



THE IMPORTANCE OF PRELIMINARY AND PERIODIC MEDICAL EXAMINATIONS IN THE DETECTION OF METABOLIC SYNDROME IN EMPLOYEES OF ORGANIZATIONS AND THE GENERAL POPULATION

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Article history:	Abstract:
Received: October 20 th 2025 Accepted: November 14 th 2025	Metabolic syndrome is one of the key medical and social problems of modern society, due to the growing prevalence of obesity, type 2 diabetes, and cardiovascular diseases. This problem is particularly relevant in the working-age population, where chronic non-communicable diseases directly affect labor productivity and quality of life. The article examines the role of preliminary and periodic medical examinations as an effective tool for early detection of metabolic syndrome among employees and the general population. It analyzes modern diagnostic criteria, organizational aspects of medical examinations, and the possibilities for prevention and correction of identified disorders. The study concluded that systematic medical examinations are highly important for reducing the risk of complications and promoting a preventive healthcare model.
Keywords: metabolic syndrome, epidemiology, medical examinations, prevention, screening, employees of organizations, public health.	

RELEVANCE. In recent decades, there has been a steady increase in the prevalence of metabolic syndrome (MS) worldwide, which is considered a collection of interconnected metabolic disorders that significantly increase the risk of cardiovascular diseases and type 2 diabetes. According to the World Health Organization, metabolic syndrome is one of the leading causes of premature mortality and disability [4]. The problem of MS is particularly important among people of working age. Modern working conditions, characterized by physical inactivity, chronic stress, irregular eating habits, and disrupted work and rest schedules, contribute to the development of risk factors for metabolic disorders. In this regard, preliminary and periodic medical examinations are an important element of the system for the prevention and early diagnosis of chronic non-communicable diseases [8, 9]. The purpose of this review article is to analyze the significance of preliminary and periodic medical examinations in identifying metabolic syndrome among employees and the general population, as well as to justify their role in the system of preventive medicine.

MATERIALS AND METHODS. The work used a review and analysis of domestic and foreign scientific publications, recommendations of international medical organizations (WHO, IDF, AHA/NHLBI), as well as

regulatory and methodological materials devoted to the issues of metabolic syndrome diagnostics and the organization of medical examinations. Methods of comparative, analytical and system analysis were used.

RESULTS, DISCUSSION.

The concept and diagnostic criteria of metabolic syndrome

Metabolic syndrome is a complex of metabolic disorders that includes abdominal obesity, arterial hypertension, dyslipidemia, and carbohydrate metabolism disorders. The criteria of the International Diabetes Federation (IDF) and the National Cholesterol Education Program (NCEP ATP III) are widely used in clinical practice.

According to current views, the diagnosis of metabolic syndrome is established in the presence of three or more of the following signs:

- * abdominal obesity (increased waist circumference);
- * elevated triglyceride levels;
- * low levels of high-density lipoproteins;
- * high blood pressure;
- * high fasting blood glucose levels or type 2 diabetes [1, 2, 3, 5, 6, 7].

The unification of diagnostic criteria is important for mass preventive examinations, as it allows for the comparability of data and improves the efficiency of screening.



Preliminary and periodic medical examinations: goals and objectives

Preliminary medical examinations are conducted at the time of employment and are aimed at assessing the employee's health status, identifying contraindications to performing professional duties, as well as early signs of chronic diseases and risk factors.

Periodic medical examinations are conducted at a fixed frequency and have the following goals:

- * dynamic monitoring of the employees' health status;
- * early detection of metabolic syndrome and its components;
- * prevention of occupational and general somatic diseases;
- * assessment of the effectiveness of previously carried out preventive measures.

Thus, medical examinations perform not only a control function, but also a preventive one.

The role of medical examinations in the detection of metabolic syndrome

Medical examinations allow for the detection of metabolic syndrome at the preclinical stage, when there are no subjective complaints from the examinees. As part of the examinations, anthropometric indicators, blood pressure, and laboratory studies of lipid and carbohydrate metabolism are measured.

The results of numerous studies indicate that a significant number of cases of metabolic syndrome are detected during preventive examinations. This is especially true for individuals who do not seek medical assistance on their own. Early detection of MS creates conditions for timely intervention aimed at correcting lifestyle and preventing the development of severe complications.

Preventive value and subsequent measures

The detection of metabolic syndrome during medical examinations should be accompanied by the development of an individual prevention and treatment plan.

The basis of preventive measures includes:

- * normalization of body weight;
- * increasing the level of physical activity;
- * rationalization of nutrition;
- * correction of blood pressure and lipid profile;
- * control of blood glucose levels.

At the organizational level, the implementation of workplace health promotion programs is effective, which include educational activities, creating conditions for physical activity, and fostering a healthy lifestyle culture [8, 9].

Despite the obvious importance of medical examinations in detecting metabolic syndrome, there are certain limitations in practice. These include

insufficient equipment in medical facilities, variability in diagnostic criteria, and low adherence to preventive recommendations by healthcare professionals. Therefore, further improvement of organizational measures is required.

CONCLUSION. Thus, preliminary and periodic medical examinations are an effective tool for early detection of metabolic syndrome in employees and the general population. Their systematic implementation helps to reduce the prevalence of risk factors, prevent the development of cardiovascular diseases and diabetes, and improve the quality and duration of life. Integrating medical examinations with preventive programs at the workplace is a promising area for the development of preventive medicine.

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