

**Losing weight can be effortless if you overcome your insulin resistance, says expert.**

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# Reversing the metabolic syndrome

**S**ndrome X. The Metabolic Syndrome. The Insulin Resistance Syndrome.

They may be different names, but all three point to the same set of health concerns affecting both the developed and developing world – expanding waistlines along with high blood pressure, cholesterol levels and raised blood sugar levels.

The Metabolic Syndrome, which increases the chances of people developing type 2 diabetes and dying from heart attacks, is now considered to be the driving force for a new cardiovascular disease epidemic, says the International Diabetes Federation.

"Eventually, after (years of) inactivity, poor diet and unhealthy lifestyle, people eventually tip over to develop the Metabolic Syndrome, which is really, the insulin resistant syndrome," said Dr Ray Strand, author of the book *Preventing Diabetes and Healthy for Life*, while he was in Kuala Lumpur recently.

But, Dr Strand says that you can reverse the insulin resistant syndrome by applying a triad of healthy practises – eating a low glycaemic diet, increase moderate exercise and supplementing your diet with nutrition that helps insulin sensitivity – and lose weight without even trying.

## Insulin resistance, the glycaemic index (GI) and the metabolic syndrome

When we eat or drink food that contains sugar (from simple sugars to complex carbohydrates) it breaks down to its basic units, glucose.

Our body produces insulin (a hormone) to help muscle and liver cells absorb glucose from our blood to be used to produce energy or form energy stores.

However, when we consume food with high levels of sugar, our blood sugar levels rise rapidly and our body compensates by producing more insulin to bring the blood sugar levels down.

Soon, our cells may develop a resistance to insulin, and more insulin is needed for the cells to bring glucose from the bloodstream into our cells to maintain the blood sugar levels at a certain range.

So, if our body can produce enough insulin to counter insulin resistance (which prevents cells from taking in glucose), our blood sugar levels will remain the same.

It is when our insulin production drops, and insulin resistance stays the same; our blood sugar levels will increase, says Dr Strand.

But not all foods that contain sugar and carbohydrate have the same effect on our blood sugar levels. Some of these foods break down gradually (low glycaemic index) while some break down rapidly (high glycaemic index) during digestion to release glucose into the bloodstream, raising blood sugar levels at varying speed.

Dr David Jenkins, who was credited for the development of the glycaemic index, found in his first study in 1981 that "great differences (of GI) were seen not only

between but also within most of the food groups, e.g. among cereals, the GI for wholemeal bread was 72% while for wholemeal spaghetti, it was 42%".

That means if you eat wholemeal bread, your blood sugar levels will raise to a higher level over two hours as compared to wholemeal spaghetti.

The problem with spiking (rapidly raising) your blood sugar levels by eating high glycaemic foods is you over-stimulate the production of insulin, which subsequently cause blood sugar levels to drop below the normal range, says Dr Strand.

The low blood sugar levels will in turn, stimulate the release of stress hormones – cortisol and adrenaline – that causes hunger or craving for food, he added.

"So, what we've been calling emotional eating all this while is actually a natural response of the body," he explained.

In the Metabolic Syndrome, insulin resistance raises blood sugar levels and the excess glucose is diverted into storage in the form of fat, says Dr Strand.

## Reversing the Metabolic Syndrome

After years of studying medical literature and conducting clinical studies on the syndrome, Dr Strand, a family physician who specialises

in nutritional medicine, could recite research statistics from memory if you asked him about his findings.

But, he got a shock when he found out that nine to 10% of adult Malaysians have developed diabetes.

"We have a worldwide problem, and it's not just in the US and Canada, but also in New Zealand and Australia," says Dr Strand.

And the metabolic syndrome (that increases the risk of diabetes) is said to affect 25% of the US and Canadian adult population, according to the *Journal of American Medical Association*, he said.

Despite extensive publicity and research, doctors are also diagnosing the disease (diabetes) too late, he added.

He said that according to a diabetologist in the US, more than 60% of the people whom physicians diagnose with diabetes already had some form of cardiovascular disease and 80% of them may die prematurely of a cardiovascular event.

You can't lose weight if you have underlying insulin resistance, Dr Strand says.

"They (people with insulin resistance) hold on to fat like a sponge holds on to water. It's an abnormal metabolic state where calories are no longer a culprit because the muscles can't utilise the calories normally," says Dr Strand.

"In my medical practise, I started

to think: since the problem (in the metabolic syndrome and diabetes) is insulin resistance – which means that we are not as sensitive to our insulin as we once were – we need to make lifestyle changes to improve insulin sensitivity. It is just common sense," said Dr Strand.

## Improving insulin sensitivity

To find out how insulin sensitivity can be improved, Dr Strand referred to medical literature for answers.

And what he found was research showing that when people don't make their blood sugar levels rise suddenly (by eating food with high GI), their body responds by secreting less insulin hormones (fat storage hormone) and more glucagon hormones (fat releasing hormones).

"This improves insulin sensitivity from a certain type of mechanism," he said.

And that is not the only way to do it. Exercise can also do the trick, albeit a different way, Dr Strand says.

"A modest aerobic activity will improve your insulin sensitivity, but not weight resistance training," he said.

So if you go for a 30-minute brisk walk or do an equivalent of aerobic activity five days a week, you would significantly improve your insulin sensitivity, he added.

Also, research has shown that supplementing some nutrients at an

advanced level (more than the Recommended Dietary Allowance) also increases insulin sensitivity through yet another mechanism, says Dr Strand.

And so, in the year 2005, Dr Strand and his partners decided to put a combination of these three approaches to test in a pilot study on 25 people (five men, 20 women) who were at risk to develop full-blown Metabolic Syndrome.

By putting participants through a 12-week lifestyle modification programme involving low-glycaemic functional foods (meal replacements), a low glycaemic diet, and modest exercise, they wanted to see if the programme could reverse some of the symptoms of Metabolic Syndrome in affected people.

On average, the participants lost about 6% of their initial body weight, their BMI and waist circumference declined and other parameters of the metabolic syndrome improved.

Blood pressure, for example, declined from a baseline average of 131/86mmHg to 121/80mmHg (normal blood pressure is 120/80mmHg). Average total cholesterol, low-density lipoprotein (LDL) cholesterol and fasting blood sugars also dropped after 12 weeks on the programme.

The study concluded that these changes are consistent with a reversal of the Metabolic Syndrome with significant improvements in cardiovascular and metabolic health, says Dr Strand.

A subsequent study done at the University of Colorado on 60 people revealed similar results, he added.

Another study done by a doctor who gave a group of 12-year-old boys a low glycaemic breakfast or lunch and another group a high glycaemic equivalent found out that the group who ate high-glycaemic breakfasts or lunches ate about 80% more calories compared to their counterparts who ate low glycaemic meals. And similar results were also found when the doctor switched the groups, said Dr Strand.

## Not 'no carbs', but take 'good carbs'

Is it difficult to sell the idea of a low glycaemic diet to Asia where carbohydrate is staple?

"Yes it is. But it is difficult in the US, too," Dr Strand said.

"All of our grains are processed and high glycaemic, and we (in the US) have the same problem as yours." That is why it is about food choices we make rather than abstinence or cutting out carbohydrates, says Dr Strand.

It is like saying: "I'm going to take this bread and this rice (that is low glycaemic) rather than this (high glycaemic)," he added.

For Dr Strand, anything with a GI of over 60 is considered high and those with a GI between 40 and 60 is considered moderate.

Describing his experience in encouraging his patients to go on a low glycaemic diet, Dr Strand says, "(In the end), my patients come back to me and say 'what is so hard about never getting hungry, feeling good, having more energy, more focus, seeing health parameters improve and losing weight without even trying?'"

■ For more information about the pilot study in year 2005, please visit [www.releasingfat.com/showClinicalTrial.asp](http://www.releasingfat.com/showClinicalTrial.asp). For information about the glycaemic index of foods, please visit the University of Sydney School of Molecular and Microbial Biosciences Human Nutrition Unit database at [www.glycemicindex.com](http://www.glycemicindex.com).



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