



CONVERGENCE

News, Links, and Insights
by JEFFREY BLAND, PHD



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Thank you for subscribing to Dr. Jeffrey Bland's newsletter. Enjoy and share this information, which is for educational purposes only and is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Always consult with a qualified healthcare professional when you are in need of advice regarding a medical condition.

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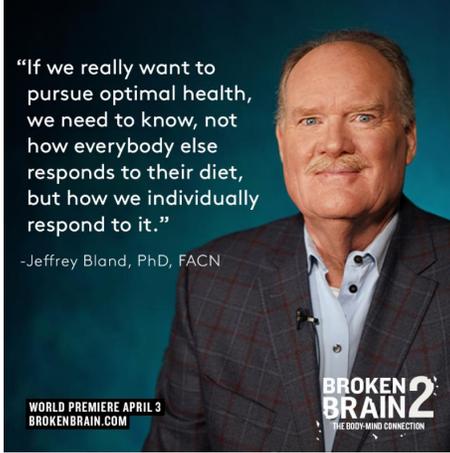
Upcoming Event! There's Still Time to Register

Next month, Dr. Jeff Bland will speak at the "Woodstock" of planetary health—the May 15-17 inVIVO Planetary Health conference in Detroit, Michigan. Topics will include bees, microbiome rewilding, green infrastructure, nutritional ecology, and much more. "To restore human health, we must restore the health of our society and our relationship with the natural environment—with a greater sense of unity, place, and purpose."

<https://www.invivoplanet.com/program.htm>
!

Broken Brain 2 Starts April 3rd A New Docu-Series by Dr. Mark Hyman

Dr. Mark Hyman has done it again! He has interviewed more than 70 experts on a topic that universally unites us all: brain



health. This 8-part online docu-series begins April 3rd. Don't miss a single episode, don't miss a single interview—this is an important educational opportunity for both clinicians and consumers.

Learn more: <https://bit.ly/2Og5dme>

"Excess Adiposity" as a Focal Exposome Factor



We are increasingly aware of how obesity affects cardiometabolic health, and how cardiovascular disease may manifest differently in men and women. While screening for cancer is also improving, its symptoms are less familiar and may develop either very slowly or suddenly, making it trickier to detect changes in patterns of incidence at the population level. A [two-decade study of common cancers](#) in the US population, covering years during which obesity became normalized, has revealed that “exposure to excess adiposity” is emerging as an exposome factor that significantly impacts cancer risk. Greater cancer among younger adults is particularly concerning, as it may reflect greater accumulation of genomic damage.

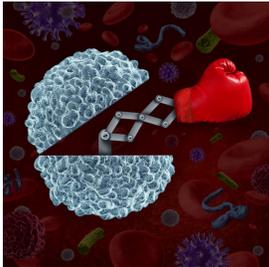
The incidence of certain cancers has altered as obesity has become more common, and this recent Lancet study clarifies that certain types of cancer are on the rise in younger adults. Thirty common cancers were tracked among US adults aged 25-84, and 5 of 12 obesity-related ones showed significantly greater increases among those aged 25-49; especially multiple myeloma and kidney cancer, but also pancreas, gall bladder, and uterine cancers. Thyroid cancer, also obesity-related, increased in both younger (25-49) and older (50 and above) age brackets, and colorectal cancer increased in older adults; obesity may be especially implicated in increases in early-onset colorectal cancer.

Insights into the connections between cancer and biological aging shed light on how obesity modulates cancer risk, and may be applicable in understanding the increased incidence of multiple myeloma in the younger population. Multiple myeloma (MM) is a form of blood cancer characterized by clonal overproduction of specific immunoglobulins, and it is preceded by an asymptomatic pre-malignant form called monoclonal gammopathy of undetermined significance (MGUS), though MGUS does not always result in MM. Obesity significantly increases risk for MM (and is considered the only modifiable risk factor for it), and obesity is also the only known modifiable risk factor for rapid progression of MGUS to MM. However, advanced research suggests that [epigenetic events relating to initiation and progression](#) of MM may be reversible with appropriate methylation therapy. Clonal Hematopoiesis of Indeterminate Potential (CHIP) is a [related preclinical blood condition](#) in which oxidative stress and aging-related stem cell mutations affect epigenetic programming of immune cell replication, and it is associated with hematologic cancers and cardiometabolic disease. CHIP and MGUS exemplify the ways in which epigenetic alterations can create cellular environments conducive to accelerated biological aging and inflammation. Though the study of epigenetic health effects is new, the amenability of obesity and cardiometabolic disease to comprehensive lifestyle modification lends reasonable hope that conditions like MGUS, CHIP, and their serious sequelae may be partly preventable.

This study also cited evidence that less than half of primary care givers regularly asses

body mass index in their patients, and that only a minority of obese patients receive weight loss counseling. It is clear that adipose mass can play a role in carcinogenesis, and this research helps us understand that this may happen in different ways in younger and older ages of fat deposition. Alongside recent evidence that [frequent consumption of organic foods](#) is associated with a 25% lower overall risk of cancer, there appear to be many options on the table for managing long-term wellness.

T-Helpers and Autoimmunity



Balance between populations of T-helper 1 (Th1) and Th2 immune cells has long been considered to reflect equilibrium between adaptive and innate immunity, but the discovery of Th17 cells enhances appreciation of this system's complexity. Naïve T-helper cells [differentiate into specialized T cells](#) based upon environmental inputs: Th1 cells to defend against intracellular pathogens like viruses, Th2 cells to aid mucosal barrier function and address parasites, Th17 cells to defend against fungi and bacteria, regulatory T cells (T-regs) which [dampen immune, autoimmune, and inflammatory processes](#) (and are found in lower levels [in obese adipose tissues](#)), and effector T cells that mount immune responses and counter the effects of T-regs. T-helper cells respond to cytokine signaling but also [express transcription factors](#) that influence their development and can enable them to acquire new functions and phenotypes after differentiation.

Prior to knowledge of Th17 cells, Th1 cells were thought to be prime contributors to autoimmunity in central nervous conditions like multiple sclerosis (MS), as Th2 antagonism of Th1 function has been observed to cause improvement. Further research indicated that [Th17 cells may initiate MS](#) while Th1 cells could contribute to different types of MS or to later stages in its development. [Reduced suppressive capacity](#) of T-regs has been seen in those with MS, as have [Th17 cells with an exaggerated, pathogenic phenotype](#) that is resistant to suppression. Because both Th17 and T-regs are found in appreciable levels on intestinal mucosal surfaces, some researchers feel that [imbalance between these](#) opposing cells' functions [may play a major role](#) in some autoimmune conditions.

Given that both Th17 cells and T-regs display [remarkable phenotypic plasticity](#) and localize to the gut, perhaps it is not surprising that diet influences their balance and function. In some studies, [higher sodium intakes](#) have been linked to increased pathogenicity of Th17 cells and reduced suppressive capacity in T-regs as well as to MS lesions and exacerbations, and preclinical evidence suggests that high sodium levels could also increase permeability of the blood-brain barrier. Conversely, researchers observe that higher intakes of [omega-3 fats](#), lower intakes of omega-6 fats, and greater colonic production of short-chain fatty acids (fueled by dietary fiber) may improve Th17/T-reg functional balance. Early evidence also suggests that melatonin may inhibit Th17 cell production, though confirmation in humans is needed.

The conundrum of autoimmunity invites closer examination of how immune cells achieve specialization and how their functional plasticity affects overall balance. Proper T-reg activity is clearly needed for maintaining immune tolerance yet must also allow for a robust response to legitimate threats. Interactions at the [aryl hydrocarbon receptor](#), which acts as an immune response modifier based on environmental inputs, are also known to strongly influence [regulatory T cell function](#), though this avenue of inquiry is relatively new. Better understanding of how lifestyle, genetic variations in metabolism and detoxification, and exposures to toxins and normal "Hygiene Hypothesis" challenges like dirt and animals factor into the immune tolerance equation will undoubtedly facilitate future research and clinical practice.



Where in the World is Dr. Bland?

Every year, Dr. Jeff Bland speaks in front of audiences around the world.

Will this be the year your paths cross?

[View Appearances Calendar](#)

Functional Nourishment (and Motivation!) for 65 and Better



It is true that most of us would benefit from eating fewer processed foods and adopting an eating pattern more like a Mediterranean diet, which has been shown to counter numerous aging processes and age-related loss of function. Yet the number of modified Mediterranean diet plans is ever increasing to meet more personalized needs; for example: vegan, high-protein, high-choline, and gluten-free variations. The [NU-AGE diet](#) takes advantage of the

Mediterranean diet's focus on healthy fats and antioxidant phytonutrients, and was developed to minimize ["inflamm-aging"](#) while optimizing nourishment of those over 65 years of age. In this population, ensuring adequate intake of fresh foods, vitamin D, B vitamins, unsaturated fats, prebiotics, and protein is crucial, as is limiting intakes of saturated fats and highly refined foods.

Modifying eating habits can pose social, behavioral, financial, logistical, and cognitive challenges for individuals, especially elders. A one-year, multi-center European trial investigated the long-term feasibility of NU-AGE: how well participants became educated about its basic nutritional tenets, prepared to carry them out, switched to the new way of eating, and eventually normalized their NU-AGE habits. (Further study will track the physiological effects of NU-AGE.) Participants were also provided with a vitamin D supplement and foods like olive oil, low-fat cheese, unsaturated fat margarine, and pasta free of charge. Researchers found that, on average, 9 counseling sessions totaling about 7 hours over one year was sufficient for successful cultivation of this dietary approach. Participants' intakes of whole grains, legumes, nuts, low-fat dairy, fish, and olive oil were especially improved, and they also consumed much less in the way of sweets and alcohol. Researchers suggested that the motivation-oriented diet counseling was a key factor in the successful implementation of NU-AGE.

While significant one-year improvement was seen overall, it was interesting to note that while French participants started with diets most similar to NU-AGE, they also showed the greatest improvements; Dutch subjects started with the least NU-AGE-like diets but showed second-best improvement, and UK subjects initially showed the second-least NU-AGE-like diets as well as the least improvement after one year. It may well be that a personalized approach to motivation is a critical 'nutrient' in any personalized dietary intervention.

PERSONALIZING NUTRITION THERAPY IN THE AGE OF LIFESTYLE MEDICINE:

Compelling Evidence, Breakthrough Science,
and a **New Era** of Clinical Care

OCTOBER 11 - 12, 2019 Seattle, Washington

THE SEVENTH ANNUAL THOUGHT LEADERS CONSORTIUM

Registration is open and seats are filling quickly! Dr. Jeff Bland is the conference host and facilitator. Join more than 300 attendees from around the world in Seattle this fall.

Click [HERE](#) to view the current program schedule.

Click [HERE](#) for a conference overview.

Click [HERE](#) to register for the 2019 Thought Leaders Consortium.

Connect with Dr. Jeffrey Bland



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