Standard Process
VETERINARY FORMULAS™

Nutritional Support Protocol

A Multimodal Approach to Behavioral Health in Companion Animals

Developed and reviewed by the members of the Standard Process Veterinary team

Hippocrates said, "All disease begins in the gut". Studies show that dogs with behavioral problems often have gut issues. This research area is called the Gut-Brain Axis. It highlights the ongoing two-way communication between the gut and the brain, which is crucial for both.

The Gut-Brain Axis

The gut-brain axis is the two-way communication between the gut and the brain. It involves signals between the central nervous system, the enteric nervous system, and the immune system. The autonomic nervous system (sympathetic and parasympathetic) starts in the lumen of the intestinal canal and reaches the central nervous system through enteric, spinal, and vagal pathways. Studies show that the gut microbiome can affect brain function and behavior, highlighting a strong connection between gut health and brain health.[1] This is supported by studies in germ-free mice, which demonstrated that gut microbial colonization plays a key role in the development and maturation of the enteric and central nervous systems. The microbiota plays a role in normalizing brain functions and behavior.[2]

The Gut Microbiome

The gut microbiome, consisting of trillions of microorganisms, influences physiological functions. Microbes' diversity, type, and quality can impact physiological functions including digestion, immunity, and metabolism. A healthy population of beneficial microbes plays a significant role in the animal's health. Nutrition plays a vital role in shaping the gut microbiome. Research has shown that the gut microbiome can influence brain function and behavior, suggesting a significant link between gut health and neurological health.[2] Additionally, studies in animal models have shown that the absence of gut microbiota can lead to abnormal behaviors, including anxiety and cognitive impairments.[3]

Strategies for Supporting the Gut-Brain Microbiome Axis

Veterinary practitioners can adopt various strategies to support the gut-brain microbiome axis in pets. A multi-modal approach that includes dietary adjustments, supplements, and environmental modifications can optimize gut health and improve behavioral outcomes.

Nutrient Support for Brain-Gut Homeostasis

Glandulars: Extracts of adrenal, thyroid, hypothalamus, pituitary, thymus, pancreas, spleen, kidney. Key players are hypothalamus, adrenal, and pituitary. Provide a source of peptides, enzymes, lipids, steroids, and low-dose hormones.[5]

Adaptogens: natural compounds or plant extracts that increase adaptability, resilience, and survival of organisms to stress.[6]

Vitamins: B – The Vitamins for Stress

- B6, B12, and Folic Acid are all essential to the health of the CNS
  - Vitamin B6 – normal brain development, function, and neuronal health; neuroprotective. Cofactor in the synthesis of serotonin, noradrenaline, and dopamine
  - Vitamin B12 – required to form methionine, which undergoes methylation to SAMe

Minerals: For Homeostasis and the Brain-Gut Axis

- Magnesium
- Calcium
- Potassium
- Selenium
- Zinc, Copper, and Manganese

Adjunctive Supplement Support

FEATURED PRODUCT

Canine and Feline Enteric Support

Suggested Use: **See product label for dosing by weight**

Canine and Feline Enteric Support is a supplement that helps support the digestive systems of both dogs and cats and the intestinal cells' ability to regenerate and respond to daily metabolic and immune challenges.

- Contains a variety of functional foods, both plant and animal, that "feed" the various components of the digestive system
- Provides general digestive system support

Canine Adrenal Support

Suggested Use: **See product label for dosing by weight**

Canine Adrenal Support is a dog supplement that supports their adrenal glands' ability to rebuild, regenerate, and respond normally to stress.

Canine and Feline Whole Body Support

Suggested Use: **See product label for dosing by weight**

Canine and Feline Whole Body Support provide general multisystem support for daily maintenance of all body systems.

Min Tran

Suggested Use: **Dosing by weight****

A vegetarian nervous system support supplement provides a good source of magnesium which supports the actions of neurotransmitters that help regulate mood.*†

- Be mindful of animals with thyroid conditions: the product contains significant amounts of iodine.

Min Chex

Suggested Use: **Dosing by weight****

Min-Chex is a combination of synergistic factors designed to support the nervous system.*†

- Be mindful of animals with thyroid conditions: the product contains significant amounts of iodine.

ProSynbiotic

Suggested Use: **Dosing by weight****

ProSynbiotic, a probiotic for everyday microbial support, is a synergistic blend of 4 probiotic microbes and a prebiotic fiber to support overall intestinal health.*†

Multimodal Approach to Supporting Healthy Behavior | **In Office/Physical Exam**

- **Dietary modifications**
  - Switch to a high-quality, species-appropriate diet
  - Include some fresh food (up to 20% of calories)
- **Supplementation**
  - Whole food-based supplements that provide support for organ systems, omega-3 fatty acids, prebiotics and probiotics, adaptogens
- **Environmental Changes**
  - Create a stress-free environment
  - Establish routines
  - Incorporate calming music and/or pheromones
  - Ensure regular exercise and mental stimulation
- **Incorporate medications as needed/necessary**

REFERENCES

1. Carabotti, M., Scirocco, A., Maselli, M. A., & Severi, C. (2015). Annals of Gastroenterology, 28(2), 203–209.
2. Diaz Heijtz RD, Wang S, Anuar F, et al. Proc Natl Acad Sci U S A. 2011;108:3047–3052.
3. Appleton J. (2018). Integrative medicine (Encinitas, Calif.), 17(4), 28–32.
4. Horn, J., Mayer, D. E., Chen, S., & Mayer, E. A. (2022). Translational psychiatry, 12(1), 164.
5. Gaylord DVM, L. (2022, July 18). Glandular therapies for pets. IVC Journal.
6. Panossian, Alexander, and Georg Wikman. Pharmaceuticals (Basel, Switzerland) vol. 3,1 188-224. 19 Jan. 2010, doi:10.3390/ph3010188

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† Only veterinary professionals should recommend the use of human dietary supplements for animals. This is intended to serve as a starting point for qualified veterinary professionals in making recommendations of human dietary supplements for animals. Qualified veterinary professionals are expected to apply their own professional judgment as to the appropriate use of human dietary supplements and the correct dose.

**Please contact your Standard Process Representative for the Core Formula Dosing Chart

*These statements have not been evaluated by the Food and Drug Administration These products are not intended to diagnose, treat, cure, or prevent any disease.

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