

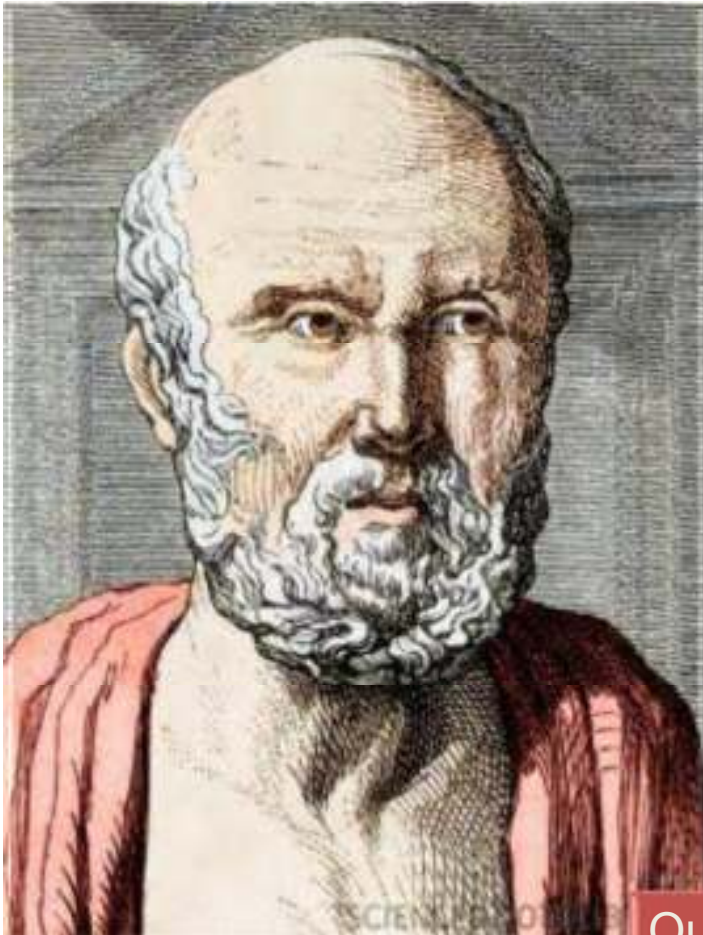
GUT HEALTH WORKSHOP

Dr. Melissa Monkivitch

5 March 2016

Thank you for coming!

Gut Health History



- Hippocrates: Grandfather of medicine; 300BC
- "All disease begins in the gut."
- "Let food be our medicine and medicine our food."
- 1800's - widespread farming changed the energy source from fats to carbohydrates
- WW2 - antibiotics and vaccinations, chemotherapy, disease modifiers.
 - science predominates over nature
- 21st century disease: over-consumption, obesity crisis, environmental toxins, pollutants, lack of fitness > tipping point for longevity.

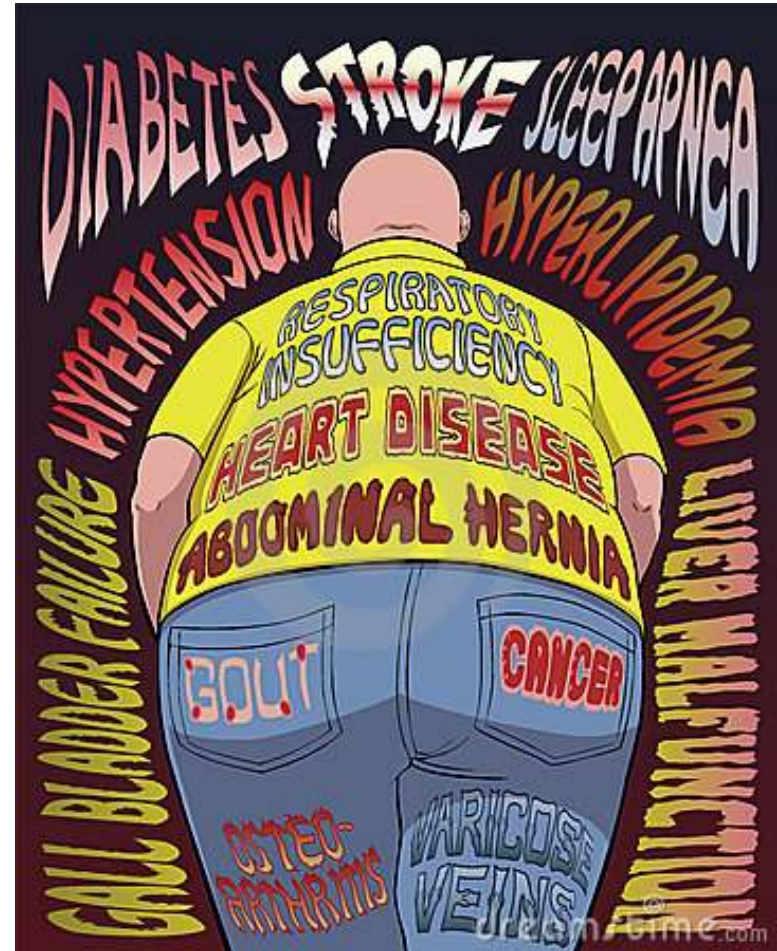
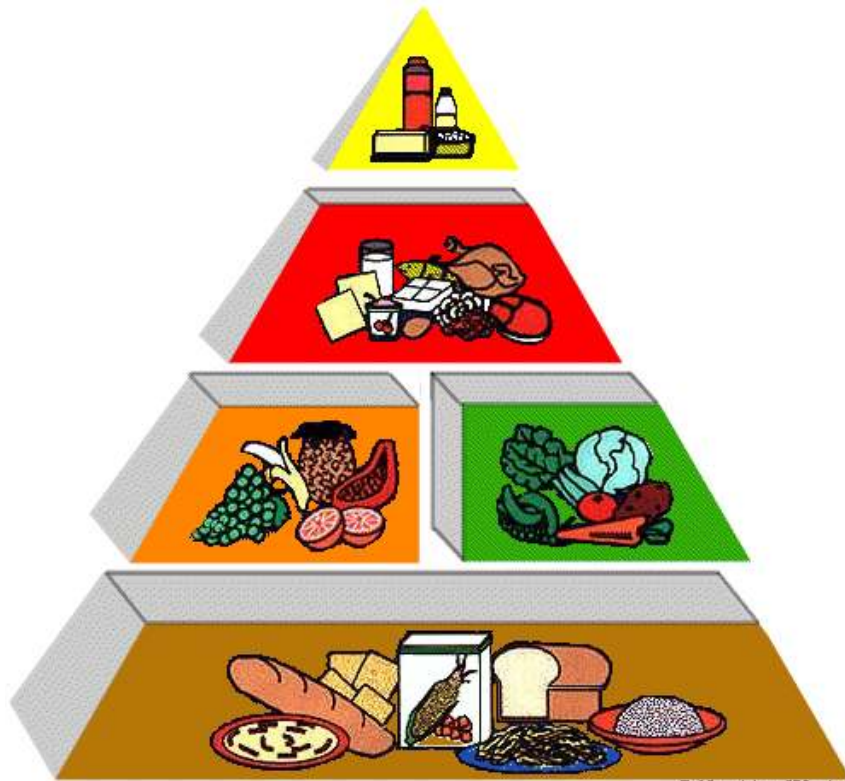
Our children run the risk of living less long than we do due to western lifestyle.

'Nutrigenics'



- Nutrition 'over' the gene – the new frontier in medicine.
- WHO states that 85% of chronic diseases are lifestyle driven.
- Bowel cancer soon to be top of the list.
- Doubling of the incidence of IBD in teenagers in last 10 years.
- Health studies in obese children
 - glucose intolerance
 - kidney stones
 - heart remodelling
 - psychocognitive disorders

The food pyramid is wrong!!!!



Food Health Toxins

1. Sugar + high GI processed carbohydrates
2. Gluten: sticky protein in wheat, barley, rye
3. Omega-6: vegetable oils & margarine
4. Hooved animal products
5. Gut busters: gut bug depletion & disarray



Food Dimensions

Alkaline

- Anti-inflammatory
- Nutrient rich
- Superfood
- **Weighting:** more

Acidic

- Pro-inflammatory
- Nutrient poor
- Toxin
- **Weighting:** less

Sugar

Simple sugars / white processed carbohydrates

- Acidic , inflammatory, nutrient poor, addictive, gut buster > feeds unhealthy flora
- Coats proteins and fats > glycation > increases free radicals and inflammatory particles
- Triggers insulin secretion > visceral fat storage > inflammatory cytokines
- Reduced satiation > over consumption> obesity
- * **fructose** does not switch off ghrelin (hormone of hunger) > overconsumption > obesity.
- **Weighting:** minimise

Complex carbohydrates

- Nutrient rich; fibre, vitamins and minerals, folic acid reduces homocysteine levels
- Satiating, gut bug food
- Includes whole-grains and pulses
- **Weighting:** moderate, second tier



Sugar

Fruit

- Alkaline, anti-inflammatory, nutrient dense. Superfoods: blueberries, goji berries, red grapes; anti-oxidants, resveratrol
- Contains enzymes. Helps with digestion and breakdown of inflammatory proteins & immune complexes
- Contains various percentages of glucose and fructose
- Eat whole fibre: reduces glycaemic index and food for gut bugs
- **Weighting:** 2 pieces daily

Sugar Alternatives

- Honey, agave, rice malt, coconut sugar: all sugars of various combinations and GI
- Aspartame – artificial sweetener in soft drinks: 3 neurotoxins; increases cognitive and emotional disorders, increases obesity and diabetic risk
- stevia = safe, natural
- **Weighting:** minimise

* IBS + fructose intolerance

Avoid: apples, pears, stone fruits, melon, dried fruits.

Eat: banana, oranges, berries, pineapple, pawpaw.

Gluten

- Tricky , sticky protein found in wheat, rye, barley
- Food additive: thickener for sauces, soups, processed foods
- Humans have not evolved to digest gluten proteins (gliadin and glutenin)
- Very inflammatory and acidifying: triggers immune response and a major cause of 'leaky gut'.
- MBE - strong association between gluten and gut and brain disease
 - bypasses the blood brain barrier
- **Coeliac disease**
 - immediate response: autoimmune disease
 - easy to test: gliadin antibodies, duodenal biopsy and gene test
- **Non Coeliac Gluten Hypersensitivity (NCGH)**
 - delayed response: brain and gut syndromes; IBS, brain fog, anxiety, depression, migraine, headaches, learning and socialising disorders= autism, Asperger's, ADHD neurodegenerative disorders ; MS, Alzheimer's disease
- Gluten intolerance- many other proteins attached to gluten
 - affects all of us to a variable extent
 - 30% affected by symptomatic delayed response syndromes
 - difficult to test in Australia (Cyrex testing USA)
 - need to exclude gluten completely if suffering any gut or inflammatory diseases
 - best to minimise for everyone else
 - panification process of yeast enzymes working on gluten over time helps break down gluten

* wheat is also a major source of fructose, and in those who are fructose intolerant will trigger IBS.

Oils & Fats

Good

Omega - 3

- Anti-inflammatory, nutrient dense, superfood.
- Makes up 2/3's of the fat in our brains.
- Breast milk, fish, algae, krill, olive oil, nuts and seeds, avocado- thus benefit of Mediterranean diet.
- Always use cold pressed, virgin organic olive oil; polyphenols and vitamin E are anti-oxidants.
- Use cold in dressings or cook at low temps.
- High intake reduces cognitive decline; see JAMA study, 2015



Bad

Omega - 6

- Polyunsaturated vegetable oils; canola, sunflower, rice bran oil, peanut oil, margarines, grain fed beef.
- Pro-inflammatory and thrombotic ; arachidonic acid metabolised to thromboxanes and prostaglandins.
- Competes with omega-3 for same enzyme pathway.
- Should be in a ratio of 1:1 with omega-3; important in cell membranes and nerve cell function..
- Toxic levels in the western diet:
25:1 in Australia, 45:1 in America
- Avoid reaching 'smoke point' - burning oil releases carbon toxins and free radicals - carcinogenic.
- Avoid direct use and minimise indirect intake.

Oils & Fats

Good

Bad

Coconut oil

- Anti-inflammatory, nutrient dense, superfood.
- Saturated fat but of MCFA; results in elevation of HDL and stabilisation of LDL- low levels of CAD in countries of high intake.
- Metabolised by liver into ketones: immediate energy source, not stored as fat!
- Increases energy expenditure and satiates, reducing appetite resulting in weight control.
- Contains lauric acid which is anti-bacterial, & anti-fungal.
- Reduces cognitive decline as ketones are a direct fuel for the brain.
- Protects against hair and skin damage and irritation: no alcohol, BPAs or preservatives.
- Has a high 'burning point' so good for high temp cooking.



Saturated animal fats

- MBE of clear association with vascular disease and cancer.
- Source of fat soluble vitamins; A, K, D, E.
- Omega-3: Omega-6 ratio best in grass fed beef and dairy. Avoid grain-fed as predominantly Omega-6.
- Butter is preferable to any margarine and is full of vitamins & minerals. Use wisely!

Alzheimer's disease is associated with insulin resistance, therefore the cells are unable to use glucose as an energy source. Many world-wide studies looking at cognitive benefits of Coconut oil.

Animal Protein

Meat protein

- China study confirmed 20% increased risk of chronic diseases.
- Recommended by every Cancer Council to minimise.
- Acidic, inflamm.atory, nutrient rich, not superfood.
- L- Carnitine + gut flora affect > unstable cholesterol plaques.
- WHO has classified processed meats (ham, salami, sausages, deli meats) as a grade-1 carcinogen because of undeniable evidence of cancer link (20% increased risk if eaten frequently) – **AVOID**.
- Charred meat and BBQ meat also undeniably toxic to the gut due to the formation of heterocyclic amines-carcinogenic in animal studies. Marinating prevents charring and reduces the risk.
- Nutrient rich with iron, B 12, zinc, protein - all readily available in plant-based diet.

Poultry protein

- No associated cancer risk but nutrient poor and quality affected by mass farming and processing.

Eggs

- Whole food with complete complement of proteins, good cholesterol fat and high in nutrients: vitamins D, K, E, B group, choline (brain food), selenium, zinc, omega-3.

Weighting: if CAD 3 per week, if not 6+ per week



Animal Protein

Dairy Protein

- Inflammatory, nutrient dense, superfood in cultured form.
- Cause of gut intolerance to the protein or the lactose.
- 50% of gluten intolerance co-exists with dairy intolerance.
- A-2 protein less irritant to the gut than A-1
 - avoid if prone to allergy or IBS.
 - restrict to cultured format if suffering cancer, IBD or autoimmune disease.
- Benefit of cultured milk products (yogurt and kefir) outweigh negatives.

* good milk alternatives: coconut, soya, almond, rice milk – beware sugar content of packaged forms.

Fish protein

- Anti-inflammatory, nutrient rich.
- Reduces overall CAD and cancer risk: breast, bowel, prostate, omega-3 effect.
- High in minerals: iodine, zinc, calcium, B group, vitamins A & D.
- **Weighting:** 3 serves per week



Gut Busters

- Two mechanisms of disease:

1. Inflammation
2. The action of free radicals

Both affected by the interaction between diet and gut flora (nutrigenics)

There is increasing evidence that microbial metabolites can influence the magnitude and quality of immune response (70% of our immune cells reside in the gut).

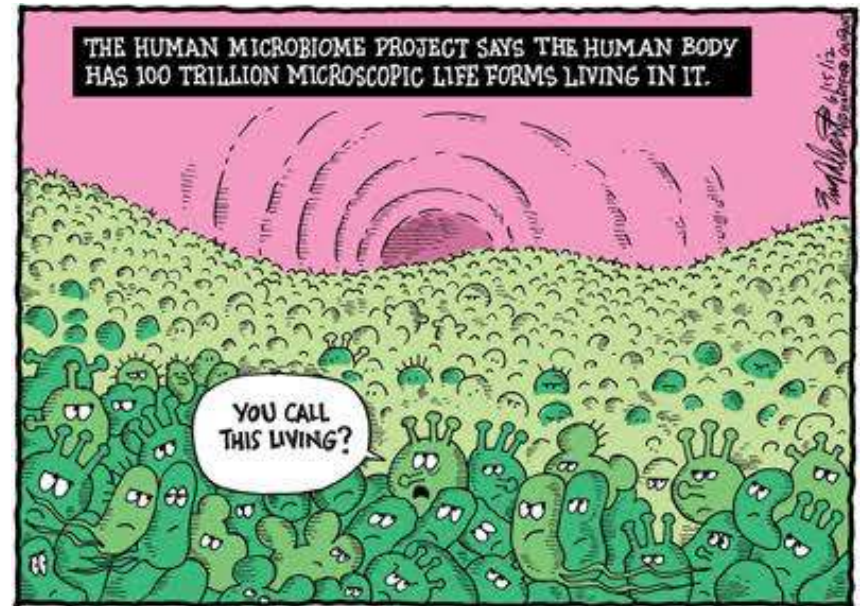
- Gut function includes: enzyme secretion and digestion, motility, absorption of nutrients and fluid, mucous production, barrier protection to invaders, immune protection, detoxification (25% in the gut and 75% in the liver), and waste management.
- Gut busters are any environmental factor that alters or diminishes the ability of the gut and the gut flora to achieve these functions.



environmental toxins, chlorine, airborne toxins, chemical sprays on food, food additives and preservatives, BPAs, drugs, antibiotics, chemotherapies, immune suppressants, AND toxic foods as listed.

Gut Microbiome

- Largest interface between ourselves and the external environment - greater surface area than skin!
- One cell layer thick. Folded into villi.
- Gut flora are the process workers sorting out what goes in or what is thrown out.
- Gut microbiome studied as an extension of the human genome map undertaken in 2008.
- 10 - 35,000 distinct species >100 billion individuals.
- Established in the first 3 years of life via vaginal birth, breast feeding and subsequent food intakes.
- Two main groups: bacteroidetes and firmicutes.
- The predominance of bacteroidetes promotes health and leanness.
- The predominance of firmicutes promotes ill-health and obesity (better energy transformers)



'Leaky gut' or dysbiosis is a breach in endothelial bonds due to dietary and environmental toxins which leak into the blood stream triggering an allergic or immune response > inflammation.

Gut Microbiome

ROLE:

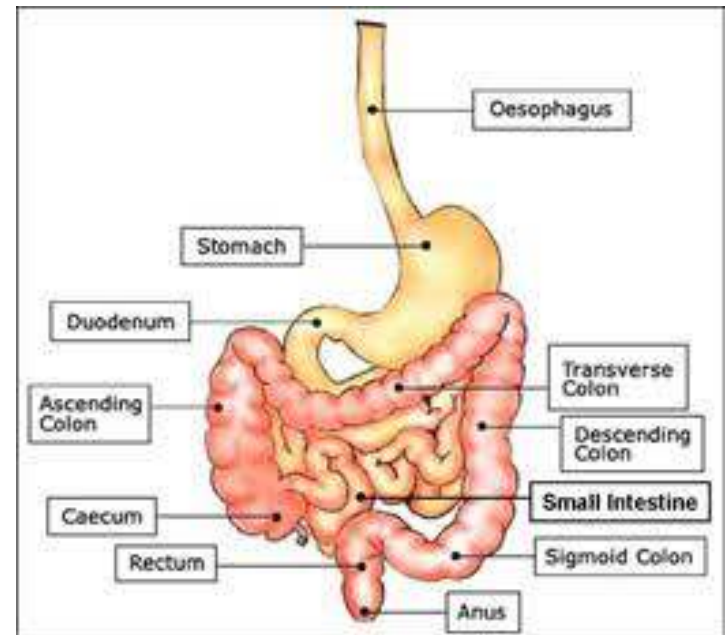
- Barrier protection, mucous production
- Block pathogenic invasion
- Produce neurotransmitters: glutamate, GABA, serotonin
- Immune & hormonal modulation
- Control inflammation
- Control weight by reducing circulating ghrelin (hunger hormone)

ALTERED BY:

- LUSC, bottle feeding
- Drugs: antibiotics/ chemo/ cortisone
- Environmental chemicals, chlorinated water, air pollutants, food toxins
- Food substances; gluten and sugar
- Lack of nutrients & fibre
- Stress, lack of exercise, lack of sleep

AIDED BY:

- Anti-inflammatory, nutrient rich diet
- Prebiotics: insoluble fibres such as inulin (studies show 30% reduced all illness outcomes in high fibre diet)
- Probiotics such as yogurt and fermented foods: miso, tempeh, sauerkraut, kimchee
- Probiotic enema and faecal transfusions for inflammatory, autoimmune diseases and chronic diarrhoea.



Gut Makers

Vegetarian diet

- **Alkaline:** leafy green vegies, citrus.
- **Anti-inflammatory:** insoluble fibres acted upon by gut bugs creating SCFA's which down regulate inflammation (decrease cytokines and prostaglandins)
 - E.g. inulin: Jerusalem artichokes, chicory, asparagus, white onions, garlic, bananas, cocoa beans, coffee beans. (*avoid if fructose intolerant!*)
- **Nutrient rich:** Vitamins, minerals, protein, fats.
- **Enzyme-rich:** Aids digestion and break down of inflammatory proteins - denatured by cooking. Eat half of vegetables in raw state.
- **Eat organic** to reduce environmental toxin load.

* **vinegar** : acetic acid- acetate= SCFA; down regulates inflammation. include 1-2 tbsps. daily.

Fermented food

- **Ancient tradition** of food preservation. Marked longevity noted in populations that intake cultured foods.
- **Raw foods preserved** via lactic acid fermentation; bacteria convert sugar molecules into lactic acid - low PH and protects against pathogenic invaders.
- Miso, tempeh, sauerkraut, yogurt, kimchee, kefir; milk and water.
- **Replenishes the gut** with healthy bifidobacteria: lactobacillus, acidophilus.



Superfoods



Benefits above the direct nutrient effect:

- ✓ anti-cancer,
- ✓ anti-aging,
- ✓ cognitive enhancement

- Blueberries, pomegranates, red grapes, red wine: high levels of anti-oxidants
- Kale and cruciferous group (cabbage, cauliflower, broccoli): contains sulphoraphanes - anti-inflammatory, anti-cancer
- Turmeric. Curcumin is a polyphenol and the active metabolite - enhances cognition & mental and physical energy, reduces inflammation, mood stabiliser and improver of lipid profile.
- Raw cacao: more anti-oxidants than blueberries, high in polyphenols, inulin fibre rich, cognitive and mood enhancing (add to morning muesli & midday coffee for superboost effect)
- Coffee: high in polyphenols, cognitive enhancing and energy. Recommend 2-3 cups per day.

Diet and Wellness

Mediterranean Diet recommended by WHO

- High in vegetables and legumes-organic (50% reduction in pesticides).
- Fish as the main protein source.
- Some seasonal fruits.
- High in omega-3 via nuts, seeds and olive oil.
- Carbohydrates mostly wholegrain and complex.
- Small amounts of dairy and meats.
- Red wine- polyphenol antioxidants.
- Vinegar- SCFAs.

Vegetarian & Oceanarian Diet

- Lowest cancer and chronic diseases risk (20-30%).
- Gluten free, omega-6 free if IBD or AID.
- High nutrient, low toxin.
- Environmentally responsible.
- Kind to animals.
- Recommended if suffering any gut or auto-immune disease.



Diet & Illness

If you are suffering from any inflammatory disease, such as Crohn's disease, Rheumatoid arthritis, intractable asthma, Multiple Sclerosis, severe eczema, cancer, diabetes, thyroiditis, polymyalgia rheumatica etc., I recommend a diet that is:

1. Gluten free
2. Dairy free (apart from milk kefir)
3. Omega-6 reduced
4. Omega-3 & coconut oil enriched
5. Meat free (fish, eggs & vegetables only)
6. Minimise white sugar and processed carbohydrates (eat brown, wholegrain only)
7. Enzyme supplements taken before each meal (amylase, protease & lipase) to break down inflammatory immune protein complexes and aid digestion
8. Low FODMAPS if bowel disease or obese
9. No alcohol until stabilized. Allow up to 2 glasses 3 times per week red wine thereafter.
10. Natural fermented foods taken daily (e.g. kefir, yoghurt, miso, sauerkraut)
11. Supplements of B group vitamins, turmeric, vitamin D, omega-3 daily
12. Include cider vinegar 1-2 tbsps. daily for anti-inflammatory benefit

Supplements



Mega- multi B

- Folic acid down regulates inflammation
- B6, B12 provitamins for neurotransmitter formation

Omega-3 (high DHA)

- Anti-inflammatory
- Makes up >90% of brain omega-3
- Mood stabiliser

Vitamin D

- Acts as brain hormone stimulating neurotransmitter and nerve growth
- Reduces cancer risk ; melanoma
- Reduces inflammatory disease such as MS
- Interacts directly with our gut bacteria

Coconut oil 1 tsp twice daily

- Anti- inflammatory
- Anti bacterial/ fungal/ viral
- Energy dense brain food. used to treat and prevent neurodegenerative brain diseases

Tumeric

- Curcumin active ingredient
- Anti- inflammatory, anti-oxidant
- Brain food - enhances growth of new brain cells and improves mood
- Improves glucose metabolism

Probiotic

- Enhances good gut flora balance
- Reduces inflammation/ digestive problems

Enzyme supplements

- Help digestion in an inflamed gut
- Break down inflammatory proteins clogging up the gut wall, joints, muscles & nerves

Food Mantra

"We are what we eat"

" Let food be our medicine and
medicine our food"

Hippocrates





Kefir Making

Water kefir

First ferment

- 1/4 cup kefir beads
- 1/4 cup raw sugar
- 1 litre of filtered water - room temp, or coconut water for extra boost!
- 1 dried fig or apricot

Cover with a dry muslin cloth and rest in shaded area for 1-2 days.

Second ferment

- Drain off fermented liquid retaining beads for next round
- Add flavours to ferment for further 48 hours – orange, citrus juice, herbs
- Drain off liquid and bottle for refrigeration

Coconut kefir

- Use 1-2 Tablespoons of beads
- Add 1 cup of coconut milk
- Stand overnight in a yogurt maker

*can be stored in the fridge for weeks if away from home



Green 'Super' Smoothie

morning alkaline hit containing 3 superfoods



- Greens: kales, spinach, parsley
 - vitamins, minerals, sulphoraphanes
- 1 piece each: Lemon, cucumber, celery, fresh tumeric
 - alkaline, flavour, fibre, oils
- Banana or berries (low fructose)
 - sweetener, fibre, anti-oxidants
- 1tbsp sesame seeds and flax seeds
 - calcium, fibre, omega-3
- coconut milk or fat
 - energy, taste, aids vitamin abso
- 1 tspn 'vital greens'
 - spirulina, wheat grass, chlorella
- Fluids:
 - water, kefir, coconut water

Sprouting



- Optimum food energy
 - Alkaline
 - Anti-inflammatory
 - Nutrient rich
 - Superfood (broccoli sprouts have the highest detoxifying effect above all other foods)
- High in natural enzymes
- Easy to grow
- Delicious in taste
- Enhances any salad
- Excellent exchange for grains

Sauerkraut



- Highly nutritious
 - Easy to make
 - Delicious in taste
 - High in probiotics and enzymes
 - Extended storage
1. Chop 1kg cabbage in food processor
 2. Knead until wilted - up to 30 mins
 3. Add flavours: dill, caraway seeds
 4. Add saline: 3 tsps. sea salt to 1 litre filtered water +/- probiotic starter
 5. Cover and stand for 2 weeks in dark cool environment
 6. Store for up to 12 mths in the fridge
 7. Eat as side dish or mix in salads
 8. Remember to eat it!

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Much of the inspiration and information in this presentation has been gained by reading the works* of Dr. David Perlmutter M.D., neurologist & Fellow of the American College of Nutrition, based at Miami School of Medicine.

*recommended reading: 'The Grain Brain' and 'Brain Maker'