

LVIV NATIONAL MEDICAL UNIVERSITY N.A. DANYLO HALYTSKY

Department of Physical Training and Sports Medicine

Approved at the methodical meeting of
the department of Physical training and sports medicine
Head of the department

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GUIDELINES

in the discipline

PHYSICAL REHABILITATION AND SPORTS MEDICINE

for 3th year students

training of specialists of the second (master's) level higher education in the
field of knowledge 22 "Health" specialty 221 "Dentistry" for independent work
in preparation for practical classes

Topic 8 *"Application of means of physical rehabilitation for the purpose of
prevention and correction of occupational diseases in dentistry."*

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Methodical guidelines are made in accordance with the requirements of the curriculum in the discipline "Physical Rehabilitation and Sports Medicine", compiled to train specialists of the second (master's) level of higher education in the field of knowledge 22 "Health" specialty 221 "Dentistry".

According to the curriculum, the study of physical rehabilitation and sports medicine at the medical faculty is carried out in the 3d year of study.

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1. Scientific and methodological substantiation of the topic.

The work of a dentist is hard and stressful. In the daily practice of the dentist there are unconscious violations of the rules of occupational hygiene, which lead to undesirable consequences.

Proper provision of working conditions (lighting, working posture, compliance with the regime of work and rest) will prevent the occurrence of occupational diseases of the dentist.

2. Learning objective

2.1. The student must know:

- Clinical and functional justification for prevention and treatment of occupational diseases by a dentist;
- the impact of professional activity on the physical condition of the doctor-dentist;
- the value of choosing the optimal working position;
- exercises for the prevention and treatment of occupational pathology dentist.

2.2. Be able:

- choose the optimal working position;
- rationally plan working hours and rest.

2.3. Master practical skills:

1. Be able to choose the optimal working position.
2. Perform physical exercises during the day for the prevention of occupational diseases
3. Be able to carry out treatment and prevention measures for prevention of diseases that occur in physicians-dentists.
4. Rationally plan working hours and rest.

3. Student tips:

To avoid fatigue at work, the dentist must follow the following rules:

- 1) during the first hour should be engaged in simple and short-term work;
- 2) after 2 hours it is advisable to take a break for 10-15 minutes;
- 3) have a 2-3 minute rest between patients;
- 4) in the middle of the working day you should take a break for 30-60 minutes.

Working conditions and efficiency of the dentist. Of great importance for productivity has a doctor's workplace.

Rational distribution of furniture, regular ventilation premises during the working day, provide acceptable conditions work.

The air temperature in the room should be 18-20 ° C, relative humidity 30–45%. The walls and ceiling are painted in light colors.

Occupational diseases of a dentist, causes of their occurrence, methods of elimination, prevention

The dentist manipulates most of the working time tools. It is generally accepted that irrationally thin handles instruments cause strain and muscle spasm. For the prevention and treatment of osteoarthritis and curvature of the fingers the following exercises are recommended:

- 1) the fingertips of both hands are folded and the hands many times out efforts move towards;
- 2) the thumb with effort slides from the base of the finger to its tip (perform for all fingers);
- 3) fingers folded into a fist, thumb inside. Squeezing fist, slowly remove the thumb.

Dupuytren's contracture develops in individuals who are constantly work with hard tools, is quite often observed and in dentists, because a large number of tools (forceps, tips) constantly press on the same place of the palm. On the middle, ring finger or little finger occur rope-like nodular

thickenings of the palm, leading to contractures of the main and average joints. At the same time fingers bend, sometimes so much that the nails grow into the palm. Hot air showers and hot baths are used for treatment for the palm, paraffin, ozokerite, passive stretching at night. A cuff is proposed - a steel tape 2 cm wide, which is sewn into a tight belt and placed on the palm or back of the brush. Thanks to the steel strap, the excess pressure on individual parts of the fascia is evenly distributed over a larger area of the palm. To unload the right hand, you can train the left to perform all the work associated with high stress.

Tendovaginitis - a disease of the joint bag in places tendon attachment, which develops as a result of prolonged, often repetitive tension of individual muscle groups in the unnatural, forced position. At the appearance of its first signs should be done break in work. The combination of tendovaginitis with Raynaud's disease leads to occupational disability. Fingers become cold, bloodless, pale. In severe cases, gangrene develops. Tendovaginitis and circulatory disorders are especially common dentists who work without a nurse. Working without a nurse is not only slow and unprofitable, but also dangerous for the doctor's health. Treatment of tendovaginitis. Thermal procedures, lidase electrophoresis or ronidase, massage, rest of the affected hand. In heavy cases, surgery is indicated. If the main etiological factor is not eliminated – systematic overstrain of the finger, the process progresses and does not give in conservative treatment, even in young people.

The effect of vibration on the body of the dentist.

To vibration sources manual mechanized machines of rotational action belong: drill and, directly, the dental tip. Prolonged exposure to vibration combined with the complex adverse factors (static muscle loads, noise, emotional strain) can cause persistent pathological disorders in the body, the development of vibration disease.

Therapeutic and preventive measures:

- 1) reducing the intensity of vibration due to design improvements;
- 2) control over the serviceability of equipment: during operation and wear there is a pronounced increase in vibration;
- 3) compliance with the regime of work and rest;
- 4) treatment-and-prophylactic and general health-improving measures:
 - a) thermal procedures for hands in the form of hydrotherapy (baths);
 - b) massage and self-massage of hands and shoulder girdle;
 - c) industrial gymnastics;
 - d) UFO;
 - e) vitamin prophylaxis and other tonic procedures (psychological relief room, oxygen cocktail, etc.).

Diseases associated with prolonged static load. The work of a dentist combines static work and mental activity. Almost every second dentist over the age of 45 is convinced by his own example that disorders of the musculoskeletal system are the main pathology directly related to the chosen specialty. If during the first 15 years of operation joint diseases are noted by 10-15% of dentists, then with a professional experience of 26-35 years such diseases occur in 25-45%. Insufficient access to the operating field, poor visibility forces doctors to take an awkward, unnatural position that is forced to persist for a long time. Static disorders affect ligaments and muscles. At long unilateral loading at first muscles get tired, then stretch and, as a result, joints weaken and bones shift. There are so-called stress diseases of skeletal muscles. As a result of improperly organized mode of work and rest dentists, suboptimal organization of the workplace, many hours of work in an awkward position may be the following diseases: osteochondrosis of the cervical, thoracic and lumbar spine, neuritis and myalgia of the upper extremity, osteoarthritis of the shoulder, elbow and small joints of the hand.

Occupational stress, metabolic and neurohumoral reactions.

Increased responsibility, lack of information and time to make the right decision leads to a

high degree of neuro-emotional tension. This leads to tachycardia, increased blood pressure, changes in the ECG, increased pulmonary ventilation and oxygen consumption, fever. In conditions of psycho-emotional stress in stressful situations the following functional disorders may occur:

- muscular symptoms (tension and pain);
- gastrointestinal symptoms (dyspepsia, vomiting, heartburn, constipation);
- cardiovascular symptoms (rapid heartbeat, arrhythmia, pain in the chest);
- respiratory symptoms (shortness of breath and hyperventilation);
- CNS symptoms (neurotic reactions, insomnia, weakness, fainting, headaches).

Among the cardiovascular symptoms are most often noted coronary insufficiency and hypertension.

Elimination and prevention of violations

To avoid these phenomena, you need to give up excessively tense body position and replace it with a more comfortable one. The main reasons for forcing a doctor to take the wrong body position are haste and insufficient attention to the correct individual adjustment of the dental chair for each patient.

To properly install the chair, consider the following:

- 1) growth and weight of the patient;
- 2) growth and weight indicators of the doctor;
- 3) visual acuity of the doctor;
- 4) illumination.

The correct position of the doctor is considered, in which the head, neck, chest and abdomen are on the same vertical, and the main burden accounts for the skeleton, while the muscles and ligaments are loaded in minimally. In this position, the functions of the respiratory, circulatory, digestion are in favorable conditions.

Occupational foot diseases in dentists

It has been proven that a dentist should work sitting almost all working hours. Standing work, which is not accompanied by various muscular movements, disrupts venous outflow, causes blood stasis in the veins of the lower extremities. Veins dilate, their valves do not function properly, blood circulation slows down and, as a result, there are circulatory disorders in the vessels not only of the extremities but also of the abdominal cavity. There are occupational injuries of the foot: curved, flat or split feet due to prolonged maintenance of the vertical position of the body. Insufficiency of supporting tissues, muscles, ligaments, bones and develops joints. Wrong shape of shoes (narrow-toed) causes foot disease. Shoes, stockings and socks should not be disturbed blood circulation in the lower leg and foot. They need to be chosen with this calculation so that the toes can move freely. At long standing and turn of feet, except flat feet develops the so-called valgus foot with a protruding inner ankle.

For the treatment and prevention of feet and legs, the following is proposed a set of exercises: bending and unbending the toes, grabbing and lifting the toes from the floor, walking on heels, on river sand, on rocks, running on pebbles in the water, exercises with a stick on wheels, etc. Massage and self-massage of feet are successfully applied. It is advisable to make a warm foot bath beforehand. Then make massage movements to relax the ankle, arch of the foot, toe massage, relaxing shin massage. It is useful to walk barefoot on a hard wet sandy beach, stand or run on a beach covered with small pebbles.

Occupational diseases of the spine in dentists

The need to maintain a certain position of the body with a tilt for a long time the torso affects the spine. Vertebrae are displaced and diverge, the spine acquires an atypical configuration. Tension of the ligament is accompanied compression of the intervertebral discs, blood vessels and nerves on the side of the formed lordosis. There are pains in the neck, shoulders, back, buttocks, passing into the extremities. Occipital and neck pain, neuralgia of the humeral plexus, intercostal space neuralgia,

Scaleus syndrome, neck immobility, shots and back pain, sciatica. Root, motor, sensory and autonomic disorders develop.

Massage, warm baths and medical are used for treatment gymnastic exercises.

The main ways to combat fatigue:

- 1) rational organization of the workplace and furniture;
- 2) therapeutic gymnastics;
- 3) rational mode of work and rest;
- 4) industrial gymnastics;
- 5) physiological unloading rooms.

More than 80% of working time, the dentist is forced to work in a sitting position. After a hard day's work is necessary apply stress relievers. It is recommended to take a bath with a water temperature of 35-36 ° C for 10-15 minutes. In the water you can add valerian, horsetail. After the bath, it is important to keep your feet warm (use a blanket, warmer). The bed should not be too soft, the blanket - light.

Methods of combating fatigue

After work, in the evening, it is useful to take a warm shower that helps relieve fatigue and stress.

It is recommended to relax the muscles and nervous system light self-massage to improve capillary circulation, which helps the appearance of a subjective feeling of freshness.

Massage has a positive effect on the tone of the skin, muscles, vascular and nervous systems, has a reflex effect on internal organs.

All types of hardening, motor activity, sports are useful.

Together with training of muscles trains also vascular system, becomes economical breath that leads to increase of working capacity of cardiac activity.

Allergic diseases of the hand's skin of dentists

In dental practice, doctors, nurses, dental technicians have to be in constant contact with various allergens:

medicinal and chemical substances, which include novocaine, antibiotics, polymers, synthetic materials, etc.

The most common skin diseases of allergic nature are contact dermatitis and eczema. They also include toxicoderma, urticaria, dermatoconiosis.

Epidermites (dry skin) caused by regular contact with water and degreasers are considered an allergic predisposition.

Eye diseases in dentists

Daily and seasonal fluctuations of natural light require the use of artificial light instead of natural or in addition to it.

Given the fact that the work of a dentist in the conditions polyclinic requires a lot of strain on the eyes, the lighting of the offices should be increased.

Many doctors associate the appearance of headaches, irritability from monotonous noise, "flicker" and "transfusion" moving objects with fluorescent lighting and note that it gives a bluish color to the mucous membranes and skin. After 10 years of practice, 80% of dentists report eye diseases. Therapists have a high risk of developing conjunctivitis. It is recommended to wear goggles when preparing teeth and removing dental plaque.

Hygienic requirements for industrial lighting

With insufficient lighting and visual stress, the state of vision functions is at a low functional

level, in the process of performing work visual fatigue develops, the overall decreases efficiency and productivity, the danger increases injuries. Low light contributes to the development of myopia.

Prevention: a rational layout of lamps, ban on the use of local lighting only. It is difficult to imagine the work of a modern dentist without the use of photopolymerizing filling materials. The composition of the photocomposite includes photosensitizers, their polymerization occurs under the influence of light radiation in a narrow area of the visible spectrum within 480 nm (blue light). To carry out this process, special devices are used - photopolymerizers, which differ in power, lighting, additional service functions, design, but the principles of operation and the main components of the structure are approximately the same.

It is worth paying special attention to the effect of blue light on the doctor's vision. British scientists in an animal experiment found that the total direct 15-minute exposure to light polymerizer on the eyes leads to signs of irreversible changes in the retina. Quite often there are cases when doctors after long work with a photopolymerizer, especially without means of protection, complain of flickering of "flies" before eyes. In this regard, you need to work only if available on photopolymerizer protective caps and be sure to use goggles. Thus, compliance with the relevant sanitary norms, work regime and rest, physical exercises, therapeutic gymnastics and massage will help prevent occupational diseases of the dentist.

4. Control questions:

1. Clinical and functional justification for prevention and treatment occupational diseases of the dentist.
2. The influence of professional activity on the physical condition of the dentist.
3. Working conditions and efficiency of the dentist.
4. The value of selecting the optimal working position.
5. occupational diseases that occur at the dentist.
6. Diseases of the dentist are associated with prolonged static load.
7. Methods of combating fatigue
8. exercises for the prevention and treatment of occupational pathology of the doctor-dentist.
9. Hygienic requirements for industrial lighting.
10. Elimination and prevention of violations.

5. Literature

5.1. Basic:

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