



**HEALTH RESULTS**

EXPLORE, MEASURE & IMPROVE your inner *(metabolic)* health

# Metabolic Health and Insulin



## **You are going to come across the phrases ‘metabolic health’ and ‘metabolic syndrome’ many times on this website, but what do they mean?**

Metabolic health is a phrase used a lot in medical circles today, relating to how most chronic illnesses we face in Great Britain (including cancer, heart disease, Alzheimer’s, type 2 diabetes, strokes, obesity, and more) can all, in part, be related to the release of too much insulin.

This modern onslaught of insulin is mainly caused by the food choices we make, our stress levels, and lifestyle.

## This is how the NHS describes metabolic syndrome

**“Metabolic syndrome is the medical term for a combination of diabetes, high blood pressure (hypertension) and obesity.**

It puts you at greater risk of getting coronary heart disease, stroke and other conditions that affect the blood vessels.

On their own, diabetes, high blood pressure and obesity can damage your blood vessels, but having all 3 together is particularly dangerous.



**Metabolic syndrome may be diagnosed if you have 3 or more of the following:**

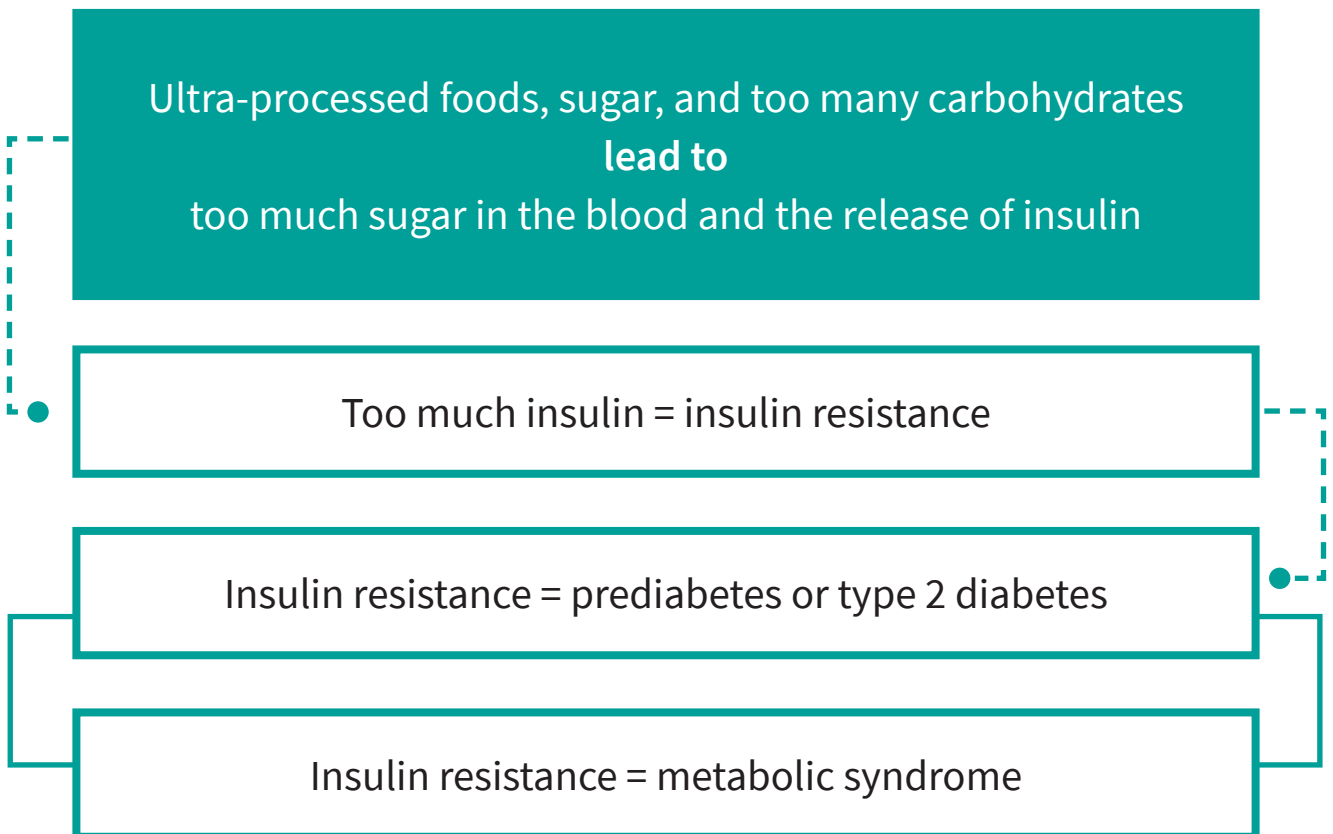
- being very overweight or having too much fat around your waist
- high triglyceride levels (fat in the blood) and low levels of HDL (the ‘good’ cholesterol) in your blood, which can lead to atherosclerosis (where arteries become clogged with fatty substances such as cholesterol)
- high blood pressure that’s consistently 140/90mmHg or higher
- an inability to control blood sugar levels (insulin resistance)”

[Reference NHS Conditions](#)

As you will discover throughout our website, we believe insulin resistance is the root cause of most chronic illness and consequently you could simply interchange ‘metabolic syndrome’, with ‘insulin resistance syndrome’.

What is the meaning of ‘syndrome’? A syndrome is simply an occurrence of factors that occur together more often than by chance alone.

**Insulin’s key role is to regulate blood sugar levels. Let us start with a flowchart of equations:**



Looking at the above equation, it’s logical to conclude that type 2 diabetes is in fact the intolerance of too much processed foods, sugar, and carbohydrates.

# CARBS

When we want to improve our metabolic health, lose weight, or even reverse type 2 diabetes, individual authors, experts, and doctors all offer varying advice on how many CARBS we should consume each day.

**Some will say 70g**

**Some will say 100g**

**Some will advise very specific amounts such as 73g**

**But the reality is: [the body doesn't actually need any CARBS at all!](#)**

[Put simply, the fewer processed foods and CARBS we eat, the quicker we both lose weight and regain our metabolic health.](#)

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Once we reach our ideal weight, if we want to add the occasional apple or banana again, then we can go for it. If we start gradually eating too many CARBS (known as CARB creep) and our weight starts to increase again, we simply need to take notice, and cut them down again.

It really is as straightforward as that.

Well, straightforward in principle, but of course sometimes harder to execute.

And that's why we are here to support you at Health Results.

# But what is metabolic health all about?

**First, let's take a look at what metabolism means.**

Metabolism is the process of converting food and drink into energy and unlocking nutrition. As humans, we are designed to eat a certain diet: the evolution of our species hasn't yet progressed to consume the manufactured and lab-created stuff that we all too often put into our body. We were designed to eat free-roaming animals and 'in season', naturally-growing plants (collectively known as real food). It's that simple. After all, fresh plants and wild animals were the only food available to our ancestors.

As we eat food, our body digests each meal and breaks each macronutrient down into a smaller component. For example: fat is actually made up of fatty acids; the smallest component of proteins is amino acids (the good stuff that builds muscles); and CARBS simply become sugar.

The body processes different nutrients in a particular order, based on how easy the task is. Alcohol is absorbed very quickly, around a quarter of what we drink can be transferred into the bloodstream and hit the brain in less than one minute! Next come CARBS, which easily break down into sugar, followed by the conversion of protein into amino acids. Fats are left until last, as it is quite a complex task for our body to break them down into fatty acids.

Let's park that for a moment and get a basic understanding of insulin.

Your standard granulated sugar is actually two sugars in one.



It is half fructose  
(the sugar you often  
find in fruit)

&

Half glucose  
(the sugar you find in  
potato, rice, pasta, bread)

But there is a problem with both sugars when over-consumed.

Let's just focus on glucose for now.

There's approximately 5 litres of blood circulating round your body, but it can only suspend around **1 teaspoon of glucose**.

**Any more than this and it is detrimental to health.**

Eat a 12" Subway and the bread will turn into around 15 teaspoons of sugar. Drink a can of Coke and the body has to quickly deal with 7 teaspoons of sugar.

The body now needs to rapidly either burn it for energy or dispose of it.

At this point, glucose levels are too high, causing the pancreas to release a hormone known as insulin that binds to the liver and muscle cells, signalling for them to remove glucose from the bloodstream and store it as insoluble glycogen in your liver and muscles. Glucose is soluble within the bloodstream, made up of a single glucose unit, whereas glycogen is the stored form of glucose, made up of several glucose units. The problem is that, depending on our build, the liver and muscle stores combined only hold around 300–500g of glycogen: in terms of calories this equates to just 1200-2000, after which all excess glucose becomes stored as body fat (also known as adipose tissue).

Conversely, when our blood sugar levels are too low, the pancreas releases a hormone known as glucagon that breaks down insoluble glycogen into soluble glucose, releasing glucose into our bloodstream for use as energy. When it breaks down glycogen in a muscle that itself needs energy, it uses it as its own fuel.

<b>Glucagon</b>	Sometimes referred to as the slender hormone, works in opposition to insulin. The two of them need to work in partnership to ensure the right amount of glucose is in the blood.
<b>Glucose</b>	Soluble form of sugar within the bloodstream.
<b>Glycogen</b>	Stored form of sugar in both the liver and muscles, made up of several glucose molecules



The trouble is, when we continually have high levels of insulin over a prolonged period, cells eventually become insulin resistant. It's a bit like being in a noisy office – we notice the distraction at first, but eventually we just block it out. For those who eat too frequently, and who consume lots of CARBS, the end result might be hyperglycaemia (high blood sugar level) or hyperinsulinemia (high amounts of insulin in the blood).

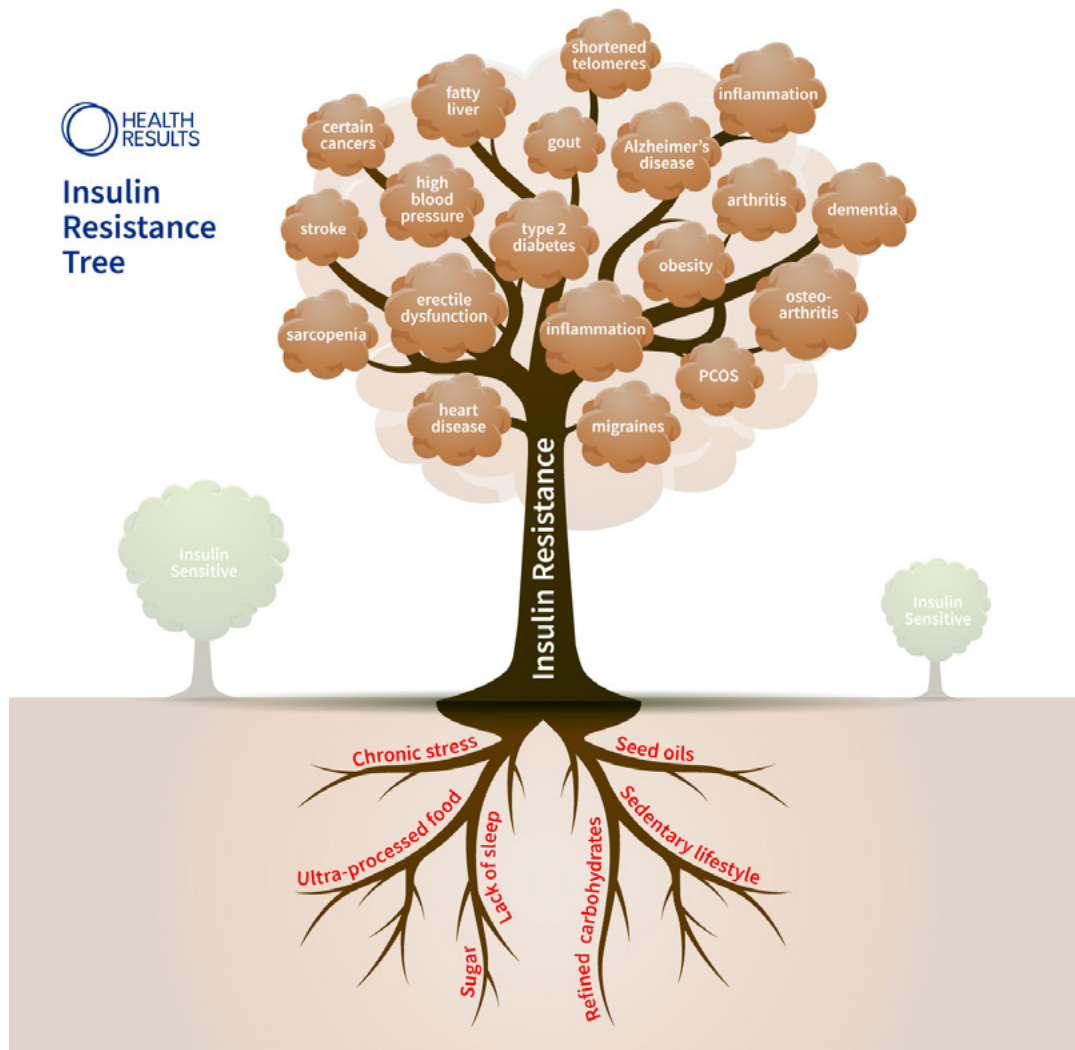
This is what often causes type 2 diabetes; when overconsumption of CARBS leads to the cells shutting up shop and not letting insulin do its job. Incidentally, type 1 diabetes is rarer and is a very different medical condition, known as an autoimmune disease. For those suffering with type 1, the body isn't able to generate sufficient or any insulin to transport sugars out of the blood, and therefore most sufferers have to inject themselves with insulin.

The medical profession once regarded type 2 diabetes as a chronic, progressive, and irreversible disease. Nowadays, thousands of people in Great Britain are putting their type 2 diabetes into remission by learning more about metabolic health and taking the necessary steps to correct it.

Before we start chastising insulin, we should remember that the **hormone is only doing the job Nature designed it to do!** When we are eating healthily, rather than seeing it as a prison officer escorting a villain to the fat cells, we should view insulin as an usher in a church, accompanying energy to each and every seat.

Insulin is one of the most critical hormones in the metabolism of food, and our cells are unable to process glucose without it. As long as we don't consume too much sugar, ultra-processed foods, and refined CARBS, our insulin system functions perfectly, just as it has for more than 2 million years.

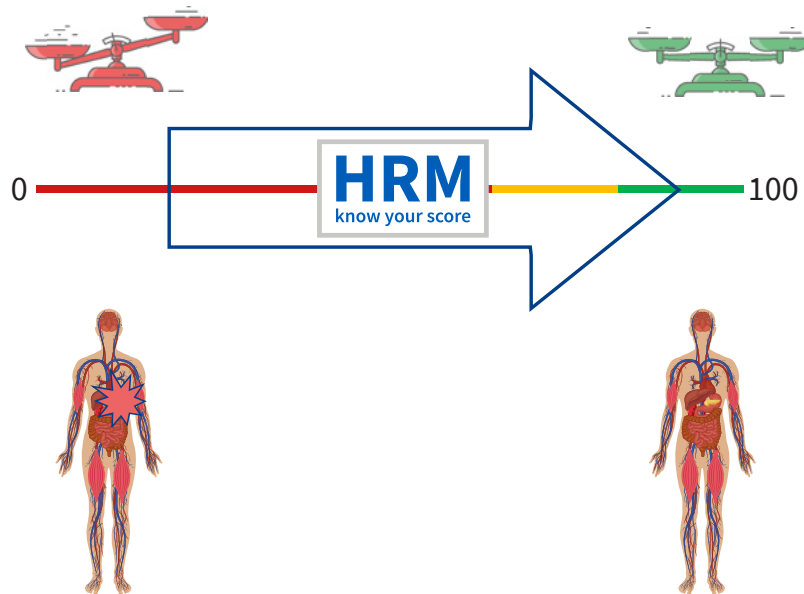
There are other causes of insulin resistance too, such as **stress, lack of sleep, and a sedentary lifestyle**. You will find our ‘Insulin Resistance Tree’ appear several times on this website, as we believe it conveys the message well.



At Health Results we believe we should not submit to chronic illness. Some say that most of the modern diseases that finish us off are because we are simply living longer (though even the fact that we are living longer is not true). Others say, ‘we have to die of something’. While, of course, they are right: wouldn’t you rather – just like the centenarians in places like Ikaria and Okinawa – die just of old age?

To live longer and healthier we have to prioritise our metabolic health. Another way of looking at this is how we can improve our inner health.

## We can improve our inner health



- To improve our inner health we need to take action to make ourselves more insulin sensitive.
- We also need to eat fewer foods that excessively challenge our blood glucose all the time.
- We need to help our body to maintain homeostasis.
- If we help our body to maintain homeostasis it will be able to look after itself much better.
- We are more likely to avoid getting modern diseases.
- We will feel better.
- We can even reverse conditions such as type 2 diabetes.

## We can measure our inner health

There is no single test that can tell us exactly what state our inner health is in.

Health Results has brought together a range of scientifically established inner health tests. These include:

- measurement of waistline (at the level of your belly button)
- blood pressure
- blood test for the glucose level
- blood test for the levels of some fats (triglycerides and HDL-cholesterol).

The Health Results Metabolic (HRM) Score uses all these measurements to calculate an overall inner health score out of 100.

[The HRM Service →](#)

We recommend you download and read our resource all about your HRM score [here](#), to find out more.



1. Waist to height ratio
2. Blood pressure
3. Blood glucose level
4. Blood triglyceride level
5. HDL cholesterol (HDL-C)