

# bigging up..... BREAKFAST

by Ed Baker

*Carbohydrates certainly have a role to play in our daily routines, but for your first meal of the day you should be thinking outside the box! Forget the cereal and give proteins pride of place – for greater energy, improved concentration and a better physique.*

If you are reading this in the UK or Ireland, the chances are you started this morning, like most other people, with a breakfast cereal – part of the 6.7–8.4kg of dried cereal the average person consumes each year [1]. It's not entirely your fault: the UK cereal market was worth £1.27 billion in 2005, helped largely by companies such as Kellogg's spending over £50 million a year on advertising [2].

In contrast, the humble egg, long considered a suitable breakfast food, is today sadly lacking from our screens. The 'go to work on an egg' television commercials of the 1950s and 60s, mooted for a comeback in 2007, were rejected by the Broadcast Advertising Clearance Centre (BACC) for supposedly not promoting enough variety in the diet.

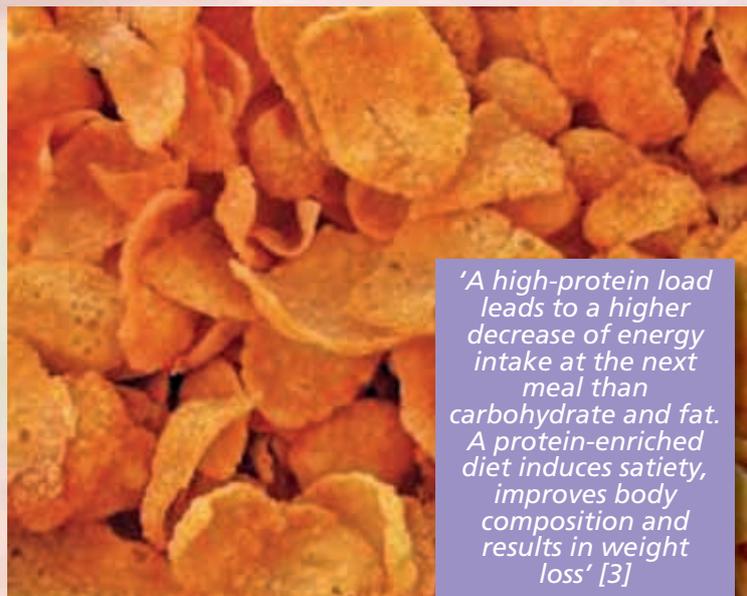
## Protein power

The BACC's position is certainly regrettable, both for the general population (including dieters) and for sportsmen and women. A protein-orientated start to the day will give you more drive, improve concentration and help you achieve a leaner physique [3]. The right meal first thing allows energy levels to be better regulated and food choices throughout the day to be more measured [3]. A high-carbohydrate choice is certainly the appropriate replenishment after a workout or period of physical exertion – but not when all we have done is stumble out of bed!

## Curb your carbs

In order to plan the best food sources for our needs, measuring carbohydrates and assessing their activities is key, particularly with reference to insulin response, given its role in our metabolism (see page 11).

The glycaemic index (GI) is a way of ranking carbohydrates on a scale from 0 to 100 according to how rapidly they are absorbed into the



*'A high-protein load leads to a higher decrease of energy intake at the next meal than carbohydrate and fat. A protein-enriched diet induces satiety, improves body composition and results in weight loss' [3]*

### CEREAL DRAMA: A HISTORY OF CORNFLAKES

Today's breakfast cereals arose from the American Temperance movement of the mid-19th century. John Harvey Kellogg, head of the Western Health Reform Institute in 1867, set out to cure what he saw as the two greatest ailments of the time, constipation and masturbation. Many of Kellogg's teachings advocated a meat-free diet, designed to prevent succumbing to the sins of the flesh. The fact that baked wheat could be packaged and sold for 10 times the cost of its ingredients was a handy bonus.

Little has changed in the manufacturing process since those early days. The kernels are broken down into grits, then steam-cooked under high pressure. The germ, containing essential fats and other nutrients, is removed first as otherwise it would go rancid and shorten the shelf life of the product. Flavourings and synthetic vitamins are now added to replace those lost in processing. Steam is then driven out of the cooked grits before they are rolled into flakes and toasted at 300°C for 5–6 seconds, ensuring that very few original nutrients survive. The flakes are dried and packed – with added sugar and corn syrup sprayed on to make frosted variants.

bloodstream – glucose being the denominator against which other carbohydrates are measured, with the score of 100.

## Sweet – not sour

Foods with a lower GI are absorbed more slowly than glucose: they delay hunger, control appetite, produce a gradual rise in blood sugar, a more moderate insulin response, and have proven health benefits – particularly for diabetics [4].

The lesser-known cousin of GI is the glycaemic load (GL). This is an estimate of how much blood sugar will rise after consuming a certain food, based upon the amount of carbohydrate per gram that it contains. A single unit of GL is approximately equivalent to consuming one gram of glucose. Significantly, it is not just the speed of absorption that is important, but the amount of

	Low GI	Medium GI	High GI
<b>Low GL</b>	All-bran (8:42)	Beetroot (5:64)	Popcorn (8:72)
	Apples (6:38)	Cantaloupe (4:65)	Watermelon (4:72)
	Carrots (3:47)	Pineapple (7:59)	Wholemeal bread (9:71)
	Peanuts (1:14)	Sucrose/sugar (7:68)	
	Strawberries (1:40)		
	Sweetcorn (9:54)		
<b>Medium GL</b>	Apple juice (11:40)	New potatoes (12:57)	Cheerios (15:74)
	Bananas (12:52)	Wild rice (18:57)	Shredded wheat (15:75)
	Fettucine (18:40)		
	Orange juice (12:50)		
<b>High GL</b>	Linguine (23:52)	Couscous (23:65)	Baked potatoes – Russet variety (26:85)
	Macaroni (23:47)	White rice (23:64)	Cornflakes (21:81)
	Spaghetti (20:42)		

**Table 1.** Glycaemic index and glycaemic loads, shown as (GI:GL),

carbohydrates a certain food contains, gram for gram, and therefore how energy-dense that food is.

### Metabolic maths

Table 1 gives you an idea of how the GI/GL combination pans out for a selection of foods, which should give you ideas on how to plan your own regime. Broadly speaking, your aim should be to establish what kind of food is appropriate for each meal or snack. Are you looking to sustain your energy levels for a long morning of meetings and concentration, fuel a workout or ensure rapid recovery after training? In short, high-GI foods are appropriate immediately post workout, whereas lower-GI foods are more effective at stabilising energy levels over time.

To calculate GL for yourself, you can follow these steps:

- Determine the available carbohydrates (in grams) per 100g.
- Multiply by the GI of the food per 100g.
- Divide by 100.
- For usability, round up to nearest decimal point.

For example:

Watermelon has 5g carbohydrates per 100g; GI = 72  
 GL = (5 x 72 = 360) ÷ 100 = 3.6 (then round up to): 4.

### Start as you mean to go on ...

The importance of considering our insulin response at breakfast time is to make the most of ourselves for the whole of the day. Most readers will know that a prime function of insulin is regulation of blood sugar – and that Type II diabetes is often associated with insulin resistance

#### INSULIN: KEY FACTS

- Insulin is released when blood sugar rises, for example, following a meal.
- The secretion of insulin is related to the speed at which blood sugar rises.
- Insulin causes uptake of glucose into cells – a surplus amount of glucose will be stored as fat.
- Insulin slows down the rate at which fat is metabolised, and increases the rate at which it is stored.

developed through years of consuming sugary foods [4].

For those seeking improved body composition, enthusiastic workouts and lots of energy, insulin management is critical – while the long-term health benefits of limiting sugary foods are also significant for the population as a whole.

### ... begin your day with protein ...

To ensure your energy levels are consistently high all morning, base your breakfast around protein, not carbohydrates!

Working on the basis that the only thing you did before breakfast was wake up, I recommend you aim to promote a very moderate insulin response – a slow, gradual rise in blood sugar and a feeling of fullness and satiety that doesn't have you reaching for a sugar-coated cereal bar by 10 o'clock.

#### Points to remember

- ✓ Both GI and GL are important when considering your insulin response.
- ✓ Despite the high GI of fruits such as watermelon, very low levels of carbs make them a 'safe' option to obtain a lean physique along with the high antioxidant benefits of fruit.
- ✓ The water and fibre content of fruit will generally make you feel full before you reach high levels of sugar consumption.
- ✓ Therefore, avoid fruit juices, even if they say '1 of your 5 a day' on the carton – they contain much more sugar than a piece of real fruit.

This is particularly important if you have just begun a fat loss programme for summer and are restricting your calories, because recent research indicates that eating protein at breakfast will cause you to feel less hungry [6] and eat more appropriately at lunch time, with powerful results [3].

### ... keep the carbs for later

Insulin drives glucose out of the blood and into muscle or adipose (fat) cells. It also increases protein synthesis through increasing amino acid transport into cells. This is useful *post workout* when the muscle cells are depleted and in need of nutrients. The time to promote the release of insulin is directly after a workout, to replenish muscle glycogen which will have been the predominant fuel source if you did any of the following:

- trained at an intensity above a gentle walk;
- lifted weights for more than 5 repetitions (> 1 set and < 8 minutes rest between sets);
- performed interval training;
- exercised for between 20 and 90 minutes.

*'Increased dietary protein consumed at breakfast leads to an initial and sustained feeling of fullness during energy restriction compared to other meal times' [6]*

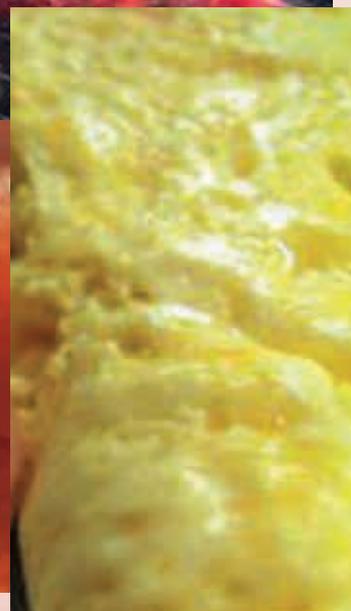
**Breakfast menus**

Three personal breakfast favourites are given below. The portions are roughly suitable for a 80kg man performing three weight training sessions per week, plus assorted moderate-intensity sport or cardio activity.

- Two thin-cut sirloin steaks (100g each). Pan-fry in butter and add a handful of mixed raw nuts and seeds.
- Two homemade burgers, fried on a heavy iron griddle or grilled on high. Serve with sliced blue cheese and an apple.

(To make four burgers: mix 400g grass-fed lean minced beef with a little tomato purée, Worcestershire sauce, salt, pepper, finely chopped onions and dried sage. Knead well until mixture sticks together and shape into four burgers with wet hands – can be made the night before and refrigerated.)

- Three organic free-range eggs, scrambled with a splash of whole milk and butter, served with 75g of organic smoked salmon and three large handfuls of spinach, wilted in the pan.



Assuming the above activities are comparable to training sessions for most readers, post-workout feeding is therefore the time to consume a small dose of simple carbohydrates, as follows:

Post-workout carbs: *1g carbs per 1kg bodyweight, in a liquid solution (roughly 75g for the average man, or 300kcal)*

**References**

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