

Metabolic Syndrome

Introduction

I chose this topic because it was something I was not familiar with and I was interested in learning exactly what it was. From the term “Metabolic Syndrome” I had an idea that it would include some type of problem with the metabolic system, but other than that, I knew nothing about it.

I was interested in finding out how it might be related to weight gain and obesity, who may be at risk of getting metabolic syndrome, and if it was a fatal condition or could be treated effectively. I was also interested in learning some statistics on Metabolic Syndrome.

Section 1: Background and Problem Statement

Metabolic syndrome is a general term used to describe various risk factors that are linked to excess weight and obesity. These five risk factors include having excess fat in the abdominal area, a higher than normal triglyceride level, a lower than normal HDL cholesterol level, high blood pressure, and high blood sugar. Metabolic Syndrome is also linked to more serious health issues such as heart disease, stroke, and diabetes.

- **Web site #1 Name:** National Heart Lung and Blood Institute
- **Web address:**
http://www.nhlbi.nih.gov/health/dci/Diseases/ms/ms_what.html
- **Background Information:**

Healthy People 2010 did not address Metabolic Syndrome; however the U.S. Department of Health & Human Services did address it through the National Heart Lung and Blood Institute (NHLBI). The NHLBI defines the problem, the risk factors, and gives an overview of how the risk factors can affect your life and lead to other health problems. It also gives an outlook on how many people in the U.S. have this condition, who is at risk, and how someone can prevent himself/herself from getting metabolic syndrome.

For people living with Metabolic Syndrome, the NHLBI lists the ways that it can be treated and how living with the disease differs from living

without it. For those who may be at risk of developing Metabolic Syndrome, there are many precautions that can be taken to prevent it.

If someone is not sure if he or she has Metabolic Syndrome, the NHBLI also explains the signs and symptoms of the condition.

- **Web site #2 Name: American Heart Association**
- **Web address:**
<http://www.americanheart.org/presenter.jhtml?identifier=4756>
- **Background Information:**

The American Heart Association is a non-profit organization dedicated to cardiac care in the U.S. Like the National Heart Lung and Blood Institute, the American Heart Association (AHA), defines what Metabolic Syndrome is, other health problems it may be linked to, and how it is diagnosed. The AHA also includes a section called “Recommendation for Managing the Metabolic Syndrome” where it gives advice on living with this condition and how one can reduce metabolic risk factors by making lifestyle changes.

The AHA also provides links to other topics related to Metabolic Syndrome, such as: blood pressure, cholesterol, diabetes, and obesity.

- **Web site #3 Name: Cleveland Clinic**
- **Web address:**
http://my.clevelandclinic.org//disorders/Metabolic_Syndrome/hic_Metabolic_Syndrome.aspx
- **Background Information:**

Cleveland Clinic is one of America’s top hospitals and research facilities. According to Cleveland Clinic (CC), Metabolic Syndrome is also known as Insulin Resistance Syndrome. CC defines Metabolic Syndrome as a collection of heart disease risk factors that increase the chance of one developing heart disease, stroke, and diabetes. CC also goes into more detail about the health risks.

CC provides excellent information for anyone who has Metabolic Syndrome and what other kind of health problems can develop, as well as how someone can reverse the condition by making changes to their daily life.

Section 2: Research

- **Web site #1 Name: PubMed**
- **Web address: <http://www.ncbi.nlm.nih.gov/pubmed/20212186>**
- **Summary of the research:**

The PubMed Web site came up with many results when Metabolic Syndrome was searched. The Department of Cardiovascular Medicine at Cleveland Clinic did a study on Metabolic Syndrome, its risk factors, and the progression of coronary atherosclerosis. Coronary atherosclerosis is a condition in which cholesterol builds up in an artery. Cleveland Clinic found that Metabolic Syndrome is linked to this condition since one of the risk factors includes not having enough HDL cholesterol, or good cholesterol, to remove cholesterol from the arteries.

- **Web site #2 Name: The Journal of the American Medical Association**
- **Web address: <http://jama.ama-assn.org/cgi/content/abstract/287/3/356>**
- **Summary of the research:**

The Journal of the American Medical Association (JAMA) posted a report on the prevalence of Metabolic Syndrome among U.S. adults. JAMA found that it is important to treat patients that have metabolic syndrome in order to prevent cardiovascular disease. This importance increased with age, and differed between genders.

JAMA concluded that results from a sample of U.S. adults showed that metabolic syndrome is highly prevalent.

- **Web site #3 Name: Diabetology & Metabolic Syndrome**
- **Web address: <http://www.dmsjournal.com/content/2/1/13>**
- **Summary of the research:**

Diabetology & Metabolic Syndrome is a database where you can find research that has been done on Diabetes and Metabolic Syndrome. In one study, the purpose was to find out if short-term nutritional counseling could reduce body mass index, waist circumference, and triglycerides in women who have Metabolic Syndrome.

The study was conducted with thirty three women who were 35 years or older. The results show that changes did occur, including a significant decrease in body mass index, and waist circumference. The

conclusion determined that short-term nutritional counseling did improve some factors of Metabolic Syndrome in adult women.

Section 3: Statistics

- **Web site #1 Name:** American Heart Association
- **Web address:** <http://www.americanheart.org/downloadable/heart/1260809371480FS15META10.pdf>
- **Summary of the statistics:**

The American Heart Association recently updated their statistics in 2010 on Metabolic Syndrome. Statistics on adult prevalence of Metabolic Syndrome show that prevalence, or number of people living with the condition, increased significantly with the increase in age. However, the prevalence of Metabolic Syndrome in adolescents ages 12–19 was 9.4 percent. Although that may sound like a small percentage, in reality 9.4 percent represents about 2.9 million adolescents.

- **Web site #2 Name:** National Health Statistics Report
- **Web address:** <http://cdc.gov/nchs/data/nhsr/nhsr013.pdf>
- **Summary of the statistics:**

Centers for Disease Control and Prevention (CDC), provided a National Health Statistics Report on the prevalence of Metabolic Syndrome in 2009. The purpose of this report was to look at the individual risk factors that cause Metabolic Syndrome.

The results were that approximately 34% of adults meet the criteria for Metabolic Syndrome. Males and females ages 40-59 were three times as likely to have the risk factors of metabolic syndrome as those ages 20-39. These results show that Metabolic Syndrome increases with age and with body mass index.

- **Web site #3:** PubMed
- **Web address:** <http://www.ncbi.nlm.nih.gov/pubmed/11790215>
- **Summary of the statistics:**

The U.S. National Library of Medicine published findings from the third National Health and Nutrition Examination Survey on the

prevalence of Metabolic Syndrome among U.S. adults. What was found was that the prevalence of Metabolic Syndrome increased from 6.7% among participants aged 20 through 29 years to 43.5% for participants aged 60 through 69 years. That is a significant increase. They also found that about 47 million U.S. residents have Metabolic Syndrome.

Section 4: Consumer Information

- **Web site #1 Name: Family Doctor**
- **Web address:**
<http://familydoctor.org/online/famdocen/home/common/heartdisease/basics/826.printerview.html>
- **Summary of the information:**

Family Doctor provides information on Metabolic Syndrome to the general public. It says that physical activity and a healthy diet can help reduce the risk of getting Metabolic Syndrome. As defined by Family Doctor, Metabolic Syndrome occurs when three out of the five risk factors are true. The more risk factors one has, the higher risk he or she is at risk for heart disease.

- **Web site #2 Name: Mayo Clinic**
- **Web address:**
<http://www.mayoclinic.com/health/metabolic%20syndrome/DS00522>
- **Summary of the information:**

If someone does have Metabolic Syndrome, lifestyle changes can delay or prevent the development of other serious health problems such as heart disease, stroke, or diabetes.

Metabolic Syndrome is linked to insulin resistance in which cells in the digestive system do not respond normally to insulin, so glucose cannot enter the cells. The body then produces too much insulin in order to help glucose into the cells, which results in high levels of insulin. Higher than normal levels of insulin can lead to diabetes when the body can no longer produce the right amount of insulin to control blood sugar.

- **Web site #3 Name: JAMA**
- **Web address:** <http://jama.ama-assn.org/cgi/reprint/295/7/850.pdf>
- **Summary of the information:**

Treating Metabolic Syndrome can be very difficult for many people. To treat this condition, lifestyle changes must be made. These changes include weight loss, regular exercise, stopping smoking, and reducing fat intake. In some, these modifications may not be enough and medications must be used to decrease blood pressure, lower triglycerides, and increase good cholesterol.

Section 5: Solutions to the Problem (or Issue)

- **Web site #1 Name: Mayo Clinic**
- **Web address:**
<http://www.mayoclinic.com/health/metabolic%20syndrome/DS00522/DSECTION=treatments-and-drugs>
- **Summary of the information:**

The Mayo Clinic is a Web site that provides the public with health information. According to the Mayo Clinic, the best ways to address the issue is for one to know where he or she stands as far as the risk factors are concerned. If one is close to having three or more risk factors for Metabolic Syndrome, some things that he or she can do to treat the problem is exercise more, lose weight, eat healthy, and quit smoking. The Mayo Clinic advises that one should monitor his or her weight, blood sugar, cholesterol, and blood pressure levels with his or her doctor.

- **Web site #2 Name: National Heart Lung and Blood Institute**
- **Web address:**
http://www.nhlbi.nih.gov/health/dci/Diseases/ms/ms_treatments.html
- **Summary of the information:**

The National Heart Lung and Blood Institute is brought to the general public's attention through the U.S. Department of Health & Human Services.

The major goal of treating Metabolic Syndrome is to reduce the risk of heart disease, stroke, and diabetes. Treatment is directed mainly at lowering bad cholesterol levels and high blood pressure. The secondary goal would be to prevent the onset of diabetes. Complications of diabetes often include heart and kidney disease, vision loss, and limb amputation.

- **Web site #3 Name: JAMA**
- **Web address: <http://jama.ama-assn.org/cgi/reprint/295/7/850.pdf>**
- **Summary of the information:**

The Journal of American Medical Association explains the treatments of Metabolic Syndrome, as well as states ways of preventing the condition in the first place.

Things that a person can do to prevent Metabolic Syndrome include exercising regularly throughout life; eating a healthy, balanced diet that is low in saturated fats and high in nutrients; not smoking; regular medical check-ups. To prevent children from getting Metabolic Syndrome, adults should encourage children to have daily physical activity and to make healthy food choices.

Conclusions:

Throughout my research, I learned a lot about Metabolic Syndrome. At first, I only had a slight idea of what it was, but once I learned what it was, I was surprised to find out that it included five risk factors. I also did not realize how many people in America are affected by Metabolic Syndrome.

I hope that others have learned that it is important to be aware of your health and to take care of your nutritional needs. Many of the risk factors are not physically observable, except for excess fat. High blood sugar, high blood pressure, etc. are not things that a person can tell just by looking at someone, which is why regular doctor's appointments are necessary in preventing Metabolic Syndrome.

Back to Betty C. Jung's Web site	http://www.bettycjung.net
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