ЗДОРОВЬЕСБЕРЕГАЮЩИЕ ТЕХНОЛОГИИ В ФИЗИЧЕСКОМ ВОСПИТАНИИ

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THE IMPACT OF NORDIC WALKING ON THE LEVEL OF PHYSICAL FITNESS

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Annotation. The impact of Nordic walking on human's health and physical abilities is revealed in this article. The most significant advantages of Nordic walking, the impact of it on human's motor skills and the description of positive effects on human's body are stated here. There is also the analysis of effective training program in this scientific article.

Using Nordic walking poles requires coordinated movements for balance and stability which are similar to those of ordinary walking, but more intensive. The amplitude of walking regulates the width of steps. Consistent activity of arms and legs promotes the activity of joints, hips muscles, chest, neck and shoulders.

Nordic walking technique is similar to ordinary walking movements on the one hand, and to the skiing movements on the other hand. This allows the activity of all muscles. Arms movements increase the effectiveness of training process for 40%/ The experience proves that after few steps with poles people are able to feel the rhythm. 2–3 training sessions are enough to form new walking technique.

Cardiorespiratory Stamina. Aerobic and anaerobic conditioning are at the core of the Nordic walking workout. Aerobic exercise utilizes readily available oxygen, glycogen, and fat stores to sustain movement and pace, most often at a consistent moderate heart rate, and it is performed for longer durations of time. Aerobic conditioning is the backbone of your training program, not just because it is inherent in a Nordic walking experience, rather because it preps your body for more intense anaerobic conditioning later on. Anaerobic activity requires a quicker source for energy, therefore instead of using fat stores, the main source of fuel is what is stored in your muscles, and what you ate for breakfast. It takes your heart rate to a new level of intensity that is often difficult to sustain longer than seconds or minutes. Because it is a distance exercise, Nordic walking is an endurance activity, working many of the muscle groups used in running and cross–country skiing. It is an ideal activity for cardiorespiratory fitness because it can be performed at any intensity. Also, those who wish to burn fat will have no trouble. Those who wish to compete at a higher level have options for intensive training. Others who simply wish to build a healthier heart or participate in sports can find the appropriate pace to suit their fitness goals.

Anaerobic conditioning takes your aerobic training to the next level. We think of anaerobic conditioning as advanced cardio training. Advanced cardiorespiratory activity increases both strength and power. The more intense your cardiac output is, the less readily oxygen is available to metabolize the fat that sustains energetic movement. Your body taps into other stores of quick energy for muscle function, such as what you ate for breakfast in addition to what you ate the day before that is stored as glycogen in your muscles. Your muscles cannot sustain the intense demands of this advanced cardio training for long. Instead, you should use interval training to progressively build your cardio machine.

Benefits of anaerobic conditioning or advanced cardio training include the following:

1. Healthier heart
2. Greater cardiorespiratory endurance
3. Increased fitness levels
4. Enhanced nerve response
5. Better dynamic balance
6. Faster recovery time
7. Greater speed
8. Improved performance in sports

Muscular Endurance. Muscular endurance is the ability to sustain movement or activity for a prolonged amount of time. With practice, skilled Nordic walkers acquire a more athletic gait that combines simultaneous physical reactions with a faster pace and speed. At this level of training, distance

events become appealing and attainable. Muscular endurance allows you to settle into a comfortable yet productive pace.

Balance. Balance comes from bodily responses that maintain equilibrium. It is just as beneficial for mobility and body awareness as cardiovascular, strength, and flexibility. Everyone is born with balance, but savvy athletes know how to train to cultivate it. Some prefer a less strenuous approach to stability training, such as with the single–side balance exercise described in chapter 5. However, Nordic walking challenges you to achieve more dynamic balance because you are working the upper body to move forward while recovering small imbalances in the feet, ankles, legs, and pelvis. Poles challenge the upper and lower body simultaneously, resulting in better balance. Training for balance and becoming aware of the body's balance centers will help you attain superior motor efficiency and athletic ability. Remember that stability, mobility, and balance dance together at any intensity.

Range of Motion. Traditionally, power walkers use a shorter stride and an arm swing that often barely involves the upper body. These movements require less effort and use fewer muscles. Nordic walking techniques elicit a greater range of movement and a longer stride that activates more muscles and propels the body forward with strength. The pole action is an enhancement of the opposing arm swing used when walking normally. The increased range of motion allows you to literally cover more ground. Likewise, flexibility and other fitness qualities improve.

Agility. Agility relates to quickness and maneuverability. Starting or stopping suddenly, pivoting, dodging, jumping, and other types of fast footwork are skills that require muscle control. A variety of fun agility drills relate to Nordic walking. Some involve the creative use of poles; others utilize the natural environment. Agility and balance work together to help you effortlessly adjust to stimulus that acts on your body to throw it off its axis. Examples include impulsive direction changes or when you reach the top of a hill or run into a headwind. The body reacts to deflection to stabilize itself naturally. These athletic components are the prerequisites for coordination.

Coordination. Coordination involves a complimentary relationship of movements—a smooth flow from one slight movement to the next to accomplish an efficient stride. You must move the upper and lower body both independently and in opposition. Rhythm and coordination determine pace, which can eventually equal speed. Although power may not always be required for Nordic walking, coordination is the most obvious athletic component. Your Nordic walking skills will be efficient when your movements are so subtle and well memorized that your brain is able to communicate instructions for movement with ease, developing physical and mental sequential reactions without wasting energy. Coordination training combines balance, agility, and visual skills. It can also include power training. Other activities like group exercise classes, sports, and eye–foot or eye–hand drills are also effective for developing coordination.

Efficiency of Movement. Nordic walkers often comment that their practice helps them walk with greater grace and ease, even without poles. Nordic walking enhances both posture and coordination. Nordic walking poles lengthen the body's levers (the arms and legs as they swing in opposition) and its stride length (the distance between the feet). Efficiency of movement, or using as little energy as possible to accomplish skills, is both the result and objective of skilled Nordic walkers. Additional benefits include fewer injuries, better reaction time, quicker and more precise movement, and greater mastery of sport skills.

Visual Skills. Balance and its recovery depend on visual cues. You need superior visual skills to hit a baseball, kick a soccer ball, and stay upright when your lightweight poles accidentally tangle in your legs during a high cross wind! Nordic walkers are fortunate because the stability created by the pole tips lets them focus their vision ahead instead of down at the ground. The practice of gazing ahead with a soft focus, taking in the entire landscape, is much healthier for the spine. If you continually look down at the ground, the placement of your head can injure your spine, pulling your shoulders and upper torso away from the center of the pelvis and the axis of efficiency. Over time, your bones may grow out of alignment. The visual skills gained during Nordic walking assist postural integrity by helping you appropriately balance your head's weight, improving poor posture and eliminating back strain. Adept vision also helps prevent needless injuries on crowded bike paths and on busy sidewalks.

Strength and Power. Training for strength and power develops muscles that are controlled and responsive. Strength is the prerequisite for intense power training and injury prevention. Furthermore, it produces positive adaptations that improve balance, agility, and more. Coordinating simultaneous movements, like those in Nordic walking, requires full–body effort to support the demands of repetitive motion and endurance. If performed safely, a balanced strength program results in muscle balance and back health.

The result of a sound program of power conditioning is muscular involvement with a quality of explosive reaction. For example, competitive runners train with sprint drills to help them pick up the pace at the end of the race. Power training is appropriate for any type of endurance sport performed at a high level of proficiency. However, you must have developed your muscles with specific strength exercises that build structural integrity before beginning power conditioning. You must be strong enough to endure high–impact exercises and drills. Sprints, leaps, bounds, and skips are specific examples of Nordic walking drills.

In order to prove that Nordic walking improves human's health a 3–stages experiment was conducted. The area of "Lugi" park in Pinsk was used during all the training session.

At the 1st stage the physical level of the participants (women aged from 50 to 70) was analyzed. They were instructed about Nordic walking technique and asked to walk with poles around the park for 50min and in a result they crossed a distance of 1870m.

At the 2nd stage the program of the classes was formed. The group performed supervised exercise sessions three times a week for 12 weeks, 50–70 min per day (warm–up 10–15 min, main exercise 30 min in the first eight weeks and 40 min in the final four weeks, cool down 10–15 min). All participants were instructed to achieve an exercise intensity corresponding to a HR of 100–120 bpm. All participants also wore a pedometer at waist–level to monitor the number of steps taken during each class.

At the third stage the very first exercise was repeated, they were asked to walk for 50 min around the Park. After 12 weeks of intensive training in Nordic the participants walked 3605m instead of 1870. That research proves that Nordic walking is one of the possible ways to improve physical abilities.