Letter to Editor: Metabolic Syndrome and Lifestyle

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Dear Editor in Chief

Metabolic Syndrome (MetS) is a risk factor for several diseases and disorders such as Type 2 diabetes (T2D), Cardiovascular Disease (CVD), fatty liver, cholesterol gallstones, polycystic ovary syndrome, obstructive sleep apnea, and gout [1]. MetS is becoming a worldwide epidemic as a result of the increased prevalence of obesity and a sedentary lifestyle. Also, the prevalence of MetS is relatively high in the adult population. Four elements have been identified for MetS: central obesity, dyslipidemia (increased triglycerides and reduced High-Density Lipoprotein [HDL] cholesterol), hypertension, and glucose intolerance. However, the definitions used vary somewhat between ethnic groups.

The National Cholesterol Education Program Adult Treatment Panel (ATP III) defines MetS as the presence of three or more of the following conditions: abdominal obesity as Waist Circumference (WC) ≥102 cm for males or ≥88 cm for females (in Iran according to the guidelines of the Nutrition Improvement Office of the Ministry of Health and Medical Education, waist circumference ≥90 cm for men and women), systolic/diastolic blood pressure (SBP/DBP) ≥130/85 mm Hg or treatment of previously diagnosed Hypertension (HTN), fasting blood glucose level ≥100 mg/dL or already diagnosed T2D, HDL level less than 40 mg/dL in men and less than 50 mg/dL in women or specific treatment for this lipid abnormality, triglyceride level ≥150 mg/dL or particular treatment for this lipid abnormality [1, 2].

Some probable dietary risk factors, such as high intake of saturated fatty acids and low intake of omega-3 fatty acids also increase the risk of cardiovascular diseases. Besides, inadequate physical activity, smoking, and extreme alcohol consumption have been linked with an increased risk of central obesity and other metabolic abnormalities. Smoking and physical inactivity have been identified as crucial modifiable risk factors for MetS and its consequences. Several studies have shown that smoking is a significant risk factor for CVD and TD2, and it is also associated with metabolic abnormalities and increases the risk of MetS. Sedentary physical activity is one of the major modifiable risk factors for the MetS.

The second leading cause of premature morbidity and mortality is excess body weight gain due to the high-calorie diet and insufficient physical activity. Physical activity is associated with many health-related benefits, including a reduced risk of developing several chronic diseases such as obesity, CVD, TDM, and MetS. The adverse effect of physical inactivity on MetS is presumably due to reduced energy expenditure, which results

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in increased energy intake. Cross-sectional studies have reported an inverse association between physical activity and MetS. Most guidelines support that at least 150 minutes of moderate-intensity physical activity per week is associated with a lower prevalence of MetS [3].

Many studies have been conducted to examine the probable dietary patterns associated with MetS and its components. One of the dietary patterns associated with reducing MetS is the Mediterranean diet. This diet was first defined as the food usually consumed by the populations bordering the Mediterranean Sea. It is characterized by the consumption of fruit, vegetables, nuts, olive oil, fish, and low consumption of saturated fat, red meat, processed meat, refined carbohydrates, and whole fat dairy products. Adherence to the Mediterranean diet improves both physical and mental health and, accordingly, the quality of life. Also, it has been revealed that the Mediterranean diet may lower the risk of elevated Low-density Lipoprotein cholesterol (LDL), blood glucose values, and TG; and improves HDL levels. Foods rich in antioxidants (vitamin E, vitamin C, and β-carotene) exert beneficial influences on glucose metabolism and diabetes prevention. They are also associated with a reduction in the risk of developing CVD. Dietary fiber intake, especially cereals and whole grains, can manage and control body weight, blood glucose, and lipid profile [4].

Stress management is useful for preventing MetS. The increased cortisol production in chronic stress may lead to higher WC, which results in the accumulation of abdominal fat. Besides the hormone disturbance, endothelial dysfunction, and its related arterial compliance reduction were more severe in stressful persons.

A healthy lifestyle, including weight loss through calorie restriction, healthy food choices, increased physical activity, and smoking cessation has a remarkable role in preventing or delaying the onset of MetS or treating the condition when present. Lifestyle interventions such as a healthy diet and physical activity would be the first approach for improving the metabolic risk factors related to cardiovascular diseases. People should be encouraged to consume less junk food, more fruits, and vegetables, and to do a moderate level of physical activity (e.g. jogging, brisk walking, swimming, yoga, and bicycling) for 40-45 min at least 5 times in a week. In Conclusion, classic healthy lifestyle habits have proven results in reducing the risk of developing MetS [4, 5].

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