Untitled Draft

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# Results

We excluded 242 data points from 49 participants with a reported health condition at the Checkpoint data collection point. Table @ref(tab:table1) provides an overview of the demographic, anthropometric, and cardio-metabolic characteristics of the remaining 1,825 participants. The cohort was evenly distributed by sex, with 49% females across all wave points. Majority of participants were non-Indigenous (98%), which is representative of the population. The participant cohort was predominantly in early to mid-puberty, with the majority classified as Tanner stages 2 38% and 3 29%. The LSAC is designed to be representative of the Australian population, and therefore the standardized socioeconomic status indicator is expected to have a mean of 0 (standard deviation = 1). Participants included in the Checkpoint data were on average from slightly higher socioeconomic families than the entire LSAC dataset (Wave 3 mean 0.27; SD = 0.95). Participants average total screen time increased steadily across the study period, from a mean of 133 minutes per week (SD = 77) to 196 minutes per week (SD = 92) in Wave 6.

# Tables

\*\*Table 1. Descriptive statistics of the LSAC Checkpoint cohort.\*\*

|  | **Wave Point** | | | | |
| --- | --- | --- | --- | --- | --- |
| **Characteristic** | **Wave 3**  N = 1,790 | **Wave 4**  N = 1,793 | **Wave 5**  N = 1,800 | **Wave 6**  N = 1,825 | **Checkpoint**  N = 1,825 |
| Age (Years), Mean (SD) | 4.82 (0.22) | 6.85 (0.29) | 8.91 (0.30) | 10.91 (0.33) | 12.00 (0.40) |
| Sex, n / N (%) |  |  |  |  |  |
| Male | 917 / 1,790 (51%) | 919 / 1,793 (51%) | 925 / 1,800 (51%) | 935 / 1,825 (51%) | 935 / 1,825 (51%) |
| Female | 873 / 1,790 (49%) | 874 / 1,793 (49%) | 875 / 1,800 (49%) | 890 / 1,825 (49%) | 890 / 1,825 (49%) |
| Indigenous Status, n / N (%) | 32 / 1,790 (1.8%) | 32 / 1,793 (1.8%) | 32 / 1,800 (1.8%) | 33 / 1,825 (1.8%) | - |
| Socioeconomic Status, Mean (SD) | 0.27 (0.95) | 0.24 (0.96) | 0.22 (0.97) | 0.19 (0.96) | - |
| Aggregated Screen Time (min/day), Mean (SD) | 133 (77) | 148 (79) | 178 (86) | 196 (92) | - |
| MVPA (min/day), Mean (SD) | - | - | - | - | 63 (34) |
| Sedentary Time (min/day), Mean (SD) | - | - | - | - | 552 (81) |
| Diet, n / N (%) |  |  |  |  |  |
| Does Not Meet Guidelines | - | - | - | - | 1,591 / 1,787 (89%) |
| Meets Guidelines | - | - | - | - | 196 / 1,787 (11%) |
| Sexual Maturity, n / N (%) |  |  |  |  |  |
| Tanner1 | - | - | - | - | 322 / 1,704 (19%) |
| Tanner2 | - | - | - | - | 639 / 1,704 (38%) |
| Tanner3 | - | - | - | - | 492 / 1,704 (29%) |
| Tanner4 | - | - | - | - | 212 / 1,704 (12%) |
| Tanner5 | - | - | - | - | 39 / 1,704 (2.3%) |
| VO2 Max, Mean (SD) | - | - | - | - | 48 (10) |
| Waist Circumference (cm), Mean (SD) | - | - | - | - | 66 (8) |
| Waist-to-Height Ratio, Mean (SD) | - | - | - | - | 0.43 (0.05) |
| BMI Z-Score, Mean (SD) | - | - | - | - | 0.30 (0.99) |
| Body Fat (%), Mean (SD) | - | - | - | - | 22 (8) |
| Systolic Blood Pressure (mmHg), Mean (SD) | - | - | - | - | 108 (8) |
| Diastolic Blood Pressure (mmHg), Mean (SD) | - | - | - | - | 62.4 (5.7) |
| Fasting Time (hours), Mean (SD) | - | - | - | - | 4.16 (1.10) |
| Glucose (mmol/L), Mean (SD) | - | - | - | - | 4.88 (0.47) |
| Triglycerides (mmol/L), Mean (SD) | - | - | - | - | 1.17 (0.50) |
| Total Cholesterol (mmol/L), Mean (SD) | - | - | - | - | 4.07 (0.65) |
| Cholesterol:HDL Ratio, Mean (SD) | - | - | - | - | 1.41 (0.27) |
| Non-HDL Cholesterol (mmol/L), Mean (SD) | - | - | - | - | 0.97 (0.26) |
| Phospholipids (mmol/L), Mean (SD) | - | - | - | - | 0.41 (0.12) |
| Apolipoprotein A1 (g/L), Mean (SD) | - | - | - | - | 1.39 (0.12) |
| Apolipoprotein B (g/L), Mean (SD) | - | - | - | - | 0.65 (0.10) |
| ApoB:ApoA1 Ratio, Mean (SD) | - | - | - | - | 0.48 (0.08) |
| Glycoprotein (mmol/L), Mean (SD) | - | - | - | - | 0.98 (0.11) |

Table 2. Unadjusted and adjusted associations between screen time and health outcomes.

|  | **Unadjusted** | | **Adjusted** | |
| --- | --- | --- | --- | --- |
| **Variable** | **Beta** **(95% CI)**1 | **p-value** | **Beta** **(95% CI)**1 | **p-value** |
| **Cardio-metabolic Risk Score** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.01 (-0.07 to 0.10) | 0.80 | 0.01 (-0.09 to 0.11) | 0.88 |
| Screen Time Trajectory Slope | 0.11 (-0.17 to 0.40) | 0.44 | 0.19 (-0.23 to 0.61) | 0.37 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.09 (-0.15 to -0.03) | **0.003** |
| Sedentary Time |  |  | -0.01 (-0.07 to 0.05) | 0.81 |
| **ApoB/ApoA1 Ratio** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.00 (-0.01 to 0.01) | 0.97 | -0.01 (-0.02 to 0.01) | 0.39 |
| Screen Time Trajectory Slope | 0.01 (-0.03 to 0.05) | 0.54 | 0.01 (-0.05 to 0.06) | 0.85 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.01 (-0.02 to -0.01) | **<0.001** |
| Sedentary Time |  |  | 0.00 (0.00 to 0.01) | 0.23 |
| **Glycoprotein Acetyls** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.01 (-0.01 to 0.02) | 0.47 | 0.00 (-0.02 to 0.02) | 0.82 |
| Screen Time Trajectory Slope | 0.02 (-0.04 to 0.07) | 0.55 | 0.02 (-0.06 to 0.10) | 0.60 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.02 (-0.03 to -0.01) | **<0.001** |
| Sedentary Time |  |  | 0.00 (-0.01 to 0.01) | 0.64 |
| **Phospholipids** |  |  |  |  |
| Screen Time Trajectory Intercept | -0.01 (-0.03 to 0.00) | 0.11 | 0.00 (-0.02 to 0.01) | 0.65 |
| Screen Time Trajectory Slope | -0.05 (-0.11 to 0.00) | 0.058 | -0.04 (-0.13 to 0.04) | 0.30 |
| Moderate-to-Vigorous Physical Activity |  |  | 0.02 (0.01 to 0.03) | **0.001** |
| Sedentary Time |  |  | -0.01 (-0.02 to 0.01) | 0.37 |
| **Cardiorespiratory Fitness (VO2 Max)** |  |  |  |  |
| Screen Time Trajectory Intercept | -3.2 (-4.4 to -2.0) | **<0.001** | -2.9 (-4.2 to -1.6) | **<0.001** |
| Screen Time Trajectory Slope | -3.3 (-7.3 to 0.71) | 0.11 | -3.4 (-8.9 to 2.1) | 0.23 |
| Moderate-to-Vigorous Physical Activity |  |  | 3.3 (2.5 to 4.1) | **<0.001** |
| Sedentary Time |  |  | 0.26 (-0.52 to 1.0) | 0.51 |
| **Waist Circumference** |  |  |  |  |
| Screen Time Trajectory Intercept | 1.2 (0.40 to 2.0) | **0.003** | 1.3 (0.36 to 2.2) | **0.007** |
| Screen Time Trajectory Slope | 3.2 (0.51 to 5.9) | **0.020** | 1.8 (-2.1 to 5.8) | 0.36 |
| Moderate-to-Vigorous Physical Activity |  |  | -1.5 (-2.1 to -0.94) | **<0.001** |
| Sedentary Time |  |  | -0.29 (-0.87 to 0.28) | 0.31 |
| **Waist-to-Height Ratio** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.01 (0.01 to 0.02) | **<0.001** | 0.01 (0.01 to 0.02) | **<0.001** |
| Screen Time Trajectory Slope | 0.02 (0.00 to 0.03) | **0.033** | 0.01 (-0.01 to 0.03) | 0.44 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.01 (-0.01 to 0.00) | **<0.001** |
| Sedentary Time |  |  | 0.00 (-0.01 to 0.00) | 0.39 |
| **Body Mass Index (z-score)** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.16 (0.06 to 0.26) | **0.002** | 0.19 (0.07 to 0.30) | **0.002** |
| Screen Time Trajectory Slope | 0.30 (-0.04 to 0.64) | 0.082 | 0.16 (-0.35 to 0.66) | 0.54 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.17 (-0.25 to -0.10) | **<0.001** |
| Sedentary Time |  |  | -0.06 (-0.14 to 0.01) | 0.082 |
| **Body Fat Percentage** |  |  |  |  |
| Screen Time Trajectory Intercept | 2.0 (1.2 to 2.9) | **<0.001** | 2.2 (1.3 to 3.2) | **<0.001** |
| Screen Time Trajectory Slope | 2.4 (-0.47 to 5.3) | 0.10 | 1.1 (-3.0 to 5.3) | 0.59 |
| Moderate-to-Vigorous Physical Activity |  |  | -2.4 (-3.1 to -1.8) | **<0.001** |
| Sedentary Time |  |  | -0.47 (-1.1 to 0.13) | 0.13 |
| **Systolic Blood Pressure Ampification** |  |  |  |  |
| Screen Time Trajectory Intercept | -0.15 (-0.46 to 0.16) | 0.34 | -0.11 (-0.47 to 0.26) | 0.57 |
| Screen Time Trajectory Slope | 0.16 (-0.91 to 1.2) | 0.77 | 0.48 (-1.1 to 2.0) | 0.55 |
| Moderate-to-Vigorous Physical Activity |  |  | 0.28 (0.03 to 0.52) | **0.027** |
| Sedentary Time |  |  | 0.00 (-0.23 to 0.23) | 0.97 |
| **Pulse Pressure Amplification** |  |  |  |  |
| Screen Time Trajectory Intercept | -0.02 (-0.05 to 0.01) | 0.22 | -0.01 (-0.05 to 0.03) | 0.57 |
| Screen Time Trajectory Slope | -0.11 (-0.22 to 0.00) | **0.046** | -0.09 (-0.25 to 0.07) | 0.27 |
| Moderate-to-Vigorous Physical Activity |  |  | 0.03 (0.00 to 0.05) | **0.047** |
| Sedentary Time |  |  | 0.01 (-0.01 to 0.03) | 0.41 |
| **Sysolic Blood Pressure (z-score)** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.08 (0.01 to 0.16) | **0.035** | 0.07 (-0.02 to 0.17) | 0.11 |
| Screen Time Trajectory Slope | 0.22 (-0.04 to 0.49) | 0.10 | 0.18 (-0.22 to 0.57) | 0.38 |
| Moderate-to-Vigorous Physical Activity |  |  | 0.00 (-0.06 to 0.06) | 0.98 |
| Sedentary Time |  |  | 0.02 (-0.04 to 0.07) | 0.57 |
| **Diastolic Blood Pressure (z-score)** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.08 (0.02 to 0.13) | **0.005** | 0.05 (-0.01 to 0.12) | 0.12 |
| Screen Time Trajectory Slope | 0.16 (-0.03 to 0.35) | 0.095 | 0.10 (-0.18 to 0.38) | 0.48 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.05 (-0.09 to -0.01) | **0.018** |
| Sedentary Time |  |  | 0.01 (-0.03 to 0.05) | 0.70 |
| **Triacylglycerides** |  |  |  |  |
| Screen Time Trajectory Intercept | 0.00 (-0.07 to 0.07) | 0.98 | -0.02 (-0.10 to 0.06) | 0.62 |
| Screen Time Trajectory Slope | 0.13 (-0.09 to 0.36) | 0.24 | 0.20 (-0.15 to 0.54) | 0.27 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.07 (-0.12 to -0.03) | **0.003** |
| Sedentary Time |  |  | -0.02 (-0.07 to 0.03) | 0.40 |
| **Total Cholesterol** |  |  |  |  |
| Screen Time Trajectory Intercept | -0.05 (-0.13 to 0.04) | 0.29 | -0.03 (-0.14 to 0.07) | 0.52 |
| Screen Time Trajectory Slope | -0.12 (-0.41 to 0.16) | 0.40 | -0.16 (-0.61 to 0.29) | 0.49 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.05 (-0.11 to 0.02) | 0.15 |
| Sedentary Time |  |  | 0.01 (-0.05 to 0.07) | 0.77 |
| **HDL Cholesterol** |  |  |  |  |
| Screen Time Trajectory Intercept | -0.02 (-0.06 to 0.02) | 0.27 | 0.00 (-0.04 to 0.04) | 0.96 |
| Screen Time Trajectory Slope | -0.08 (-0.20 to 0.04) | 0.19 | -0.06 (-0.25 to 0.12) | 0.48 |
| Moderate-to-Vigorous Physical Activity |  |  | 0.05 (0.02 to 0.07) | **<0.001** |
| Sedentary Time |  |  | -0.01 (-0.03 to 0.02) | 0.56 |
| **Non-HDL Cholesterol** |  |  |  |  |
| Screen Time Trajectory Intercept | -0.02 (-0.05 to 0.02) | 0.35 | -0.02 (-0.06 to 0.02) | 0.32 |
| Screen Time Trajectory Slope | -0.03 (-0.14 to 0.09) | 0.62 | -0.04 (-0.22 to 0.13) | 0.62 |
| Moderate-to-Vigorous Physical Activity |  |  | -0.04 (-0.07 to -0.01) | **0.002** |
| Sedentary Time |  |  | 0.01 (-0.01 to 0.04) | 0.39 |
| **Glucose** |  |  |  |  |
| Screen Time Trajectory Intercept | -0.05 (-0.11 to 0.01) | 0.13 | -0.03 (-0.11 to 0.05) | 0.43 |
| Screen Time Trajectory Slope | -0.01 (-0.21 to 0.19) | 0.92 | 0.11 (-0.21 to 0.43) | 0.50 |
| Moderate-to-Vigorous Physical Activity |  |  | 0.03 (-0.02 to 0.07) | 0.25 |
| Sedentary Time |  |  | 0.01 (-0.04 to 0.05) | 0.75 |
| 1CI = Confidence Interval | | | | |

## 133 minutes per week (SD = 77)