Introduction

Adolescents spend two thirds of their waking hours sitting [1], mostly because recreational-based SB (i.e. activities in a sitting, reclining or lying posture that do not increase energy expenditure above 1-1.5 metabolic equivalents) [2] are on the rise [3]. Sitting too much and for too long is a risk factor for chronic disease and poor mental health during adolescence [3]. Specifically, adolescents who spent ≥3hours/day on sedentary pursuits have shown increased odds ratios for obesity [4] and depressive symptoms [5]. According to the 24-hour Activity Cycle model of daily physical behaviours (sleep, sedentary behaviour, light-intensity and moderate-to-vigorous intensity PA), changes in time spent in one of the four basic activities that consume time during the day will influence time spent in at least one other activity, which might modify health-related effects [6]. Thus, replacing adolescents' sedentary time with moderate-to-vigorous physical activity (MVPA) has been associated with a better quality of life [7] and cardio metabolic heath (i.e. body mass index, waist circumference, biochemical markers and blood pressure) [2, 8, 9]. While adolescents´ health could strongly benefit from effective strategies that replace SB with PA [10], most interventions on reducing sedentary time during adolescence have shown small effects [11].

Participating in organised sports is the most preferred option to spent time in MVPA during adolescence [12], although it consistently decreases from secondary school to university [13]. However, high levels of sports participation (i.e. 50-64% in Spanish secondary school students) [14] co-exist with low levels of overall PA (37% of youth in secondary school participate in ≥420 minutes of moderate-to-vigorous physical activity every week) and high levels of SB (17-18 year olds sit an average of 8.5 h per day on a school day) [15, 16], with very limited evidence on the influence organised sports participation has on SB and PA. While research has studied associations between organised sports participation and (i) physical and psychosocial health [17], (ii) school performance [18], (iii) health-related lifestyles such as smoking, alcohol, fruit, vegetable, soft drinks and fast food consumption [19, 20], (iv) MVPA and fitness levels [21], (v) engagement in physical fights and injuries [22] and (vi) illicit drug use [23], less is known about the influence sports participation has on total and context-specific SB, which is a key risk factor for health in adolescence and young adulthood.

On the need to understand whether promoting sports participation and preventing relapse could be an effective intervention to reduce daily time spent in total and context-specific SB across a developmental stage where SB evolves, this study will investigate the influence that doing sport – during the transition

from secondary school to university – has on SB and PA in a sample of Spanish adolescents followed during a three-year period. Such formative research might be valuable for translating individualized sports participation recommendations into pediatricians´ practice.

Materials and methods

Study design and sample recruitment

A three-year longitudinal study was designed to assess associations between changes in sports participation and changes in total and domain-specific SB and PA in Spanish adolescents (n=113) from the county of Osona (Barcelona).

Adolescents were followed from secondary school to university (16, 17 and 18 years of age; Year 1, 2 and 3 respectively). During Year 1, invitation letters were sent to the directors of all secondary schools in the county (n=25) requesting permission for their 16-year-old students to complete a survey over the next two years. Thirteen centres (52%) accepted to participate in Year 1, three of which dropped out in Year 2 (40%). The reasons for dropping out were lack of time and involvement in other projects. Eight centres were public schools while two were private schools sponsored by a public voucher system.

During Years 1 and 2, participants completed the survey as part of a course in the classroom (March 2012 and March 2013). Parental approval was obtained through the school management. During Year 3, participants completed the survey using online devices (March-April 2014). Reminders to fill in the survey were sent twice via email and Facebook. The Ethics Committee of the University of Vic-Central University of Catalonia approved the study (2011) and all participants signed a written informed consent every year before completing the survey. Only University undergraduate students that completed the survey in Years 1, 2 and 3 were included in this study. Of an initial potential sample of 695 teenagers, 662 responded in Year 1 (95% response rate), 480 in Year 2 (69% response rate) and 180 in Year 3 (26% response rate). One hundred and thirteen participants (n=113) completed the survey in Years 1, 2 and 3.

Data collection and variables

Data was collected using a 42-item survey that gathered data on (i) socio-demographic variables; (ii) perceived barriers to physical activity; (iii) lifestyle behaviours (iv) total and domain-specific SB; (v) total and domain-specific PA at light, moderate and vigorous intensities; and (vi) sport participation. For the

present study, total and domain-specific SB, total and domain-specific PA and sport participation were analysed.

Domain-specific sedentary behaviour

The sedentary behaviour questionnaire (Active Where? Survey – Section R)[24] assessed sitting time (min/day) during weekdays and weekends and across different domains[17]: (1) television viewing (television + video); (2) computer use (computer games + internet use); (3) socialising behaviours (sitting with friends); (4) school (school assistance + homework); (5) transport (private + public transport); and (6) sedentary hobbies (reading, playing music and doing handicrafts). Response categories were organised into 15-min blocks, 30-min blocks and one-hour blocks, with the last option being ≥5h. If that was the case, they were asked to specify the number of minutes/day. The SB domains were aggregated on a total score to calculate total SB, The Active Where survey was designed specifically for youth and has shown good reliability in most sitting domains, with a percentage agreement ranging from 27.1% to 76% [24].

Physical activity

PA levels were measured using the Spanish version of the International Physical Activity Questionnaire (IPAQ) long form [25]. The IPAQ assessed min/week of light-intensity PA (LPA), moderate-intensity activities (MPA) and vigorous-intensity PA (VPA) globally and across four specific domains (leisure, work/school, home and transport) during the last seven days. The SB item included in the IPAQ long form was not included because it only measures total sitting time rather than domain-specific. The IPAQ has shown reasonable validity properties for assessing activities in different intensities and for total physical activity in healthy European adolescents aged 15–17 years (Rs=0.17-0.30) [26].

Sport participation

Sport participation was measured using a specific question based on previous adolescent research [27, 28]: Do you currently do any sport on a regular basis? (Yes/No); what type of sport do you do? (Open answer). Three responses resulted from these: (a) No participation; (b) Individual Sport; (c) Team Sport. Team sports were classified as those involving ≥2 players on each side competing simultaneously, while an individual sport involves participants competing alone [29]. Students could mark both responses b and c if appropriate.

Statistical analysis

A descriptive analysis of the subjects' characteristics in Year 1 (n=113) was performed using proportions and measures of central tendency and dispersion according to the nature of the variables. Gender differences were assessed using T-Student and Chi-Square tests. Longitudinal associations between sport participation, total and domain-specific SB and PA were assessed using Generalized Estimating Equations (GEE), which are an extension of Generalized Linear Models (GLM) [30]. This methodology is useful for analysing repeated measures of the same individual over time, assuming independence between individuals but not within observations of the same individual. This was considered the best approach as we had repeated measures of individuals and, they could change sport participation over time. An autoregressive correlation was used assuming that observations of Year 3 were more correlated with Year 2 than with Year 1. The analysis was performed using STATA software 12 [31].

Results

Baseline characteristics of adolescents of 16 years of age (Year 1)

Participant characteristics (n=113; 58% females) are summarised in table 1.

Prevalence of total and domain-specific sedentary behaviours

Adolescents spent a considerable amount of time on SB (792 min/d weekly and 605 min/d at weekends). From Mondays to Fridays, teenagers spent 454 min/d sitting at school/doing homework, followed by 125 min/d sitting in front of a computer at home, watching TV (68 min/d), sitting while socialising (51 min/d), doing sedentary hobbies (47 min/d) and sitting for transport (22 min/d) (Table 1). SB while socialising and at school/doing homework was significantly higher in females ($p=0.043$ and $p=0.004$ respectively, table 1).

During weekends, adolescents doubled their sitting time watching TV and socialising. Contrarily, teenagers reported less sitting doing homework due to not attending school. Time spent doing homework on Saturdays and Sundays was significantly higher in females than in males ($p<0.001$, table 1).

Physical activity (min/week) spent at different intensities in specific domains

Teenagers spent most time doing LPA (383 min/wk), followed by MPA (305 min/wk) and VPA (233 min/wk). While leisure activities constituted around half of the time dedicated to VPA (141 min/wk) and MPA (124 min/wk), time spent in LPA activities was concentrated in transport (142 min/wk) (Table 1).

On average, time spent in VPA was higher in males than in females (309 min/wk vs. 177 min/wk, p=0.002). In MPA, the mean time spent was also higher in males than in females (362 min/wk vs. 264 min/wk; p=0.04). In LPA, no differences by gender were identified. On examining specific domains for PA, no differences were found by gender.

Temporal variation from secondary school to university of sports participation, domain-specific sedentary behaviours and physical activity

From secondary school to university**,** sport participation decreased within the three years in both males (from 63% to 49%) and females (from 46% to 33%). Among males, the most significant decrease was in team sport (from 46% to 35%), while among females individual sport showed a sharper reduction (from 34% to 21%) (Figure 1).

Over the same period, leisure PA and transport PA decreased (-115 min/d and -50 min/d respectively) in males while no changes were reported for PA at home or school. In females, PA increased at work/school and home (+129 min/d and +67 min/d), decreased for leisure (-74 min/d) and remained stable for transport (Figure 2).

From secondary school to university, sitting time spent socialising (+45 min/d among males and +50min/d among females) and for transport increased in both males and females (>30 min/d). Sitting time related to school attendance was remarkably high across both secondary school years in males (396 min/d) and females (449 min/d), but sharply decreased during the first year of university (-75 min/d). At weekends, a decrease in time spent sitting in computer use (-50 min/d males, -56 min/d females) was also identified. In females, time sitting watching TV increased (+19 min/d), while time spent on sedentary hobbies descended (-25 min/d) (Figure 3).

Associations between sports participation,total and domain-specific sedentary behaviours from secondary school to university.

Associations between sport participation, total and domain-specific sedentary behaviours during weekdays

According to the unadjusted model, teenagers that did individual sports from secondary school to university spent less time on total SB (-95.9 min/d 95% CI -152.4 to -39.5) compared with non-sport participants (Table 2). By domains, individual sport participants spent less time sitting in computer use (-36.6 min/d 95% CI -60.5 to -12.8) and socialising (-19.8 min/d 95% CI -36.6 to -3). Other SB domains were not influenced by individual sport participation. Adjusting by gender and year, individual sport participants spent significantly less time in overall SB (-101 min/d 95% CI -157.2 to -45) and computer use (-37.4 min/d 95% CI -61.4 to -13.4), but not socialising. Team sport participants only showed differences in total sedentary time in the unadjusted model (-64.8 min/d 95% CI -122.7 to -7.0). After adjustment, these differences disappeared.

Associations between sports participation and total and domain-specific sedentary behaviours during weekends.

According to the unadjusted model, individual sport participants spent less time on total SB during weekends (-107.7 min/d 95% CI -176.5 to -38.9) when compared to non-sport participants. Specifically, individual sport participants spent significantly less time sitting doing homework activities (-27.3 min/d 95% CI -51.9 to -2.6) and watching TV (-18.7 95% CI -36.3 to -1). After adjusting for gender and year, associations with total time spent in SB, doing homework (-110.5 min/d 95% CI -179.7 to -41.4; -26.5 95% CI -50.7 to -2.3 respectively) and watching TV remained significant (-18.7 95% CI -36.3 to -1).

Team sport participants also spent less time on total sedentary activities during weekends compared with non-sport participants (-132.6 min/d 95% CI -205.7 to -59.4), mainly on sitting time doing homework (-40 95% CI -65.8 to -13.6), socialising (-43.5 min/d 95% CI -71.7 to -15.4) and doing sedentary hobbies (-30 min/d 95% CI -52.6 to -7.3). After adjustment, associations between total sedentary time remained significant (-126.4 min/d 95% CI -202.4 to -50.4 total), as well as socialising (-37 95% CI -66 to -8.2) and doing hobbies (-24 95% CI -47.4 to -0.5).

Adjusted multiple models also suggested that independently of sport participation and gender, sitting time spent at school/doing homework during weekdays decreased by -40.4 min/d every year (95% CI –54.1 to -

26.7), while sitting time socialising and on transport increased by +16.7 min/d (95% CI 8.9 to 24.5) and +18.6 min/d every year (95% CI 13.2 to 24), respectively. During weekends, sitting time spent watching TV and on computer use was reduced by -9.1 min/d (95% CI -17.1 to -1.2) and -28.2 min/d every year (95% CI -42 to -14.4), respectively. In contrast, sitting time while socialising at weekends increased over the years (22.3min/d every year 95%; CI 9.9 to 34.7).

With regard to gender differences, girls spent more time sitting during weekdays than boys on the transition to university (+58.6 min/d every year 95% CI 5.4 to 111.6). Specifically, girls increased sitting time doing homework (+49.5min/d every year; 95% CI 21.8 to 77.2) and socialising (+20 min/d every year; 95% CI 5.1 to 35). During weekends, girls increased sitting time doing homework (+51 min/d, 95% CI 27 to 75) and decreased sitting time using the computer (-49 min/d 95% CI -87.3 to -10.6).

Associations between physical activity (min/week) spent at different intensities and in different domains from secondary school to university

According to the unadjusted model, individual sport participants spent more time in MVPA (105.3 min CI 95% 32.5 to 178.1 vigorous and 129.4 min 95% CI 57.6 to 201.2 moderate) than non-sport participants. When looking at specific PA domains, individual sport participants also spent more time doing leisure PA (+169 min; 95% CI 105.7 to 232.2*)*. After adjusting for gender and year, differences remained significant for VPA (+113.8 min/week; 95% CI 41.9 to 185.8), MPA (+130.1 min/week; 95% CI 58.3 to 202) and for leisure time PA (+165 min/week; 95% CI 102.6 to 227.5).

According to the unadjusted model, team sport participants spent more time in MPA (+97.7min/week; 95% CI 24.2 to 170.9) and less time in LPA (-95 min/week; CI 95% -0.4 to -189.6) than non-sport participants. When looking at specific PA domains, team sport participants spent less time being active on transport (-60 min/week; 95% CI -105.5 to -14.4) but did more PA during leisure time (+101.3 min/week; 95% CI 33.1 to 169.4). After adjusting by gender and year, increases in MPA remained (78.8 95% CI 2.5 to 155.2), but not in LPA. Regarding the domains for PA, less time spent on PA while going from one place to the other remained significant (-53.5 min/week; 95% CI -6 to -101.1), as did the increase of PA during leisure time (+69.4 min/week; 95% CI 0.3 to 138.5).

Time spent on leisure PA decreased by 37 min/year (95% CI - 8.6 to -65.4), while time spent on work and home PA increased 52 min/y (95% CI 1.9 to 102.1) and 27.2 min/y (95% CI 0.8 to 53.6), respectively. By

gender, females decreased the time doing VPA (-129.3 95% CI -202 to -56.6) and increased the time doing LPA when compared to males (96 min CI 95% 3.4 to 188.5). Females also decreased the time doing leisure PA (-100 min 95% CI -31.4 to -167.5).

Discussion

This study investigated the influence sports participation had on total and context-specific SB and PA on the transition from secondary school to university in a sample of Spanish adolescents. Results indicated that playing sport was associated with spending less time in total SB during weekdays and weekends. However, not all SB domains were linked to sport participation, with associations differing from whether participants played individual or team sports. While individual sport participation influenced the following context-specific SB: recreational computer use on weekdays, doing homework and watching TV during weekends; team sport participation influenced sedentary socialising and hobbies during weekends. Playing sport was also linked to higher MVPA during leisure time. This formative research indicated that developing sport-based interventions and recommending sport participation could be an effective public and individual health intervention to reduce time spent on harmful-domains of SB, especially recreational screen-based behaviours, which is a key issue given the increasing trends of screen time among adolescents [32].

First, the present study indicates that playing organised sports on the transition from school to university is associated with less time spent sitting during weekdays or weekends. The evidence surrounding SB and sports participation is limited and mixed. Our results are in concordance with some Finnish research which reported that youth participation in organised sports met the recommendations for screen-based SB (2 hours/day) more often than non-sport participants [33, 34]. Other studies found no associations between organised sports and time spent in sedentary behaviour [35], although this was a cross-sectional study with a broad age range (10 to 18 years old). Nonetheless, the present study indicates that sport-related recreational MVPA might have a role in replacing adolescents' daily SB, which could result in improvements in health-related quality of life [7] and cardio metabolic health across this developmental stage [2, 8, 9, 36]. Identifying and measuring sports participation could help pediatricians to characterize an optimal 24-hour pattern of PA for health and develop individualized recommendations for sport participation.

Second, the present study indicates that only some domain-specific behaviours were related to organised sports participation. This is especially relevant as some of these sedentary behaviours, such as recreational screen-based sedentary time, have been widely reported to be harmful for health. High prevalence of screen-based sedentary time in adolescents has been associated with mental health problems [32, 37], and insufficient sleep duration [38]. Moreover, high screen time among adolescents has been correlated with higher prevalent obesity in adulthood [39]. Our study supports the idea that sports participation could contribute towards reducing the time spent on screen-based activities and mitigate its associated health risks, highlighting the importance of studying the context in which sedentary behaviours occur [40].

Third, the present results indicate that associations between sport participation and context-specific sedentary behaviour differed between individual and team sports. While individual sport participants spent less time sitting in recreational computer use and television viewing, team sport participants spent less time on sedentary socialising or hobbies. This could be explained because team sport traditionally stimulates social engagement [41, 42], which replaces the sedentary social activities among adolescents [43]. Moreover, organised team sports provide a supportive environment to accumulate PA among adolescents [44, 45]. Individual sport participants spending less time on screen time activities could be explained considering the nature of individual sports. Individual sports that require a high level of performance are more effective to develop higher self-control [46]. Previous research associated high screen time with lower self-control [47]. However, gender differences should also be studied and, in general, there is lack of evidence about why individual sport participants spent less time sitting in recreational computer use and television viewing. Future intervention studies could evaluate its impact on domains of sedentary behaviour. Nonetheless, our study suggests that organised sports participation –especially with regard to individual sports – can contribute to reduce screen time and overall SB.

Main limitations and strengths

This study used self-report data to determine levels of PA and SB which can lead to an overestimation of PA levels [48]. Although recall bias is common and would require validation against objective measures (i.e. inclinometers or accelerometers), self-report methods provide information on the type of behaviour being undertaken or the social or environmental context in which it occurs [40], a key issue to further understand context-specific SB interventions. In the future, self-report and objective methods should be combined to accurately assess the patterns of both SB and PA across this life time period.

The study also provides data on a medium-size sample from over one hundred participants. Although a bigger sample size would have been preferable, this study is one of the first longitudinal studies among Spanish adolescents that follows up key indicators of SB in relation to sport participation across a developmental stage that is scarcely studied. Because SB evolves with age, it is important to integrate a life-course perspective in SB-reduction interventions whenever possible [40].

Future studies

The relationship between context-specific SB and sport participation needs to be further investigated. On the transition from secondary school to university, the rapid changes in technology usage constantly increases time spent on domain-specific SB and modifies the screen-based media landscape, which makes it relevant to promote ongoing research. Accelerometer-measured sedentary behaviour should be added in combination with self-report data in future studies.

Conclusions

This formative research highlights the value of promoting sport-based interventions and recommending sport participation to reduce total SB and context-specific SB in the transition from secondary school to university. Results provide new insights into planning for effective strategies that could change domain-specific SB and prevent the growing volume of SB among adolescents. While pediatricians would benefit from providing individualized recommendations on sport participation, policies should not only focus on promoting organised sports during adolescence but also during young adulthood, with universities becoming a key setting in this role. This could result in significant improvements in adolescents' chronic disease risk and well-being, not only during adolescence but also during young adulthood.

Author contribution

I.A. and A.P. conceived of the presented idea and developed the theory. E.C. and J.M. verified the analytical methods and analysed the data. E.C designed the model and the computational framework and analysed the data. D.W. supervised the findings and English accuracy of this article. I.A., A.P. and E.C. discussed the results.

Compliance with Ethical Statements

Conflict of Interest: The authors declare that they have no conflict of interest.

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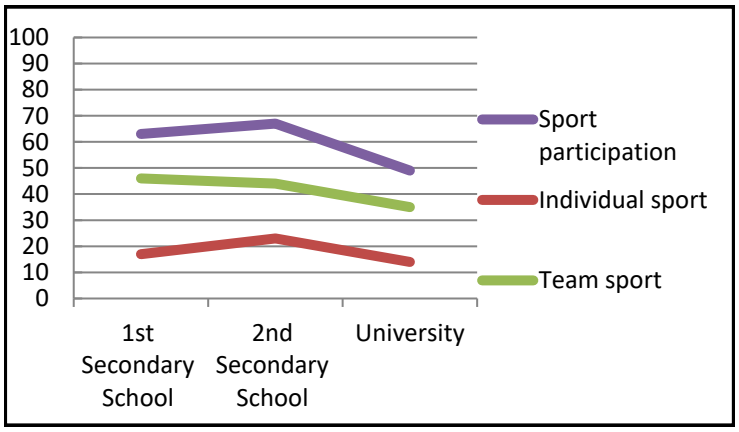
Table 1. Sport participation and time spent in domain-specific sedentary behaviours and physical activity during the first year of Secondary School by gender.

1st year of Secondary School		**Males (n=48)**	**Females (n=65)**	**Total (N=113)**
Sport Participation[1]		n (%)	n (%)	n (%)
No		18 (37.5)	35 (53.8)	53 (46.9)
Yes: Individual sport		8 (16.7)	22 (33.8)	30(26.5)
Yes: Team sport		22 (45.8)	8 (12.3)	30(26.5)
Domain-specific sedentary behaviours		**Mean minutes/day (SD)**	**Mean minutes/day (SD)**	**Mean minutes/day (SD)**
Total sedentary	Weekdays	770(282)	807(161)	792(220)
	Weekends	581(323)	623(223)	605(270)
Television viewing	Weekdays	80(81)	59(53)	68(67)
	Weekends	112(84)	96(72)	103(77)
Computer use	Weekdays	144(165)	111(81)	125(124)
	Weekends	197(165)	154(106)	172(135)
School/Homework	Weekdays [2]	427(79)	474(86)	454(86)
	Weekends [1]	73(64)	121(66)	101(69)
Socialising	Weekdays [3]	36(43)	56(58)	51(45)
	Weekends	102(116)	116(88)	110(101)
Transport	Weekdays	24(30)	21(20)	22(25)
	Weekends	39(43)	50(57)	45(51)
Hobbies	Weekdays	38(50)	53(82)	47(70)
	Weekends	58(75)	85(86)	73(82)
Domain-specific physical activity (PA)	**Intensity**	**Mean minutes/week**	**Mean minutes/week (SD)**	**Mean minutes/week (SD)**
Total PA	Vigorous [4]	309(288)	177(159)	233(231)
	Moderate [5]	362(277)	264(223)	305(251)
	Light	359(242)	401(278)	383(263)
Transport PA	Vigorous	0	0	0
	Moderate	43(136)	23(69)	32(103)
	Light	130(168)	151(146)	142(155)
	Total	174(258)	175(165)	175(208)
Leisure PA	Vigorous	174(205)	117(124)	141(165)
	Moderate	159(173)	97(126)	124(151)
	Light	76(105)	88(127)	83(118)
	Total	411(297)	303(231)	349(265)
Work/school PA	Vigorous	78(114)	53(85)	64(98)
	Moderate	100(77)	88(82)	93(80)
	Light	66(91)	59(92)	62(91)
	Total	245(176)	201(157)	220(166)
Home PA	Vigorous	56(90)	6(25)	27(66)
	Moderate	58(93)	53(80)	55(85)
	Light	86(97)	102(101)	95(100)
	Total	202(194)	163(167)	180(179)

(1) $p<0.001$; (2) $p=0.004$; (3) $p=0.043$; (4) $p=0.002$; (5) $p=0.040$

Figure 1. Percentage of sport participation during the three years.

Males



Females

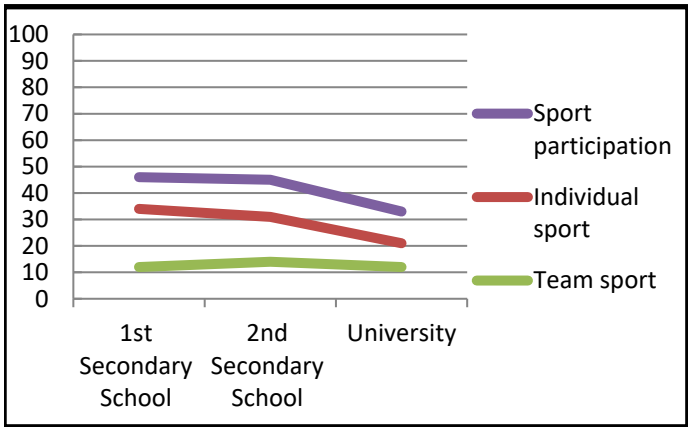
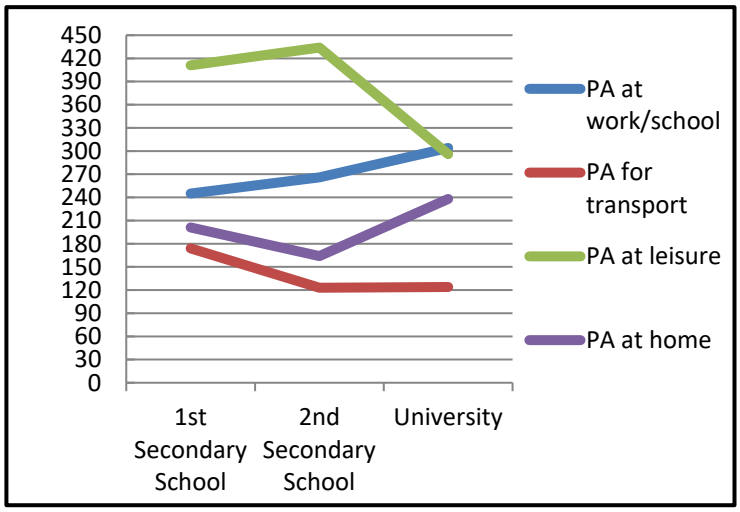


Figure 2. Minutes per week of PA in different domains during the three years.

Males



Females

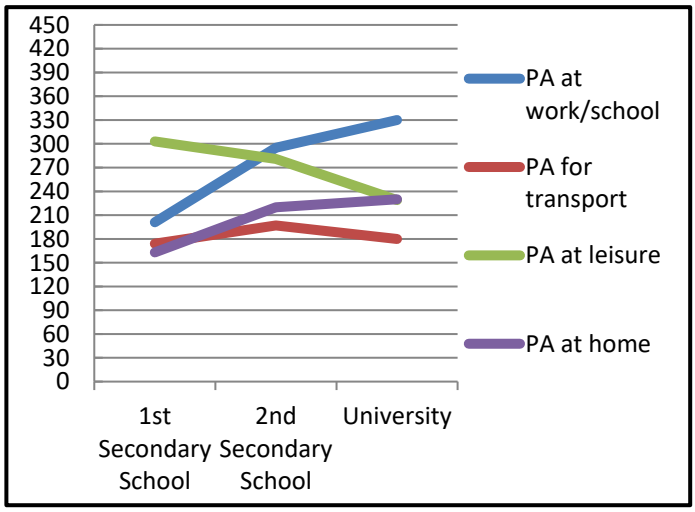
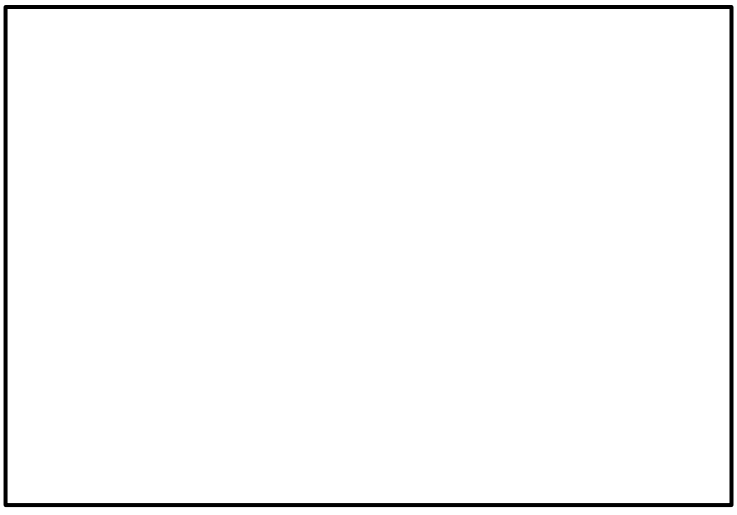


Figure 3. Minutes per weekday of sedentary behaviour across during the three years.

Males



Females

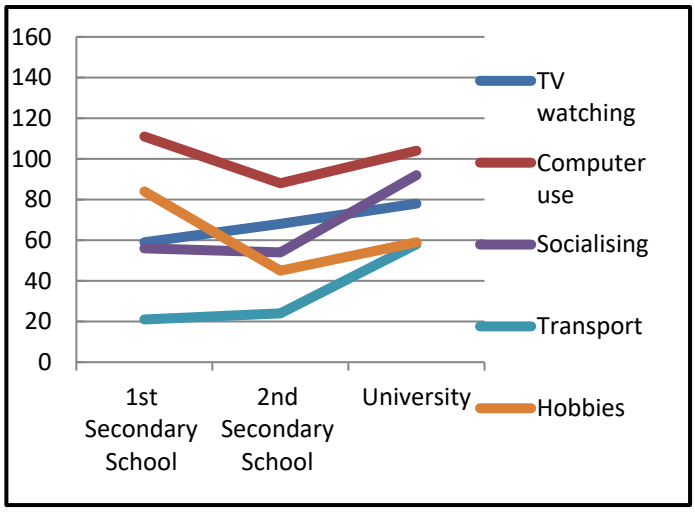


Table 2. Time spent in domain-specific sedentary behaviours and physical activity in relation to sport participation, adjusted by gender and calendar year models.

		Constant	year		gender		Individual sport		Team sport	
Domain-specific sedentary behaviours (minutes/day)		β	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Total sedentary	Weekdays	792.4	-14.3	(-40.7 – 12.1)	**58.5**	**(5.4 – 111.6)**	**-101**	**(-157.2 -44.9)**	-47.9	(-107.6 -11.9)
	Weekends	657	-9.3	(-40.9 -22.3)	27.3	(-45.9 – 100.5)	**-110.5**	**(-179.7 - -41.4)**	**-126.4**	**(-202.4 - -50.4)**
Television viewing	Weekdays	65.5	+5.5	(-2.2 – 13.2)	-5.4	(-22.5 –11.8)	-10.5	(-27.2 – 6.3)	+5.2	(-13.0 – 23.4)
	Weekends	122	**-9.1**	**(-17.1– -1.15)**	-3.3	(-23.9 – 17.2)	**-18.7**	**(-36.3 -1.03)**	-5.0	(-24.9 – 14.8)
Computer use	Weekdays	136	-4.1	(-15.3 – 7.0)	-13.1	(-36.5 – 10.4)	**-37.4**	**(-61.4 - -13.4)**	-9.2	(-35.0 – 16.5)
	Weekends	238	**-28.2**	**(-42.0 – -14.4)**	**-49.0**	**(-87.3 – -10.6)**	-20.4	(-51.1 – 10.4)	-16.2	(-51.3 -19.0)
Homework	Weekdays	488.3	**-40.4**	**(-54.1 – -26.6)**	**49.5**	**(21.8 – 77.2)**	-25.3	(-54.5 – 3.9)	-18.5	(-49.6 – 12.6)
	Weekends	81.9	+3.4	(-7.8 – 14.6)	**+51**	**(26.9 – 75.0)**	**-26.5**	**(-50.7 - -2.3)**	-22.6	(-48.7 – 3.5)
Socialising	Weekdays	19	**+16.7**	**(8.9 – 24.5)**	**+20**	**(5.1 – 35.0)**	-16.3	(-32.6 – 0.1)	+4.7	(-12.5 – 21.9)
	Weekends	93.8	**+22.3**	**(9.9 – 34.7)**	+8.1	(-18.5 – 34.7)	-21.8	(-48.5 – 4.9)	**-37**	**(-35.9 - -8.2)**
Transport	Weekdays	1.6	+18.6	**(13.2 – 24.0)**	-3.4	(-12.7 – 9.5)	-2.2	(-13.0 – 8.6)	-1.6	(-12.7 – 9.5)
	Weekends	46.7	+1.4	(-4.6 – 7.4)	+1.2	(-14.6 – 16.9)	-2.8	(-16.1 – 10.5)	-8.2	(-23.2 – 6.9)
Hobbies	Weekdays	39.4	3.4	(-4.2 – 11.0)	9.9	(-8.5 – 28.3)	-3.0	(-19.7 – 13.8)	-12.0	(-30.6 – 6.5)
	Weekends	63.9	+1.9	(-7.5 – 11.3)	+21.8	(-2.3 – 45.9)	-4.3	(-25.1 – 16.5)	**-24.0**	**(-47.4 – -0.5)**
Total intensities and domain-specific physical activity (PA) (Min/week)		β	β	95% CI	β	95% CI	β	95% CI	β	95% CI
Total vigorous PA		277.7	-3.7	(-36.9 – 29.5)	**-129.3**	**(-202.0 – 56.6)**	**+113.8**	**(41.9 – 185.8)**	+21.1	(-56.9 – 99.2)
Total moderate PA		282	-2.1	(-36.1 – 31.7)	-57.2	(-124.8 – 10.4)	**+130.1**	**(58.3 – 202.0)**	**+78.8**	**(2.5 – 155.2)**
Total light PA		320	+35.1	(-5.6 – 75.9)	**96.0**	**(3.4 – 188.5)**	.19	(-88.7 – 89.1)	-60.9	(-158.2 – 36.3)
Transport total PA		178.7	-9.2	(-30.3 – 11.9)	23.7	(-18.5 – 65.8)	21.4	(-23.3 – 66.1)	**-53.5**	**(-101.1 - -6.0)**
Leisure total PA		388.7	**-37.0**	**(--65.4 - -8.6)**	**-99.6**	**(-167.5 - -31.6)**	**165.1**	**(102.6 – 227.5)**	**69.4**	**(0.3 – 138.6)**
Work/school total PA		147.7	**52.0**	**(1.9 – 102.1)**	10.9	(-77.8 – 99.5)	30.7	(-71.3 – 132.7)	35.9	(-69.8 – 141.6)
Home total PA		154.0	27.2	(0.7 – 53.6)	-5.4	(-63.6 – 52.9)	2.1	(-55.2 – 59.4)	-6.3	(-68.6 – 56.0)