**STUDY DESIGN**

- Randomized, double-blind
- 3-month study of dogs fed a diet containing MCT oil and a unique blend of nutrients
- Dogs diagnosed by veterinarian with CDS using DISHAA (DISHA + Anxiety)

**RESULTS**

In 90 days, dogs significantly improved across all DISHAA categories.

**MECHANISM OF ACTION**

- How MCT oil nourishes the brain of senior dogs

**UNIQUE BLEND OF NUTRIENTS**

- Arginine: Supports healthy circulation, blood pressure and brain function
- EPA + DHA: Supports brain structure and function. EPA helps reduce inflammation.
- Antioxidants: Help reduce oxidative stress
- B Vitamins: Used in energy metabolism and DNA maintenance

**MEDICAL INDICATIONS**

- Idiopathic Epilepsy
- Cognitive Dysfunction Syndrome

*as an adjunct to veterinary therapy

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A concentrated source of MCT oil

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**NeuroCare**

Formulated with medium chain triglyceride oil to help nutritionally manage dogs with epilepsy

Enhanced with a unique blend of nutrients and medium chain triglyceride oil to help nutritionally manage dogs with Cognitive Dysfunction Syndrome

**Neurological Health**
- Helps maintain muscle mass (as an adjunct to veterinary therapy)

**Cognitive Health**
- Helps maintain cognitive health

**General Health**
- Helps maintain healthy immune system, including appropriate antibody production

**Neurologic Health**
- Helps maintain muscle mass (as an adjunct to veterinary therapy)

**Cognitive Health**
- Helps maintain cognitive health

**General Health**
- Helps maintain healthy immune system, including appropriate antibody production

**BENEFIT INGREDIENTS MECHANISM**
- MCTs block AMPA receptor
- MCTs may have direct anti-seizure effects via blockage of AMPA receptors
- MCTs may have direct anti-seizure effects, which can act as an alternative energy source to compensate for decreased glucose metabolism by the brain
- 12-month study of treatment: arginine, GLA, DHA, antioxidative, and B-vitamins to help support metabolic health
- Contains antioxidative vitamins C and E to support healthy immune system including a high level of vitamin E to help reduce oxidative stress
- MCTs block AMPA receptor to help maintain healthy brain function and help reduce inflammation

**BREEDS WITH GENETIC PREDISPOSITION TO EPILEPSY**
- Labrador Retriever, Belgian Shepherd, Petit Basset Griffon Vendeen, Basset, Irish Wolfhound, English Springer Spaniel, Vizsla, Bernese Mountain Dog, Standard Poodle, Belgian Shepherd, Border Collie, Australian Shepherd, Border Terrier
- While most prevalent, any breed dog could be affected

**NEUROLOGIC HEALTH**
- Helps maintain muscle mass (as an adjunct to veterinary therapy)

**Cognitive Health**
- Helps maintain cognitive health

**General Health**
- Helps maintain healthy immune system, including appropriate antibody production

**PURINA® PRO PLAN® VETERINARY DIETS NC NEUROCARE™ HEALTH BENEFITS**

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**PURINA® PRO PLAN® VETERINARY DIETS NC NEUROCARE™ CANINE EPILEPSY OVERVIEW**

Epilepsy is the #1 condition in dogs diagnosed with neurological conditions.

Most idiopathic seizures commence between 1 and 3 years of age.

An estimated 1 in 11 dogs are affected by epilepsy.

**BREEDS WITH GENETIC PREDISPOSITION TO EPILEPSY**
- Labrador Retriever, Belgian Shepherd, Petit Basset Griffon Vendeen, Basset, Irish Wolfhound, English Springer Spaniel, Vizsla, Bernese Mountain Dog, Standard Poodle, Belgian Shepherd, Border Collie, Australian Shepherd, Border Terrier
- While most prevalent, any breed dog could be affected

**Goal of Epilepsy Management**

**REDUCE OR ELIMINATE SEIZURE ACTIVITY**

Reduction in seizure frequency of at least 50% is considered successful.

Over two-thirds of dogs continue to have seizures long-term.

20-30% of dogs remain poorly controlled despite appropriate medication.

**RESEARCH AND RESULTS**

**OVER THE COURSE OF 90 DAYS:**
- 71% of dogs showed a reduction in seizure frequency
- 48% of dogs showed a 50% or greater reduction in seizure frequency
- 14% of dogs achieved complete seizure freedom

**RESULTS**

Most dogs with idiopathic epilepsy showed a reduction in seizure frequency in 90 days when fed a test diet with MCT oil, as an adjunct to veterinary therapy.

- Typical anti-epileptic drugs (phenobarbital and potassium bromide) are GABA-ergic, enhancing inhibitory neurotransmission
- Experts believe MCTs (c10–14:0) may have direct anti-seizure effects via blockage of AMPA receptors, inhibiting excitatory neurotransmission; enhancing typical anti-epileptic therapy

**STUDY DESIGN:**
- 21 dogs completed
- Dogs on medication but still having seizures

**R E S E A R C H A N D R E S U L T S**

**OVER THE COURSE OF 90 DAYS:**
- 71% of dogs showed a reduction in seizure frequency
- 48% of dogs showed a 50% or greater reduction in seizure frequency
- 14% of dogs achieved complete seizure freedom

**STUDY DESIGN**
- Randomized, placebo-controlled, double-blinded, crossover design
- 6-month study of dogs with idiopathic epilepsy
- Dogs fed a test diet with MCT oil for 3 months and control diet for 3 months.
Antioxidants
B Vitamins

Formulated with medium chain triglyceride oil to help nutritionally manage dogs with epilepsy.

NEUROLOGIC HEALTH
• Helps maintain muscle mass and help maintain lean muscle mass
• Enhanced with a unique blend of nutrients and medium chain triglyceride oil to help nutritionally manage dogs with Cognitive Dysfunction Syndrome

Complete and balanced nutrition and enhanced with antioxidants and B-vitamins – to help support cognitive health

Cognitive Dysfunction Syndrome

Epilepsy is the #1 condition in dogs diagnosed with neurological conditions.

Most idiopathic seizures commence between 1 and 3 years of age.

An estimated 1 in 111 dogs are affected by epilepsy.

Breeds with Genetic Predisposition to Epilepsy

• Labrador Retriever, Belgian Shepherd, Petit Basset Griffon Vendeen, Boxer, Irish Wolfhound, English Springer Spaniel, Vizsla, Bernese Mountain Dog, Standard Poodle, Border Collie, Australian Shepherd, Border Terrier

While most prevalent, any breed/dog could be affected.

Goal of Epilepsy Management

REDUCE OR ELIMINATE SEIZURE ACTIVITY

Reduction in seizure frequency of at least 50% is considered successful.

Over two-thirds of dogs continue to have seizures long-term.

20-30% of dogs remain poorly controlled despite appropriate medication.

RESEARCH AND RESULTS

Study Design

Randomized, placebo-controlled, double-blinded, crossover design

Results

Most dogs with idiopathic epilepsy showed a reduction in seizure frequency in 90 days when fed a test diet with MCT oil, as an adjunct to veterinary therapy.

Over the course of 90 days:

• 71% of dogs showed a reduction in seizure frequency
• 48% of dogs showed a 50% or greater reduction in seizure frequency
• 14% of dogs achieved complete seizure freedom

A NOVEL MECHANISM OF ACTION

Typical antiepileptic drugs (phenobarbital and potassium bromide) are GABAergic, enhancing inhibitory neurotransmission.

Experts believe MCTs (C10:0 – C14:0) may have direct anti-seizure effects via blockade of AMPA receptors.

MCTs block AMPA receptors.
**CANINE EPILEPSY OVERVIEW**

Epilepsy is the #1 condition in dogs diagnosed with neurological conditions¹. Most idiopathic seizures commence between 1 and 3 years of age¹. An estimated 1 in 111 dogs are affected by epilepsy.

**BREEDS WITH GENETIC PREDISPOSITION TO EPILEPSY**²

- Labrador Retriever, Belgian Shepherd, Petit Basset Griffon Vendeen, Boxer, Irish Wolfhound, English Springer Spaniel, Vizsla, Bernese Mountain Dog, Standard Poodle, Belgian Shepherd, Border Collie, Australian Shepherd, Border Terrier

While most prevalent, any breed or dog could be affected.

**Goal of Epilepsy Management**

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- 48% of dogs showed a 50% or greater reduction in seizure frequency.
- 14% of dogs achieved complete seizure freedom.

**A NOVEL MECHANISM OF ACTION**

MCT oil contains short and medium chain triglycerides (MCTs) which may have direct anti-seizure effects via blockage of AMPA receptors inhibiting excitatory neurotransmission (phenobarbital and potassium bromide) are GABAergic enhancing inhibitory neurotransmission.

Experts believe MCTs (C10:0 – decanoic acid) may have direct anti-seizure effects via blockage of AMPA receptors inhibiting excitatory neurotransmission in addition to decreasing oxidative stress by being a noncompetitive AMPA receptor antagonist.

**STUDY DESIGN**

- Randomized, placebo-controlled, double-blinded, crossover design
- 6-month study of dogs with idiopathic epilepsy; dogs fed a test diet with MCT oil for 3 months and control diet for 3 months.

**OVER THE COURSE OF 90 DAYS:**

- 71% of dogs showed a reduction in seizure frequency
- 48% of dogs showed a 50% or greater reduction in seizure frequency
- 14% of dogs achieved complete seizure freedom
**CANINE COGNITIVE DYSFUNCTION SYNDROME**

**INCIDENCE**

Age-related neurodegenerative disorder characterized by gradual and progressive cognitive decline

An estimated 14% of dogs 8+ but only 13% are diagnosed

**Most commonly affects older dogs**

- 8–10 years: 3.4%
- 12–15 years: 5.6%
- 16–18 years: 23.3%
- >18 years: 41%

**RESULTS**

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**MECHANISM OF ACTION**

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- A concentrated source of MCT oil
- Arginine: Supports healthy circulation, blood pressure and brain function
- EPA + DHA: Supports brain structure and function. EPA helps reduce inflammation.
- Antioxidants: Help reduce oxidative stress
- B Vitamins: Used in energy metabolism and DNA maintenance

**UNIQUE BLEND OF NUTRIENTS**

- When added to a dog’s daily diet, MCTs are easy to digest and are converted by the liver into an additional brain energy source, ketones, including βHB.
- Ketones are used very efficiently by the brain of senior dogs, helping address the change in glucose metabolism

**MEDICAL INDICATIONS**

- Idiopathic Epilepsy
- as an adjunct to veterinary therapy
- Cognitive Dysfunction Syndrome

*as an adjunct to veterinary therapy

**REFERENCES**

1. 2016 Veterinary Medicine Landscape Dashboard

*Learn more at www.PurinaProPlanVets.com