

**The Gawler Foundation  
Profound Healing, Sustainable Wellbeing Conference 2013**

**Breakout sessions Set B**

# **Funny Guts**

**Keeping your gut healthy, and how it  
benefits 'whole health'**

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# The Gaia hypothesis

This theory was developed in the 1970s by James Lovelock, [1995 Nobel prize for chemistry], and Lynne Margulis, [microbiologist]. Also known as the Gaia principle, it maintains that all life on earth is one living, breathing ecosystem, with earth's biosphere dependent on the interaction between the inorganic elements of the earth, and the living forms thereon. It is self regulating\*\*\*

# Quote

- “.....Nature isn't benign.....The survival of the human species is not a pre-ordained evolutionary program....genetic variation exist[s]....not necessarily confined to what happens routinely, or even frequently....It is, I think, worthwhile being conscious of the limits of our powers.....We are caught in the food chain, whether we like it or not, eating and being eaten..” - *The Coming Plague* Laurie Garrett
- The microbiota of the planet, earth, water and extremophiles are central to this chain of life

# Microbiota -1

Soil microbiota act as microbial biosensors, removing heavy metals and defending against pathogens threatening the ecosystem

Humans and their commensal organisms are just two steps in this planetary chain

Organisms include those on the surface of our skin, lining the reproductive tract, the respiratory tract...and the gut bacteria

There they become part of the endothelial or mucosal microbiome, and are key players in the immune system

# Microbiota-2

Using tools such as toll-like receptors [TLR] on cells, they recruit elements from both the adaptive and innate immune systems to fight infection

[It is important to remember that the immune system was “designed” to fight germs, although in higher order life forms, it has broadened its scope]

# What is the Gut?

Anything from mouth to anus

And its blood supply

And lymphatics

And its innervation- special mention, the Vagus Nerve

And its microbes

Special cells such as mucosal and dendritic cells

And, from an embryological perspective, it also includes pancreas, liver and biliary system

# This talk

Today we are looking at environmental impacts on the gut

However, we have to remember that it is *always* an interactive process

For example, if we have a gut problem that results in a prescription for antibiotics or PPIs, we can alter the pH of the gut, or the balance of gut flora, commensals and pathogens alike

Good or bad?

# Clinical presentations

IBS

IBD: Crohn's, Colitis, Ulcerative colitis

Bacterial/parasitic problems: SIBO, SBBO

Intestinal malignancies

Coeliac disease

Adverse food reactions

Digestive disorders



# The Ecosystem

- There are 90 trillion bugs in our gut, [and only 10 trillion cells in the rest of our entire body]. **Why?**
- They carry out gut maintenance and repair
- Wage a Turf War with dangerous bacteria
- Identify cancer cells
- De-toxify poisons
- Remove heavy metals
- “Talk” to dendritic cells which talk to the rest of our immune system, helping it to “decide” whether a challenging food becomes an AFR or a life threatening allergy

# How do we know?

- Allergies and food intolerances far more common in babies born by Caesarian section, depriving infant of exposure to Mum's healthy vaginal flora during birth
- Younger siblings less likely to have allergies or asthma than first-borns
- Allergies and food intolerances far less common in tribal communities and developing countries than in the developed parts of the developed world

# How do we know? (cont.)

- Read up on “The hygiene hypothesis” ; Dr. David Stratton London School of Hygein and Tropical Medicine
- Even worms have a role to play. Read “Helminthic therapy” in relation to treating IBD like Crohn's disease
- Modern Kids get “wormed” regularly. Good idea or diaster?
- Once we never saw IBD in children. Now common in kids as young as eight years old. My youngest patient was five.

# Adverse Food Reactions-1

*Food Allergy*: i.e. IgE based

These are usually immediate, and may manifest as vomiting or diarrhoea. RAST testing useful

*Food intolerances*:

- Often IgG based. As IgG reactions, they may have a delayed effect, and may not be obvious to the patient.

# Adverse Food Reactions-2

Neither IgE nor IgG based:

- Food Families: e.g brassicas, nightshades, lily family
- ABO Rh sensitive....blood Group diets
- White cell, [HLA] haplotypes. Looking at chromosome 6, our tissue type. Probably the most meaningful blood group to assess, but not much data available
- Lectins. Natural plant toxins which some tolerate better than others. Blood group link
- FODMAPs
- Other food chemicals such as salicylates and amines

Non foods such as additives, preservatives..colours

# Gluten-1 [a class of its own]

## 1. Coeliac:

- Is tested through IgA, but IgA is *not* an inflammatory reaction
- Characterised by incursion of lymphocytes into sub-mucosa
- Requires the presence of Coeliac genotype..DQ2 or DQ8
- Only 1:20 of all people of this genotype express it as clinical Coeliac
- As a systemic disease, hypothesis is that it may bypass the gut altogether and affect only the CNS, [cerebral ataxia, other neurological disorders such as epilepsy] or the skin, [Dermatitis herpetiformis].....[University of Manchester]

# Gluten -2

## 2. Non Coeliac gluten intolerance

May or may not be DQ2 DQ8 linked.

[i] If linked, in the absence of clinical coeliac, gluten peptides may be toxic having bypassed the T lymphocytes and HLA DQ systems, inciting other inflammatory cells that then prime the T lymphocytes [Lancet July 5, 2003]

[ii] Gluten intolerance not associated with Coeliac genotype. Prof. Peter Gibson, Melbourne

[iii] Associated with streptococci, casein, Hg. Via DPP4 [Robyn Cosford...personal communication]

# Dairy

Dairy has many AFRs.

[I] lactose intolerance

[ii] Homogenisation. Believed by many to be a gastric irritant, cardiotoxic..and carrying other health effects



# Dairy -2

[iii] Dairy protein intolerance

Beta lactoglobulins [bovine milk], vs alpha lactoglobulins

A1 vs A2 milk

- refers to A1 beta casein vs A2 beta casein. Human milk is A2. Most goat, sheep and animal milks are A2. Original bovine milk was A2. Now seen mostly only in Jersey cows
- It is believed that the A1 protein came about as mutation about 100 years ago. With that mutation came another one for increased productivity, for which dairy farmers selected, as opposed to A1

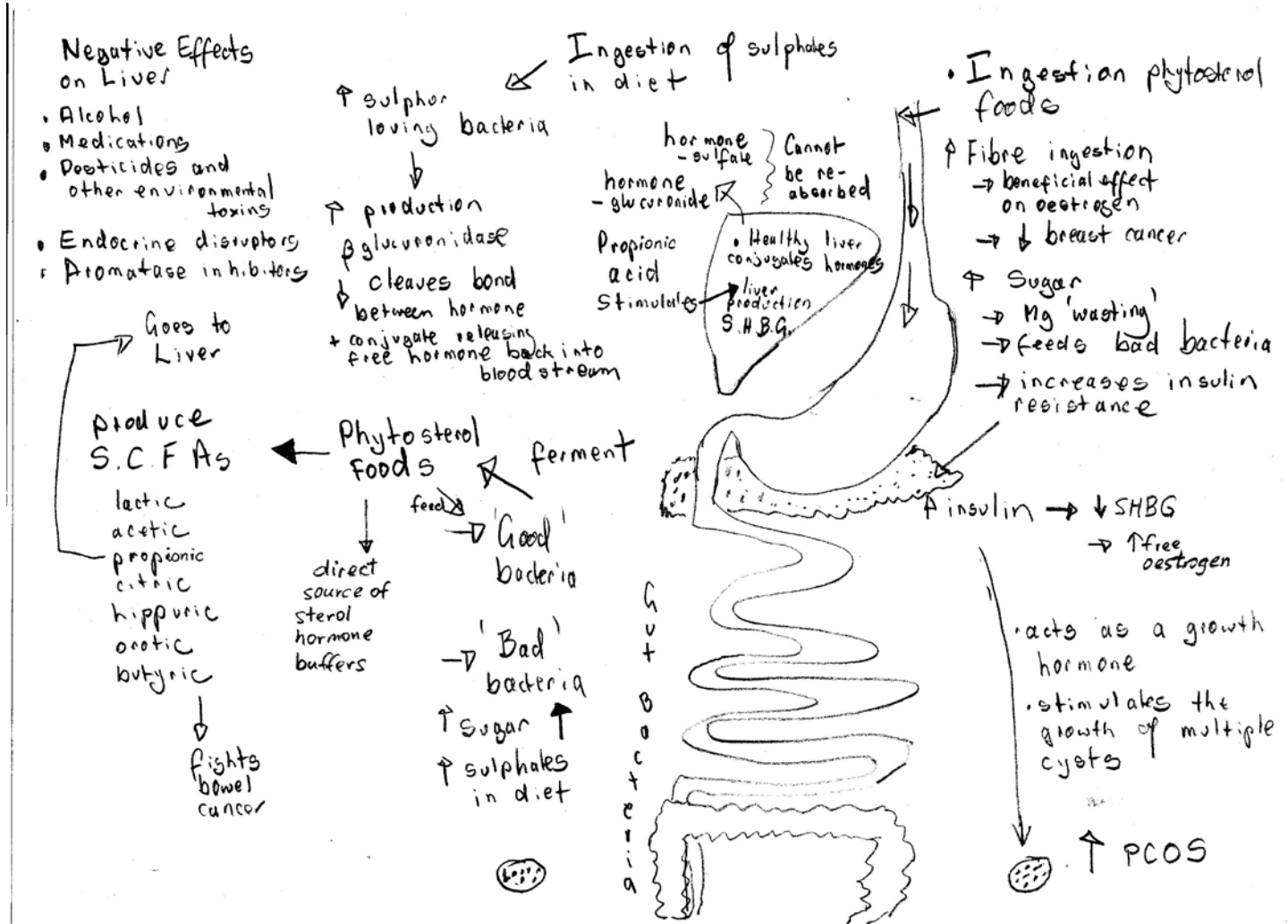
# Example 1- Gut bacteria modify hormone balance

- Gut bacteria determine hormone balance...and more
- But the bacteria have some specific “rules”
  - no sugar [Dr. Robert Lustig UTube video. Contrast CSIRO diet, GI diet, Catalyst program]
  - rainforest fruits predominantly [not Frankenstein fruit or GMO fruit]
  - High levels of soluble fibre...[fruit and vegetables]
- Helicobacter: Friend or Foe?

“one of humanity's oldest and closest companions”  
[Blaser. Scientific American, Feb 2005,p. 24]

See shortly

# Diagram



# C: PHYTOCHEMICALS

OTHERS

## Plant Sterols

- (i) 'Phytoestrogens'
- (ii) 'Phytoprogesterones'

e.g. Isoflavones:

Lignans

Coumestens

e.g. Red clover

= Promensil

= Phytosterol

Other Plant chemicals with  
modifying effects on hormone  
action, e.g. through enzyme  
inhibition

(i) Indoles

(ii) Herbal (multiple)

e.g. Black Cohosh

= Remifemin

# Soy?

- Medical misnomer labels soy as “phytoestrogen”
- It is NOT. Nor is it a xeno-oestrogen
- The correct biochemical term is “phytosterol”
- Which means that it is structurally a sterol molecule, can sit on oestrogen receptors to either *stimulate* them *or block* them, according to the body's immediate needs
- Health issues only arise in 3 ways
- [i] synthetic concentrates as opposed to whole foods
- [ii] GMO soy [organic therefore safe]
- [iii] Individual AFRs to soy

# Example 2-Helicobacter

- Helicobacter are “one of humanity's oldest and closest companions” [Blaser. Scientific American, Feb 2005,p. 24]

May protect against oesophageal cancer, allergy and asthma.

- Maybe we only need to treat helicobacter when its there in overgrowth
- Remember, that part of the treatment includes antibiotics and PPIs

# The Medical Response 1

- Doctors love medications that relieve *symptoms*
- Does this always address the problem or does it make it worse via unintended consequences?
- PPI s [Somac, Nexium etc] increase risk of Atrial fibrillation, Clostridium difficile, community acquire pneumonia, and possible B12 and iron malabsorption

# The Medical Response 2

- Our Gut is “designed” to begin acid at the top end, and alkaline at the bottom. Bowel bugs like an alkaline environment to hold bowel cancer etc at bay
- Stomach acid, [or some acidic foods] aid in digestion...and on entering the duodenum stimulate a pancreatic response with a massive bicarbonate wash
- Reduced stomach acid, reduced pancreatic wash
- Is this contributing to rise in pancreatic gut dysbiosis even pancreatic cancers?