

Behavioral Changes Resulting from Microbiome Restoration: An Integrative Veterinarian's Perspective

By Margo R. Roman, DVM

Appendix I - About MBRT Protocol

Micro-Biome Restorative Therapy (MBRT) has been used for human *Clostridium difficile* amelioration and is being used for other gastrointestinal issues. In the past five years, multiple research papers in various journals have shown the value of this treatment. Since 2011, MBRT has been an integral part of MASH's treatment protocols, and the behavior and personality changes we have observed have been truly amazing. Especially in cases of chronic illnesses, we have seen dramatic reversals of health and behavior. It is **very important that our microbiome donors are carefully vetted and consistently cared for**, so that we are able to consistently repeat positive changes in multiple recipients. We protect our donors' health and make sure they consume organic food and truly pure water free of any added chemicals. These animals have no pesticide or herbicide exposure. We use only all-natural household cleaners, and we make sure that they have limited vaccinations and are only titered for distemper, parvo and rabies (after they have been protected with a three-year rabies vaccine; our town has accepted the titers each year). They are given only limited heartworm medication when absolutely necessary (as this works actually as an antibiotic), and no chemical flea preventative besides natural and herbal prevention. For any health issues that might come up, we use acupuncture, homeopathy, ozone, and herbal medicine treatments. The donors' personalities are positive, upbeat, and friendly, with a body condition score of at least three out of five. The donors are athletic and get exercise daily in a natural forest setting.

Why is it **important to prep the gut** before a fecal transplant? When we want to inoculate microbes into an existing microbiome, it is important to make sure that the terrain is hospitable to the microbes, so we need to prep the gut with good food and nutraceuticals. We start the recipient on a fresh whole foods organic diet. We try to find a novel protein for that dog or cat. Usually we will start with rabbit or venison, as they are not typical protein sources in pet foods. We then add to the diet digestive enzymes, probiotics, fructooligosaccharides, colostrum, vitamins E and C, spirulina, phytonutrients, dimethylglycine, herbal support, and high-quality mercury-free fish oils (omega-3 and 6 fatty acids). We sometimes use slippery elm and marshmallow root to further line the GI tract. All of these nutraceuticals can help reduce any inflammation and allow better digestion to occur. The glandulars we use that mimic the patient's GI tract tissue are desiccated jejunum, ileum, and colon. Each case may need an additional support depending on the specifics of that animal's medical condition. It is ideal to prep the animal for at least three days. Sometimes, if an owner has come a very long distance, or the animal has severe diarrhea, we may try to inoculate, knowing that we have to repeat it a week later. Occasionally, these treatments can create an unsettling detoxing effect with diarrhea and

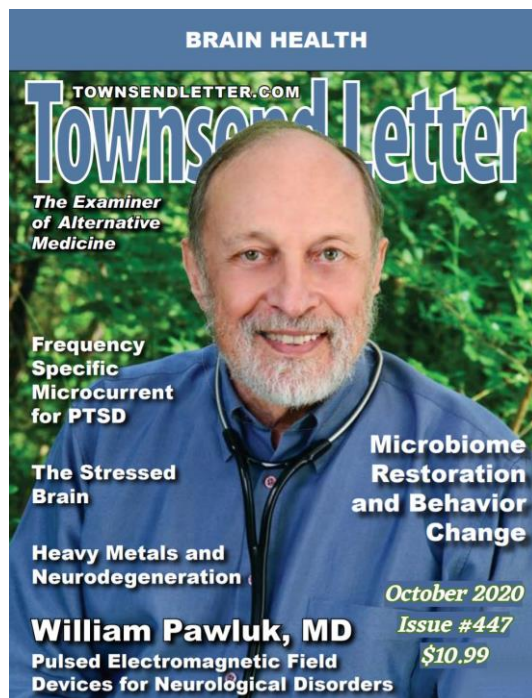


vomiting, especially if proper preparation isn't done, so it is advised to go slowly with this protocol.

After treatment, we put the animal on a fresh, organic, pesticide- and preservative-free diet as an important way to mimic the gut terrain of these microbes' original environment. We encourage a raw, meat-based diet, beginning with green tripe. We also want to include blended fresh vegetables to increase plants in the diet. If owners want their pets to remain on a more familiar diet, we encourage them to at least switch to one that is fresh and organic. To help our clients understand these changes, we ask them if they think it would be comfortable to sleep for the night on a concrete bed and surrounded by concrete. This analogy can help them to understand that microbes are more likely to set up a new colony and thrive in a terrain similar to where they had lived prior to their elimination from the donor.

As part of the MBRT protocol, we also use ozone therapy as gas insufflation prior to a transplant. Ozone is a very positive, complementary component of a successful MBRT. **Ozone**, because of its ability to destroy bacteria, viruses, phages, parasites, mycoplasmas and other components, **will help disrupt and diminish the biofilm** within the GI tract where it is in contact with it. It may kill some of the good bacteria, but its primary action is to kill a lot of the overgrowth that seems to hinder repopulation. It then leaves the area flooded with oxygen to help the cells in the body regain their mitochondrial health. An entire paper can be written about ozone's qualities and medical support for the body. Medical ozone enhances the efficiency of mitochondrial function.⁶⁶⁻⁶⁸ There are more mitochondria within stem cells, which are generated in the deepest parts of crypts in the columnar cells in the colon. It is this author's opinion, based on information from international ozone conferences as well as personal communications with ozone experts, as well as observations of clinical cases, that ozone is able to reach these stem cells and stimulate them, helping the colon to heal. Because the GI tract of an unhealthy individual is typically inflamed, administering the prescribed dosage of medical ozone helps stimulate (by initiating oxidative stress) the mitochondria of the stem cells to repair and regenerate themselves, allowing healing and ultimately bringing down the inflammation.⁶⁹ Ozone has been used as a rectal insufflation for many years. The understanding is that the caudal rectal vein, which is the closest blood vessel to the colon, picks up the oxygen and sends it to the liver. This is why rectal ozone is excellent for hepatitis and pancreatitis.^{70,71} Using something as simple as ozone gas rectally can help with the success of MBRT treatments.²²

(References can be viewed online at TownsendLetter.com; Issue #447)



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