



## **THE PREVALENCE OF METABOLIC SYNDROME AMONG CHILDREN AND PREVENTIVE MEASURES.**

**Ruzmatova Hiloloy Kabilovna**

Central Asian Medical University.

### **Article history:**

### **Abstract:**

**Received:** September 20<sup>th</sup> 2024

**Accepted:** October 14<sup>th</sup> 2024

International studies on metabolic syndrome in school-aged children show that this syndrome is increasing in many developed and developing countries. Metabolic syndrome in children is identified through a combination of risk factors such as abdominal obesity, high blood pressure, dyslipidemia (abnormal blood lipid levels), and elevated blood sugar levels.

**Keywords:** Metabolic syndrome, Exogenous, Endogenous, Psycho-emotional, El Plato del Bien Comer, MyPlate, Eatwell Plate.

The prevalence of metabolic syndrome worldwide varies, with some studies finding that this rate ranges from 6% to 39% among children and adolescents. In 2020, metabolic syndrome was diagnosed in 2.8% of children and 4.8% of adolescents globally. This corresponds to approximately 25.8 million children and 35.5 million adolescents. The prevalence rate varies depending on a country's income level. In high-income countries, the prevalence was 2.2% among children and 5.5% among adolescents. In low-income countries, these rates were higher: 3.5% for children and 7.0% for adolescents..

In Northwestern European countries, the prevalence among children is 1.4%, while in Central Latin America, it is 8.2%. Among adolescents, the prevalence is 2.9% in East Asia and 6.7% in high-income English-speaking countries. In India, the prevalence of metabolic syndrome among adolescents is approximately 7.5%, with higher rates observed in boys compared to girls. Research indicates that children and adolescents from higher socio-economic backgrounds have an increased risk of metabolic syndrome, associated with lifestyle and dietary changes.

The highest rates among children were recorded in Mexico and Iran (12.3% and 8.8%, respectively), while among adolescents, the highest rates were reported in Spain (9.9%), the United Arab Emirates (9.8%), and Iran (9.0%).

In developing countries, the prevalence of this syndrome is linked to rising obesity rates. However, due to variations in diagnostic criteria across countries, there is no standardized global identification method. Both exogenous and endogenous factors play a role in the development of metabolic syndrome.

#### **1. Exogenous risk factors**

**Poor diet:** Eating foods that are high in calories, low in fiber, and high in sugar and fat contributes to obesity and insulin resistance.

**Physical inactivity:** Low physical activity leads to weight gain and decreased insulin sensitivity.

**Stress:** Psycho-emotional stress can stimulate the release of cortisol, which contributes to the accumulation of visceral fat.

#### **2. Endogenous risk factors**

**Genetic predisposition:** Hereditary factors affect the metabolism of fats and carbohydrates.

**Hormonal changes:** Hormonal imbalances, especially during adolescence, increase the risk of insulin resistance.

In recent decades, the consumption of fruits and vegetables has decreased among the Mexican population, while the consumption of fatty and animal-based foods, as well as sugary drinks, has increased. These dietary changes have led to an increase in overweight and obesity among children and adolescents.

Effective prevention requires a comprehensive approach that includes both community initiatives and individual lifestyle changes.

**Diet and nutrition:** High intake of refined carbohydrates, saturated fats, and sugars increases the risk of obesity and metabolic syndrome.

**Physical activity:** Insufficient physical activity leads to a decrease in metabolism and increased body weight.

**Bad habits:** Smoking and alcohol consumption can increase insulin resistance and disrupt lipid metabolism.

**Environmental factors:** Environmental pollution and exposure to endocrine disruptors can affect metabolism.

**Nutrition:** A balanced diet with an emphasis on vegetables, fruits, grains, and protein foods.

**Physical activity:** Regular aerobic exercise (e.g., running, swimming) helps control body weight and increases insulin sensitivity.

**Education and awareness:** Engage youth in healthy lifestyle education programs.

**Weight control and health monitoring:** Early detection of obesity, hypertension, and other risk factors.



Looking at the above global statistics, Mexico has the highest rate among children, and in order to prevent metabolic syndrome, the Ministry of Health of that country developed a visual guide in 2005 to teach the principles of healthy eating and promote a healthy lifestyle. This guide, "El Plato del Bien Comer," is based on the official Mexican recommendations for nutrition, and allows people to easily understand how to eat a balanced and varied diet.

"El Plato del Bien Comer" is divided into three main sections:

Fruits and vegetables (green) should make up a large part of your daily diet. They are a source of vitamins, minerals, and antioxidants, which help improve metabolism.

Grains (yellow) — include whole grains, such as rice, pasta, bread, and oats. They serve as a source of energy and are considered complex carbohydrates.

Proteins (red) — found in foods like meat, fish, eggs, legumes, and dairy products. Proteins are essential for growth, tissue repair, and immune function.

**Basic principles**

**Variety:** Each meal should include all three main food groups.

**Balance:** The diet should be balanced, meaning that all nutrients (protein, carbohydrates, fat) should be present in a certain proportion.

**Portion control:** It is recommended to control portion size to prevent overeating.

This model is designed to educate family members, schoolchildren, and other members of the community about healthy eating and help prevent chronic diseases such as obesity, diabetes, and cardiovascular disease.

"El Plato del Bien Comer" is a Mexican version of the "Good Eating Plate" and is similar to healthy eating guidelines used in other countries, such as "MyPlate" (USA) or "Eatwell Plate" (UK).

The US MyPlate is a dietary guide developed by the United States Department of Agriculture (USDA) to help develop healthy eating habits. MyPlate is a simple and easy-to-understand graphic indicator that helps you understand how to eat properly by dividing your food plate into five main food groups. It was introduced by the USDA in 2011 to replace the previous "Food Pyramid".

The UK's guide to healthy eating and good nutrition. The guide was officially launched in 2016 and was developed by the UK Department of Health to help people learn about healthy eating habits. The main aim of the Eatwell Guide is to provide guidance so that everyone can include a balanced, varied and healthy

diet in their diet. The UK approach is slightly different in structure and design. For example, the UK guide separates fats and fat substitutes into a separate group.

In order to prevent diseases caused by metabolic syndrome in our country, this is clearly reflected in the Resolution of the President of the Republic of Uzbekistan No. 6035 "On additional measures to ensure public health by further improving the effectiveness of medical preventive work".

In accordance with this resolution, systematic screening examinations are conducted to identify cardiovascular risk factors (hypertension, heart attack, stroke, diabetes mellitus and other risk factors) in citizens aged 40 and older.

Participation in the formation of personal and public hygiene, a healthy lifestyle among the population, identification of risk factors for non-communicable diseases in them through questionnaires and examinations and provision of individual advice. Organization and implementation of awareness-raising activities on the principles of healthy nutrition, the basics of physical activity, the importance of personal hygiene, and the avoidance of harmful habits.

This decision also shows that we, together with the population, need to pay great attention to healthy eating and physical activity.

#### **LIST OF REFERENCES:**

1. X.K.Рузматова "METABOLIC SYNDROME AND ITS PREVENTION IN UZBEKISTAN" NOVATEUR PUBLICATIONS INTERNATIONAL JOURNAL OF INNOVATIONS IN ENGINEERING RESEARCH AND TECHNOLOGY
2. X.K.Рузматова "ФАКТОРЫ РИСКА СИНДРОМА МЕТОБАЛА" EURASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES
3. O'zbekiston respublikasi prezidentining "Tibbiy profilaktika ishlari samaradorligini yanada oshirish orqali jamoat salomatligini ta'minlashga oid qo'shimcha chora-tadbirlar to'g'risidagi" 6035-sonli qarori.
4. "Global strategies to prevent obesity" — By World Health Organization (WHO)
5. "The effectiveness of school-based interventions for the prevention of childhood obesity" — International Journal of Behavioral Nutrition and Physical Activity