



Skiers are made in the summer!

After a long race season, Nordic skiers typically take a break from training. We use this off time to evaluate the past season and plan for the next. Nordic skiers typically begin training again on May 1st. It is now May 7th!

The ISC typically doesn't become involved in our skiers athletic lives until after school gets out in early June, as many skiers compete in track, tennis or other Spring athletic programs. But Spring 2020 is unlike any other Spring!

We will try to send out weekly training tips for ISC skiers, to help them become better skiers, and to help encourage a healthy outdoor lifestyle. As you will see below, we have included suggestions for both ski jumping and cross country skiing. We plan to offer training tips in this manner because all ISC ski jumpers are cross country skiers, but not all ISC cross country skiers are ski jumpers.

Thanks!

Ski Jumping Coach Gary Rasmussen

Cross Country Ski Coach Dick Ziegler

Training Tip - Week 1

Ski jumping: Practice getting into your inrun position *20 times each day*.

Your goal: Improve your inrun position and make it second nature.

Have someone take a picture of you while you are in your inrun position. Study that picture and see if it looks like these pics of a World Cup skier, and Timothy doing his own training:



If the picture of you doesn't look like these two pictures, go back and try again. Visualize these pictures while you are getting into your inrun.

Cross country skiing: Go for a Level 1 or 2 (see below) *run* or *bike ride* every other day.

Your goal: Increase the capacity of your “aerobic engine” – increase your endurance.

If you haven't been doing much running or biking recently, work into it slowly – *run* for 10 minutes for the first few times. Then increase to 20 minutes. Or, start off *biking* for 20 minutes, slowly increase to 30, and so forth. **Try to maintain a level of aerobic activity that you slowly increase throughout the Spring.**

Training Levels

L1 – recovery, easy

L3 – lactate threshold, moderately high

L2 – endurance, moderate

L4 – VO2 Max, high

L5 – intensive repetitions, very high

Recovery

Intensity: **Level 1.** Easy, 2-3mmol/L below LT; 30-50 bpm below LT.

Duration: 30 mins. - 1.5 hours.

Objective: This zone is used for warm-up and cool-down periods. Training at this intensity will promote recovery following glycogen-depleting workouts or high intensity intervals and maintain cardiovascular and muscular adaptations. The primary goal of recovery is to deliver O₂ and CHO (carbohydrates) back to the muscles.

Endurance

Intensity: **Level 2.** Moderate, 1-2 mmol/L below LT; 10-30 bpm below LT. Level 1. Easy, 2-3 mmol/L below LT; 25-50 bpm below LT.

Duration: 30 mins. - 3 hours.

Objective: A moderate intensity is the optimum zone for improving endurance adaptations. An easy intensity delivers the same benefits, but more slowly. Unlike many athletes in bipedal and less-weight bearing sports, most skiers do most of their endurance training at the easier of these two intensities (around 35 bpm below LT). Training in both of the endurance zones improves the ability to deliver more oxygen to the muscle cell and process more energy from aerobic sources. Specific training adaptations include an increase in the size and number of mitochondria, an increase in myoglobin, increased capillarization, and an increased number of aerobic enzymes. Skiers tend to lower the intensity the longer the session. Over two hours = level 1. Under an hour = level 2.

Lactate Threshold

Intensity: **Level 3.** Moderately high, below LT by 5 bpm, or above LT by 5 bpm.

Duration:

• Tempo: 15 to 60 minute continuous effort at 5 bpm below LT.

• Interval: 5 to 15 minutes at LT and up to 5 bpm over LT.

Objective: Training at this intensity will raise LT as a percentage of Vo₂ max as well as increase Vo₂ max.

VO2 Max

Intensity: **Level 4.** High, 1-2 mmol/L above LT or at a heart rate associated with 95% of Vo₂ max.

Duration: 3-5 minute intervals with half-time to equal recovery.

Objective: This is the optimum zone for improving Vo₂ max. Training adaptations include an increase in stroke volume, an increase in maximal aerobic capacity and improved lactate buffering capacity - go fast, hurt less = go faster.

Intensive Repetitions

Intensity: **Level 5.** Very high, 2-6 mmol/L above LT.

Duration: Short: 30-60 seconds with complete recovery.

Long: 1-2 minutes with complete recovery.

Objective: Training at this zone generally only occurs for a few weeks prior to a major competitive event and increases anaerobic capacity and buffering ability.