# **Tim Noakes on carbohydrates**

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It is clear that many South Africans are unhappy with the way they eat or with the unpleasant consequences they perceive to be due to their dietary choices, writes Prof Tim Noakes. Read more about his new high-protein, low-carbs dietary approach, explained in his own words.

There has been an extraordinary recent <u>media interest</u> in exactly what Tim Noakes is eating. Some have even asked for the full details of "Tim Noakes's diet". It is clear that many South Africans are unhappy with the way they eat or with the unpleasant consequences that they perceive to be due to their <u>dietary choices</u>.



To begin with some initial points. First the eating plan I follow was first prescribed in 1861 by a Harley Street surgeon Mr William Harvey with great success to a corpulent London undertaker, Mr William Banting. Thus it is more appropriately named the Harvey/Banting diet. In time the term to "bant" was introduced into the English language. It referred to the use of this low carbohydrate diet for <u>weight loss</u>. Indeed "banting" was the standard treatment for weight loss in all the major European and North American medical schools for nearly 100 years until it suddenly went out of fashion after 1959 when it was written out of all the major medical and nutritional textbooks, to be replaced with its polar opposite, the currently popular low fat, high carbohydrate, "heart healthy" diet.

Dr Robert Atkins re-discovered "banting" in 1974 and his name is now incorrectly used as if he was the first to describe this eating plan. The history of Harvey and Banting's original contribution was re-discovered by Gary Taubes and is described in Taubes' momentous books *Good Calories, Bad Calories* and *Why we get fat and what to do about it.* 

## **Biological needs**

Second the reason why this eating plan has been so extraordinarily effective in my case is because it matches precisely my particular biological needs, perhaps because like Mr Banting, my lineage is from England. In brief I inherited from my father and his lineage, a predisposition to develop adult-onset diabetes because I am what is known as "carbohydrate resistant" (CR) and hence "pre-diabetic". My biology is such that I am unable effectively to clear from my bloodstream, the breakdown product of ingested carbohydrate, glucose. As a result my pancreas must over-secrete the hormone, insulin, one of whose normal functions is to direct the glucose from the bloodstream into the liver and muscles.

But instead, in my case, under the action of insulin most of the carbohydrate that I ingest is directed into my fat cells where it contributes to progressive weight gain, continual hunger, lethargy and, in time, pancreatic failure and the onset of the irreversible and universally fatal condition, adult-onset diabetes. I

am as certain as I can be that this eating plan is the only effective long-term health solution for anyone who shares this Banting/Noakes biology.

The yet to be answered question is: How many South Africans who are unhappy with the effects of their dietary choices on their bodies, share this same biology? If it is a majority, then there are many, many South Africans who will benefit from "banting". If it is a minority, then relatively few will benefit. Since most South Africans are already eating diets high in <u>carbohydrates</u>, especially those that are refined, my bias is to believe that many might benefit from this eating plan.

# Eating plan for life

The third point is that *this is not a diet*, it is an eating plan for life – it is a life style, it is a new eating behaviour. This is not the way to go for anyone who wishes a quick fix to lose weight and to improve their health by changing their eating patterns for as short a time as possible. Once you "bant", you have to stick with it **for life**. Because those who successfully lose weight on this eating pattern will regain that weight and more within a short time of going back to eating the way they did before – that is, returning to eat the foods that precipitated the problem in the first place.

The point is that the metabolic abnormality (CR) driving the problem is not ever going to normalise regardless of how much weight is lost or even how much exercise is performed. For those of us with CR, our metabolism is the problem and if we want to do the best for our bodies, then we have to change **forever** the nature of the foods that we eat. But I argue that this change is much easier than most would ever believe. Unfortunately it is also the advice that many dieticians may be scared to prescribe for the reason that they have been taught that high fat, low carbohydrate Banting diets full of "artery-clogging" saturated fats are dangerous. But this is an unsubstantiated dogma that does not stand up to an intelligent and independent interpretation of the complete scientific literature.

So those who are unwilling to commit to a life-long change in their eating behaviours should probably not begin in the first place.

## Addiction

For to change one has to rid oneself of an addiction for easily assimilated carbohydrates – an <u>addiction</u> that is at least as powerful as those associated with cigarette consumption and some recreational drugs like heroin. It is not easy to give up addictions. And like all addictions, addicts have to take each moment of their recovery one day at a time. In a sense those of us who are unable to metabolise carbohydrates, are never cured of that addiction. We are always in recovery. We have to take each new day of our cure, one day at a time.

But for those who like me are convinced that they have a **really good reason** to change (in my case to avoid dying from adult-onset diabetes – the fate that struck my father and his brother) and are prepared to change what we eat for the rest of our lives, then we may be up for the challenge.

The fourth point is that this is not a "fad" diet - the reason why it works so well is because there are solid biological reasons why it must produce a successful outcome if followed faithfully by those with CR.

#### **Discipline for success**

The fifth point is that this eating plan requires some initial discipline to be successful. As I have said, it takes discipline to insure that we do not relapse into our former addiction. Those who will be the most likely fully to commit to this change are those who have the greatest reason for and desire to change. Initially I had the greatest motivation to change – I do not want slowly to degenerate in the demeaning grip of adult-onset diabetes. I then discovered that once I had rid myself of my addictive food choices especially rapidly assimilated carbohydrates, I felt so incredibly good that I would never want to go back to my former eating ways.

So now I have two reasons to stay with this eating plan - a better (but not absolute) prospect of long-term health and the vigorous feelings of a renewed youth.

The point is that the greater one's reasons for change, the more probable it is that one will stay with the plan long enough to see these benefits. For the point is that addictions are incredibly powerful. And at least initially the brain will rebel and produce a range of (fake) symptoms in an attempt to keep one searching for the food choices to which it has become addicted. One has to call the brain's bluff until eventually it relents and these addictive drives are replaced with renewed feelings of vigour and the power of control over one's food choices.

## Athletic ability

The sixth point is that many wish to know how this change might affect their athletic abilities since they have been led to believe, not least by my writings in *Lore of Running*, that without a high carbohydrate intake they will be unable to <u>exercise</u> properly. What I now understand is that carbohydrates are relatively ineffective fuels for those with CR so that there is no risk that the exercise performance of those with CR will be impaired if they cut their carbohydrate intake as have I. Instead I am certain that the less carbohydrate that those with CR ingest (both in training and in racing), the better they will perform.

My experiment has shown me that I can do any amount of exercise I wish without increasing my carbohydrate intake. (I walk for 6 hours on the mountain and race up to 21km without needing any more the 50-75 grams of carbohydrates a day that is already in my diet). We are currently researching a group of serious and some elite athletes who have adopted the Banting diet and who have found that their performances have improved substantially with weight loss and reduction of their carbohydrate intakes both before and **during** racing. We need to understand why this is possible.

#### Not for everyone

However those who can metabolise carbohydrates efficiently and who have always been lean despite eating a high carbohydrate diet may **not** benefit in any way from this eating plan. I would not advise any athlete who is lean and quite happy with his or her weight and performances to change to this eating plan since it might not make a difference and might even be detrimental.

On the other hand I have noticed that there are a large number of slower finishers in the Argus Cycle

<u>Tour</u> and in the <u>Comrades Marathon</u> who are, to put it scientifically, either overweight - <u>body mass</u> <u>index (BMI)</u> greater than  $25 \text{kg/m}^2$  or frankly obese (BMI greater than  $30 \text{kg/m}^2$ ). The point is that the BMI is an excellent proxy for whether or not one is eating the right amount of energy each day. If the BMI is greater than  $25 \text{kg/m}^2$  in males (somewhat less for females), one is eating more than one should.

For there is also evidence that, within reason, the less one eats, the more likely it is that one will stay healthy for longer. Which raises the question: Why do those with BMIs greater than  $25 \text{kg/m}^2$  continue to eat too much even if they are exercising enough to compete in the Argus and the Comrades? The answer in my case was clear. It was not that I was gluttonous or lazy – the more usual explanation. It was because my brain was receiving false signals – based on my CR and the addictive effect of carbohydrates - about how much I really needed to eat. Once I corrected the signalling to my brain by adopting a high fat, low carbohydrate diet, I lost the urge to overeat.

## Overweight cyclists and runners

My conclusion is that there are many overweight or obese cyclists and runners who are eating a high carbohydrate diet because that is what they think they should be eating because they are "athletes" (and *Lore of Running* says that athletes must **maximise** their carbohydrate intakes to optimise their performances).

But they do not understand (as I did not until I switched) that because of their CR, their high carbohydrate diet is simply making them fatter and less healthy, despite all the exercise. If they were to "bant" they would bring their BMIs back to the safer values of  $25 \text{kg/m}^2$ . This weight loss would substantially improve their running and cycling times (by hours) without the need to do even one additional kilometre in training. I reduced my recent best 21km time by 40 minutes in this way.

## Children and carbs

The seventh point is that babies particularly should not be placed on high carbohydrate diets since the proper development of their brains (and facial structures) requires that the majority of their calories comes from fat and protein. Yet many baby formulas are full of sugar and carbohydrate and cannot provide the proper nutrients for optimum development during childhood.

Similarly children who are obese already at a young age will most likely have CR and carbohydrate addiction and would benefit enormously by "banting". There is also growing interest that, at the other end of the age spectrum, the elderly brain (like mine) requires a high fat intake to protect it from the detrimental effects of aging.

## Are you carbohydrate resistant?

The final point is how does one determine if one is CR or not. First is the family history. If there is a close family member with adult-onset diabetes, then one is more likely to be CR. Second is one's weight history. Those who were <u>heavy (obese)</u> as children are very likely to be CR. Alternatively a history of progressive weight gain through adult life or with pregnancy or at the <u>menopause</u>, and an inability to forestall weight gain when eating a high carbohydrate diet is also very suggestive. Frequent

failed attempts to lose weight when following the more usual calorie-restricted but still high carbohydrate diet, is also highly suggestive.

Finally when the CR is advanced it can be diagnosed with certainty with a fasting blood sample that shows elevated fasting glucose, insulin and glycosylated haemoglobin concentrations. If any of these three values is elevated, it is a sure indication that one is heading for adult-onset diabetes and the quicker one adopts a preventive, low carbohydrate diet, the better.

# **Dietary choices**

So now to my dietary choices. Recall that I am profoundly CR so that I must restrict carbohydrates as much as possible to delay the onset of <u>diabetes</u> for as long as possible, hopefully for ever so that I will succumb from some other, less destructive (but) terminal illness. So I restrict the intake of the foods listed below. I have found it easiest simply to remove all from my diet. Those with lesser degrees of CR (and carbohydrate addiction) will not need to be as restrictive as am I.

- Sugar (Must be completely removed from your diet)
- All sugary drinks including cola drinks and sweetened fruit juices
- Bread
- Rice
- Pasta
- Potatoes
- Porridge
- Breakfast cereals
- Some high energy fruits like bananas
- All confectionary cakes and sweets
- Desserts containing sugar and carbohydrates
- Artificial sweetners and products containing these products (like "diet" colas)
- Vegetable oils containing high concentrations of omega 6 fatty acids

I also warn everyone to be very wary of so-called "low-fat" "healthy" options, yoghurt especially, since these are laden with sugar and so are less healthy than are the full fat options. In fact one needs to check the sugar contents of all the foods that one eats. It is astonishing how many contain <u>hidden sugar</u> (which is of course there for a very good reason – for it is addictive, driving the overconsumption of the foodstuffs into which it is added).

I think that most dieticians would agree that none of the foods listed above is essential for health and some like sugar and other refined carbohydrates are definitely unhealthy. Some dieticians argue that whole grain cereals should be included because they are "healthy" but I have had difficulty finding whole grain cereals that have not been heavily refined.

It is also clear that allergies to grains and cereals are commoner than is realised and I wonder if some of the benefit I have derived might not be due to removal of some undetected allergens in cereals or grains. Indeed I have "cured" myself completely of two allergic (respiratory) conditions and one gastrointestinal complaint since adopting this eating plan.

## **Making choices**

However the real point is that if one is as CR as am I, one has to make choices of (i) how much carbohydrate one wants to eat each day. I limit myself to between 50-75 grams a day as that is the amount that allows me to regulate my body weight effortlessly without hunger – and (ii) which carbohydrate sources will provide that scanty amount of carbohydrate. I have chosen to get my miserly grams of carbohydrate from highly nutritious vegetables and dairy produce, not from whole grain cereals. Others might be advised to make a different choice.

As a result, I restrict my food choices to the following food and beverage groups:

- Eggs from free range hens
- Fish an excellent source of omega 3 fatty acids
- Meat not processed and preferably from sources that are organically raised eating grass. This group includes biltong, preferably game or ostrich.
- Dairy Produce milk, cheese and yoghurt all full cream and from organically fed cows.
- Vegetables mainly leafy, low carbohydrate sources like lettuce but also including broccoli, tomatoes, mushrooms, onions, avocado and many others. The choice is based on their nutrient value and their low carbohydrate content.
- Nuts especially macadamias, walnuts and almonds but specifically excluding the non-nuts, peanuts and cashews which are high in carbohydrates.
- Fruits only those which have a lower carbohydrate content like berries and apples.
- Water, tea and coffee (all unsweetened)!

I eat my fill from these food groups and am no longer hungry. In fact my preferred choice is now to eat a "proper meal" only once every 12-24 hours. I wonder whether humans are truly designed by our evolutionary history to eat large meals, three times every 12 hours (during the day).

## **Omega-3 fatty acids**

I also currently supplement my eating with <u>omega-3 fatty acid capsules</u> (1.6 - 2 g/day). The value of omega-3 supplementation seems to be universally accepted. I am also experimenting with supplementation of a range of vitamins but this is still a work in progress as is my choice of the best vegetables and salads to limit the CR and two other medical tendencies that genetic testing has revealed.

I do not believe that I have the final answers and am continually reading the scientific literature and the internet and tweaking my diet. I will continue to modify my eating by studying the literature, eating differently for periods and seeing if I notice any differences in how I feel, in my blood markers and in my running performances. But the basic pattern of severely restricting my carbohydrate intake remains completely non-negotiable.

Obviously it is stupid to go to the trouble of changing one's eating plan but continuing to do other behaviours that are unhealthy. So <u>smoking</u> is not allowed and <u>lots of exercise</u> is encouraged -30 to 60 minutes a day of sweating exercise on most days of the week. Proper sleep and control of stress are obviously very important as well.

#### The benefits of low-GI carbs

I am only too aware that we are all different and whereas too much carbohydrate and cereal and too little fat in the diet was clearly my problem, there are others who may have trouble with <u>dairy produce</u> or meat and may find it difficult to eat enough of these foodstuffs to replace enough carbohydrate in their diets for there to be a noticeable difference in the way they feel.

I also appreciate that there is little biological reason why those without CR would benefit from this eating plan. Indeed for reasons that I do not yet fully understand, there clearly are many who will lose weight by doing **the exact opposite** from what I have proposed, that is by replacing the fat and rapidly assimilated carbohydrates in their diet with an abundance of slowly absorbed, <u>low GI</u> carbohydrates. But many of those who are interested in "my" diet have probably already tried that option and found that it does not work for them.

## Consult a dietician

A number of people have asked me to provide a specific eating plan. I am reluctant to do that because I am not a professional dietician and I do not see this as my role. Instead my advice is that one should <u>consult a registered dietician</u> for help. I appreciate that there are dieticians who are reluctant to prescribe the Harvey/Banting diet because it conflicts so absolutely with what they have been taught to be true. But perhaps if enough South Africans approach enough dieticians and tell them they want to "bant", we may be able to influence their profession to reconsider the scientific basis for what they believe so ardently to be true. And to consider that perhaps there is more than one single eating plan for all who wish to lose weight.

Finally the internet is full of information about the low carbohydrate revolution. Type in low carbohydrate or Paleo diet into Google and start searching. I list below a few (in no special order) and include books that may be helpful.

- Gary Taubes *Good Calories Bad Calories* and *Why we get fat and what to do about it*. Perhaps two of the most important health books of the past 50 years.
- Mark Sisson *The Primal Blueprint* Book and internet site.
- Dr Westman and colleagues New Atkins Diet for the New You Book and internet site.
- Pierre Dukan <u>*The Dukan Diet*</u> Book and internet site.
- Loren Cordain *The Paleo Diet* Book and internet site.

For extra motivation to see what can be achieved in a short space of time try this:

## The Brentwood Diet

Incidentally I am aware of a medical colleague in Cape Town who lost 100kg in 1 year, going from 175 to 75kg as she overcame her carbohydrate addiction. Such is the power of this eating plan when followed by those with severe CR.

Finally I believe we are rapidly approaching a tipping point when the value of this eating plan will become more universally accepted. The Scandinavian countries – which already have the healthiest people in the world - are rapidly adopting this eating pattern to the extent that Norway has run out of butter! (Norwegians have always eaten high-fat diets and are perhaps the world's healthiest nation).

Good luck!

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