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VITAL SIGNS

Patterns: The Sound of Victory?

By [ERIC NAGOURNEY](#)

Does it matter which runner is closest to the starter's pistol at the beginning of a race? It just might, a new study says.

Researchers who looked at results from the 2004 Olympics say sprinters who were closest to the gun took off faster, probably because they perceived the shot as louder than their competitors did.

The [study](#), which appears in the June issue of *Medicine & Science in Sports & Exercise*, suggests that Olympic officials consider extending the use of "silent" guns, which set off a sound behind each runner. The lead author of the study is Alexander M. Brown, a student at the University of Alberta in Canada.

The researchers looked at runners' reaction times in the 100-meter sprint and the 110-meter hurdles. Competitors in those races hear "on your marks," "set" and a pistol shot from speakers behind them. The study found that runners in the first lane, next to the starter's pistol, reacted more quickly. The differences were slight, but they occurred in races where a few hundredths of a second can make a difference.

When the researchers measured reaction times of volunteers in the lab, they found that the louder the sound of the shot, the faster the reaction time.

The study did not suggest the outcomes of the races had been affected. One explanation, said David F. Collins, a physical education professor at the university, is that in the final races, the runners who have done the best in heats tend to be placed in the center lanes.

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