

Queensland Sport, Exercise and Recreation Survey of Children – 2019 (QSERSC):

A proxy-based, dual frame prevalence study of children's physical activity outside school hours

Prepared for the Department of Housing and Public Works
(Sport and Recreation) by Schottler Consulting Pty Ltd



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Contents

List of figures and tables.....	6
Executive summary	18
Integrated summary and discussion of key findings.....	20
Introduction.....	56
Section 1 – Prevalence of children’s participation in physical activities for sport, exercise and recreation in Queensland.....	60
Children’s participation in physical activities for sport, exercise and recreation in Queensland.....	61
Frequency of children’s participation in physical activities for sport, exercise and recreation in Queensland	79
Share of total activities for Children 5–17 years	91
Section 2 – Children’s participation in specific sport, exercise and recreation activities in Queensland ..	94
Overall participation in specific sport, exercise and recreational activities	95
Participation in specific activities – Top 10 activities by age	97
Participation in specific activities – Top 10 activities by gender	104
Participation in specific activities – Top 10 activities by region	108
Section 3 – Frequency of children’s participation in specific sport, exercise and recreation activities in Queensland	115
Overall frequency of participation in sport, exercise or recreation activities.....	116
Frequency of participation in sport, exercise or recreation activities – Top 10 activities by age	119
Frequency of participation in sport, exercise or recreation activities – Top 10 activities by gender	125
Frequency of participation in sport, exercise or recreation activities – Top 10 activities by region	129
Section 4 – Percentage of children participating in physical activity Daily, Weekly or Less than weekly	136
Overall prevalence of Daily, Weekly or Less than weekly physical activity	137
Overall prevalence of Daily, Weekly or Less than weekly physical activity – by age	143
Overall prevalence of Daily, Weekly or Less than weekly physical activity – by gender	146
Overall prevalence of Daily, Weekly or Less than weekly physical activity – by region	149

Section 5 – Location, average session time and distance travelled by Queensland children for the top three most frequent physical activities	156
Participation in Active play.....	157
Participation in Active transport.....	160
Participation in Walking	164
Participation in Cycling and scootering	167
Participation in Sport	171
Participation in General exercise and fitness	175
Participation in Recreational activities	179
Mean session length, distance travelled and location of activity for other activities with sample.....	183
Section 6 – Sedentary behaviour of Queensland children involving screen time	184
Time spent on screens for school work, leisure, entertainment and other reasons – Overall results	185
Time spent on screens for school work, leisure, entertainment and other reasons – Results by age	188
Time spent on screens for school work, leisure, entertainment and other reasons – Results by gender	192
Time spent on screens for school work, leisure, entertainment and other reasons – Results by region	195
Section 7 – Barriers to Queensland children participating in physical activities for sport, exercise and recreation	200
Barriers for children 5–17 years doing or increasing physical activity over the past 12 months – Overall barriers for children and for parents/carers.....	201
Barriers for children 5–17 years doing or increasing physical activity over the past 12 months – Barriers for children and for parents/carers by child age	206
Barriers for children 5–17 years doing or increasing physical activity over the past 12 months – Barriers for children and for parents/carers by child gender	217
Barriers for children 5–17 years doing or increasing physical activity over the past 12 months – Barriers for children and for parents/carers by region.....	223
Barriers for children to participating in physical activities for sport, exercise and recreation by single age	235
Section 8 – Parent/carer attitudes towards children’s physical literacy in Queensland.....	236
Parent/carer attitudes towards physical literacy – Overall results	237
Parent/carer attitudes towards physical literacy – Results by age	240
Parent/carer attitudes towards physical literacy – Results by gender	243
Parent/carer attitudes towards physical literacy – Results by region	245

Section 9 – Queensland children with lower, medium and higher levels of physical activity	248
Background on children with different levels of physical activity participation.....	249
Demographic profile of low, medium and high physical activity segments in Queensland	250
Screen time profile of low, medium and high physical activity segments in Queensland.....	256
Physical literacy profile of low, medium and high physical activity segments in Queensland	260
Physical activity profile of low, medium and high physical activity segments in Queensland	263
Profile of top physical activities of low, medium and high physical activity segments in Queensland.....	270
Profile of physical activity barriers for low, medium and high physical activity segments in Queensland	273
Distribution of low, medium and high Physical Activity segments in Queensland	281
Section 10 – Estimate of the percentage of children undertaking at least 60 minutes of physical activity per day	283
Imputation of estimated minutes of physical activity	284
Percentage of children participating in 60 minutes of physical activity per day – overall results	286
Percentage of children participating in 60 minutes of physical activity per day – results by age	287
Percentage of children participating in 60 minutes of physical activity per day – results by gender	289
Percentage of children participating in 60 minutes of physical activity per day – results by region	290
Section 11 – Physical activity of Queensland children from different backgrounds – Aboriginal and/or Torres Strait Islander children	292
Frequency of children’s participation in physical activities for sport, exercise and recreation in Queensland – Aboriginal and/or Torres Strait Islander children	293
Participation in specific activities – Top 20 activities for Aboriginal and/or Torres Strait Islander children	296
Child related barriers to Aboriginal and/or Torres Strait Islander children doing or increasing physical activity over the past 12 months.....	299
Parent/carer barriers to Aboriginal and/or Torres Strait Islander children doing or increasing physical activity over the past 12 months.....	302
Time spent on screens for school work, leisure, entertainment and other reasons – Aboriginal and/or Torres Strait Islander children	305
Parent/carer attitudes to physical literacy – Aboriginal and/or Torres Strait Islander children	308
Other results relating to Aboriginal and/or Torres Strait Islander children.....	311

Section 12 – Physical activity of Queensland children from different backgrounds – Children of LOTE backgrounds (Languages other than English)	312
Frequency of children’s participation in physical activities for sport, exercise and recreation in Queensland – Children of LOTE background	313
Participation in specific activities – Top 20 activities for children of LOTE background	316
Child related barriers to children doing or increasing physical activity over the past 12 months – children of LOTE background.....	320
Parent/Carer barriers to children doing or increasing physical activity over the past 12 months – children of LOTE background.....	323
Time spent on screens for school work, leisure, entertainment and other reasons – Children of LOTE background	326
Parent/carers attitudes to physical literacy – Children of LOTE background	329
Other results relating to children of LOTE background	332
Section 13 – Physical activity of Queensland children from different backgrounds – Children with a disability	333
Frequency of children’s participation in physical activities for sport, exercise and recreation in Queensland – Children with a disability	334
Participation in specific activities – Top 20 activities for children with a disability	337
Child related barriers to children with a disability doing or increasing physical activity over the past 12 months	340
Parent/Carer barriers to children with a disability doing or undertaking physical activity over the past 12 months	343
Time spent on screens for school work, leisure, entertainment and other reasons – Children with a disability...	346
Parent/carers attitudes to physical literacy – Children with a disability	349
Other results relating to children with a disability	353
Appendix	354
Appendix A – Definitions	355
Appendix B – Activity classification approach	358
Appendix C – Survey instrument	364
Appendix D – Technical report (methodology in detail)	379
Appendix E – Literature review	399
Appendix F – Detailed tables	413
Appendix G – References	630

List of figures and tables

List of figures

Figure 1. Past year prevalence of and frequency of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 (N=5,273, December 2018 to April, 2019)	23
Figure 2. Past year prevalence and frequency of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by age (N=5273, December 2018–April, 2019)	25
Figure 3. Past year prevalence and frequency of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by gender (N=5273, December 2018–April 2019)	27
Figure 4. Mean share of children's physical activity participation based on annual activity frequency data (N=5273, December 2018–April 2019)	29
Figure 5. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Overall results for the top 20 activities (N=5,273, December 2018 to April, 2019)	30
Figure 6. Amount of time per day Queensland children aged 5–17 years spent on screens in total during the past 12 months – Percentage results by age (N=5273, December 2018 – April 2019)	39
Figure 7. Low, medium and high physical activity segments in Queensland children 5–17 years – Screen time profile (N=5273, December 2018–April 2019)	41
Figure 8. Low, medium and high physical activity segments in Queensland children 5–17 years – Physical activity profile (N=5273, December 2018–April 2019)	43
Figure 9. Sampling by Sport & Recreation Service Regions of Queensland (N=5273, December 2018–April 2019)	57
Figure 10. Study measures used in the study (2019)	58
Figure 11. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Overall Results (N=5273, December 2018–April, 2019)....	63
Figure 12. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by age (N=5273, December 2018–April 2019)	67
Figure 13. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by single age (N=5273, December 2018–April 2019)	70
Figure 14. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by gender (N=5273, December 2018–April 2019)	71
Figure 15. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by region (N=5273, December 2018–April 2019) ..	74
Figure 16. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Overall results (December 2018–April 2019)	79
Figure 17. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results by age (N=5273, December 2018–April 2019)	83
Figure 18. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results by single age (December 2018–April 2019)	85
Figure 19. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results by gender (December 2018–April 2019)	86
Figure 20. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results by region (December 2018–April 2019)	89
Figure 21. Share of total activities – Mean frequency of each activity as a percentage of total activity frequency per annum – Results by age and gender (December 2018–April 2019)	92

Figure 22. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Overall results for the top 20 activities (N=5273, December 2018–April, 2019)	95
Figure 23. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 activities by gender (N=5273, December 2018–April, 2019).....	104
Figure 24. Mean frequency of participation of children 5 to 17 years in specific sport, exercise or recreation activities per annum – Overall results for the top 20 activities (Only activities with a minimum of N=40)	117
Figure 25. Mean frequency of participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 most frequent activities by gender (N=5273, December 2018–April, 2019) (Only activities with a minimum of N=40)	125
Figure 65. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Overall results (December 2018–April 2019)	138
Figure 26. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Active play (N=5273, December 2018–April 2019)	157
Figure 27. Location where activities were undertaken for only the child's top three activities – Overall results for Active play (N=3506, December 2018–April 2019)	158
Figure 28. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Active transport (N=5273, December 2018–April 2019)	160
Figure 29. Location where activities was undertaken for only the child's top three activities – Overall results for Active transport (N=1532, December 2018–April 2019).....	162
Figure 30. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Walking (N=5273, December 2018–April 2019)	164
Figure 31. Location where activities were undertaken for only the child's top three activities – Overall results for Walking (N=971, December 2018–April 2019).....	165
Figure 32. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Cycling and scootering (N=5273, December 2018–April 2019).....	167
Figure 33. Location where activities were undertaken for only the child's top three activities – Overall results for Cycling and scootering (N=1631, December 2018–April 2019).....	169
Figure 34. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Sport (N=5273, December 2018–April 2019)	171
Figure 35. Location where activities were undertaken for only the child's top three activities – Overall results for Sport (N=1641, December 2018–April 2019).....	173
Figure 36. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for General exercise and fitness (N=5273, December 2018–April 2019).....	175
Figure 37. Location where activities were undertaken for only the child's top three activities – Overall results for General exercise and fitness (N=1962, December 2018–April 2019).....	177
Figure 38. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Recreational activities (N=5273, December 2018–April 2019)	179
Figure 39. Location where activities were undertaken for only the child's top three activities – Overall results for Recreational activities (N=854, December 2018–April 2019)	181
Figure 40. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months (N=5273, December 2018–April 2019)	185

Figure 41. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months – Mean and percentage results by age (N=5273, December 2018–April 2019)	188
Figure 42. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months – Mean and percentage results by gender (N=5273, December 2018–April 2019)	192
Figure 43. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months – Results by region (N=5273, December 2018–April 2019).....	195
Figure 44. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Child barriers (N=5273, December 2018–April 2019)	202
Figure 45. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Parent/carers barriers (N=5273, December 2018–April 2019)	204
Figure 46. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Child related barriers (N=5273, December 2018–April 2019)	209
Figure 47. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Parent/carer related barriers (N=5273, December 2018–April 2019).....	212
Figure 48. Child and parent/carer barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Child barriers by child gender (N=5273, December 2018–April 2019)	219
Figure 49. Child and parent/carer barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Parent barriers by child gender (N=5273, December 2018–April 2019)	220
Figure 50. Child related barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Results by region (N=5273, December 2018–April 2019)	226
Figure 51. Parent/carer related barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Results by region (N=5273, December 2018–April 2019)	230
Figure 52. Barriers for children to participating in physical activities for sport, exercise and recreation by single age (N=5273, December 2018–April 2019).....	235
Figure 53. Indicators of physical literacy of Queensland children aged 5–17 years – Overall results (N=5273, December 2018–April 2019)	237
Figure 54. Indicators of physical literacy of Queensland children aged 5–17 years – Overall results (N=5273, December 2018–April 2019)	240
Figure 55. . Indicators of physical literacy of Queensland children aged 5–17 years – Results by gender (N=5273, December 2018–April 2019).....	243
Figure 56. Indicators of physical literacy of Queensland children aged 5–17 years – Results by region (N=5273, December 2018–April 2019).....	245
Figure 57. Low, medium and high physical activity segments in Queensland children 5–17 years – Screen time profile (N=5273, December 2018–April 2019).....	256
Figure 58. Low, medium and high physical activity segments in Queensland children 5–17 years – Physical literacy profile (N=5273, December 2018–April 2019)	260
Figure 59. Low, medium and high physical activity segments in Queensland children 5–17 years – Physical activity profile (N=5273, December 2018–April 2019).....	264
Figure 60. Top 10 physical activities for the low, medium and high physical activity segments (N=5273, December 2018–April 2019) (N=1855 for low, N=1701 for medium and N=1717 for high segment).....	271
Figure 61. Barriers to physical activity for the low, medium and high physical activity segments – Child related barriers (N=5273, December 2018–April 2019) (N=1855 for low, N=1701 for medium and N=1717 for high segment).....	274
Figure 62. Barriers to physical activity for the low, medium and high physical activity segments – Parent related barriers (N=5273, December 2018–April 2019) (N=1855 for low, N=1701 for medium and N=1717 for high segment).....	278
Figure 63. Distribution of Low, Medium and High Physical Activity segments – Results for Queensland (N=5273, December 2018–April 2019) (N=1855 for low, N=1701 for medium and N=1717 for high segment)...	281

Figure 64. Distribution of Low, Medium and High Physical Activity segments (N=5273, December 2018–April 2019) – Detailed results by region, age and gender (N=1855 for low, N=1701 for medium and N=1717 for high segment) CAUTION SMALL SAMPLES – RESULTS SHOULD BE INTERPRETED AS INDICATIVE ONLY	282
Figure 66. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Overall results (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	286
Figure 67. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by age (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	287
Figure 68. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by gender (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	289
Figure 69. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by region (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	290
Figure 70. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019).....	294
Figure 71. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019)	297
Figure 72. Child-related barriers to children doing or increasing physical activity over the past 12 months – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019)....	300
Figure 73. Parent/carer barriers to children doing or increasing physical activity over the past 12 months – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019)....	303
Figure 74. Amount of time per day Queensland children aged 5–17 years spent on screens for school work or leisure, entertainment and other reasons outside school hours during the past 12 months. Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019)	305
Figure 75. Indicators of physical literacy of Queensland children aged 5–17 years – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019).....	308
Figure 76. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	314
Figure 77. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	317
Figure 78. Child-related barriers to children doing or increasing physical activity over the past 12 months – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	321
Figure 79. Parent/carer barriers to children doing or increasing physical activity over the past 12 months – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	324
Figure 80. Amount of time per day Queensland children aged 5–17 years spent on screens for school work or leisure, entertainment and other reasons outside school hours during the past 12 months – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018 to April 2019)	326
Figure 81. Indicators of physical literacy of Queensland children aged 5–17 years – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	329

Figure 82. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019).....	335
Figure 83. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019).....	338
Figure 84. Child related barriers to children doing or increasing physical activity over the past 12 months – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018 to April 2019).....	341
Figure 85. Parent/carer barriers to children doing or increasing physical activity over the past 12 months – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018– April 2019).....	344
Figure 86. Amount of time per day Queensland children aged 5–17 years spent on screens for school work or leisure, entertainment and other reasons outside school hours during the past 12 months. Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019)	346
Figure 87. Indicators of physical literacy of Queensland children aged 5–17 years. Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018– April 2019)	350
Figure 88. Sampling by Sport & Recreation Service Regions of Queensland (N=5273, December 2018–April 2019)	380
Figure 89. Study measures used in the study (2019).....	387

List of tables

Table 1. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Active transport (N=5273, December 2018 – April 2019)	32
Table 2. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Cycling/scooter riding (N=5273, December 2018 – April 2019)	33
Table 3. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Walking (N=5273, December 2018 – April 2019)	34
Table 4. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Top 10 results for Sports (N=5273, December 2018 – April 2019)	35
Table 5. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Top 10 results for General exercise and fitness (N=5273, December 2018 – April 2019).....	36
Table 6. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Top 10 results for Recreational activities (N=5273, December 2018 – April 2019).....	37
Table 7. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Overall Results (N=5273, December 2018–April 2019)....	63
Table 8. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by age (N=5273, December 2018–April 2019)	68
Table 9. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by gender (N=5273, December 2018–April 2019) 72	
Table 10. Past year prevalence of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by region (N=5273, December 2018–April 2019) 75	
Table 11. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Overall results (December 2018–April 2019)	80
Table 12. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results by age (December 2018–April 2019)	84
Table 13. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results by gender (December 2018 to April 2019)	87
Table 14. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results by region (N=5273, December 2018–April 2019)....	90
Table 15. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Overall results for the top 20 activities (N=5273, December 2018–April, 2019)	96
Table 16. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 activities by age (N=5273, December 2018–April, 2019).....	97
Table 17. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 activities by gender (N=5273, December 2018–April, 2019).....	105
Table 18. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 activities by region (N=5273, December 2018–April, 2019).....	108
Table 19. Mean frequency of participation of children 5 to 17 years in specific sport, exercise or recreation activities per annum – Overall results for the top 20 activities (Only activities with a minimum of N=40)	118
Table 20. Mean frequency of participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 most frequent activities by age (N=5273, December 2018–April, 2019) (Only activities with a minimum of N=40)	119

Table 21. Mean frequency of participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 most frequent activities by gender (N=5273, December 2018–April, 2019) (Only activities with a minimum of N=40)	126
Table 22. Mean frequency of participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Top 10 most frequent activities by region (N=5273, December 2018–April, 2019) (Only activities with a minimum of N=40)	129
Table 23. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Overall results (December 2018–April 2019)	141
Table 24. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results by age (December 2018–April 2019)	144
Table 25. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results by gender (December 2018–April 2019)	147
Table 26. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results by region (December 2018–April 2019)	151
Table 27. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Active play (N=5273, December 2018–April 2019)	157
Table 28. Location where activity was undertaken for only the child's top three activities – Overall results for Active play (N=3506, December 2018–April 2019)	159
Table 29. Distance travelled one way for only the child's top three activities – Overall results for Active play (N=3506, December 2018–April 2019).....	159
Table 30. Average session length for Active play where it was reported in the child's top three activities – Overall results for Active play (N=3506, December 2018–April 2019).....	159
Table 31. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Active transport (N=5273, December 2018–April 2019)	161
Table 32. Location where activities were undertaken for only the child's top three activities – Overall results for Active transport (N=1532, December 2018–April 2019)	162
Table 33. Distance travelled one way for only the child's top three activities – Overall results for Active transport (N=1532, December 2018–April 2019)	163
Table 34. Average session length for activity where it was reported in the child's top three activities – Overall results for Active transport (N=1532, December 2018–April 2019).....	163
Table 35. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Walking (N=5273, December 2018–April 2019)	164
Table 36. Location where activities were undertaken for only the child's top three activities – Overall results for Walking (N=971, December 2018–April 2019).....	165
Table 37. Distance travelled one way for only the child's top three activities – Overall results for Walking (N=971, December 2018–April 2019).....	166
Table 38. Average session length for activity where it was reported in the child's top three activities – Overall results for Walking (N=971, December 2018–April 2019).....	166
Table 39. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Cycling/scooter (N=5273, December 2018–April 2019)	168

Table 40. Location where activities were undertaken for only the child's top three activities – Overall results for Cycling and scootering (N=1631, December 2018–April 2019).....	169
Table 41. Distance travelled one way for only the child's top three activities – Overall results for Cycling and scootering (N=1631, December 2018–April 2019).....	170
Table 42. Average session length for activity where it was reported in the child's top three activities – Overall results for Cycling and scootering (N=1631, December 2018–April 2019).....	170
Table 43. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Sport based on the top 20 activities only (N=5273, December 2018–April 2019).....	172
Table 44. Location where activities were undertaken for only the child's top three activities – Overall results for Sport (N=1641, December 2018–April 2019).....	173
Table 45. Distance travelled one way for only the child's top three activities – Overall results for Sport (N=1641, December 2018–April 2019).....	174
Table 46. Average session length for activity where it was reported in the child's top three activities – Overall results for Sport (N=1641, December 2018–April 2019).....	174
Table 47. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for General exercise and fitness (N=5273, December 2018–April 2019).....	176
Table 48. Location where activities were undertaken for only the child's top three activities – Overall results for General exercise and fitness (N=1962, December 2018–April 2019).....	177
Table 49. Distance travelled one way for only the child's top three activities – Overall results for General exercise and fitness (N=1962, December 2018–April 2019).....	178
Table 50. Average session length for activity where it was reported in the child's top three activities – Overall results for General exercise and fitness (N=1962, December 2018–April 2019).....	178
Table 51. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Recreational activities (N=5273, December 2018–April 2019).....	180
Table 52. Location where activities were undertaken for only the child's top three activities – Overall results for Recreational activities (N=854, December 2018–April 2019).....	181
Table 53. Distance travelled one way for only the child's top three activities – Overall results for Recreational activities (N=854, December 2018–April 2019).....	182
Table 54. Average session length for activity where it was reported in the child's top three activities – Overall results for Recreational activities (N=854, December 2018–April 2019).....	182
Table 55. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months (N=5273, December 2018–April 2019).....	187
Table 56. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months – Results by age (N=5273, December 2018–April 2019).....	190
Table 57. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months – Results by gender (N=5273, December 2018–April 2019).....	194
Table 58. Amount of time per day Queensland children aged 5–17 years spent on screens for schoolwork or leisure, entertainment and other reasons outside school hours during the past 12 months – Results by region (N=5273, December 2018–April 2019).....	197
Table 59. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Child barriers (N=5273, December 2018–April 2019).....	203
Table 60. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Parent/carers barriers (N=5273, December 2018–April 2019).....	205

Table 61. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Child and Parent/carers barriers by age (N=5273, December 2018–April 2019).....	213
Table 62. Child and parent/carer barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Results by child gender (N=5273, December 2018–April 2019).....	221
Table 63. Barriers to Queensland children aged 5–17 years doing or increasing physical activity over the past 12 months – Parent and child barriers by region (N=5273, December 2018–April 2019).....	231
Table 64. Indicators of physical literacy of Queensland children aged 5–17 years – Overall results (N=5273, December 2018–April 2019)	239
Table 65. Indicators of physical literacy of Queensland children aged 5–17 years – Results by age (N=5273, December 2018–April 2019)	241
Table 66. Indicators of physical literacy of Queensland children aged 5–17 years – Results by gender (N=5273, December 2018–April 2019).....	244
Table 67. Indicators of physical literacy of Queensland children aged 5–17 years – Results by region (N=5273, December 2018–April 2019)	246
Table 68. Low, medium and high physical activity segments in Queensland children 5–17 years – Demographic profile	251
Table 69. Low, medium and high physical activity segments in Queensland children 5–17 years – Screen time profile (N=5273, December 2018–April 2019).....	258
Table 70. Low, medium and high physical activity segments in Queensland children 5–17 years – Physical literacy profile (N=5273, December 2018–April 2019)	261
Table 71. Low, medium and high physical activity segments in Queensland children 5–17 years – Physical activity profile (N=5273, December 2018–April 2019).....	266
Table 72. Top 10 physical activities for the low, medium and high physical activity segments (N=5273, December 2018–April 2019) (N=1855 for low, N=1701 for medium and N=1717 for high segment).....	272
Table 73. Barriers to physical activity for the low, medium and high physical activity segments – Child related barriers (N=5273, December 2018–April 2019) (N=1855 for low, N=1701 for medium and N=1717 for high segment).....	275
Table 74. Barriers to physical activity for the low, medium and high physical activity segments – Parent related barriers (N=5273, December 2018–April 2019) (N=1855 for low, N=1701 for medium and N=1717 for high segment).....	279
Table 75. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Overall results (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	286
Table 76. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by age (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	288
Table 77. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by gender (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	289
Table 78. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by region (December 2018–April 2019) ESTIMATE INTERPRET WITH CAUTION ONLY	291
Table 79. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019).....	295
Table 80. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years. Results for Aboriginal and/or Torres Strait Islander	

children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019)	298
Table 81. Child-related barriers to children doing or increasing physical activity over the past 12 months – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018 to April 2019). 301	
Table 82. Parent/carer barriers to children doing or increasing physical activity over the past 12 months – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019)... 304	
Table 83. Amount of time per day Queensland children aged 5–17 years spent on screens for school work or leisure, entertainment and other reasons outside school hours during the past 12 months – Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019)	307
Table 84. Indicators of physical literacy of Queensland children aged 5–17 years. Results for Aboriginal and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018 to April 2019).....	310
Table 85. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	315
Table 86. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years. Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	318
Table 87. Child related barriers to children doing or increasing physical activity over the past 12 months – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	322
Table 88. Parent/carer barriers to children doing or increasing physical activity over the past 12 months – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	325
Table 89. Amount of time per day Queensland children aged 5–17 years spent on screens for school work or leisure, entertainment and other reasons outside school hours during the past 12 months – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	328
Table 90. Indicators of physical literacy of Queensland children aged 5–17 years – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children, December 2018–April 2019)	331
Table 91. Frequency of participation in major activities as a population wide prevalence estimate (based on all children 5 to 17 years including non-participants) – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018 to April 2019).....	336
Table 92. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019).....	339
Table 93. Child barriers to children doing or increasing physical activity over the past 12 months – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019)	342
Table 94. Parent/carer barriers to children doing or increasing physical activity over the past 12 months – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018 to April 2019).....	345
Table 95. Amount of time per day Queensland children aged 5–17 years spent on screens for school work or leisure, entertainment and other reasons outside school hours during the past 12 months. Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019)	348

Table 96. Indicators of physical literacy of Queensland children aged 5–17 years. Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019)	352
Table 97. Sample sizes and margins of error for the study sample (N=5273) (95% confidence interval or margin of error at the 95% confidence level).....	381
Table 98. Sampling within five Sport & Recreation Service Regions and three bands within each region (N=5,732)	390
Table 99. Rates of respondent consent and overall response rate for the study (December 2018–April 2019) (N=5273) (PERCENT OF NUMBERS USED IN CALCULATIONS SHOWN IN GREEN SHADED CELLS)	395
Table 100. Quotas achieved relative to quota targets set for the study	397
Table 101. The Draft Australian Physical Literacy Standard (ASC, 2019)	410
Table 102. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for 200+ activities (N=5273, December 2018 – April 2019)	414
Table 103. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results by age for 200+ activities (N=5273, December 2018 – April 2019)	422
Table 104. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results by gender for 200+ activities (N=5273, December 2018 – April 2019)	437
Table 105. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results by regions Far North, North and South West for 200+ activities (N=5273, December 2018 – April 2019)	449
Table 106. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results by regions Far North, North and South West for 200+ activities (N=5273, December 2018 – April 2019)	459
Table 107. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Overall results for 200+ activities (N=5273, December 2018 – April 2019).....	469
Table 108. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Results by age for 200+ activities (N=5273, December 2018 – April 2019).....	478
Table 109. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Results by gender for 200+ activities (N=5273, December 2018 – April 2019).....	494
Table 110. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Results by Far North, North and South West regions for 200+ activities (N=5273, December 2018 – April 2019)	504
Table 111. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Results by North Coast and South Coast regions for 200+ activities (N=5273, December 2018 – April 2019).....	515
Table 112. Mean minutes per session of activity for Queensland children aged 5–17 years (N=5273, December 2018 – April 2019)	525
Table 113. Mean number of kilometres travelled to participate in physical activities outside of school hours for Queensland children aged 5–17 years (N=5273, December 2018 – April 2019).....	532
Table 114. Location where activity was undertaken for only the child's top three activities – Results by activity (N=3506, December 2018 – April 2019) (activities with N=40 or higher only)	539
Table 115. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results for Aboriginal	

and/or Torres Strait Islander children (N=284 for Aboriginal and/or Torres Strait Islander children and N=4954 for non-Aboriginal and/or Torres Strait Islander children, December 2018–April 2019).....	544
Table 116. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results for children of LOTE background (N=720 for LOTE children and N=4548 for non-LOTE children December 2018–April 2019)	546
Table 117. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results for children with a disability (N=510 for children with a disability and N=4714 for children without a disability, December 2018–April 2019)	548
Table 118. Overall prevalence of Daily, Weekly or Less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results by region and age (December 2018–April 2019)	550
Table 119. Overall prevalence of daily, weekly or less than weekly physical activity based on population wide prevalence estimates (based on all children 5 to 17 years including non-participants) – Results by region and gender (December 2018–April 2019)	560
Table 120. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by region and age (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	566
Table 121. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by region and gender (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	567
Table 122. Percentage of children participating in 60 minutes of physical activity per day (based on all children 5 to 17 years including non-participants) – Results by Aboriginal and/or Torres Strait Islander, LOTE or disability (December 2018–April 2019) ESTIMATE ONLY INTERPRET WITH CAUTION.....	568
Table 123. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results by Aboriginal and/or Torres Strait Islander and LOTE background (N=5273, December 2018 – April 2019)	569
Table 124. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Results by whether child has a disability (N=5273, December 2018 – April 2019)	585
Table 125. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Results by Aboriginal and/or Torres Strait Islander background (N=5273, December 2018 – April 2019)	594
Table 126. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Results by LOTE background (N=5273, December 2018 – April 2019).....	605
Table 127. Mean frequency of participation in physical activities for sport, exercise or recreation outside school hours per annum for the past 12 months for Queensland children aged 5–17 years – Results by child disability status (N=5273, December 2018 – April 2019).....	617

Executive summary

This report presents findings for data collected during 2018–19 for the Queensland Sport, Exercise and Recreation Survey of Children – 2019 (QSERSC): A proxy-based, dual frame prevalence study of children's physical activity outside school hours. Participation was measured for children aged between 5 and 17 years, with parents and carers used as a proxy to report activity participation. A single child was randomly selected from within the household for parent/carer reporting. Dual frame refers to the sampling of parents/carers in households with landline telephones and/or mobile telephones.

The following definitions guided the survey:

Physical activity: Any bodily movement produced by skeletal muscles that requires energy expenditure and produces progressive health benefits (US National Institutes of Health and World Health Organization).

Sport: Human activity capable of achieving a result requiring physical exertion and/or physical skill which, by its nature and organisation, is competitive and is generally accepted as being a sport (Clearinghouse for Sport and Physical Activity).

Exercise: A type of physical activity that is planned, structured and repetitive and has the objective of achieving, improving or maintaining physical fitness (attributes that are health or skill-related) (adapted from Casperson *et al* 1985).

Recreation: Any physical activity undertaken during leisure time outside of structured, competitive sport, including unstructured play involving physical activity/exertion (Adapted from Sport and Recreation Victoria).

Other definitions used in the study are in Appendix A.

The specific physical activities coded as sport, exercise, recreation or other types of activities are in Appendix B.

The study was conducted on behalf of Sport & Recreation, Department of Housing and Public Works, within Queensland Government. Data collection was undertaken between December 2018 and April 2019.

A total of 5273 Computer Assisted Telephone Interviews (CATI) were conducted with parents or carers of children 5 to 17 years across five sampling regions within Queensland. Each sampling region included three sampling bands based on Local Government Areas or suburbs with large, medium and small populations (making a total of 15 sampling strata) (or suburbs for Regions north and south of the Brisbane River). This ensured that all areas of each Queensland location were sampled and not just major towns.

This study is a specialist type of study called a prevalence study. Prevalence studies aim to accurately measure the prevalence of children's participation in physical activity and have scientifically designed approaches to measurement, sampling and data weighting to ensure that they produce accurate point-estimates of prevalence. For this reason, a number of scientific approaches were used to ensure that results are accurate for the Queensland population of children 5 to 17 years.

An integrated summary of the study methodology, main [study] findings and a discussion of the implications of findings for encouraging physical activity of Queensland children in sport, exercise and recreation activities is presented in the section *Integrated summary and discussion of findings*.

In summary, major findings are below.

Finding 1. Queensland children's physical activity participation is highest in Chores or work involving physical activity, Active play and General exercise and fitness activities and highest frequency in Active play, Chores and work involving physical activity and Cycling and scootering. In addition, 84.2% of children 5 to 17 years participated in physical activity Daily, 14.9% participated Weekly and 0.9% participated Less than weekly.

Finding 2. Queensland children have lower and less frequent participation in physical activities during adolescence.

Finding 3. A number of gender differences emerged in relation to physical activity participation and participation frequency in Queensland.

Finding 4. Queensland children's physical activity is much broader than just sport.

Finding 5. Queensland children's top INDIVIDUAL physical activities are Chores or work involving physical activity, Active play and Swimming for leisure.

Finding 6. Queensland children like to walk and cycle when participating in Active transport.

Finding 7. Queensland children like riding on the footpath/in open spaces and general scooter riding when participating in cycling/bike riding. BMX is also popular.

Finding 8. Walking the dog is a popular physical activity for Queensland children who take part in Walking (excluding walking for active transport), along with Walking for General exercise.

Finding 9. Soccer, Netball, Basketball and Rugby league are top sports for Queensland children.

Finding 10. Swimming, Running and Gym based cardio work outs are top ways that Queensland children like to keep fit when participating in General exercise and fitness activities.

Finding 11. Fishing, Horse riding, Snow sports, Dancing and Skateboarding are top recreational activities for Queensland children.

Finding 12. Many Queensland children are spending far too much sedentary time on screens for leisure and entertainment.

Finding 13. Most of the barriers to Queensland children participating in physical activity are parent/carer-related barriers, rather than child-related barriers.

Finding 14. Children with lower levels of physical activity are generally sedentary, spend higher amounts of time on screens and have lower physical literacy.

Finding 15. Findings revealed a range of insights about the physical activity of Aboriginal and/or Torres Strait Islander children and children speaking Languages Other Than English (LOTE) and of children with disabilities and the barriers to physical activity participation.

Integrated summary and discussion of key findings

This report presents findings for data collected during 2018–19 for the Queensland Sport, Exercise and Recreation Survey of Children – 2019 (QSERSC): A proxy-based, dual frame prevalence study of children's physical activity outside school hours. Participation was measured for children aged between 5 and 17 years, with parents and carers used as a proxy to report activity participation.

A single child was randomly selected from within the household for parent/carer reporting. Dual frame refers to the sampling of parents/carers in households with landline telephones and/or mobile telephones.

The following definitions guided the survey:

Physical activity: Any bodily movement produced by skeletal muscles that requires energy expenditure and produces progressive health benefits (US National Institutes of Health and World Health Organization).

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A total of 5273 Computer Assisted Telephone Interviews (CATI) were conducted with parents or carers of children 5 to 17 years across five sampling regions within Queensland. Each sampling region included three sampling bands based on Local Government Areas, medium and small populations (making a total of 15 sampling strata) (or suburbs for Regions north and south of the Brisbane River). This ensured that all areas of each Queensland location were sampled and not just major towns.

This section presents an integrated summary of the study methodology, main [study] findings and a discussion of the implications of findings for encouraging physical activity of Queensland children in sport, exercise and recreation activities.

Measurement, sampling and data weighting

This survey of Queensland children's physical activity outside of school hours is a prevalence study.

Prevalence studies aim to accurately measure the number or proportion of people in a population who demonstrate a characteristic of interest. Prevalence studies use scientifically designed approaches to measurement, sampling and data weighting to ensure they produce accurate point-estimates of prevalence in the population of interest.

A detailed technical report on the study methodology is also presented in Appendix D for reference.

In summary, a number of scientific approaches were used to ensure that results are accurate for the population of Queensland children aged 5–17 years. Most notably, these included:

- ④ Use of a probability sampling approach using dual frame CATI interviewing – Historically, population surveys have relied on random digit dial CATI surveys to sample a population of interest. In spite of the availability of low cost online survey panels, research highlights that online panels may produce biased prevalence estimates. For these reasons, a full CATI dual frame sampling approach was used to sample parents/carers at random during data collection.
- ④ An extensive program of soft refusal conversions was undertaken to achieve world class rates of consent and response to the survey. Consistent with best practice in prevalence studies, the current study achieved a rate of consent to the study of 82% for landline/86% for mobile and a rate of response of 49% (using a more conservative method) or 64% (using a less conservative method) (equivalent to the survey relative to all in-scope numbers dialled).
- ④ Confidence intervals and standard errors were generated as part of data analysis and were adjusted to reflect the complex sampling design.
- ④ A new questioning approach was used to ensure accurate reporting of physical activities by parents/carers. The entire domain of physical activities (over 200 activities) was identified and cognitive interviewing was conducted with parents/carers to develop a set of 12 activity prompts (based on activity clusters) to encourage parents/carers to report the complete domain of activities undertaken by their child during the past 12 months. If a general activity was reported by parents/carers, interviewers could then prompt parents/carers to report specific subtypes of each activity mentioned (e.g., not just bike riding, but whether it was BMX, mountain biking etc.).
- ④ Physical activity was conceptualised to include not just sports, rather was conceived as any physical activity from a holistic perspective. This included sport, exercise and recreation activities, plus any physical activity from Active play and Chores or work involving physical activity and any physical activity from Active transport.
- ④ A dual frame sampling approach was used in the survey to ensure complete representation of children 5–17 years. Quotas were set for four child and gender age bands proportional to population in each of the 15 sampling regions. Quotas were achieved in all bands, except for two in discrete Aboriginal and/or Torres Strait Islander community regions (which lack available commercial landline and mobile sample).
- ④ A specialised data weighting approach was also used to correct for the dual sample frame design, along with adjustments for the complex sampling approach (including various adjustments for the probability of selection of respondents).

This included adjustments for:

- The total number of families in the household
- The total eligible children 5–17 in the household
- The number of landlines in the household
- The number of mobiles owned and answered
- The sampling design by region (including the 15 sampling strata)
- Population benchmark estimates of children 5–17 years in each telephone ownership stratum.

The above best practice approaches to measurement design, sampling and data weighting effectively ensure that study results are both representative of Queensland children 5 to 17 and are accurate point estimates of their total physical activity participation outside of school hours.

When reviewing summary results, note the following to assist in interpretation:

SE, LCL and UCL

- SE refers to 'Standard error', which is a measure of the statistical accuracy of the result (a measure of the dispersion of the sample around a population estimate).
- LCL refers to the Lower Confidence Limit or the lower margin of error at the 95% confidence level.
- UCL refers to the Upper Confidence Limit or the upper margin of error at the 95% confidence level.
- Caps on lines on graphs effectively represent the margin of error around results (LCL to UCL).

Odds ratios (OR)

- Odds ratios are presented to allow identification of group trends in data.
- An odds ratio of 1 implies that a result is equally likely in both groups. An odds ratio greater than one implies that the event is more likely in the second group compared to the 'reference group'. An odds ratio less than one implies that the result is less likely in the second group (compared to the reference group).

Probability values (p)

- Probability values or p values less than 0.05 were used to assess statistical significant differences (indicated through $p < .05$).
- This implies that the null hypothesis (i.e., the theory that there is no difference between groups) must be rejected and differences between groups are unlikely to be due to random sampling error.
- While only a theoretical basis, this provides an indication of the likelihood that an observed trend is 'real' (although is by no means a guarantee).
- While $p < .05$ is used to infer statistically significant differences (rejection of the null hypothesis), p values lower than this threshold are provided for reader reference.
- Results where p values are lower than .05 (e.g., $p < .01$, $p < .001$) may provide stronger evidence for rejection of the null hypothesis. Lower probability values are proposed by some authors as needed to reduce the likelihood of incorrectly rejecting the null hypothesis (e.g., Benjamin et al, 2017).
- Given the many hundreds of exploratory analyses conducted in the study, Bonferroni and other adjustments for multiple comparisons were not deemed appropriate.

Percentages and means

- As parents/carers reported measures for a single randomly selected child 5–17 years in their household, presented percentages and means are effectively equivalent to the percentage or mean results for children 5–17 years. Parents/carers were only used as a proxy for answering questions about their child.

95% confidence interval

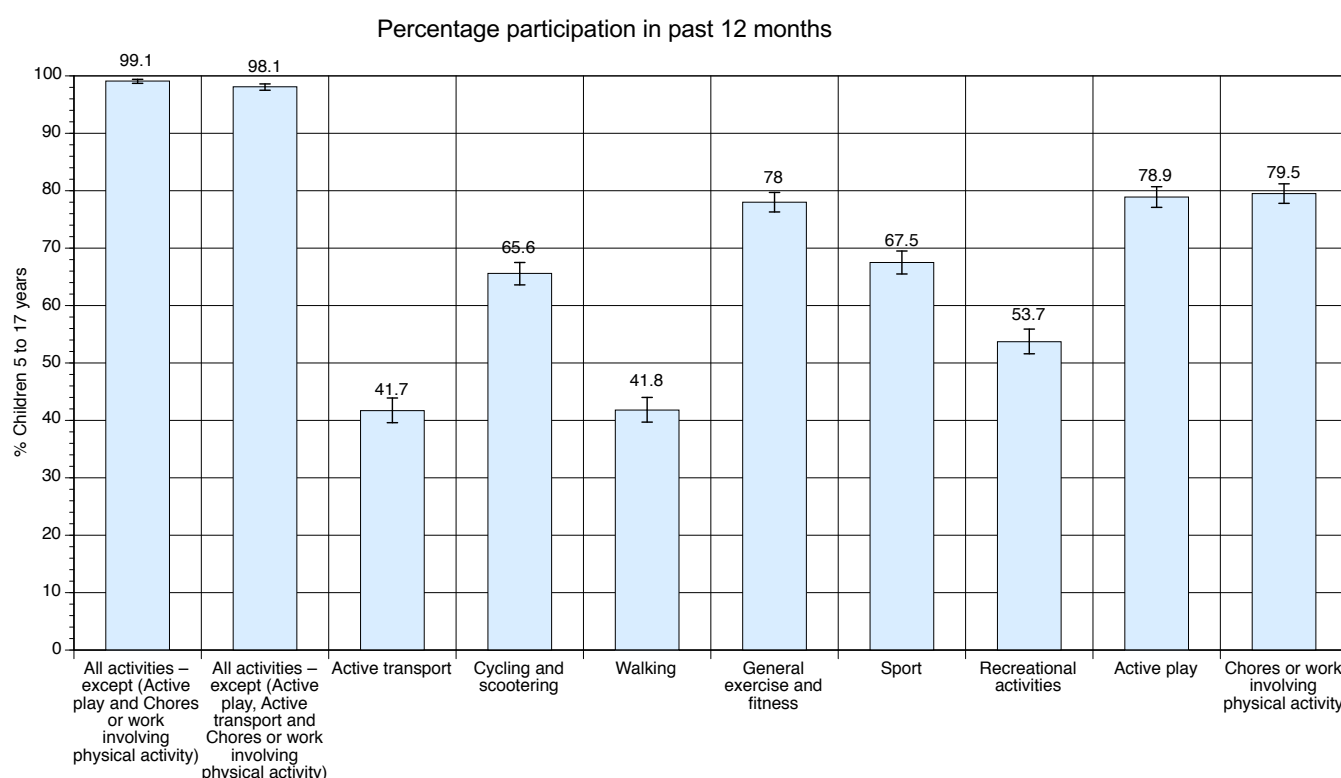
- The 95% confidence interval, denoted by the error bars defines the upper and lower confidence levels for results and reflects that the true population value for a result is likely to lie within this range in 95% of samples undertaken.

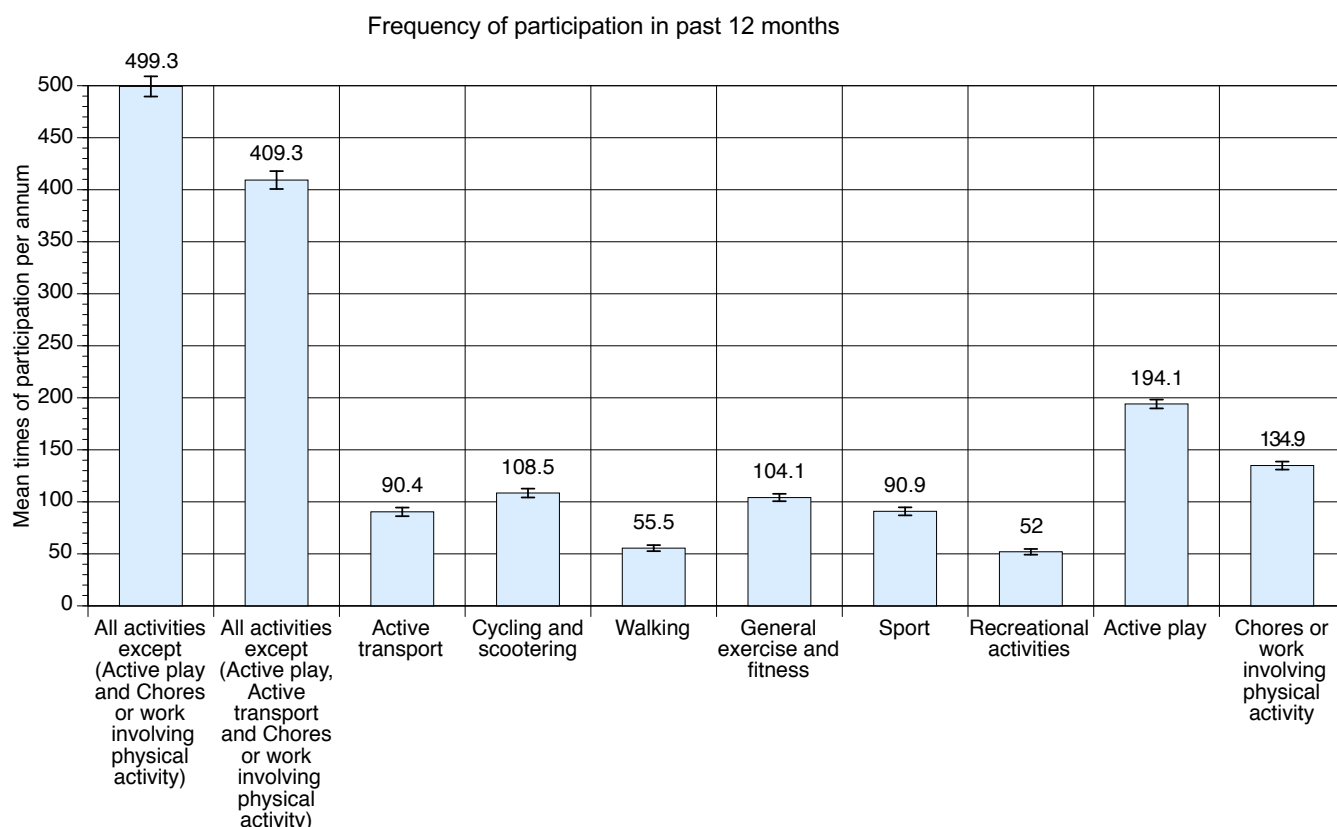
Finding 1. Queensland children’s physical activity participation is highest in Chores or work involving physical activity, Active play and General exercise and fitness activities and highest frequency in Active play, Chores and work involving physical activity and Cycling and scootering.

In addition, 84.2% of children 5 to 17 years participated in physical activity Daily, 14.9% participated Weekly and 0.9% participated Less than weekly.

Queensland children 5 to 17 years had highest participation in Chores and work involving physical activity (79.5%), Active play (78.9%) and General exercise and fitness activities (78%) (Figure 1). Where the annual frequency of activity was examined, Active play (194.1 times per year) and Chores or work involving physical activity (134.9 times per year) were the most frequently undertaken activities, followed by Cycling and scootering (108.5 times per year).

Figure 1. Past year prevalence of and frequency of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 (N=5,273, December 2018 to April, 2019)





(Base: All parents/carers with a child aged 5 to 17 years – Children not participating are included in the frequency analysis to generate a population wide estimate for frequency of participation)

Findings also showed that:

- 📍 Based on all activities undertaken, 84.2% of children 5 to 17 years participated in physical activity Daily, 14.9% participated Weekly and 0.9% participated Less than weekly.
- 📍 The physical activities that had the highest percentage of Daily participation were Cycling or scootering (6.2%), General exercise and fitness (4.6%) and Active transport (4.3%).
- 📍 The physical activities that children had the lowest Daily participation were Walking (1.1%), Chores or work involving physical activity (0.2%) and Active play (0.1%).
- 📍 Following imputations of the mean session minutes per activity type for eight major types of physical activity (as the survey only examined session minutes for the three highest frequency physical activities), estimates suggested that 73.8% of children *may* have participated in at least 60 minutes of physical activity per day during the past 12 months.
- 📍 In addition, 81.5% of children 5–8 years, 79.4% of children 9–11 years, 68.7% of children 12–14 years and 61.6% of children 15–17 years *may* have participated in at least 60 minutes of physical activity per day during the past 12 months.

It should, however, be noted that the results above relating to a minimum of 60 minutes are not equivalent to the minimum national standard of 60 minutes of Moderate to Vigorous physical activity (MVPA) for children 5–17 years.

This is because only general physical activity, rather than MVPA was measured in the study (60 minutes of MVPA is one of the national standards) and data was only based on self-report by parents/carers (over the past 12 months) (rather than objective diary recording or use of accelerometers to measure physical activity).

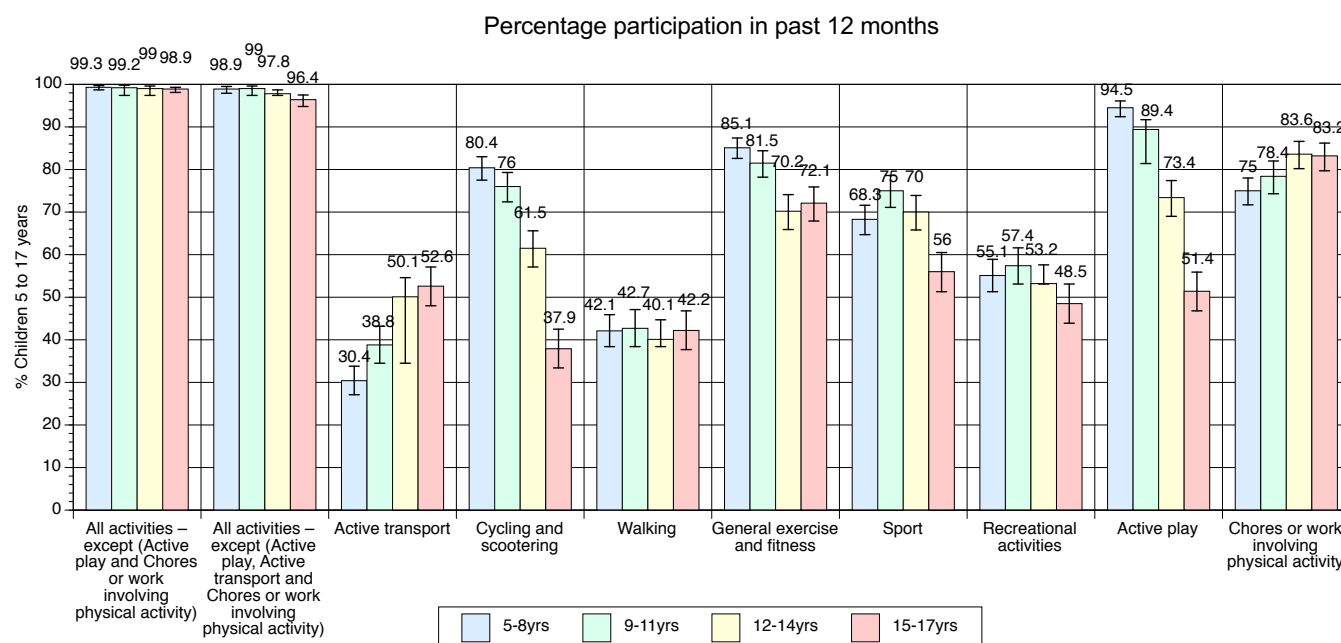
Finding 2. Queensland children have lower and less frequent participation in physical activities during adolescence.

Queensland children's physical activity participation follows a developmental trajectory, with some activities showing higher or lower participation and participation frequency at particular ages (Figure 2). In particular, Active Transport participation and frequency is higher in children 15–17 years (and in older children generally), Cycling and scootering participation and frequency is higher in children 5–8 years (and in younger children generally). In comparison, walking and recreational activity participation are relatively more similar by age.

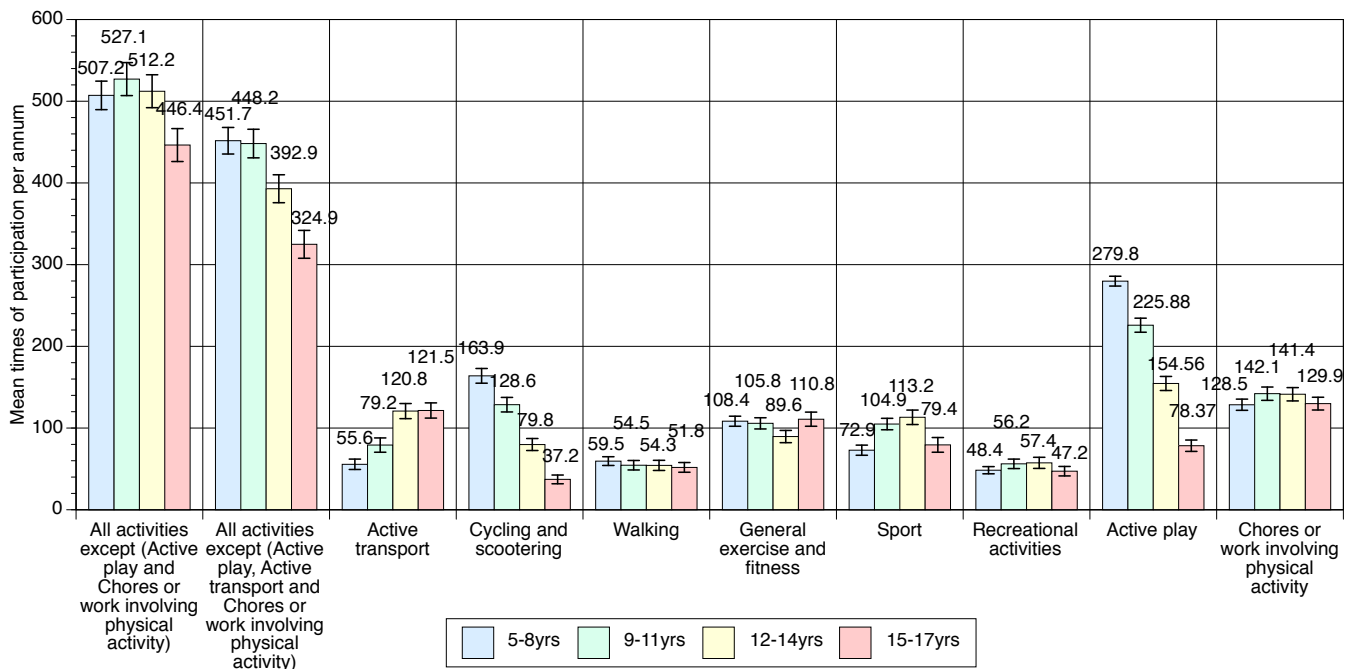
Results by age, however, highlight a general trend for children in older age groups (12–14yrs and 15–17yrs – around 'adolescent years') to have lower participation in many physical activities and undertake activities less frequently, compared to children in younger age groups (5–8yrs and 9–11yrs) (with the exception of Active Transport and participation in Chores or work involving physical activity was also higher for the older age groups). The entire population of Queensland children was the basis of both analyses below (non-participants were allocated a frequency of zero).

Lower participation by age highlights the potential for early intervention strategies to reverse declines in children's physical activity from a developmental perspective.

Figure 2. Past year prevalence and frequency of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by age (N=5273, December 2018–April, 2019)



Frequency of participation in past 12 months



(Base: All parents/carers with a child aged 5 to 17 years – Children not participating are included in the frequency analysis to generate a population wide estimate for frequency of participation) See report Sections 1 and 3 for further detail.

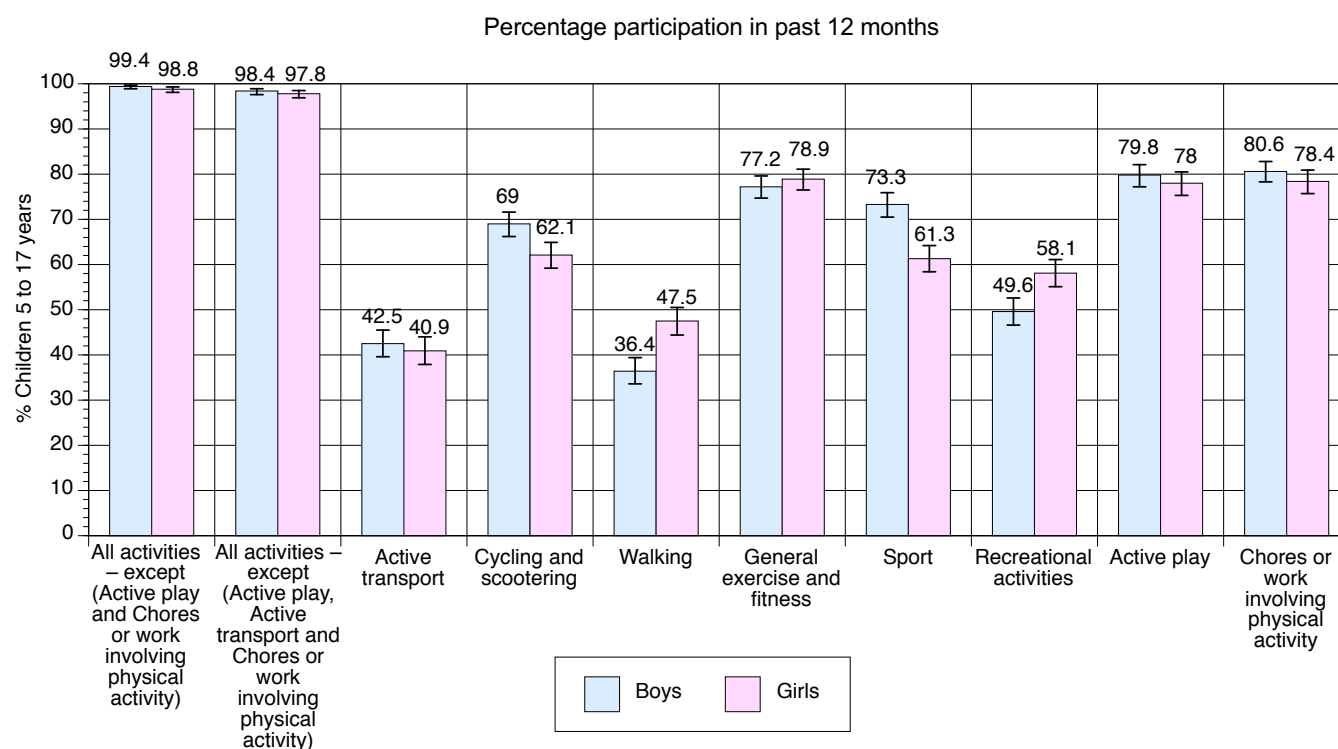
Finding 3. A number of gender differences emerged in relation to physical activity participation and participation frequency in Queensland.

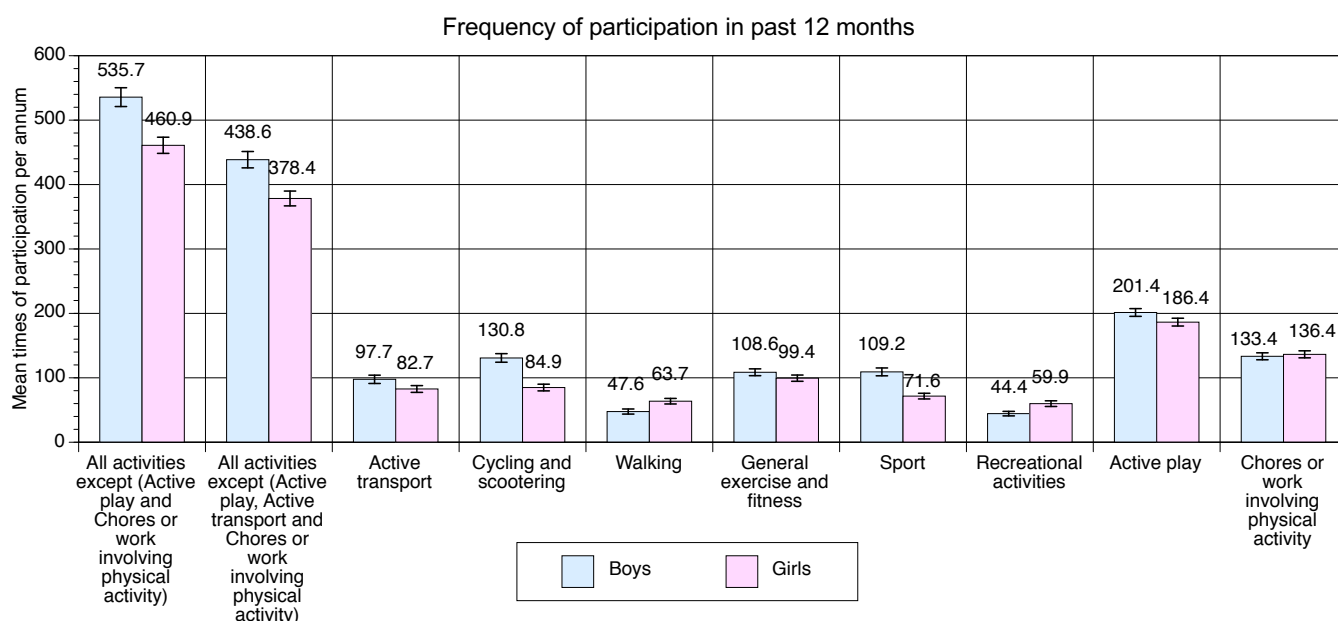
Findings highlight that boys have higher participation in some physical activities compared to girls. Compared to girls, boys were significantly more likely to have participated in Cycling and scootering (OR=1.4, $p<.01$) and Sport (OR=1.7, $p<.001$), although they were significantly less likely than girls to have participated in Walking (OR=0.6, $p<.001$) and Recreational activities (OR=0.7, $p<.001$) (The difference for Chores or work involving physical activity was not statistically significant between boys and girls).

In relation to activity frequency, boys participated significantly more frequently in Active transport ($p<.001$), Cycling and scootering ($p<.001$), Sport ($p<.001$) and General exercise and fitness ($p<.05$), while girls participated significantly more frequently in Walking ($p<.001$) and Recreational activities ($p<.001$).

Such findings highlight the potential to consider gender based differences in developing physical activity programs for Queensland children (e.g., Girls may enjoy walking more than boys, while boys may enjoy sport more than girls etc.).

Figure 3. Past year prevalence and frequency of participation in physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Results by gender (N=5273, December 2018–April 2019)





(Base: All parents/carers with a child aged 5 to 17 years – Children not participating are included in the frequency analysis to generate a population wide estimate for frequency of participation) See report Sections 1 and 3 for further detail.

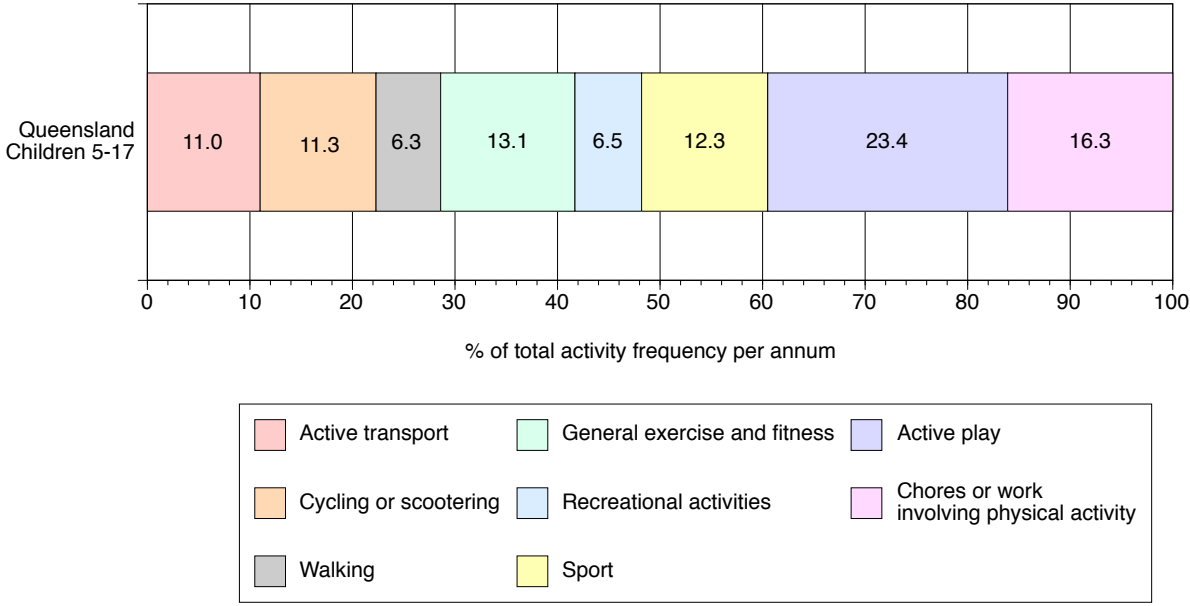
Finding 4. Queensland children's physical activity is much broader than just sport.

When the frequency of each type of physical activity was calculated as a proportion of the total frequency of all activities undertaken by each child per annum, the average 'share' of different types of physical activity (relative to total physical activity frequency) was able to be calculated.

Analysis showed that an average of 10.9% of the total times Children 5–17 undertook physical activities during the past 12 months related to Active Transport, 11.3% related to Cycling and scootering, 6.3% related to Walking, 13.1% related to General exercise and fitness, 6.5% related to Recreational activities, 12.3% related to Sport and 23.4% related to Active Play.

Such data highlights that Queensland children's physical activity is far broader than sport alone and needs to be viewed from a holistic perspective (including a strong focus on informal activities such as Active play, Walking, Cycling and scootering, General exercise and fitness). In particular, Active Play (23.4%) and General exercise and fitness activities (13.1%) are major parts of Queensland children's total physical activity.

Figure 4. Mean share of children's physical activity participation based on annual activity frequency data
(N=5273, December 2018–April 2019)



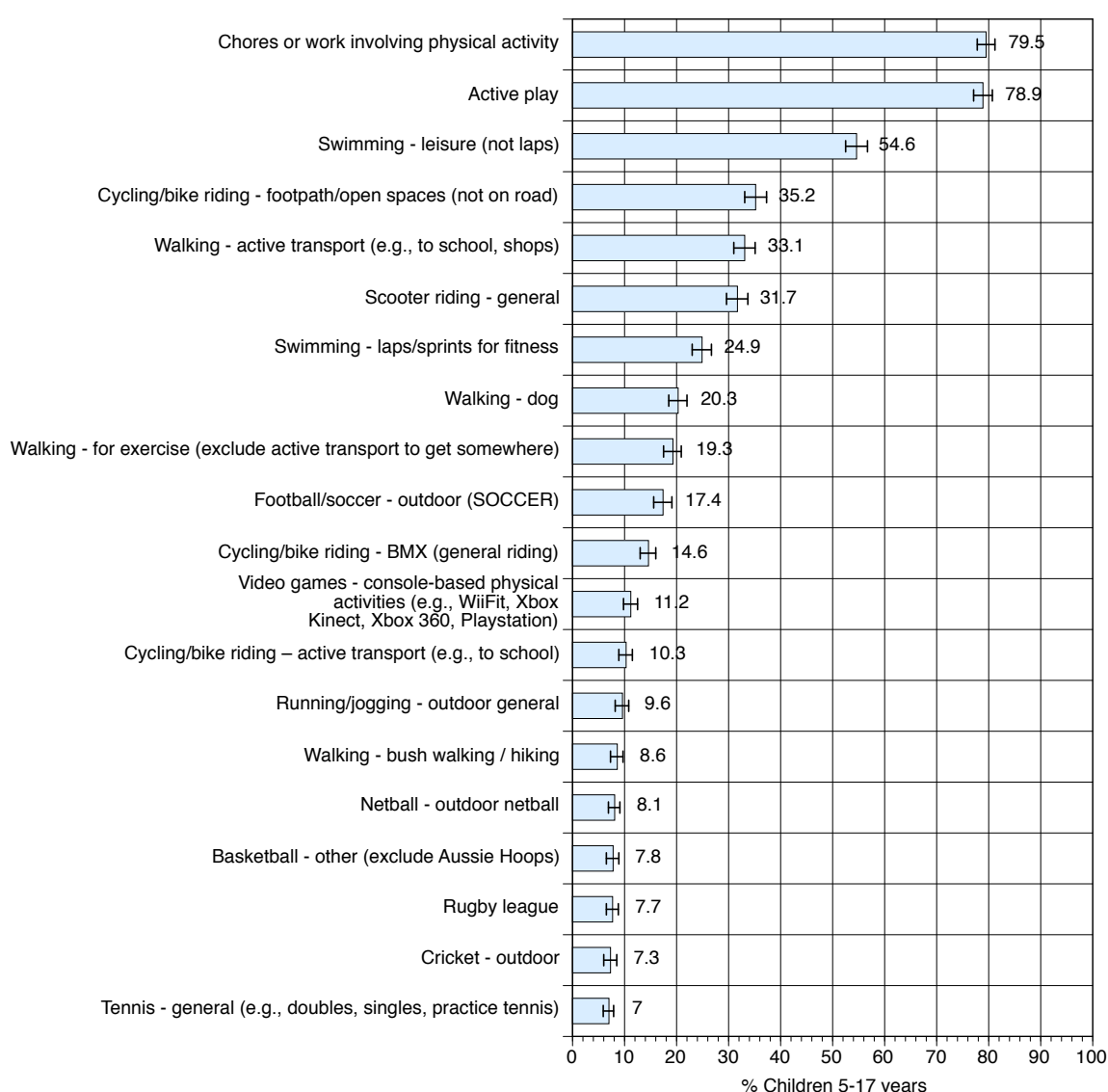
(Base: All parents/carers with a child aged 5 to 17 years – Children not participating are included in the frequency analysis to generate a population wide estimate for frequency of participation)
See report Sections 1 and 3 for further detail.

Finding 5. Queensland children's top INDIVIDUAL physical activities are Chores or work involving physical activity, Active play and Swimming for leisure.

Queensland children's top three INDIVIDUAL physical activities (excluding composite measures of multiple activities) are Chores or work involving physical activity (e.g., gardening, helping around the house) (79.5%), Active play (78.9%) and Swimming for leisure (not laps) (54.6%) (Figure 5). It is also noteworthy that most of the top 20 specific activities are informal, non-organised activities.

This highlights a need for children's physical activity to be encouraged from a holistic perspective – including a strong focus on informal activities that children do themselves.

Figure 5. Participation in specific physical activities for sport, exercise or recreation outside school hours for Queensland children aged 5 to 17 – Overall results for the top 20 activities (N=5,273, December 2018 to April, 2019)



Question: During the past 12 months, did (Child) participate in any physical activities for sport, exercise or recreation outside school hours? (Base: All parents/carers with a child aged 5 to 17 years)

The top four INDIVIDUAL activities (excluding composite measures of multiple activities) were quite similar for different aged children, although participation differed slightly depending on the child's age:

- 📍 **For younger children** aged 5 to 8 years and 9 to 11 years, the top activities were Active play, Chores or work involving physical activity, Swimming – leisure (not laps) and cycling/bike or scooter riding.
- 📍 **For older children** aged 12 to 14 years and 15 to 17 years, the top four activities were Chores or work involving physical activity, Active play, Swimming – leisure (not laps) and Walking for active transport. This may highlight that activity changes may occur from around age 12, with slightly higher participation in activities such as Active transport, compared to younger age groups.

Top 10 for children 5 to 8 years	Top 10 for children 9 to 11 years
<ol style="list-style-type: none"> 1. Active play – 94.5% 2. Chores or work involving physical activity – 75% 3. Swimming – leisure (not laps) – 58.1% 4. Scooter riding – general – 49.5% 5. Cycling/bike riding – Footpath/ open spaces (not on road) – 44.9% 6. Swimming – laps/sprints for fitness – 39.7% 7. Walking – active transport (e.g., to school, shops) – 23.9% 8. Walking – for exercise (exclude Active transport to get somewhere) – 21.7% 9. Football/soccer – outdoor (SOCCER) – 19.8% 10. Walking – dog – 17.7% 	<ol style="list-style-type: none"> 1. Active play – 89.4% 2. Chores or work involving physical activity – 78.4% 3. Swimming – leisure (not laps) – 61.4% 4. Cycling/bike riding – Footpath/open spaces (not on road) – 40.6% 5. Scooter riding – general – 39.1% 6. Walking – active transport (e.g., to school, shops) – 28.9% 7. Swimming – laps/sprints for fitness – 28% 8. Football/soccer – outdoor (SOCCER) – 22.4% 9. Walking – dog – 20.5% 10. Walking – for exercise (exclude Active transport to get somewhere) – 19.4%
Top 10 for children 12 to 14 years	Top 10 for children 15 to 17 years
<ol style="list-style-type: none"> 1. Chores or work involving physical activity – 83.6% 2. Active play – 73.4% 3. Swimming – leisure (not laps) – 50.2% 4. Walking – active transport (e.g., to school, shops) – 38.4% 5. Cycling/bike riding – Footpath/open spaces (not on road) – 31.1% 6. Scooter riding – general. – 23.5% 7. Walking – dog – 21.6% 8. Walking – for exercise (exclude Active transport to get somewhere) – 17.8% 9. Swimming – laps/sprints for fitness – 16.8% 10. Football/soccer – outdoor (SOCCER) – 15.5% 	<ol style="list-style-type: none"> 1. Chores or work involving physical activity – 83.2% 2. Active play – 51.4% 3. Swimming – leisure (not laps) – 46.7% 4. Walking – active transport (e.g., to school, shops) – 45.4% 5. Walking – dog – 22.4% 6. Cycling/bike riding – Footpath/open spaces (not on road) – 19.7% 7. Walking – for exercise (exclude Active transport to get somewhere) – 17.3% 8. Gym – cardio exercising (exclude fitness classes) (e.g., Treadmill, Cross trainer – 13.4% 9. Running/jogging – outdoor general – 12.8 10. Gym – free weights exercising (exclude fitness classes) (e.g., dumbbells) – 10.7%

Interestingly, the top three activities for boys and girls were also virtually identical – Chores or work involving physical activity, Active play and Swimming – Leisure (not laps). Scooter riding was fourth for boys, while Cycling/bike riding – Footpath/open spaces (not on road) was fourth for girls.

Finding 6. Queensland children like to walk and cycle when participating in Active transport.

In total, 41.7% of Queensland children had participated in some type of Active transport during the past 12 months. Results showed that Walking was the top type of Active transport (33.1%), followed by Cycling/bike riding (10.3%) (Table 1).

In addition, while 93.9% of children undertook their Active transport on an informal basis, 5.9% were participating in school programs and 0.1% were participating in programs organised through clubs or other organisations.

Results also showed that (based on the three highest frequency activities reported):

- ☉ Active transport involved travel of a mean distance of 1.6 kms (one way).
- ☉ Mean session duration for Active Transport was 20.5 minutes.

Table 1. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Active transport (N=5273, December 2018 – April 2019)

Activities	%	SE	LCL	UCL
Walking – active transport (e.g., to school, shops)	33.1	1	31.1	35.2
Cycling/bike riding – active transport (e.g., to school)	10.3	0.6	9.1	11.7
Scooter riding – active transport (e.g., to school, shops)	2.9	0.3	2.3	3.6
Running/jogging – active transport (e.g., to school, shops)	0.3	0.1	0.2	0.6
Skateboarding – active transport (e.g., to school, shops)	0.2	0.1	0.1	0.4
Active transport (all of the above activities)	41.7	1.1	39.6	43.9

Question: During the past 12 months, did (Child) participate in any physical activities for sport, exercise or recreation outside school hours? (Base: All parents/carers with a child aged 5 to 17 years)

Finding 7. Queensland children like riding on the footpath/in open spaces and general scooter riding when participating in cycling/bike riding. BMX is also popular.

In total, 65.6% of Queensland children had participated in Cycling and scootering activities during the past 12 months. The top three highest participation activities were Cycling/bike riding – footpath/open spaces (not on road) (35.2%), Scooter riding – general (31.7%) and Cycling/bike riding – BMX (general riding) (14.6%) (Table 2).

Table 2. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Cycling/scootering (N=5273, December 2018 – April 2019)

Activities	%	SE	LCL	UCL
Cycling/bike riding – footpath/open spaces (not on road)	35.2	1.1	33.1	37.3
Scooter riding – general	31.7	1.0	29.7	33.8
Cycling/bike riding – BMX (general riding)	14.6	0.8	13.2	16.2
Cycling/bike riding – mountain biking/On trails	4.9	0.5	3.9	6.1
Cycling/bike riding – on–road	3.3	0.3	2.7	4.1
Cycling/bike riding – BMX at skate park	2.4	0.4	1.7	3.3
Cycling/bike riding – track or velodrome cycling	0.4	0.2	0.2	1.2
Cycling/bike riding – BMX freestyle	0.2	0.1	0.1	0.4
Cycling and scootering	65.6	1.0	63.6	67.5

Question: During the past 12 months, did (Child) participate in any physical activities for sport, exercise or recreation outside school hours? (Base: All parents/carers with a child aged 5 to 17 years)

In addition, while 98.7% of children undertook their Cycling and scootering on an informal basis, 1.4% were participating in club/organisation programs and 0.1% (each) were participating in either school or other programs.

Results also showed that (based on the three highest frequency activities reported):

- 📍 Cycling and scootering involved travel of a mean distance of 1.2 kms (one way).
- 📍 Mean session duration for Cycling and scootering was 44.6 minutes.

Finding 8. Walking the dog is a popular physical activity for Queensland children that take part in Walking (excluding walking for active transport), along with Walking for General exercise.

Overall, 41.8% of Queensland children participated in Walking during the past 12 months (excluding walking in active transport). Of all types of Walking, Walking the dog was the highest participation activity (20.3%), closely followed by Walking – general exercise (19.3%). Bush walking / hiking was also popular (8.6%) (Table 3).

Table 3. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Overall results for Walking (N=5273, December 2018 – April 2019)

Activities	%	SE	LCL	UCL
Walking – dog	20.3	0.9	18.6	22.1
Walking – general exercise (exclude active transport to get somewhere)	19.3	0.9	17.7	21.1
Walking – bush walking / hiking	8.6	0.6	7.5	9.9
Walking (all of the above activities)	41.8	1.1	39.7	44

Question: During the past 12 months, did (Child) participate in any physical activities for sport, exercise or recreation outside school hours? (Base: All parents/carers with a child aged 5 to 17 years)

While 98.8% of walking participation was on an informal basis, 1% of participation was undertaken as part of a club/organisation and 0.2% was undertaken via a school program.

Results also showed that (based on the three highest frequency activities reported):

- 📍 Walking activities involved travel of a mean distance of 1.7 kms (one way).
- 📍 Mean session duration for Walking activities was 41.7 minutes.

Finding 9. Soccer, Netball, Basketball and Rugby league are top sports for Queensland children.

Overall, 67.5% of Queensland children participated in Sport during the past 12 months. Of all types of sporting activities, the top four highest participation sports were Football/soccer – outdoor (SOCCER) (17.4%), Netball – outdoor netball (8.1%), Basketball – other (exclude Aussie Hoops) (7.8%) and Rugby league (7.7%).

Table 4. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Top 10 results for Sports (N=5273, December 2018 – April 2019)

Activities	%	SE	LCL	UCL
Football/soccer – outdoor (SOCCER)	17.4	0.9	15.7	19.2
Netball – outdoor netball	8.1	0.6	7.1	9.3
Basketball – other (exclude Aussie Hoops)	7.8	0.6	6.7	9.1
Rugby league	7.7	0.6	6.6	8.9
Cricket – outdoor	7.3	0.6	6.1	8.6
Tennis – general (e.g., doubles, singles, practice tennis)	7.0	0.5	6.1	8.1
Football – touch football	6.2	0.6	5.2	7.4
Gymnastics – aerobic	5.4	0.4	4.7	6.3
Football – AFL / Aussie Rules	4.2	0.4	3.5	5.0
Rugby union	3.1	0.4	2.4	3.9
Sports (all activities – not just the top 20 sports)	67.5	1.0	65.5	69.5

Question: During the past 12 months, did (Child) participate in any physical activities for sport, exercise or recreation outside school hours? (Base: All parents/carers with a child aged 5 to 17 years)

The highest participation channel for Sport was through clubs or organisations (78.7%), followed by informal channels (14.2%) and school (10.9%).

Results also showed that (when respondents reported only their three highest frequency activities):

- ☞ Sporting activities involved travel of a mean distance of 15.5 kms (one way).
- ☞ Mean session duration for Sport was 79.1 minutes.

Finding 10. Swimming, Running and Gym based cardio work outs are top ways that Queensland children like to keep fit when participating in General exercise and fitness activities.

Overall, 78% of Queensland children participated in General exercise and fitness activities during the past 12 months. Of all types of General exercise and fitness activities, swimming, running and gym had high participation.

The top four specific activities were Swimming – leisure (not laps) (54.6%), Swimming – laps/sprints for fitness (24.9%), Running/jogging – outdoor general (9.6%) and Gym–cardio exercising (4.1%) (Table 5).

Table 5. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years – Top 10 results for General exercise and fitness (N=5273, December 2018 – April 2019)

Activities	%	SE	LCL	UCL
Swimming – leisure (not laps)	54.6	1.1	52.5	56.7
Swimming – laps/sprints for fitness	24.9	1	23.1	26.8
Running/jogging – outdoor general	9.6	0.7	8.4	11
Gym – cardio exercising (exclude fitness classes) (e.g., Treadmill, Cross trainer)	4.1	0.5	3.3	5.1
Running/jogging – Parkrun	3.8	0.4	3.1	4.6
Running/jogging – cross country	3.5	0.4	2.9	4.3
Gym – free weights exercising (exclude fitness classes) (e.g., dumbbells)	2.9	0.3	2.3	3.6
Fitness classes – boxing or boxercise (non–contact – fitness only)	1.4	0.3	0.9	2.2
Gym – weight machine exercising (exclude fitness classes)	1.1	0.2	0.8	1.5
Exercise at home – cardio (including exercise bikes, treadmill, dancing)	1.0	0.4	0.5	2
General exercise and fitness (all activities)	78	0.9	76.3	79.7

Question: During the past 12 months, did (Child) participate in any physical activities for sport, exercise or recreation outside school hours? (Base: All parents/carers with a child aged 5 to 17 years)

General exercise and fitness was undertaken largely through informal channels (69.3%), followed by clubs/organisations (27.8%) and through school (5.2%).

Results also showed that (based on the three highest frequency activities reported):

- 📍 General fitness and exercise activities involved travel of a mean distance of 5.0 kms (one way).
- 📍 Mean session duration for General fitness and exercise activities was 59.4 minutes.

Finding 11. Fishing, Horse riding, Snow sports, Dancing and Skateboarding are top recreational activities for Queensland children.

Overall, 53.7% of children aged 5 to 17 years participated in Recreational activities during the past 12 months. The top five reported Recreational activities were Fishing – recreational angling/fishing (6.6%), Horses – horse riding / trail riding / Pony Club (non–equestrian) (6.2%), Ice/snow sports – skiing, snowboarding, ice skating (excluding ice hockey) (6.2%), Dancing – jazz dancing (5.3%) and Skateboarding – general (5%) (Table 6).

Table 6. Participation in physical activities for sport, exercise or recreation outside school hours during the past 12 months for Queensland children aged 5–17 years –
Top 10 results for Recreational activities (N=5273, December 2018 – April 2019)

Activities	%	SE	LCL	UCL
Fishing – recreational angling/fishing	6.6	0.5	5.7	7.6
Horses – horse riding / trail riding / Pony Club (non–equestrian)	6.2	0.5	5.2	7.3
Ice/snow sports – skiing, snowboarding, ice skating (excluding ice hockey)	6.2	0.6	5.2	7.4
Dancing – jazz dancing	5.3	0.5	4.4	6.4
Skateboarding – general	5.0	0.5	4.2	6
Dancing – ballet	4.2	0.4	3.6	5
Kayaking/ canoeing / paddling (exclude rafting, stand up paddleboard)	4.0	0.4	3.3	4.8
Dancing – Hip Hop dancing	3.7	0.4	3	4.6
Martial arts – Karate	3.5	0.5	2.6	4.6
Rollerblading – outdoor	3.4	0.4	2.7	4.2
Recreational activities (All activities)	53.7	1.1	51.6	55.9

Question: During the past 12 months, did (Child) participate in any physical activities for sport, exercise or recreation outside school hours? (Base: All parents/carers with a child aged 5 to 17 years)

Recreational activities were most commonly undertaken informally (50.4%), followed by participation through a club/organisation (46%), school (5.6%) or through another location (0.7%).

Results also showed that (based on the three highest frequency activities reported):

- 📍 Recreational activities involved travel of a mean distance of 17.2 kms (one way).
- 🕒 Mean session duration for Recreational activities was 78.7 minutes.

Finding 12. Many Queensland children are spending far too much sedentary time on screens for leisure and entertainment.

The amount of time that Queensland children were reported by parents and carers to spend on screens was examined in the survey. This involved asking parents and carers to report the total minutes spent on screens outside school hours both for school work and for leisure, entertainment or other reasons.

Results showed that:

- 📺 **For school work** – 49.4% of parents and carers reported that children spent up to one hour per day, 11.9% spent more than one hour per day and 38.7% spent none per day.
- 📺 **For other screen time** (e.g., for leisure, entertainment or other reasons) – 46.3% of parents and carers reported their child spent up to one hour per day, 31.5% spent between one and two hours per day, 19.5% spent more than two hours per day and just 2.7% spent no screen time on other activities per day.
- 📺 **For total screen time** – 27.4% of Queensland children 5–17 years spent a total of one hour or less of screen time per day, 32.8% spent between one and two hours per day and 39.9% spent over two hours per day.

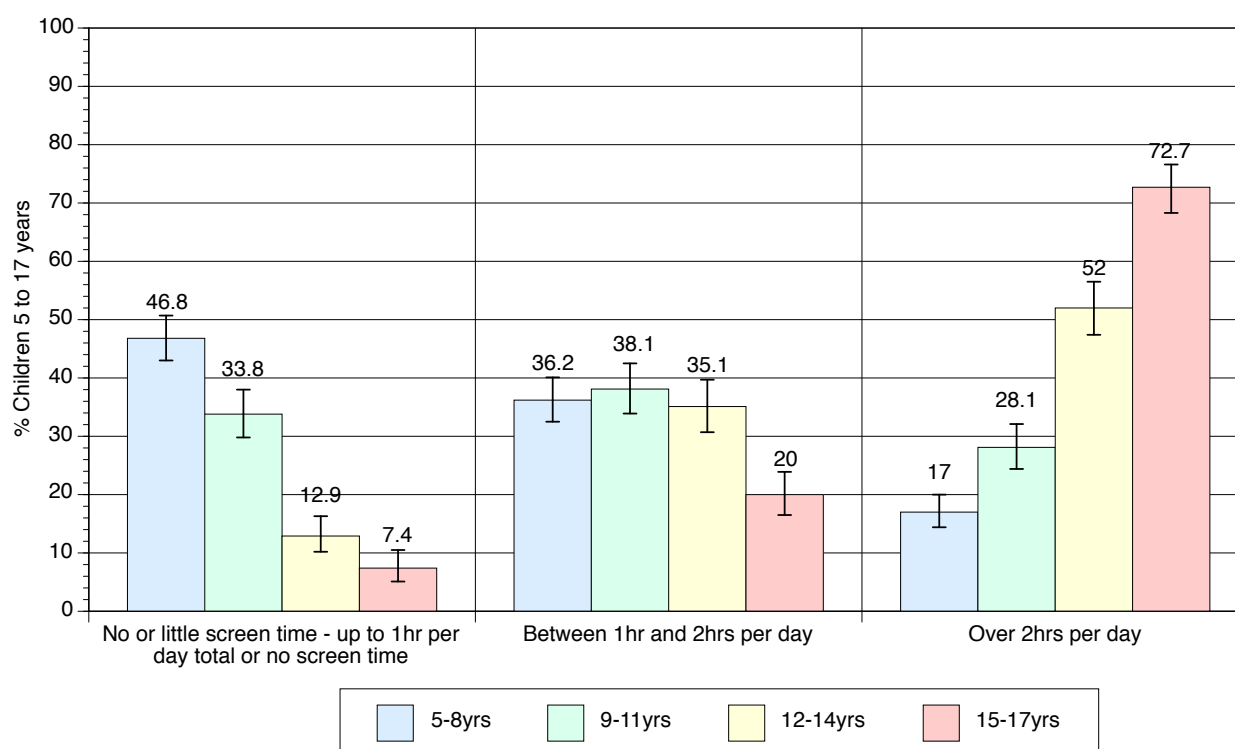
As two hours is the suggested national maximum for screen time, this implies that an estimated 39.9% of Queensland children 5–17 years are spending far too much time on screens (Australian 24-hour movement guidelines for children and young people (5–17 years)).

As parents and carers reported that children spent an average of 34.8 minutes in screen time for school work and 102.3 minutes screen time for leisure, entertainment and other reasons (a total screen time of 137.1 minutes per day), results highlight that there is potential to divert some part of children's leisure and entertainment screen time to regular physical activity.

Findings also highlighted that the total time spent on screens was extremely high for older children, with 72.7% of 15–17 year olds in particular exceeding the maximum daily recommendation of two hours screen time (Figure 6).

Boys spent a significantly lower mean number of minutes on school work, compared to girls and a significantly higher mean number of minutes on screen time for leisure, entertainment and other reasons (each $p < .001$).

Figure 6. Amount of time per day Queensland children aged 5–17 years spent on screens in total during the past 12 months – Percentage results by age (N=5273, December 2018 – April 2019)



Question: During the past 12 months, how many minutes per day on average has (Child) spent on screens outside school hours – like TV, tablets, video games and computers? Could you break this into screen time spent on school work and screen time for leisure, entertainment and other reasons? (e.g., TV, Internet, messaging or chats, social media etc.). (Base: All parents/carers with a child aged 5–17 years)

Finding 13. Most of the barriers to Queensland children participating in physical activity are parent/carer-related barriers, rather than child-related barriers.

As part of the study, parents and carers were asked to report the barriers for children doing or increasing their physical activity over the past 12 months.

Results showed that:

- 📍 **When asked to report child-related barriers** – Around 55% of parents/carer reported no barriers for children at all to increasing their physical activity. The top five reported barriers were not enough time/too many commitments (8.6%), not being interested or not liking physical activity/exercise/sport (7.2%), being too lazy (7%) and the child having a temporary illness or injury (6.5%).
- 📍 **When asked to report parent/carer-related barriers** – Around 37.2% reported no barriers for parents/carers. In addition, the top reported barriers were lack of time (30.7%), work commitments (27.5%) and the expense/costs (26.8%). Having to care for other children (8.2%) and no car or transport issues (6.2%) were also highlighted as key barriers for parents and carers.

Together, results suggest that a large proportion of parents/carers acknowledge that there are really few child-related barriers to their child increasing their physical activity level. Rather, most barriers to children taking part in physical activity are actually barriers for parents/carers, rather than for children.

Such findings highlight the need to address mainly parent/carer barriers in increasing children's physical activity and to particularly focus on ways of reducing travel and costs of activities to cater to the needs of busy Queensland parents/carers.

Finding 14. Children with lower levels of physical activity are generally sedentary, spend higher amounts of time on screens and have lower physical literacy.

As part of data analysis, all physical activity frequency variables were summed to form the total times of physical activity for each child per annum. This data was then broken down into three groups, each representing approximately one third of children (i.e., Terciles, or as close as possible to terciles).

The cut points for the terciles based on the frequency of physical activity of children were as follows:

- Ⓢ Low physical activity (bottom tercile or the lowest third) – less than or equal to 572 times physical activity was undertaken per annum
- Ⓢ Medium physical activity (middle tercile or the middle third) – 572 to 962 times that physical activity was undertaken per annum
- Ⓢ High physical activity (top tercile or the top third) – 963 times or over that physical activity was undertaken per annum

Segments were then profiled to identify the characteristics of low, medium and high physical activity groups in Queensland. It should be noted in this context that these segments are only based on Terciles and do not necessarily indicate that 'high' physical activity was sufficient.

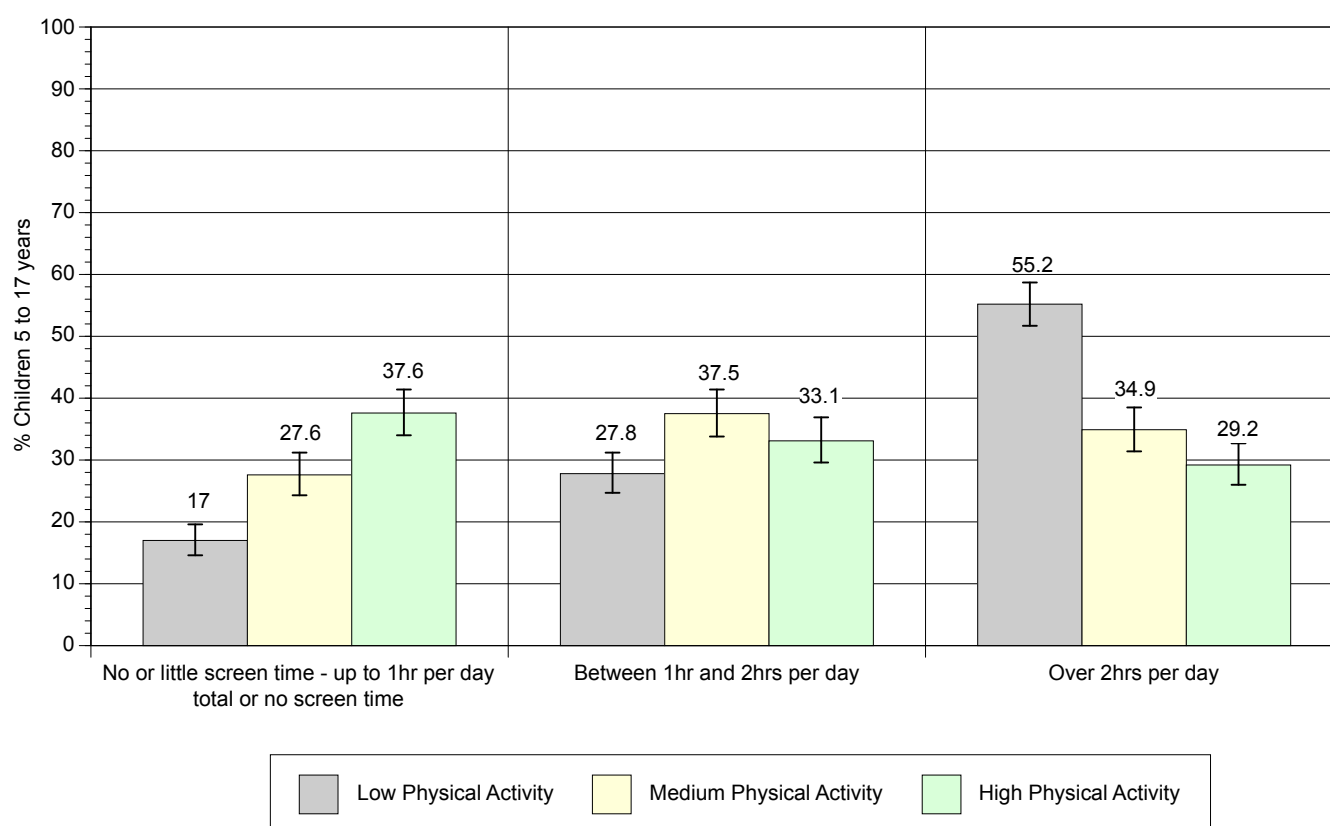
Findings interestingly showed that very few major demographic differences emerged between physical activity segments. This may suggest that low physical activity occurs for children regardless of socioeconomic background.

However, the following important differences were observed:

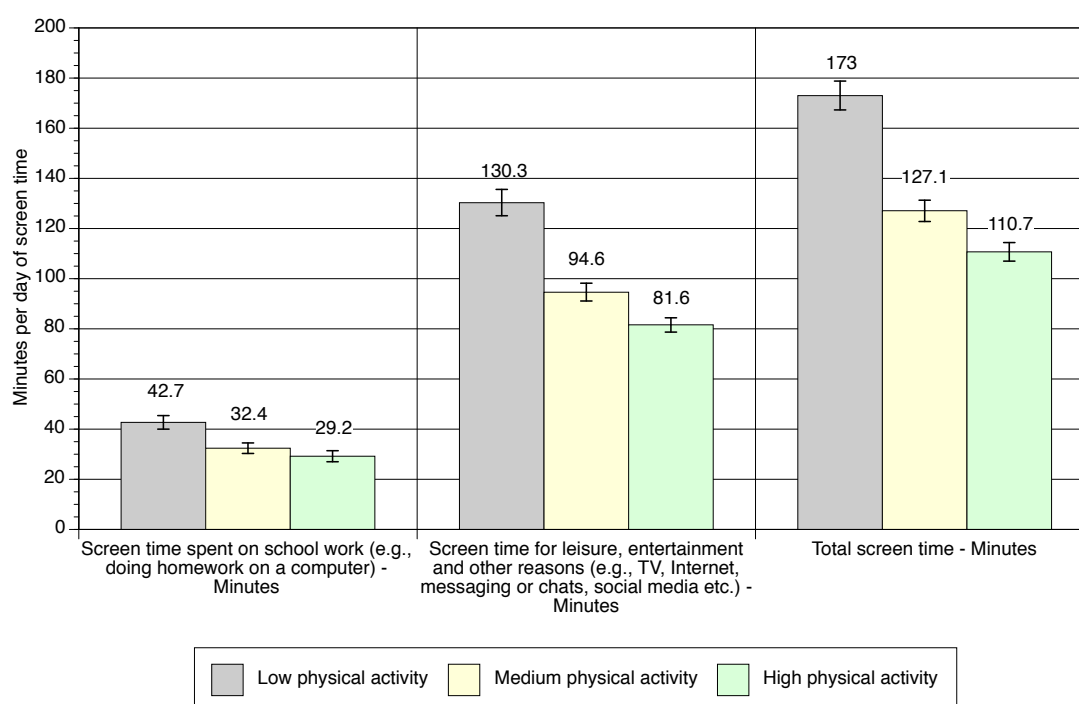
- Ⓢ Children in the High Physical Activity segment and Medium Physical Activity segment spent a significantly lower amount of minutes on screens for school work, leisure, entertainment and other reasons and in total, compared to the Low Physical Activity segment (each $p < .001$).

Figure 7. Low, medium and high physical activity segments in Queensland children 5–17 years – Screen time profile (N=5273, December 2018–April 2019)

Percentage of children by total time per day on screens

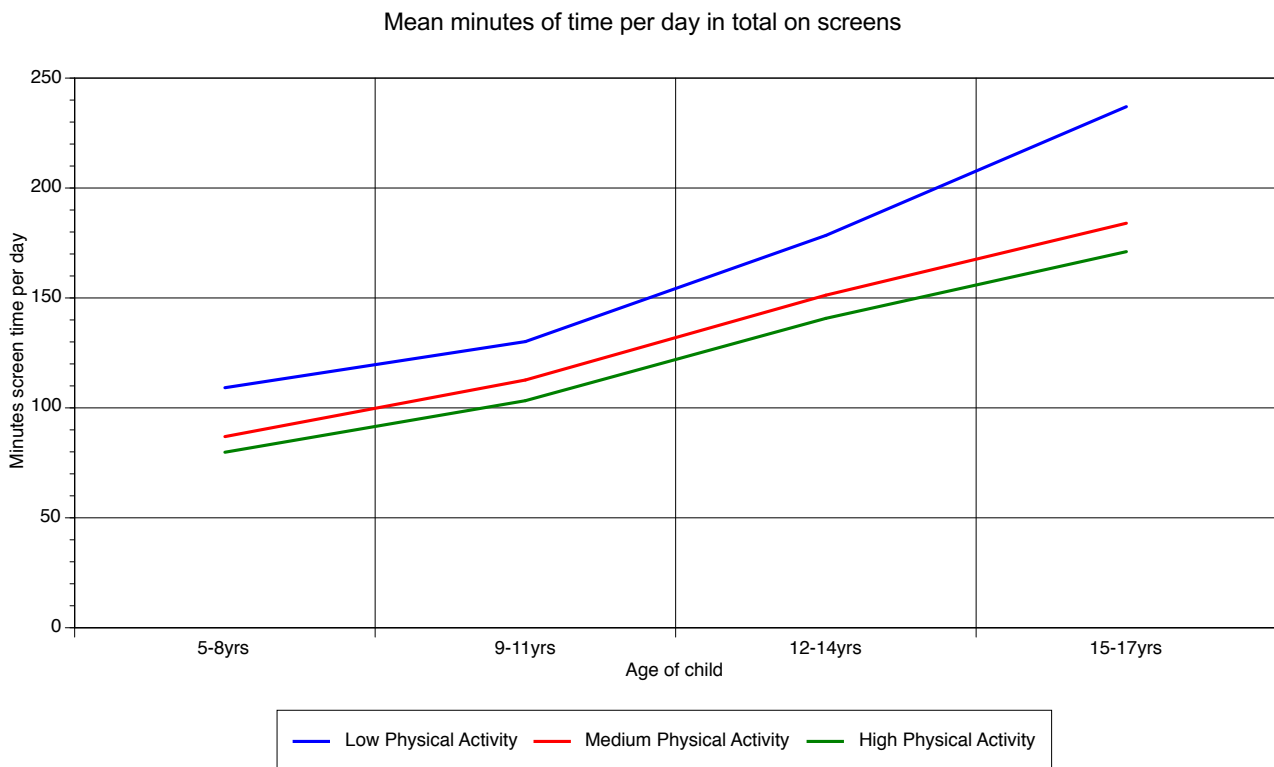


Mean minutes of time per day on screens – For school work versus leisure, entertainment and other reasons



(Base: All parents/carers with a child 5–17 years)

- ☉ The tendency for Low Physical Activity children in teenage years to spend more time on screens per day was particularly salient, with 15–17 year olds in the Low segment spending much higher time on screens.



- ☉ Regardless of age, children in the Higher Physical Activity segment were reported by their parents/carers as having greater physical literacy. That is, they:

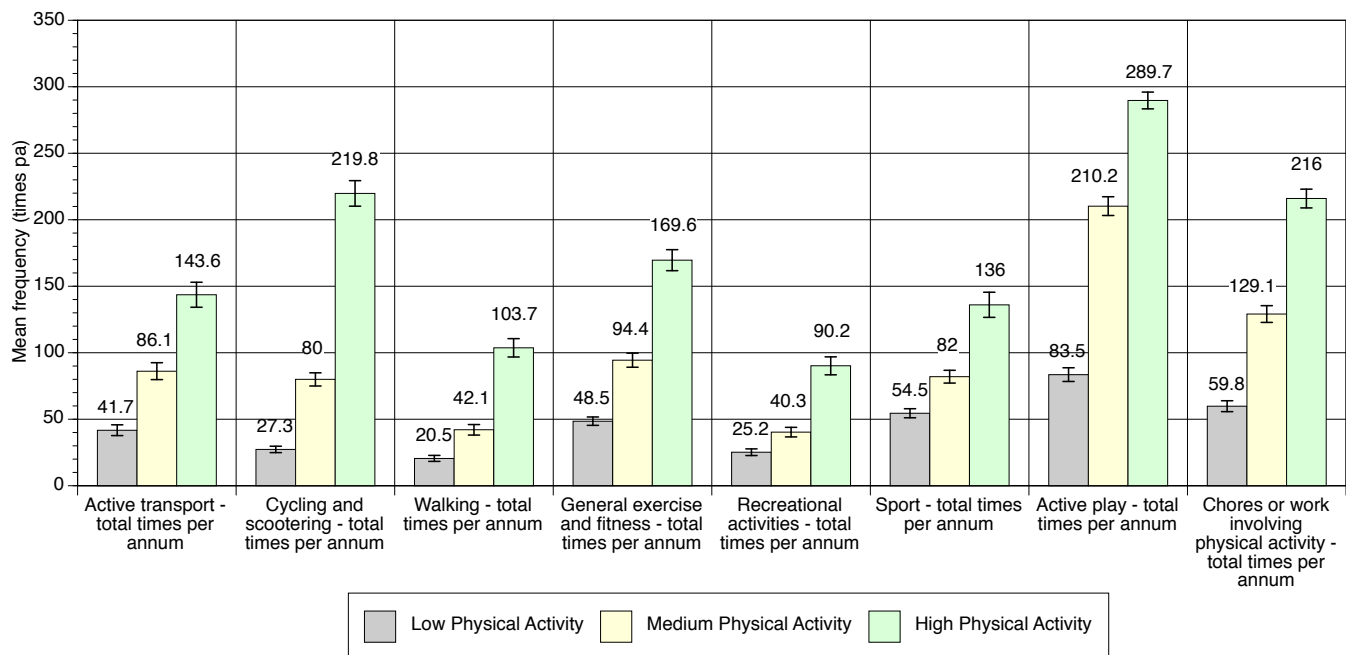
- Were more likely to have sufficient experience with physical movement to feel confident with physical activity
- Had a greater appreciation of the importance of physical activity and;
- Were more frequently encouraged by their parent/carer to be physically active.

- ☉ Children in the High Physical Activity segment and Medium Physical Activity segment had significantly higher participation levels in all forms of physical activity (for the 200+ activities measured), compared to the Low Physical Activity segment.
- ☉ Children in the High Physical Activity segment participated significantly more frequently in activities (for the 200+ activities measured) than the Medium and Low Physical Activity segments (each $p < .001$).
- ☉ Children in the High Physical Activity segment spent significantly more minutes on average on General exercise and fitness participation than the Low Physical Activity segment ($p < .01$).

- When their specific activity participation was observed by major or specific types of activities, overall patterns highlighted that most Low Physical Activity children were **globally sedentary**.

This may suggest that Low Physical Activity children have generally low involvement in physical movement, whether movement is part of Sport, Exercise or even Recreational activities (etc.). It is particularly notable that they even have low involvement in readily accessible activities like Walking.

Figure 8. Low, medium and high physical activity segments in Queensland children 5–17 years – Physical activity profile (N=5273, December 2018–April 2019)



Question: How often did (Child) participate in (ACTIVITY) during the past 12 months? (Base: All parents/carers with a child aged 5 to 17 years – Children not participating are included in this analysis to generate a population wide estimate for frequency of participation) (Though children participating who did more than 12 activities may have their data excluded from the analysis, if that activity was not randomly selected for frequency data) (as a maximum of 12 activities were rated).

- When child-related barriers were examined – the top barrier for children in the Low Physical Activity segment was not being interested/not liking physical activity/exercise/sport (12.4%), not enough time/too many commitments (10.1%) and being too lazy (9.5%).

A number of significant trends were identified in relation to child-related barriers to physical activity. Compared to the Low Physical Activity segment, the High Physical Activity segment reported the following notable child related barriers (for further barriers, see report):

- They were less likely to report not liking physical activity/exercise/sport (OR=0.2, $p<.001$)
- They were less likely to report being lazy (OR=0.5, $p<.01$)
- They were less likely to report fear about participation/being scared (OR=0.4, $p<.05$)
- They were less likely to report the barrier of girl/boy sport stereotypes (OR=0.04, $p<.01$)
- They were less likely to report (the child – rather than the parent/carer) having a disability (OR=0.5, $p<.01$).

- The top parent/carer barriers to low physical activity children increasing their physical activity were all related to not having time or cost. They included lack of time (30.1%), too expensive/high cost (27.4%), work commitments (23.6%), caring for children (7.5%) and no car/poor public transport/can't get there/too far (5.9%).

Together, findings highlight that key barriers to Low Physical Activity in Queensland children are likely to primarily relate to not liking physical activity and not prioritising physical activity for MOST children (with the exception of children with disabilities).

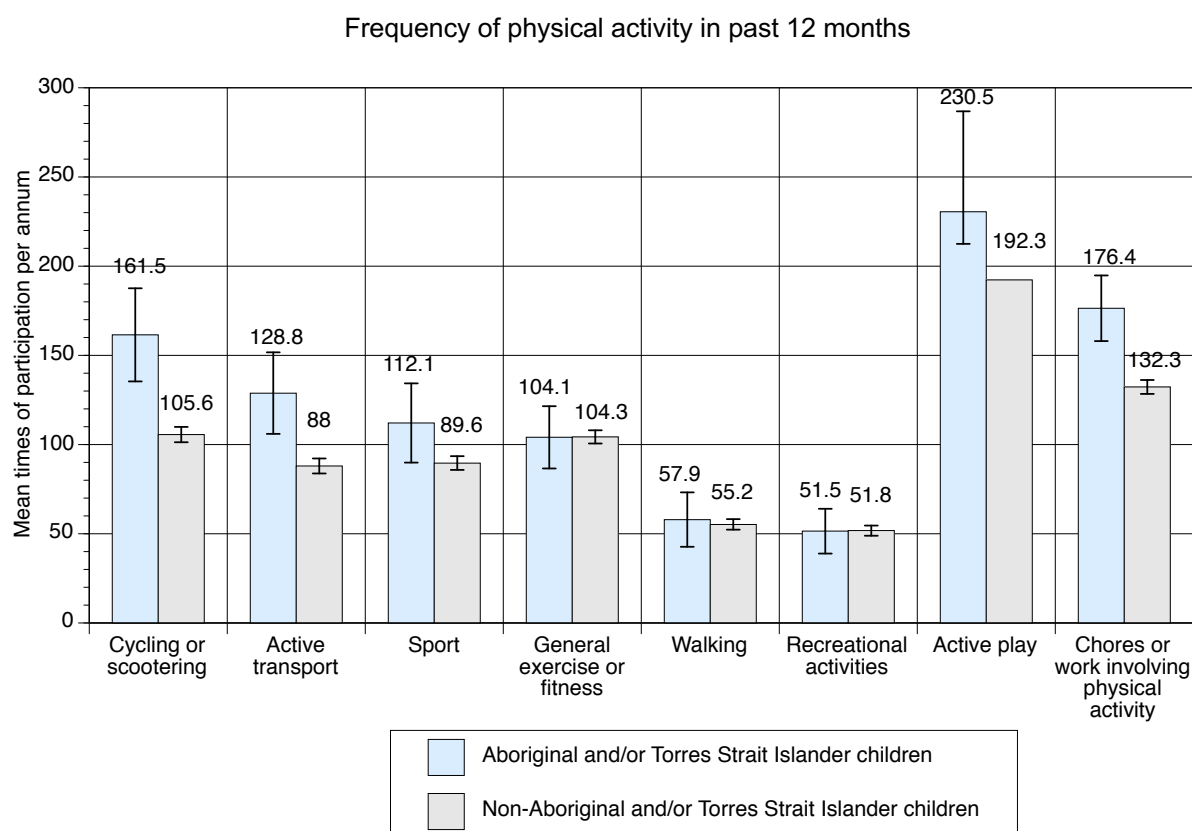
In addition, it is likely that parents/carers not having time (whether for travel, work or caring responsibilities) and having to travel to activities is a major barrier to children taking part in physical activities in Queensland, along with the cost of activities.

This highlights the need to design and implement practical strategies to provide opportunities for physical activities for Queensland children that overcome the time, travel and cost issues faced by some Queensland parents/carers.

Finding 15. Findings revealed a range of insights about the physical activity of Aboriginal and/or Torres Strait Islander children, children speaking Languages Other Than English (LOTE) and of children with disabilities and the barriers to physical activity participation.

Aboriginal and/or Torres Strait Islander children

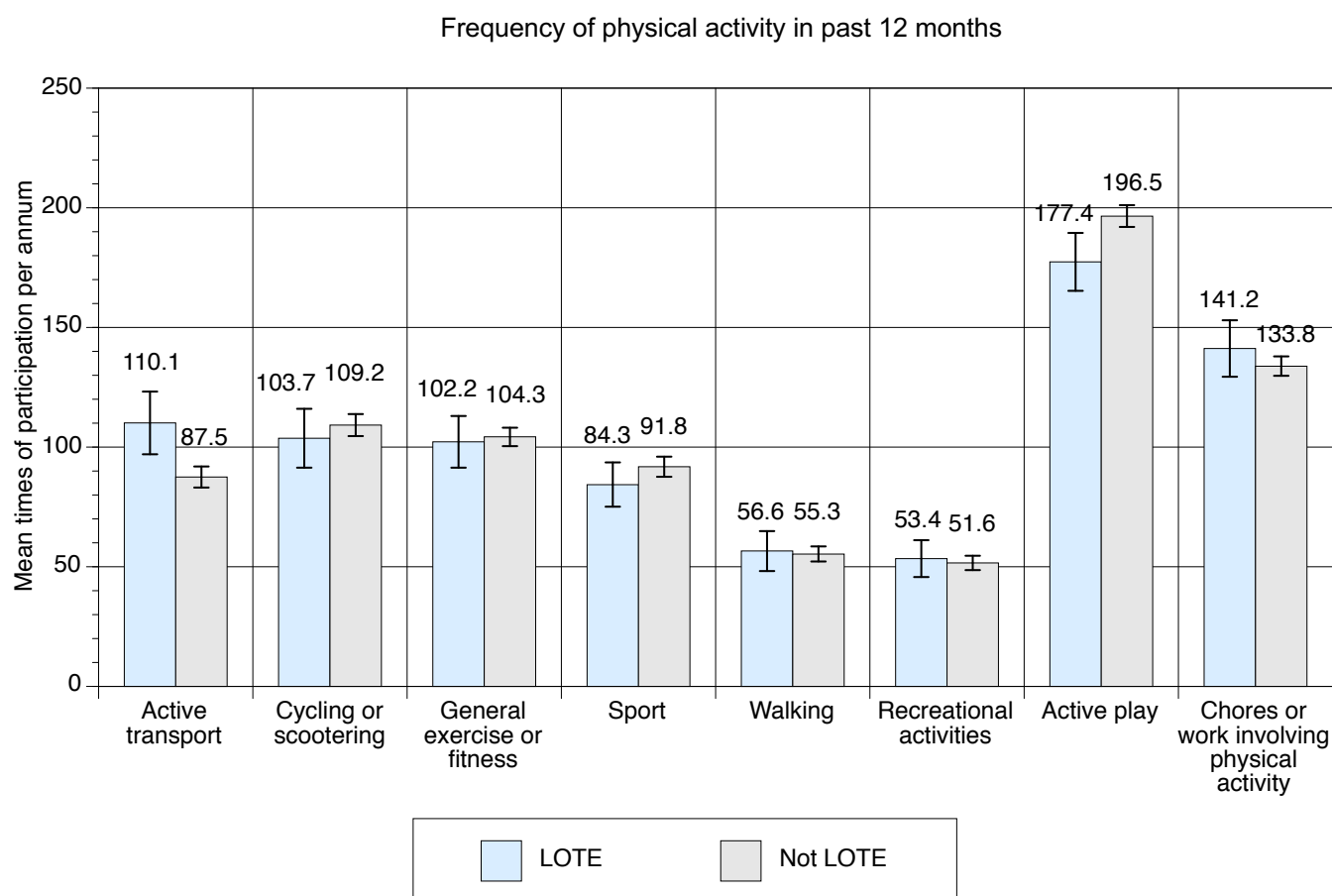
- ☉ The top three most frequent activities for Aboriginal and/or Torres Strait Islander children were Active play (230.5 times per annum), Chores or work involving physical activity (176.4 times per annum) and Cycling and scooting (161.5 times per annum).
- ☉ Aboriginal and/or Torres Strait Islander children participated more frequently than non-Aboriginal and/or Torres Strait Islander children in Active transport ($p < .01$), Active play ($p < .01$), Cycling and scooting ($p < .001$) and Chores or work involving physical activity ($p < .01$). Participation in Sport was also tending towards significance.



(Base: All parents/carers of Aboriginal and/or Torres Strait Islander background)

Children of LOTE backgrounds

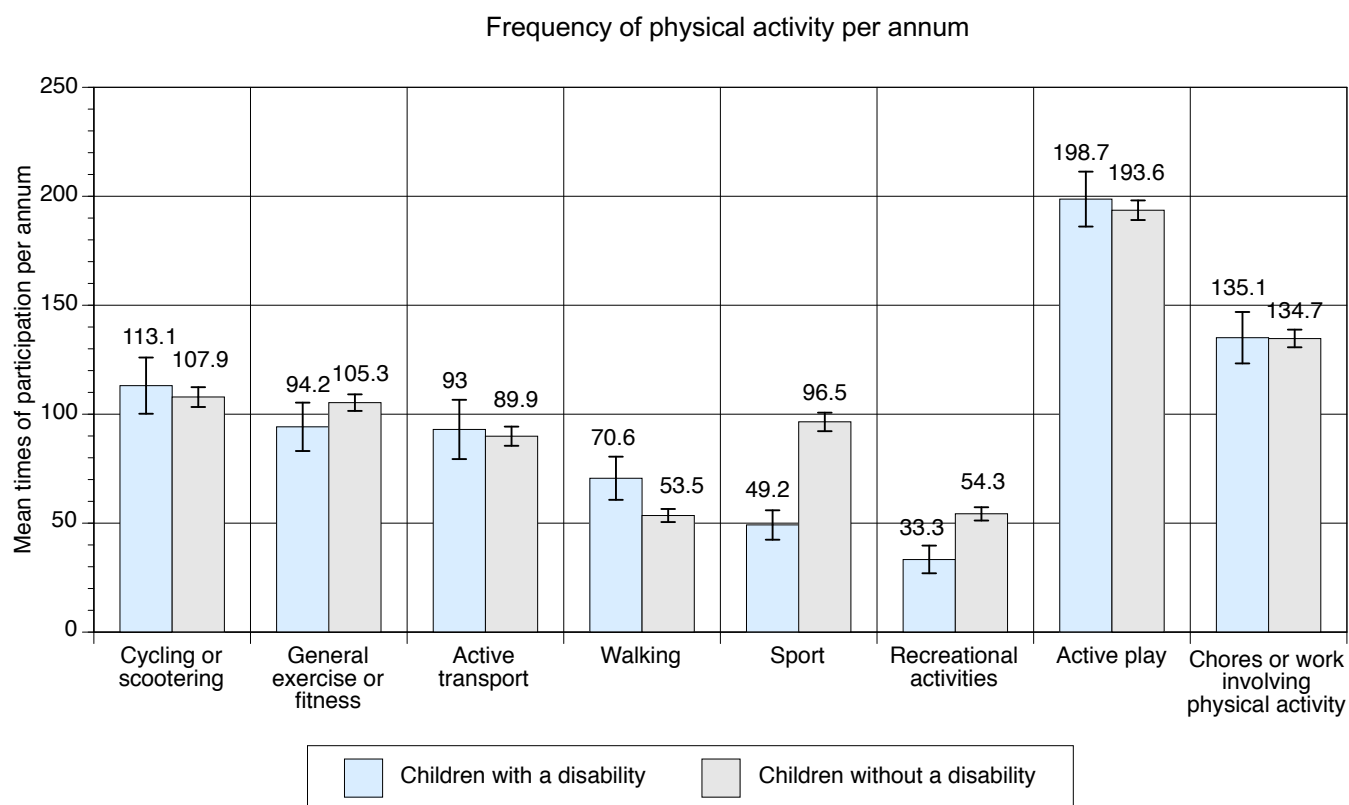
- The top three most frequent activities for children of LOTE background were Active play (177.4 times per annum), Chores or work involving physical activity (141.2) and Active transport (110.1 times per annum).
- Children of LOTE background participated more frequently than children of non-LOTE background in Active transport ($p < .01$).



(Base: All parents/carers of Aboriginal and/or Torres Strait Islander background)

Children with a disability

- ☉ The top three most frequent activities for children with a disability were Active play (198.7 times per annum), Chores or work involving physical activity (135.1 times per annum) and Cycling and scootering (113.1 times per annum).
- ☉ Children with a disability participated more frequently than children without a disability in Walking ($p < .01$) and less frequently in Recreation ($p < .001$) and Sport ($p < .001$).



(Base: All parents/carers of children with any type of disability)

Barriers for Aboriginal and/or Torres Strait Islander children and children of LOTE background and for children with a disability

The top child-related and parent-related barriers for the three segments to doing or increasing the child's physical activity were as follows (apart from 'no barriers'):

Aboriginal and/or Torres Strait Islander children (55% reported no child-related barriers, 33.1% reported no parent/carer-related barriers)	
<p>The top child-related barriers were:</p> <ul style="list-style-type: none"> ☞ Child has illness or injury – temporary (10.5%) ☞ Not interested/doesn't like physical activity/exercise/sport (7.4%) ☞ Child has disability (7.4%) ☞ Fear about participation/scared (6.6%) ☞ Too lazy (5.8%) 	<p>The top parent/carer barriers were:</p> <ul style="list-style-type: none"> ☞ Lack of time (29.9%) ☞ Too expensive/high cost (29.7%) ☞ Work commitments (26.2%) ☞ No car/poor public transport/can't get there/too far (14%) ☞ Caring for children (10%)
Children of LOTE background (52.8% reported no child-related barriers, 41.4% reported no parent/carer-related barriers)	
<p>The top child-related barriers were:</p> <ul style="list-style-type: none"> ☞ Not enough time/too many commitments (10.5%) ☞ Not interested/doesn't like physical activity/exercise/sport (6.9%) ☞ Too tired (6.6%) ☞ Too lazy (6.4%) ☞ Child has illness or injury – Temporary (5.6%) 	<p>The top parent-related barriers were:</p> <ul style="list-style-type: none"> ☞ Lack of time (31.5%) ☞ Work commitments (27%) ☞ Too expensive/high cost (22.3%) ☞ Caring for children (7.3%) ☞ No car/poor public transport/can't get there/too far (4.9%)
Children with a disability (28.1% reported no child-related barriers, 31% reported no parent/carer-related barriers)	
<p>The top child-related barriers were:</p> <ul style="list-style-type: none"> ☞ Child has disability (38.9%) ☞ Child has illness or injury – ongoing (10.4%) ☞ Not interested/doesn't like physical activity/exercise/sport (9.7%) ☞ Fear about participation/scared (7.4%) ☞ Too lazy (7.0%) 	<p>The top parent-related barriers were:</p> <ul style="list-style-type: none"> ☞ Lack of time (36.3%) ☞ Too expensive/high cost (32.3%) ☞ Work commitments (27%) ☞ Caring for children (13.7%) ☞ No car/poor public transport/can't get there/too far (9.1%)

Together, results highlight that, while Aboriginal and/or Torres Strait Islander children and LOTE children have few barriers to physical participation, children with disabilities report that disabilities may act as a barrier to physical activity participation.

This highlights the importance of designing and delivering mainstream programs for children with accessibility adaptations to ensure that all children can take part.

For parents, as time and related commitments (e.g., work, child care) and cost also present barriers to children's participation, this further highlights the need for future strategies to address parent/carer barriers as a means to increasing children's physical activity participation in Queensland.