

Cross-fit through cross-country skiing



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Cross-country skiing is a cyclic type of sport (with a simple motor structure), which makes it very popular among clients of all age groups (from children to elderly people). The simplicity of the motor structure of exercises makes it possible for people with different range of coordination abilities to practise it, and provides opportunities for well-balanced complex training. In contrast to sports practised indoors, its advantage lies in the fact that physical training is done in the open air which greatly increases the training effect and provides good opportunities for recreation and recuperation.



Level 1

Training is organized in the classical style. This group includes people who have never practised any kind of sport and who have a limited functional and physical potential (with no experience in cross-country skiing)

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- Aim of the training session - mastering the strides of the classical style in cross-country skiing.
- Duration of training - 40-50 minutes
- Training intensity – low
- Terrain – mostly flat



Double pole push without kick – impact entirely on upper limbs. It is recommended for clients with low power abilities of the upper limbs. External counter force (the angle of the ski track) is increased gradually.



Double pole push with kick – prevailing impact on upper limbs. Compared to the technique of double pole push without kick, pushing is done by lower limbs as well here, which provides a greater load for the skier. Depending on the client's needs, greater loads could be applied with priority on lower or on upper limbs.

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Diagonal step – complex impact on the upper and lower limbs. For greater dynamics of the training session in terms of physical and functional loading there could be faster change of the two components (length and frequency of the stride)



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Exercises for mastering the stride:



The given exercises could be used as additional training aiming at the development of specific muscle groups through adequate change of the kinematic and dynamic characteristics of movement.

Training program:

- Duration of loading – 40-50 minutes;
- Methods of loading – continuous, steady, pulse rate – 120-140 beats per minute;
- Loading intensity – low;
- Terrain – mostly flat (gentle slopes possible);
- Control of the training session – current check of pulse rate frequency;
- Choice of exercises – general fitness and additional.

Level 2:

Training is organized in the classical style. This group includes people who practise some sport or do physical exercise infrequently and whose functional and physical potential is satisfactory. Taking into account that clients in Level 2 and Level 3 experience greater physical loading, it is advisable that they have a medical check-up with their GP for evaluation of their health condition. The aim of the training session is to master and perfect the classical style of cross-country skiing.

In order to have more appropriate physical and functional loading, we test the potential abilities of our clients. This provides a personal approach in our work with each client and increases the effect of the training session. It also reveals the current potential of students and helps to plan the training objectives.

Description of the test: The covered distance on a profiled skiing course is checked at a given pulse rate (PWC-170). Duration of skiing-10 minutes. The recovery processes are also checked in time (through pulse rate).



We suggest the following categorization:

Level 1: (Good)-covered distance – up to 1.5 km

Training program:

- Duration of training – 15-20 minutes.
- Methods of loading – steady, variable, active loading in the uphill parts and recovery in the flat parts of the course, pulse rate – 120-165 beats per minute.
- Loading intensity – medium.
- Terrain – slightly profiled.
- Control of the training session – through pulse rate and the number of motion cycles in specific sections – climbing.

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Level 2: (Very good) – covered distance – 1.5-3 km

Training program:

- Duration of training – 40-50 minutes.
- Methods of loading – steady, variable, active loading in the uphill parts and recovery in the flat parts of the course, pulse rate – 120-165 beats per minute.
- Loading intensity – medium.
- Terrain – slightly profiled.
- Control of the training session – through pulse rate and the number of motion cycles in specific sections – climbing.

Level 3: (Excellent)-covered distance over 3 km

Training program:

- Duration of training – 60-90 minutes.
- Loading method – interval and interval - variable.
- Loading intensity – high.
- Terrain – strictly profiled (overcoming great external counter forces)
- Number of repetitions in a series – 4-6 times.
- Number of series – 1-2 series.
- Type of recovery – active.
- Duration of recovery – 3-5 minutes between repetitions and 10-15minutes between the series.
- Length of the course – 1200-1500 m.
- Control of the training session – through pulse rate and running speed per lap.

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Level 3:

Training is organized in the classical and free style. This group includes skiers who do physical training and practise a sport regularly, and who have excellent functional and physical abilities.

- Aim of the training session – mastering the skating stride in cross-country skiing.
- Duration of loading – 60-90 minutes.
- Loading method – interval and interval - variable.
- Loading intensity – high.
- Terrain – strictly profiled (overcoming great external counter forces)
- Number of repetitions in a series – 4-6 times.
- Number of series – 1-2 series.
- Type of recovery – active.
- Duration of recovery – 3-5 minutes between repetitions and 10-15minutes between the series.
- Length of the course – 1200-1500 m.
- Control of the training session – through pulse rate and running speed per lap.

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Half- skating stride:

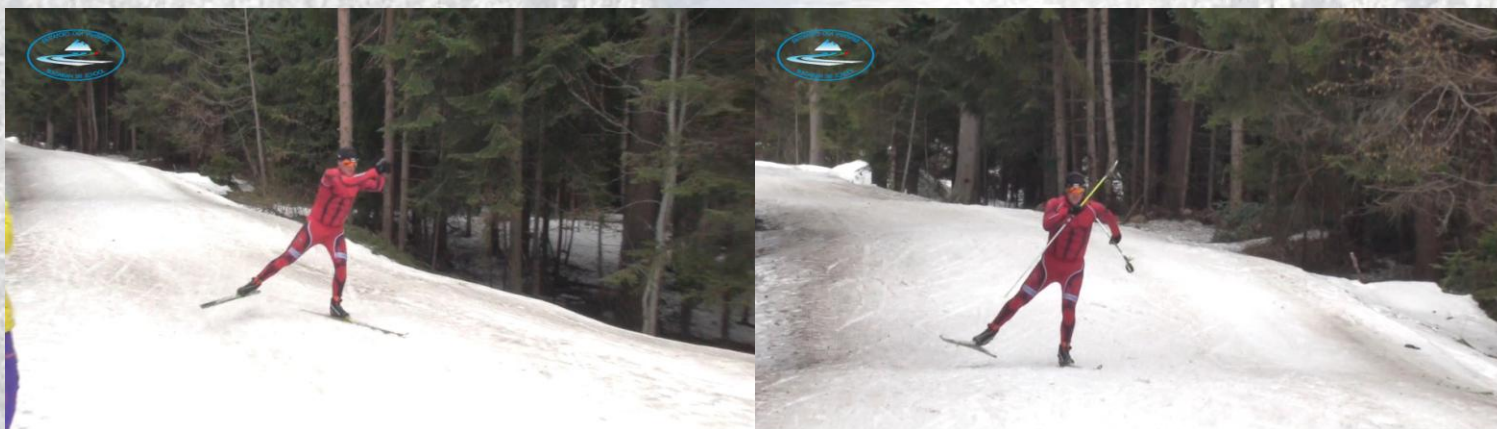


It is used as the basic way to change direction in cross-country skiing.

V2 skating stride:



Exercises for mastering V2 skating stride:



V2 skating stride can change its phase structure according to the gradient of the course, which makes it suitable for all terrains. This helps for more effective loading (functional – on the flat sections, with greater frequency of movement per unit of time, and physical – during the climbs, with a more powerful push after each slide).

V1 skating stride (symmetrical and asymmetrical):



The symmetrical stride is used on flat courses and the asymmetrical - for the climbs. The bigger the gradient of the course, the farther forward the leading arm goes. As methodological guidance in this case, it is advisable to change the leading arm more often for better distribution of the skier's physical effort.

In terms of bioenergetics, skating stride is more economical than classical. It involves a greater number of muscles groups and allows greater freedom of movement, which leads to a better effect of the training session.

Our loading program helps to master separate technical skills and provides a well-balanced loading of students, in order to increase their functional and physical abilities. The program aims not only at the improvement of our clients' skiing technique, but through various technical skills (cross-country strides) we achieve an overall physical improvement. In order to control and measure loading reliably, we add pulse testers to our clients' technical equipment. This allows the instructor to adjust the training program to the individual needs of students. This approach is a good prerequisite for increasing skiers' functional capacity.



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