**PUBLIC RELEASE: 22-NOV-2016**

London 2012 Olympics inspired many local kids to get more involved in sport

*But levels of physical fitness significantly worsened*

The London 2012 Olympic Games inspired many local children to get more involved in sport, reveal the results of a before and after study, published in the online journal *BMJ Open*.

But this inspiration did not translate into improved physical fitness, levels of which declined significantly in the aftermath of the event, the findings indicate.

When Britain was awarded host status for the Olympic Games in London 2012 in 2005, this was based on a bid which promised to "inspire a generation" and "create a legacy of sport and healthy living," despite there being no evidence of any such outcome from previous events of this kind, say the researchers.

The Active People Survey showed an initial increase of around half a million adults participating in a weekly 30 minute session of sporting activities between April 2012 and April 2013.

But the data indicate that since then, the number of 16-25 year olds doing this has fallen, a trend that has continued, say the researchers.

To find out if London 2012 was associated with increased levels of physical activity, physical fitness and changes in body mass index (BMI), the researchers carried out a before and after study among pupils at six schools within a 50 km radius of the Olympic park in East London.

Some 733 children between the ages of 10 and 16 were assessed in 2008-9, up to 3+years before London 2012, and 931 from the same schools in 2013-14, up to 18 months afterwards.

At both time points they were quizzed about how much inspiration they took from the Games, and how much physical activity they did. Their cardiorespiratory fitness was assessed in a 20 metre shuttle run by peak V02--a measure of oxygen uptake that is linked to the capacity to perform sustained exercise.

Over half (53%) of the children said London 2012 had inspired them to try new sports/ activities.

Children who continued to take part in sports/activities in the 18 months after London 2012 were more active and fitter than those who didn't. And average BMI was also lower among the girls.

Compared with those who said they weren't inspired by the Olympics, peak V02 was higher among those who continued to participate in sports/activities 18 months after London 2012.

This 45% of the sample was also more physically active than those who said they were not inspired, or had been only briefly inspired, by London 2012.

But peak V02 was significantly lower after London 2012 than it had been before among all the children. This is a cause for concern as low levels of cardiorespiratory fitness in childhood are associated with a heightened risk of metabolic disorders in adulthood, say the researchers.

This is an observational study so no firm conclusions can be drawn about cause and effect. Furthermore, the researchers caution that they cannot discount the possibility that the children who had been inspired by the Olympics might already have been fitter and more active, or that other factors might have offset any fitness benefits arising from London 2012.

And the true scale of the legacy may never be known due to the lack of any appropriate measures to monitor changes associated with events like London 2012, they point out.

"High levels of inspiration to participate in new activities reported following London 2012 and positive associations with fitness are encouraging...[But] these associations must be interpreted in the context of the significant declines in fitness shown by our repeated cross-sectional comparison," they write.

"The cost of hosting future mega-events cannot be justified based on the assumption that they will automatically produce health related benefits," they add.

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