

## Food and nutrition

The solution for almost any long term health problem will almost always include lifestyle interventions like nutrition and physical exercise. Genetic factors are important but one can't change them (yet). Lifestyle accounts for about 30-40% of ALL cancer, vascular disease and diabetes. It accounts for sizable chunks of mental illness, musculoskeletal disorders, obesity, autoimmune and allergy disorders.

The most powerful lifestyle intervention, besides correcting a drug use problem such as smoking or alcohol overuse, is through optimising nutrition. On face value it seems that dietary advice is confusing with so many authorities offering apparently different ideas on what we should be eating and drinking. But in fact it is not. It is surprising how consistent the key messages are and I will try to condense them below.

The messages discussed below are reflected in the structure of various recommended diets such as the CSIRO diet, the DASH diet (diet for hypertension) and the NICE (National institute for clinical excellence) diet as well as the most studied and proven diet, the mediterranean diet.

If your goal is to lose weight the reader should supplement their reading with Prof Joseph Proietto's excellent book 'Body Weight Regulation (etc - long title)' which can be downloaded as an eBook or visit our website for other resources. A sub-specialist General Practice 'Alevia' are excellent - visit their website for more information.

### What is a healthy diet?

The table below is not a bad attempt at answering that question. It summarizes the effect various food types have on the common chronic illnesses. Regarding the arrows, up means the food causes higher rates of that condition and visa versa.

**Table 2** Associations between intake of foods and chronic disease risk based on published meta-analyses and reviews

Food	Cancer	Type 2 diabetes	Coronary heart disease	Stroke
Whole grains	↓ <sup>14</sup>	↓ <sup>11 12</sup>	↓ <sup>12 13</sup>	
Vegetables	↓ <sup>14</sup>		↓ <sup>12 13</sup>	↓ <sup>12 13</sup>
Fruits	↓ <sup>14</sup>		↓ <sup>12 13</sup>	↓ <sup>12 13</sup>
(Fermented) dairy products	↓ <sup>14</sup>	↓ <sup>11 12</sup>		↓ <sup>12</sup>
Red meat	↑ <sup>14</sup>	↑ <sup>11 12</sup>	↑ <sup>13</sup>	↑ <sup>12 13</sup>
Processed meat	↑ <sup>14</sup>	↑ <sup>11 12</sup>	↑ <sup>12 13</sup>	↑ <sup>12 13</sup>
Fish			↓ <sup>12 13</sup>	↓ <sup>12 13</sup>
Olive oil		↓ <sup>15</sup>		↓ <sup>16</sup>
Eggs		↑ <sup>12</sup>		
Nuts		↓ <sup>12</sup>	↓ <sup>12 13</sup>	
Cocoa/chocolate			↓ <sup>17</sup>	↓ <sup>17</sup>

Here is another by Tim Crowe from Deakin University in the form of a top 10 list of his favorite dietary ingredients;

1. Vegetables - especially cruciferous ones like brassicas and dark leafy greens but any and all, including all the colors
2. Oats
3. Nuts and seeds
4. Tea especially green but also black and to a lesser extent, coffee
5. Berries
6. Fish
7. Dark chocolate
8. Soy
9. Tomatoes especially cooked tomatoes and especially when combined with olive oil
10. Yoghurt (not low fat)

But what are the guiding principles? The first two principles below, that a healthy diet is based on diversity and whole foods, is uncontroversial and entirely backed by evidence. The third, that of eating to help our gut bacteria, is an evolving science. And the last is my own little thought bubble which is based on nothing but intuition.

### Diversity

My son, when he he was 3 or 4, was into lists and comparisons. He would ask; 'What is the healthiest food in the world?' He would become impatient when I tried my best to explain there is no such thing. This thinking lives on strongly in the adult community in the form of supplements and superfoods where the assumption is that if you can condense or purify the goodness from food into an essence then this will be much more powerful than the food it came from. The problem is, it usually doesn't work (there are a few exceptions). The message is, of course, that my son's question was wrong. And the idea of using 'essences' is equally wrong. For a diet to be healthy, it has to be diverse. The more ingredients the better and the more colors the better.

### Whole foods

The second aspect to what constitutes a healthy diet is that it must be based on whole foods. A food which comes off a farm or out of the ocean that has a single name, be it animal or vegetable, is a whole food. This includes vegetables, nuts, seeds, legumes, pulses, fruit, eggs, dairy, meat and seafood. It does not include white flour which is processed. Potato only just qualifies - it is mostly starch. It does include cocoa so dark chocolate is in but white and milk chocolate are out. No, ice-cream doesn't come under 'dairy'.

There is overwhelming evidence that intake of whole foods CAUSES good health. The table above is a tiny fraction of the evidence for this claim. The fibre in vegetables fruit nuts seeds and legumes is metabolised by beneficial gut bacteria which create highly useful short chain fatty acids (SCFAs) which nurture the gut lining, signal through hormones to enhance the effects of insulin and signal the brain to reduce appetite. They are proven to treat diabetes and lower cholesterol. A healthy microbiome also causes better immune function and reduces inflammation in the body.

Processed foods however are usually nutritionally depleted and devoid of diversity. Take white flour for example. The processed form is mostly the starch which is made of carbohydrates which are long strings of sugar. The bran, containing all of the fibre, is removed from the wheat grain when it is processed. Eat the seed and you get benefit, eat white flour and you don't.

Processed foods (in other words most of the foods found in packets and tins at the supermarkets) often contain manufactured fats called trans fatty acids and high concentrations of simple sugars both of which are unambiguously harmful. They stimulate weight gain, increase cholesterol, cause diabetes (in some) and adversely effect immune function and the diversity and types of microbes in our gut (see below). Because the brain sets itself to consume a set amount of food per day, the more processed food you eat, the less whole foods you will eat. There is strong evidence that the obesity pandemic is based on simple sugars and processed carbohydrates in our diets (plus TV and computer screens but that's another story).

### Gut bacteria - the 'microbiome'

The health of the gut microbial ecosystem (the 'Microbiota') is closely related to the health of the individual. The Microbiome typically consists of approx. 100 trillion micro-organisms and encodes about 3 million genes as opposed to our own 23 000. It produces thousands of metabolites (useful molecules) and has a significant effect on human health, enough to think of it as a virtual organ of the body. Research into this aspect of human health is very much in its infancy. However, we do know that it effects our inflammatory status, immune status, obesity propensity, cholesterol status and diabetes risk. Our microbiome helps prime and educate our immune system. It can even influence our response to chemotherapy and immunotherapy. (See; [Role of the gut microbiota in nutrition and health](#) - BMJ 'Food for Thought' series). Antibiotics, proton pump inhibitors (stomach acid suppressing drugs), osmotic laxatives (like Acilax and Duphalac), progesterones and artificial sweeteners, alcohol, food emulsifiers and processed foods harm the microbiome.

Cheese, soluble fibre and polyphenols (in vegetables berries nuts tea coffee and legumes) all increase known specific health promoting bacteria.

Not enough is known yet to warrant routine testing of the microbiota in individuals but this will happen over time. Enough is known to be strongly motivated to look after your bacteria.

### My thought bubble or 'What about meat?'

The yummy stuff in delicatessens (mostly cured pork) is highly processed, extremely high in saturated fatty acids and mildly teratogenic (cancer encouraging). My recommendation is to very occasionally buy really expensive, incredibly yummy deli stuff and reaaaaally enjoy it. But what about fresh meat? It is a whole food and highly nutritious. But high intakes of meat increase the risk of cancer, especially bowel cancer and gout and is looking pretty undesirable in the table above and is (apparently) mildly pro-inflammatory.

My pet theory is that meat is meant to be a rare commodity. An acre of land can produce only a very small amount of meat per year but can produce a mountain of veggies. This idea, that our earth is able to generate nutrients in roughly the same proportions that are best for our nutrition, is my thought bubble. Probably just the buried hippy coming out in me after all these years but I like the idea. By the way plant proteins are entirely sufficient. It is a myth that certain amino acids can only be found in meat.

### What about Omega 3/6 ratio, high fat diets, high protein diets, glycemic index.....?

The basic message is - ignore the whole lot. The answers are to be found in the above principles. Omega 3's and 6's are both good and forget how much of each are to be found in this nut or that grain. The fat / carb debate is basically over. There is no evidence that intake of fat is bad or good. The proportions will look after themselves if you follow principles 1 and 2.

But there are better forms of fats and oils. Olive oil is essentially a miracle but it is not suitable for high temperature cooking. Use Raw coconut oil/ fat (it is solid at room temperature) for that. Canola oil is fine. Use palm oil and you will go to orangutang hell.

Eggs are good for you. Eat however many you want.

The glycemic index is another way to look at carbohydrates but you get the same results. Seeds, legumes, whole grains and nuts are good, highly processed carbs and simple sugars are bad.

I had a patient once who embraced the high protein / fat diet with gusto. Loved his bacon and eggs every morning. Cholesterol of 9 - back to the drawing board.

## Implementation

Paradoxically, I do NOT want you to take the above information and completely change your diet to suit. Why? It won't work. Perfectionistic approaches usually fail because people are not perfect.

Because foods, especially processed foods (high in simple sugars and carbohydrates) act on our brain to induce a pleasure response, they act like addictive substances. It is therefore the case that simply knowing what food is healthy or unhealthy will have roughly zero effect on one's food related behaviour. Only behavioural approaches work against addiction and this also applies to dietary change. In my experience, successful approaches are based on a good understanding of what healthy eating is but are not perfectionistic. Successful interventions usually target the 1 or 2 key unhelpful behaviours for that individual, according to that individual. For example, a person who gets hungry after dinner and habitually snacks on deserts or cereal or whatever at night in front of the TV may chose a simple rule of only having nuts and/or yoghurt after dinner. A patient of mine once lost 15kg and transformed his health by making one rule; 'make my own lunch'.

So;

- Understand nutrition by reading and learning what you need from reliable sources. Our website has links
- Understand your strengths and weaknesses by looking at your behavior across the typical week
- Make at most 2 rules to make good inroads in improving your diet
- Be happy. There is no room for guilt. Food is wonderful - even the yummy stuff

I hope this overview has covered the important principles that will help you construct an approach to your diet that suits you.

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