECT™ ADULT LIGHT/ STERILISED Chicken	ACTI-PROTECT™ ADULT 7+ Chicken
Crude Protein	g	8.3	7.5	7.2	7.6	6.7	7.4	6.7	7.8	7.5
Crude Fat	g	5.1	4.8	4.3	4.6	4.1	4.6	4.1	2.6	3.9
Carbohydrates	g	6.5	8.1	9.5	8.5	10.4	8.9	10.4	13.0	10.0
Crude Fibre	g	0.6	0.6	0.6	0.8	0.6	0.8	0.6	1.0	0.5
Crude Ash	g	2.0	2.0	1.9	1.9	1.8	1.8	1.9	2.2	1.9
MINERALS										
Calcium	g	0.37	0.34	0.35	0.41	0.34	0.26	0.38	0.45	0.39
Phosphorus	g	0.25	0.24	0.26	0.21	0.23	0.21	0.21	0.26	0.24
Magnesium	g	0.03	0.03	0.03	0.03	0.03	0.03	0.03	0.04	0.03
Sodium	g	0.10	0.11	0.15	0.13	0.10	0.11	0.11	0.12	0.11
Potassium	g	0.18	0.17	0.17	0.18	0.17	0.17	0.16	0.21	0.19
Chloride	g	0.17	0.17	0.19	0.20	0.19	0.14	0.18	0.21	0.22
Iron	mg	6.9	6.8	6.2	5.7	6.5	6.4	7.1	7.7	6.5
Copper	mg	0.5	0.5	0.5	0.5	0.6	0.6	0.6	0.6	0.5
Zinc	mg	4.1	4.1	4.4	4.5	4.8	4.8	4.7	5.0	4.6
Manganese	mg	1.4	1.4	1.7	1.6	1.9	1.8	1.7	2.0	1.7
Selenium	mg	0.011	0.011	0.011	0.011	0.011	0.011	0.011	0.012	0.011
Iodine	mg	0.062	0.063	0.066	0.071	0.073	0.076	0.074	0.075	0.070
VITAMINS (all vitamin levels are average)										
Vitamin A	IU	462	485	640	598	461	603	490	613	567
Vitamin D_3	IU	27	27	30	41	26	41	26	33	30
Vitamin E	IU	5.2	5.4	12.1	12.4	12.2	12.3	12.3	6.9	14.5
Vitamin K	mg	0.004	0.004	0.005	0.005	0.004	0.005	0.004	0.005	0.005
Vitamin C	mg	1.5	1.5	1.8	1.8	1.8	1.8	1.8	1.7	2.1
Vitamin B_1	mg	0.70	0.71	0.82	0.89	0.69	0.90	0.72	0.92	0.85
Vitamin B_2	mg	0.37	0.37	0.41	0.40	0.34	0.40	0.37	0.43	0.41
Vitamin B_3	mg	4.2	4.2	4.8	5.1	4.1	5.0	4.1	5.1	4.9
Vitamin B_5	mg	1.2	1.2	1.4	1.4	1.1	1.4	1.2	1.5	1.4
Vitamin B_6	mg	0.40	0.39	0.46	0.52	0.39	0.52	0.39	0.52	0.48
Vitamin B_8	mg	0.01	0.01	0.01	0.00	0.01	0.00	0.01	0.01	0.01
Vitamin B_9	mg	0.12	0.12	0.14	0.14	0.11	0.14	0.12	0.15	0.14
Vitamin B_{12}	mg	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Choline	mg	53	50	48	58	48	59	48	60	55
Taurine	mg	25	25	23	26	21	24	20	38	22
ESSENTIAL FATTY ACIDS										
Linoleic acid	g	0.5	0.5	0.7	0.5	0.7	0.6	0.5	0.5	0.5
EPA & DHA	g	0.047	0.042	0.042	0.149	0.042	0.138	0.026	0.061	0.042
DHA	g	0.012	0.013	0.018	0.094	0.018	0.087	0.011	0.026	0.018
Omega 3 (ω-3)	g	0.1	0.1	0.1	0.3	0.1	0.3	0.1	0.1	0.1
Omega 6 (ω-6)	g	0.4	0.4	0.6	0.5	0.5	0.6	0.4	0.4	0.4

FELINE DRY
TYPICAL ANALYSIS

AS FED

PURINA® PRO PLAN® EXPERT CARE NUTRITION

NUTRIENT	Unit	ACTI-PROTECT™ KITTEN Chicken	ACTI-PROTECT™ STERILISED ADULT Salmon	ACTI-PROTECT™ STERILISED ADULT Turkey	ACTI-PROTECT™ STERILISED ADULT 7+ Turkey
Moisture	%	6.0	6.0	6.0	6.0
Protein	%	40.0	41.0	41.0	40.0
Fat	%	20.0	12.0	12.0	13.0
Carbohydrates	%	26.0	29.5	29.5	31.5
Crude Fibre	%	1.0	4.0	4.0	3.0
Ash	%	7.0	7.5	7.5	6.5
MINERALS					
Calcium	%	1.35	1.32	1.33	0.89
Phosphorus	%	1.12	1.14	1.13	0.80
Magnesium	%	0.10	0.11	0.11	0.11
Sodium	%	0.39	0.61	0.56	0.44
Potassium	%	0.69	0.81	0.81	0.84
Chloride	%	0.69	0.99	1.01	0.76
Iron	mg/kg	296	259	268	266
Copper	mg/kg	22	20	20	22
Zinc	mg/kg	183	164	170	166
Manganese	mg/kg	65	57	57	59
Selenium	mg/kg	0.47	0.50	0.47	0.40
Iodine	mg/kg	3.0	2.5	2.6	2.5
VITAMINS (all vitamin levels are average)					
Vitamin A	IU/kg	26550	23639	24890	24035
Vitamin D_3	IU/kg	1165	1537	1226	1142
Vitamin E	IU/kg	597	593	578	1282
Vitamin K	mg/kg	0.20	0.17	0.18	0.17
Vitamin C	mg/kg	70	70	70	70
Vitamin B_1	mg/kg	35	30	32	31
Vitamin B_2	mg/kg	18	16	17	16
Vitamin B_3	mg/kg	210	200	196	188
Vitamin B_5	mg/kg	57	52	53	51
Vitamin B_6	mg/kg	23	21	21	21
Vitamin B_8	mg/kg	0.34	0.32	0.32	0.27
Vitamin B_9	mg/kg	5.9	5.2	5.5	5.2
Vitamin B_{12}	mg/kg	0.33	0.29	0.31	0.28
Choline	mg/kg	3423	3051	3066	3158
Taurine	mg/kg	1778	1826	1837	1900
ESSENTIAL FATTY ACIDS					
Linoleic acid	%	3.08	1.52	2.37	3.10
Arachidonic acid	%	0.25	0.3	0.1	0.1
Omega 3 (ω-3)	%	0.26	0.53	0.38	0.40
Omega 6 (ω-6)	%	2.51	1.37	1.86	2.40
ENERGY					
Metabolisable Energy Calculated NRC 2006	kcal/kg	4270	3760	3760	3880
Energy from protein**	%	39.2	44.0	44.0	42.1
Energy from fat**	%	38.3	25.3	25.3	26.8
Energy from carbohydrates**	%	22.5	30.8	30.8	31.1

**Calculated by Modified Atwater.

FELINE DRY
TYPICAL ANALYSIS

DRY MATTER

PURINA® PRO PLAN® EXPERT CARE NUTRITION

NUTRIENT	Unit	ACTI-PROTECT™ KITTEN Chicken	ACTI-PROTECT™ STERILISED ADULT Salmon	ACTI-PROTECT™ STERILISED ADULT Turkey	ACTI-PROTECT™ STERILISED ADULT 7+ Turkey
Dry Matter	%	94.0	94.0	94.0	94.0
Protein	%	42.6	43.6	43.6	42.6
Fat	%	21.3	12.8	12.8	13.8
Carbohydrates	%	27.7	31.4	31.4	33.5
Crude Fibre	%	1.1	4.3	4.3	3.2
Ash	%	7.4	8.0	8.0	6.9
MINERALS					
Calcium	%	1.4	1.4	1.4	0.9
Phosphorus	%	1.2	1.2	1.2	0.9
Magnesium	%	0.1	0.1	0.1	0.1
Sodium	%	0.4	0.6	0.6	0.5
Potassium	%	0.7	0.9	0.9	0.9
Chloride	%	0.7	1.1	1.1	0.8
Iron	mg/kg	315	275	285	283
Copper	mg/kg	23.3	21.5	21.6	22.9
Zinc	mg/kg	195	174	181	177
Manganese	mg/kg	68.7	60.2	60.5	62.6
Selenium	mg/kg	0.5	0.5	0.5	0.5
Iodine	mg/kg	3.2	2.7	2.8	2.7
VITAMINS (all vitamin levels are average)					
Vitamin A	IU/kg	28245	25148	26478	25570
Vitamin D_3	IU/kg	1239	1635	1304	1215
Vitamin E	IU/kg	635	631	615	1364
Vitamin K	mg/kg	0.21	0.18	0.19	0.19
Vitamin C	mg/kg	74	74	74	74
Vitamin B_1	mg/kg	36.8	32.2	33.9	33.2
Vitamin B_2	mg/kg	19.6	17.5	18.2	16.8
Vitamin B_3	mg/kg	223	213	209	200
Vitamin B_5	mg/kg	60.4	55.3	55.9	54.0
Vitamin B_6	mg/kg	24.6	22.2	22.5	22.1
Vitamin B_8	mg/kg	0.4	0.3	0.3	0.3
Vitamin B_9	mg/kg	6.3	5.6	5.8	5.5
Vitamin B_{12}	mg/kg	0.4	0.3	0.3	0.3
Choline	mg/kg	3642	3246	3262	3359
Taurine	mg/kg	1891	1943	1954	2022
ESSENTIAL FATTY ACIDS					
Linoleic acid	%	3.28	1.62	2.52	3.30
Arachidonic acid	%	0.27	0.32	0.11	0.11
Omega 3 (ω-3)	%	0.28	0.57	0.40	0.43
Omega 6 (ω-6)	%	2.67	1.46	1.98	2.56
ENERGY					
Metabolisable Energy Calculated NRC 2006	kcal/kg	4543	4000	4000	4128

FELINE DRY
TYPICAL ANALYSIS

PER 100 KCAL

PURINA® PRO PLAN® EXPERT CARE NUTRITION

NUTRIENT	Unit	ACTI-PROTECT™ KITTEN Chicken	ACTI-PROTECT™ STERILISED ADULT Salmon	ACTI-PROTECT™ STERILISED ADULT Turkey	ACTI-PROTECT™ STERILISED ADULT 7+ Turkey
Protein	g	9.4	10.9	10.9	10.3
Fat	g	4.7	3.2	3.2	3.4
Carbohydrates	g	6.1	7.8	7.8	8.1
Crude Fibre	g	0.2	1.1	1.1	0.8
Ash	g	1.6	2.0	2.0	1.7
MINERALS					
Calcium	g	0.32	0.35	0.35	0.23
Phosphorus	g	0.26	0.30	0.30	0.21
Magnesium	g	0.02	0.03	0.03	0.03
Sodium	g	0.09	0.16	0.15	0.11
Potassium	g	0.16	0.21	0.22	0.22
Chloride	g	0.16	0.26	0.27	0.19
Iron	mg	6.94	6.89	7.12	6.85
Copper	mg	0.51	0.54	0.54	0.55
Zinc	mg	4.28	4.36	4.53	4.28
Manganese	mg	1.51	1.50	1.51	1.52
Selenium	mg	0.01	0.01	0.01	0.01
Iodine	mg	0.07	0.07	0.07	0.06
VITAMINS (all vitamin levels are average)					
Vitamin A	IU	622	629	662	619
Vitamin D_3	IU	27.3	40.9	32.6	29.4
Vitamin E	IU	13.98	15.77	15.38	33.04
Vitamin K	mg	0.005	0.005	0.005	0.005
Vitamin C	mg	1.64	1.86	1.86	1.80
Vitamin B_1	mg	0.81	0.81	0.85	0.80
Vitamin B_2	mg	0.43	0.44	0.45	0.41
Vitamin B_3	mg	4.91	5.32	5.23	4.85
Vitamin B_5	mg	1.33	1.38	1.40	1.31
Vitamin B_6	mg	0.54	0.56	0.56	0.53
Vitamin B_8	mg	0.01	0.01	0.01	0.01
Vitamin B_9	mg	0.14	0.14	0.15	0.13
Vitamin B_{12}	mg	0.01	0.01	0.01	0.01
Choline	mg	80.2	81.1	81.5	81.4
Taurine	mg	41.6	48.6	48.9	49.0
ESSENTIAL FATTY ACIDS					
Linoleic acid	g	0.72	0.41	0.63	0.80
Arachidonic acid	g	0.06	0.08	0.03	0.03
Omega 3 (ω-3)	g	0.06	0.14	0.10	0.10
Omega 6 (ω-6)	g	0.59	0.37	0.49	0.62

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