

# The Importance of Parental Beliefs and Support for Physical Activity and Body Weights of Children: A Population-based Analysis

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## ABSTRACT

**Objective:** To determine whether parental beliefs and support for physical activity (PA) are associated with normal-weight and overweight children's self-reported PA and body weight using a population-based approach.

**Methods:** We analyzed cross-sectional survey data from 6,585 students and their parents in Alberta, Canada, collected in 2008 and 2010. Parental beliefs and support were collected through questions on "care about staying fit", "encourage PA" and "engage in PA with their child". Children's PA was self-reported. Body mass index was calculated from measured height and weight. We applied random effects models to assess: 1) the association of parental beliefs and support with children's PA; 2) differences in the associations for normal-weight and overweight children; 3) the association of parental beliefs and support with overweight.

**Results:** Parental care, encouragement, and engagement in PA were independently and positively associated with PA among both normal-weight and overweight children. Relative to children whose parents encouraged them "quite a lot", those whose parents encouraged them "very much" were 22% less likely to be overweight (OR=0.78, 95% CI: 0.68-0.89).

**Conclusion:** Health promotion strategies that target parents to encourage and engage in PA with their children may increase activity levels and reduce overweight among children.

**Key words:** Physical activity; public health; health promotion; childhood obesity

La traduction du résumé se trouve à la fin de l'article.

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Overweight and obesity in childhood are major public health concerns. They negatively impact self-esteem and academic performance.<sup>1,2</sup> Because overweight children tend to become overweight adults, an increasing number of children will face chronic disease in their lifetime.<sup>3,4</sup> In Canada, the prevalence of childhood overweight has more than doubled in the past decades. Recent estimates indicate that about 30% of children are overweight or obese.<sup>5</sup>

Insufficient physical activity (PA) is a proximate risk factor of childhood overweight.<sup>6</sup> In Canada, most children are not sufficiently active;<sup>7</sup> 9% of boys and 4% of girls accumulate the recommended 60 minutes of daily moderate-to-vigorous activity.<sup>7</sup> Promotion of PA is therefore a priority for the prevention of childhood overweight.

Parental beliefs and support for PA have been suggested as key areas for health promotion. Recent reviews report that parents influence children's PA behaviour by modeling and by supporting PA (e.g., being active together, encouraging PA).<sup>8,9</sup> However, research is limited and inconsistent when comparing the importance of parental PA beliefs and support for overweight relative to normal-weight children's PA.<sup>10,11</sup> Furthermore, the literature lacks generalizability because studies have not been population-based. Additionally, parental beliefs and support for children's PA have not been associated with children's weight status.

To support the development of health promotion strategies and interventions for the prevention of childhood overweight, our pri-

mary objective is to use a population-based sample of children and parents to assess whether parental beliefs and support for PA are associated with childhood overweight. We also aim to assess the association of parental beliefs and support with PA, and whether this association is distinct for normal-weight compared to overweight children.

## METHODS

### Study design/setting

Raising healthy Eating and Active Living (REAL) Kids Alberta is a population-based study of grade 5 children and parents in Alberta, Canada. The survey was conducted in 2008 and 2010 and employed a one-stage stratified random sampling design as described elsewhere.<sup>12</sup> In 2008, 148 of 184 (80.4%) schools participated. We sent 5,321 students home with surveys containing

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**Conflict of Interest:** None to declare.

**Table 1.** Descriptive Characteristics of Grade 5 Children and Their Parent(s) in Alberta, Canada Including Means (95% Confidence Interval) and Prevalences

	2008 Prevalence n=3300	2010 Prevalence n=3285	Combined Prevalence n=6585
Mean age (95% CI)	10.67 (10.66-10.68)	10.88 (10.87-10.89)	10.78 (10.77-10.79)
Proportion boys, %	48.3	49.2	48.7
Overweight (including obese), %	28.5	27.4	27.9
Obese, %	6.7	8.8	7.7
Mean PAQ-C (95% CI)	3.30 (3.28-3.32)	3.32 (3.30-3.34)	3.31 (3.30-3.32)
Parental educational attainment, %			
Secondary or less	26.9	25.1	26.0
College diploma	39.7	39.2	39.5
University or graduate degree	33.4	35.7	34.5
Household income, %			
≤\$50,000	24.0	24.0	24.0
\$50,001-\$75,000	17.7	17.6	17.6
\$75,001-\$100,000	22.0	20.4	21.3
≥\$100,001	36.3	38.0	37.1

**Table 2.** Prevalences and Associations (Beta Coefficient and 95% Confidence Interval) of Parental Beliefs and Support for Grade 5 Children's PA in Alberta, Canada

	Prevalence	Univariable			Multivariable						
		β	95% CI	Effect Size‡	β	95% CI	Effect Size‡	β	95% CI	Effect Size‡	
Care about staying fit and exercising											
Not at all /A little bit	23.1	-0.16	-0.19, -0.12	0.016	-0.15	-0.18, -0.11	0.014	-0.02	-0.05, 0.01	<0.001	
Quite a lot	46.1	0.00	-	-	0.00	-	-	0.00	-	-	
Very much	30.8	0.15	0.11, 0.19	0.015	0.14	0.11, 0.18	0.013	0.02	-0.01, 0.05	<0.001	
Encourage PA											
Not at all /A little bit	13.1	-0.28	-0.33, -0.24	0.033	-0.27	-0.31, -0.22	0.030	-0.19	-0.23, -0.15	0.020	
Quite a lot	45.0	0.00	-	-	0.00	-	-	0.00	-	-	
Very much	41.9	0.22	0.19, 0.25	0.040	0.21	0.17, 0.24	0.036	0.13	0.10, 0.16	0.019	
Engage in PA together											
Never or <1 time/week	39.3	-0.44	-0.47, -0.41	0.163	-0.44	-0.47, -0.41	0.171	-0.40	-0.43, -0.37	0.147	
1-3 times/week	51.7	0.00	-	-	0.00	-	-	0.00	-	-	
≥4 times/week	9.0	0.34	0.30, 0.38	0.035	0.36	0.32, 0.41	0.045	0.33	0.28, 0.37	0.040	

Note: We combined responses to the first two categories for each question due to small cell sizes.

\* Model 1 is adjusted for gender, household income, parental educational attainment and year of data collection.

† Model 2 is adjusted for parental care about staying fit and exercising, encouraging PA, engaging in PA together, gender, household income, parental educational attainment, and year of data collection.

‡ Partial Eta squared.

parental consent forms for their parent(s) to complete and return to school; 3,704 (70%) surveys were returned, 3,645 (98% of the 3,704) students received parental consent, and 3,421 children completed student surveys, resulting in a participation rate of 64%. We repeated data collection among grade 5 students and parents in 2010 from the schools that participated in 2008. In 2010, 7 schools were closed or not available to participate; we replaced these schools with 10 additional schools. We distributed 5,597 home surveys from 151 schools; 3,687 (66%) home surveys were returned, 3,656 (99% of the 3,687) students received parental consent to participate, and 3,389 children completed student surveys, resulting in a participation rate of 61%. Among these children, 3,300 in 2008 and 3,285 in 2010 had complete responses on parental beliefs and support, self-report PA, and BMI scores and were considered in the analysis.

**Assessment of parental beliefs and support**

The parent survey included three questions related to beliefs and support that were adapted from the activity-related parenting practices scale by Davison et al.<sup>13</sup> These included: 1) how much do you personally care about staying fit and exercising; 2) to what extent do you encourage your grade 5 child to be physically active; and 3) how often do you or another parent/guardian usually engage in PA together with your child. The questions we used are available at: www.REALKidsAlberta.ca

**Assessment of outcome measures**

*Physical Activity*

The student survey included the Physical Activity Questionnaire for Older Children (PAQ-C). The PAQ-C is a validated 7-day recall instrument that provides a summary score for general PA for children, aged 8 to 14 years.<sup>14-16</sup> We derived the summary score by taking the mean score of 7 items, each scored on a 5-point scale. A summary score of 1 indicates low PA, whereas a score of 5 indicates high PA. The PAQ-C is a valid and reliable self-report measure for children's PA during the school year.<sup>14,15</sup>

*Overweight and Obesity*

Trained assistants measured children's standing height to the nearest 0.1 cm using stadiometers (Seca-Stadiometer, Germany) and body weight to the nearest 0.1 kg on calibrated digital scales (Health-o-meter, IL, USA). We asked children to remove their shoes for both measurements. BMI was calculated as kg/m<sup>2</sup>. We defined overweight using the International Obesity Task Force BMI cut-off point established for children and youth.<sup>17</sup> The cut-off point is based on the health-related adult definition of overweight (BMI ≥25), but is adjusted to specific age and sex categories for children.

**Table 3.** Prevalences and Associations (Beta Coefficient and 95% Confidence Interval) of Parental Beliefs and Support for Normal-weight and Overweight (Including Obese) Grade 5 Children's PA in Alberta, Canada

	Prevalence	Univariable			Multivariable *		
		$\beta$	95% CI	Effect Size $\ddagger$	$\beta$	95% CI	Effect Size $\ddagger$
Care about staying fit and exercising							
Normal weight							
Not at all /A little bit	16.1	-0.15	-0.20, -0.11	0.011	-0.14	-0.19, -0.10	0.010
Quite a lot	33.0	0.00	–	–	0.00	–	–
Very much	23.1	0.14	0.11, 0.18	0.011	0.13	0.10, 0.17	0.009
Overweight/Obese							
Not at all /A little bit	7.0	-0.24	-0.29, -0.19	0.014	-0.23	-0.28, -0.18	0.013
Quite a lot	13.1	-0.08	-0.12, -0.04	0.003	-0.07	-0.12, -0.03	0.003
Very much	7.7	0.09	0.02, 0.16	<0.001	0.09	0.02, 0.16	<0.001
Encourage PA							
Normal weight							
Not at all /A little bit	8.9	-0.29	-0.34, -0.23	0.024	-0.27	-0.32, -0.21	0.022
Quite a lot	31.5	0.00	–	–	0.00	–	–
Very much	31.7	0.23	0.19, 0.27	0.033	0.22	0.18, 0.26	0.030
Overweight/Obese							
Not at all /A little bit	4.3	-0.32	-0.40, -0.24	0.016	-0.30	-0.38, -0.22	0.014
Quite a lot	13.5	-0.04	-0.08, 0.00	0.001	-0.04	-0.08, 0.01	0.001
Very much	10.1	0.13	0.07, 0.19	0.004	0.13	0.07, 0.19	0.003
Engage in PA together							
Normal weight							
Never or <1 time/week	28.0	-0.43	-0.47, -0.40	0.117	-0.43	-0.46, -0.40	0.123
1-3 times/week	37.7	0.00	–	–	0.00	–	–
$\geq$ 4 times/week	6.4	0.32	0.27, 0.37	0.025	0.34	0.30, 0.39	0.032
Overweight/Obese							
Never or <1 time/week	11.3	-0.53	-0.58, -0.48	0.108	-0.53	-0.58, -0.48	0.111
1-3 times/week	14.0	-0.07	-0.11, -0.04	0.004	-0.07	-0.10, -0.03	0.003
$\geq$ 4 times/week	2.6	0.32	0.23, 0.41	0.007	0.35	0.26, 0.43	0.011

\* Adjusted for gender, household income, parental educational attainment, and year of data collection.

 $\ddagger$  Partial Eta squared.

### Confounding variables

Analyses were adjusted for the confounding potential of gender, survey completion year, parental education attainment, and combined household income (which is known to be high in Alberta) (Statistics Canada, 2011).

### Data analysis

T-test and chi-square tests were used to test for differences between the 2008 and 2010 samples. Because observations were clustered within schools, we applied random effects models with students nested in schools. For each of the parental beliefs and support variables, we first applied univariable linear regression models to determine their associations with children's self-reported PA. Second, we applied multivariable linear regression models to adjust for the confounding effects of gender, parental educational attainment, household income, and year (Model 1). Third, we considered all predictors simultaneously to quantify their independent importance for children's self-reported PA (Model 2). We repeated these analyses stratified by normal-weight and overweight or obese children. Estimates of the effect size were derived from each model and are presented as estimates of the Partial Eta Squared. Last, to assess the effects of parental beliefs and support for PA on childhood overweight, we applied logistic random effects models. Missing values for parental education attainment and household income were treated as separate covariate categories, however, we do not present their estimated values.

All analyses were weighted to account for the effect of the study design. Therefore, the estimates are population-based and apply to the grade 5 student population of Alberta, Canada. We used Stata Version 11 (Stata Corp, TX, USA) to perform the statistical analyses. The Health Research Ethics Board of the University of Alberta approved this study, including data collection and parental informed consent forms in 2008 and 2010.

### RESULTS

There were no differences between the 2008 and 2010 samples (Table 1). Boys reported higher levels of PA relative to girls ( $p < 0.001$ ). Increased parental care about staying fit and exercising, parental encouragement of PA, and parental engagement in PA with their child were associated with increased self-reported PA among children (Table 2). Parental encouragement of PA, and engagement in PA together were independent determinants of children's self-reported PA (Table 2: Model 2 beta coefficients).

Overweight children whose parents cared "quite a lot" about staying fit and exercising were reportedly significantly less active compared to normal-weight children whose parents cared "quite a lot" (Table 3:  $\beta = -0.07$ , 95% CI: -0.12, -0.03). Table 3 depicts similar findings for encouragement of PA ( $\beta = -0.04$ , 95% CI: -0.08, 0.01) and engagement in PA together ( $\beta = -0.07$ , 95% CI: -0.10, -0.03).

Parents and children engaging in PA together and parental care about staying fit and exercising were not associated with childhood overweight. The single statistically significant independent parent factor that was negatively associated with childhood overweight was increased parental encouragement. Relative to children whose parents encouraged PA "quite a lot", children whose parents encouraged PA "very much" had 22% lower odds of being overweight (Table 4: Model 2 OR=0.78, 95% CI: 0.68-0.89).

### DISCUSSION

This study demonstrated that increases in parental care about staying fit and exercising, encouragement of PA, and parental engagement in PA with their child were associated with increased rates of self-reported PA among children. These gradients persisted after stratification based on weight status. A novel finding of this study was that the impact of parental encouragement of children's PA was also reflected in a lower prevalence of overweight.

**Table 4.** Prevalences and Associations (Odds Ratio and 95% Confidence Interval) of Parental Beliefs and Support for Childhood Overweight Among Grade 5 Children in Alberta, Canada

	Prevalence	Univariable		Multivariable			
		OR	95% CI	Model 1*		Model 2†	
				OR	95% CI	OR	95% CI
Care about staying fit and exercising							
Not at all /A little bit	23.1	1.08	0.93, 1.25	1.06	0.91, 1.23	1.02	0.87, 1.20
Quite a lot	46.1	1.00	–	1.00	–	1.00	–
Very much	30.8	0.87	0.75, 1.02	0.90	0.77, 1.05	0.98	0.84, 1.15
Encourage PA							
Not at all /A little bit	13.1	1.13	0.95, 1.34	1.11	0.93, 1.32	1.10	0.92, 1.33
Quite a lot	45.0	1.00	–	1.00	–	1.00	–
Very much	41.9	0.76	0.67, 0.87	0.78	0.69, 0.89	0.78	0.68, 0.89
Engage in PA together							
Never or <1 time/week	39.3	1.07	0.93, 1.23	1.05	0.91, 1.21	1.00	0.87, 1.15
1-3 times/week	51.7	1.00	–	1.00	–	1.00	–
≥4 times/week	9.0	1.03	0.82, 1.30	1.01	0.80, 1.27	1.07	0.85, 1.34

\* Model 1 is adjusted for gender, household income, parental educational attainment and year of data collection.

† Model 2 is adjusted for parental care about staying fit and exercising, encouraging PA, engaging in PA together, gender, household income, parental educational attainment, and year of data collection.

Our findings are consistent with previous reviews indicating that parental beliefs and support for PA are positively related to children's PA, self-reported or otherwise.<sup>8,9</sup> We found that parental engagement in PA and parental encouragement of PA were stronger predictors of children's reported PA than parental care about personal fitness. Other studies report similar findings.<sup>18,19</sup> For example, McGuire et al.<sup>19</sup> showed that parental encouragement was significantly related to boys' and girls' PA, but parental concern about personal fitness was not related. These results are further supported by the fact that parental care about personal fitness reflects modeling behaviour,<sup>20</sup> which often less directly affects children's PA than more proximate forms of support.<sup>21</sup>

Colley et al.<sup>22</sup> reported that Canadian adults are not sufficiently active. Yet many parents report to engage in physical activities with their children. This study found that parental engagement in PA with their child was the strongest predictor of children's self-reported PA. This finding is consistent with some<sup>23</sup> but not all studies.<sup>24</sup> This discrepancy, however, may be an effect of children's age. The mean age of the children sampled by Adkins et al.<sup>23</sup> was 8.8 years, while the children sampled by Robbins et al.<sup>24</sup> were 11-14 years. There is some evidence<sup>25</sup> to suggest that as children move into adolescence, parental involvement in children's PA becomes less important and other types of support (e.g., encouragement and peer involvement) become more important. To our knowledge, this is the first study to report population-based results; therefore our results indicate that at a population level, targeting parents to encourage and spend time being active with their children may be an effective strategy to increase grade 5 children's PA.

We also found that increased parental care about staying fit and exercising, increased parental encouragement of PA, and increased engagement in activities were associated with increased rates of self-reported PA among both normal-weight and overweight children. These findings are consistent with those of others.<sup>10,26</sup> However, the associations were distinct for normal-weight and overweight children. For example, the association between parental encouragement and self-reported PA, while positive among both overweight and normal-weight children, was stronger among normal-weight children. This seems consistent with a study that found that family social support was positively associated with PA in normal-weight boys, but not in overweight boys.<sup>11</sup> The importance of parental encouragement on overweight children's PA may be influenced by the tendency of these children to report more barriers to PA.<sup>27</sup> Con-

versely, the associations between parental engagement in PA together and reported PA behaviour among normal-weight and overweight children were similar, suggesting that parental engagement in PA may help overweight children to overcome barriers to PA.

We also showed that encouraging PA was negatively associated with childhood overweight. Studies indicate that parent encouragement is mediated through psychosocial attributes such as improved self-efficacy and liking of and attraction to activity.<sup>18,20</sup> Health promotion strategies and interventions to increase children's PA and/or reduce childhood overweight should include programs to teach parents how to effectively support their children to be physically active. Rhea recommended introducing overweight children gradually to enjoyable activities that will build their sense of self-efficacy.<sup>28</sup>

Strengths of our study include our large representative sample, generalizability of our results, measured heights and weights, and a high response rate for school-based research.<sup>29</sup> A limitation relates to the cross-sectional design, and necessitates caution with respect to interpretations of directionality and causality. Also, self-report measures are prone to bias and may produce socially desirable responses to questions surrounding parental beliefs and support, and an overestimation of children's PA.<sup>30</sup> Objective measures of PA (e.g., pedometers) would provide a more accurate estimate of children's PA, however, pedometers may be logistically and financially challenging in large population-based studies, as was the case in this study.

## CONCLUSION

We showed the importance of parental beliefs and support for children's PA and body weight status. Health promotion strategies and programs that educate parents on how to effectively support their child in developing an active lifestyle may contribute to increasing PA and preventing overweight among children.

## REFERENCES

1. Tremblay MS, Inman JW, Willms JD. Relationships between physical activity, self esteem, and academic achievements in ten- and eleven-year-old children. *Pediatr Exerc Sci* 2000;11:312-23.
2. Florence MD, Asbridge M, Veugelers PJ. Diet quality and academic performance. *J School Health* 2008;78:209-15.
3. Must A, Strauss RS. Risks and consequences of childhood and adolescent obesity. *Int J Obes Relat Metab Disord* 1999;23:S2-S11.
4. Whitaker RC, Wright JA, Pepe MS, Seidel KD, Dietz WH. Predicting obesity in young adulthood from childhood and parental obesity. *N Engl J Med* 1997;337:869-73.

5. Tremblay MS, Shields M, Laviolette M, Craig CL, Janssen I, Connor Gorber S. Fitness of Canadian children and youth: Results from the 2007-2009 Canadian Health Measures Survey. *Health Rep* 2010a;21:1-14.
6. Mayer J. Genetic, traumatic and environmental factors in the etiology of obesity. *Physiol Rev* 1953;33:472-508.
7. Colley RC, Garriguet D, Janssen I, Craig CL, Clarke J, Tremblay MS. Physical activity of Canadian children and youth: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Rep* 2011;22:1-9.
8. Edwardson CL, Gorely T. Parental influences on different types and intensities of physical activity in youth: A systematic review. *Pyschol Sport Exerc* 2010;11:522-35.
9. Pugliese J, Tinsley B. Parental socialization of child and adolescent physical activity: A meta-analysis. *J Fam Psychol* 2007;21:331-43.
10. De Bourdeaudhuij I, Lefevre J, Defroche B, Wijndaele K, Matton L, Philippaerts R. Physical activity and psychosocial correlates in normal weight and overweight 11 to 19 year olds. *Obes Res* 2005;13:1097-105.
11. Kitzman-Ulrich H, Wilson DK, Van Horn ML, Lawman HG. Relationship of body mass index and psychosocial factors on physical activity in underserved adolescent boys and girls. *Health Psychol* 2010;29:506-13.
12. Simen-Kapeu A, Veugelers PJ. Should public health interventions aimed at reducing childhood overweight and obesity be gender-focused? *BMC Public Health* 2010;10:340-47.
13. Davison KK, Cutting TM, Birch LL. Parents' activity-related parenting practices predict girls' physical activity. *Med Sci Sport Exerc* 2003;35:1589-95.
14. Crocker PRE, Bailey DA, Faulkner RA, Kowalski KC, McGrath R. Measuring general levels of physical activity: Preliminary evidence for the Physical Activity Questionnaire for Older Children. *Med Sci Sports Exerc* 1997;29:1344-49.
15. Kowalski KC, Crocker PRE, Faulkner RA. Validation of the Physical Activity Questionnaire for Older Children. *Pediatr Exerc Sci* 1997;9:174-86.
16. Kowalski KC, Crocker PRE, Donen RM. The Physical Activity Questionnaire for Older Children (PAQ-C) and Adolescence (PAQ-A) Manual, 2004. Available at: <http://hkin.educ.ubc.ca/behavioural/PAQ%20manual.pdf> (Accessed July 2011).
17. Cole TJ, Bellizzi MC, Flegal KM, Dietz WH. Establishing a standard definition for child overweight and obesity worldwide: International survey. *BMJ* 2000;320:1240-43.
18. Brustad RJ. Who will go out and play? Parental and psychological influences on children's attraction to physical activity. *Pediatr Exerc Sci* 1993;5:210-23.
19. McGuire MT, Hannan PJ, Neumark-Sztainer D, Falkner Cossrow NH, Story M. Parental correlates of physical activity in a racially/ethnically diverse adolescent sample. *J Adolesc Health* 2002;30:253-61.
20. Brustad RJ. Attraction to physical activity in urban schoolchildren: Parental socialization and gender influences. *Res Q Exerc Sport* 1996;67:316-23.
21. Trost SG, Sallis JF, Pate RR, Freedson PA, Taylor WC, Dowda M. Evaluating a model of parental influence on youth physical activity. *Am J Prev Med* 2003;25:277-82.
22. Colley RC, Garriguet D, Janssen I, Craig CL, Clarke J, Tremblay MS. Physical activity of Canadian adults: Accelerometer results from the 2007 to 2009 Canadian Health Measures Survey. *Health Rep* 2011;22:1-8.
23. Adkins S, Sherwood NE, Story M, Davis M. Physical activity among African-American girls: The role of parents and the home environment. *Obes Res* 2004;12:385-455.
24. Robbins LB, Stommel M, Hamel LM. Social support for physical activity of middle school students. *Public Health Nurs* 2008;25:451-60.
25. Duncan SC, Duncan TE, Strycker LA. Sources and types of social support in youth physical activity. *Health Psychol* 2005;24:3-10.
26. Sallis JF, Prochaska JJ, Taylor WC. A review of correlates of physical activity of children and adolescents. *Med Sci Sports Exerc* 2000;32:963-75.
27. Trost SG, Kerr LM, Ward DS, Pate RR. Physical activity and determinants of physical activity in obese and non-obese children. *Int J Obes* 2001;25:822-29.
28. Rhea DJ. Physical activity and body image of female adolescents. *J Phys Educ Rec Dance* 1998;69:27-31.
29. Finn-Aage E, Melde C, Taylor TJ, Peterson D. Active parental consent in school-based research: How much is enough and how do we get it? *Eval Rev* 2008;32:335-62.
30. Toriano RP, Berrigan D, Dodd KW, Masse LC, Tilert T, McDowell M. Physical activity in the United States measured by accelerometer. *Med Sci Sports Exerc* 2008;40:181-88.

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## RÉSUMÉ

**Objectif :** Déterminer, selon une approche populationnelle, si les croyances et l'appui parentaux à l'égard de l'activité physique (AP) sont associés à l'AP et au poids autodéclarés d'enfants de poids normal et en surpoids.

**Méthode :** Nous avons analysé les données d'une enquête transversale menée auprès de 6 585 élèves et de leurs parents en Alberta (Canada) en 2008 et en 2010. Les croyances et l'appui des parents ont été obtenus à l'aide de questions sur leur « volonté de rester en forme », leur « encouragement de l'AP » et leur « pratique de l'AP avec leur enfant ». L'AP des enfants était autodéclarée. L'indice de masse corporelle a été calculé à partir de la taille et du poids mesurés. Nous avons appliqué des modèles à effets aléatoires pour évaluer : 1) l'association entre les croyances et l'appui parentaux et l'AP des enfants; 2) les différences, dans les associations établies, entre les enfants de poids normal et en surpoids; 3) l'association entre les croyances et l'appui parentaux et le surpoids.

**Résultats :** Les soins, les encouragements et la participation des parents à l'AP étaient indépendamment et positivement associés à l'AP, tant chez les enfants de poids normal que chez les enfants en surpoids. Comparativement aux enfants dont les parents les encourageaient « pas mal », ceux dont les parents les encourageaient « beaucoup » étaient 22 % moins susceptibles d'être en surpoids (RC=0,78, IC de 95 % : 0,68-0,89).

**Conclusion :** Les stratégies de promotion de la santé qui amènent les parents à encourager l'AP et à la pratiquer avec leurs enfants pourraient accroître les niveaux d'activité et réduire le surpoids chez les enfants.

**Mots clés :** activité physique; santé publique; promotion de la santé; obésité infantile