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Competition-Coaching Introduction L2T

Step 9:

Skill Development - Dryland Techniques



**Reference Material
for Dryland Workshop**



PARTNERS IN COACH EDUCATION

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Incorporating sport-specific off-season (dryland) activities such as ski walking, ski striding and roller skiing into your athlete development program helps prepare your skiers for the winter season. As such, these activities form an important component of a complete seasonal plan for cross-country skiing.

9.1 Introduction to Ski Simulation Exercises

9.1.1 Introduction to Roller Skiing

Young athletes are introduced to roller skiing for the purpose of improving their ski technique and developing basic roller ski skills that they can build on in the future. When introducing this new activity you may wish to educate both the athlete and their parents on the principal objective at this stage and to explain to them that it should not be used as a “training method” before the athlete enters the Training to Train stage.

For those athletes that pursue excellence, roller skiing will become an essential, specific, all round training method, and skiers in the Training to Compete and Training to Win stages may use it for up to 60% of their off-season training. With good skills, these athletes can do strength, sprints, distance and technique work - all on their roller skis.

Understandably it takes practice for an athlete to achieve a good level of competency and there are progressive steps beginners should follow when they first start out in order to ensure their safety and long-term success with this activity. Following are guidelines to help your athletes get started the right way.

- ❑ Young athletes can be introduced to roller skis before the end of the Learning to Train stage.
- ❑ The activity should take place in group sessions under the supervision of a qualified coach.
- ❑ Initial roller ski sessions should be short in length (not more than 30-40 minutes) because beginners may develop shin pains the first few times they try it.
- ❑ Initial roller skiing instruction for young athletes should focus on skating technique. A good introductory roller ski is a light “skating” ski. Combi boots are ***not*** appropriate for rollerskiing. Athletes must use a dedicated skate boot for rollerskiing with a solid cuff providing ankle support. ***Soft cuffs are not appropriate for rollerskiing, especially for beginners and will increase the chance of falling and injury.***
- ❑ Along with the mandatory helmet and a reflective vest, you may wish to encourage beginners to use elbow and knee pads. Train your athletes to put on their helmet before they put on their roller skis.
- ❑ Roller skiing should be introduced without poles.
- ❑ An empty paved parking lot is a good location for the first sessions. If that is not available, locate a stretch of smooth, paved flat road with as little traffic as possible.
- ❑ Initially the emphasis should be on the athlete establishing a personal comfort level. Begin with exercises they can handle. Simple agility courses can be set up to help the athlete develop skills that will provide them with a general sense of control, such as turning and stopping. The next step is to work on balance, rhythm and coordination

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- skills that provide the foundation for good technique.

- ❑ Before athletes move on to more advanced technique work they should be familiar with all of the roller ski speed-control techniques. They should also be able to demonstrate the following – the ability to double pole with their hips forward on pole plant, to step turn, to control their speed by having one ski on a slower surface, to stop by going off the road surface, and to comfortably ski down moderate hills. It is important for the athlete to achieve a level of confidence where they can stand (put their full weight) on top of one ski.

Control Tips for Roller Skiers

- ❑ Control your speed in potentially dangerous areas, for example road intersections or areas with potholes.
 - ❑ To control or reduce speed, stand up straight – the increased wind resistance will slow you down. Do this before you pick up too much speed.
 - ❑ Begin with snowplowing – before you pick up too much speed.
 - ❑ Place one ski on a slower surface (gravel or grass) at the side of the road.
 - ❑ Take short, quick steps into the fall-line of the hill, thereby traversing the slope.
 - ❑ When turning, look in the direction you want to go (where you want to end up), not where your skis are pointed.
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- ❑ Once these basics have been established, the technique focus should be on Two Skate and One Skate - with and without poles. When learning skating technique on roller skis, the skier should focus on the same technique cues they would on snow - balance, weight shift, powerful push off and full extension.
 - ❑ For initial technique instruction, use easy terrain that is flat or very gradually uphill, so that balance is more easily maintained. Steeper uphill should be avoided so that the skiers do not have to push too hard and can concentrate on technique elements. Downhills should be avoided as speed makes learning technique and balancing on roller skis more difficult; athletes should develop a degree of confidence before applying their skills to such terrain.
 - ❑ Encourage your athletes to focus on the proper execution of a technique, so that you are not correcting bad habits later.
 - ❑ Consider using a bike to teach roller ski sessions. This allows you the flexibility needed to observe all of the skiers in your group.
 - ❑ Encourage your club to purchase several pairs of roller skis specifically for the use of this age group. This will make it possible for all of the athletes in your group to try them out and learn some basic skills. It will also allow for some additional time for the athletes to determine whether or not they wish to make the level of commitment to the sport of cross-country skiing that would justify the financial investment of purchasing

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their own roller skis and related equipment. When athletes have advanced to the T2T stage and they want to use the club skis on a regular basis (two or more times a week over an extended period) they should purchase their own equipment.

As mentioned above, the recommended development stage for introducing roller skiing as a “training method” is Training to Train. Refer to the Competition Coach Introduction (CCI) - Training to Train (Dryland) Reference Material for more information.

Roller Ski Tips for Your Athletes/Parents

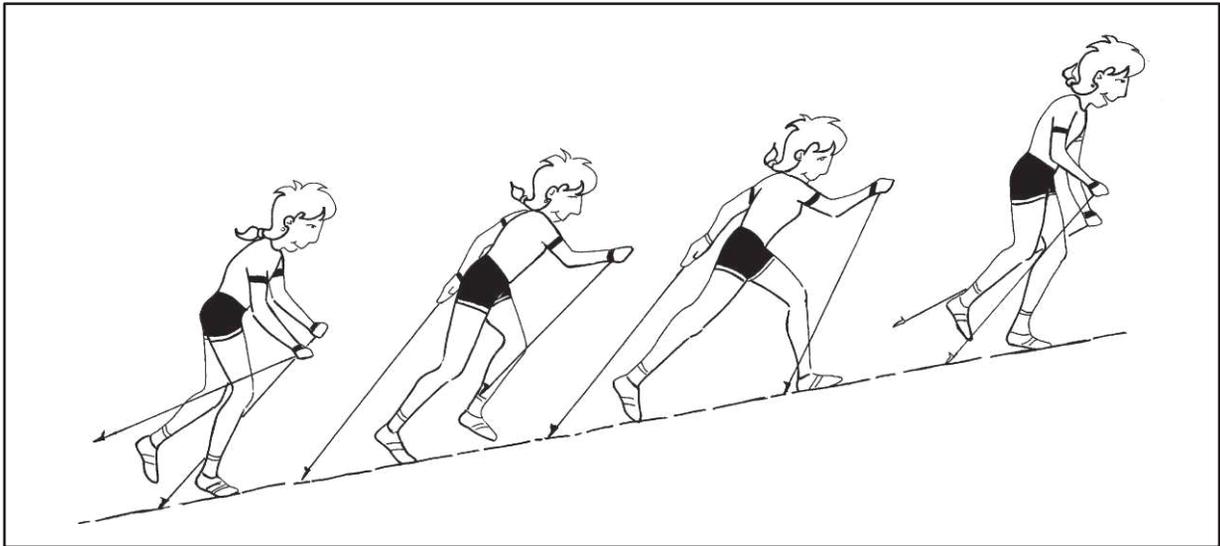
- ❑ Lightweight roller skis are a must for young skiers. Heavy roller skis are too hard on the legs and can give an athlete back problems.
- ❑ When purchasing roller skis, first find out about the cost and availability of replacement parts for that particular model.
- ❑ Roller skis come in different speeds. It is important to ensure that the speed of the roller skis matches the terrain in which they will usually be used (ideally an athlete will use equipment that allows them to ski at a speed similar to that which they would on snow). Using lightning fast roller skis on easy terrain will do little to improve a skier's conditioning.
- ❑ Speed reducers are useful for slowing down on downhill slopes.
- ❑ The wheels of roller skis should be checked regularly for excessive wear on one side - for example uneven wear caused by snowplowing. Each session the roller skis should be alternated from one foot to the other to encourage even wearing of the wheels.
- ❑ Be careful of paint lines on the road when it rains. These can be very slippery, as can wet leaves in the autumn.
- ❑ Proper maintenance can greatly increase the effective life of roller skis. Following are some guidelines to help achieve this:
 - ✓ Tighten all nuts before starting the workout.
 - ✓ Take wrenches and other necessary tools on long roller ski sessions.
 - ✓ Check your wheels before and after each workout.
 - ✓ The wheels should be lubricated with penetrating oil when they get wet.
 - ✓ Use a pocket-size diamond file to keep the carbide tips of the ski poles sharp. Use it after each outing, otherwise the tips will become too dull and will require a shop-based sharpening.
- ❑ Poles do not grip on the pavement as well as they do on snow, which can cause arm action to change. Special carbide pole tips help correct this problem, and so will skiing on new and warm road surfaces because they provide the best grip. Your athletes should ensure that the pole tip and handles are correctly aligned and sharp, and be careful to plant their pole so that the tip digs in properly. When they return to skiing on snow, they should be aware that they may have to adjust their pole action.
- ❑ Roller blading is problematic as an off-season activity for developing technique skills.

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Due to the manoeuvrability and generally high speed of roller blades, athletes using them are unable to simulate proper cross-country skiing technique.

Roller skiing is a good way to enforce good technique habits. It is also a good way to acquire bad habits. It is CRITICAL for you to pay close attention, ongoing, to your athletes' technique when they are roller skiing.

9.1.2 Introduction to Ski Walking



As with roller skiing, young athletes are introduced to ski walking and ski striding for the purpose of improving their ski technique and developing basic skills that they can build on in the future. When properly executed, these ski simulation techniques will look quite similar to techniques used on snow.

Ski walking is a dryland technique that is used to imitate the on-snow uphill Diagonal Stride technique (without the glide). Athletes should learn ski walking on a mild to moderately steep slope. Once learned, it can be used on steep inclines as well.

When ski walking, the push-off action from one leg begins as the second leg is being brought forward and the hips are falling forward. A side view of the skier during this phase would show the hips of the skier just in front of their toes at the point in time when their feet are together. It is the “falling” action of the upper body and the hips moving ahead of the toes before the push-off that allows the skier to have the powerful leg push that propels them both forward and up the hill (not up in the air), thus covering the greatest possible distance. When imitating the Diagonal Stride technique, skiers should not overextend their foot strike, as this will cause their hips to stay back and prevent them from executing a powerful push-off. As with the Diagonal Stride on snow, the front foot should land lightly reaching forward, with the toes pointing slightly up. The upper body should also be leaning forward.

To execute a proper weight shift the skier needs to have his/her weight over their foot at the time when it lands (head over foot) and when the push-off phase is initiated. One common

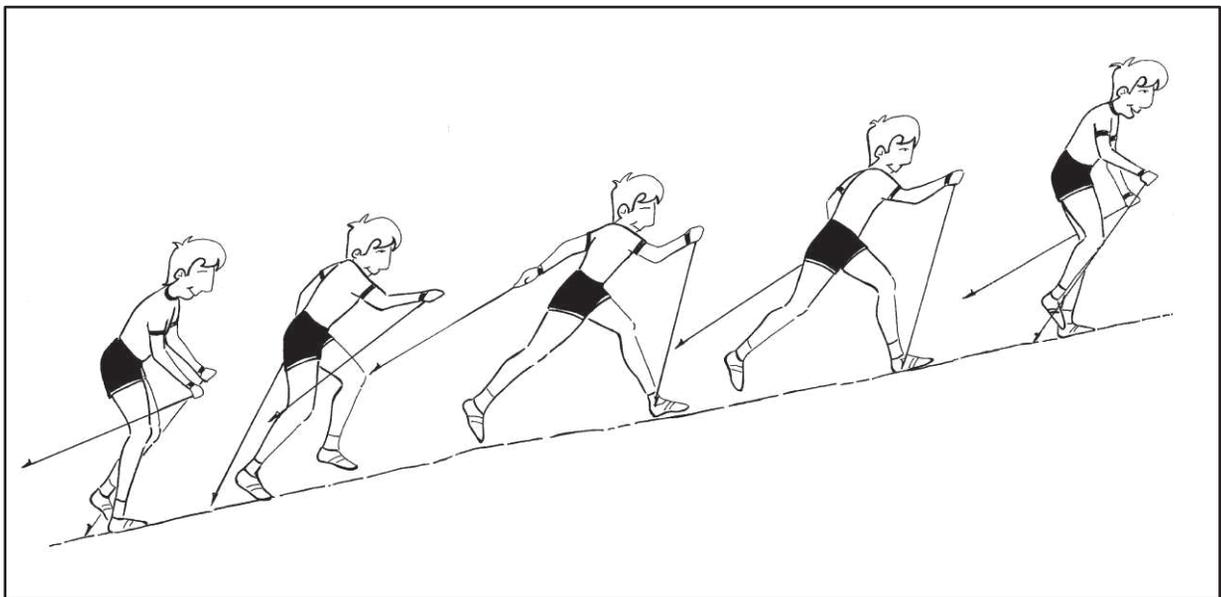
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mistake is for skiers to have their hips too far back at the time of the push-off, causing them to propel themselves upwards rather than straight forward. To correct this problem, ask them to slow down their movements until they can “feel” that they are slowly falling forward when their feet are together and their hips are in front of their toes (before they initiate the push-off).

The poles used for both ski walking and ski striding should be shorter than those used on snow. The general rule for adult athletes is that they should be 7.5 to 10 cm shorter. The reason for this is that the glide phase in a Diagonal Stride cannot be reproduced fully in a dryland setting. Poles should not be introduced until the skier has become familiar with the technique. When they are introduced, it is important to emphasize the complete extension of the arm with every stride. When this is done properly, the skier will release his/her grip on the handle and extend their fingers back. Ensure the pole straps fit adequately to allow for the full extension of their fingers without losing the pole.

Children can be introduced to ski walking techniques (without poles) at the beginning of the Learning to Train (L2T) stage of development.

9.1.3 Introduction to Ski Striding



The basic difference between ski walking and ski striding is that ski striding is done with more intensity and has a flight phase where both feet are off the ground. Children should be introduced to ski striding (without poles) at the beginning of the L2T stage of development. Poles can be added once they have mastered the technique. Note that the purpose of ski striding at this stage of development is for teaching technique, not for doing intensity training.

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REFERENCES

Cross Country Canada, NCCP Level 2 Technical Manual - Cross Country Skiing, 2005. Niemi, A. Ski Walking and Ski Striding Technique Illustrations, 2007.

Getting Started with Rollers, Ski Cross Country, 1999, pp.15.