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Photos by Kerry Tasker

Outdoors › Hiking

The Best Nonslip Traction Devices

UPDATED MAY 11, 2020

Our former pick for nonslip running shoes, the Icebug DTS2 BUGrips, has been replaced by the DTS3; it's also available in [men's](#) and [women's](#) sizes and we'll be testing these for next winter. [Show more](#)

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Our runner-up pick for nonslip running shoes, the Salomon Speedspike CS, has been discontinued, and we've removed it from this guide. [Show less](#)

Your guide

Lisa Maloney

A staple of slapstick humor, slipping and falling is a lot less funny when it happens to you—and the risk goes up in winter. After more than twelve hours of testing fifteen different traction devices on water-slicked ice, hard-packed snow, and slippery hills in Alaska's city sidewalks and forested trails, we've identified the **ICEtrekkers Diamond Grip** as the best ice gripper for all-around walking use. They're easy to put on and walk in but still offer great traction on all but the slickest hills as long as you weigh enough to press the low-profile spikes into the ice. We also identified options that will work well for lighter people.

Our pick

ICEtrekkers Diamond Grip

Best for all-around city use



The ICEtrekkers Diamond Grip offer the best combination of traction and durability in most conditions for most users.

\$43* from Amazon

\$45 from ICEtrekkers

*At the time of publishing, the price was \$42.

Built with a stretchy, durable rubber harness makes them easy to put on or take off your shoes and many low-profile, spiked “traction beads,” the **ICEtrekkers Diamond Grip** is the best choice for most people on all but the steepest and iciest terrain. You'll also find these marketed as the **Yaktrax Diamond Grips**; they're the same, so pick the one that's cheapest. One thing to be aware of: With this sort of ice gripper, lower body weight correlates to reduced traction. Users that weigh about 150 pounds should

get good traction in most conditions, but those who weigh 120 pounds or less might want to consider an ice gripper with more aggressive spikes.

Our pick

Hillsound Trail Crampon Ultra

An upgrade for hardcore traction

The Hillsound Trail Crampon Ultra performed the best of all the hardcore outdoor traction aids we tested, helping testers feel sure-footed in all but the most severe snowy, icy conditions.

\$65* from Amazon

*At the time of publishing, the price was \$70.

For backcountry users, the **Hillsound Trail Crampon Ultra** offers the biggest and most plentiful spikes underfoot for a lightweight yet aggressive and stable grip in almost all conditions. (Despite the name, the Trail Crampon Ultra is a lightweight, flexible traction device—not actual crampons.) These traction devices also have an ultra-tough rubber harness and a hook-and-loop instep strap to hold everything snugly in place.

Runner-up

Hillsound FreeSteps6

For gnarly city conditions

If you know you're going to be navigating lots of steep, icy hills or just need some extra grip, you'll like the Hillsound FreeSteps6.

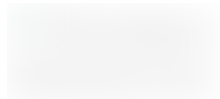
\$44* from Amazon

*At the time of publishing, the price was \$0.

With a total of 21 midsize steel spikes in the sole and a stretchy rubber harness that holds everything snugly on your shoes, the Hillsound FreeSteps6 offer stable, sure-footed traction in even challenging urban conditions.

Everything we recommend

Our pick



ICETrekkers Diamond Grip

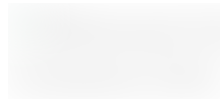
Best for all-around city use

\$43* from Amazon

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Our pick



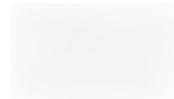
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Runner-up



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The research

[Collapse all](#)

Why you should trust us

I've lived through almost 30 cold Alaska winters. The last 15 of them have included quite a bit of hiking in snowy and icy conditions, and for the last 11 years I've worked as an outdoor writer, which means I make most of my living from using and writing about my experience with this sort of gear. I also spend quite a bit of time hiking in the company of others, so I have years of firsthand experience with the slipping and sliding (and cussing) that results when traction devices aren't up to the challenge.

In addition to all of that, the editors and I pored over other expert reviews of traction devices to identify leaders in the category. Some of our sources (listed at the end of this guide) included Runner's World and Outside Online for their feedback on running cleats; Backpacker and Active Junky for feedback on hiking traction devices; and hundreds of user reviews posted on Amazon and REI.

Where we tested

To make sure every device (as well as our all-in-one shoe picks) received an even chance, I spent more than a dozen hours walking, running, and hiking in the most slippery conditions I could find in and around my hometown of Anchorage, Alaska.

I did my testing during an icy, almost snowless winter, so I had plenty of slick surfaces to choose from. Believe it or not, the best testing ground ended up being a popular sledding hill. When there's this little snow, the passage of sleds and bodies compacts everything down into a combination of smooth, hard-packed snow and slick ice—two of the most challenging surfaces for any traction device—and the steep hill I chose magnified the challenges posed by those slick surfaces.

In some cases, the walking trails leading up to the sledding hill presented more of a challenge than the hill itself. The cycle of freezing and thawing, combined with copious rainfall, had turned them into jumbled rivers of hard-frozen, water-slicked ice at just enough of an incline to send me sliding like a member of the Olympic bobsled team. This type of surface isn't terribly common in most cities, but it's common near water sources outdoors or in places where runoff is funneled down a channel and

freezes. It's the equivalent of a frozen waterfall, just laid out at a shallow slope instead of dangling vertically.

I also took each pair of ice grippers out for a stroll on the steep, ice-slicked sidewalks of a hill near my home to see how they'd perform in city conditions.

Who this is for

Is this you? If so, you need this guide.

If temperatures ever dip below freezing where you live, even for just a few nights, you've probably had the dubious pleasure of slipping around on the ice like a cartoon character. But slips and falls are no joke. According to the US Centers for Disease Control, they're the leading cause of non-fatal injuries for almost every age group in the United States. Of course, your risk of slipping and falling is much higher when snow or ice cover the ground.

A good traction aid, which you might identify as ice grippers, ice cleats, ice spikes, or many similar names, can't eliminate the risk of a slip or fall entirely. But they can do an awful lot to cut down on the risk. They are especially helpful for people with impaired mobility or osteoporosis, seniors, or anyone else who is at increased risk of injury from a fall.

Removable traction aids are meant to slip on and off your shoes as needed. They all have some sort of flexible harness that stretches to fit over your shoe and then contracts to hold the actual traction devices, which may be steel or aluminum spikes, coils or chains, in place on the underside of your shoe.

If you already have some sort of nonslip traction aid and the stretchy harness and spikes are still in good shape, you'd replace it only if it doesn't fit your footwear or if it can't perform well in the sort of conditions you encounter. If you're at all on the fence, it's better to go for more traction instead of less. After all, it's much cheaper to pay for a pair of ice grippers now than to deal with the cost and inconvenience of being hurt in a fall.

How we picked

Stick it to ya: these devices attach to your shoes and keep you upright (usually) on ice.

As useful as all of these nonslip devices can be, it's important that you use a device that's properly matched to the conditions you'll encounter. A nonslip device that works really well on hard-packed snow might not have enough bite for walking on hard ice that's frozen solid; and while aggressively spiked traction devices are great for use on ice or in the backcountry, they end up feeling like silly, inch-high stilts if you take them for a stroll on city concrete that's covered with a thin slick of ice.

Ultimately, the type of traction device you choose has as much to do with how you'll use it as the conditions you expect to encounter. Because of that, we've divided this report into two categories: Ice grippers for city walking, where you need a balance of solid grip plus easy walkability, durability for tromping across bare sections of pavement or gravel, and easy on/off so you can go back and forth from indoors to out; and ice grippers that are meant to help handle rugged, ungroomed winter terrain that stop just short of the full-on crampons you'd use for a mountaineering or climbing trip.

We evaluated each ice gripper on several criteria, no matter its category. The first was how well they grip on a variety of surfaces, including rough ice that has some texture to it, hard-packed snow, and smooth, water-slicked ice. The next was how well they fit on your shoes or boots; if there's play between the grippers and your boots, your foot might actually end up slipping around *inside* the ice gripper even when the spikes are solidly set in the ice.

I also froze each ice gripper for at least 24 hours and stretched them to their maximum tolerance repeatedly as a means of testing the elasticity and durability of their harnesses. None actually tore, but several felt like they were getting close to it, a sign that the harnesses might rip with repeated real-world use.

Finally, I also took each set of ice grippers for a walk on dry ground or concrete, just to see how easy they'd be to walk in. This is a scenario that you're likely to encounter during the shoulder season in the city, when

there's patchy coverage of snow and ice, or when trekking outdoors where differences in terrain, temperature and sun exposure mean you sometimes end up walking on sheer ice one moment, then bare rock or gravel the next. Of course you should try to stick to ice and snow whenever possible when wearing ice grippers to reduce wear and tear on their spiked surfaces, but if a pair can stand up to the occasional dry ground, they'll be more durable and useful in the long run.

Our pick for all-around city use: ICEtrekkers Diamond Grip

Lightweight, reliable, and perfect for urban environments.

Our pick

ICEtrekkers Diamond Grip

Best for all-around city use

The ICEtrekkers Diamond Grip offer the best combination of traction and durability in most conditions for most users.

\$43* from Amazon

\$45 from ICEtrekkers

*At the time of publishing, the price was \$42.

We chose the **ICEtrekkers Diamond Grip** (aka the **Yaktrax Diamond Grip**; the products are the same) as our favorite all-around traction aid. Their welded, low-profile, steel chains are covered with spiked "traction beads" provide great grip on most slippery surfaces, including hard-packed snow

and slightly-textured ice. The rubberized harness that holds them in place is tough and durable but still easy to take on and off, and the traction beads help eliminate the risk of an embarrassing trip or fall if you were to catch bigger spikes on an uneven surface.

Each of the traction beads, strung on aircraft-grade steel cable, has six angled points so that no matter how they're oriented, there are always dozens of "toothed" surfaces pointing down at the ground. For almost any conceivable city use, including smooth, level ice or inclined ice that has some texture to it, the Diamond Grips offer a great balance of traction, durability, and civilized behavior.

The only issue is that those angled points aren't very big, so if conditions get really extreme—say, smooth, "plastic" ice with a slick of water on it—you'll want to invest in more aggressive ice grippers. Also, if you're very light, you might not press the spikes far enough into the ice to get good traction.

The harness on the ICETrekkers Diamond Grip only has a little bit of stretch to it, but it's still easy to pull on over shoes as long as you get the proper size for your footwear; the tough harness stays put once it's on.

In a 2013 [Runner's World review](#) of ice cleats for runners, the ICETrekkers Diamond Grip draws a lot of praise for the way the traction beads spin just enough to keep snow from clogging them up, and testers liked their performance for running in a variety of conditions too. The Diamond Grips also get a nod from the [Appalachian Mountain Club](#) for their tough, low-profile traction, and they're an enduring favorite of REI users. Their warranty covers manufacturing defects, with no time limit given.

Flaws but not dealbreakers

It's hard to beat the Diamond Grip for all-around performance on almost any footwear. But if you're very light, you might not have enough body weight to get the best traction out of the low-profile spikes on the traction beads. I weigh about 150 pounds and got good traction out of them, but somebody who weighs about 30 pounds more was even more stable; he said he couldn't make them slide, even if he tried. The harness also isn't quite as stretchy as what you'll find on other traction aids, although that

translates to a tough, secure fit, as long as they are sized correctly to fit your footwear.

An upgrade for gnarly city conditions: Hillsound FreeSteps6

A tough, crampon-like device that's relatively comfortable for city walking.

Runner-up

Hillsound FreeSteps6

For gnarly city conditions

If you know you're going to be navigating lots of steep, icy hills or just need some extra grip, you'll like the Hillsound FreeSteps6.

\$44* from Amazon

*At the time of publishing, the price was \$0.

The **Hillsound FreeSteps6** seems to fly mostly under the radar of other professional reviewers, perhaps because they look so similar to the Hillsound Trail Crampon Ultra (our top pick for hardcore backcountry use). Why go for the little brother when you can have the hardcore version? But we like the FreeStep6's slightly smaller spikes for being tough enough to handle the worst possibly city conditions, even water-slicked smooth ice at an incline, while still remaining relatively civilized and comfortable underfoot if you have to cross a stretch of bare pavement or gravel.

The harness that attaches the FreeStep6 to your shoe is very similar to that of the Trail Crampon Ultra but lacks an instep strap (you don't really need it) and stretches a little more easily, so it's very easy to take on and off your shoes.


The quarter-inch underfoot spikes are the best thing about the FreeStep6. Although they're not as large as what you'd find on a hardcore traction device meant for trail use, they're arranged in multidirectional clusters to protect against slip in any direction, no matter what sort of hill you're on, and there are a lot of them: 21 in total.

Flaws but not dealbreakers

The only constructive criticism we can offer of the Hillsound FreeSteps6 is the way they fall strictly in the middle: They're useful in both city and backcountry conditions, but they may be too aggressive for some city users and too minimalist for backcountry users, who may need the security of larger spikes. But if you live in a region where the cities get seriously slick, or if you want a mild-mannered backcountry ice gripper that can do double-duty in the city, this is a great pick.

An upgrade for hardcore trail traction aids: Hillsound Trail Crampon Ultra

The big brother to our gnarly city pick, the Hillsound Ultra crampons have bigger spikes for rougher terrain.

Our pick**Hillsound Trail Crampon Ultra****An upgrade for hardcore traction**

The Hillsound Trail Crampon Ultra performed the best of all the hardcore outdoor traction aids we tested, helping testers feel sure-footed in all but the most severe snowy, icy conditions.

\$65* from Amazon

*At the time of publishing, the price was \$70.

When you need serious outdoor traction, the bigger and sturdier the spikes, the better. The **Hillsound Trail Crampon Ultra** is tops in this category because it has the most numerous and aggressive spikes underfoot (18) arranged in a multi-directional pattern that offers traction against sliding in any direction on ice, hard-packed snow and even some types of mud. The Trail Crampon Ultra's shoe harness is also the toughest we tested, and it comes with a hook-and-loop instep strap to help fit the spikes snugly to your foot.

The Trail Crampon Ultra's half-inch steel spikes are the most important part of their appeal. There are twelve spikes under the forefoot and six under the heel, arranged in multi-directional clusters and secured by steel chains that pass under the midfoot for extra traction and stability. Our runner-up in this category has a total of 12 spikes under the whole foot. While that's not a huge difference, the extra spikes do matter when a slip or fall could potentially send you sliding right off a mountain or cliff.

The harness on the Hillsound Trail Crampon Ultra is another high point, for three reasons. First, it's stretchy enough to get over most boots or shoes very easily. Second, it felt significantly sturdier than the nearest competitor in our stretch tests. Third, the Hillsound Trail Crampon Ultra was the most likely in our test to give a perfect, stable fit on a wide range

of boots and shoes. Having the hook-and-loop instep strap to further anchor the harness in place is a big help, too.

Although the Hillsound Trail Crampon Ultra doesn't receive as much media attention as its direct competitor, the Kahtoola Microspikes, it has drawn some notable mentions over the last few years. [Active Junky](#) puts the Hillsound Trail Crampon Ultra on their list of top ice grippers, praising it for its tough, versatile harness and the big spikes that grip securely even on ice and hard-packed crust. This item's mild-mannered cousin, the Hillsound Trail Crampon (no Ultra), is also a top-ranked item on REI.com.

Flaws but not dealbreakers

Despite the name, the Hillsound Trail Crampon Ultra doesn't take the place of actual crampons, which have larger, sharper steep spikes and a rigid frame for extra stability, leverage, and durability. Every backcountry user has to be responsible for their own safety, but for me, my personal line of safety and comfort is the line between hiking and climbing or mountaineering. If I can classify what I'm doing as a hike, I'll grab the Hillsound Trail Crampon Ultra on my way out the door. If what I'm doing could remotely be called climbing or mountaineering, real crampons are more appropriate.

Finally, although you can tromp around on bare ground reasonably comfortably in these spikes, it's definitely not ideal, and they're going to be more noticeable underfoot than smaller, more subdued spikes.

The competition

There are lots of great traction aids, and for such a practical product, you'd be surprised how many folks have a cultish dedication to their personal favorites. Different usage scenarios, weather conditions, and even body types—lightweight walkers will want something with more aggressive grips, since they may have a hard time pressing more mild spikes into the ground—mean that many of the items we refer to as competition merit serious consideration, which is why we're offering extended write-ups here.

[Kahtoola Microspikes](#) are a good example. They've reached near cult status here in Alaska, thanks to their combination of large spikes

connected by sturdy chains and a very lightweight, stretchy harness that holds the aforementioned spikes onto your feet. I'd feel secure hiking in Kahtoola Microspikes anywhere, and they're only in second place by a hair, but there are some important comparisons to be made between the Kahtoola Microspikes and the winner of this category, the Hillsound Trail Crampon Ultra.

Although the Microspikes' actual spikes are only a hair smaller than the Trail Crampon Ultra's, there are fewer of them (12 total, compared to the Hillsound TCU's 18) and the Kahtoola spikes aren't arranged in aggressive, multidirectional clusters. The spikes are also advertised as being three-quarters of an inch long, but according to our ruler, they are just under a half-inch long.

Although the Kahtoola Microspikes' harness is very lightweight and stretchy and offers great durability for most hikers, I've heard occasional secondhand reports of them breaking and noticed that they felt less strong than the Hillsound harness during our stress tests. That doesn't mean they're flimsy—quite the contrary, since dozens if not hundreds of Alaskans are out there putting them through their paces every day and stories of breakage are quite rare—but, given the choice, I will take the stronger Hillsound harness. If the harness on your Kahtoola Microspikes does break, they're usually fast to honor their two-year warranty, and according to a few anecdotes, may even replace the Microspikes if they're beyond the warranty period.

Our next favorite ice grippers are produced by **Due North**. Due North puts out several models of traction aids that are very similar; each has a stretchy rubber harness and six 1/8-inch carbide-tipped steel spikes, along with some sort of grippy rubber on the bottom that's meant to lend extra stability. Because they're so similar, we'll group all three models we considered—the Due North All-Purpose traction aids, the Due North Everyday G3 traction aids and the Due North Everyday Pro traction aids—into one collection.

The carbide spikes on all three devices offer excellent traction, biting and gripping into even hard ice, and even lightweight people will get great traction from them. In fact, they do almost as well as Icebug shoes in flat conditions (the Icebugs do better on hills). It's only the number of spikes—we wish there were more—and their tendency to break when walking

on hard, bare surfaces that kept these ice grippers from placing higher in the report. But if you're looking for the best bang for your buck in terms of traction aids, these are it.

The Due North traction aids are also easy to put on and take off, and any broken spikes can be easily popped out and then replacements popped in (each pair comes with two extra spikes), so these are a friendly, useful choice for anyone that needs ice grippers that are easy to handle but still effective. Some people even run in them, although again, the tendency of the spikes to break when you cross hard surfaces and the way they feel underfoot when there's no snow or ice to be had can both be problems. We found some user complaints indicating that newer Due North models aren't as durable as they used to be, but we haven't yet found any durability problems in our tests.

The biggest difference between the three Due North ice grippers is what sort of rubber tread comes in between the spikes and the type of harness that holds them in place. The Due North All-Purpose offers bidirectional rubber tread in between the spikes, giving you the most aggressive grip on any reasonably textured surface, and their harness is the sturdiest. However, we found that the softer rubber of the Due North Everyday Pro was a little bit better at providing traction on smooth ice. The Due North All-Purpose also has the most structured toe harness of the lot, but the Everyday Pro's harness is almost as secure and more adaptable to different shoe or boot types. (The Everyday G3 falls into the middle in every category just discussed above.) So, if we have to choose one of these ice grippers for city use, it'd be the Everyday Pro.

Stabil is another popular brand of traction aid, with each of their devices designed for a specific activity. We evaluated the [Stabilicers Hike XP](#) and the [Stabilicers Run](#). Both devices use nine hardened screws on the bottom of the cleat for traction (five under the forefoot, four under the heel) along with fairly aggressive chevron treads running down the length of the midfoot. The Hike XP has especially aggressive chevrons that we think will be helpful in mud and soft snow, although we didn't have access to enough of either to test that theory; for the month during which we conducted our initial testing, this part of Alaska was all ice and hard-packed snow.

Like most traction aids, Stabil produces theirs in varying sizes. A "small" Stabilicers Run was noticeably narrower than the same size in a Hike XP and actually provided slightly better traction on our tests, possibly because of the addition of a piece of extra-soft, grippy rubber underneath the instep. Still, the results were about the same: Great traction on hard snow and textured ice, but a tendency to slip a little before gripping on sheer ice. Still, we found reports from [Active Junky](#) that praises the Stabilicers Sport, a slightly larger version of the Run, for its superb traction. Combining that with the happy people I've seen walking around in these traction devices, this looks to be another case where if you're a lightweight you might not get much traction, but somebody with more body mass will.

The Stabil traction devices also have the most substantial and structured harnesses of any traction device we evaluated, which is a bonus in terms of fit and security if they happen to fit your footwear, but a downside in terms of versatility because it's harder to find that good fit.

The Hike XP has an ankle strap and an instep strap that should be handy for keeping it from slipping off your feet in deep snow, and the Run has an optional instep strap, but neither was needed to get a secure fit in the icy conditions we were evaluated in.

The **Yaktrax Pro** is one of the most unusual devices we tested. Instead of spikes, it uses steel coils wrapped around the part of the rubber harness that sits underneath the sole of your foot. Past versions of this type of ice gripper had a reputation for slipping out from under you in challenging conditions as the coils acted like little ice skates, so we were pleasantly surprised by how well they worked on semi-hard snow and soft or rough ice. (Yaktrax also offers its Walk model, but we didn't test it because it is just a slightly more mild version of the Pro and is usually priced about the same. If this design appeals to you, go for the Pro.)

That traction is thanks to tiny edges—essentially, a continuous spiraling ridge—molded into the steel coils, which helps them grip the ice. However, these ice grippers will still slip very easily on hard ice with even the slightest hint of an incline or decline; and when the ice is hard or wet, they're not a good choice, even on gentle inclines.

So, although the Yaktrax Pro's easy-on, easy-off harnesses and total absence of spikes both make them appealing (and a decent choice if you

must have something you can go indoors with, although they'll still scratch delicate floors), keep in mind that they're only useful in flat or very mild conditions, and they can actually be a liability in more challenging conditions.

DIY traction solutions

If you don't want to buy traction aids, you can improvise your own by adding hardened sheet metal screws to the bottom of an old pair of shoes. This is a common, low-cost solution offered by many running stores; some of them even offer it for free to seniors as a means of preventing falls. However, as you might imagine, there are a few catches.

The first is that the sole of your shoes must be thick enough to keep the points of the screws from penetrating through to your feet, and sturdy enough to keep you from feeling the screws underfoot when you pass over dry or bare patches of ground that the screws won't sink into at all. Second, the screws sometimes fall out, and when they do, or if you choose to remove them at the end of the winter, you'll have little holes in the soles of your shoes. And finally, although the traction from this sort of device is better than nothing, it's not as good as the other ice grippers mentioned in this report, and if you wear studded shoes on errands or to the office, you'll still want to change footwear before going inside. These are also a definite case of the heavier you are, the more traction you'll get; lightweights should save time and look elsewhere.

We also tried a second creative DIY solution, applying the flexible silicone rubber adhesive **Sugru** to the bottom of a pair of running shoes, pressing it into a textured pattern, and letting it cure for 24 hours as directed by the manufacturer. We hoped the flexible, textured surface would grip onto ice and offer increased traction. However, once we took the Sugru-enhanced shoes out for a spin (Sugru on one shoe, Sugru-free on the other), we found that there really was no difference in traction, and the Sugru started coming off within the first half-mile.

Care and use

Putting ice grippers on your boots or shoes is easy: Slip the toe of your footwear into the toe of the ice gripper, then stretch the heel section of the traction device onto the heel of your shoe or boot. Adjust the ice gripper as needed so the spikes, coils, or beads are centered on your foot, and you're ready to go.

It's actually easier to do this with your boots or shoes on. If you find yourself struggling, most likely it's because the ice grippers are too small. Size does matter when it comes to getting a proper fit, so always compare your shoe/boot sizing to the size range for each ice gripper so you make sure you get the gripper in the proper size.

Your ice grippers really don't need much care and upkeep, but if you live in an area where road salt or chemicals are used for de-icing, you should rinse them off and pat them dry after every use.

Also, keep an eye on the two places in which ice grippers can fail. The first is the actual spikes or studs; they can become blunt as you walk over patches of bare ground or pavement, and they can also break, fall out of the ice gripper, or both, depending on its construction. Due North ice grippers are unique in that you can easily replace their carbide studs; just pop the old ones out and insert new ones (each Due North device comes with two extra studs in the package).

The other potential weak point for any ice gripper is the stretchy harness that holds the spikes onto your foot. Although it's rare, these harnesses can and do break, especially if you've been using ice grippers that are sized too small for your shoes or boots, so it's a good idea to periodically check the harnesses over for rips, tears and other visible wear. If you see any, it's time to either return the ice grippers for warranty service or replace them altogether.

Sources

1. [Injury Prevention & Control: Data & Statistics \(WISQARS\)](#), Centers for Disease Control and Prevention
2. [Gaining Traction](#), Runner's World, January 10, 2013
3. [Editors' Choice Gold 2012: Kahtoola MICROspikes](#), Backpacker

4. Berne Broudy, [Gear Review: Salomon Spikecross 3 CS Winter Trail Runner](#), Backpacker

Further reading



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