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## The Vancouver Sun <br> Winter Olympics by the numbers

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1. What are the odds of a Canadian making it to the Olympic Games?

There is clearly a genetic basis for doing well at sports (height, length of stride, hand-eye coordination, muscle-to-fat ratios, quick-twitch muscles, et cetera are all genetically based) but let's assume that each Canadian has an equal chance of making it to the Winter Olympics. Also, let's assume that you have three Olympics, on average, that you could be selected for.

No. of Canadians: 33.3 million
No. of Canadian athletes: 206
Assume each Canadian has a chance to make it to three Olympics (say when they are 20, 24, and 28). Then the odds of making it are: 1 in 50,000

## 2. By comparison, what are the odds of an American making it to the Olympic Games?

No. of Americans: 304.1M
No. of American athletes: 238

Assume each American has a chance to make it to three Olympics (say when they are 20, 24, and 28). Then the odds of making it are: 1 in 430,000
3. By comparison, what are the odds of someone from India making it to the Olympics? From China? From Africa? No. of Indians: 1.14B No. of Indian athletes: 3 Odds: 1 in 125M No. of Chinese: 1.33B No. of Chinese athletes: 91 Odds: 1 in 5M

No. of Africans: 1B

No. of African athletes: 9 Odds: 1 in 37M
4. What are the odds of making the 2010 Canadian Olympic team in the various sports: hockey, alpine, biathlon, bobsleigh, cross-country, curling, figure skating, freestyle, luge, Nordic combined, short track, skeleton, ski jumping, snowboarding, speed skating? Alpine: 1 in 1.5M Biathlon: 1 in 4.2M Bobsleigh: 1 in 2.8 M Cross-country: 1 in 2.2 M Curling: 1 in 3.3 M

Figure skating: 1 in 2.8M Freestyle skiing: 1 in 1.85M Hockey: 1 in 750,000 Luge: 1 in 3.3 M Nordic: 1 in 33 M Skeleton: 1 in 5.6M Ski jumping: 1 in 8.3 M Snowboarding: 1 in 1.85M Speed skating: 1 in 1.3 M
5. What were the odds of Canada breaking its gold-medal drought at home?

If every athlete (or team) has an equal chance of winning the gold in their event, then the chances were over 999 in 1,000 that Canada would win a gold medal. (Quebec's Alexandre Bilodeau was the first to accomplish this feat in the men's moguls freestyle skiing event.)
6. What were the odds of Canada failing to win a gold medal?

Assuming the same as in Question 5, it would be less than 1 in 1,000.
Olympic statistics courtesy of MITACS, a national research network for the mathematical sciences. Visit mitacs.ca.

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