Overview of Skate Skiing and the 5 Main Techniques

Transcript

0:00
Skate skiing is also known as Free Technique. It's one of the two major disciplines of cross-country skiing. The other is called Classic skiing and it's the more traditional style.

Skate skiing is done on wide, groomed trails, outside of the classic ski tracks. Not all cross-country ski trails are dual purpose skate and classic, so it's good to check the trail map and signage. And, as much as possible, try to avoid skating over the classic ski tracks, because that will damage them.

0:28
You can also skate ski on pavement on roller skis. Roller skiing is an excellent approximation of skating on snow and a great option for enjoying the sport year round.

Aside from when you're going straight downhill, skate skis are always positioned in a V-shape, with the tails closer together than the tips.

Skate skiing looks similar to ice skating, but the mechanics are different enough that you can't directly transfer ice skating skills to skate skiing.

0:55
A skate skier uses the inside edge of the ski to push forward. The push with the ski is called a skate push, a kick, or a leg push - it all means the same thing.

Exactly how the ski works during the kick depends on the technique and the terrain. The ski either lands flat or on the inside edge, then it rolls further inward as the skier pushes against the snow and the leg straightens.

No matter what, a skate ski should be in continuous motion. It's always gliding and never comes to a stop during the kick, like a classic ski does.

1:26
The poles make a significant contribution in most skate techniques. The mechanics of poling are similar to the mechanics of classic poling, although the poles in skate skiing are longer.

Self-taught skate skiers use a technique that seems to come naturally to everyone. You can identify a self-taught skier because they use the same technique on all terrain - uphills, downhills and flats.

Racers and other trained skiers will have a repertoire of techniques to use in different situations.

1:55
Skate skiing has five primary techniques along with a range of supplemental techniques for situations like downhills and corners. I'll use the rest of this video to introduce the five primary skate techniques.
I won’t give a detailed account of the mechanics of each technique - the Technique Explainer Courses do that. Instead, this is meant as an orientation video for those new to the sport, or for anyone who wants a big picture overview of the main skating techniques.

2:25
Ski techniques are like gears on a bike. You switch between techniques as your speed changes. Speed changes for many reasons. Hills are the most obvious, but snow conditions matter too. The temperature, humidity and age of the snow all affect your speed.

The names of the various skate techniques cause a lot of confusion. You’ll find differences even among English speaking countries. We’re English Canadian and the names we use are different from those used in America. It’s confusing at first, but eventually you’ll get used to it.

In XC Ski Nation, we try to blend the Canadian and American terms, but we often default to the Canadian names. In this video, I’ll mostly just the Canadian terminology.

3:07
As we move to the right along this technique spectrum, speed increases and the techniques have longer glide phases. In the other direction, the techniques are more about generating power to overcome inertia.

A related trend along this spectrum is that the V-shaped angle of the skis gets narrower the faster you go. This is true between techniques and within a single technique. So when you start out, you’ll have a wide V, but, as you build up speed, the V will narrow, even if you don’t change techniques. When you’re going at very high speeds it will almost feel like the skis are parallel.

3:42
Let’s dive in and look at video of each technique and talk about some of the key features.

Don’t forget we have a full library of Skate Technique demo videos. I’ll link to that below this video. And, again, almost every technique has it’s own Explainer Course which goes into detail about the mechanics.

The lowest gear, Diagonal Skate, is the easiest technique for climbing hills. The arms and legs move in opposition, similar to the Classic ski technique called Diagonal Stride which is why this technique is called Diagonal Skate.

4:15
This is a standout feature of Diagonal Skate - all the other skate techniques use a double poling action or no poling at all. If you see a skier using an alternating poling action, you can be sure it’s Diagonal Skate.

Diagonal Skate is useful for when you want to get up a hill with minimal effort. It’s rarely used by serious skate skiers because Offset is more efficient. We’ll look at Offset next.

4:41
Offset, or V1, is for climbing hills and is the first of the two most used skate techniques.

In Offset the skier has a highly characteristic stance. It’s low and wide - almost squat-like.
In other skate techniques there are times in the cycle when it looks like the skier is standing up, but you won’t see that kind of full body extension in Offset.

5:07
We say that Offset has a 3 to 1 timing. That refers to how the skis and poles are coordinated. You have two poles and two skis for a total of four points of contact with the snow. In Offset the two poles should land on the ground at exactly the same time as one ski. The other ski works alone without a pole push.

That’s why we say it has a 3 to 1 timing and why Offset is an asymmetrical technique.

You either Offset on your right or your left side. You can even switch from one side to the other part way up a hill. See if you can spot the moment Olivia switches sides on this video.

Most everyone has a favourite side, but you should try to develop your skill and strength on both sides as evenly as possible.

6:04
How the poles are angled is another standout feature of Offset technique. At the moment of pole plant, one pole is almost vertical and the other is angled backwards and out to the side. That staggered position is what gives Offset it’s name. It’s a consequence of the wide V positioning of the skis.

Every ski technique has a unique rhythm. In Offset it often looks like the skier is galloping or skipping up the hill.

Next in the line-up is One Skate, or V2. One Skate is the other dominant technique and is used in the widest range of conditions. It’s closely related to the classic ski technique called double poling.

6:45
One Skate has a beautiful, ballet-like rhythm. There’s one double poling action for every skate push. One pole push, for one skate push. That’s why we call it One Skate.

The other hallmark of this technique is how the skier’s body flexes and extends with each stride. Just before the pole plant, the skier stands tall with the legs together under the body. Then the body flexes at the ankles, knees and hips as the skis and poles push against the ground.

7:15
Learning to coordinate this full body flexion and extension with the pole push and the skate push is the secret to efficient one skating. It’s easy to fixate the beautiful leg swing in this technique and think it’s all about leg power, but it’s the use of body weight that really makes the difference to efficiency.

Unlocking efficiency in One Skate demands quite a lot of balance. This technique won’t feel completely comfortable until your balance develops, so you have to be very disciplined and practice One Skate even when it feels difficult to push with every pole stroke.
One of the best pieces of advice I can give you is to prioritize One Skate, especially early on.

7:56
The fourth gear is Two Skate, called V2-alternate in America. Two Skate also demands a lot balance but novices find it a little easier because you can kind of cheat on the balance with Two Skate in a way you can’t with One Skate. I know that’s a little hard to understand, but just trust me on this one.

8:15
Two Skate is used at higher speeds, typically on flats and gentle downhills.

It’s similar to One Skate, in that the skier’s body is visibly extended just before the pole plant. But in Two Skate, instead of poling with every leg push, you pole with every other leg push. One pole stroke for every two skate pushes. That’s why it’s called Two Skate.

Just like in Offset, this means you’re either poling on your right side or your left side.

So Offset and Two Skate are both one-sided techniques. The skier only poles on one side and that can make it difficult for new skiers to tell the difference.

8:50
It doesn’t help that the majority of skate skiers you’ll see on the trails, at least here in North America, are self-taught and they also only poling on one side. Their technique won’t match up perfectly with what I’ll show you here.

9:05
So, as I’ve already said, Offset is for hill climbing, and Two Skate is for fast conditions. Even though they both have one-sided poling, they are completely different techniques.

In Offset the skier stays in that deep, wide stance throughout the cycle. The skis are positioned in a wide angle V. The turnover of each cycle, also known as the tempo or poling frequency, is quick because it’s an uphill technique and you have to keep moving so you don’t come to a stop.

In contrast, Two Skate has a long glide and a narrow V. In Two Skate, the skier stands tall on the poling side, then flexes down over the other ski. Two Skate uses full body flexion and extension similar to what we see in One Skate.

Also, in Offset the pole plant is tightly timed to when one ski hits the ground. Two Skate has a totally different timing.

9:57
The fifth and final gear is Free Skate. Free Skate is for the fastest conditions. Once you’re moving too fast for Free Skate, you’ll have to switch to a tuck or maybe even apply the brakes.

In Free Skate there’s no poling, but there’s an alternating arm swing. You’ll see different arm positions and swing styles, or alternatively, a skier may simply tuck the poles under the arms and cruise along.
The skier stays low and bent forward in Free Skate. You don’t have to stand tall because you don’t need to get up in order to plant your poles. This position keeps your centre of gravity low and makes it easier to keep your balance, which is why Free Skate is such an enjoyable technique for beginners to practice.

10:38
So, to summarize, there are 5 main skate techniques. Generally speaking they work like this: Two Skate is used at high speeds, such as on flats and declines.

One Skate is the most versatile technique and can be used on uphills, downhill and flats.

Free Skate is the highest speed technique for when you’re moving too fast to use your poles.

Offset is the primary uphill technique. Diagonal Skate is also an uphill technique and can be a real lifesaver for getting up hills without completely flat lining.

11:08
With experience, your eye will develop and you’ll easily identify each technique.

Your long term goal is to become competent in all the skate techniques, but in terms of usage, Offset and One Skate are most used and should be your primary focus, especially in your early days.

As your skate skiing skills increase, the way you use the various techniques will change. Diagonal Skate will become less useful as you improve the efficiency of your Offset. Eventually, you’ll even learn to One Skate uphills. As your balance improves, you’ll Two Skate at higher and higher speeds - speeds which at first you’ll only Free Skate.

11:44
It’s best to avoid thinking in absolutes when it comes to nordic ski technique and that’s one of the major themes we promote in XC Ski Nation. Many of the features of a technique are adjustable.

You can learn more about the ways each technique is adjusted in the Explainer Courses.

Also, ski techniques evolve and follow trends. What we say now may not apply in a few years. Skiers have different bodies and coaches have different ideas about technique which adds to the variation. We will certainly change our ideas over time.

There’s enough nuance in this sport to keep it interesting and challenging for a lifetime. And all that just adds to the enjoyment and pleasure of skate skiing.