



Flex - Maximising Performance whilst reducing body fat

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In part 1 of this 3 part series, I gave you some guidelines around which to base your diet to maximise the potential for fat burning.

In part 2 I go on to describe how this works during a training week and daily schedule. These principles can then be adopted to allow peak performance for weekly team-based events, or drawn out for longer periods to peak for other competitive events.

The article describes strategies you can apply to your own diet or to the diet of your athletes if you are a nutrition coach.

- **Establishing a base for change**
- **Eat in phases to maximise recovery and lose fat using ratios**
- **Use the meal matrix and recovery matrix to make things easier if you want a quick start**

There is no doubt that carbohydrates are the preferred rate limiting fuel for high intensity intermittent sports. Sure the creatine phosphate pathways are great for short bursts of activity, but run out of carbohydrates in the form of stored glycogen and these bursts will be few and far between with a tremendous aerobic pay back.

Anyone who has been on a ketotic diet and tried to maintain a programme of short duration high intensity workload will tell you that, and the biochemistry books are there to back up their experience.

Run out of carbohydrates and your performance will drop off rapidly. The problem we face is giving your body enough to be able to perform at your best for the required duration of the event without over doing it and getting fat. For longer events you'll also need to be able to top these



levels up during competition, thereby reducing the amount you draw on your stored glycogen.

HOW MUCH CAN YOU STORE?

We know that the whole body stores around 500g of glycogen (400g in the muscles and 100g of stored liver glycogen). This is stored along with 3g of H₂O per gram of carbohydrates, so the weight of stored sugar for energy and water in the body will be around 2kg in an average weight person. So a large 500g jar of honey could then in theory be enough to top up your glycogen reserves, if there was no other need for carbohydrates at the time of ingestion. This theory also presumes the body is completely stripped of its glycogen reserves, something which is difficult and demanding to accomplish. So, the question which needs answering is;

How do I create enough of a deficit to reduce my body fat, whilst maintaining performance and performing maximally once a week during a 7 day training and competition cycle?

The answer of course is 7 day carbohydrate flexing.

This process involves flexing the amount of carbohydrate you consume down, during the earlier part of the week then flexing this up towards the latter part of the week so that you reach competition day maximally charged. In other words fully loaded with stored glycogen and well hydrated.

How do you do this and still maintain and even increase your muscle mass? In order to understand this more you need to picture the whole week in different phases.



Day 1	Day 2	Day 3	Day 4	Pre Comp Day	Competition day	Recovery Day

Days 1 through 4 are aimed at altering your body composition according to your goals. As such it will depend a lot on how strict you want to be and also on other performance parameters. These days are green to emphasise the amount you will rely of vegetables for your nutrition.

You could spend all 4 days for instance in a strictly fat burning phase, consuming just protein, fat and fibre which would lead to a rapid drop in fat mass, body weight and energy.

You could then pick you carbohydrate intake up from Thursday, in measured amounts so as to not rebound fat gain, through to competition day and then be ready to perform maximally.

This model is of course the one used in early carbohydrate loading strategies which relied upon exercising to exhaustion and then carbohydrate replenishment.

The famine-feast cycle does of course prime the muscle to take on glycogen more efficiently than if you keep levels fairly well topped up and then top them up some more. This is probably due to increased insulin sensitivity and increased carbohydrate storage enzyme activity in muscle. In fact following a famine-feast cycle, even if it's not as extreme as the one outlined above will provide some of the benefits of increased and more efficient glycogen storage. This model would be classically used in bodybuilding athletes to allow maximum body fat loss whilst getting muscle full for the show.

Pre competition day is amber to allow you to begin raising your intake of carbohydrates ahead of the competition day. How much you raise these will depend on how you've established your base. You can stay in the



green zone for long period of time but make sure you come up for 'air' (higher carbohydrates) at least once each week for the whole day. (We'll go into this strategy much more in the next issue when we cover the 'Hollywood' fat loss diet strategy.

ESTABLISH A FAT LOSS BASE

PROTIEN BASE

To protect your lean mass and to provide a framework for change, first get your optimal protein consumption organised.

Start with 2.2g / kg LBM. So for a 100kg athlete at 10% body fat, you'd use a 90kg (lean body mass LBM) multiplier to give you 198g of protein per day. Divide this by 6 and you get a nice round 33g per meal.

You don't need to be too fixated with the 33g per meal, as long as you don't eat less than 200g each day and try not to eat more than your lean weight in kg, in grams, in one sitting. Plus if you don't want to count your protein intake in grams then simply aim to eat one and a half palms worth for each of your 3 main meals and half a palms worth for each of your 3 snacks.

Protein myth No 1. You can only absorb around 25-30g of protein in one sitting. There is no evidence to support this claim in young athletic individuals. Instinctively also this theory would not have supported the evolutionary perspective of human development. Imagine a cave man say to his mate, no I'm done now I can only absorb a palm full of protein at one sitting! Truth is you can absorb far more than that, although I suggest a sensible maximum of your body weight in kg, in grams for day to day use.

You see that we'll also flex your protein intake up at certain 'anabolic' times of the day and down at other times.

FAT BASE

Next you'll need some fat. Aim to eat a minimum of your body weight in kg, in grams of fat each day. Split this between the 3 types of fat,



saturated, mono and polyunsaturated. If we divide this down for our 100kg 10% body fat athlete we get a round 15g per meal.

Fat will provide useful hormonal support as well as maintaining the inflammatory cascade to allow recovery and repair of tissue. You'll see that at times, we'll flex your fat intake up and use certain types of fat to stimulate muscle recovery. Try not to eat more than a 1/3 of your daily suggested intake in 1 sitting.

If you don't want to measure your fat intake in gram then aim for a tablespoons worth at each meal of whole food fats, such as, cheese, olives, avocado and a thumb's worth of oily fats, like olive oil, coconut oil and so on.

CARBOHYDRATE BASE

Finally you'll need to look at the carbohydrate component of your daily intake. Again use your weight as a multiplier. If you stick with the 100kg athlete, aiming to get to 8% body fat then eating your weight in kg, in grams of carbohydrate each day will result in body fat loss. On this model you'd eat 90g of carbohydrate each day. Now for you carbo junkies this might not seem a lot but it's actually not too restrictive as long as you don't blow your whole daily quota on some M & M's!

Using our meal planner or 6 meals per day, this would mean being able to eat a slice of non-wheat bread at each meal. Or an apple, or any other carbohydrate adding up to 15g. Choosing veggies though is best as these are best for you and also you can eat more volume to eat your 15g.

Remember you can spread the intake out so at some meals you eat more and others less, you don't have to be anal and eat exactly that amount at all of your meals.

Before we continue let's put this into some kind of normal day with examples;

AM TRAINING

Double espresso



45 minutes cardio; Water and 5g glutamine

BREAKFAST;

Scoop of whey concentrate

½ cupful of oats

Water

Put into porridge:

3 fish oil capsules – or a tablespoon of ground flaxseed on top

SNACK

1 Pot cottage cheese

1 small apple

LUNCH

1 Cooked Chicken Breast

1 Large bag of baby leaf spinach

10 olives

Balsamic vinegar

TRAINING;

Weights – fat loss is the goal so water and carnitine mixture

POST SESSION

5 g Creatine, 5g Glutamine

1 Scoop Whey Isolate

20g refined sugars

DINNER

200g of steamed green beans

Large cooked Steak, salt & pepper

Lemon juice

Fish oil capsules

BEFORE BED

30g of slow release protein – small piece of dark chocolate

Ok so this diet is hard, but you won't be hungry.



You'll feel cravings which will subside over 24 hours, glutamine helps with these if they become unbearable (have a teaspoon in water). Dark chocolate can also be used for cravings, a thumbs worth – count this as fat.

Remember this is only for a few days (3-4) before you can crank back up your energy intake.

Green days, hard days, lean days!

ENERGY PHASES ESTABLISH A PERFORMANCE BASE

Over the course of the next few days you can use the less strict approach below. Keep the protein multipliers consistent, you may even wish to increase these if your require muscle growth.

This approach would be on an amber day in your weekly cycle.

PHASES

FAT BURNING PHASE

0:1 RATIO

0 CHO:1 PRO

This is best achieved through the use of zero sugar sports drinks or specific amino based fat burning drinks. The use of caffeine and other ingredients in these drinks may assist fat burning through different mechanisms and through delaying fatigue.

ENERGY PHASE – DURING TRAINING

4:1 RATIO

4 CHO:1 PRO



Stick to liquid based isotonic drinks but make sure you add glutamine / creatine and or BCAA powder. Remember you can only take in a certain amount of solute whilst you are training and you need to make sure you stay hydrated so don't go above a 6% solution. If you are fat, or targeting fat loss then stick to water based amino fortified drinks WITHOUT carbohydrates in them.

RECOVERY PHASE / REPLENISHMENT / REFRESH

Body Weight x 1.5 = grams of CHO max for maximum recovery after competition day. Otherwise use the protein multiplier; so 30g of protein and 90g of carbohydrates.

Use the recovery matrix to adjust this amount depending on the duration and intensity of the session.

3:1

3 CHO:1 PRO

Follow Recovery based advice appropriate to the level and intensity of the session – see Recovery Matrix below.

REGENERATION PHASE / GROWTH / HEALING

1:4

1 CHO:4 PRO

This phase will typically involve lots of protein, essential fats and carbohydrates. It's also advisable to take in high ORAC foods at this stage too. The fat loss base diet keeps you in this phase for 3-4 days. On the energy phase daily plan you flex your requirements over a 24 hour period.

It can also be summarised in these Tables;



MEAL MATRIX

Less Active			More Active	
Fat Loss			Performance	
PROTEIN	VEGGIES	EFA's	FRUIT	STARCH

So when you are less active, eat the food in the green zone.

When you are more active add the red zone foods, but keep fat intake lower the more red zone foods you eat.

COMPETITION MEAL MATRIX

More Active			Less Active	
Performance			Performance	
STARCH / SLOW RELEASE SUGARS	FRUITS	PROTEIN	EFA's	VEGGIES

Here you can see the emphasis has changed towards starchy carbohydrates and slow release sugars to maximise the available energy ready for your event.

It's very important not to eat fast release sugars until you have begun your warm up to help avoid rebound hypoglycemia before you are due to compete.

Use the recovery matrix after each event or when you have a break in your event, e.g. at half time;

RECOVERY MATRIX;

TRAINING INTENSITY	Immediately	Within 1-2 hours	Within 3-4 hours
LOW	1 scoop of recovery powder in 300mls water		
MEDIUM	2 scoops of recovery powder in 350ml of water	A Medium sweet potato with lunch in addition to routinely consumed foods	
HIGH	3 Scoops of recovery powder in 400ml of water	A banana and bowlful of blueberries and yoghurt in addition to.....	A large slice of date and walnut cake with fruit smoothie

So for light intensity sessions a single and small recovery drink is suggested

Recovery meals can be higher on the glycemic index and have a higher glycemic load to assist glycogen replenishment – higher GI choices are preferred if subsequent exercise is necessary within 24 hours, otherwise lower GI starchy sources and fruit may be better choices

After this drink has been consumed you can go back to your meal plan based on your goals

Medium intensity sessions require a slightly larger amount of carbohydrate immediately post workout and again within 2 hours. Take a recovery drink immediately after working out and then within 2 hours eat some form of starchy carbohydrate or fruit.

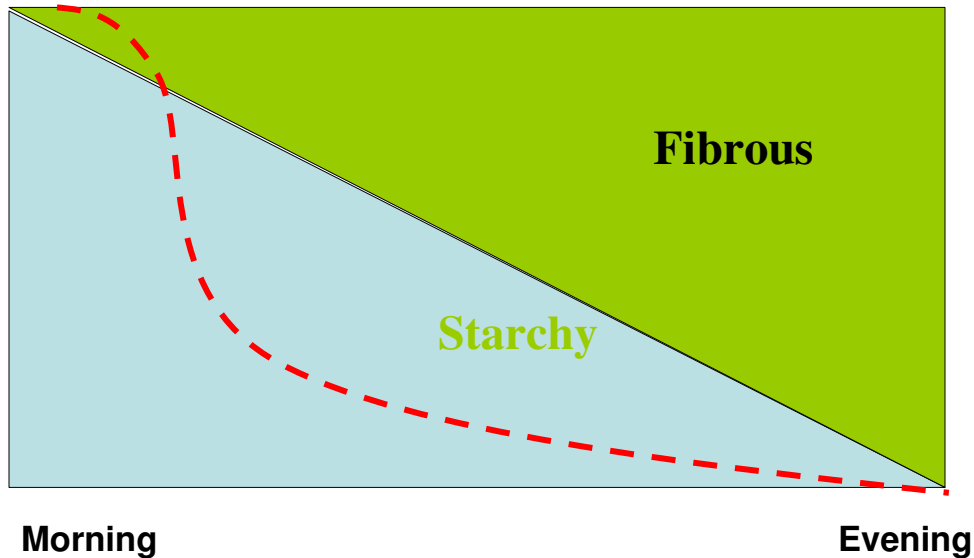
Finally, for high intensity sessions or matches, you need 3 separate recovery hits over 4 hours: immediately; within 2 hours; and again within 4 hours. Aiming to consume 4 times your weight (in kg) in grams of carbohydrates is one easy way to ensure maximum recovery. However this is an aggressive recovery formula and should only be adopted after aggressive intensive training of an appropriate intensity and duration.

Remember that your first goal after training is to rehydrate to the tune of half the weight you've lost in kg in litres.

So if you've lost 3kg then drink 1.5litres of hydration based fluids before recovery based powders.

3kg weight loss; divided by 2 = 1.5kg, convert this into litres = 1.5 litres of 6-8% solution before a higher concentration beverage is consumed. This will avoid any potential to further dehydrate an athlete through consuming too high a concentrated formula.

CARBOHYDRATE CONSUMPTION



Summary

The flex approach represents the beginning of instinctive eating for your own performance requirements.

- There are a number of options to allow for the variation in individual requirements
- Carbohydrate flexing initially involves lowering carbohydrates from starch and fruit earlier in the week.
- You keep your base requirements of protein, veggies and fat to protect your lean mass at this time.
- Increasing fruit and starch toward competition day begins to increase glycogen stores in the body.



- Competition days should emphasise starchy carbohydrates, sugars and fruits for maximum available energy.
- The recovery matrix can be used to refuel the body at any available opportunity.
- Energy phases can be used daily to maintain performance whilst reducing body fat levels; energy phases are also typical of amber days leading up to competition.
- The flex approach can be used on a weekly, daily or monthly cycle to fit with your competition and training plans.
- If you want to prioritise fat loss then stay in the green zone but come up for 'air' (additional carbohydrates) every 7 days.

Maximum fat loss strategies will be the focus of the next installment.

Till then happy flexing.

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