Background

Population

[illegible]

Intervention (exposure)

[illegible]

[illegible]

[illegible] 1, 2016, [illegible]

[illegible] A [illegible] 1. [illegible] ([illegible] ://[illegible] / [illegible] ://[illegible] / [illegible] / [illegible] /; [illegible] 11, 2016) [illegible] C [illegible] -C [illegible]

B [illegible] , B C [illegible] , [illegible] ([illegible] 11; [illegible] , [illegible] , CA, [illegible] A), [illegible] ([illegible] , [illegible] , C [illegible]), [illegible] ; [illegible] , [illegible]

Table 1 The relationship between sedentary behaviour and adiposity (Continued)

No. of participants (No. of studies)	

Table 3 The relationship between sedentary behaviour and psychosocial health

No. of participants (No. of studies)	Design	Quality assessment					Absolute effect	Quality
		Risk of bias	Inconsistency	Indirectness	Imprecision	Other		

The range of mean ages at time of exposure measurement was ~1 to 4.3 years; the oldest mean age at follow-up was ~12 years. Data were collected by randomized trial, cross-sectionally, and up to 9.5 years of follow-up. Psychosocial health measures were: aggression toward a sibling (assessed by the Aggressive Sibling Social Behavior Scale); aggressive behaviours/aggression, delinquent behaviours, total behaviour problems, externalizing problems, internalizing problems, emotional reactivity, anxious or depressed symptoms, and attention problems (assessed by the CBCL or Japanese CBCL); attentional problems (assessed by the hyperactivity subscale of the BPI); attention problems and hyperactivity (assessed by the BASC-2); bullying (assessed by unpublished questionnaire); co-operation, assertion, responsibility, self-control, and total social skills (assessed by the Social Skills Rating System); emotional symptoms/problems, conduct problems, hyperactivity-

Table 8 High-level summary of findings by health indicator

Health indicator	Number of studies	Quality of evidence	Summary of findings: Number of studies reporting unfavourable/null/favourable associations with at least one health indicator measure by SB type[a]
Critical			
Adiposity	60	Very low to moderate	Objectively measured sedentary time:
			Sedentary time in 30-min bouts (accelerometer-derived): null (1)
			Total sedentary time (accelerometer-derived): unfavourable (1), null (12)
			Screen-based sedentary behaviours:
			Computer (duration, frequency): unfavourable (1), null (6)
			Internet (duration): null (1)
			Total screen time (duration): unfavourable (9), null (14)
			TV time (duration): unfavourable (20), null (24), favourable (2)
			Video games (duration): unfavourable (1)
			Other screens (DVDs/videos; duration): unfavourable (1), null (1)
			Other sedentary behaviours:
			Reading (duration): null (1)
			Sitting (baby seats, car, sedentary quiet play; duration): unfavourable (2), null (4), favourable (1)
Motor development	7	Very low	Objectively measured sedentary time:
			Sedentary time in 30-min bouts (accelerometer-derived): null (1)
			Total sedentary time (accelerometer-derived): unfavourable (1), null (2)
			Screen-based sedentary behaviours:
			TV time (duration): unfavourable (2), null (3)
			Other sedentary behaviours:
			Sitting (baby carrier/sling, car seat, high chair/other chair, playpen, stroller; duration): null (1), favourable (1)
			Supine position (duration): unfavourable (1), null (1)
Psychosocial health	15	Very low to moderate	Objectively measured sedentary time:
			Total sedentary time (accelerometer-derived): null (1)
			Screen-based sedentary behaviours:
			Computer (duration): unfavourable (1), null (1)
			Total screen time (duration): unfavourable (1)
			TV time (duration): unfavourable (9), null (11), favourable (2)
Cognitive development	25	Very low	Objectively measured sedentary time:
			Total sedentary time (accelerometer-derived): null (1)
			Screen-based sedentary behaviours:
			Computer (yes, no): null (1)
			Mobile phone use (yes, no): unfavourable (1)
			Total screen time (duration): unfavourable (1)
			TV time (duration): unfavourable (11), null (10), favourable (1)
			Video games (duration): null (1)
			Other screens (total or electronic media exposure; duration): unfavourable (2), null (1)

[illegible]: [illegible] (n = 3) 88, 91, 92 , [illegible] (n = 4) 37, 40, 93, 94 . [illegible] ([illegible] A [illegible] A) [illegible] ([illegible] ; [illegible] 2 [illegible]). [illegible] “ [illegible] ” [illegible] ([illegible] 2).

A [illegible] 3.9 [illegible] 2.4 [illegible] (. ., [illegible]) [illegible]

[illegible]

2, 6, 9 [illegible] 34 . A [illegible] 9- [illegible] 34 (A 2: 3).

A [illegible] 1.5 5 . [illegible] 1 9.5 [illegible] 4.3 [illegible] 6.3 [illegible] 96 . [illegible] 4.3 [illegible] 6.3 [illegible] 96 (A 2: 3).

[illegible] / [illegible] 2/9 95, 103 , [illegible] 1/9 100 , [illegible] 5/9 90, 92, 96, 97, 99 , [illegible] 1/9 102 (A 2: 3). [illegible] 90, 95 , [illegible] 92 , [illegible] 97 , [illegible] 103 , [illegible] 99 , [illegible] 96 (A 2: 3). [illegible] 100 ; [illegible] 100 ; [illegible] 100 ; [illegible] 92, 100 ; [illegible] 99, 102 ; [illegible] 92, 102 ; [illegible] 100 [illegible] 102 ; [illegible] 97 ; [illegible] 96 ; [illegible] 102 .

2.5 [illegible] 3 [illegible] 102 . [illegible] 7 [illegible] (,) [illegible] ( ) [illegible] (, ,) 104 . [illegible] 2/6 101, 103 , [illegible] 2/6 100, 106 , [illegible] 1/6 105 , [illegible] 1/6 98 . [illegible] 101 , [illegible] 103 , [illegible] 105 , [illegible] 105 . [illegible] 100 , [illegible] 106 , [illegible] 105 . [illegible] 98 .

Cognitive development

[illegible] 25 , (4 A 2: 4) 88, 90, 92, 94, 100, 102, 104, 107–124 . [illegible] (n = 11) 88, 90, 92, 100, 102, 112, 113, 119–122 , [illegible] (= 1) 116 , [illegible] (n = 16) 90, 94, 100, 104, 107–111, 114, 115, 117, 118, 121, 123, 124 . [illegible] (,) [illegible] (, ; 4 ,). [illegible] “ ” [illegible] (4).

A 11 [illegible] 6 5 [illegible] (,) [illegible] (,). C [illegible] 8 8 [illegible] 6 [illegible] 14 : [illegible] 112 . [illegible]

10

5/10

126 .

Fitness

Author details
[1]Healthy Active Living and Obesity Research Group, RI #1, Children's Hospital of Eastern Ontario Research Institute, 401 Smyth Road, Ottawa, ON K1H 8L1, Canada. [2]University of Strathclyde, School of Psychological Science and Health, G1 1QE, Glasgow, Scotland, UK. [3]Faculty of Physical Education and Recreation, University of Alberta, Edmonton, AB T6G 2H9, Canada. [4]School of Kinesiology, University of British Columbia, Vancouver, BC V6T 1Z3, Canada. [5]Library and Media Services, Children's Hospital of Eastern Ontario, Ottawa, ON K1H 8L1, Canada.

Published: 20 November 2017

References

1. Sedentary Behaviour Research Network. Letter to the editor: standardized use of the terms "sedentary" and "sedentary behaviours". Appl Physiol Nutr Metab. 2012;37:540–2. http://dx.doi.org/10.1139/h2012-024. Accessed 25 Nov 2016.
2. LeBlanc AG, Spence JC, Carson V, Connor Gorber S, Dillman C, Janssen I, et al. Systematic review of sedentary behaviour and health indicators in the early years (aged 0-4 years). Appl Physiol Nutr Metab. 2012;37:753–72. PM: 22765839.
3. Tremblay MS, LeBlanc AG, Janssen I, Kho ME, Hicks A, Murumets K, et al. Canadian sedentary behaviour guidelines for children and youth. Appl Physiol Nutr Metab. 2011;36:59–

81. Reilly JJ, Armstrong J, Dorosty AR, Emmett PM, Ness A, Rogers I, et al. Early life risk factors for obesity in childhood: cohort study. BMJ. 2005;330:1357. PM:15908441.
82. Leary SD, Lawlor DA, Davey SG, Brion MJ, Ness AR. Behavioural early-life exposures and body composition at age 15 years. Nutr Diabetes. 2015;5: e150. PM:25664839.
83. Flores G, Lin H. Factors predicting overweight in US kindergartners. Am J Clin Nutr. 2013;97:1178–87. PM:23553169.
84. Gooze RA, Anderson SE, Whitaker RC. Prolonged bottle use and obesity at 5. 5 years of age in US children. J Pediatr. 2011;159:431–6. PM:21543085.
85. Wheaton N, Millar L, Allender S, Nichols M. The stability of weight status through the early to middle childhood years in Australia: a longitudinal study. BMJ Open. 2015;5:e006963. PM:25922101.
86. Griffiths LJ, Hawkins SS, Cole TJ, Dezateux C. Millennium cohort study child health group. Risk factors for rapid weight gain in preschool children: findings from a UK-wide prospective study. Int J Obes. 2010;

124. Ferguson CJ, Donnellan MI. The association between children's baby video viewing and poor language development robust? A reanalysis