



# Skate Ski Technique

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Notes from Coaching Refreshers 2020-21 and 2022

## **Body Position, Balance, Timing**

### **BODY POSITION**

- Tall, tight, ankle flexion (knees over boots), imagine nose, knees, toes stacked on top of each other
- Power Circle - 30 cm around you - think having a cylinder, movements within this circle will propel you forward most efficiently.
- Pole driver to pole plant - drop your full body weight.

### **BALANCE**

- Practice hopping on both skis, hop on one ski, hop on other ski; hop on one ski around in a circle- repeat with other ski
- Lift leg to balance on one ski
- Ski down gentle slope on one ski

### **ONE SKATE TECHNIQUE**

- Initiate with double poling action
- Focus on high poles in front/beside face, initiate impulse with pole plant by dropping full body weight onto poles (with knee and ankle flexion) and press ski into snow to create velocity- the greater the impulse, the greater the forward velocity

- Think “pole, skate, pole skate”
- glide on a flat ski

**Box or Dance drill: Skate Ski Drill:** [The One Skate Dance Video](#)

1. Begin the drill standing on level ground, feet shoulder width apart.
2. Flex slightly into your hips, knees and ankles. This is your new “tall” position. Do not straighten up beyond this position from now on.
3. Shift your weight over to one foot. You can keep both feet on the ground to help with balance, but the great majority of your weight should be on one foot. Weight your foot evenly across all four corners of the foot.
4. Flex into the supporting leg, almost like you are doing a single leg squat. Hinge into your hips and flex your knees and ankles so your entire body flexes down over that ski. Don’t sit too heavily into the hips.
5. Staying low and flexed, shift your weight over to the other foot.
6. Once you are fully on the new foot start to straighten up again. Remember, don’t straighten up fully. Maintain some soft flexion at the hip, knee and ankle.
7. Staying on that foot, flex into the hip, knee and ankle once again. At the bottom, shift your weight over to the other foot and then extend the body up again to the “tall” position.
8. The cues are DOWN-ACROSS-UP-DOWN-ACROSS-UP ETC. (Nordic Ski Lab)

**PROGRESSION TO TEACH ONE SKATE**

- Drill: skate (no poles hands up high as though you were holding poles) think small steps, keeping tall, tight posture with ankle flexion. Looking for straight legs, push to the side, legs pendulum back to centre. Practice forward lean – flex knees and ankles, weight on the balls of the feet.
- Drill: Forward lean into another skier (stationary). Down the track make small steps with no knee flexion and then add knee flexion/angle flexion, extend the glide
- Drill: hold poles  $\frac{1}{3}$  the way down and hold them at head level, good body position, tall, small quick steps from one ski to the next, use poles a visual feedback for body position (no rotation, no bending forward from waist, etc). Poles should move in similar motion as if poles are in hands (from perpendicular to horizontal).

- Drill: Put poles on, tap poles for each small skate, move head and poles as a unit to initiate pole plant, shoulder joint moves - elbow jab, hands to iliac crest, think chest up and squeezing shoulder blades together.
- Drill- stomp - supports ankle flexion, getting into a tall position and good balance. If a skier is unable to hold stomp on flat ski, consider working on balance exercises.
- Drill- stomp + pause- “start-stop”- initiate with poles, stomp, deep ankle flexion, move into tall position, glide, pause with poles in tall/ready position, carry poles high, aim for poles in front/beside face (out of corner of your eye), pole plant and stomp new glide ski into the snow.
- One skate up slight incline drill  
Focus on high poles, in front/beside face, initiate impulse with pole plant by dropping full body weight onto poles (crunch sternum to belly button) with strong knee and ankle flexion (cover your boots with your knees) and press (kick) ski into snow to create the velocity- the greater the impulse, the greater the forward velocity (helps to reinforce good technique/body position)

## **DOUBLE POLE TECHNIQUE**

- Start with poles up in front/beside face/eyes
- Initiate impulse with pole plant by dropping full body weight onto poles (with knee and ankle flexion; “knees to skis”)
- Complete double pole with crunch, poles/hands going only as far as iliac crest, elbows remaining bent (90 degrees)

## **OFF-SET TECHNIQUE for hill climbing**

- 1-3 concept. Push off the drive (back) leg/ski (1) onto the glide (forward) leg/ski (3 point landing coordinated with both poles planting simultaneously with the glide ski)
- Body to lean into the hill; body low; finish off the double pole on the glide ski to extend the glide (complete the crunch like in double pole) and drive through
- Ratio of lead versus non-lead leg- either 50:50 (similar to hop skate- used in racing) or 70:30
- Technique- off- set uphill- use non-lead leg/driver to push off, glide onto lead leg, double pole through

- Drill- stand facing hill with skis in skate position; lean back on skis- no movement; get weight forward on skis- skis will begin to slide uphill; take small jumps forward + skis will glide uphill

### **TWO-SKATE TECHNIQUE:**

- Use on gentle downhill slope - this technique is fast and flowy, it's key to keep the arms/poles moving (no stall between skates)
- Initiate with pole plant, good ankle flexion, two skate between poling and long glide on flat ski
- Emphasize bringing poles up high, in front of face/eyes
- Because of the tempo of this technique, poles will extend beyond the iliac crest

### **FREE SKATE:**

- This is also a fast and flowy technique, use on a gentle downhill slope to increase speed
- Maintain deep forward ankle flexion, body position is forward and low
- Reach forward with alternate hand pointing to opposite ski- repeat
- Encourage long glide on flat ski

### **TIMING**

- Timing is an important aspect of nordic skiing (for both skate and classic skiing). It's about having rhythm and flow, about applying the power in the most biomechanically efficient way to optimize the technique. It is also about the timing of the power of the crunch or press (either with poles or skis) and the brief rest that occurs during the return of the poles or skis. Good timing of ski technique demonstrates the summation of forces from the application of the power through the crunch or press in the snow (the active phase) and the relaxation of the return phase (the passive phase) of skis and poles.

### **VIDEO OF SKATE REFRESHER WITH A STAPFF Feb 2022**

Neil Smith videoed the Skate Refresher with Andrea Stapff on Feb 2022. Thanks to Neil for making this resource available. The link below is a private link, and permission may be requested to access it. Please do not reproduce without permission.

Part 1 - One Skate

[https://drive.google.com/file/d/1kFkRVUH8NweUFbuGTjYU0u\\_A3JbWNkf9/view?usp=sharing](https://drive.google.com/file/d/1kFkRVUH8NweUFbuGTjYU0u_A3JbWNkf9/view?usp=sharing)

Part 2 – Offset

<https://drive.google.com/file/d/1EDgLnBF2XHvhJSIPkbP9VmZq-3Ze55Td/view?usp=sharing>

Recorded by C. Bowlby; edited by A. Stapff and M. Atkinson

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