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Nordic walking – the healthiest sport ever? – A review

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Abstract

Nordic Walking (NW) is a widely practiced sport that was originally intended as a way for cross-country skiers to get a year-round workout. However, it quickly proved to be easy, enjoyable and undemanding, which led populations around the world to train NW. Today, the sport is used as rehabilitation in most medical specialties, as it is considered to be safe, not creating barriers, inexpensive and has no side effects. This article presents a literature review on the effects of NW on patients' mental and physical health.

Introduction

Sport participation is one of the most effective ways to prevent many diseases. Physical activity, especially moderate physical activity, is recommended at any age, often also as a treatment for many conditions (1,2).

According to Eurostat, 44.3% of Europe's population over the age of 15 played sports at least once a week in 2019. The highest percentage was observed in Norway (84.2%) and the lowest in Romania (6.3%).

The most frequently chosen physical activity is walking as an alternative mode of transportation to a destination (83% of the exercising population), followed by aerobic exercise (44% of the exercising population) (3). Recently, one of the most popular aerobic exercises is Nordic walking (NW).

Technique of nordic walking

Nordic walking is a sport that was initially invented as a year-round training for cross-country skiers (4). It also has a lot in common with this sport, as even the International Nordic Walking Federation mentions that the sport shares several features with the classic technique of cross-country skiing, such as the back positioning of the pole during loading phase, the equipment of the poles with a handle and strap, and their active and dynamic use (5).

In order to practice Nordic walking, it is necessary to get special poles with for supporting oneself during dynamic walking according to the pattern - right leg in front together with the left hand, left leg in front together with the right hand. Thanks to such a technique, large groups of muscles of the upper and lower limbs are engaged, which is a definite advantage between NW and classical walking (W) (6).

Compared to W, practicing NW on flat ground increases energy expenditure, as a result of engaging more muscles. When walking uphill, the amount of calories burned is comparable, probably due to the fact that in both cases it is the legs that do more work against gravity thus relieving the burden on the arms in NW. In this situation, one should also be particularly mindful of proper gait technique, otherwise NW significantly reduces the activation of the back muscles compared to W (7).

Contraindications

According to available data there are no significant contraindications of NW. Some researchers point out the need of doing this sport outdoors, so every contraindication may concern the weather contidions and the lay of the land. The only condition is the ability of patient to walk on they own. The age is not signifficant as NW is concidered as a great way for elderly people to rehabilitate on their own (8–10).

Nordic walking and cardiovascular diseases

Patients suffering from cardiovascular diseases should be given special attention to their lifestyle. Due to their co-occurrence with dyslipidemia, obesity and diabetes, in their case sports are especially recommended as a way to improve quality of life and better control of diseases (11). Studies show that attaching NW to the standard treatment of the above diseases used in sanatoriums increases the anti-inflammatory and hypolipidemic effects and increases the adaptive potential of patients (12). Moreover, 3- to 6-month NW training improves subjective quality of life and fitness and has a hypolipidemic effect, reduces fasting glucose levels, and has a positive effect on the mental health of this group of patients (13,14). In addition to adaptation, 6-week NW training scheduled in such a way that lipid metabolism dominates during has been shown to significantly improve physical fitness, cardiovascular fitness and remarkably improve body composition in postmenopausal women who previously led sedentary lifestyles. Walking without poles with similar regularity was not as effective (15).

For patients with coronary artery disease, 2-week NW training was a safe form of rehabilitation that significantly improved cardiac performance and functional capacity. An additional advantage is also the easy accessibility of NW to patients with different clinical conditions (16). Moreover, its combination with high intensity interval training is considered to significantly improve mental and physical fitness, and is rated by patients as enjoyable and beneficial in terms of the time they have to devote to physical activity (17).

What's also important is that NW reduces arterial stiffness as a predictor of cardiovascular events similarly to interval training and moderate-to-vigorous intensity continuous training. It can therefore be a great alternative to these exercises in patients with coronary artery disease (16). Poland's "KOS-zawał" rehabilitation program for patients after acute myocardial infraction involves unique hybrid telerehabilitation. Patients in stage I practice NW at the rehabilitation center for 1 week, to then implement healthy habits at home for 4 weeks 5 times a day. The course of treatment was monitored using devices that send the patient's ECG to the monitoring center during physical activity. During the course of the study, a significant improvement in the patients' physical performance was noted, as well as a progressively longer load time in the exercise test. What's more, no adverse effects were monitored during NW training, and there were no patient deaths during the one-year follow-up, suggesting that NW is not only a healthy, but very safe sport in this group (18).

Nordic walking in pulmonology

Bronchial asthma is one of the most common lung diseases. It is characterized by inflammation occurring in the airways, resulting in patients suffering from shortness of breath. Exercise plays an important role in the treatment of asthma, improving respiratory capacity and quality of life (19). A randomized trial conducted on patients with asthma for 8 weeks showed that along with standard treatment and education, NW improves patients' overall health and may be a new form of exercise used by these patients (20). There is also a study comparing the effects of practicing NW and calisthenics on the physical performance of patients with asthma. The results show that NW is significantly more effective, extending more distance in the 6 minutes Walking Test and increasing FEV1 in spirometry (21).

The effectiveness in improving physical fitness of NW is also shown in a study conducted on patients with idiopathic pulmonary fibrosis. After 12 weeks of NW training, the distance they covered during the 6-minute Walking Test increased significantly. In addition, researchers suggest that this form of rehabilitation is definitely safe for patients (22).

Patients with cystic fibrosis also benefit greatly from physical activity. Currently, studies are being conducted on the effectiveness of a rehabilitation program for such patients that, among other things, focuses on physical activity in the form of aerobic sports including NW. The results of the study appear promising (23).

Aerobic training is also recommended to improve the quality of life of patients with chronic lung diseases, such as Chronic Obstructive Pulmonary Disease (COPD). It has been shown that 1 hour a day of NW significantly increases pulmonary function and overall quality of life in such patients relative to the non-exercise group. This type of rehabilitation can be administered in the hospital and at the patient's home (24). Moreover, even mathematical models performed during studies of patients with COPD confirm that exercise tolerance and overall respiratory tolerance are significantly increased in patients who practice NW (25).

NW can also be a great way to reduce sedentary time in COPD patients. Unfortunately, however, behavioral interventions alone have limited impact on patients' behavior. Nevertheless, they should still be persuaded to participate in sports, especially NW (26).

The role of aerobic training in the treatment of patients with post-COVID-19 syndrome is also an interesting matter. Although they produce significantly more lactates during NW training than participants in the control trial, it is believed that NW exercise significantly improves their quality of life and physical performance (21).

However, if a patient undergoes lung transplantation as a result of the above diseases or other conditions, one of the most important ways to recover is to implement proper exercise rehabilitation. NW, as a low-cost, easy-to-practice sport, has been proven to have a great effect on the health of lung transplant patients, increasing the distance covered in the 6 Minutes Walking Test by almost 30%. Moreover, no side effects of introducing this type of rehabilitation have been noted (27).

Patients with Parkinson's disease can also do sport

Parkinson's disease significantly impairs daily functioning. Researches are being made to find better and better methods of stimulating and rehabilitating patients. Studies are being conducted on simultaneous physical training (so far walking on a treadmill) with deep brain stimulation. Researchers suggest that this physical activity can be replaced by NW, as it requires a stable, upright posture, trunk rotation and a larger step starting from the heel (28). In addition, NW can be used as a single method of rehabilitation - regular NW training has been shown to lengthen stride length, increase the frequency of steps per minute, and reduce the frequency of freezing described in this disease [30]. Such training has been shown to be effective in patients regardless of the severity of Parkinson's disease (29,30) and that it is considered enjoyable by patients, and its positive effects on health are clearly perceived by them (31).

Compared to standard walking, NW appears to be much more effective in rehabilitating this particular group of patients, as the patients' gait mechanics are completely changed due to the increase in mechanical work during walking (32).

Mental health improvement

It has been emphasized for years that in order to maintain good mental health one should practice physical activity. NW due to the fact that it is practiced outdoors and can be done in a group, well-being of patients significantly increases and they socialize which further promotes well-being (33–36). Participants in NW lessons build strong social relationships, so they gain social and emotional support (37). Moreover, this type of training increases resistance to psychological and physical stress (34). However, they may feel uncomfortable, as society still sees negative attitudes toward walking with poles (37). The positive effect on mental health is evident not only in sick patients, but also in asymptomatic people - this group also felt the positive effects of practicing NW (37).

Conclusion

Nordic Walking is a sport that can be practiced almost without restriction. The literature to date does not describe any contraindications to the sport or its side effects. Moreover, it can significantly improve the quality of life with a wide variety of diseases - cardiovascular, pulmonological, neurological or even psychiatric. It also has a good effect on blood cholesterol levels and helps lower the level of fasting glucose. It is important to take care of proper walking technique during training to reap the full benefits of this physical activity.

Healthy people can also experience many benefits from NW, such as socializing, building social ties, and reducing sedentary lifestyles, which is a prevention of the previously mentioned diseases. In daily clinical practice, it is important to remember to persuade patients to practice sports, especially aerobic sports, so that they can reap all these mentioned benefits without any significant risks, and offer them to practice NW.

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