This is diagnosed if a complete im...functioning. The result is poorly functioning cells and an increase in cellular apoptosis (programmed cell death). Treatment consists of eradication of the chronic infection and immune modulators. The RNase-L activity can be done by Redlabs USA (www.RedlabsUSA.com). (No affiliation).

Coagulation problems: This is diagnosed with a specialized laboratory test that includes soluble fibrin monomer, prothrombin fragment 1+2, fibrinogen and thrombin/antithrombin complex. Defects are typically treated with heparin and vascular enzymes such as lumbrokinase and serapeptidase to stop the excessive production of soluble fibrin monomers and to help clean up the fibrin already laid down. Eradication of chronic infections is also important, as there is often a chronic infection as the underlying stimulus of the abnormal activation of coagulation.

Low thyroid: CFS and FM patients almost
always have low tissue levels of thyroid hormones due to hypothalamic and pituitary dysfunction and thyroid resistance, which has been documented in a number of studies. Unfortunately, this hypothyroidism is missed 80-90% of the time because standard thyroid tests and TSH levels are usually normal, and this is what 90% of doctors are accustomed to using to diagnose low thyroid. Currently, the best method to diagnose low thyroid in these conditions is to look at the T3/reverseT3 ratio.

When CFS and FM patients are treated with thyroid, they are almost always under-dosed because their pituitary dysfunction results in their TSH becoming quickly suppressed, which normally indicates too much thyroid. Because these patients have pituitary dysfunction, one must not rely on the TSH and not treat based on this parameter. In addition, due to the thyroid resistance, T4 preparations such as Synthroid and Levoxyl cannot provide adequate tissue levels of the active hormone. T4/T3 combinations such as Armour thyroid can be of benefit, but many patients also find that these preparations also do not provide adequate relief. Straight timed released T3 is often the best preparation to obtain adequate tissue levels.

**Adrenal insufficiency:** Standard blood testing will almost always miss this deficiency. Studies show that with sophisticated testing, close to 100% of CFS and FM have adrenal dysfunction and treatment can be very beneficial. To diagnose, we typically use symptoms and a combination of blood sugar, free cortisol, and HgA1C%. Again, one must have a high clinical suspicion and not just think in terms of normal and abnormal. These normal levels are determined for healthy individuals, not the chronically ill, so the cortisol levels should be higher with this illness. 24-hour urine and saliva tests can be done, but these can also result in false positive and false negative results.

**Growth hormone deficiency:** Many CFS and FM patients are low in growth hormone. This hormone is produced in the pituitary, and with the documented pituitary dysfunction in CFS and FM, it is not unexpected that there is such a deficiency in these illnesses. Treatment can some-times make a tremendous impact and because the cost has come down significantly in recent years, it is a viable treatment for more patients. IGF-1 is the best indication for growth hormone levels, but again, one cannot use the standard laboratory normal ranges to diagnose.

**ImmuneSupport:** Once you’ve determined which problems a CFS or FM patient has, do you prescribe both traditional and alternative treatments, or do you focus on a single method at a time?

**Dr. Holtorf:** In order to treat these diseases adequately, one must simultaneously use both traditional and so-called alternative treatments. If one treatment were used at a time it would take many years before the patient feels better. Many treatments can be withdrawn as the patient improves.

**ImmuneSupport:** Please tell us a little bit about the Holtorf Medical Group, Inc: The Center for Hormone Imbalance, Hypothyroidism and Fatigue (www.HoltorfMed.com) where you practice.

**Dr. Holtorf:** I started the Holtorf Medical Group to concentrate on the treatment of complex endocrine dysfunction, hypothyroidism, fatigue, CFS and fibromyalgia. Eighty percent of our practice is for patients complaining of fatigue, with CFS and FM probably being the biggest part of the practice.

**ImmuneSupport:** What are the biggest challenges you face with treating CFS and FM patients?

**Dr. Holtorf:** Although we have good success with CFS and FM, these are challenging cases that require doctors to spend significant time with the patient. It cannot be accomplished with seven-minute office visits.

**ImmuneSupport:** What are the biggest successes you’ve experienced with treating CFS and FM?

**Dr. Holtorf:** Many of these patients are very sick and have given up. It is so gratifying to get these patients back to having a life. They are just so grateful. Many have been unable to work and/or have been on disability and now, following treatment, are happy, functional and productive.

**ImmuneSupport:** Are you working on any promising new treatments at this time – either through research or through a trial and error process with your patients?

**Dr. Holtorf:** We are continually working on and implementing new treatments every day in practice. We have been using and refining many of the so-called new treatments for many years. For instance, Valcyte is considered a new novel treatment for CFS, but we have been using it for 4 years since it was first approved.

**ImmuneSupport:** What are the most exciting developments you’ve seen recently in treatment options for CFS and FM?

**Dr. Holtorf:** Recent developments are taking place in a stepwise manner, but I do not believe it will be through the so-called mainstream medicine one-drug cures. I think these are very treatable conditions and advances will only continue to improve treatment. I do believe, however, that the incidences of CFS and FM will significantly increase and at some point will be considered an epidemic because they are very poorly treated through the standard health care delivery system.