



Metabolic Syndrome

Without a doubt, the biggest enemy in our war with heart disease is a condition known as the Metabolic Syndrome, a group of separate traits that become extra deadly when they get together. Previously known as "Syndrome X," or "Insulin Resistance Syndrome," Metabolic Syndrome is defined by a constellation of five traits. They are:

- *Hypertension*
- *High Triglycerides levels in the blood (non-cholesterol lipids)*
- *Low HDL cholesterol levels in the blood (HDL is known as the "good" cholesterol)*
- *Insulin resistance or full blown diabetes*
- *Truncal obesity (carrying the extra weight in the gut more than on the hips)*

Each of these traits carries a statistical chance of increasing one's heart attack risk, but the killer combination of *any three of them* doubles the already substantial danger a person has just from adding up the risk from each trait. In fact, Metabolic Syndrome is the culprit behind 80% of the heart attacks in this country. And it's been sneaky.

For example, most people know that diabetics as a group have a 25% shorter life than non-diabetics and the reason is the high heart attack and stroke rate in these patients. Most type 2 diabetics, about 87%, *also* have Metabolic Syndrome. The 13% of diabetics who don't turn out to have no more heart attacks than non-diabetics! It hasn't been the diabetes per se that's caused all that heart disease but rather the Metabolic Syndrome which is along for the ride.

Of course thin diabetics, without high blood pressure and with normal cholesterol and triglyceride numbers, must still control their blood sugars very carefully if they want to avoid blindness, constant pain in their hands and feet, kidney failure, amputations of their legs or an early death by infection. These indignities are the terrible results of high blood sugar over many years. Many diabetics haven't lived long enough to suffer them because the Metabolic Syndrome has taken them out. And this is a shame since our success in preventing these awful complications has also exploded in recent years.

Metabolic Syndrome is on the rise. Obesity in America has grown beyond epidemic levels, more than doubling between 1990 and 2000. Only one third of Americans *aren't* overweight! One third qualify as "obese" by having a body mass index of over



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30 (Appendix 4) And more than 44% of Americans over age fifty actually have the Metabolic Syndrome. No wonder more than 4000 of us had heart attacks today.

Why is this happening and what can be done? There are all sorts of theories about why we're getting fatter and in a way that is so dangerous. It's true that we move less than we did. Heck, even in the office we sometimes had to get off our butt and walk down the hall to ask a co-worker a question or deliver a document. Now we just fire off emails and files. What TV started, the internet seems to be finishing!

A diabetic expert and colleague once reminded me that when we were both kids in the 50's and 60's, traveling in the family station wagon for summer vacation, we would sometimes pull into a gas station and be given the treat of the month - a full 10-ounce Coke of our *very own*! In 2006, several Big Gulps each day are the norm for many of our young people. In the 80's the fad was to run 10k's and carbo-load the night before. Evil fat was out of our diets and Penguins Yogurt was sweeping the nation - you could eat all you wanted because there was no fat!

Today we still eat all the carbs we want but the 10k runs seem to have fallen out of style. When we don't exercise, our bodies, with million-year old programming, assume we must be injured or sick. Why else would anyone lay around instead of gathering food and running away from danger? Back when our software was being written disability meant starvation and so our bodies response is to slow our metabolism to a crawl and increase our appetite. That way, in the wild, the fat we had would last longer and we'd eat any chance we get. We may be cranky with hunger most of the time but we might survive until we were able to hunt again.

Now that very real hunger wanting to *eat any chance it gets* meets an *endless* food supply. And the nation's weight has spiraled up and out of control. The worst part is that once the weight goes on, the body *doesn't want* to let it go. It wants to be sure you're a super athlete before it's going to crank up its metabolism and waste a single calorie. Changes in our bodies actually occur as counter-regulatory systems alter the way our fat cells (adipose tissue), our muscle cells, our stomach and our brain all talk to each other and how our bodies package, transport and burn the sugar and the fat we use for fuel. This semi-permanent change is called the Metabolic Syndrome.

Forget the war on drugs or even on crime; they're small potatoes in the world of killing. America should declare war something we can win. Metabolic Syndrome is easy to find. All but one of the five elements are obvious by looking, taking a common blood test or measuring a blood pressure. Insulin resistance is the only trait that's not



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routinely measured today but a glucose tolerance test with insulin levels added to each blood test will easily demonstrate the problem.

The latest debate about how best to approach cardiovascular risks, and metabolic syndrome in particular, includes an argument saying that focusing on these five components will cause doctors and patients to ignore other risk factors. And experts mostly agree that of the five, insulin resistance seems to be the real bad guy here and that the other four risk factors, like the heart diseases itself, may in part be caused by the insulin resistance itself. Reverting to the term *Insulin Resistance Syndrome* has been suggested by some experts and a new term, *Cardiometabolic Risks*, may soon come into common use to include the risks of Metabolic Syndrome and all those not included in the naughty five.

Whatever we call the Metabolic Syndrome, treatment must be aggressive and include weight loss in most cases. But even real progress with exercise and careful eating will seldom lower the danger enough to make drugs unnecessary. Medications are needed if we really expect to lower the risk of early death, especially when we already see atherosclerosis in the arteries of our Metabolic Syndrome patient. At present, the best strategy has been to go after each of the known risk factors individually. I'll share a few of my own strategies if you promise not to take them as personal advice and to understand that they are always changing as we learn more about the body and have the use of newer, safer and more effective treatments.