Why Intermittent Metabolic Switching? Nutritional Common Sense Part III

By: Gary E. Foresman, MD

Hopefully you have had a chance to review the PubMed links from the first article and taken the time to hone your eating awareness as discussed in the second article in our series. From here on out I will use the term intermittent metabolic switching (IMS) as the cover term for the metabolic effects derived either through exercise and/or through intermittent fasting (IF)/ Time Restricted Feeding (TRF).

IMS represents a breakthrough in our understanding of nutrition, health, longevity, and (my favorite) neuroplasticity—the adaptive changes that occur with stress, more specifically as they relate to brain health. The Paleo/Primal lifestyle focuses on eating quality, whole human foods, getting our carbohydrates (carbs) exclusively through fruits and vegetables (except for occasional indulgences), whereas the Keto lifestyle focuses on living on a fat-adapted diet and maintaining a state of ketosis. Both systems can work, and I have patients successfully doing either method successfully.

First and foremost, healthy nutrition cannot be understood without healthy exercise, especially when it comes to IMS. IMS can best be understood as consciously living in both a fasted state and a fed state. When we feed and eat adequate proteins and carbs, we metabolize glucose and store glycogen in our muscles and liver. We store approximately 800 calories of glycogen (immediately accessible stored glucose: G) that will last 10-14 hours in a non-exercising individual.

When we deplete glycogen through fasting or exercise, fatty acids are released from fat/adipose tissue and converted in the liver and brain to ketone bodies: K, to provide energy, especially adapted to this is our central nervous system. As the complexity of the biochemistry of these switches becomes understood, what becomes clear is that both the G:K switch and the K:G switch provide relevant benefits to the human organism. These adaptations distinguish IMS as the heathiest approach to eating I have become aware of.

The simplest approach to IMS involves a healthy exercise program with TRF. I start each day with a plan of 16-18 hour fast and thusly an eating window of 6-8 hours. In my life this means usually eating a Paleo/Primal diet from 12:30PM to 6:30PM and allowing water, tea, and coffee during the 18 hour fast. If hungry during the 6 hour window, I eat, keeping fruit, trail mix, healthy protein bars available eases the process. Hunger helps people thrive. The best advice I can give, as someone who battles constant hunger, is to learn to embrace the health benefits of hunger. When I am fatigued from

not sleeping well (Leonardo just hit 9 weeks old!) or from heavy exercise, I lighten up on my restrictions. IMS takes resolve and motivation; when I am both overly fatigued and fasting, the "edge" transitions to edgy! Furthermore I am in this for the long haul.

Switching between periods of positive and negative energy balance provides documentable improvements in insulin resistance, abdominal fat, heart rate and blood pressure regulation along with all the neuroplasticity benefits!
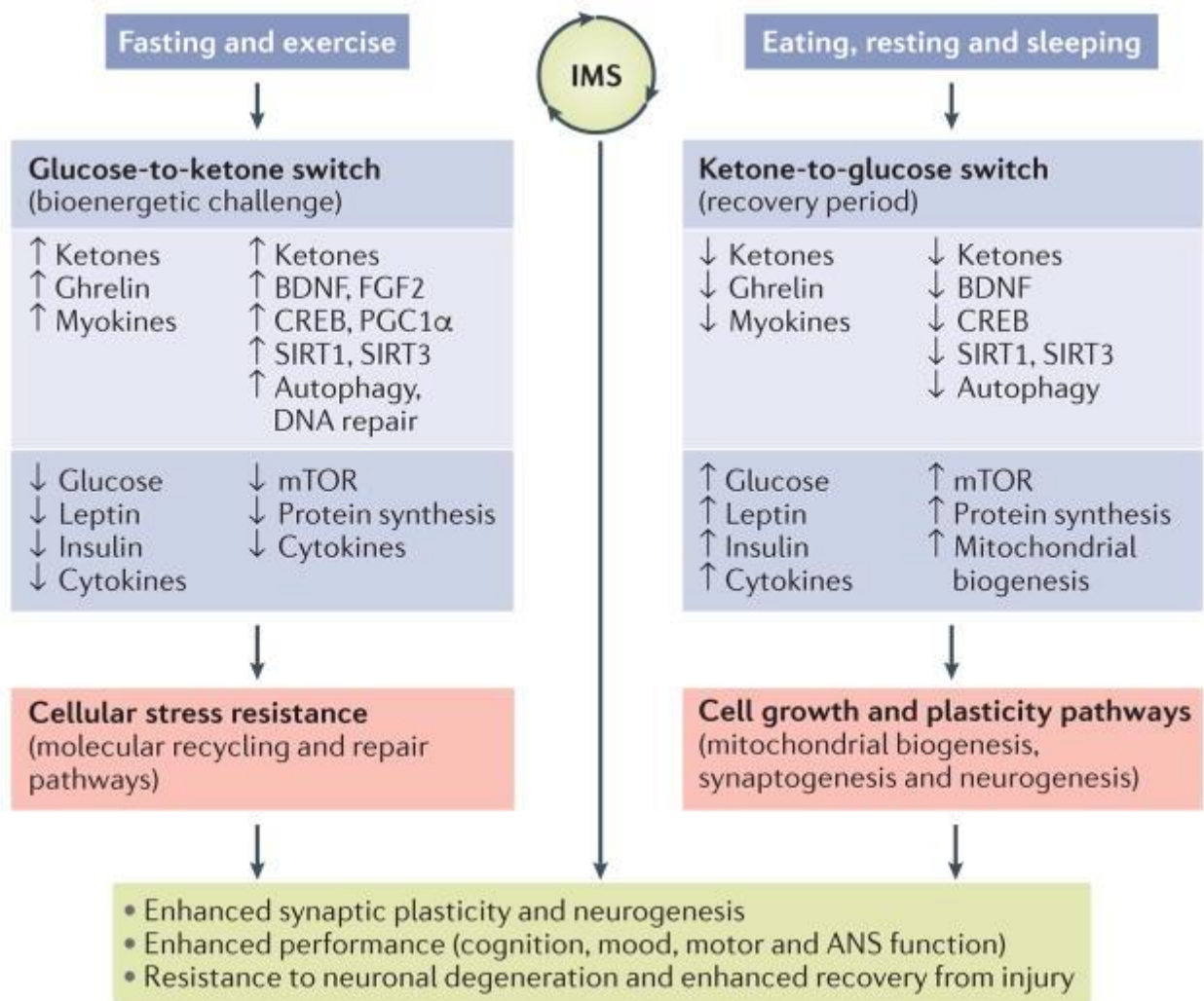
The above figure from ***"Intermittent metabolic switching, neuroplasticity and brain health"*** helps illustrate my excitement for the importance of IMS. The neurobiology of wisdom can be found in the balance of growth and repair as seen above. As we age, the need for enhanced cellular stress resistance with increased Brain-Derived Neurotrophic Factor (BDNF) and decreased activation of mammalian target of Rapamycin (mTOR) allows for the healthy growth and repair of the brain.

Whether you are simply looking for an approach to optimized brain function, longevity, or overall wellness, or looking to treat metabolic syndrome, depression, anxiety, or any neurodegenerative disease, I strongly recommend exploring the evolving world of IMS!

Your Journey to Health and Healing,
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