

Fitbits go the distance in running study

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La Trobe University researchers have put one of the world's most popular activity trackers to the test.

Denise Jones, Joanne Kemp and colleagues from La Trobe Sports and Exercise Medicine tested the accuracy of the Fitbit Flex for recording steps at moderate to high speeds, with the help of a group of Melbourne runners.

Dr. Joanne Kemp said the study found non-elite athletes could rely on the device.

"The Fitbit Flex is one of the most popular and affordable fitness devices on the market and many recreational runners are using them to record their runs," Dr. Kemp said.

"Previous research has found that at lower speeds Fitbits have a tendency to underestimate step count, but there's been limited research on how well they measure running speeds over 8kms/h.

"Our study found the Fitbit Flex has good-to-excellent reliability for running speeds of between 8 and 14kms/h, but are slightly less reliable at higher speeds."

To test the accuracy of the Fitbit Flex, participants wore two Fitbits on their right arm and one on their left while running on a treadmill.

Researchers filmed them running four-minute intervals, starting at

8kms/h. Speeds increased by 2kms/h after each interval and participants continued until they could no longer complete a full interval.

Dr. Kemp said there was less than one per cent difference between the steps recorded by the Fitbits and a [slow motion](#) visual count of steps from the video recordings.

"Between 8 and 14kms/h the Fitbit Flex was out by around seven steps—a difference of less than one per cent," Dr. Kemp said.

"We can confidently say that they accurately measure [step count](#) at jogging and running speeds.

"However, it's difficult to assess their reliability at higher speeds because only a handful of our participants were able to continue running at 16kms/h.

Further research with a bigger group of runners at this level is needed."

Dr. Kemp said researchers also compared each of the three Fitbits worn by participants and found differences of between two and six per cent between devices worn on different arms.

"For those who want consistent recordings, our advice is to always wear your Fitbit on the same arm," Dr. Kemp said.

"While Fitbits are not 100 per cent accurate, it's great to know they are a reliable way of tracking physical activity.

"Knowing that will hopefully encourage runners to keep training and even motivate others to start."

The research is in *The International Journal of Sports Physical Therapy*.

More information: Denise Jones et al, VALIDITY AND RELIABILITY OF THE FITBIT FLEX™ AND ACTIGRAPH GT3X+ AT JOGGING AND RUNNING SPEEDS, *International Journal of Sports Physical Therapy* (2018). [DOI: 10.26603/ijsp20180860](https://doi.org/10.26603/ijsp20180860)

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