

The jaw-dropping benefits of cross-country

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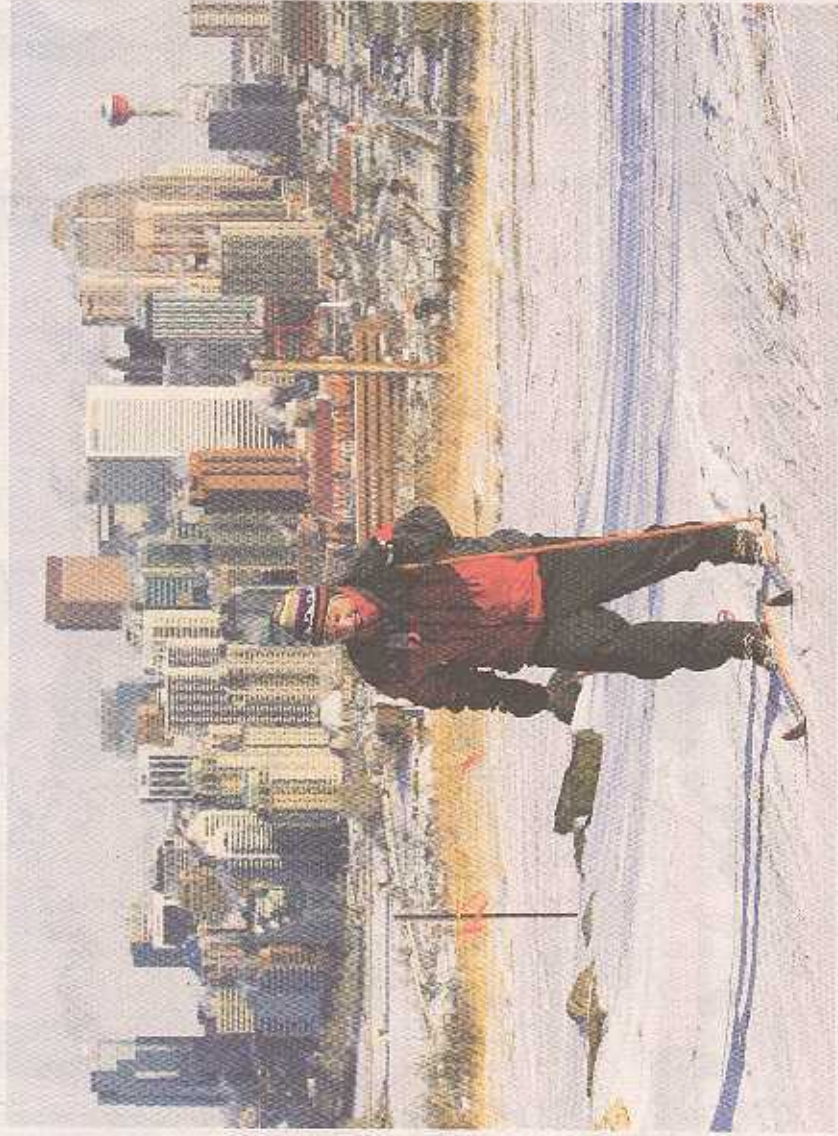
The options for aerobic exercise during the Canadian winter can seem grim: slipping and sliding along icy streets, pedalling nowhere under the fluorescent lights of the gym, and so on. But there's a better option, one that, recent research suggests, actually offers unique advantages compared to the alternatives. When it snows, why not make for the cross-country ski trails?

STAY YOUNG

Researchers in Sweden and at Ball State University in Indiana assembled two groups of octogenarian men. All of the volunteers were healthy, lived independently and were capable of completing a vigorous exercise test to exhaustion. The difference was that one group comprised lifelong cross-country skiers who trained four to six times a week, while the other group didn't do any formal exercise beyond the activities of daily living.

Predictably, the skiers were in better shape than the non-skiers. But the magnitude of the differences is jaw-dropping. The various test results, to be published in a forthcoming issue of the *Journal of Applied Physiology*, show that the skiers had approximately twice the cardiovascular and muscular fitness of the untrained group.

Even compared to previous studies of lifelong endurance athletes in their 80s, the skiers were about 40-per-cent fitter, suggesting that the full-body workout provided by cross-country skiing is uniquely effective. In fact, their fitness "places them in the lowest all-cause mortality risk category



Clambering up a hill is like a miniature sprint that increases your heart rate. JEFF MCINTOSH/THE CANADIAN PRESS

for men of any age," the researchers point out.

The results are consistent with earlier studies of cross-country skiers: An analysis of 73,000 men and women who participated over a 10-year period in Vasaloppet, an annual long-distance race series in Sweden, found that they were less than half as likely to die during the follow-up period as matched controls from the general population.

In contrast, the untrained subjects were perilously close to the "prognostic exercise capacity" that's associated with an inability to live independently. The message: Good genes can help you

The most arm-intensive activity was double-poling, where the propulsion is provided entirely by the arms. Next was "G3 skating," the freestyle technique in which skiers double pole with every stride. Then came the classic skiing style, with skis kept parallel. And the final exercise was running, which doesn't use the arms at all.

The goal of the study was to understand how the male skiers' greater upper-body strength would affect performance in the different techniques. Sure enough, the men were comparatively better in the most arm-dependent tasks: They were 20-

per-cent faster at double-poling, 17-per-cent faster at skating, 14-per-cent faster at classic style, and just 12-per-cent faster while running. The results suggest that you should vary your technique on different types of terrain in order to maximize your workout.

CLIMB HARD

The occasional steep uphill on a cross-country course is a necessary evil. How else do you earn the downhill that follows? You can turn your skis perpendicular to the hill and side-step your way up, or even take your skis right off. But the quickest solution—like pulling a hand-aid off—is to angle your skis slightly outward and herringbone up at top speed.

Clambering up a hill in this style is like a miniature sprint, and it will send your heart rate soaring upward. That's a good thing: Researchers have shown that including some short bursts of intense activity while exercising can produce a much more effective workout. It's possible to insert similar bursts into other types of workouts, like running or cardio machines at the gym, but a rolling cross-country ski loop integrates them naturally, since you'll slide backward if you don't keep pushing.

Of course, cross-country skiing isn't without drawbacks. For city dwellers in particular, it can be difficult to find good trails.

More importantly, it's a strictly limited-time option. Come spring, you'll be back to your usual workout routines. So ski while you can.

Alex Hutchinson blogs about exercise research at sweatscience.runnersworld.com. His latest book is *Which Comes First, Cardio or Weights?*