

THE PHYSICAL PREPARATION OF SKIERS (AGED 11 – 14)

UDC: 796.921.015.57-052
(Professional paper)

**Aleksandar Joksimović¹, Daniel Stanković¹, Danilo Aćimović²
and Emilija Petković¹**

*¹University of Niš, Faculty of Sport and Physical Education,
Niš, Serbia*

*²State University of Novi Pazar, Faculty of Sport and Physical Education,
Department for Biochemical and Medicine Science, Novi Pazar, Serbia*

Abstract:

Plan and prepare physical training program covers a period of sixty days, and the landmark was preparing to start the calendar contest. Preparation period solves the largest part of the job or the basis without which it cannot go forward, and the quality and validity of our work will mark a little later. Physical preparation is only part of the overall preparation of athletes and one more link of chain which includes: technical, tactical, theoretical and psychological preparation. Physical preparation in the off-season is certainly a basis for further development and upgrading, but it is certainly not allowed to leave out in later training process. As the sunrise on the snow or the competition will be approached by general physical preparation slightly exceed the specific form of physical training. Physical preparation means a certain level of speed, strength, endurance, coordination and mobility.

Keywords: *methods of training, mogtor skills functional skills, training programs*

INTRODUCTION

Physical preparation is one of the important components of sports-training profile, and is associated with the development, by raising or maintaining the level of functional ability skiers. It provides versatile physical development, as well as the strengthening and consolidation of health. Physical preparation includes skier development, improvement and maintenance of motor abilities (strength, speed, endurance, flexibility, balance, coordination). In the course of training requirements for raising the level of motor ability is increasing, and for these reasons and simulation process in this segment of training must be perfected and modified. Assets - physical exercises, which are applied in the work of the skier must be versatile and to the field

of sports gymnastics, athletics, sports games, mountaineering, swimming, cycling and others. Such sharing of resources for the implementation of physical exercise physical preparation of skiers comes from three groups of body movement: a) natural forms of movement, b) gymnastic exercise (exercises formatting) and c) basic sports games. The subject of this work is to display a certain methodical procedures for better physical preparation that skiers aged 11-14 years. The problem is directed to a better organized and more efficient recreation, to increase the level of physical preparation of skiers. The aim of work was defined by a particular display of the exercises to raise the level of aerobic and anaerobic capacity for high quality level of physical preparation skiers aged 11-

15 years.

Physical preparation may be conditionally divided into the base targeted and specific, and required to be practiced throughout the year. Basic physical preparation was conducted in the period from May to late June. During this period, conducted training for all round development of physical skills and influence to increase the working capacity of skier. Directed physical preparation refers primarily focused on the development of endurance capacity, long-term continuous or interval running or short distance speed development with quick run across the different conditions, sports games and the like. Specific physical preparation is beginning to be implemented after completion of training in August and September and lasts until the beginning of the first contest as well as during the entire competitive season. Specific physical preparation of the task, in this case, to develop, improves and maintains motor and functional abilities of skiers.

1. Aerobic capacity (endurance, lactate training, strong endurance)

- Continuous run (heart rate 140-160) in nature or in the stadium, 35-50 min.

- Cycling, Training section of lactate in the time period lasting approximately ski contest (30-65 sec. Pulse of 165-185). They are training for which there is a trespass aerobic endurance, in which there appear to increase the concentration of lactate in the blood of a minimum duration of five weeks.

2. Power (training in the gym)

- The bottom of the body: deep squats, squat, lunge, leg lift, squat on one leg, climbing on a bench, step forward and sideways

- Upper body: bench press, machine, fitting in the chest, chest bed, decay, shoulder

- Exercises for abs and development of back muscles (especially lower).

- Circuit training.

Aerobic training

The development of aerobic capacity skiers are conducted in conditions of sufficient amounts of oxygen and the prevalence of oxidation energy processes that enable the transport of oxygen consumed energy at the periphery of locomotion.

Continuous aerobic training method is useful for the development of long-term durability. It is necessary dynamic synchronization function of all

organs and organic composition to ensure and oxygen consumption during the skiing activity. Training activities are carried out continuously and can take more than 60 minutes as specified aerobic threshold, and that of the functional size through which energy is dominated by anaerobic processes.

Aerobic interval training method consists of repeating heavy training load of short or long duration to serve as a powerful stimulus for activation of the transport system. According Reindel et al 1964 and 1978 Keul aerobic interval training creates preconditions for an increase in systolic efficiency heart, which is related to the aerobic productivity.

Training activities suitable for this type of aerobic training are running different sections, running with the pace of change and run the appropriate intensity. It is recommended intensity of 60-80% in the area of heart frequency of 150-180 beats per minute, up to 2 min. Number of iterations is determined according to individual capabilities, which allow skiers a stable and high consumption of oxygen.

For the assessment of aerobic capacity skiers basic indicator is the maximum relative receives O₂. In order to determine the specificities of functional abilities of skiers often applied testing at rest and in conditions of competition.

- Maximum receipt of O₂ (l/min)

- Real receipt of O₂ (ml/min./kg.)

All forms of sprints, suitable for raising the efficiency of anaerobic capacity, and various forms of continuous running effectively influence the improvement of the mechanism of oxidative or aerobic ability skiers.

Anaerobic training

Increasing demands and the intensification of motor activity in skiing condition increased demands on the body the opportunity to work in hypoxic conditions.

Fatigue in these cases depends on the speed of which the exhaust anaerobic energy supplies and reduces the efficiency of the nervous system. Therefore, it is in the methods of anaerobic training necessary to solve three basic tasks:

- Raise the functional mechanism of the energy possibilities

- Improve the energy mechanism

- Increase the effectiveness of neural structures

in the specific conditions of oxygen debt.

Motoric way of upgrading an lactate component of anaerobic endurance is determined by duration of creatinephosphate reaction time and covered an lactate oxygen debt. Appropriate training activities are: short sprints, series of jumps, or by a series of specific exercises of high intensity and duration of no longer than 30 sec.

Suitable training method is the method of maximum interval that causes strong physiological reactions for which the frequency of the heart climbs up to 190 beats per minute. It is useful to apply 4-5 reps. Pause between repetitions of series is 3 min. and between a series of 70-10 min.

A development lactate component of anaerobic endurance is based on the instigation of strong glycolytic reaction and use of energy from anaerobic glycolytic compounds. In this example, an interval method is the most appropriate form of training. Useful training activities are running section from 200-600 meters polygons barriers and specific exercise duration up to 2 min.

The intensity of stimulus is moving in the range 80-90% and the highest value causes physiological reactions (frequency of the heart and more than 200 beats per minute. Training work is done in 3-4 sets with 3-4 reps working in a series of intervals.

Standby or extended break is applied because of the need and capacity retention of tolerance greater amounts of lactate in the blood.

a) The natural forms of walking

From a large fund of natural forms of walking the choice of assignments from different forms of walking is being given.

Walking

The exercises of walking can be done in such a way that the feet touch the ground surface with their whole surface or with their inside or outside part, or combined. Walking on heels or toes in a smaller or bigger astride stand with all combinations is possible.

Running

All the running exercises should be combined with almost all variations of walking but without crossing the steps. The choice should be made with regard to the age, sex, level of preparation and skier category.

Hops (hops in place and hops from the place)

The exercises that are done with both legs can be realized from various starting positions: the basic

skiing or standing position, half-squat or squat, smaller or bigger spread-legs position, etc.

Exercises on the Swedish Bench

Taking into the consideration the fact that hops can be combined with the jump-ons, jumps forward and jumps-over, here is the description of the exercises that can be performed in every gym. In the methodic of the training itself, the exercises are firstly performed without and later on with the additional load by means of belts, ski-shoes, lead cuffs, etc.

b) Gymnastic exercises (shaping exercises)

The Exercises for the physical preparation of Alpine skiers can be divided according to their effect onto the particular parts of the body and the initial position of the gymnast.

Exercises for the Hands and the Shoulder Belt

Imitating the rhythmical stabbing with sticks in the given rhythm and tempo, the sporadic propping with sticks by one and then the other hand with the maximum front hand movement and back hand movement. In a normal upright position the frontal circuits forwards and backwards.

Exercises for the Torso in the Standing Position

The exercises of the torso movement in all planes can be done in all combinations for the improvement of the flexibility and coordination. Increasing the intensity of the exercises can be done by using weighs, lead belts or the resistance of the co-gymnast. These shaping exercises are also used for the warm-up on training or prior to a competition.

Torso exercises in Lower Positions

From the kneeling position with both legs, leaning sittings to the both sides. From the kneeling position with both legs, with hands on the nape of the neck over-bending and sitting on the feet, then standing up and maximum back-bending. From the wide spread sitting and with the hand movement deep over-bending, roll-up and touch the opposite foot by hand. Get back into the initial position and repeat the exercise in the opposite direction.

The Exercises for the Legs and the Pelvis Belt in Standing Position

Normally upright and in conjunctive position go up, lower the feet and raise the toes. In a normal upright position, hold up the contracted knee onto the chest. In a normal upright position, hold up one leg contracted in a knee. The other knee should be held straight.

The Exercises for the Legs and the Pelvis Belt in Lower Positions

All the exercises in lower positions can be done with extra weights or confrontation of the co-gymnast.

Isometrics Exercises

The exercises of the position imitation do after the techniques have been successfully practiced, together with the exercises on the smaller surface of the foot onto the props and tools.

The Exercises for Legs and Pelvis Belt on the Spring Board

Exercises that are performed by foot can be run from different starting positions: basic skier normal upright position, or stand, or squat, lower-or higher skier stance and so on. Exercises for the legs and pelvis belt on elastic table.

Exercises are performed from different starting positions for better orientation.

c) Elementary and sports games

In the physical preparation of the Alpine skiers, elementary and sports games give, besides the already mentioned means of physical movement a wide possibility and basis for the choice of adequate games which can meet the criteria of the required aim- preparation of skiers. Elementary games can be applied both in the enclosed and in the open space, on the dry terrain, sand, or even on the snow surface. Different material means can be used in these games: balls, bats, cones, markers, as well as certain gymnastic devices, respecting particular rules and codes of appliance, in order to avoid the possible injury of the contestants. It is also possible to perform the application of famous sports games with changed and adjusted game rules, with the correspondent modification of the terrain or the surface on which they are put into action.

CONCLUSION

Exercises, as the basic means in the development of the psychosomatic and mobility status of the skier which were shown in this work intended pri-

marily alpine skier age category of 11-15 years

Besides, a special attention should give to the volume, intensity, recovery and the rest of the skiers, as well as to the methodic of training, and sports training in general.

REFERENCE:

- Hadžić, R., Radosav, S. & Joksimović, A. (2009). Takmičarska forma alpskih skijaša u dečijem uzrastu [Competitors form of skiers in children's age. In Serbian]. *Sportekspert*, 2(2), 33-34.
- Gama, M. (1982). *Sve o skijanju* [Everything about skiing. In Croatian]. Zagreb: Mladost.
- Jeločnik, M. (1974). *Sports classes for alpine skiing*. Ljubljana: Institute for the kinesiology.
- Joksimović, A. (2007). *Tehnika i metodika skijanja* [Technique and methodic of skiing. In Serbian]. Niš: SIA.
- Joksimović, A. (2008). The physical preparation of alpine skiers. *Fizička kultura (Skopje)*, 36(1), 55-60.
- Joksimović, A. (2009). *Preporuke i instrukcije u procesu učenja ski tehnike* [Instructions and recommendations in learning ski carving technique. In Serbian]. *Sport & Science (Sofia), (Extraordinary Supplement 1)*, 189-192.
- Joksimović, A. (2009). *Skijanje – tehnika* [Instructions and recommendations in learning ski carving technique. In Serbian]. Knjaževac: GIP Timok.
- Stojanović T. and Joksimović A. (2005). *Karving skijanje - tehnika* [Carving skiing: technique. In Serbian]. Banja Luka: Centar for sport.

ФИЗИЧКАТА ПОДГОТОВКА НА СКИЈАЧИТЕ СО ВОЗРАСТ ОД 11 ДО 14 ГОДИНИ

УДК: 796.921.015.57-052
(Сѝручен ѝруд)

**Александар Јоксимовиќ¹, Даниел Станковиќ¹, Данило Аќимовиќ²
и Емилија Петковиќ¹**

*¹Универзитетот во Ниш, Факултетот за спорти и физичко воспитување,
Ниш, Србија*

*²Државен Универзитет во Нови Пазар, Факултетот за спорти и
физичко воспитување, Оддел за Биохемиски и медицински науки,
Нови Пазар, Србија*

Апстракт:

Планот и програмата на тренингот за физичката подготовка офаќа период од шестина денови, а ориентацијата за почетоците на подготовките е календарот на најпреварите. Во подготвителниот период на подготовките се решава најобемниот дел на работата, од-носно на основата без која не може да се оди напред, а квалитетот на таа работа се оценува подоцна. Физичката подготовка е само еден дел од оштата подготовка на спортистите и само една алка од синцрот кој го сочинуваат: техничката, тактичката, теоретската и психолошката подготовка. Физичката подготовка во подготвителниот период е основа за најважниот развој и надградбата, но таа не смее да се запостави во другиот дел на тренинжниот процес. Со приближувањето на снежниот период, односно скијачките најпревари, оштата физичка подготовка постепено преминува во форма на специфична подготовка. Физичката подготовка подразбира создавање на одредено ниво на брзина, снага, издржливост, координација и подвижност.

Клучни зборови: *методи на тренинг, моторни способности, функционални способности, програми на тренинг*