

DIGITAL LIFE, SEDENTARY BEHAVIOUR AND ITS IMPACT ON PHYSICAL ACTIVITY PARTICIPATION

DIGITAL LIFE

Over the past decade, young people's daily lives have become increasingly shaped by digital technologies, with near-universal smartphone access and high social media and gaming use among adolescents in many high-income countries (Ofcom and international youth media reports). This expanded digital environment has changed how young people spend leisure time is spent and form identities and social connections. A systematic review by Chan (2022) shows that higher engagement in video gaming and esports is consistently linked with lower physical activity and higher sedentary time. Adolescents with high gaming exposure had 4.9 times higher odds of ≥ 2 hours per day of sedentary behaviour, and gaming was associated with higher odds of elevated BMI (log OR = 0.35, 95% CI 0.12–0.57). Gaming was also related to poorer sleep outcomes, including greater odds of sleep deprivation (OR = 2.83) and reduced odds of restful sleep (OR = 0.23), as well as more frequent consumption of sugary drinks and snacks (OR for unhealthy snacking = 1.65). Among esports participants, notable proportions reported physical strain such as eye strain (52%), neck pain (41%) and wrist or hand pain (36–30%). Importantly, negative associations were stronger in adolescents than in younger children, suggesting this is a sensitive period for habit formation.

Building on this broader shift toward digital leisure, Brooks (2016) shows that video gaming is becoming a routine and socially embedded part of early adolescent life. Gaming for two or more hours on weekdays was most common among 11–13-year-olds, with levels declining by age 15, suggesting a peak in early adolescence. The study also documents a rapid rise in gaming over time: between 2006 and 2010, the share of boys gaming at least two hours per day increased from 42% to 55%, and among girls from 14% to 20%, highlighting changing leisure patterns.

Importantly, gaming was closely tied to social life rather than isolation. Adolescents with more opposite-sex friends were more likely to game heavily; girls with three or more opposite-sex friends were 4.3 times more likely to game for four or more hours per day. Parental involvement in free-time decisions reduced the likelihood of exceedingly high gaming by around 50 to 70%, indicating a moderating role of family context.

Booker (2015) found that prominent levels of screen-based media (SBM) use are linked to poorer wellbeing in young people. Each one-unit increase in total SBM use was associated with 19 to 24% lower odds of reporting happiness (OR \approx 0.76–0.81). While some interactions suggested that older adolescents may be slightly less affected by moderate screen use than younger adolescents, prominent levels of use were associated with poorer wellbeing across age groups. The authors also highlight that wellbeing and health behaviours established during

adolescence often track into adulthood and contribute to longer-term inequalities, positioning adolescence as an important period for intervention.

Overall, these findings indicate that digital leisure does not simply replace one hobby with another but can reshape daily routines around sitting, screen time and irregular sleep, which in turn influences energy, wellbeing, and readiness to engage in physical activity. For sport and physical activity providers, this points to the need to understand digital culture as a core part of young people's lifestyles, and to consider how sport can either compete with or thoughtfully integrate digital elements.

SEDENTARY BEHAVIOUR

Sedentary behaviour is now a defining feature of contemporary adolescence, with many young people spending substantial portions of their day sitting in school, studying, or engaging with screen-based leisure. As a result, how young people use their discretionary time and whether they remain connected to sport has become increasingly important for understanding participation influences.

Valenciano-Valcárcel's (2025) research shows that organised sport can act as a protective factor against sedentary behaviour during adolescence, but its effects are uneven across gender and educational stage. Young people involved in organised sport report higher overall physical activity, are more likely to meet recommended activity levels, and accumulate less sedentary time, while non-participants do not compensate through informal activity. Clear gender differences emerge: boys are more active overall while girls accumulate more sedentary and screen time, particularly at higher educational levels and when not engaged in sport. Importantly, sport participation delivers a larger relative benefit for girls, both in raising activity and reducing sedentary time, yet girls are also more likely to drop out as they get older. Across educational progression, physical activity declines and sedentary behaviour rises, even among sport participants, although the drop is steepest for non-participants.

Longitudinal evidence indicates that these patterns begin early and intensify over time. Corder (2015) found that over a four-year period in early adolescence, more than 40 minutes per day of physical activity was replaced by sedentary behaviour. Moderate and vigorous activity decreased every year, with vigorous activity showing the largest relative reduction despite its strong association with health. Most adolescents reduced activity levels and increased sedentary time, indicating that decline is a common pattern rather than an issue affecting only specific groups. Girls recorded lower levels of moderate-to-vigorous physical activity at all ages, while boys experienced steeper annual declines, leading to convergence without eliminating gender differences. Physical activity decreased more rapidly at weekends than on weekdays, pointing to the role of school structure in maintaining activity during the week. Rural adolescents and those who were overweight or obese consistently recorded lower activity levels, with these inequalities remaining stable over time. Losses in moderate-to-vigorous activity were replaced by sedentary behaviour rather than light activity. The findings indicate that activity decline begins early in adolescence and that young people move into later education stages with lower habitual activity, higher sedentary norms, and embedded gendered and geographic inequalities.

UNDERSTANDING THE NEXT GENERATION OF HIGHER EDUCATION STUDENTS



Overall, the findings suggest that many incoming university students arrive with already-established sedentary habits and reduced activity, especially older adolescents and young women who disengaged from organised sport during adolescence. This indicates that universities are often inheriting pre-existing participation patterns rather than creating them, and that maintaining or re-introducing accessible sport opportunities could play a role in counteracting entrenched sedentary behaviour among new student cohorts.