

METABOLIC SYNDROME (SYNDROME X)



The Metabolic Syndrome (Syndrome X) is characterized by a group of metabolic risk factors which include:

- Abdominal obesity (excessive fat tissue in and around the abdomen)
- Atherogenic dyslipidemia (blood fat disorders – high triglycerides, low HDL cholesterol and high LDL cholesterol – that promote plaque buildups in artery walls)
- Elevated blood pressure
- Insulin resistance or glucose intolerance
- Prothrombotic state (e.g. high fibrinogen)
- Proinflammatory state (e.g. elevated C-reactive protein in the blood)

People with the metabolic syndrome are at increased risk of coronary heart disease and other diseases related to plaque buildups in artery walls (e.g. stroke and peripheral vascular disease) and type II diabetes. The metabolic syndrome has become increasingly common in the United States. It is estimated that over 50 million Americans have it. The dominant underlying risk factors for this syndrome appear to be abdominal obesity and insulin resistance. Insulin resistance is a generalized metabolic disorder, in which the body can not use insulin efficiently. This is why the metabolic syndrome is also called the insulin resistance syndrome.

Other conditions associated with the syndrome include physical inactivity, aging, hormonal imbalance and genetic predisposition. Some people are genetically predisposed to insulin resistance. Acquired factors, such as excess body fat and physical inactivity, can cause insulin resistance and the metabolic syndrome in these people. Most people with insulin resistance have abdominal obesity. The biologic mechanisms and the exact relationship between insulin resistance and metabolic risk factors are not quite fully understood and appear to be complex.

CRITERIA FOR DIAGNOSIS OF SYNDROME (SYNDROME X)

The American Heart Association and the National Heart, Lung, and Blood Institute recommend that Metabolic

Syndrome (Syndrome X) be identified as the presence of three or more of the following criteria:

- Elevated waist circumference:
 - Men – Equal to or greater than 40 inches.
 - Women – Equal to or greater than 35 inches
- Elevated triglycerides: Equal to or greater than 150 mg/dL
- Reduced HDL (“good”) cholesterol:
 - Men – Less than 40 mg/dL
 - Women – Less than 50 mg/dL
- Elevated blood pressure: Equal to or greater than 130/85 mm Hg
- Elevated fasting glucose: Equal to or greater than 100 mg/dL

With the vast number of Americans developing Metabolic Syndrome, concern continues to grow that this condition will present a massive public health problem. Identifying factors that could lower the risk of metabolic syndrome, especially in young people, could help individuals improve their health and well being.

MANAGEMENT OF METABOLIC SYNDROME (SYNDROME X)

The primary goal of clinical management of the metabolic syndrome is to reduce the risk for cardiovascular disease, type II diabetes, and stroke. Second is to reduce the major risk factors for cardiovascular disease: stop smoking and reduce LDL cholesterol, blood pressure and glucose levels to the recommended levels.

For managing both long and short-term risk, lifestyle therapies are the first-line interventions to reduce the metabolic risk factors. These lifestyle interventions include:

- Weight loss to achieve a desirable weight (BMI less than 25 kg/m²)
- Increased physical activity, with a goal of at least 30 minutes of moderate-intensity activity daily
- Healthy eating habits that include reduced intake of saturated fat, trans fat and cholesterol

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METABOLIC SYNDROME X PROTOCOL

In addition to the above listed lifestyle interventions, it is also helpful to introduce a nutritional supplementation program. Supplementation can have a significant impact on metabolic health. A number of nutritional supplements provide benefits for normalizing blood sugar and metabolic control:

SUPPLEMENT	DOSAGE
Mixed Carotenoids (from D. Salina)	4000 IU
Vitamin D (Cholecalciferol)	1000 IU
Calcium (Citrate tetrahydrate)	600 mg
Magnesium (Amino Acid Chelate)	300 mg
Chromium (Picolinate)	600 mcg
Vanadium (Sodium Metavanadate)	500 mcg
Green Tea Extract	250 mg
Fish Oil	3000 mg
Citrus Bioflavonoids	500 mg
DHEA	50 mg
Lipoic Acid	300 mg
Lutein	6 mg
Lycopene	5 mg
Quercetin	500 mg
Thiamin (Vitamin B1)	100 mcg
Riboflavin (Vitamin B2)	100 mg
Niacin (Niacinamide) (Vitamin B3)	100 mg
Pyridoxine hydrochloride (Vitamin B6)	100 mg
Folic Acid	400 mcg
Biotin	200 mcg
Pantothenic Acid (Vitamin B5)	100 mg
Methylcobalamin (Vitamin B12)	100 mg
Zinc (Chelazome Amino Acid Chelate)	25 mg
Copper (Amino Acid Chelate)	1 mg

RECOMMENDATIONS

The supplements in the above listed protocol are a general recommendation with an average dosage. By using the CustomVite program, our team of nutritionists has the ability to customize each supplement (or even add/delete) to a patient's unique nutritional requirements. In the case of Metabolic Syndrome (Syndrome X) the CustomVite program can help improve your patient's overall nutritional status by helping them to improve their blood sugar control and metabolic health naturally, without danger or stress to the body. This recommendation does not take into account drug-nutrient interactions. By having the patient provide us with their current prescriptions and supplements through our Lifestyle and Medical History Questionnaire, we can cross reference their information to determine if there are any interactions for their personalized formulation.