**Does Acute Feeding Contribute to Long-Term Chronic Disease Risk?**

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Chronic disease onset is often discovered later in life, yet it is lifestyle choices early in life that have the biggest impact on future risk. It is the age-old argument of nature versus nurture. Our laboratory has long studied how acute feeling results in transient shifts in disease risk. Some of these shifts include metabolic endotoxemia, increase in whole body inflammation, and an increase in cell-surface adhesion molecules. Circulating monocytes are major players in transient response to acute feeding and are significant due to their propensity to become foam cells when an individual has unhealthy lifestyle habits. In this session we will explore the underlying physiology of acute feeding and its transient impact on disease risk. The goal of this work is to understand how one’s lifestyle contributes to long-term disease risk. We will also discuss potential natural products (i.e. polyphenols, probiotics, etc.) that may be useful countermeasures. This topic includes a combination of applied and application-based science.

**Session Description:**

Meal-related, dietary endotoxemia is a condition that affects approximately 1/3 of individuals living in Western society. Individual differences in gut permeability and/or microbiota composition have been purported as the chief factors effecting dietary endotoxemia risk. Habitual, repeated dietary endotoxemia may increase the risk of developing a chronic, inflammatory diseases (i.e. CVD, type II DM, etc.). In this session, we will explore current data regarding probiotic treatment with an emphasis on selection of treatments with the best potential to improve human health.

**Learning Objectives:**

1. (Knowledge) Be able to describe what dietary endotoxemia is and why it is a health problem – 10min
2. (Comprehension) Identify the causes of dietary endotoxemia and the impact of eating behavior – 10min
3. (Analysis) Identify the characteristics of an effective probiotic treatment – 15min
4. (Application) Apply the benefits of spore-based probiotic treatment as one aspect of a comprehensive treatment plan – 15min