



WINTER – SNOW-BASED ACTIVITIES

Exercise in the snow:

Nowadays, "lifestyle diseases" such as cardiovascular diseases, type 2 diabetes, obesity, high blood pressure, allergies or even psychological diseases such as depression and anxiety disorders are on the rise. On the one hand this is due to sedentary lifestyles (on average we generally exercise too little) combined with an unbalanced diet and high stress potential due to urban crowding effects, such as over-stimulus, noise, competitive pressure, etc. On the other hand, we spend too much time in enclosed spaces (>90%!) and, when we go outside, the environment and air quality play an important role. Besides the proven positive psychological effect of unspoilt nature on humans, nature also offers a higher concentration of negative air ions and reduced fine dust pollution. Particularly in winter, when the air is even more polluted by loose chippings, heating, etc., outdoor physical exercise in the fresh air is recommended.

Physical activity significantly improves cardiorespiratory fitness and increases our capacity to absorb oxygen. This improves our performance and blood circulation, so that every cell in our body is optimally supplied with oxygen. Movement also releases more endorphins in the brain, which has a mood-enhancing and activating effect on us. Regular exercise also has an influence on our immune systems and produces anti-inflammatory effects: People with a sedentary lifestyle who are overweight usually suffer from mild, chronic inflammation.

Regular, moderate physical activity supports our immune systems in many ways and counteracts numerous diseases. Physical exercise has been shown to reduce the inflammatory capacity of leukocytes, increase the number of neutrophils (part of the leukocytes whose main task is defence against pathogens) in the blood and promote phagocytosis activity (the body's own defence mechanism against foreign or malignant cells).

Regular physical exercise reduces the resting pulse and sympathicotonus, strengthens our muscles, including the heart muscle, and increases heart rate variability. Exercise reduces both cholesterol and blood sugar levels, thus significantly reducing the risk of cardiovascular disease or type 2 diabetes. Even age-related hypertension can be counteracted via physical activity. Regularly covering a distance of 50 km/week will even halve our mortality rates. Regular physical activity strengthens our immune system, reduces susceptibility to infection and has a protective effect against the most common lifestyle diseases.

Tobogganing
Alpine skiing
Cross-country skiing
Ski mountaineering
Snowshoeing

Studies of medical evidence:

- Indication: stamina/strength/power/balance in older people (Muller et al., 2011): evidence level Ib
- Indication: cardiovascular risk factors in older people (Niederseer et al., 2011): evidence level Ib
- Indication: cardiovascular and metabolic behaviour (T. L. Stoggl et al., 2017): evidence level IIb
- Indication: cardiovascular fitness and metabolic behaviour (Stoggl et al., 2016): evidence level IIb
- Indication: health status (BMI, fitness, physical activity, depression, smoking and alcohol consumption) (Anderson et al., 2017): evidence level III
- Indication: cardiovascular diseases (M. Faulhaber et al., 2007): evidence level III

Health tourism potential:

- Guided winter hikes with and without sports equipment.
- Creation and maintenance of infrastructure such as toboggan runs, cross-country ski trails and winter hiking trails.
- Development of hiking routes and offers in close cooperation with tourist facilities and enterprises with hiking guides.

