

Supplementary Material S5. Effect of hosting elite sport events, elite sport success or elite sport role-modelling on PA/sport participation or membership in youth (👦) or adult (👤) populations. 📍 = geographical effect. Those studies that did not specify the evaluation of a lagged effect (>1 year) were considered as studies evaluating an immediate effect (≤1 year). * These studies did not provide the age range of the studied population.

A. Effect of hosting elite sport events		
Authors Year	In favour of hosting elite sport events	Not in favour of hosting elite sport events
Lines 2007	<ul style="list-style-type: none"> 👦 Playing soccer was at the height of its popularity among teenagers during the 1996 UEFA European Football Championship. 👦 Swimming and running increased (from 4% to 46% and 0% to 36%, respectively) substantially during the Atlanta 1996 OG. 👦 Tennis participation increased consistently from 24% to 36% across the three events (1996 UEFA European Football Championship, Atlanta 1996 OG, Wimbledon Lawn Tennis Championships). 	<ul style="list-style-type: none"> 👦 A decline in participation in soccer (from 60% to 18%) was observed immediately after the 1996 UEFA European Football Championship.
Frawley & Cush 2011	<ul style="list-style-type: none"> 👦 Youth rugby memberships increased by 68% over the period 2000–2008. 👦 Youth rugby memberships increased at a greater rate (20%) than the average during the year of the 2003 Rugby World Cup (2003–2004). 👤 Adult rugby memberships increased by 10% over the period 2000–2008. 👤 Adult rugby memberships increased at a greater rate (5%) than the average for the year of the 2003 Rugby World Cup (2003–2004). 	
Veal et al. 2012	<ul style="list-style-type: none"> 👦 The Sydney 2000 OG may have had a modest positive effect on youth sports participation overall, but Olympic sports rather than non-Olympic sports experienced stronger increases. 👦 For the 2003 Rugby World Cup, youth PA participation increased from 2003 (1.3%) to 2006 (2.1%). 👦 For the 2006 Melbourne Commonwealth Games, youth PA participation in Commonwealth Games sports generally experienced greater growth than other sports. 👤 The Sydney 2000 OG may have had a positive effect on adults' sports participation overall, but non-Olympic sports rather than Olympic sports experienced stronger increases. 	<ul style="list-style-type: none"> 👤 For the 2003 Rugby World Cup, adult participation rate (a least once per year) changed from 2001 (0.6%) to 2005 (1.0%) with a peak in 2003. 👤 A decline in adult PA participation was observed after the 2006 Melbourne Commonwealth Games.

Feng & Hong 2013		<p>♣ No relationship was observed between the frequency of sport participation and the Beijing 2008 OG.</p> <p>📍 No difference was observed according to the geographical location of townships</p>
Wicker & Sotiriadou 2013	<p>♣ 6.9% of respondents spent more time participating because of the 2006 Melbourne Commonwealth Games.</p> <p>♣ 5.9% of respondents started a new PA because of the 2006 Melbourne Commonwealth Games.</p>	
Craig & Bauman 2014		<p>♣ The PA/sport participation rates and the number of steps/day did not differ before, during or after the Vancouver 2010 OG</p> <p>📍 No difference was observed in British Columbia or in Canada overall.</p>
Ruseski & Maresova 2014	<p>♣ The more mega-sporting events hosted by a country, the more likely was an individual in that country to report participating in PA (estimate = 0.010, $p < 0.001$).</p>	
Bauman et al. 2015	<p>♣ Walking minutes increased significantly after the Sydney 2000 OG ($p < 0.05$).</p> <p>📍 A positive but small effect was noted among New South Wales residents, who were more likely to engage in PA.</p>	<p>♣ No effect was observed for moderate PA, vigorous PA, total minutes of leisure-time PA (including walking), number of PA sessions and proportion reaching the recommended PA levels.</p>
Perks 2015	<p>📍 Only in Vancouver, when compared to the same time-period in 2005, PA participation increased in the two months (March/April) immediately following the Vancouver 2010 OG ($z = 2.06$, $p < 0.05$).</p>	<p>♣ Between 2005 and 2010, PA participation decreased at national, provincial, and municipal levels in Canada.</p>
Weimar et al. 2015	<p>♣ Youth memberships increased in the same year that an elite sport event was hosted (Coefficient = 0.033, $p < 0.01$).</p> <p>♣ Adult memberships increased in the same year that an elite sport event was hosted (Coefficient = 0.023, $p < 0.05$).</p>	<p>♣ No effect was observed on youth memberships 1 to 5 years after the elite sport event.</p> <p>♣ No effect was observed on adult memberships 1 to 5 years after the elite sport event.</p>
Downward et al. 2016		<p>♣ No shift in the parameters of the fitted models was observed, indicating no evidence of the London 2012 OG increasing PA participation.</p>
Kohe & Bowen-Jones 2016	<p>♣ Just before the London 2012 OG, more students participated in school sport in London than in the Midlands (Cramar's value = 0.174).</p>	<p>♣ Just before the London 2012 OG, more students participated in sport outside school in the Midlands than in London (Cramar's value = 0.173).</p>
Pappous & Hayday 2016	<p>♣ After a plateau shown in 2010–2011, an increase in judo memberships was observed after the London 2012 OG (2012–2013).</p> <p>♣ After a sharp decrease in 2010–2011, an increase in fencing memberships was</p>	

	observed after the London 2012 OG (2012–2013)	
Potwarka & Leatherdale 2016	<p>📍 PA participation increased in females from 2007–2008 (pre-event) to 2009–2010 (the year prior to the event and the year the event was staged) at the regional level (Richmond) ($z = 2.05$, $p = 0.04$)</p>	<p>🚶 No effect of the Vancouver 2010 OG was observed at national (Canada) or provincial (British Columbia) levels.</p> <p>📍 No effect was observed at regional level for males.</p>
Grix et al. 2017	<p>🚶 PA participation increased immediately after London was awarded the OG, then remained stable and decreased after the OG.</p> <p>🚶 Participation increased in cycling, athletics, boxing, table tennis and netball from 2005/2006 to 2014/15</p>	<p>🚶 Participation decreased in cycling in 2013/2014.</p> <p>🚶 Participation decreased in swimming, badminton, volleyball, hockey and remained stable in gymnastics from 2005/2006 to 2014/2015.</p> <p>📍 Half of the surveyed cities witnessed a decrease in participation.</p>
Kaplanidou 2017	<p>🚶 Beijing residents were likely to exercise more ($p < 0.01$) and to participate in more sport events as an athlete ($p < 0.01$) 2 years after the OG.</p>	<p>🚶 Residents from the other cities were less likely to exercise more (Atlanta, $p < 0.01$; Athens, $p < 0.01$) and to participate in more sport events as an athlete (Atlanta, Sydney, Athens, $p < 0.01$)</p>
Aizawa et al. 2018	<p>🚶 Individuals aged 10-19 during the Tokyo 1964 OG practiced PA more frequently than other generations ($\beta = 0.046$, $p = 0.001$).</p>	<p>🚶 No or negative effects were observed for individuals who were aged 10-19 during the Sapporo 1972 OG, the Tokyo 1991 World Athletics Championships, or the Nagano 1998 OG.</p> <p>📍 No effect of host region was observed ($\beta = -0.017$, $p = 0.664$)</p>
Haut & Gaum 2018*		<p>🚶🚶 No effect of elite sport events was observed on table tennis memberships.</p>
Storm et al. 2018		<p>🚶 No effect of elite sport events was observed on youth handball memberships.</p> <p>🚶 No effect of elite sport events was observed on adult handball memberships.</p>
Kokolakakis et al. 2019	<p>🚶 PA participation (at least three times per week for at least 30 min) increased following the London 2012 OG.</p> <p>🚶 In 2014, the PA participation rates decreased relative to 2013 but remained higher than pre-Olympic levels.</p>	<p>🚶 The increase of participation rate after the London 2012 OG was less pronounced when PA participation was less frequent (once per week for at least 30 min, or once a month).</p>
Milton et al. 2019		<p>🚶 36.6%, 36.9%, and 36.1% of the population were defined as ‘active’ before (2007/2008), during (2011/2012), and after (2015/2016) the London 2012 OG, respectively.</p>
Kokolakakis & Lera-Lopez 2020	<p>🚶 From 2012 to 2014, the number of regular participants increased in Olympic sports after the London 2012 OG.</p> <p>🚶 From 2012 to 2014, participation increased in combat sports, team sports and water sports, whatever the practice frequency.</p> <p>🚶 An increase in the number of regular participants was observed after the London 2012 OG for swimming, athletics, cycling, and equestrianism.</p>	<p>🚶 No effect was observed when Olympic sports were practiced once a month.</p>

	<p>👤 In general, the effect seemed to increase over time after the London 2012 OG.</p>	
Mölenberg et al. 2020	<p>👤 Sport-specific participation increased 1 year after three events (2010 Tour de France Grand Départ, 2010 Gymnastics World Championship, 2011 Table-tennis World Championship); the number of cyclists remained elevated up to 5 years after the 2010 Tour de France Grand Départ.</p>	<p>👤 The pooled effect of the 10 elite sport events did not show any change in sport-specific participation 1 year after the event took place.</p>
Annear et al. 2021	<p>👤 Higher interest in the OG was significantly and positively associated with overall weekly PA ($r_s = 0.19, p < 0.001$).</p> <p>📍 Residents of Tokyo had higher levels of PA than residents of Sapporo ($r = 0.13, p = 0.003$) and Nagoya ($r = 0.15, p < 0.001$) but not of Osaka and Fukuoka.</p>	<p>📍 Residents of Tokyo did not have higher levels of PA than residents of Osaka and Fukuoka.</p>
Bauman et al. 2021	<p>👤 Increase in the prevalence of PA participation was observed for the Beijing 2008 OG and the Nagano 1998 OG (although no change was observed for winter sport).</p>	<p>👤 No change was observed for the Atlanta 1996 OG, Sydney 2000 OG, Salt Lake City 2002 OG, Vancouver 2010 OG, London 2012 OG, and Rio de Janeiro 2016 OG.</p>
Castellanos-Garcia et al. 2021	<p>👤 Youth memberships increased 1 year after hosting the elite sport events (Coefficient = 1 764.27, $p = 0.039$).</p> <p>👤 Adult memberships increased after hosting elite sport events (Coefficient = 8 747.87, $p < 0.001$), especially 2 years after hosting the events (Coefficient = 9 025.67, $p = 0.036$).</p>	<p>👤 No effect was observed 1, 3 and 4 years after hosting elite sport events for adult memberships.</p>
Potwarka et al. 2021		<p>👤 Hosting previous OG was not significantly associated with youth PA rates</p>
B. Effect of elite sport success		
	In favour of elite sport success	Not in favour of elite sport success
Hanstad & Skille 2010*	<p>👤👤 Medals in Biathlon at OG or World Championships were associated with increased membership ($r = 0.59, p < 0.05$) and participation in mass biathlon races ($r = 0.75, p < 0.01$).</p> <p>👤👤 Top 15 World Cup places were associated with membership ($r = 0.69, p < 0.05$) and participation in mass biathlon races ($r = 0.63, p < 0.05$).</p>	
de Bosscher et al. 2013*	<p>👤👤 Memberships increased following a successful year in four sports: athletics ($r = 0.840, p < 0.01$), gymnastics ($r = 0.624, p < 0.05$), judo ($r = 0.678, p < 0.01$) and tennis ($r = 0.643, p < 0.01$). They continued to increase 2 years after success in athletics and judo, 3 years in gymnastics and 5 years in tennis.</p>	<p>👤👤 No or negative correlations were observed for 11 other sports.</p>
Ruseski & Maresova 2014		<p>👤 PA participation was negatively associated with the success at the Athens 2004 OG (estimate = -0.016, $p < 0.001$).</p>
Frawley & Van	<p>👤 From 2003 to 2009, football participation for female youths increased by 51%.</p>	<p>👤 From 2003 to 2009, football participation for male youths decreased by 8%.</p>

<p>den Hoven 2015</p>	<p> From 2003 to 2009, football participation for adult males increased by 34%, the largest growth being recorded between 2007 and 2008 (20%) and between 2005 and 2006 (10%).</p> <p> From 2003 to 2009, football participation for adult females increased by 25%, the largest growth being recorded between 2007 and 2008 (43%) and between 2005 and 2006 (11%).</p>	
<p>Goranova & Byers 2015</p>	<p> PA participation increased with success at the Beijing 2008 OG ($r = 0.579$, $p = 0.012$) and the London 2012 OG ($r = 0.414$, $p = 0.078$).</p>	
<p>Moscoso-Sánchez et al. 2015*</p>		<p>  The number of PA participants increased by 10% from 1980 to 1995 and by 1% from 1995 to 2010 (while the whole population increased by 17%). The latter period is considered as the glorious era of Spanish competitive sport.</p> <p>  With the exception of football and non-competition PA (e.g. fitness), the majority of sport has undergone a progressive loss of practitioners (e.g. basketball from 23% of practitioners in 1990 to 8% in 2010, handball from 6% in 1990 to 1% in 2010, tennis from 18% in 1990 to 7% in 2010).</p>
<p>Weimar et al. 2015</p>	<p> Youth memberships increased 3 years after success (Coefficient = 0.023, $p < 0.05$).</p> <p> Adult memberships increased 4 years after success (Coefficient = 0.018, $p < 0.1$).</p>	<p> No effect was observed on youth memberships during the successful year, and 1, 2, 4 and 5 years after success.</p> <p> No effect was observed on adult memberships during the successful year, and 1, 2, 3 and 5 years after success.</p>
<p>Frick & Wicker 2016*</p>	<p>  Football memberships (and the number of clubs and teams) increased after World Cup title wins by the men's national team ($r = 0.0288$, $p < 0.05$).</p>	<p>  No effect was observed after World Cup or European title wins by the women's national team, as well as after European title wins by the men's national team.</p>
<p>Aizawa et al. 2018</p>		<p> No success effect at the Tokyo 1964 OG was observed on PA participation ($\beta = -0.032$, $p = 0.069$).</p>
<p>Haut & Gaum 2018*</p>	<p>  Table-tennis memberships increased with success ($r = 0.295$, $p < 0.01$), which continued up to the third year after the success ($r = 0.230$, $p < 0.01$). However, this result is mainly explained by Austria.</p> <p>  Memberships increased with any success ($\text{Eta}^2 = 0.021$, $p = 0.082$), medals in Single, Double and Mixed ($\text{Eta}^2 = 0.037$, $p = 0.021$) and medals in Men's Single ($\text{Eta}_2 = 0.039$, $p = 0.017$).</p>	<p> No or negative effects were observed in France and Germany.</p>
<p>Storm et al. 2018</p>	<p> Youth memberships increased after female success ($B = 344.622$, $p < 0.05$).</p>	<p> No effect was observed on youth memberships after male success.</p> <p> No success effect was observed on adult memberships.</p>

Ishigami 2019		 No effect was observed on football participation in female students following success at the 2011 FIFA Women's World Cup.
Seguí-Urbaneja et al. 2020*	  Memberships increased during the success year in 6 sports: athletics ($r = 0.590$, $p < 0.01$), badminton ($r = 0.397$, $p < 0.05$), basketball ($r = 0.821$, $p < 0.01$) and handball ($r = 0.430$, $p < 0.05$), tennis ($r = 0.401$, $p < 0.05$) and triathlon ($r = 0.766$, $p < 0.01$). It continued to increase 2 years after success in athletics, 5 years in basketball, 8 years in triathlon and 10 years in handball.   Memberships increased 8 or 10 years after success in four sports: cycling, judo, equestrian and volleyball.	  No correlations or negative correlations were observed in the 13 other sports.
Castellanos-Garcia et al. 2021	 Adult memberships increased 1 year after success (Coefficient = 1820.02, $p = 0.093$).	 No success effect was observed on youth memberships.  No effect was observed in the success year, and 2 to 4 years after success, on adult memberships.
Potwarka et al. 2021	 Youth PA rates were positively associated with the number of medallists at the London 2012 OG (Coefficient = 0.2088, $p = 0.012$). This association was only observed in the male youth population (Coefficient = 0.2685, $p = 0.011$).	 Youth PA rates were negatively associated with the number of athletes participating at the London 2012 OG (Coefficient = -0.0177, $p = 0.024$). This association was mainly observed in the male youth population (Coefficient = -0.0302, $p = 0.003$).  Winning a gold medal had no effect.
Storm & Holum 2021	 Female youth memberships increased after success ($r = 1.054$, $p < 0.1$).	 No effect was observed on male youth memberships.  Relegation (from the top league) was associated with a decrease in male youth ($r = -19.78$, $p < 0.01$) and female youth ($r = -11.52$, $p < 0.1$) memberships.  No success effect was observed on adult memberships.  Relegation (from the top league) was associated with a decrease in male adult ($r = -10.30$, $p < 0.01$) and female adult ($r = -4.79$, $p < 0.05$) memberships.
C. Effect of elite sport role-model		
	In favour of elite sport role-model	Not in favour of elite sport role-model
Weimar et al. 2015	 Youth memberships increased 1 year after the best athlete/team award (Coefficient = 0.021, $p < 0.05$).	 No effect was observed in the award year, or 2 to 5 years after the award on youth memberships.  No effect was observed on adult memberships.
Storm et al. 2018		 No effect of famous Danish handball players was observed on youth memberships (data not reported).  No effect of famous Danish handball players was observed on adult memberships (data not reported).

Castellanos-Garcia et al. 2021	 Adult memberships increased 3 years after the best athlete/team award (Coefficient = 7816.88, $p < 0.001$).	 No effect of the role model was observed on youth memberships.  No effect on adult membership was observed in the award year, or 1, 2 and 4 years after the award.
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