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# NUTRITION 2

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## Crossfit Blackfire's Guide to Fat Adaptation!



We may talk about performance all we want but the majority of us want to get lean... Fast! Whether we want to get lean to look good or lean to be able to perform better it doesn't matter, after all, pull-ups, muscle-ups and sprinting around the track will all get a lot easier without that extra 20 pounds around our tummies.

So while reducing our daily intake of calories by 500 will get us there eventually is it really the fastest way to get there? Or are there shortcuts?

Training your body to get 'Fat Adapted'.

For this we have first got to understand how our body functions on food.

"Did someone mention

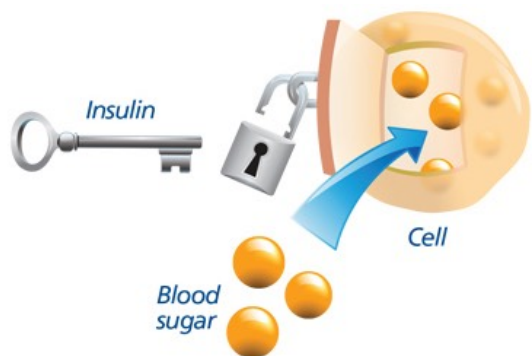


Insulin?"

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**Insulin!**

Insulin is the hormone secreted by your pancreas every time you eat a substantial amount of Carbs. The Carbs are digested and go into your blood stream and shunted to wherever energy is required for burning. However all the excess blood sugar that exists - it is insulin that tells your body to store the excess sugar into cells as energy aka fat.



Insulin is the key that opens your fat cells to start storing fats. But it's a one way street! While Insulin opens the fat cells it does so **ONLY** for storage ie. the cell will never let fat exit for burning when Insulin is present!

*So Point 1 You can't have Insulin present in your system if you want get into Fat burning mode.*

The body has two energy systems. Which side are you eating from?

So how do you do it?

**“IF YOU WANT to avoid weight gain, remove all added sugars from your diet.”**

Simply put. If you burn more calories a day than you put in; then your body has to dip into its reserves for the extra energy ie. it has to burn its fat to make up for the deficit.



**- DR JASON FUNG**

But is there an easier way?

**Your Body is like a fridge!**

The body has two energy sources - it can burn Carbs or it can burn fat. In terms of priority your body will always prefer to burn Carbs first before it will burn fat.

Here's an awesome example given by Dr Fung. Your body has a fridge and a freezer. The fridge is your Carbohydrate system and its where you store ready to eat

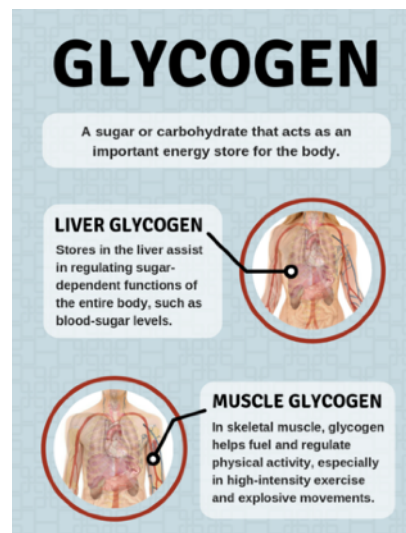
foods. And the freezer is your Fat System.

So let's say you're hungry! The first thing you do is open your Fridge to see what's there to eat. Oh look an apple. Easy and quick to eat. You would never open the freezer and take a frozen bag of peas and wait for it to defrost before you can consume it. You would only dip into your Fat reserves for energy (Freezer) when you found your fridge (Carb system) to be empty and you were hungry.

In the case of your body your fridge would be the Glycogen stored in your liver. And this needs to be depleted BEFORE your body will dip into your fat reserves.

The body stores around 400 calories (100gms of Glycogen) in the liver. After a one hour Crossfit class (or if you haven't eaten for about 12 hours) you've burnt through this reserve and are now dipping into your Fat reserves for energy.

But the minute you eat carbs you refill your liver glycogen and your body says "Hey that easy to burn stuff is here! No need to burn fats anymore!"



*So, Point number 2, you must deplete your Carb system for fat burning mode to begin.*

## The Ketogenic Diet

In this diet we limit our carb intake to less than 50gms a day and increase our fat intake so that insulin levels remain low and our body is forced to start burning the fat we eat for energy. If we remain in a caloric deficit our body will burn our fat reserves too.

## Intermittent Fasting

Based on the same theory. Here we deprive our body of any food for a limited amount of time thus forcing our body to first deplete our liver glycogen and then making it turn to our fat reserves for energy. After the fasting period we break the fast and eat. At this point Insulin spikes, fat burning stops and we repeat the cycle so on and so forth. Once again a caloric deficit is required for this to work.



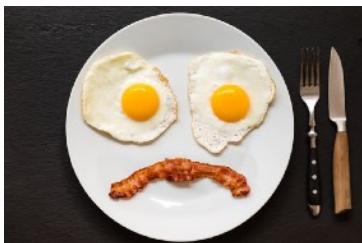
## Keto and IF together

If during your feeding window you ate very low carbs *then* Insulin response is further blunted and the window to re-enter ketosis is further reduced. Best of both worlds!



## Questions, Problems, doubts, etc

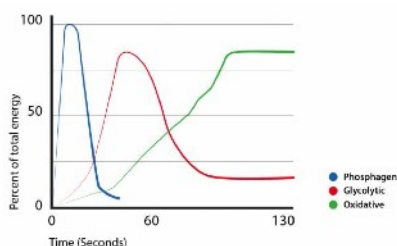
### The Keto Flu



Every time your body shifts 'gears' - burning fat to burning carb and visa versa, your body will 'complain'. Body Aches, tiredness, headaches, etc. This is because your body, for years, has been living only in the 'Carb' gear. However, once you reach deep ketosis your body will find it easier and easier to get in and out of ketosis without any problems. Avoid the Keto flu by reducing carbs gradually. Once you've reached your target carb goal stick to it for at least a month to reach deep ketosis!

### Performance loss

Depending on your workout your body uses 3 energy pathways. If you do 3 Maximal reps and rest you have used your Creatine Phosphate system. If you do 8-12 Maximal reps you have used your Glycolytic System (Glucose). If you do slow jogging, rowing, or light weight reps you've used your Aerobic (Oxidative) System.



Now since your body is deprived of Carbs (Glucose) you will definitely feel dip in energy in any exercise that challenges your Glycolytic System.

However, 3 heavy reps followed by rest or light weights and running will be relatively untouched!

The only way around this, if this is too troublesome, is through something called the Targeted Keto Diet. An hour before your workout consume 20gms of Glucose mixed in water. This will kick you out of Ketosis for your workout and give you the energy you need for the WOD. Cons are that you might feel \*bleh\* as you slip back into Ketosis (Keto Flu).

### Muscle Loss and Working out in a fasted state

It is a misnomer that when the body is in a Carb deprived state that your body turns to it muscles for energy. Enough studies show that participants on a keto/IF diet built more muscle and lost more fat when exercising compared to those who were just in a calorific deficit.

Moreover, it has been seen that because your body on IF feels deprived it conserves protein and muscle much more. And people following IF need to consume just 0.6 gms of protein compared to regular people who need to consume 1gm of protein to every pound of lean body mass!



Dr Fung puts it succinctly - it is ludicrous to think that the human body will store away energy as fat for the days when it will starve and when that day comes the

human body (with no logic whatsoever) shuns its fat reserves and instead turns to its muscles instead for energy! Impeccable logic.

### **BMR Loss**

There is a concern that the amount of energy your body burns a day will be down throttled due to Keto and IF. This is true but only in regards to a caloric deficit that is too large. If you burn 3,000 calories a day and consume only 2,000 calories - then in some time your body will down regulate its BMR to meet your caloric intake. This has nothing to do with eating many small meals a day, keto or IF. The way around this is to have cheat days every once in a while to shake your body out of reducing BMR.

### **That being said - Who Should Not Follow a Keto Diet/IF**

#### **Some precautions must be made clear**

- In order to follow this or any other diet program, you must first undergo a health screen to rule out any rare conditions or contraindications with your health or medications with a ketogenic diet that may be unknown to you.
- this diet is not appropriate for people with any stage of diabetes, kidney disease, or any pre-existing liver, pancreatic or kidney issues or conditions. Some rare conditions such as Muscular Dystrophy and other conditions may complicate and severely distress the pancreas, liver or kidneys.
- this diet is not appropriate under any circumstances if you currently have blood sugar issues such as hypoglycaemia or type 1 diabetes. It may or may not be appropriate if you have type 2 diabetes and on any medications for diabetes, and will require doctor supervision.
- this diet may not be appropriate or safe for people who are pregnant, nursing or who have Gestational Diabetes.
- this diet may not be appropriate for anyone suffering or recovered from an eating disorder.

As always, WhatsApp any questions to me or write to [crossfitblackfire@gmail.com](mailto:crossfitblackfire@gmail.com)

Please feel free to share with anyone you feel will be interested.

Cheers

Ashutosh

For Crossfit Blackfire