

# CRUSADOR

WIELDING A SWORD OF TRUTH IN A WORLD OF LIES

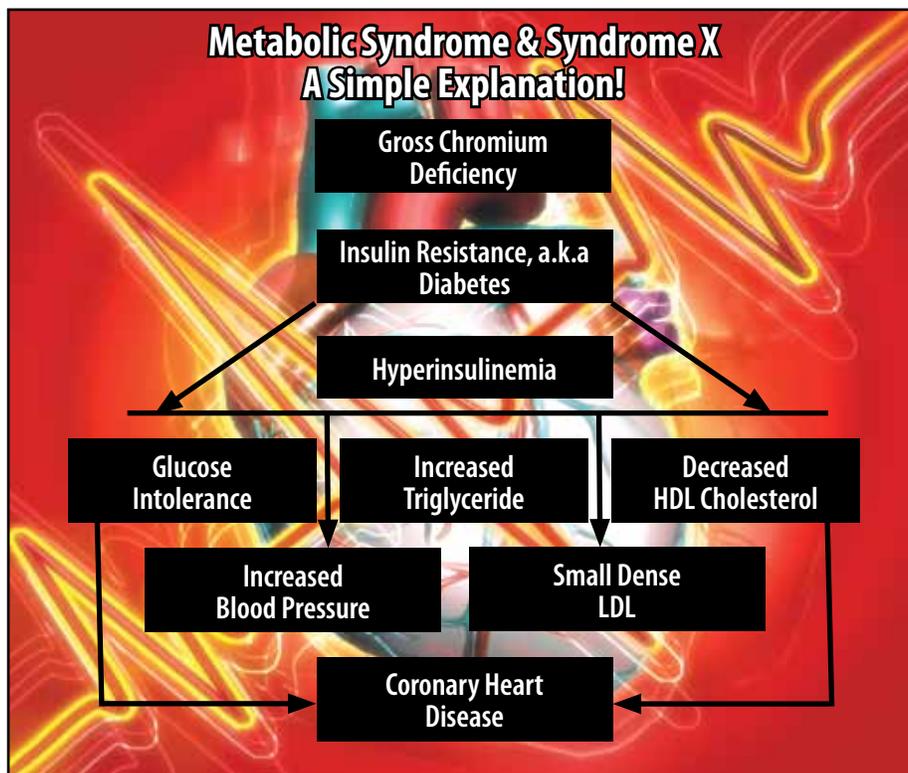
## METABOLIC SYNDROME (and related medical myths)

By Christopher Barr, Health/Nutrition Historian

Since the late 1990s a newly created condition has been established through the mainstems of medicine and science called metabolic syndrome (also less popularly called syndrome X) that has quickly become noted commonly in general populations.

Though major medical groups vary somewhat on exact specifics there is a general agreement between them that having any combination of three of the following constitute metabolic syndrome:

- 1) Reduced HDL (high density lipoprotein) levels [below 40]
- 2) Elevated triglyceride levels [above 150]
- 3) Impaired glucose tolerance [above 100]
- 4) Obesity [above 30 BMI or varying waist measurements]
- 5) High blood pressure [minimum 130/80]



Following is an analysis of these five components said to make up metabolic syndrome.

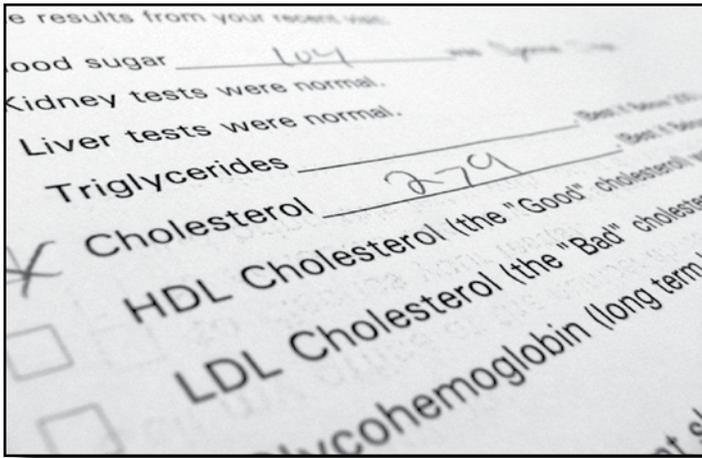
### Reduced HDL

High density lipoprotein is commonly referred to as "good cholesterol". Studies published in major medical journals in recent years have noted that if HDL levels are high enough then LDL (low density

lipoproteins commonly referred to as "bad cholesterol") and total cholesterol levels are no longer cardiovascular risk factors.

Numerous chromium studies over the course of several decades have shown that HDL levels increase in response to chromium supplementation.

As far back as 1981 an increased HDL level of greater than 10 per cent was shown in a study of middle-aged men taking 200 micrograms of chromium daily compared to no change in the half not provided



a daily chromium supplement. This change was after almost 3 months even though the study used chromium chloride which is the lowest absorbed of all chromium supplements (less than .5 [one-half of one] percent). **The 'Effect of chromium chloride supplementation on glucose tolerance and serum lipids including high-density lipoprotein of adult men' study** was published in the prestigious *American Journal of Clinical Nutrition*.

Published studies consistently demonstrate greater increases in HDL levels with whole food chromium supplementation (chromium within food sources) than with freestanding chromium supplementation.

HDL levels increase significantly with whole food chromium supplementation in greater than modest intakes in each instance they were measured according to my personal observations of countless individuals through five decades.

The preponderance of evidence clearly indicates that reduced HDL levels are indicative of chromium deficiency.

### **Elevated Triglyceride Levels**

Numerous chromium studies over the course of several decades have shown that triglyceride levels decrease in response to chromium supplementation.

As far back as 1980 a consistent reduction of triglyceride levels was demonstrated with whole food chromium supplementation. The **'Beneficial effect of chromium-rich yeast on glucose tolerance and blood lipids in elderly subjects'** study was published in the prestigious medical journal *Diabetes*.

My own personal observations note that triglyceride levels do not always improve as quickly and dramatically as HDL levels (and glucose levels) do in response to whole food chromium supplementation, though improvement does always occur.

The preponderance of evidence clearly indicates that elevated triglyceride levels are indicative of chromium deficiency.

### **Impaired Glucose Tolerance**

Chromium was established as an essential nutrient specifically for glucose tolerance more than half a century ago by Dr. Klaus Schwarz and Dr. Walter Mertz at the National Institutes of Health. This mineral nutrient was found in a molecule subsequently named glucose tolerance factor (GTF), which is made up of about two-thirds chromium. In other words, chromium is essential for glucose tolerance, meaning reduced chromium levels must therefore result in impaired glucose tolerance.

The most significant and consistent improvements in glucose tolerance are noted with whole food chromium supplementation as demonstrated by more peer-reviewed, published studies that could fill several issues of this publication. In fact, whole food chromium was developed by Dr. Schwarz and Dr. Mertz more than 30 years ago after they were unable to achieve anything more than insignificant results with non-food chromium supplementation with any consistency.

More than 10 years ago a study comparing chromium chloride and whole food chromium showed a "higher percentage of subjects responded positively" to modest whole food chromium supplementation for improved HDL, triglyceride and glucose levels even though the chromium chloride supplementation was at an almost ten times greater intake. The double-blind crossover study **'The effects of inorganic chromium and brewer's yeast supplementation on glucose tolerance, serum lipids and drug dosage in individuals with type 2 diabetes'** was published in the *Saudi Medical Journal*.

## Preliminary Conclusion

The first three criteria for the possibility of the medical 'metabolic syndrome' are in fact a result of the nutritional deficiency of the mineral chromium. Since there are now only two choices left (for now) then 'metabolic syndrome' cannot be determined by the three criteria necessary and is therefore a medical myth.

The so-called 'metabolic syndrome' is at best a nutritional deficiency disease akin to beri-beri, pellagra or rickets rather than a medical malady.

## The Obesity Conundrum

Last year mainstream medical and popular media noted a paradox of obese individuals being found with healthy blood sugar, cholesterol and HDL levels absent indications of diabetes and/or cardiovascular disease. **The 'Metabolically healthy obesity: different prevalence's using different criteria'** study was published in the *European Journal of Clinical Nutrition*.

This should not have been paradoxically surprising news, but rather both medically and nutritionally common knowledge – as well as plain, good science.

The long-term, medically renowned Framingham studies demonstrated that individuals on a traditional Mediterranean diet of fresh fruits and vegetables, whole grains and olive oil have low levels of the diabetes, cardiovascular disease and cancer that plague those making Standard American Dietary (S.A.D.) food choices.

Those healthy individuals on traditional Mediterranean diets are very often well nourished, i.e. obese.

In other words, if your obesity comes from liking to eat and you make wholesome food choices then those filled-with-nutrients-foods (such as an abundance of the minerals chromium, selenium and silica) then you have the nutrient density to support your girth.

On the other hand, if your obesity comes from liking to eat and you make S.A.D. food choices

almost entirely devoid of chromium, selenium and silica then you will not have the nutrient density to support your girth.

Yet, obesity has become a monster-under-the-bed bogeyman used for terrorizing Americans into medical submission to sick care rather than to focus upon the nutritional importance that is in fact foundational for actual health care.

In case you want more than just the information of this nutritional historian/researcher allow me to introduce the phederal government Centers for Disease Creationontrol and Promotionevention (CDC) that is both a pharmaceutical and media darling regarding the matters of metabolic syndrome, obesity and chromium.

## Obesity

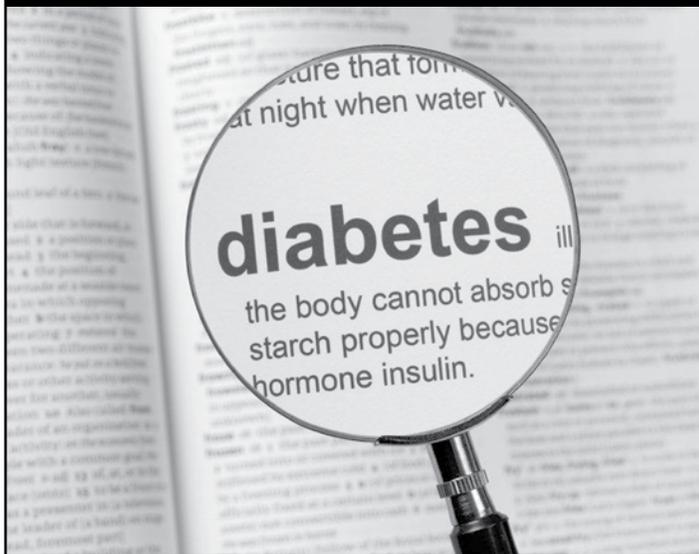
Early in 2011 the CDC released an extensive report on diabetes that received much media attention. It noted growth continuing at a high level for diabetes in Americans and focused on obesity as the crux of the matter.

This author proceeded to call up the massive CDC web site and searched the site for chromium. Amazingly there were more than 1,000 hits for chromium. Even more amazingly, citation after citation at the CDC web site dealt with chromium as a toxin even though it was admitted that the toxic form of chromium – hexavalent chromium or chromium VI – is produced only through industrial processing of chromium ore by man.

Hexavalent chromium is so toxic that it is so highly regulated as to not even be available in a supplemental form even by accident.

Nutritional chromium supplements even in the majority of forms that are very poorly utilized are so safe that a recent study noted the "350-fold difference between the acceptable daily intake and the calculated reference dose for humans of 70 micrograms per day seems without precedent with respect to other nutritional minerals." **'The safety and efficacy of high-dose chromium'** study was published in the medical journal *Alternative Medicine Review: a journal of clinical therapeutic*.

## Diabetes = Gross Chromium Deficiency



### Buried Treasure

Refining my CDC search to 'GTF chromium' resulted in just a single hit out of the more than 1,000 hits for chromium and oh, what a hit that it was. I hit the proverbial pay dirt.

Just one single page near the end of a document addressed chromium with a subheading of '**Essential Dietary Nutrient**'.

The first paragraph noted that chromium "is required to potentiate insulin and for normal glucose metabolism."

The first paragraph concluded, "Cr(III) deficiency has been associated with" and stacked the following items ...

1. Cardiovascular disease
2. Decreased lean body mass
3. Decreased sperm count
4. Elevated percent body fat
5. Fasting hyperglycemia
6. Glucosuria
7. Impaired fertility
8. Impaired glucose tolerance
9. Maturity-onset diabetes.

Note the first item listed of cardiovascular disease.

This is associated with chromium deficiency due to low HDL levels that follow. Low HDL is the single most important reflective marker for cardiovascular disease. Chromium deficiency also leads to high LDL and total cholesterol levels as well as increased triglyceride levels.

Then note the fourth item listed of elevated percent body fat, i.e. OBESITY.

So the first and eighth items listed by CDC as associated with chromium deficiency affirm my preliminary conclusion noted above that the so-called 'metabolic syndrome' is at best a nutritional deficiency disease akin to beri-beri, pellagra or rickets rather than a medical malady.

The fourth item listed by CDC as associated with chromium deficiency additionally reinforces my preliminary conclusion by dismissing the fourth criteria option for determining so-called metabolic syndrome leaving only high blood pressure all alone as a single determinant for a syndrome requiring at least three options.

"Studies have shown that the Cr(III) supplementation in deficient and marginally deficient subjects can result in the rapid reversal of many of the symptoms of chromium-deficiency," is the concluding sentence on the single nutritional page about chromium at the massive CDC web site.

So it is recognized on the CDC web site that rapid reversal of chromium deficiency symptoms is possible through supplementation with chromium.

Strangely, this astoundingly healthful nutrition information is hidden away near the end of a document titled 'Chromium (Cr) Toxicity' and published by the CDC **Agency for Toxic Substances and Disease Registry**.

Both metabolic syndrome and obesity as a cause for diabetes, cardiovascular disease and cancer are thus revealed to be medical mythology.

### Insulin Resistance/Insulin Sensitivity

Chromium has several decades ago been identified as a co-factor with insulin to facilitate glucose (sugar)

into the cell for both production of adenosine triphosphate (ATP) by the mitochondria of the cell for energy, and reduction of blood sugar levels.

Insulin is not some manic-depressive fighting in rebellion against its intended function at some times and crying in a corner at other times displaced from its intended role.

The hormone insulin is but one significant part of glucose metabolism requiring the mineral chromium as a partner for efficient glucose metabolism.

Insulin resistance and insulin sensitivity are representative examples of medical mythology.

Whenever you see or hear either insulin resistance, insulin sensitivity, metabolic syndrome or "obesity causes ..." replace those medical mythologies in each instance with the words "gross chromium deficiency" that represents scientific reality.

## In conclusion

It is a medical mindset that ignores – or refuses to address – nutrition that leads to such medical mythologies as addressed herein.

Sadly, the nutrition industry is beginning to embrace these medical myths produced by a medical mindset that promotes specialized products to combat "metabolic syndrome" that rarely contain whole food chromium.

Refined, bleached white flour in America is the single greatest component of **S.A.D.** food choices according to the federal government. More than 90 per cent of chromium is removed by this processing from the whole grains that normally contain this most vital of minerals in abundance.

About 99 per cent of chromium is removed from sugar cane – that also normally contains an abundance of chromium – when refined, bleached white sugar is produced. Rarely will you find white flour products that do not contain white sugar as well.

Consumption of each of these items has increased steadily from about 10 pounds per person per year

100 years ago to more than 150 pounds per person per year today. These two components make up about one-third of the American diet.

Chromium is the single, most important nutrient discovered to date though very few know very much about it and most of what the few know is wrong.

More than 30 years ago I came across human studies about chromium by the U.S. government revealing that it took from 205 to 290 micrograms of daily dietary chromium consumption "to maintain chromium equilibrium". In other words, this is how much is required so that you don't lose more chromium than you take in.

That is why I have recommended 300 micrograms of whole food chromium intake daily. This is to make sure that all that is needed of this most important of all nutrients is received with at least a little more to replenish depleted body storage. Since chromium is not quickly metabolized this amount should be broken up into smaller amounts taken more frequently – 100 micrograms thrice daily.

The average dietary chromium intake of Americans has fallen to less than 50 micrograms daily. The medical mindset, by way of the Institute of Medicine, therefore suggested reducing chromium intake standards and the phederal government complied by changing the recommended daily amount to less than the 50 micrograms daily currently consumed. This way the medical, scientific, and federal experts "so-called" can say that people generally get the recommended amount from the foods they eat.

Chromium intake standards have officially been reduced to the lowest common denominator.

By the way ... what sense does it make for the Institute of Medicine to advise on nutrition matters?

If nutrition matters at all then chromium nutrition is the most important matter of all.

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