



Dr Shideh Pouria

The Gut-Heart and the Gut-Lung Axes

Abstract for both talks

Clinical ecology has long acknowledged the presence of a functional link between digestive tract function and systemic diseases which manifest distally from the gut. In fact, the Persian and Arab physicians of antiquity all searched in the gut for the root of ill health elsewhere in the body and as such considered digestive tract disorders as ‘the mother of all diseases’. Modern research has caught up with this ancient fact through the evidence produced from studying the microbiome, mucosal immunology, physiology and nutrition.

The relationship between gut health and heart and lung conditions is an underexplored one in clinical practice. In these talks, cases of cardiac and respiratory diseases will be presented as a framework for understanding the gut-heart and gut-lung axis and their clinical relevance. The presentation will show how to assess seemingly unrelated organs from a gut perspective as well as how to manage underlying causes of cardio-respiratory disease arising from the gut. We shall discuss how this approach will not only help relieve symptoms but also address the causes in order to prevent further ill health.

Dr Damien Downing

The Gut-Brain Axis

Abstract

The gut-brain axis is central to all inflammation and its treatment.

We are each a community. Most of the DNA within us is microbial. These microbes supply B vitamins to us and to each other but they are dependent on us for vitamin D. We need sufficient vitamin D and vitamin B5, pantothenic acid, in order to produce ACh, the neurotransmitter of the parasympathetic, but we are nearly all deficient in both. This can interfere with parasympathetic function and disrupt sleep and healing.

The Enteric Nervous System, the “second brain”, surrounding the gut, has both mechano- and chemo-sensors. Enteroendocrine cells (EECs) detect molecular signals from the gut microbiome such as bacterial lipopolysaccharides and also nutritional lipids, particularly SCFAs such as butyrate (ketones!), and pass them to the vagus nerve.

The vagus is the main part of the parasympathetic, and also the second largest nerve trunk after the spinal cord. 80% of the vagus fibres are afferent. Stimulation (VNS) of vagal afferents at high frequency (20–30Hz) is recognised as a treatment for drug-resistant epilepsy and for depression.

These afferent signals, via a “vago-vagal reflex”, activate vagal efferents and so the Cholinergic Anti-inflammatory Pathway (CAP), which reduces inflammation, gut permeability and anxiety, reconfiguring pro-inflammatory M1 macrophages (“battleships”) as anti-inflammatory M2 macrophages (“powerplants”). Low-frequency (5Hz) stimulation of vagal efferents does the same.

Stress inhibits the vagus and stimulates the sympathetic. Stress increases gut permeability and inflammation and modifies the composition of the gut microbiome. So do environmental toxins, infections, sleep disruption and dietary changes.

The only way to assess vagal tone in humans is through Heart Rate Variability (HRV). We know that impaired HRV is linked to most chronic inflammation, and promoting HRV (by improving vagal tone) treats inflammation, gut permeability and anxiety.

Dr Sarah Myhill

Upper Gut Dysbiosis - Diagnosis and Treatment

Abstract

The normal upper gut should be near sterile, acidic, carnivorous digesting gut. Recent Western carbohydrate-based diets may overwhelm the ability of the upper gut to be near-sterile and this results in upper fermenting gut by bacteria, fungi and parasites. In this lecture the clinical picture of upper fermenting gut and wider ramifications is described together with relevant tests to diagnose. This leads us logically to treatment strategies to reduce fermentable substrate, restore normal digestion and regimes to reduce the fermenting microbes.

Dr Jerry Thompson

Common Gut Problems and the Microbiome in General Practice

Abstract

This talk will illustrate how an understanding of the microbiome will affect the way in which we practice medicine. It will illustrate how taking an ecological approach can lead to improvement in many gut disorders seen in general practice. The talk will also cover how different treatments and commonly prescribed medication can affect the microbiome both positively and negatively.

Sue Camp

Comprehensive Stool Testing – what can we learn from these profiles?

Abstract

With a myriad of comprehensive stool profiles available to clinicians this session will present the current choices and show their suitability for those working in ecological medicine. The presentation will show how comprehensive stool profiles can help to assess the root causes of digestive imbalance and to discover more about the composition of the microbiota. It will outline what can be learned about the gut terrain, including digestive capacity, intestinal permeability and inflammation. Finally using comprehensive stool profiles, how it is possible to structure and target treatment protocols to heal the gut.