

Racers closest to starter pistol likely to be ahead of competitors further away



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Written by ANI

Thursday, 19 June 2008

Washington, June 19 (ANI): Sprinters running in lane 1 in the upcoming Olympics would certainly have an advantage over those running in other lanes, for researchers at the University of Alberta in Edmonton have shown that runners closest to the loud starter's pistol are likely to react sooner and stronger than runners farther away.

Led by Dave Collins, professor of physical education and recreation, and student Alex Brown, the researchers came to this conclusion after studying the connection between loud sounds and reaction time.

By analyzing RT for the 100/110m athletics events at the 2004 Olympics sorted by lane number, the researchers found that runners closest to the starter had significantly lower RT than those further away. And now these findings may have sprinters thinking twice about lane assignments at the Olympics.

"Whether you're a competitive athlete or just a pedestrian trying to cross a busy street, reaction time can be critical. Past research has shown loud sounds can decrease RT and increase force generated during voluntary contractions, and when those sounds evoke a startle response, RT is decreased even further, which is a good thing," said Collins.

For the study, they examined four trained sprinters and 12 untrained participants while performing sprint started from starting blocks modified to measure horizontal force. By using a recorded gunshot as the "go" signal, they randomly presented the signal to test subjects at various decibel levels, from a low of 80 dB to a high of 120 dB and found that the louder the gunshot, the faster the reaction time of the test subjects.

"In sprint events, where hundredths of a second can make the difference between a gold medal and a silver, minimizing reaction time can be the key to an athlete's success. We suggest that procedures presently used to start the Olympic sprint events give runners closer to the starter the advantage of hearing the "go" signal louder; consequently, they react sooner than their competitors," said Brown.

It is believed that the applications of this research could go beyond competitive athletics.

Collins said: "Our findings might also be helpful for research in Parkinson's disease. People suffering from Parkinson's typically experience episodes of 'freezing', where they want to move but cannot because of impaired processing in certain parts of the brain."

"By introducing a loud sound during a freezing episode we might be able to startle patients into moving as we know that faster reaction times induced by a startle response are due in part to bypassing the cortical circuits that are damaged in Parkinson's disease."

The study is published in the latest issue of *Medicine & Science in Sports & Exercise*. (ANI)

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