

The emergence of High Fat Low Carbohydrate Nutrition (HFLC) is radically confronting for those of us wedded to the High Carbohydrate Low Fat approach (HCLF). However, the evidence and wisdom can no longer be denied. This will be the biggest paradigm shift since the US Dietary Goal for Americans of 1977. We know why obesity and diabetes have exploded. The food industry is making a killing (literally)! Will you take action?

What the Fat Paradigm means

Since 1977 political, food industry and health body dogma has been that we should base our diets on convenient, “healthy” grains – the base of the old food pyramid. This was a political and commercial experiment on humankind. The food industry has nailed the “bliss point”, a combination of sugars, processed carbohydrates, vegetable oils and salt almost impossible to resist. It has made us fat!

Studies show that it is carbohydrate, NOT FAT, that is responsible for the epidemic of obesity, diabetes and heart disease. ADHD, Cancer and Dementia are also linked to excess blood glucose.

Our Resilience Insight *Sugar, Glycation & Risk* explains the carbohydrate issue. This paper will show you why you will have to fight against 40 years of dogma and a predatory food industry to reduce your carbohydrate intake dramatically and raise your fat intake. Testing!

Evolutionary Design

Evolution tells us clearly that the success of humans is based on the hunter-gatherer lifestyle:

- Running/walking 9-15km per day
- Intense collaborative social activity
- Hunting, digging tubers & picking fruit
- Plenty of sleep and plenty of rest

Over 200,000 years our brains and social abilities gave us significant advantages over our primate ancestors. Nutrition was a key part.

Collaborative hunting gave us protein and fat. Gathering gave us access to fibrous tubers and fruit (hard and bitter) in season. We ran, we climbed and we dug for our energy.

Carbohydrate was very hard to access. Sugars, such as honey were a rare treat. Meats gave structure and nutrients. Fat, whether from hunting or fishing provided the energy density to thrive, populate and innovate.

We prospered and conquered Africa. Around 40,000 years ago we migrated to colonise and populate the planet. Our success is coded into our genes and our culture. But our genes determine what we are designed to eat. With the right food we thrive. With the wrong food we get sick. See table below showing how food has changed:

Processed carbohydrate is the wrong food.

Food groups (% energy)	Hunter-gatherer	American	RDA
Carbohydrate	35-40%	52%	45-65%
Simple sugar	2%	15-30%	<10%
Fat	20-35%	33%	20-35%
Saturated	8-12%	12-16%	<10%
Unsaturated	13-23%	16-22%	10-15%
Cholesterol (mg/day)	>500mg	225-307mg	<300mg
Protein	15-30%	10-20%	10-35%
Fibre (g/day)	100 g	10-20 g	25-38 g
Vitamin-C (mg/d)	500mg	20-100mg	75-95mg
Vitamin D (IU/day)	4,000 IU	200 IU	1000 IU
Sodium (mg/day)	<1000mg	3,375 mg	1,500 mg
Potassium (mg/d)	7,000 mg	1,328 mg	580 mg

Data: CDC for US data, Konner, Eaton, Paleolithic Nutrition, 2010. RDA is Recommended Daily Allowance.

Processed Carbohydrate x 3

About 12,000 years ago we started to farm in the Middle East ushering in the first era of cereal-derived disease. Egyptian mummies show diseased teeth and gums, obesity, arterial disease and high blood pressure – Carbageddon One.

The US Dietary Goal for Americans in 1977 was based on the flawed science of biochemist Ancel Keys who concluded that fat in the diet raised blood cholesterol and caused heart disease. He was wrong on all counts. We know today that fat in the diet is inversely related to heart disease. Countries such as France and Switzerland who eat high saturated fat diets have the lowest rates of heart disease. It is now evident that it is cigarettes, sugar, processed grains and cereals, high fructose corn syrup, and unsaturated vegetable oils that drive heart disease.

Nevertheless in the Nixon era a political decision was made to promote industrial production and global sale of grains, corn and soy. The purpose was cheap food and happy farmers. The USDGA of 1977 was a huge, unscientific experiment on human health – Carbageddon Two. Within five years obesity and diabetes rates exploded. Despite hundreds of millions of dollars spent to prove the benefits of low fat high carb diets NO evidence exists to support it. Yet practically every health body has doggedly promoted it ever since!

Processed food manufacturers had a windfall. Masses of cheap grains, cereals, corn and soy were pumped into Americans and the world. We thought – many still think – that it is good for us. The food industry profits, we get sick and the sickness industry saps GDP.

Further, the food industry has systematically shaped grains, cereal, vegetables and fruit through selection and genetic modification. The goal is profit through easily digestible and sweet carbohydrates that we love. Thus our carbohydrate foods bear no resemblance to pre-agricultural foods and release abnormal amounts of fructose and glucose – Carbageddon Three.

Basic Science to Understand

Studies show that it is carbohydrate, NOT FAT, that is responsible for the epidemic of obesity, diabetes and heart disease

Our genes are coded to hunt (protein & fat) and gather (fat, fibre & carbohydrate). Dietary fat liberated time providing the energy to live, increase birth-rates, make tools, and build culture. Enter agriculture and the processing and refining of carbohydrate. One downside was the feast and famine cycle but the long-term downside is the excessive release of glucose and fructose. Bread quickly becomes pure glucose in the blood with a glycaemic index (GI) the same as pure glucose.

Glucose triggers insulin release allowing small amounts to be used for immediate energy or stored in liver and muscle. Everything else is converted into fat. Further, high insulin stops us burning fat as fuel. Result: obesity!

Fructose is another simple sugar found mostly in vegetables and fruit. Sugar is 50% glucose and 50% fructose. Fructose is not released into the blood so has a low GI. Fructose goes to the liver where it is processed into fat. Some accumulates in the liver as fatty liver and the rest goes to fat storage in the body. Small amounts of fructose bound by fibre in fresh fruit or vegetable is fine. When added to processed foods – particularly high fructose corn syrup – it overwhelms the liver.

All carbohydrates break down into glucose or fructose. The quicker they break down the more addictive they become. Processed carbohydrate

is skilfully engineered to hit the “bliss point” and is basically irresistible. Carbohydrates make up 50% of many diets and 25% is sugar. Way too high!

Over time excess insulin becomes Insulin Resistance (IR). However, some of us are Insulin Sensitive and somewhat protected.

Insulin Resistance is the iceberg that underpins high cholesterol, high blood pressure, obesity and diabetes. IR is also a brake on athletic performance as it stores energy as fat and blocks fat burning.

Worst of all you become perpetually hungry, driven by ghrelin to find more carbohydrate.

The Science of FAT

The new paradigm is that we must drive carbohydrate down dramatically and get our energy and performance from fat. YES FAT!

To repeat, there is no evidence that fat causes cholesterol elevation or heart disease. It is an essential, energy-dense nutrient that can fuel most of our energy needs. The liver can manufacture glucose from fat and protein (gluconeogenesis) where needed. Fat stores make up 98% of your energy reserves. We can quickly teach the body to burn fat. Volek and Phinney have shown that this is the best fuel for endurance exercise.

Dietary fat also makes you feel full and satisfied.

Omega 3 fats (fish & flaxseed), monounsaturated fats (olive, avocado & nuts) are still great but many scientists and practitioners now recommend increasing our saturated fat intake. Their rationale: it is safe, delicious, curbs hunger and drives fat burning. We are designed to thrive on fat.

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When we drive our carbohydrate down to less than 50g per day (a slice of bread or preferably 3 cups of vegetables) and replace our energy needs with fat we keto-adapt. The body learns to burn fat first for its energy needs.

The evidence is now clear: high fat low carb diets:

- Drive weight loss & reverse diabetes (T2)
- Are pleasurable and filling
- Lowers bad cholesterols (small LDL, Tgl)
- Raises good cholesterol (HDL)
- Lowers blood pressure & heart risk
- Fuels elite sports performance

There is some evidence that HFLC may also reduce the risk of dementia, ADHD, migraines and cancer.

A long story of low carb diets

Low carbohydrate diets are 150 years in the making. Dr William Harvey saved a Mr Banting in 1862 with the first high fat diet. Dr Robert Atkins was hugely influential in 1972 but was heavily criticised for his lack of science. More recently the *Wheat Belly* and *Grain Brain* movements, focusing specifically on gluten have had impact. Gluten is important for 1% of us but processed carbohydrate restriction is probably the key.

The Paleolithic Diet brought some improved science to the movement and then Jeff Volek and Stephen Phinney brought the science into mainstream with their *Art and Science of Low Carbohydrate Living*.

Until recently the medical dogma has steadfastly ignored science and vilified these high fat low carb (HFLC) diets. As more quality studies are being

produced to support this approach things are starting to change. Acclaimed Sports Medicine researcher Professor Tim Noakes came out publically in 2011 and in 2013 published **The Real Meal Revolution** with his team.

Our family is currently working through this book, which includes the science, practical tips and some stunning recipes. He has the attention of many athletes, coaches and business people who are urgently looking for a coherent solution to “Carbageddon”. I highly recommend it. The first week was tough

Going high fat low carbohydrate (HFLC) works but you may be able to achieve some of the gains through intermittent fasting – two fasts per week. Some athletes are dropping dinner to trigger overnight fasting

Our Practical Suggestions

1. Pick a couple of the references to study
2. Have a good debate at home
3. Eliminate bread, cereals, pasta & rice
4. Resolve to hold the line for at least a week
5. Keep your vegetable intake high
6. Introduce high fat foods including meats, eggs, avocados, nuts, whole fat dairy & coconut oils
7. Eat a solid high fat, high protein breakfast

8. Stick to three meals per day
9. Eliminate seed oils (omega 6 polyunsaturates)
10. Trial the occasional fast – no more than 150cal
11. Develop a smart shopping routine
12. Help your family make delicious HFLC meals
13. Maintain daily exercise and regular sleep
14. Read The Real Meal Revolution

References

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