STERILISED WEIGHT CONTROL

A SCIENTIFIC SUPPORT PAPER

When fed Sterilised Weight Control, 90% of cats moved to a healthier weight.

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CONTENTS

WHY IS HEALTHY WEIGHT SO IMPORTANT?

A national survey in the UK reported that 77% of pet owners perceive their animals to be at an "ideal weight." However, this perception contrasts with clinical studies, where 43% of cats in the region are classified as overweight or obese (UK Pet Food, 2024).

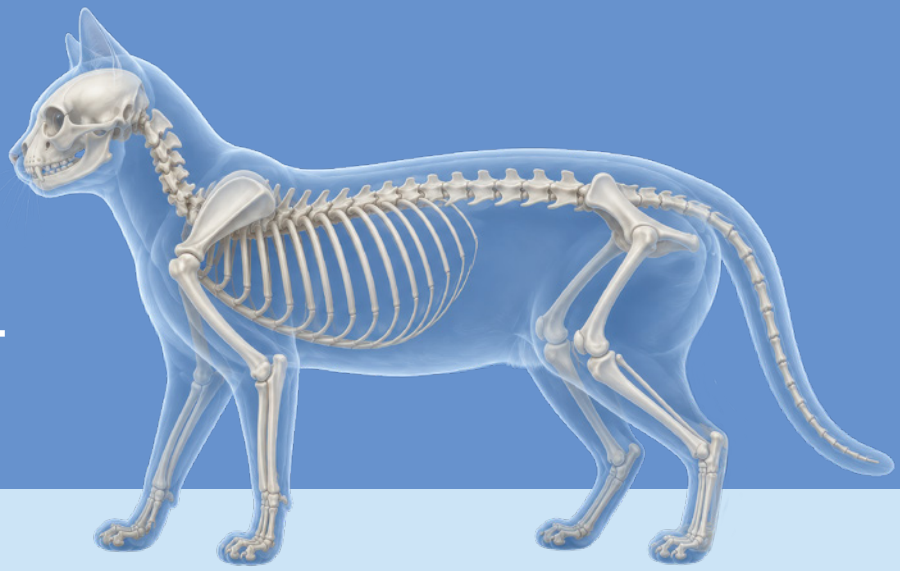
This highlights a health concern, given that obesity is one of the most prevalent nutritional disorders.

Feline obesity is diagnosed when a cat's weight exceeds their ideal body mass by 20%, while a 10–20% increase classifies them as overweight. This excess weight significantly compromises feline health and welfare by elevating disease susceptibility, impairing physical function, and reducing both life expectancy and quality of life (Öhlund, Palmgren and Holst, 2018).

Diseases and health issues associated with excess weight and obesity in cats include osteoarthritis, diabetes mellitus, cardiac dysfunction and cardiovascular disease, dyspnoea, urinary and reproductive disorders, reduced life expectancy, increased risk under general anaesthetic, decreased heat tolerance, dermatological problems, and difficulty grooming (German, 2006).

Behavioural changes are often observed as overweight cats are likely to become disinclined to play, incapable of undertaking frequent, vigorous exercise, spend increased time resting and require help jumping or climbing (Bland et al., 2009). This highlights the importance of maintaining a healthy weight to maximise long-term health and wellbeing.

FACTORS AFFECTING BODY WEIGHT



A cat's body weight depends primarily on its food intake and physical activity.

Since excessive food consumption is the critical factor in weight gain, diet becomes the pillar of healthy maintenance. It is more effective to prevent weight gain through management tools than to treat obesity and its subsequent health consequences (German et al., 2015).

While feline weight management is a complex challenge, an appropriately formulated diet provides owners a tool for supporting their pet's bodyweight.

Among the predisposing factors of weight gain, neutering is notable for significantly altering feline physiology and behaviour. This process lowers metabolism and energy expenditure, frequently leading to increased food consumption (Larsen, 2016)

Additionally, studies report a prevalence of weight gain in males compared to females, as well as with advancing age (Clark and Hoenig, 2021).

BREED SPECIFIC OBESITY SUSCEPTIBILITY

Susceptibility to obesity also varies by breed, suggesting a strong genetic influence; this is particularly evident in Domestic Shorthairs, mixed breeds, British Shorthairs, Maine Coons, and Norwegian Forest Cats (Saavedra et al., 2024).

HOW IS A HEALTHY WEIGHT ASSESSED?

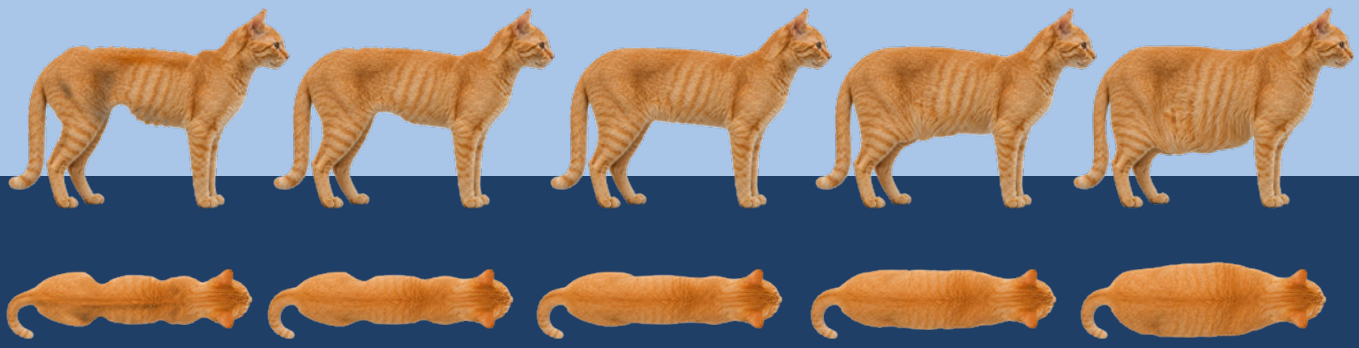
A cat's weight can be tracked on a scale; however, this can be physically challenging depending on the cat's temperament. Therefore, visual and physical observations are often the most practical way to assess weight.

By using a **Body Condition Scoring (BCS) system,** owners can easily determine their cat's health. While BCS can be subjective, the 5-point system has shown high repeatability and predictability based on body morphology (German et al., 2006).

On this scale, 1–2 represents emaciated to thin, 3 is the optimal score, and 4–5 indicates overweight to obesity.

At an ideal weight, the ribs are easily felt under a slight fat covering, with an apparent waist and abdominal tuck.

Behaviourally, the cat should remain active and mobile. Conversely, in an overweight or obese cat, a heavy layer of fat makes it difficult to feel individual ribs, absence of waist and obvious broad (Dorsten & Cooper, 2004).



1 - EMACIATED

Ribs and bony prominences are visible and easily palpable with no fat cover - severe abdominal tuck when viewed from the side and an exaggerated hourglass shape from above.

2 - THIN

Ribs and bony prominences are easily palpable with minimal fat cover. A marked abdominal tuck when viewed from the side and an obvious waist when viewed from above.

3 - IDEAL

Ribs and bony prominences are palpable with a slight fat cover. Abdominal tuck is present when viewed from the side, and a well-proportioned waist when viewed from above.

4 - OVERWEIGHT

Ribs and bony prominences can be felt under a moderate fat cover. No abdominal tuck, but a moderate abdominal fat pad is visible when viewed from the side, and no waist when viewed from above.

5 - OBESE

Ribs and bony prominences are very difficult to feel under a thick fat cover.

Prominent pendulous ventral bulge with extensive abdominal fat deposits when viewed from the side and a markedly broadened back from above. Fat deposits around the face, neck and limbs.

THE IMPORTANCE OF BIOAVAILABLE AND BIOACTIVE PEPTIDES TO SUPPORT WEIGHT CONTROL

Proteins are large molecules made up of individual 'building blocks' called amino acids.

After eating food containing protein, the process of protein digestion begins as enzymes released in different parts of the gastrointestinal tract break it down into protein hydrolysates: short chains of amino acids called peptides and free amino acids.

This enables these building blocks to be absorbed into the body where they can be recombined to build new proteins (such as skin, hair, muscle, antibodies, enzymes, hormones, etc).

Historically it was believed that only free amino acids were absorbed from the gastrointestinal tract by specific amino acid transporters whereas it is now recognised that the majority of amino acids are absorbed from the intestine as di- and tri-peptides by the broad-specificity peptide transporter PepT1 (Fei et al., 1994).

Dipeptides and tripeptides are most abundant in the molecular weight range of 0.2–0.25 kDa and 0.3–0.4 kDa, respectively.

Research has shown that intake of proteins that have already been hydrolysed (peptides) are more readily absorbed from the digestive tract than intact protein and even individual amino acids. This ensures an ideal supply of amino acid building blocks required for the renewal and synthesis of key peptide hormones and proteins (Maebuchi et al., 2007; Zhao et al., 1997).

Hormones are important substances that acts as chemical messengers in the body.

The majority of hormones are protein or protein derivatives and they facilitate a wide range of processes including metabolism, hunger and satiety, which is the feeling of fullness. This means that they play a significant role in influencing body weight as a result of hormones role in regulating appetite (Morton et al., 2006).

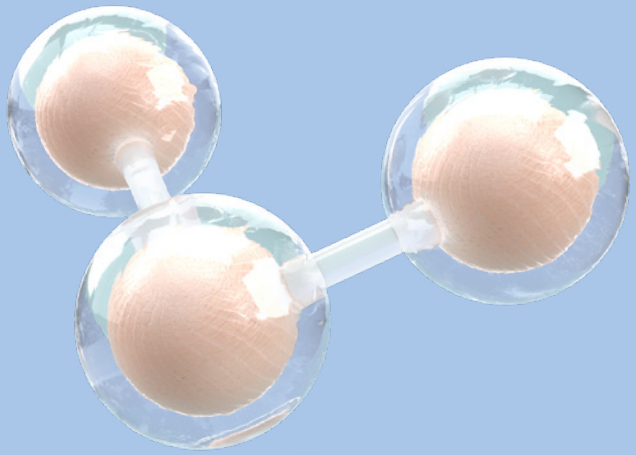
The long-term regulation of bodyweight is controlled by several endocrine signals such as the hormones insulin and leptin. This regulation is coupled with short-term signals provided by the peptide hormone cholecystokinin (CCK) from duodenal I-cells and glucagon-like peptide-1 (GLP-1) from intestinal L cells.

Secretion is stimulated in the intestine in response to nutrient ingestion and these short-term signals help to regulate daily energy intake by maintaining an appropriate intake of food. Peripheral GLP-1 may also interact with leptin, associating it in both acute and long-term regulation of energy balance (Morton et al., 2006).

Fish peptides and protein hydrolysates from crustaceans have been demonstrated to highly stimulate the secretion of appetite-suppressive molecules such as CCK in intestinal endocrine STC-1 cells in vitro.

In addition, small peptides (<1500 Da) exerted a greater CCK-stimulating effect than larger molecular weight peptides (Cudennec et al., 2008).

In vitro effects have additionally been repeated in vivo. Studies have shown that fish peptides stimulate an increase in the amount of anorexigenic (appetite supressing) hormones, CCK and GLP-1 in the blood.



Short-term this induces a decrease in food intake by increasing the feeling of satiety. Moreover, it was demonstrated that the administration of fish peptides lead to a decrease in body weight gain.

Therefore, long-term this may induce a decrease in adipose tissue as a result of hormone interactions capable of effectively reducing overall food intake.

This study is an example of a decrease in body weight mediated by both indirect and direct mechanisms. Compared to intact proteins, bioactive fish peptides significantly increased the intestinal secretion of CCK and GLP-1, which decreased food intake and total calories consumed ultimately having a direct long-term impact on decreasing adipose tissue (Cudennec et al., 2012). Furthermore, fish peptides have been reported to possess other vital biological activities against various pathologies associated with obesity. Notably, these include inhibitory effects against angiotensin-converting enzyme (ACE) and dipeptidyl peptidase IV (DPP-IV), which offer potential benefits for managing hypertension and type 2 diabetes (Ribeiro et al., 2024).

In this regard, these peptides influence satiety mechanisms and exhibit hypolipidemic and anti-atherogenic effects, demonstrating their potential as functional ingredients for the prevention and management of overweight and obesity in cats.

FISH PEPTIDES FOR SATIETY TO HELP WEIGHT MANAGEMENT

Studies have show that fish peptides (included in the Weight Control & Joint Care diet) stimulate an increase in the amount of anorexigenic (appetite suppressing) hormones, CCK and GLP-1 in the blood.

Short-term this induces a decrease in food intake by increasing the feeling of satiety, and can lead to a decrease in body weight gain. Therefore in the long term this may decrease adipose tissue effectively reducing overall food intake.

WHY COMBINE A WEIGHT CONTROL AND JOINT CARE RECIPE?

There is a clear link between excess weight and joint problems in humans and cats. Excessive weight will apply additional pressure onto joints.

When a joint is overloaded, this can cause breakdown of cartilage and increases the risk of joint damage.

Signs of joint damage include reduced joint mobility and lameness. Furthermore, as joint pain increases this may predispose inactivity and sedentary behaviour leading to further weight gain and may subsequently lead to osteoarthritis (Moreau et al., 2010).

Osteoarthritis is a progressively painful disease caused by articular cartilage degradation, in which the extracellular matrix structure is altered resulting in loss of important functional proteins such as proteoglycan which provides hydration and swelling pressure to the tissue enabling it to withstand compressional forces and collagen which provides structural support to the extracellular space of connective tissues.

Additionally, osteoarthritis is characterised by subchondral bone sclerosis which is a thickening and hardening of bone that happens underneath cartilage in a joint and chronic inflammation of synovial membranes (Johnson et al., 2020).

According to Slingerland et al. (2011), 61% of cats over 6 years old suffer from osteoarthritis, with the 2019 VET Report adding that 41% of cats with osteoarthritis are also overweight.

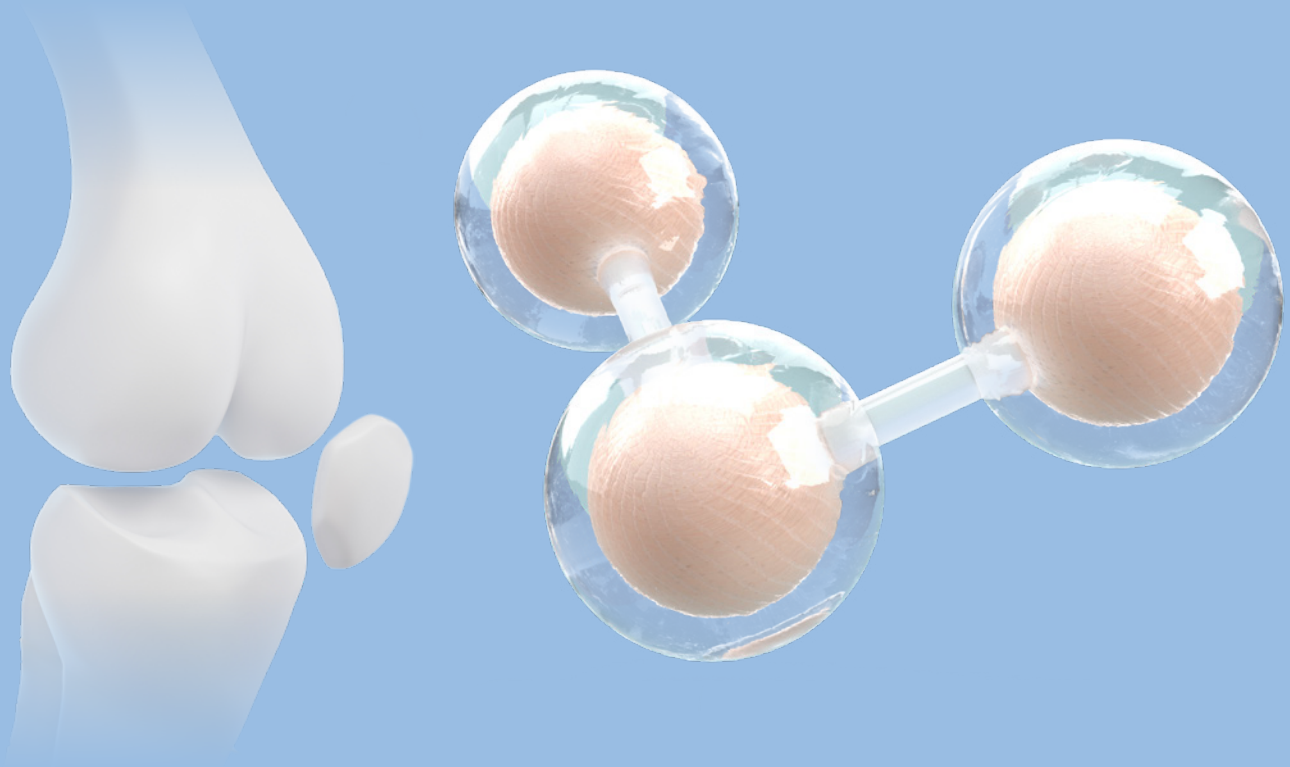
Research reviewing obesity as a risk factor for feline osteoarthritis suggests that excess body weight may contribute to disease development through mechanical overload and adipose-driven inflammation.

These findings indicate that maintaining an ideal body weight is a primary clinical goal to prevent the condition and slow its progression, mirroring proven outcomes in canine and human medicine (Canadian Academy of Veterinary Nutrition et al., 2024).

Consequently, weight loss is a critical intervention for osteoarthritic animals; it can improve mobility, reduce lameness, and alleviate associated pain, thereby preserving quality of life.

Although controlled trials specifically in osteoarthritic cats are limited, it is reasonable to expect that weight reduction will similarly improve joint comfort in cats, as current recommendations are supported by robust canine and human data (Marshall et al., 2009).

THE IMPORTANCE OF BIOAVAILABLE AND BIOACTIVE COLLAGEN PEPTIDES TO SUPPORT JOINT HEALTH



Collagen is a protein found exclusively in animals, especially in the skin, bones and connective tissues of mammals, birds and fish.

Collagen proves and maintains the structural integrity of various tissues throughout the body.

Type I collagen is the most abundant collagen, making up more than **90% of the protein content of bone and is the major collagen of tendons** (this type of connective tissue attaches muscles to bones) and ligaments (this type of connective tissue attaches one bone to another bone – holding joints together), providing structure and strength to these tissues.

Type II collagen is the predominant component of cartilage, the extremely strong, flexible and semi-rigid support tissue found at points where two bones meet, providing a smooth surface that allows joints to move easily and a 'cushion' effect to absorb the shock of impact, especially on the ends of weight-bearing bones (e.g., knee, elbow joints).

Collagen is essential for bone health. It provides the protein matrix ('scaffolding') on which calcification (bone mineralisation) can occur

Bone collagen undergoes continual breakdown, repair and renewal, so providing nourishment through dietary collagen or collagen peptides is **important to help maintain lifelong strong, healthy bones**.

In addition, collagen is a major component of articular cartilage. Supplementation with collagen peptides, particularly type II collagen, may **support joint health and cartilage repair in cats** by promoting chondrocyte activity and extracellular matrix synthesis, and potentially reducing inflammation (Gencoglu et al., 2020)

WHAT MAKES THE STERILISED WEIGHT CONTROL DIET SO UNIQUE?

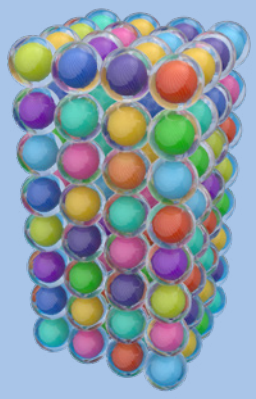
The development and formulation of the Sterilised Weight Control recipe has centred around the 'Power of Peptides', using the latest Freshtrusion® HDP technology.

Freshtrusion® HDP (Highly Digestible Protein) is the unique process of cooking fresh meat and fish ingredients in the presence of a natural enzyme, which digests (hydrolyses) the protein into a mixture of peptides and free amino acids.

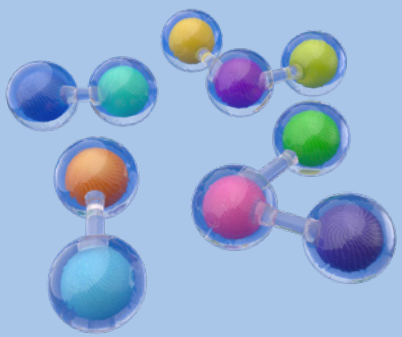
This increases the digestibility and bioavailability of the protein and improves palatability, through what we like to refer it as the "Goldilocks Principle":

THE GOLDILOCKS PRINCIPLE

Instinctively, it would be assumed that intact protein would be best for a cat to digest as it contains all the nutritional elements together as one. Similarly, individual amino acids, broken down as small as possible, might be considered to be much easier to absorb. However, it has been proven in research studies that the ideal digestibility and absorption rates occur in small-chain peptides (≤ 3kDa). We like to refer to this as the 'Goldilocks principle'.



INTACT PROTEIN

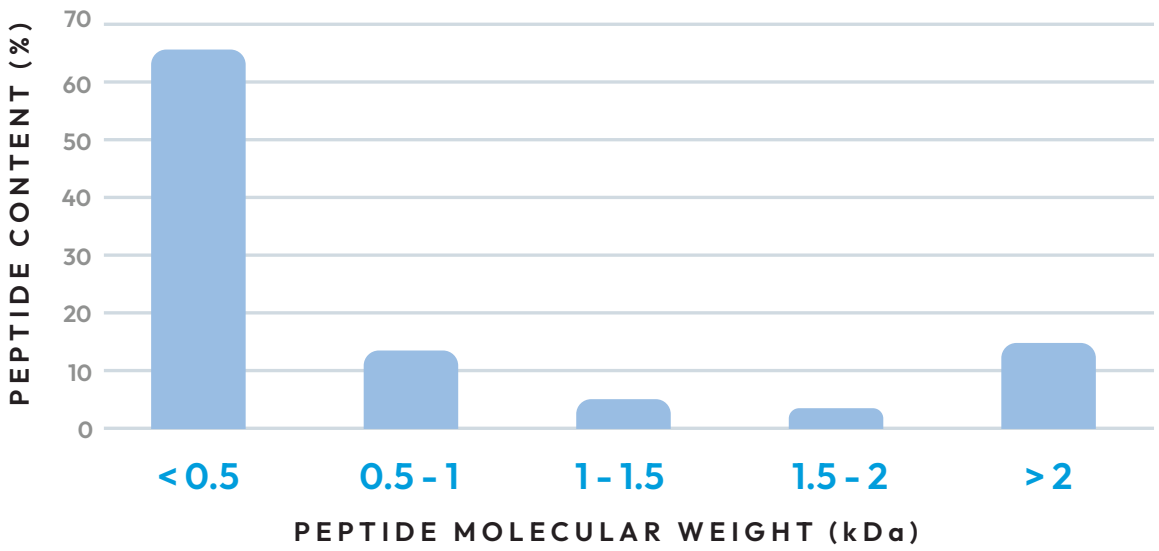


DI AND TRIPEPTIDES

SINGULAR AMINO ACIDS

TOO BIG — JUST RIGHT — TOO LITTLE

STERILISED WEIGHT CONTROL RECIPE: PEPTIDE CONTENT (%)



A minimum of 65% of the peptides in this recipe are < 0.5 kDa with just 14% of the peptides > 2 kDa.

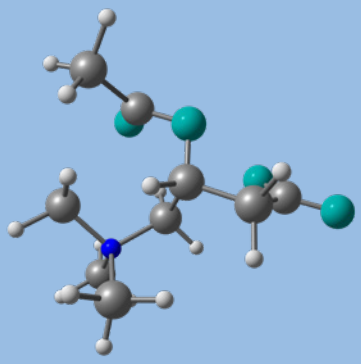
The results show the majority of peptides in the finished kibble fall into the < 0.5 kDa category, which includes the highly digestible and nutritionally beneficial dipeptides and tripeptides - achieving the Goldilocks Principle.

THE POWER OF THE PEPTIDES FOR WEIGHT CONTROL & JOINT HEALTH

- ✓ **Increases the digestibility and bioavailability of the protein**
- ✓ **Improves the palatability of the recipe**
- ✓ **Ensures an ideal supply of amino acid building blocks required for the renewal and synthesis of key peptide hormones and proteins such as collagen**
- ✓ **Stimulates the secretion of appetite-suppressive molecules which may induce a decrease in food intake by increasing the feeling of satiety**
- ✓ **Helps to support and maintain healthy joints and regain mobility**

In addition to the inclusion of hydrolysed protein, the Sterilised Weight Control diet is formulated with a blend of functional ingredients to support lean muscle mass and a low fat content to limit fat intake and deposition, including L-Carnitine and Green Lipped Mussel, Lignocellulose, psyllium seed and turmeric that have shown to have beneficial effects on weight control and joint health.

WHAT OTHER INGREDIENTS ARE BENEFICIAL IN MAINTAINING A HEALTHY WEIGHT?



L-carnitine supplementation has been shown to promote weight and fat loss in overweight cats.

The Sterilised Weight Control diet is formulated with a blend of functional ingredients to support lean muscle mass and a low fat content to limit fat intake and deposition, including L-Carnitine and Green Lipped Mussel, Lignocellulose, psyllium seed and turmeric that have shown to have beneficial effects on weight control and joint health.

Coupled with a high-protein formulation, the inclusion of dietary fibre sources such as lignocellulose and psyllium seed has been shown to be more effective in reducing voluntary food intake and increase satiety.

This is important as maximising satiety is a critical factor for any weight management diet, as it helps control appetite and supports caloric restriction (Munekata et al., 2021).

As a result, such diets lead to improved outcomes of weight loss in overweight and obese cats (German et al., 2010).

Dietary fibre contributes to satiety through multiple mechanisms, including increasing bulk, promoting gastric distension, and creating viscosity that slows nutrient absorption and prolongs satiety signals (Slavin & Green, 2007). In particular, soluble fibres such as psyllium can form a gel-like substance in the stomach, enhancing the feeling of fullness and reducing food intake. When combined with protein, these effects may be amplified through increased gastric viscosity and delayed gastric emptying, further helping to reduce appetite and prevent overconsumption (Rochon et al., 2026).

Studies have shown the benefits of L-carnitine supplementation on weight and fat loss in overweight cats. Its inclusion in feline diets enhances energy metabolism by increasing fatty acid oxidation, which helps to reduce body fat stores (Sunvold et al., 1998).

Additionally, L-carnitine may help preserve lean muscle mass during periods of increased activity and caloric restriction, which is essential for maintaining optimal body condition and supporting long-term weight management (Center et al., 2012).

WHAT OTHER INGREDIENTS ARE BENEFICIAL IN AIDING JOINT HEALTH?

Green-lipped mussel is known to contain anti-inflammatory components and other nutrients that may benefit joint health.

Dietary factors can potentially modify some of the underlying processes involved in joint problems, including modulation of the inflammatory response and provision of nutrients for cartilage repair.

The inclusion of green-lipped mussel as a functional ingredient in feline diets plays an important role in supporting joint health, as it has been shown to improve mobility in cats with osteoarthritis (Corbee, 2022).

This benefit is attributed to its rich content of bioactive compounds, including omega-3 fatty acids, amino acids (glutamine), vitamins (E, C) and minerals (zinc, copper, manganese), which contribute to reducing inflammation and promoting joint function.

Green-lipped mussel contains glycosaminoglycans (GAGs), such as chondroitin sulfates, which are long, unbranched carbohydrates and key components of the cartilage extracellular matrix and synovial fluid. These compounds may help stimulate extracellular matrix production and support cartilage repair (Bierer & Bui, 2002).

In addition, GAGs can serve as precursors of glucosamine, which has been proposed to alleviate inflammation and further support cartilage structure and function in conditions such as osteoarthritis (Meininger et al., 2000).

Complementing these ingredients, botanical inclusions like turmeric offer a potent biochemical defense. Curcumin, the active compound in turmeric, is well known for its anti-inflammatory and antioxidant properties.

It exerts these effects by inhibiting the NF-κB signaling pathway, thereby reducing pro-inflammatory cytokines such as TNF-α and IL-1β. Furthermore, it promotes cartilage repair through increased collagen II expression (Guan et al., 2022).

A recent study demonstrated that a formulation combining turmeric extract with hydrolysed collagen, produced analgesic and functional benefits in cats with mobility-impairing osteoarthritis (Lefort-Holguin et al., 2024).

WHAT ARE THE RESULTS?

As part of the development of the Sterilised Weight Control recipe, a feeding study was conducted to evaluate the benefits of this recipe in overweight or obese cats.

The study was conducted by Dr Łukasz Kisielewski, DVM, SABA Veterinary Office, Miastko, Poland.

The feeding trial included 11 healthy cats whose owners had identified concerns regarding their cat's weight and wished to evaluate whether the diet could support weight loss. In addition, the acceptance and palatability of the cat food was observed and evaluated.
The feeding trial was conducted over a 12-week period, following a transition period onto the test diet. Body weight was recorded at baseline and monitored weekly throughout the study. Total weight loss (kg), percentage weight loss, and progress towards target weight were also calculated.

Across the 11 complete records, average body weight decreased from 5.70 kg at baseline to 4.91 kg at Week 12. The average reduction was 0.79 kg, equivalent to 13.3% of starting body weight. All 11 cats included in the core analysis had a lower body weight at Week 12 than at baseline.

Additionally, palatability data indicated strong adaptation to the food.

"The 12-week dataset provides strong internal evidence of consistent weight reduction across the complete records. All included cats finished below baseline, and the group mean fell steadily across the monitoring period."

90% of cats moved to a healthier weight.

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