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## Implementation of selected preventive examinations by students of the Medical University of Warsaw

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### Abstract

**Aim:** Determination of frequency of performing preventive examinations by students of Medical University of Warsaw. **Materials & Methods:** Study was carried use of an original survey questionnaire, on group of 1000 students of Medical University of Warsaw, in period 03.2018-12.2018. **Results:** Among respondents dominated: women (73%), aged 19-25, studying public health (68%). **Conclusion:** Depending on type of examination, students performed them at different intervals. The future medical staff should be a model for the general public, the role of prevention should be made known to respondents.

**Key words:** prophylactic examinations, students, prevention

## **Introduction**

Appropriate prevention is a chance for early detection of the disease. In many cases, it has a decisive impact on the effectiveness of therapy. Systematic research is a sign of responsibility and a reasonable approach to one's health. Over the past 11 years, the number of Poles who explain their lack of concern for their own health has been reduced by over-working (from 40 to 33%). However, the number of those who find time for preventive examinations increased (from 29 to 33%) [1].

## **Aim**

Determination of frequency of performing preventive examinations by students of Medical University of Warsaw.

## **Materials and Methods**

The study was performed between March 2018-December 2018. A diagnostic survey was applied as a method of data collection, supported by an anonymous questionnaire. The questionnaire comprised 36 closed-ended single-choice questions. Participation in the study was voluntary. The participants' anonymity was guaranteed. All students of medicine and public health were invited to participate in our study.

A consent of the Ethics Committee was not required for the presented research. According to the statement of the Ethics Committee of the Medical University of Warsaw: "The Committee does not provide opinions on surveys, retrospective studies, or other non-invasive research" [2].

Descriptive statistics and variables distributions were used.

## **Results**

The study enrolled a total of 1000 students of Medical University of Warsaw (73% female, 27% male). Mean age of the study group was 21.7 years (minimum age: 19 years, maximum age: 25 years). Persons aged 23 years was the most numerous among the respondents (28%). The study group comprised of public health (68%) and medicine (32%) students. Most study participants was a third-year students (32%). The majority of the analyzed population was students of bachelor's studies. Only 19% of the students suffered

from chronic disease. The dominant causes of chronic disease were hypothyroidism (6%) and gastroesophageal reflux disease (4%). The characteristics of study population was summarized in Table 1.

**Table 1 Charactericts of study population**

<b>Variable</b>	<b>%</b>
<b>Gender</b>	Female – 73% Male – 27%
<b>Age</b>	Mean: 21.7, range: 19-25 yrs
<b>Field of study</b>	Public health – 68% Medicine – 32%
<b>A year of study</b>	I – 13% II – 22% III – 32% IV – 17% V – 16%
<b>Type of studies</b>	Bachelor's - 40% Master's - 28% Uniform - 32%
<b>Prevalence of chronic disease</b>	Yes – 19% No – 81%
<b>Chronic disease</b>	Hypothyroidism - 6% Insulin resistance - 1% Hashimoto's disease - 1% Celiac disease - 1% Psoriasis - 1% Gastroesophageal reflux disease - 4% Juvenile arthritis - 1% Asthma - 1% Allergy - 1% Multiple Sclerosis - 1% Trigeminal neuralgia - 1%

When asked whether the surveyed had ever performed morphology, as many as 98% of respondents answered positively. The largest number of respondents said that the survey was carried out every year - 58%.

Only 49% of students declared that they had ever performed an electrolyte level test. As many as 47% of the surveyed, this survey is carried out every year.

Performing a blood glucose test, declared 70% of respondents. Respondents admitted that 48% of them carry out this study every year.

As many as 91% of the respondents admitted that they had a weight / height measurement. Persons performing the research every year constitute 76% of the respondents.

As many as 96% of respondents declared that they had performed blood pressure / pulse measurements. About 74% make these measurements every year.

Only 81% of the respondents had a urine test. Regular, or every year, urine tests were signaled by 37% of respondents.

Only 47% of students had total cholesterol levels. However, every year this survey is carried out by half of the respondents (50%).

Only 36% of respondents answered that they had a blood triglyceride test. Students answering this question positively answered that 59% of them are examined every year.

The research on cholesterol - HDL / LDL fraction was carried out by 43% of respondents. The same percentage of students - 43% of respondents carry out the survey every year.

As for the issue of dental examination, 95% of the respondents gave a positive answer. As many as 87% visit a dentist every year

83% of respondents had an ophthalmological examination. Of those who had a pattern test, 43% of them answered that they were tested every year.

Only 33% of respondents answered that they had ever performed an abdominal ultrasound examination, and 30% of respondents indicated that they did it every year.

Only 54% of women answered that they had a cytology performed at least once in their lifetime. Every year, cytological examination is performed by 60% of women surveyed.

Only 25% of the surveyed women answered that they had ever had a breast ultrasound scan. Regarding regularity, 53% of women perform the test every year.

Due to the fact that there were students diagnosed with chronic diseases in the study group (19%), they admitted that they systematically carry out a medical examination monitoring the course of their illness.

Almost 3/4 of respondents (72%) performed research in state institutions.

Table 2 presents the frequency of testing among students.

## **Table 2 Performing preventive examinations**

<b>Test</b>	<b>Execution</b>	<b>Frequency of execution</b>
<b>Morphology</b>	Yes – 98% No – 2%	Every 1 year - 58% Every 2 year - 19% Every 3 year - 10% Less often -13%
<b>Electrolites</b>	Yes – 49% No – 51%	Every 1 year - 47% Every 2 year - 27% Every 3 year - 8% Less often - 18%
<b>Sugar blood</b>	Yes – 70% No – 30%	Every 1 year - 48% Every 2 year - 12% Every 3 year - 19% Less often - 21%
<b>Height/ body mass</b>	Yes – 91% No – 9%	Every 1 year - 76% Every 2 year - 4% Every 3 year - 4% Less often - 16%
<b>Blood pressure / pulse</b>	Yes – 96% No – 4%	Every 1 year - 74% Every 2 year - 4% Every 3 year - 4% Less often - 18%
<b>General urine test</b>	Yes – 81% No – 19%	Every 1 year - 37% Every 2 year - 30% Every 3 year - 9% Less often - 24%
<b>Total cholesterol</b>	Yes – 47% No – 53%	Every 1 year - 50% Every 2 year - 24% Every 3 year - 10% Less often - 16%
<b>Triglicerides</b>	Yes – 36% No – 64%	Every 1 year - 59% Every 2 year - 17% Every 3 year - 7% Less often - 17%
<b>Cholesterol – LDL/ HDL</b>	Yes – 43% No – 57%	Every 1 year - 43% Every 2 year - 24% Every 3 year -14% Less often - 19%
<b>Dental examination</b>	Yes – 95% No – 5%	Every 1 year - 87% Every 2 year - 8% Every 3 year - 1% Less often - 4%
<b>Ophthalmic examination</b>	Yes – 83% No – 17%	Every 1 year - 43% Every 2 year - 24% Every 3 year - 12% Less often - 21%
<b>Abdominal ultrasound</b>	Yes – 33% No – 67%	Every 1 year - 30% Every 2 year - 7% Every 3 year - 26% Less often - 37%
<b>Cytology</b>	Yes – 54%	Every 1 year - 60%

	No – 46%	Every 2 year - 25% Every 3 year - 9% Less often - 6%
<b>Breast ultrasound</b>	Yes – 25% No – 75	Every 1 year - 53% Every 2 year - 0% Every 3 year - 20% Less often - 27%
<b>Other tests</b> - videodermatoscopy - gastroscopy - chest X-ray - spirometry - magnetic resonance - thyroid ultrasound - PMR test	According to the doctor's instructions	
<b>Place of testing</b>	private facility – 28% state facility – 72%	

## Discussion

The maxim has been known for a long time that "prevention is better than cure". Despite this, preventive examinations are performed by Poles with unsatisfactory frequency. The ARC Market and Opinion company conducted a study in which verification was undertaken regarding the performance of preventive examinations and the well-being of Poles. It has been shown that every third Pole undertakes preventive examinations, and every 10th citizen does absolutely no action to control health [3].

The report of the Central Statistical Office "Health and Health in 2016" showed that among the reasons for not using preventive examinations Poles most often indicated: a long waiting time for an appointment (23.2%), no referral (19.1%) and fear (14.2%) [4]. Another reason for not carrying out preventive examinations is costs. The report shows that in 2016 laboratory tests were mostly financed by the National Health Fund or prevention programs, which was dependent on the type of research and was in the 50.8% range (genetic testing) - 81.7% (study PSA level) [4]. In the own study, also a significant part of the respondents - 72% admitted that prophylactic examinations were performed as a part of financing by a public payer.

The above report shows that 46% of respondents in 2016 had at least one laboratory test. The most frequently indicated were morphology (42.3%), followed by urinalysis (35.7%), and cytology was the third (18.2%) [4]. In the own study, the students declared the most the laboratories had ever performed morphology (98%), urinalysis (81%) and blood glucose (70%). Blood morphology was also a basic study performed by students from

selected universities from Suwałki, Grodno and Lviv [5]. A general blood test is useful in diagnosing many diseases, including anemia, inflammation, and individual elements are taken into account in the diagnosis of specific diseases. On the other hand, the next urinalysis is indicated in the diagnosis of kidney disease, urinary tract, complications of the so-called civilization diseases (eg diabetes, hypertension, obesity) and diseases of the so-called systemic.

Considering the implementation of non-invasive tests, in the own study 96% of the respondents had blood pressure / pulse measured, 95% underwent dental examination and 91% measured height / weight. From the 2016 report, it is known that from imaging studies, the respondents most often had an ultrasound scan (13.5%) [4].

Poles underestimate the importance of preventive examinations, as demonstrated by a study conducted by the Chair and Clinic of Internal Diseases, Hypertension and Angiology of the Medical University of Warsaw [6]. It showed that Poles have a problem with performing basic prophylactic examinations - they do not measure blood pressure, they do not mean cholesterol or blood glucose levels, and they report to the doctor in case of ailments. Interestingly, women care more about their health.

In our own study, we asked if students had ever performed individual tests and their frequency. It should be emphasized that the studied population were students, young people aged 19-25, and the recommended frequency of performing diagnostic tests depends, inter alia, on from age. In addition to general recommendations, various prevention programs are implemented in our country, aimed at early detection of the most common diseases in Poland.

In our study, every year, as many as 87% of respondents performed a dental review. Guaranteed dental services for all patients in our country, regardless of age, include a dental examination with oral hygiene instructions once a calendar year and a medical check up to 3 times a calendar year [7].

I am also happy that 76% of respondents, every year, measured their height and weight. Overweight and obesity are a risk factor for civilization diseases, including such as diabetes, hypertension or cancer, so systematic measurements of the above parameters are important in their prevention.

At the similar level, the measurement of arterial blood pressure / heart rate in the study population was made, 74% of students declared their examination every year. These measurements can be made at home, and the regularity of their performance allows you to take care of your own health.

In the own study, they were asked to perform selected laboratory tests helpful in the prevention of, among others cardiovascular diseases - total cholesterol, LDL / HDL cholesterol and triglycerides. Young people often erroneously think that a stroke or stroke is a disease associated with a later life and do not perform the above tests systematically. Every year, 59% of students performed triglyceride levels, 50% of total cholesterol, and 47% of LDL / HDL cholesterol. People aged 20-30 years should perform lipid profile every 3-5 years, if the results are correct. However, people from so-called risk groups, among others obesity, hypertension, diabetes, smoking cigarettes or relatives suffering from cardiovascular diseases must do this research more often [8].

The tests that should be performed once a year are morphology, blood glucose level and urinalysis. In our study, only 58% of students performed morphology every year, 48% examined blood glucose every year, and 37% carried out a general urine test.

Visual disturbances, tearing, burning or red eyes are the main reasons patients go to the ophthalmologist. Although eye examination does not hurt, usually many people delay their visit until they feel clear symptoms. In young people, periodic ophthalmologic examination should be performed at least every 2 years. People over 40 should control their eyesight at least once a year, even if they do not notice any disturbing symptoms. With age, we become more susceptible to changes in the bottom of the eye, cataracts and glaucoma. In the own study, 43% of students underwent eye examination every year.

In the age group from 30 years of age, it is recommended to determine the level of electrolytes in the blood every 3 years. In the surveyed population, 47% of respondents declared that they would perform this study every year.

Considering the frequency, every year only 30% of the respondents performed ultrasound of the abdominal cavity. Ultrasound examination allows to assess parenchymal organs, their anatomical structure and defects, shape and size of the organ being examined. As a rule, it is done when reporting specific ailments.

In Poland, for many years, a preventive program for cervical cancer has been carried out by performing a cytological examination. It is addressed to women aged 25-59 who have not had cytology during the last three years; with risk factors (HIV-infected, immunosuppressive, HPV-infected, high-risk types) that have not had cytology in the last 12 months [9]. In the own study, 60% of students performed cytology every year, while only 9% every three years.

Breast ultrasonography is not used in practice in screening tests - only as a complementary element of in-depth diagnostics of pathologies detected during



mammography. This method is extremely valuable for the assessment of breasts with high glandular density - typical especially for young women, before menopause, active hormonally, and should be the method of choice in these groups of patients. In the own study, 53% of respondents admitted that they carry out this study every year.

### **Conclusion**

Depending on type of examination, students performed them at different intervals. The future medical staff should be a model for the general public, the role of prevention should be made known to respondents

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