

HHC Talks

from Drs. Jean Dodds, Daniela Leumer, Miwa Kanbe and
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Hemopet Holistic Care

An integrative approach to animal wellness.



- ❖ **CellBIO** is a novel diagnostic test for the biolipid, **isoprostane**, the first of Hemopet's unique biomarker tests of cellular oxidative stress measured in dog saliva.
- ❖ Oxidative stress is the repair process that cells normally undergo after they metabolize oxygen and form free radicals (called reactive oxygen species or ROS). However, when ROS production is excessive, cells undergo damage and release biomarker lipids and enzymes that lead to tissue inflammation, infections, obesity and even cancers.
- ❖ Biomarkers of clinical interest in people and pets include isoprostane, NrF2, microRNA, and others.
- ❖ For more information, please visit cellbiomarkers.org



❖ Hemopet's novel **CellBIO** assay quantitates the isoprostane level in dog saliva to determine if the pet's body is undergoing harmful cellular oxidative stress.

❖ **Supplements used to bring down high levels of CellBIO isoprostane**
(not in priority order)

- Alpha-Lipoic acid
- Co-Enzyme Q-10 (ubiquinol)
- Ginger
- Green tea
- Licorice



❖ More supplements used to bring down high levels of CellBIO isoprostane (not in priority order)

- Milk thistle, and a few more like garlic and honey.
- Resveratrol (as a natural supplement or as food like blueberries and cranberries)
- Soybeans
- Tomatoes
- Turmeric (curcumin) – without black pepper
- Vitamin E
- As anticancer = ivermectin [Juarez, et al. The multitargeted drug ivermectin: from an antiparasitic agent to a repositioned cancer drug. *Am J Cancer Res.* 2018; 8(2):317-331.]

Role of the Gut Microbiome in Health, Longevity and Behavior

- ❖ What is the “gut microbiome”?
- ❖ The microbiome describes the organisms (bacteria, viruses, fungi, protozoa, and parasites) that live in the bowels of all vertebrates, including mammals like ourselves, pets, livestock and wildlife. They can be both beneficial and live together with their host in symbiosis (harmony) or be detrimental and cause a process called “intestinal dysbiosis”.
- ❖ These microbes are estimated to be 10 times more plentiful than the cells of their host.
- ❖ The challenge before us is to allow the healthy gut microbial flora to flourish while suppressing production of the harmful flora.

More on the Gut Microbiome in Health, Longevity and Behavior

- ❖ Harmful microbes can replicate rapidly whenever the body and its cells undergo an increased state of cellular oxidative stress, which causes them to release the reactive oxygen species (ROS) that lead to inflammation, infections, obesity and cancers.
- ❖ These detrimental and potentially harmful effects can be predicted and documented by measuring the levels of biomarker enzymes and lipids, with tongue-twisting names such as malondialdehyde, glutathione synthetase, TBARs, isoprostane and MicroRNA.
- ❖ The good news • • •
 - Bovsun, M. Gut feeling. *The Family Dog: The Gut Issue*, May/June 2019; 30-31.
 - Kirchoff, NS, Udell, MAR, Sharpton, TJ. The gut microbiome correlates with conspecific aggression in a small population of rescued dogs (*Canis familiaris*). *Peer J*. 2019; 7: e6103. doi.org/10.7717/peerj.6103

Even More on the Gut Microbiome in Health, Longevity and Behavior

- ❖ Balancing the gut microbiome in a healthy manner with selected nutrients and supplements can help counteract this cellular oxidative stress and ROS production.
- ❖ One proven way this can be accomplished is with so-called functional foods that activate the body's Nrf-2 pathway.
- ❖ Examples are: turmeric (without black pepper in pets), chili pepper, ginger, green tea, soybeans, tomatoes, berries, raw honey (*not* for the very young), garlic, cabbages, broccoli.
- ❖ More • • •

Even More on the Gut Microbiome in Health, Longevity and Behavior

- ❖ Another clinically important role for the gut is in assessing behavior and its emotional impact.
- ❖ While the brain is well-recognized to control behavior and emotions, current research is focusing upon how the gut-brain axis also regulates emotions such as stress, depression, anxiety and aggression.
- ❖ Fortunately, a group of functional superfoods can help brain health, cognition and memory.
- ❖ More • • •

Even More on the Gut Microbiome in Health, Longevity and Behavior

- Leafy greens (supply folate, vitamin B-9) - kale, spinach, collard and mustard greens.
- Cruciferous vegetables (supply folate, carotenoids) - broccoli, cauliflower, bok choy, Brussel sprouts
- Beans/legumes (supply choline).
- Whole grains (gluten-free = quinoa, millet, rice, soy, corn, flax, TEFF, tapioca).
- Berries/cherries (supply anthocyanins, antioxidants, vitamins C and E).
- Omega 3 fatty acids (are anti-oxidant, anti-inflammatory).
- Yellow Squash, asparagus, tomatoes, carrots, beets (supply folate, vitamin A, iron).
- Nuts (supply omega fatty acids, vitamins E and B-6, folate, magnesium); but *not* macadamia, walnuts, hickory nuts or black walnuts, pecans and Brazil nuts for dogs.
- Seeds (supply zinc, choline, vitamin E)
- Spices (are anti-oxidant, anti-inflammatory; e.g. turmeric).
- Herbs such as Ashwagandha, an anxiolytic to help reduce chronic stress.

May your Qi flow Freely

Best regards, Drs. Jean, Daniela, Miwa and Natalia [W. Jean Dodds, DVM; Daniela Leumer, MS, DVM, CVA; Miwa Kanbe, DVM, CVA; Natalia Nesterenko, DVM, CVA]

