

## Food Summit: Optimal nutrition for promoting healthy brain aging in pets- Yuanlong Pan- Nestle Purina Research

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### Abstract

Aging affects all tissues and organs in humans and animals including dogs and cats. Some senior dogs and cats eventually develop cognitive impairment and dementia called cognitive dysfunction syndrome (CDS), a condition similar to Alzheimer's disease in people. Since CDS is not a curable condition, our non-invasive research has been focused on nutritional strategies that promote healthy brain aging in dogs and cats. We have developed two nutritional solutions to enhance cognitive functions in dogs and cats. The first solution is to address the reduced ability of aging brain cells to utilize glucose as energy by feeding medium chain triglycerides (MCTs), and our studies have confirmed that MCTs enhance cognition in aging dogs. The second nutritional solution is to minimize known risk factors associated with brain aging. Since there are multiple risk factors, we have developed a nutrient blend targeting those risk factors and confirmed that the nutrient blend significantly enhances cognitive functions in middle-aged and aging cats. In summary, researches demonstrate that optimal nutrition can enhance cognitive functions in healthy aging dogs and cats. What we have developed for pets will help facilitate the development of similar nutritional solutions for people.

Many nutrients are critical for maintaining brain structure and function, including cognition. A deficiency of some nutrients can lead to compromised brain structure and function, which accelerates brain aging. Additional nutrients may have benefits when provided in quantities greater than those listed in recognized requirements, whereas other nutrients that may be beneficial to cognitive function may not be recognized as essential nutrients. The purpose of the information provided here was to summarize the evidence for beneficial effects of nutrients on brain function and cognition, with an emphasis on the aging brain, and to provide evidence on the dietary management of dogs with cognitive dysfunction syndrome.

The development of new food solutions for middle-aged pets helps to sustain a healthier brain as they enter the latter stages of life. The finding is a breakthrough in pet care, providing nourishment to strengthen brain cells to help pets maintain function well into their senior years.

The solution, a new Brain Protection Blend™ (BPB),

is a nutritional enrichment that targets metabolic changes and risk factors linked to brain aging. It is designed for pets to start consuming in middle age. The BPB can help maintain cognitive functions, such as memory, social interaction and learning abilities, and can keep them as sharp as they can be as pets' age.

“By taking a more proactive approach, there may be an ability to slow the brain's decline often experienced among pets as they get older. “Humans understand the need for additional nutrients to live healthily, so it's imperative that pet owners are aware of similar nutritional breakthroughs available for their pets that help slow the changes associated with aging.”

The BPB can improve cognitive function – thinking abilities and memory – in cats between 5 - and 8-years old. Plans call for the new BPB to be added to select Purina products for cats or dogs in the next 12-18 months. The effects of the BPB on dogs and hopes to eventually offer the solution to both species are still evaluating.

The BPB can be added to pet food and is comprised of a unique formulation including key ingredients such as fish oil, B vitamins, and antioxidants and the essential amino acid, arginine.

“All of these nutrients may be present in the natural prey of cats and can be found in many types of foods. The launch of the BPB is the second phase of pronged approach to addressing cognitive decline in pets using extensive research techniques that focus on adding nutritional enhancements to pet food.

The first phase centered on developing a neuron-targeted nutrition with a blend of nutrients based on medium chain triglycerides (MCTs) to improve memory function in senior dogs. Typically, cognitive decline is a slow and gradual process that begins in middle age and can be linked to a drop in brain glucose metabolism that occurs as dogs age. The outcome often results in memory loss, reduced social interaction, learning impairment and disorientation.

MCTs are nutrients sourced from vegetable oils such as coconut oil. A breakthrough diet blend containing MCTs is an innovative way to provide fuel to a pet's brain.

A research study confirmed significant improvements in behaviour and cognition in as little as 30 days when senior

dogs were fed diets with MCTs. Improvements were seen in attention span, trainability, decision making and overall cognitive function. Cognitive decline also occurs in cats and Purina is currently researching ways to include MCTs in cat food.

#### **Cognitive Decline in Pets a Growing Concern**

Some pet owners associate mobility problems to physical issues that come from adulthood without realizing that a lot of these issues actually stem from cognitive decline. This can end in pets forgetting the way to perform normal functions like employing a litter box or finding a food bowl.

Studies have found 28 percent of dogs' ages 11-12 years old and 68 percent of dogs ages 15-16 years old have one or more signs of mental issues. Among cats, 28 percent of 11-14 year olds show signs of cognitive decline and increases to 50 percent when 15 years of age or older.

According to an April 2014 survey conducted by Penn Schoen Berland and issued by Purina, quite 37 percent of dog owners have a dog older than seven. This means an outsized group of pet owners may soon face issues associated with their pet's health thanks to cognitive decline. Unfortunately, 51 percent of dog owners are not aware that dogs can suffer from cognitive decline as a side effect of aging.

However, widening the focus to finding nutritional options that will strengthen pets' cognitive abilities at a younger age and promote long-term brain health. Based on the April survey, 83 percent of dog owners would consider feeding their dog a premium food at a younger age if they might sustain brain health in the future.

More than 400 Purina scientists, veterinarians and nutritionists are studying the consequences of aging on pets since 1986, when Purina began the breakthrough "Lifespan Study" to seem at canine diets. Since 2001, researchers have studied the benefits of healthy nutrition on brain health in pets and in 2009 Purina was the first company to launch a MCT-based nutrient blend. Purina is additionally performing on addressing other aging issues among pets including eye-care and weight management.

#### **About Nestlé Purina PetCare**

Nestlé Purina PetCare promotes responsible pet care, community involvement and the positive bond between people and their pets. A premiere global manufacturer of pet products, Nestlé Purina PetCare is part of Swiss-based Nestlé S.A., a global leader in nutrition, health and wellness.

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