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Cardiometabolic Risk Syndrome

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Your Life Your Health

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In the prevention of diabetes, one of the most interesting "syndromes" and one which affects more people than are aware of it has been known by different names. It's not a deadly new virus, cancer, or heart disease. It's a disease, surprisingly enough, caused by your body's inability to make the most of the food you eat. It is estimated that over 43,000,000 Americans have this condition.

This syndrome was first called "Syndrome X"; then it was called "Insulin Resistance Syndrome," because it is thought that an abnormal response to insulin is the principle causative factor in the condition. However, because it is associated with a number of metabolic abnormalities, it became known as the "Metabolic Syndrome". It has also been called "The Deadly Quartet" in recognition of the four underlying elements of the condition.

Cardiometabolic Risk Syndrome

Because of this syndrome's contribution to the rise of heart disease, in 2006, the American Diabetes Association (ADA) embarked upon a campaign to change the name again to "Cardiometabolic Risk Syndrome". The ADA's Cardiometabolic Risk Initiative (CMRI) was a national effort that stresses the association between diabetes, heart disease, and stroke. CMRI encouraged physicians and the public to adopt cardiometabolic risk (CMR) as an umbrella term to help them better understand and manage all cardiovascular and diabetes risk factors.

SETMA's providers evaluate each patient for this condition with a tool which make it possible to complete the evaluation in less than one second. In fact, because there are at least seven different CMR formulae, SETMA completes three different calculations on each patient:

1. The World Health Organization's Equation – this formula is generally used in Europe.
2. The ATP III Diagnostic Criteria – this formula is generally used in the United States
3. The International Diabetes Federation Diagnostic Criteria – this formula is increasingly being used everywhere

More people will be shown to have the Cardiometabolic Risk Syndrome with the WHO criteria than with the other. SETMA will document and address the Syndrome if anyone one of the three is positive. For a complete, 92-page tutorial on this Syndrome and on SETMA's evaluation of it, please see the following link on SETMA's website: [EPM Tools - Cardiometabolic Risk Syndrome Suite of Templates Tutorial](#).

Whatever the condition is called, the symptoms are familiar to many people; they are:

- Feeling tired after you eat, and at other times when you shouldn't.
- Gaining a pound here and a pound there - and having difficulty losing them.
- Seeing your blood pressure creep up year after year, and
- Finding that your cholesterol does the same.

Do I have the metabolic Syndrome?

If you have three of the following five characteristics, you have the metabolic syndrome and should be aggressively treated to avoid the development of Type II Diabetes Mellitus.

1. Triglycerides above 150
2. Waist Circumference greater than 40 for males and 35 for females
3. Blood Pressure greater than 130/85
4. Fasting Blood Sugar above 110
5. HDL (good cholesterol) below 40 for males and below 50 for

females If you have the metabolic syndrome you must take steps to:

1. Lose weight
2. Stop smoking, if you do, and avoid second-hand smoke if you don't
3. Lower your blood pressure
4. Lower your cholesterol and triglycerides
5. Control your blood sugar
6. Decrease the inflammation in your body by medication and diet

These changes will be accomplished first by physical exercise and second by changing your eating habits.

Three major factors contribute to the "metabolic syndrome; they are:

- Inactivity
- Abdominal fat
- Insulin Resistance - your body's failing to respond as it should to insulin.

If you have abdominal obesity -- that is fat around your abdomen -- you are at very high risk for developing one or more of the following conditions, all of which have negative effects on your health and all of which are either a cause, an effect, or a cause and an effect of the Cardiometabolic Risk Syndrome:

- Insulin resistance
- Impaired Fasting glucose
- Type 2 Diabetes
- Hypertension
- Hyperinsulinemia

- Endothelial dysfunction -- leading to hardening of the arteries and heart disease
- Elevated levels of C-Reactive Protein -- reflecting a very high risk for heart disease and heart attack
- Other Inflammatory Markers, all measured by blood tests, such as:
 1. Uric Acid
 2. Plasminogen Activator Inhibitor I
 3. White Blood Cells
 4. Homocysteine
 5. Increased blood viscosity -- making you at risk for a stroke or blood clot
 6. Increased Fibrinogen levels -- this has the same affect as increased blood viscosity
 7. Ca⁺⁺/Mg⁺⁺
 8. Premature atherosclerosis

All of these complications are treated effectively by weight reduction and increased physical activity. While there are medications which can diminish the complications of abdominal obesity, nothing gets rid of it like weight reduction.

The presence of the "metabolic syndrome" has shown increased disease risk as follows:

- The metabolic syndrome increases risk for CHD and stroke 3 fold
- The metabolic syndrome increases risk of cardiovascular death 5 fold
- The metabolic syndrome increases the risk of development or progression of carotid atherosclerosis.

Treatment of the Cardiometabolic Risk Syndrome (CMRS)

The primary goal of treatment for CMRS is to prevent the development of type 2 diabetes, heart attack and stroke. Usually, this can be accomplished with an aggressive regimen of self-care strategies focusing on diet and exercise. You don't need to battle CMRS on your own, though. Your doctor may routinely monitor your weight and your blood glucose, cholesterol and blood pressure levels to ensure that lifestyle modifications are working. He or she may also prescribe medications to control the syndrome's individual risk factors, including:

Exercise and weight loss

Four principles should guide your exercise which is directed toward weight loss. They are:

- Regularly incorporate cardio-respiratory workouts that are low intensity for a longer duration. Rationale: The majority of the research shows that women derive a greater proportion of their energy expenditure from fats during low to moderate intensity exercise, relative to men. Thus, this will improve fat metabolism, particularly for females.
- Incorporate some cardio-respiratory workouts that are of higher intensity for a shorter period of time. This may best be realized with high intensity continuous training or perhaps with interval training. Rationale: As exercise intensity increases, the percent of

energy derived from fat decreases. However, the absolute amount of energy derived from fat is actually increased, for males and females. As exercise intensity increases, so does total energy expenditure (caloric expenditure). Even though a smaller percentage of the energy expenditure is coming from fat, more kilocalories of fat are burned, because there is greater absolute energy expenditure.

- Incorporate various modes of training, often referred to as cross-training. Rationale: The theory of multi-mode training implies that by training on different modes of exercise, the body is averted from getting overly fatigued and from overuse of the same muscles in the same movement patterns. This helps to thwart the occurrence of musculoskeletal system stress, aiding in the prevention of muscle soreness and injuries. Therefore, theoretically, a person will be able to safely do more work, more frequently, which equates to higher total energy expenditure and fat utilization.
- Vary the above workout designs regularly! Endeavor to find a satisfactory method where cardio-respiratory workouts vary either within each week, weekly, bi-weekly, or any combination of all. Rationale: Similar to the above, varying the workouts provides a new stimulus to the body's cardio-respiratory system in an effort to avoid the consequences of overuse exercise fatigue.

If you are overweight, lose weight; if you are obese, consider yourself in an emergency health condition. Get yourself involved immediately in a weight management program which majors on your responsibility for taking charge of your future. SETMA has such a program if you are serious about getting healthy.