



**in2great**  
fitness & wellness

# FAT LOSS 101



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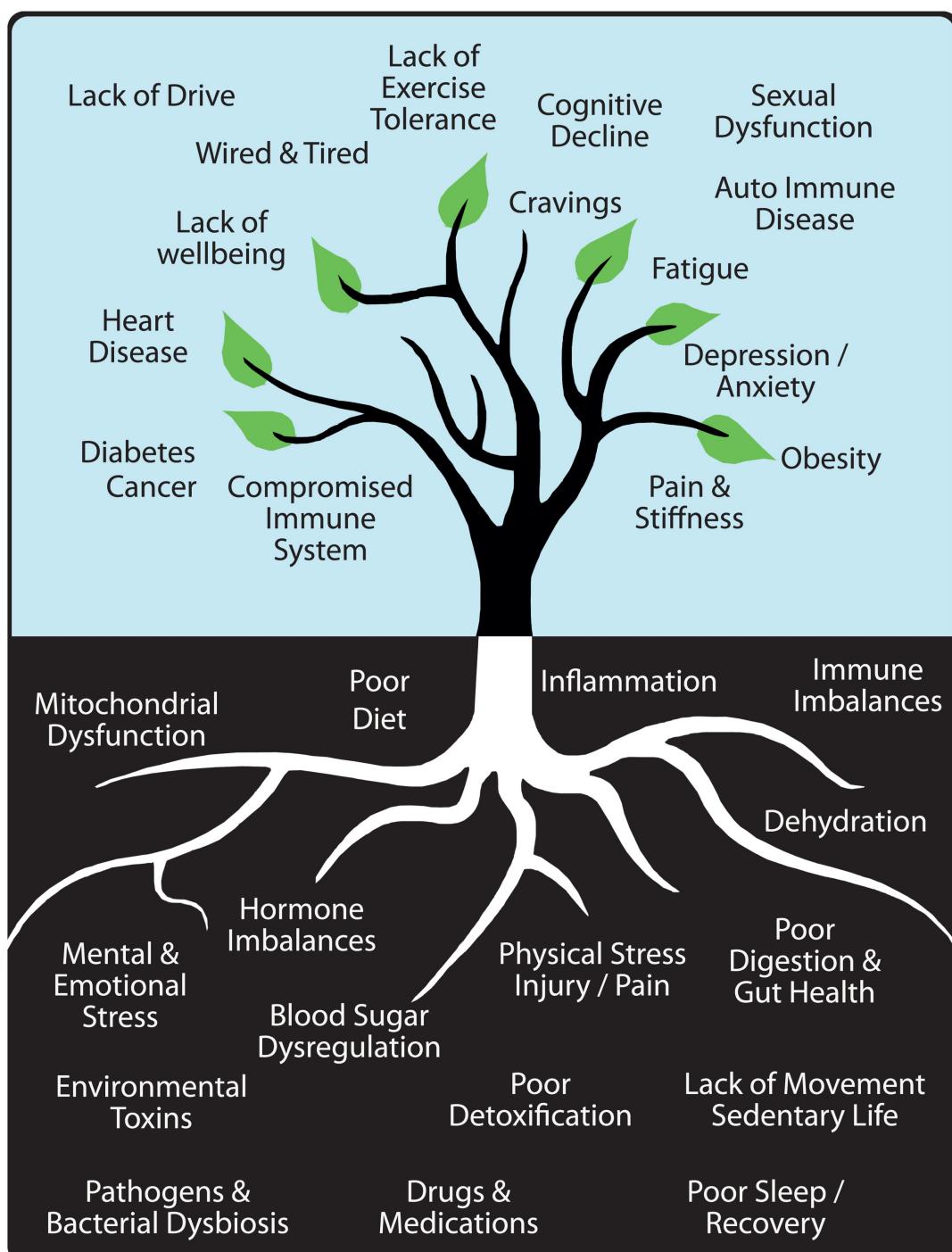
# A Comprehensive Approach to Fat Loss

There is no quick fix, or rapid body transformation that will tackle the very real and devastating health threats of obesity. Real change comes from a comprehensive approach that addresses the multiple system malfunction that is obesity.

Excess fat storage occurs from numerous factors like the breakdown of our stress response, gut health, blood sugar dysregulation, hormone imbalance, poor detoxification and other hidden health threats.

Given the dire health ramifications of obesity, the best option for sustainable change is with a functional medicine approach that looks at the root causes. In obesity there are often multiple underlying causes, weight gain is merely a symptom.

Rather than treating the symptoms and trying to ‘burn fat’ or ‘eat less’ (which do not work!) we must dive deeper and heal the broken energy regulation system.



## Fat Is A Metabolic Organ

*'Inflamed fat tissue spews a toxic brew of chemicals into the bloodstream, disseminating disease throughout the body. Chronic inflammation in the lining of the blood vessels causes narrowing of arteries, called atherosclerosis, resulting in predisposition to a heart attack or stroke. In the liver, chronic inflammation can lead to hepatitis and cirrhosis; in muscle, to loss of lean mass, in the lungs, to asthma; in the brain, to further metabolic disturbances and possibly neurodegenerative conditions like Alzheimer's'* - Dr David Ludwig, Always Hungry

Fat is not just a passive lump of tissue – It's a metabolic organ that influences our physiology in dramatic ways creating inflammation, excessive hunger, poor energy metabolism and more.

- **Obese fat cells are distressed spread inflammation**

When fat cells reach a critical size, the internal machinery of the cell is damaged under the strain of maintaining so much fat. As fat cells become distressed and or even die, they release chemicals that signal tissue damage. When this happens the immune system ramps up into attack mode, often attacking the bodies own tissue.

- **Excess Fat programs you to eat more**

Excess fat causes negative shifts in leptin the satiety hormone, insulin the fat storing hormones, programming you to be hungrier, and less efficient at getting energy from the food you eat. In essence, it's harder for your brain to get the 'stop eating you're full message.'

- **Fat creates Estrogen Dominance**

Fat tissue is responsible for the conversion of testosterone to estrogen, and the more fat you have, the more estrogen dominant you become, which creates a further cascade of toxicity, inflammation, weight gain and disease.

- Increased inflammation
- Sex hormone imbalances
- Increased cancer risk
- Poor gut health
- neurological imbalances
- Blood sugar dysregulation
- Weight gain
- Low libido
- Mood swings
- Water retention
- Irritability / anxiety

- **Fat Activates Free Cortisol**

We have 2 forms of cortisol, the active form of the hormone that tissues use, and the less active form cortisone. Both can be interconverted as needed. Fat tissue from obese individuals has 3-4 x higher amounts of 11B-HSD1 activity which converts **inactive** cortisone, into **active** cortisol. High levels of free cortisol over prolonged periods are catabolic and break down the body, causing systemic inflammation and weight gain.

- Weight gain (visceral fat)
- Blood sugar disturbances
- Poor immune function
- Sarcopenia (muscle loss)
- cravings
- decreased neurogenesis
- decreased testosterone
- increased blood pressure
- poor exercise tolerance
- mood disturbances
- Cognitive decline
- Reduced Immune function
- bone density loss
- sleep issues
- 16-OH E1 pathway (cancer)

## Fat Facts

- We are born with fixed amount of fat cells that can increase or decrease in size.
- It matters where your fat is stored
- You don't have to be fat, to be fat
- **Excess fat is a condition of starvation too few calories available to use**
- Research shows the fatter you are, the smaller your brain is

## The Fuel Gauge - To Store Or To Burn, That Is The Question!

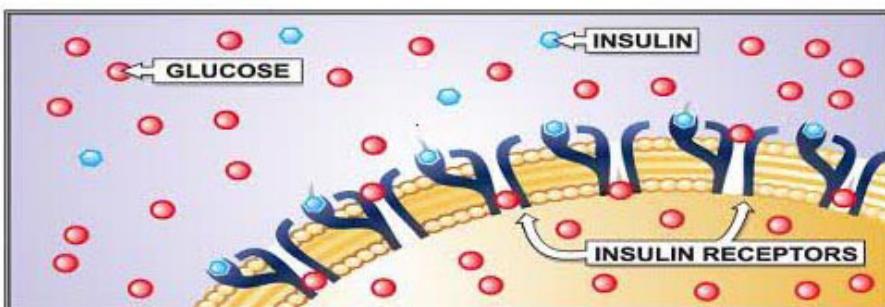
When we eat insulin is secreted from the pancreas in the bloodstream. Food raises blood sugar, insulin lowers it. Insulin opens our cells up to store or burn glucose for energy. A healthy body is insulin sensitive and will release insulin which operates like a key to escort glucose into the cells.

Insulin resistance is as though the cells are locked and energy from food can't get in. This leads to the body releasing **more** insulin in attempt to fuel the cells.

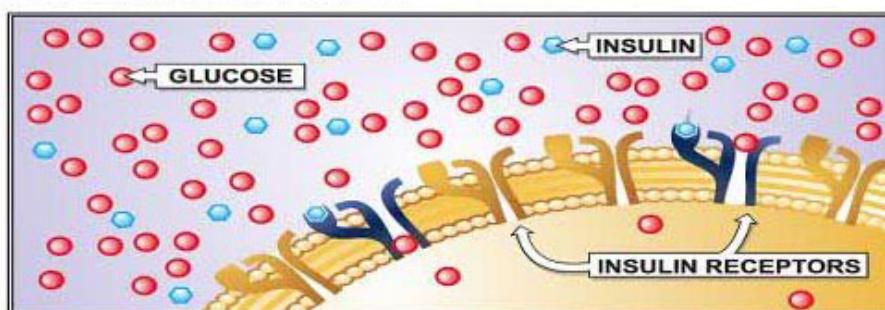
At its very essence, insulin resistance is an **intolerance to carbohydrates**. The body can no longer use carbohydrates (glucose) as fuel.

A high carb diet, toxins, bad food, blood sugar problems, high stress, inflammation or disease, push us to slide down the spectrum towards insulin resistance. The more insulin you release, the faster you age. Insulin resistance ultimately leads to diabetes type 2, but also increases obesity, decreases brain function, hormone health and cardiovascular health.

### INSULIN SENSITIVITY



### INSULIN RESISTANCE

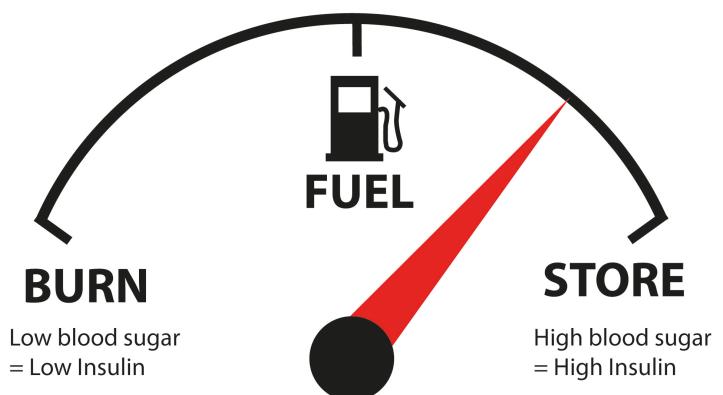


### Our food is the biggest influencer of whether fat is stored or used

When insulin is elevated, we accumulate fat. When insulin levels fall, we liberate fat, and burn it for fuel.

Carbohydrates spike insulin levels the most, protein second, and dietary fat has the least impact on insulin. When we don't eat, insulin levels drop most of all.

The more carbohydrates we eat, and the easier they are to digest and the sweeter they are, the more insulin we ultimately secrete.



## The Blood Sugar Roller Coaster Make Us Store Fat & Stressed

Having a stable source of energy is imperative. A lack of stable energy is perceived by the brain as an emergency, and shifts us into the fight and flight sympathetic nervous system response to regulate blood sugar.

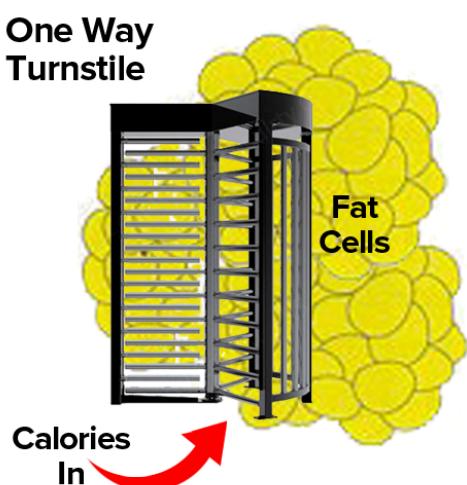
Blood sugar imbalances are at the root of many diseases. Insulin has an inverse relationship to memory. Cognitive decline is so closely connected to blood sugar dysfunction, that Alzheimer's is commonly referred to as type 3 diabetes.



### The vicious cycle of the blood sugar roller coaster:

- The food you eat is digested and enters circulation as glucose
- Blood sugar rises, so does insulin.
- High insulin tells the fat cells stop releasing, and instead absorb more fatty acids into the fat cells.
- Fat from food is stored as triglycerides in the fat cells, carbs get converted to fat in the liver, and are also stored.
- Because the calories you eat have been locked away and stored, you have less available to use
- With no energy to use, you feel tired and hungry with intense cravings
- If you eat you are wired to choose fast acting carbs which stimulates stress response
- If you don't eat the stress response is also triggered to regulate blood sugar
- The normal stress response becomes dysregulated, which compromises hormone and energy balance further
- End up in burnout, with lifelong insidious and gradual weight gain, and increased likelihood of disease

**'Consuming too many carbohydrates locks you into a pattern of fat storage, chronic inflammation, increased oxidative damage, nutrient deficiency and delayed recovery'** – Mark Sisson, Primal Endurance



Fatty acids from the blood stream pass in and out of the fat cell freely.

But if insulin is high, then fatty acids won't be taken up by the muscles and used for fuel, they will end up back in fat tissue.

In other words if insulin is high, it won't matter what you do because fat will just end up back in the fat cell making weight loss near impossible.

**Over decades of abundant glucose, fat stores proliferate and every single year we get a little fatter, and it gets much harder to lose.**

## Stress Promotes Fat Gain

You cannot lose fat when your body is stressed! Chronic stress negatively impacts blood sugar levels, hormones, cravings, gut bacteria, nervous system, sleeping habits, digestion and more.

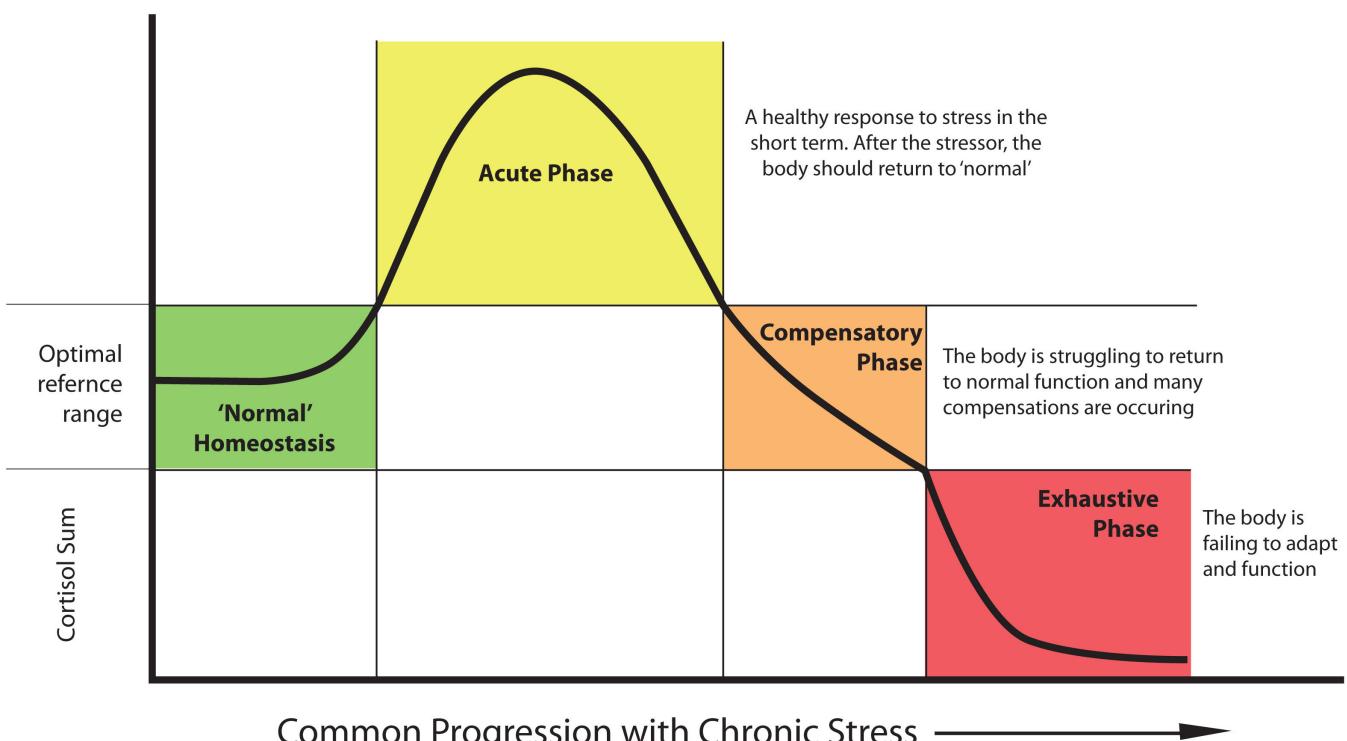
*'Elements of our modern lifestyle – including stress, sleep deprivation, and sedentary habits – have forced fat cells into calorie – storage overdrive. Fortunately, these negative effects are reversible.' – Dr David Ludwig, Always hungry*

Today many people are chronically stressed. It's estimated we have 100x more stress than our grandparents' generation. We are simply not designed to deal with stress on a constant basis. Our bodies have an evolutionary survival mechanism in place to deal with stress. As dangers or threats are perceived, a distress signal is sent to the brain to "fight or flight." Respiration and heart rate increase pumping more blood to the muscles, pupils dilate, and focus intensifies. Regular cell maintenance and digestive, reproductive, and immune activity are put on hold to divert all energy towards survival. This surge of hormones and physiological response can be extremely helpful during isolated times of stress, but if left elevated, can also be extremely destructive, putting the body into a catabolic state.

Imagine your normal daily body functions and maintenance like a highway running smoothly. When stress kicks in, it's like suddenly everything stops to make way for the emergency vehicles buzzing by, the freeway cannot flow normally until the emergency has cleared. When the stress response is ignited day in and day out, normal body functions are decreased.

- When chronic stress is present, the stress cascade begins.
  - The body will attempt to adapt, causing imbalance and dysfunction.
    - **Symptoms are the last thing to appear in the stress cascade**

## Progression of HPA Axis Dysfunction & Cortisol Dysregulation



## Why Should You Care About Your Gut Health?

The biggest health issue we face today is declining gut health. Science is showing that all diseases start with inflammation, which starts in the gut. An unhealthy gut can plant the seeds to Alzheimer's, Cancer, Depression, Obesity, Diabetes, Chronic fatigue, Chronic Pain etc. Almost any condition can be linked these days to gut health. The number one cause of death Heart Disease, is now proven to have roots as an autoimmune condition, stemming from a breached gut health. Our digestive tract is central to our body, and therefore affects all systems. It's safe to say that almost everybody living right now is suffering with less than ideal gut health. It's a spectrum of course, and some get away with it more than others.

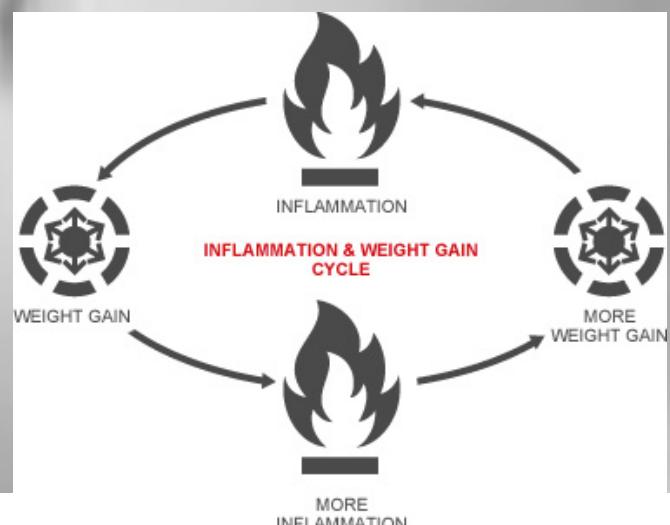
For so many, gut health is neglected and taken for granted until something goes wrong. Because we can't actually see what's going, it's easy to ignore to our own detriment. We can however see that many people around us are fat, bloated, inflamed and even those who look fit, often have a small bloated pouch around their gut.

Our digestive tract protects us on the outside of our body, and is an interface between our external world, and us. About 80% of your immune system is located along the 25-30 foot long tunnel running through us. Our GI tract is host to our microbiome, the trillions of bacteria that work with our immune system, and that create a physical barrier to protect us from pathogens and toxins. The protective epithelial lining itself is only 1 cell thick!

*'It's all about maintaining a healthy balance of bacteria in the microbiome that will then allow maintenance and integrity of the gut lining. That one cell of the epithelium from the esophagus to the rest of digestive system serves as a barrier between things in the intestines versus systemic circulation. One measly cell thick held together by tight junctions. Our entire existence depends on that one cell thick layer.'* - Dr Perlmutter, Evolution of Medicine Summit

A leaky gut can launch body wide systemic inflammation and cause you to gain fat, lose muscle, and feel tired, bloated, and sore. **Inflammation** Is at the root of all disease and another major player in the obesity epidemic.

Inflammation occurs from stress, poor gut health, toxins (both internal and external), GMO food, pathogens, hidden sub clinical conditions like impaired detoxification or parasites. When inflammation gets out of control it ignites a vicious cycle of destruction through the body.



### Common issues stemming from poor gut health

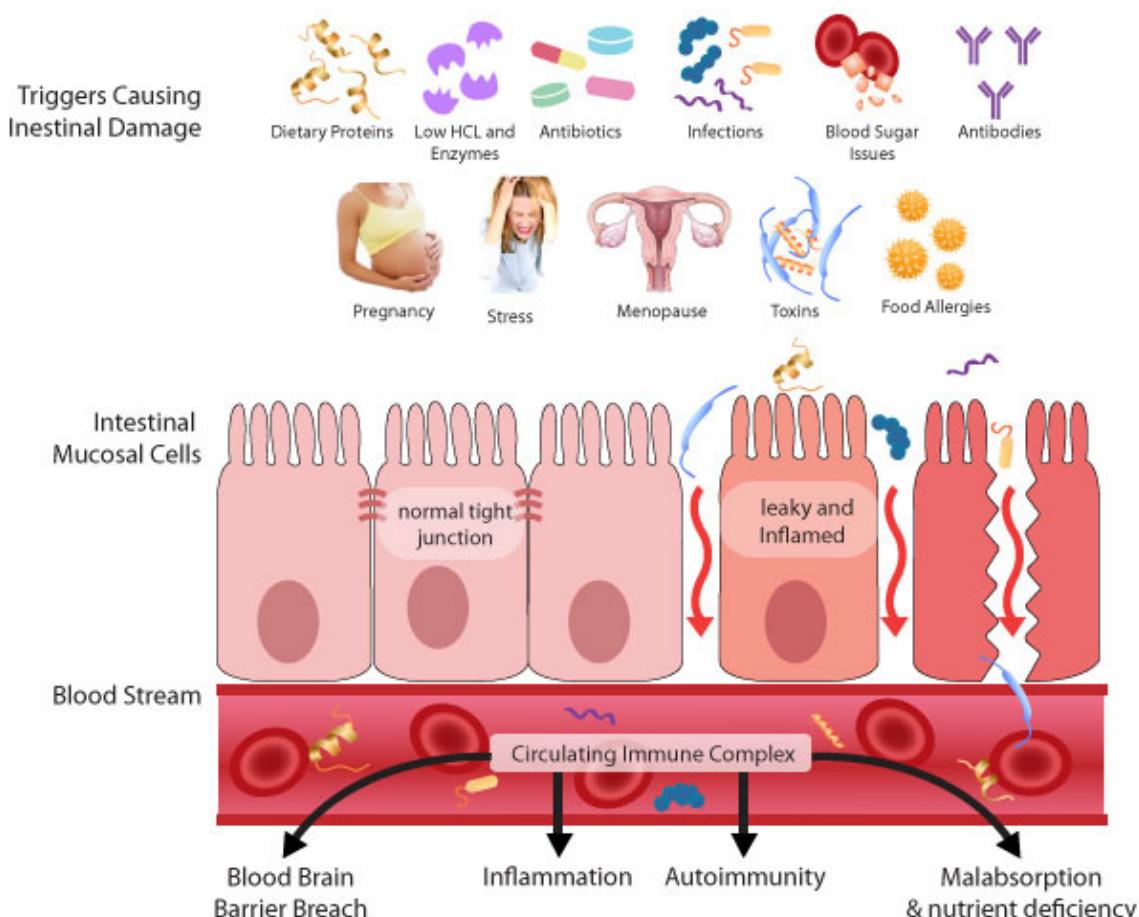
- |  |   |   |
|--|---|---|
| <ul style="list-style-type: none"><li>• Bloating, gas, IBS, diarrhoea</li><li>• Chronic sinusitis</li><li>• Immune imbalances</li><li>• Malabsorption / malabsorption</li><li>• Bacterial Dysbiosis &amp; parasites</li><li>• Sleep disturbances</li><li>• Chronic pain &amp; inflammation</li></ul> | <ul style="list-style-type: none"><li>• Mood fluctuations</li><li>• <u>Obesity / Metabolic syndrome</u></li><li>• Diabetes</li><li>• Cognitive Decline</li><li>• Fatigue</li><li>• Food intolerance / Allergies</li></ul> | <ul style="list-style-type: none"><li>• Auto immune diseases</li><li>• Hormone imbalances</li><li>• Skin issues (psoriasis)</li><li>• Heartburn / GERD</li><li>• Foggy thinking</li><li>• Liver dysfunction</li></ul> |
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Leaky Gut Progression: Leaky Gut → Food Intolerances → Immune System Issues → Autoimmunity

## What Happens in The Gut, Doesn't Stay In The Gut

When our gut lining breaks down, bad bacteria and yeast can take over the intestinal lining and allow undigested food or toxins to enter our bloodstream. Any time the gut wall is penetrated, our immune system becomes active, and inflammation is the result. When your gut health is deficient, symptoms can manifest anywhere in the body. Genes are switches, and we turn them on or off, based on lifestyle factors (Epigenetics). **Genes determine your weakest link.**

## Leaky Gut Syndrome



**The following questions paint a picture of how our gut health can come unstuck over time. If you answer yes to most of the questions, then it's likely your gut needs help.**

- Did your mother take antibiotics/ steroids when pregnant with you?
- Were you born via cesarean section?
- As a kid did you have frequent ear/ throat infections or tonsils removed?
- Are you sensitive to gluten?
- Do you have allergies or chronic sinusitis?
- Are you sensitive to chemicals?
- Are you type 2 diabetic?
- Do you have an autoimmune condition?
- Do you have frequent IBS? Both diarrhea, constipation or both?
- Do you often feel mentally foggy?
- Are you often bloated or gassy, especially after eating?
- Do you crave sugar, carbs or alcohol?
- Do you have eczema or other skin rash problems?
- Are you struggling to lose weight?
- Do you have unexplained conditions, headaches, joint pain, depression?
- Do you have a history of drug use including antibiotics, acid blockers, birth control, NSAIDS, aspirin or steroids?

## Fat Is a Dumping Ground For Toxins

When the bodies toxic load is too high, and we cannot excrete toxins efficiently via the gut, liver, kidneys, skin or breath, our body will store them in fat. Our bodies need basic nutrients to complete both phases of detoxification and if we have a deficit, or compromised gut health, toxins that were meant to be eliminated from the body, can wind up back in circulation.

A lot of toxins are fat soluble so they live in fatty tissue. The more weight or fat you have on your body, the more toxic you are. When losing fat it's imperative to upregulate your detoxification process by eating nutrient dense food (you must eat protein to be able to complete detox) and supplementing with the basics like magnesium, multivitamins, fish oils, probiotics and especially Vit D, and C. It's also a good idea to take binding agents like charcoal or bentonite clay to help sequester toxins out of the gut as your body releases them.

Detoxes have become trendy these days. There are die-hard advocates for week long juice cleanses, and then there are those who say that toxins are a myth. Toxins most certainly are not a myth! Toxins come in many forms, any substance your body cannot process effectively becomes a toxic threat to your system. There are over 85,000 toxins in our environment, and we are only able to track around 1000 of them. Research on umbilical cords of newborns shows around 300 unnatural chemical compounds are present in them like plastics, parabens and rocket fuel. We simply cannot escape the abundant toxins we are exposed to daily.

Toxins are found in the food we eat, the air we breathe, the medicines we take, the chemicals we put on our skin, AND we make them internally as metabolic by products. If we cannot excrete them we suffer!

Detoxification does not need to be a big heroic event. It's a basic day-to-day process that most people can complete relatively easily, with a healthy system. Think of your detoxification capability as a rain barrel. It can only collect so much rain or toxins, until it begins to overflow. Everyone's toxic threshold is different based on how well their detoxification organs function, how full their toxic bank already is, whether they are already dealing with immune challenges etc.

### **Chronic signs of intoxication include**

- |                                |                           |                         |
|--------------------------------|---------------------------|-------------------------|
| • Headaches                    | • Digestive symptoms      | • Rashes, skin problems |
| • Changes in focus or thinking | • Immune function changes | • Hormonal imbalances   |
| • Muscle pain                  | • Loss of energy          | • Dizziness, nausea     |
| • Acne                         | • Weight gain             | • Cravings              |

### **Enhancing Detoxification**

- Heal the gut
- Stop the toxins coming in by choosing chemical free personal and cleaning products
- Eat a nutrient dense diet of organic, including abundant fibrous vegetables and grass fed meats.
- Eat Sulphurophane rich foods: onions, leaks, garlic, & cruciferous vegetables like cabbage and broccoli
- Eat lemons for their active detox enhancing ingredient Limonene
- Key supplements for detoxification: magnesium, zinc, B vitamins, Vitamin C amino acids, probiotics.
- Avoid drinking tap water or from plastic bottles
- Avoid processed foods
- Bind toxins daily with binding agents like activated charcoal or clay

### **Avoid things that negatively influence detoxification:**

- Low protein diets - As little as 48 hours with no cysteine and you reduce our ability to detoxify.
- NSAIDS (anti-inflammatory), anti-depressants, antihistamines, acid blockers, the pill,
- Alcohol, drugs and caffeine
- Environmental toxins (mold, pesticides,

## What Doesn't Work & Why

### Starvation

The fastest way to dramatic weight loss is starvation, but it's very uncomfortable and your body has many tricks to compensate! When fewer calories are available to fuel the energy needs of the body, the brain has no choice but to unleash the starvation response to increase calories (hunger) and save energy (slow metabolism). HANGRY perfectly explains this phenomenon!

**'For sensational weight loss, starve yourself. But for sustainable weight loss, feed your fat cells well!' - Dr David Ludwig 'Always Hungry'**

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### Eating every few hours

Constant eating, means constantly elevated insulin and glucose putting the body in fat storage mode! Being hungry an hour or 3 after a meal is a BIG sign that either you ate something bad, or something is broken!

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### Exercising more & eating less

Prescribing intense training for overweight people is the worst thing you can do. It's like flogging a dead horse. The person has a broken body, and by smashing through fitness routines, they break down even more. Couple a high intensity session with a high carbohydrate diet, and it's an insidious recipe for failure.

### More intensity = more fat density!

*'Excess body fat is 80% dependent upon diet, specifically your level of carb intake / insulin production. Increased training volume (especially chronic patterns) simply increases appetite and reduces general daily activity levels. It's all about calories burned vs. calories stored. Fat loss comes from hormone optimisation, not math equations.'*

- Mark Sisson, 'Primal Endurance'

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### Counting calories

- The calorie model to consider quality, and only address quantity
- Food is information – what is it telling our body?
- Calories are used differently in each person
- Our bodies adapt to calories.
- The type of calories in, alters calories out
- Counting Calories is not an exact science.
- The bacteria in our gut digest our food and some bacteria create more energy per calorie than others



*'The calorie balance model works well if you're a toaster oven'*  
- Dr David Ludwig

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### Low fat diets

A healthy high fat diet won't make you fat, and won't negatively influence your cardiovascular health. The 1960's science 'proving' saturated fat as the bad guy for heart health was based on dodgy science by disgraced scientist Ancel Keys. Low fat diets are low cholesterol diets, and given that cholesterol is a precursor to all sex hormones, hence a low fat diet can create havoc on the hormone system.

*'Their low fat diet, as the final report stated had no beneficial effect on heart disease, stroke, breast cancer, colon cancer, or. For that matter, fat accumulation.'*

- Gary Taubes, 'Why we Get Fat and what to do about it'

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### Will power

With a broken fuel gauge we become ravenously hungry, unable to concentrate on anything other than food, and increasingly weak. Will power eventually concedes and we often make poor food choices like high glycemic index foods that trigger the brains reward centre.

*'Fast acting carbs stimulate nucleus accumbens – reward centre for cravings, addictions, activation of this area erodes will power. Hunger is hard enough to fight under any circumstances, but once the nucleus accumbens joins in, it's all over.'*

- Dr David Ludwig, 'Always hungry'

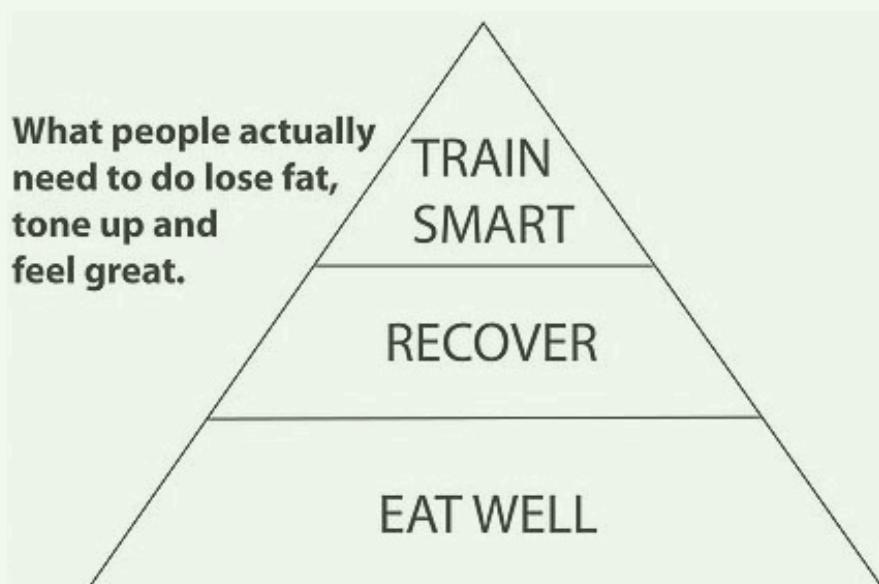
## Calming The Fat Cells

The government guidelines from the 1960's and 1980's food pyramid were based on science that was wrong, and led to a bad diet full of carbohydrates, sugar and dangerous fats. Fat is not bad, neither are carbohydrates. Bad fat is bad, and highly refined carbohydrates are bad.

Our functional medicine approach tackles healing and weight loss with the following protocol: DRESS for health success meaning Diet, Recovery, Exercise, Stress reduction and Supplementation. This means building a collection of healthy habits, while reducing health hurting habits.

Getting the results you desire will require commitment and hard work on your part. Making positive changes can be confronting and challenging. Weight gain and dysfunction has often taken a long time to manifest in the body, and consequently can take a long time to reverse.

The first aim is to turn off the starvation response and give the brain some power back, by eating quality food when you are hungry until satisfied. The idea is to tame the fat cells with a low insulin diet and reduce inflammation. Expect to struggle initially due to lifelong carbohydrate dependency and the drug like addictive properties of sugar and wheat.



## Nutrition for Weight Loss

*'The best way to shrink the fat cells is to change what you're eating in order to lower insulin and calm chronic inflammation. What then happens the fat cells open up, the body floods with calories and the brain gets a sense of sufficiency and satiety. It then allows metabolism to speed up and you naturally will eat less but this way with your body's cooperation, rather than with your body kicking and screaming'* - Dr David Ludwig, 'Always hungry'



## Nutrition Principles

- There is no one diet that works for everyone!
- Just Eat Real Food #JERF. Your diet must be comprised of real, whole, nutrient dense food that is minimally processed and maintains its natural integrity. If it is no longer recognizable as a whole food, or comes in a packet with a list of ingredients it is best avoided.
- Aim for nutrient dense food. Foods like organ meat, grass fed, pasture raised proteins, cold water seafood, bone broth, fibrous vegetables, and antioxidant rich foods.
- Cravings are powerful information, if you are hungry only hours after eating, something you ate wasn't right.
- Maintain stable blood sugar control (avoid the highs and lows)
- Most your diet should be a variety of fibrous vegetables (lettuce, broccoli, cauliflower, eggplant, capsicum)
- Calories don't matter, but calorie quality does.
- Your first meal of the day is THE most important for setting you up to fail or thrive
- Cut gluten, dairy, soy, vegetable oils, corn, GMO foods, sugar, preservatives, artificial sweeteners, and alcohol for ultimate health & rapid results
- Avoid processed flours of all kinds (corn, rice, maize, tapioca) as they raise blood sugar more than sugar itself!
- Limit fructose (avoid too much fruit or processed food)
- Hydrate with at least 2-3 litres per day
- High Fat Low Carb (HFLC) & fasting, are the fastest ways to reset insulin
- Eat your carbs later in the day, and especially at night!
- If your diet isn't working for you, it's a key sign that you are eating too many carbohydrates for your body type.

## High Fat, Low Carb (HFLC)

The HFLC approach will quickly flood your body with abundant calories which help tell your brain it's satisfied to calm down your stress response. Adding copious amounts of high calorie healthy fats to your meals means that insulin levels won't be spiked, and your body gets the message release fat. The idea is to lower insulin, and increase the use of ketones as a fuel source.

**Healthy fats:** grass fed, pasture raised proteins, nuts, seeds, avocado, olive oils, coconut oils, full fat grass fed dairy, wild caught fish, eggs,

**Bad fats:** industrial vegetable and seed oils (soy, canola), poly or mono unsaturated processed fats, trans fats, fried and processed foods, factory farmed meat.

Eating fats and proteins gives your body slower burning calories and helps tell your body it's nourished and full! High fat eating is a spectrum. Full blown ketosis means eating mostly fat and very low carbohydrate intake, if any. Nutritional ketosis is 70% of your diet consisting of fat with measurable blood ketones. A less intense HFLC approach is high fiberous vegetables, good quality protein and low starchy carbohydrates.

### Ketones the Superior fuel source

Our body can use 2 different types of fuel, blood glucose or ketones. Glucose comes from protein and carbohydrates, and ketones come from fatty acids and stored fat. Glucose is a fast burning and easy fuel for the body to use, and will always be used first. Ketones are only ever used when glucose and insulin are low, and if we are fat adapted, and able to use fat as a fuel.

*'Ketones are the preferred fuel source for the muscles, heart, liver and brain. These vital organs do not handle carbohydrates very well; in fact they become damaged when we consume too many carbs.'* – Jimmy Moore, 'Keto Clarity'

Burning glucose is like burning coal, it pollutes the environment and has a high cost.

Burning fat or ketones however are more like solar power. The Mitochondria powerhouses in our cells burn fatty acids and ketones much more cleanly than they burn carbohydrates. When mitochondria burn glucose, more free radicals are generated, leading to accelerated aging, oxidative stress, inflammation and disease.

Becoming fat adapted takes time. Some people thrive on their very first day, others who have a more broken metabolism might need an adjustment period of increased sodium, and digestive enzymes. Those with no gall bladder or compromised gut function can take ox bile salts to help. An important caveat is that high protein diets can still lead to excess fat storage, as protein is converted to glucose, and raises insulin.

### Fasting for Faster Fat loss

Fasting can be a great solution for many to quickly reset insulin receptors. Intermittent fasting is a more user friendly way to fast because it means you still eat every day. Intermittent fasting (IF) is gaining popularity for its healing, weight loss and anti-aging benefits. It's one of the easier diets to follow because you don't have to do anything, and skip a meal.

IF is commonly done by fasting anywhere from 12 to 16 hours of your day, to eat in a smaller window of time. It's easily done if you don't eat after dinner, and wait at least 12 hours before eating breakfast. Ghrelin, the hunger hormone, is lowest at 7:50am and peaks at 7:50pm, so fasting is most achievable in the morning. Of course fasting works best coupled with a HFLC diet.

Given that eating is one of the most inflammatory things we do to our body every single day, giving the digestive system a break can be a powerful healer for those who have gut issues or serious health challenges. When we feel sick, we often naturally lose our appetite, our bodies way of decreasing inflammation and boosting repair processes. Aside from decreasing insulin and helping restore blood sugar balance, fasting increases a process called apoptosis, and autophagy, which are forms of cellular cleansing.

Our bodies do not shut down in response to short term fasting. In fact, metabolism revs up, not down during fasting. This makes sense from a survival standpoint. If we do not eat, our bodies use stored energy as fuel.

## **Rest More To Lose More Fat**

In today's fast paced world, many of us are depleting our vital energy reserve by not sleeping well, over training, poor nutrition, hydration and of course high stress. These factors are highly catabolic, meaning they break down our body. Recovery is anabolic, meaning it builds us up. If stress is higher than recovery, than we are running a costly health debt that will eventually lead to disease. Enhancing recovery is one of the fastest pathways to health and weight loss.

Fat cells are among the biggest victims of sleep deprivation. Sleep is very important for weight loss. There are countless studies linking poor sleep to fat gain, cravings and increased appetite. Compromised sleep quality increases Ghrelin the hunger hormone, and decreases Leptin the satiety hormone, therefore making you want to eat non-stop, and not feel satisfied! Failure to get enough quality sleep also increases stress hormones, decreases brain function, and creates blood sugar disturbances. Getting to bed before 10pm is essential to get the most restful sleep.

### **Avoid Artificial Lights after dark**

As humans our circadian rhythm revolves around the sun. We are programmed to be awake and alert during the day, and at night time we are programmed to release a hormone called Melatonin which helps induce sleep, and keep us asleep. Light exposure, particularly from the blue light spectrum destroys Melatonin and consequently compromises sleep quality.

Ways to overcome this might include using softer red lights at night, avoiding screens after sunset, blue blocking glasses, night shift mode on phone or computer etc. The other side of this equation is equally important , which means getting exposure to natural daylight during the day, and especially in the morning.

*'Blue light after dark spikes cortisol and ghrelin, hampers leptin signalling, increases insulin production, and suppresses melatonin. Habitual screen use after dark makes you tired, fat and vulnerable to oxidative damage and accelerated aging.'* – Mark Sission, Primal endurance

### **Waking Through the Night**

Frequent waking is often caused by Hypothalamic Pituitary Adrenal Axis Dysregulation (previously termed adrenal fatigue), blood sugar issues, and immune activity like from pathogenic gut bacteria or parasites. In addition poor gut health will mean higher levels of inflammation, higher immune activity, decreased liver function, hormonal imbalances, neurotransmitter imbalances, malabsorption issues and more, all of which disrupt sleep. Your gut makes 400x the Melatonin than your brain, and 500 x more serotonin - meaning if gut health is poor, you are programed to feel wired, anxious, hungry and unable to sleep!

### **Enhancing Recovery**

There's more to recovery than rest. Recovery isn't just skipping a day at the gym or extra sleep. The best recovery is actively pursuing activities that enhance wellbeing. Recovery isn't a sure thing, and many of us severely underestimate it. It can be helpful to think of recovery as preparation, or structured health building time to enhance all other activities. There are many ways to actively enhance recovery!

- Lowering daytime stress
- Breath work, mindfulness, meditation
- Enhancing sleep quality
- Saying no to extra commitments
- Fascial fitness
- Time in nature
- Healthy relationships
- Great quality food and water
- Low intensity movement to nourish the body
- Getting sunlight during the day and avoiding screens after dark

## Train Smarter And Not Harder.

### Move it or lose it

Ditch the idea that exercise needs to be structured, and just find ways to move more through your day. Intermittent daily movement has a greater effect on overall health, than exercise. Overcoming a sedentary lifestyle optimises all health systems. Ten mins a few times through the day, everyday is far greater than a few hours of structured gym activity.

### Less is more

The best approach to losing weight, is to honour the fact the body is broken and crying for help. Exercise is powerful for boosting overall health and longevity, but it is also a stress, and needs to be managed accordingly so as not to add more stress to a body that is already struggling. Training with heart rate monitors, optimising recovery, and honouring your actual readiness to train (pictured right) is very important.

Smashing a vomit inducing, painfully intense training session on an overweight body that we know is inflamed and stressed is not a good idea. It may seem counter intuitive at first, but really it's common sense!

By training an overweight person at a lower intensity and focusing on improving movement quality, building lean muscle, increasing circulation, lymphatic drainage etc, we can achieve sustainable results with the bodies cooperation.

Results are not as quick and spectacular, but they last!

### Training doesn't offset diet

You simply cannot outrun a bad diet. By choosing high fat, low insulin-producing foods you can rewire your brain to be less dependent on carbs so that you lose weight faster and accelerate fitness results.

The fat burning zone is actually around 180 minus your age, which for most people is the equivalent of training at 60% of Heart Rate max. But here's the kicker, you only burn fat if you don't have high glucose and insulin pulsing through your blood. In other words if you are in a fasted state, or a ketogenic states, you will burn fat. But if you eat a high carb diet, are highly stressed (which elevates blood sugar) or have hidden conditions like gut dysfunction, then you will not be burning fat any time soon. It doesn't matter what training zone you are in, if you are overweight and eating a high carbohydrate diet.

Lower intensity training is the best way to escape carb dependency. Even a slightly anaerobic workout promotes sugar burning for up to 72 hours afterwards. A high carb post workout meal (food or alcohol) promotes fat gain and literally clears the testosterone, and growth hormone from your bloodstream. You can accelerate the process of fat adaption in a depleted post-workout state, when your appetite hormones are most sensitive to re-wiring. By choosing high fat, low insulin-producing foods you can rewire your brain to be less dependent on carbs.

### Mitochondria matter

Mitochondria are the energy battery packs in every single cell. Many illnesses have roots in mitochondrial dysfunctions, and so it's in our interest to build the biggest, fastest and cleanest burning engine we can by managing our mitochondria. Move often, with variety, and train at all different intensities, especially aerobically or high intensity interval training to increase mitochondrial density

All you need to know about mitochondria is that they burn cleaner when burning fat, make more energy out of fat, and they buffer oxidative stress, so the more we have the healthier we are. Increasing mitochondrial density with training, and eating HFLC good food promotes good mitochondrial health.

# HOW HARD SHOULD YOU TRAIN TODAY FOR BEST RESULTS?

Give yourself 1 point for each you have done well

- I slept well & feel rested
- I have fueled my body with good nutrition
- I have hydrated with 2+ litres of water
- I have moved well & often in the last 24 hours
- I feel energised and strong
- I have no pain or stiffness
- I feel emotionally happy, calm & not stressed
- I feel mentally ready & motivated to train



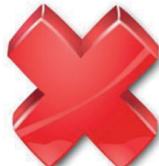
6-8

Work it! You are ready to perform



3-5

Reduce the intensity or weight today



1-2

Take it very easy today!

## Stress Reduction

Stress can come from external stressors like toxin exposure, bad food, mental and emotional stress, poor recovery, over training, injury, illness or internal stressors like sub clinical conditions, blood sugar dysregulation, inflammation etc. Our physiology dictates our architecture. Repeated stresses and minor insults to our health will change us with every exposure. It all adds up.

## HEALTH HURTERS

### NUTRITION

- ☒ Alcohol / Sugar / Gluten / Dairy / Soy / Corn
- ☒ Non organic or Free Range Meat & Vegetables
- ☒ Sports Drinks / Soda's / fruit Juice
- ☒ Canned Foods
- ☒ Artificial Sweeteners
- ☒ Micro waved Food
- ☒ Aluminium Foil
- ☒ Vegetable oils / Aerosol Cooking Oil
- ☒ Char grilled Meat / BBQ
- ☒ Plastic Storage Containers / Drink Bottles
- ☒ Non filtered water (Fluoride)
- ☒ Take away food / Processed Food
- ☒ Herbicides / Pesticides / GMO food

### TOXIC BODY CARE

- ☒ Aftershave / Perfume / Deodorant
- ☒ Soap / Body lotion / cleanser / exfoliator
- ☒ Hair colour / Shampoo & Conditioner
- ☒ Makeup & Nail polish
- ☒ Toothpaste & Mouthwash
- ☒ Anti- Bacterial Hand wash
- ☒ Sun Screen

### CLEANING

- ☒ Household Cleaning Agents
- ☒ Laundry & Dishwashing Powder
- ☒ Dry Cleaning Chemicals
- ☒ Aerosol Sprays

### DRUGS

- ☒ Prescription & over the counter drugs
- ☒ Pain Killers (NSAIDs)
- ☒ Recreational Drugs
- ☒ Cheap Supplements
- ☒ Cigarettes

### STRESS

- ☒ Overtraining
- ☒ Lack of Movement / Long periods of sitting
- ☒ Structural issues (pain)
- ☒ Mental / Emotional Stress
- ☒ Lack of sleep & Recovery
- ☒ Repetitive Movement

### MISC

- ☒ Root canals & Metal Fillings
- ☒ Parasites / Pathogens / Bacterial dysbiosis
- ☒ Candida / Fungus / Mold Biotoxins
- ☒ Electro Magnetic Radiation / Wifi
- ☒ Artificial Lighting
- ☒ Energy vampires

## HEALTH BUILDERS

### NUTRITION

- ☒ Home Cooked Meals
- ☒ Organic Food
- ☒ Grass fed, pasture raised meat
- ☒ Seasonal Food
- ☒ Filtered Water
- ☒ Low Glycemic Index Food
- ☒ Fasting
- ☒ Healthy Fats
- ☒ Hydration 2-3 Litres per day
- ☒ Bone Broth
- ☒ Quality Salt
- ☒ Good quality supplements

### NATURE

- ☒ Natural Lighting
- ☒ Time outside in nature
- ☒ Earthing / Grounding (barefoot)
- ☒ Sun Exposure
- ☒ Good Air Quality (Air filters / good ventilation)
- ☒ Natural Movement

### CLEANING

- ☒ Natural Cleaning products free of chemicals
- ☒ Clean Environment
- ☒ Essential Oils / Vinegar / Bicarb Soda

### BODY CARE

- ☒ Natural chemical free body care products
- ☒ Myofascial release (Foam rolling)
- ☒ Mobilisers/ Ground to standing
- ☒ Cold Showers
- ☒ Essential Oil products
- ☒ Massage
- ☒ Skin brushing
- ☒ Infrared Saunas
- ☒ Oil Pulling

### STRESS

- ☒ Sleep 8 hours between 10pm-6am
- ☒ Sleep in a dark cold room
- ☒ Establish a bed time routine
- ☒ Establish a morning routine
- ☒ Blue Light Blocking Glasses after dusk
- ☒ Daily Incidental Exercise
- ☒ Low Intensity movement & activity
- ☒ Exercise
- ☒ Breath Work / Meditation
- ☒ Time with loved ones / friends
- ☒ Heart Rate Variability Training
- ☒ Hobbies

**IT ALL ADDS UP!**

## Supplementation Support

It is virtually impossible to obtain all the necessary nutrients from food alone. Supplements provide the missing link between what is necessary for optimal health, and what is missing from our food supply. Supplements are an important part of a healing protocol, but should never be the first step, or the only step!

Supplements provide targeted therapy to facilitate healing, and the restoration of normal function and balance to the body. Supplements may also be used for “*intelligent allopathy*” to provide some relief and comfort while health is being restored. Supplements are not intended to treat any specific disease, but rather support the health building process. Once health is restored, many supplements will no longer be needed.

### 3 Basic Functions of Supplements

- Substitution – These supplements replace something that is currently missing in the body
- Stimulation – Supplements to stimulate organs, glands and systems in the body to do their jobs.
- Support –These are short term aids to the body while function is being restored.

### Get Expert Help

Many people fall into the trap if taking supplements they have heard help weight loss. The fact of the matter is, a supplement can have opposing factors from person to person, and ideally we should aim to address our unique situation.

It's imperative to investigate underlying conditions which may be contributing to weight gain. This is especially true if diet and lifestyle factors have been addressed, but weight gain and body fat won't budge. In these situations it's helpful to address underlying hidden stresses like gut health, cellular health or hormone imbalance which are likely creating the problem.

### Key Weight Loss Supplements

The blow list is only a guide to a few key supplements that may be useful in addressing specific bodily systems. Before purchasing supplements, speak to an expert!

- Blood sugar support: bergamot, chromium, magnesium, vit d, fish oil,
- Detoxification: Vitamin C & B, Glutathione, NAC, Magnesium, Amino acids, multi vitamin, fibre
- Inflammation: Turmeric, L-glutamine, bioperine, Vanilla, Vit C
- Gut health: Enzymes, HCL, Probiotics, L-glutamine, Aloe vera, Zinc, Slippery Elm
- Cravings: Magnesium, Relora, L-glutamine, multi vitamins,
- Stress: Magnesium, Gaba, L-theanine, Relora, Melatonin, 5htp
- Toxin Binders: Activated Charcoal, bentonite clay



**IN2GREAT**  
**FITNESS & WELLNESS**

Thanks for reading! For more specific help, please feel free to contact us for expert exercise advice, wellness or functional medicine assistance to explore your gut health, hormones and metabolism further! We would love to help you tame your fat cells and feel great for life!

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