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In this issue: Why Muscles Need Antioxidants and Not Just Protein; Foods That Build, and Foods That Cleanse; SNiPpets: Fat Metabolism; Conscious Microbiome Cultivation May Seed Better Brain Function; Visit the PLMI Thought Leaders Consortium Online Speaker Gallery

Did You Know?
PLMI has a FREE online education archive. More than 50 videos recorded at our annual Thought Leaders Consortium are now available to stream. User registration is required, but there is no fee to access and view this material. Find more details and a link at the end of this newsletter.

Here is today's featured quote from the archive:

“Everything is about collaboration, because everything is about connection.”

David Jones, MD
2017 Thought Leaders Consortium

Why Muscles Need Antioxidants and Not Just Protein

Protein and branched-chain amino acids are necessary for building and maintaining muscle mass, and minerals like calcium, magnesium, and potassium certainly aid muscular contraction and relaxation. But after a healthful workout, muscles also need cleansing from potentially toxic...
Foods That Build, and Foods That Cleanse

You may have heard Dr. Jeffrey Bland say that food is information, and that the body ‘records’ this in our genomes by tagging non-coding regions (“epigenetic modification”) that influence how the body employs the programming embedded in our chromosomes. In this interview, he and Deanna Minich, PhD, CN, RYT discuss the importance of variety in phytonutrients (and in the colors of fresh fruits and vegetables that provide them) in hitting important genetic targets for protecting health over the long term.

In order to respond appropriately to life’s challenges, our bodies actively seek and gather information from our nerves, the messages exchanged by our vital organ systems, and especially from the permanent and temporary residents of our digestive tracts: our microbiota and diets, respectively. In thinking about the ways food ‘talks’ to the body, it may be useful to think of foods in terms of building and cleansing. Achieving the right balance of foods that build and those that cleanse is important for everyone interested in maintaining overall health and a healthy weight throughout life. With foods that build, we usually need to think in terms of not getting too much, and with cleansing foods, we need to think in terms of getting enough.

Foods that build are those that provide generous levels of macronutrients needed for building body tissues:

- proteins and amino acids needed for building and repairing muscles
- fats that build cell membranes and, in excess, fat tissue
- carbohydrates that are converted into energy but also, in excess, build fat tissue.

However, in the US, the most commonly eaten ‘building foods’ have high caloric contents with lower levels of the vitamins, fiber, minerals, and phytonutrients that help regulate biochemical conditions within tissues. The standard Western diet is replete with building foods—like pasta, meat, cheese, white potatoes, highly refined or processed foods, products made from refined carbohydrates, many popular microwave meals, and junk foods. Because habitual overconsumption of these foods leads to excessive blood and organ levels of substances the body has a hard time effectively excreting, communications within the body turn to “how do we get rid of this glycated protein,” “how do we tell him we’re getting too much cholesterol,” and “where can we store all this oxidized fat until she metabolizes it”? Therefore, these foods are associated with classic Western illnesses like cancer, inflammation, autoimmune illness, cognitive problems, mood disorders, and cardiovascular disease. Not all foods that build are bad for health, though, and examples of health-supporting ones include colorful starchy root vegetables, yogurt, wild cold-water fish, organic whole grains, and eggs—but again, for...
Foods that cleanse provide high levels of nutrients and phytonutrients that help maintain tissue health and facilitate detoxification and excretion, though they can also help build healthy tissues. These foods include fresh citrus fruits, berries, melons, beans and other legumes, leafy greens, cruciferous vegetables, carrots, onions and garlic, veggies from your own garden, mushrooms, fermented foods, seaweed, ginger and rosemary and other herbs and spices, minimally processed nuts and seeds, herbal teas, and green tea. Higher consumption of these kinds of foods is associated with lower incidence of the health conditions mentioned above. Because phytochemicals, minerals, and vitamins communicate with vital organ systems and influence how they regulate themselves and each other, regular intakes of these substances turn the body ‘conversation’ in the direction of “let’s tackle that little precancerous process taking place in the colon,” “let’s put more of these blue light-blocking antioxidants in the macula since this person spends so much time on devices,” and “let’s get these lipotropic nutrients to block cholesterol absorption and make more effective HDLs.” Again, the key to cleansing foods is getting enough.

The Okinawan diet is a prime example of a way of eating that feeds healthy longevity, with a very high level of colorful foods that cleanse with just enough healthy foods that build. It is characterized by low caloric intake and low glycemic load, high intake of fiber, legumes/soybeans, and plants with medicinal properties, moderate intake of seafood and alcohol, and low intakes of dairy, meat, and fat (yet rich in omega-3s). An intriguing aspect of the Okinawan diet is that it provides what may look like a low level of protein (only around 9% of caloric intake, compared to 15-30% in most typical Western diets), though researchers have noted that the caloric balance between protein and complex (low-glycemic) carbohydrates in this diet mirrors the ideal ratio found for optimizing healthy aging in experimental animals. Of additional interest is that people traditionally consuming this diet generally find it quite delicious and satisfying (even without the fats and sweets that many Westerners associate with these qualities) and that Okinawan elders frequently live independently and with good health well into advanced age.

**SNiPPets**

How significant to health are particular single nucleotide polymorphisms, also known as SNPs? SNiPPets is a ongoing exploration of this topic. This column is produced by Jeffrey Bland, PhD and the Personalized Lifestyle Medicine Institute.

**This SNP May Increase Cardiovascular Benefits of the Mediterranean Diet**

Because microRNAs modify gene expression, they are increasingly appreciated as agents for cardiovascular therapy, and the lipoprotein lipase gene (involved in fat metabolism) is one such example. The rs13702 SNP for this gene, in which the major T allele is replaced with a minor C allele, has been associated with lower blood triglyceride levels—and greater reductions in triglyceride levels among those following a Mediterranean diet pattern rich in unsaturated fats. Carriers of this SNP who enjoy this diet, with its generous provision of monounsaturated fats from olive oil and polyunsaturated fats from nuts and seeds, have a significantly lower risk for stroke—about 42% lower than the mean. These results were found after 3 years of eating the Mediterranean way, reflecting that it is indeed a lifestyle that influences interactions between genes and diet.
Conscious Microbiome Cultivation May Seed Better Brain Function

You can’t grow a new brain, but there is increasing hope that, with lifestyle improvement, you can reprogram the one you have. Physical activity is known to be a crucial factor in brain plasticity—that is, how easily it adapts to new experience. However, preclinical research suggests that dietary improvement may also make significant contributions to neural adaptivity.

Animals given the equivalent of a junk food diet showed brain and gut inflammation, high cholesterol, impaired energy usage, damage to brain cells, and cognitive problems. When prebiotic dietary fiber (in this case, xylooligosaccharides) and/or a probiotic lactobacillus was added to their diets, all of these functional measures improved. Perhaps the most important finding of all was that those given a basic but nutritionally complete diet throughout the length of the experiment showed consistently better marks in all measures of body and brain health and function.

Visit PLMI's Speaker Gallery to Learn More About Our 2018 Thought Leaders Consortium Faculty

PLMI has assembled a world-class program for our Tucson conference this October. Each speaker is unique and we are tremendously excited about the information that our attendees will learn more about at this two-day event. If you’ve already registered we’re thrilled, and if you are considering a plan to join us please know we are ready to help with your questions. Either way, we want to tell the world more about our speakers. We have created a 2018 Speaker Gallery on the PLMI website, and on this page you can find links to speaker biographies, read Speaker Spotlight articles PLMI has created, and watch video blogs that PLMI President Dr. Jeffrey Bland has recorded.

The Sixth Annual Thought Leaders Consortium
The Science of Precision: What’s Next for Personalized Lifestyle Health Care

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Newsletter Team
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Annette Giarde - Subscription Manager