

Types of work

Physical dynamic work (isotonic)

If the muscle works by movement, it is *dynamic (isotonic) work*. It makes demands on energy metabolism and the release of energy needed for movement. Muscles use energy both aerobically from macroergic phosphate bonds and anaerobically = by oxidation of glycids and fatty acids. The dynamic type of work is divided into:

1. positive – the muscle shortens against constant or increasing resistance, part of the energy in the muscle is converted into potential or kinetic energy;
2. negative – the muscle during contraction is pulled by an external force, most of the energy is converted into heat.

Work physical static (isometric)

During this work, the length of the muscle does not change, but its tension. In addition to the energy demands, the demands on the musculoskeletal system are also evaluated. The time and motion picture shows the duration of the static load and the involvement of muscle groups. It helps in determining whether the applied force does not exceed the limit, i.e. more than 15 % of the maximum muscle force.

Work with precise muscle coordination and monotonous work

A type of physical work in which the static component serves to maintain the working position and position during work, and the dynamic work is performed by smaller muscle groups of the hand muscles. It requires neuromuscular coordination. It makes great demands on manual dexterity and often requires interplay of limb and machine movements. Regular repetition of a limited number of movements in a short time interval (work on a belt with a forced rhythm) causes monotony. Repeated stimulation of a limited area of the cerebral cortex causes attenuation faster than stimulation of a wider area. This is manifested by a faster onset of fatigue, a decrease in attention, drowsiness, mental dullness, a decrease in overall performance, an increase in the number of wrong actions and injuries. To evaluate the degree of monotonous conditions, 2 criteria are most often used: duration and number of movement actions in a work shift.

Sensory work

Work in which it is necessary to distinguish the qualities of stimuli of different intensities from the environment. It makes great demands on the *activity of the sensory organs*, most often on the visual and auditory analyzer. In visual work, the ability to distinguish is used the most (depends on visual acuity, the ability to perceive colors and depth perception). Visual fatigue is manifested by a decrease in the ability to distinguish, deterioration of accommodation, a feeling of fog, diplopia. The auditory analyzer enables the perception of changes in sound pressure. Sound has an effect on the CNS, the lack of stimuli leads to fatigue, sleepiness, sounds with signal meaning have a stimulating effect. Intense noise affects the tone of the *vegetative nerve* and also affects the activity of the cerebral cortex. Hearing fatigue is manifested by a temporary increase in the threshold of audibility, i.e. a decrease in *hearing acuity*.

Handling loads

Several criteria must be taken into account during this work:

1. gender (pregnancy for women) – for women the maximum weight of the load is 15 kg, for men 50 kg (between 18-29 years);
2. age – the maximum weight of the load decreases with increasing age, for example, for women at 45 years of age it is 10 kg, for men 40kg;
3. physical ability;
4. current state of health (pregnant: constant lifting of loads up to 5 kg, occasionally up to 10 kg);
5. other: horizontal distance of the load from the body during lifting, length and direction of movement of the load, frequency of lifting per time unit, working position and time characteristics of handling, method of grasping the load, grasping options.

Mental work

It makes demands on the CNS and psyche of a person. The strain of this work can be very difficult to assess, it depends on the individual characteristics and abilities of the worker, external factors are also applied (frequent contact with people, responsibility for large material values, for human lives, time constraints).

Night shift work

It is more strenuous than during the daytime hours, because in accordance with the biorhythm the activity of most functions decreases. ⚠

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Links

Related Articles

- Work load

References

- BENCKO, Vladimír, et al. *Hygiena : Učební texty k seminářům a praktickým cvičením*. 2. vydání. Praha : Karolinum, 2002. 205 s. ISBN 80-7184-551-5.