A B S T R A C T

Objective: To investigate the relationship among BMI, smoking consumption, dietary restraint, smoking to control weight, physical self-perception and self-esteem in young female adolescents.

Methods: 702 grade 9 students (14-15 yrs old) completed self-reported validated measures in classroom settings.

Results: 26.7 % of students had smoked in the last 30 days. Cigarette consumption was low with only 13% smoking one or more cigarettes a day. MANOVA revealed smokers had higher dietary restraint and lower perceptions of physical appearance, conditioning, and self-esteem. A similar pattern emerged for those girls classified as using smoking to control weight. Multiple regression found dietary restraint was predicted by higher BMI, and lower body appearance and self-esteem.

Conclusions: The data provided converging evidence that girls with low self-perceptions are more likely to engage in health-compromising behaviours. Smoking behaviours and dietary restraint were also linked. However, the small effect sizes for smoking behaviours warrants caution.

A B R É G É

Objectif: Étudier le lien entre l'IMC, la consommation de tabac, les restrictions alimentaires, le tabagisme comme méthode de contrôle du poids, l'image corporelle et l'estime de soi chez les jeunes adolescentes.

Méthode : 702 élèves de 9^e année (14 à 15 ans) ont rempli un questionnaire auto-administré en classe.

Résultats : 26,7 % des élèves avaient fumé au cours des 30 jours précédents. Cette consommation était faible : seules 13 % des répondantes avaient fumé quotidiennement une cigarette ou plus. Une analyse de variance à plusieurs variables a révélé que les fumeuses s'imposaient des restrictions alimentaires plus élevées et avaient des perceptions plus négatives de leur apparence physique et de leur conditionnement et une moindre estime de soi. Nous avons dégagé une tendance semblable chez les filles disant fumer pour contrôler leur poids. Par régression multiple, nous avons constaté que les restrictions alimentaires s'accompagnaient d'un IMC supérieur et d'une apparence physique et d'une estime de soi inférieures.

Conclusions : Les données tendent à montrer que les filles qui ont une piètre image corporelle sont plus susceptibles d'adopter des comportements nuisibles pour la santé. Le tabagisme et les restrictions alimentaires seraient également liés. Toutefois, la faible ampleur de l'effet du tabagisme incite à la prudence.

Smoking Behaviour and Dietary Restraint in Young Adolescent Women: The Role of Physical Self-Perceptions

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There is a growing recognition that the social-cognitive construction of the physical self influences health-related behaviours.¹⁻³ The literature shows that teenage girls' self-perceptions about body weight and shape have a profound impact on social and emotional development.^{1,4-8} To manage intensifying negative physical self-perceptions and body anxiety, teenage girls are often motivated to engage in health-compromising behaviours such as smoking and chronic dieting.^{5,9-11} Research has linked the initiation and maintenance of smoking in teenage girls to weight and body shape concerns.^{9,11-16} Tomeo and colleagues¹¹ found that contemplation of smoking initiation was associated with unhappiness with appearance whereas smoking experimentation was linked to daily dieting. Negative physical self-perceptions are also associated with dieting behaviours.^{5,17,18} There is also a relationship between dieting and smoking as a means to control weight in teenage girls.^{10,11} Approximately 37-39% of female adolescents and young adult smokers use smoking as a means to control weight.^{12,14}

This study is the first year of a three-year longitudinal investigation of physical self-perceptions and health-related behaviour. The study used a hierarchical, multidimensional physical self-perception profile (PSPP) framework that has identified four specific physical self-perceptions (sport competence, body attractiveness, physical condition, and physical strength) nested under general physical self-worth, which in turn is nested under

global self-esteem.¹⁹ The PSPP model has been validated with older children and adolescents.^{20,21} Specific physical self-perceptions differentially predict various health-related behaviours,^{2,5,20} with perception of body attractiveness linked to dietary behaviour in adolescent females.⁵ Young women's physical self-worth and global self-esteem are more strongly influenced by body attractiveness than the other physical self-perceptions.^{22,23}

In investigating smoking and dietary behaviour, researchers need to consider actual body characteristics in addition to physical self-perceptions. Body mass index (BMI) and bi-iliac bone width were central predictors of adolescent girls' desire to lose weight.²⁴ Research with Canadian adolescents has found that overweight females are more likely to smoke.¹³ Tomeo and colleagues¹¹ also found that the stage of tobacco uptake from precontemplation to experimentation was associated with the prevalence of girls being overweight (BMI>84th percentile).

Cigarette smoking increases during adolescence^{25,26} and is a prevalent CVD risk factor in females age 15-25 years.²⁷ There are no Canadian data that attempt to link physical self-perceptions, dietary restraint, and smoking behaviour in this population. It was hypothesized that smoking consumption, using smoking as a means to control weight, and dietary restraint will be related to negative physical self-perceptions, in particular body appearance. These results should be attenuated after controlling for BMI. Significant interrelationships were also expected between smoking and dietary restraint.

METHOD

Measures

Physical Characteristics. The girls reported age, height and weight. Previous

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research^{11,28} found that both self-reported height and weight has acceptable validity for adolescent populations. Body mass index was calculated by a ratio (kg/m²).

Physical Self-Perceptions. The Physical Self-Perceptions Profile (PSP) consists of five 6-item scales that measure perceptions of general physical self-worth (PSW), sport competence (Sport), body attractiveness (Body), physical condition (Condition), physical strength (Strength). The item score can range from 1 to 4, indicating low to high self-perceptions within the domain.¹⁹ The PSP scales have acceptable scale reliability and validity with younger adolescents.^{20,29}

Global Self-Esteem. The "What I am Like" Questionnaire from the Adolescent Self-Perception Profile assessed global self-esteem/worth (GSE). Recommended for adolescents, the GSE is a validated 5-item self-report questionnaire.³⁰

Dietary Restraint. The Dutch Eating Behavior Questionnaire – Restrained Eating (DEBQ-R) is a 10-item self-report questionnaire designed to assess the degree to which an individual restrains her eating behaviour.³¹ The DEBQ-R is scored on a 5-point scale ranging from 1) Never to 5) Very Often. The scale has acceptable reliability and validity for adolescents.¹⁸

Smoking Behaviour. Students indicated whether they have ever smoked cigarettes, and at what age they first tried smoking. Students were also asked about smoking consumption in the last 30 days.³² Consumption was scored on a 7-point ordinal scale: 1) not at all, 2) less than 1 cigarette daily, 3) 1 to 5 cigarettes daily, 4) about ½ pack per day, 5) about 1 pack per day, 6) about 1½ packs per day, and 7) 2 or more packs per day.

The Smoking Situations Questionnaire (SSQ) assessed the use of smoking as a means of weight control.³³ The SSQ is a 6-item self-report questionnaire, with each item scored on a 6-point Likert scale ranging from 1) never to 6) always. The SSQ has acceptable reliability.

Participants and procedures

Grade 9 girls from eight city schools (n=489) and seven schools (n=213) within a one-hour drive of Saskatoon, Saskatchewan, agreed to participate in the

TABLE I
Descriptive Statistics for Self-perception Variables, Dietary Restraint, Body Mass Index and Smoking as a Means to Control Weight (SSQ)

	Mean	SD	Skewness	N
Global Self-Esteem	2.91	0.73	-0.39	694
Physical Self-Worth	2.64	0.70	0.51	689
Conditioning	2.76	0.66	-0.12	690
Sport Competence	2.62	0.70	0.05	690
Strength Competence	2.57	0.60	0.13	689
Body Attractiveness	2.32	0.70	0.05	690
Dietary Restraint	2.23	1.02	0.54	693
SSQ	1.51	0.76	2.25	178
Body Mass Index	20.65	3.12	1.36	690
Smoking Consumption	1.46	0.94	2.74	696

TABLE II
Correlations Among Self-perceptions, Dietary Restraint, and Body Mass Index

	1	2	3	4	5	6	7	8
GSE		0.63*	0.54*	0.48*	0.39*	0.33*	-0.45*	-0.16*
PSW	0.64*		0.67*	0.76*	0.64*	0.53*	-0.43*	-0.29*
Body	0.54*	0.67*		0.54*	0.37*	0.25*	-0.47*	-0.50*
Conditioning	0.48*	0.76*	0.54*		0.73*	0.55*	-0.28*	-0.31*
Sport	0.39*	0.64*	0.37*	0.73*		0.59*	-0.17*	-0.14*
Strength	0.33*	0.53*	0.25*	0.55*	0.59*		-0.09*	0.08
DEBQ-R	-0.45*	-0.43*	-0.47*	-0.28*	-0.17*	-0.09*		0.32*
BMI	-0.16*	-0.29*	-0.50*	-0.31*	-0.14*	0.08	0.32*	

* significant at p<0.05 level (2-tailed)

study. Participation rates ranged from 91-98% in non-city schools and 68-95% in city schools. The city schools represented a range of socio-economic neighbourhoods. All participants and their parents/guardians provided informed consent. The students ranged from 14-15 years old, with BMI ranging from 15 to 37.2. The participants were primarily Caucasian.

Following approval from the participating school boards and school principals, researchers met with the students to describe the study and distribute consent forms. One week later, the questionnaire package was administered during class time, with a researcher available to answer any questions. The questionnaire was completed in the following order: physical characteristics, physical activity questionnaires,* smoking behaviours, PSPP and GSE, and DEBQ-R.

Statistical analysis

Statistical analyses were performed using SPSS version 10. First, we examined the distributional properties and the scale reliability of the variables. Consistent with previous research,²⁰ the PSW variable was not

* There were concerns with the validity of the yearly physical activity measures for over 100 students. Therefore, physical activity was not included in the analyses.

included in any primary analyses since the four PSPP subdomain scales are collectively strong predictors of physical self-worth (PSW), yet provide specific information on aspects of the physical self. Multiple regression was used to predict dietary restraint based on BMI and physical self-perceptions and global self-esteem (GSE). Smoking consumption was analyzed through a multi-step process. Since the smoking consumption data were skewed, we formed two categories: non-smokers and smokers. MANOVA analysis, with follow-up univariate ANOVA with Bonferroni corrections,³⁴ were conducted to determine group differences for self-perceptions, BMI, and dietary restraint. A similar two-group classification and MANOVA procedure was used to examine the use of smoking as a means to control weight.

RESULTS

Preliminary analysis

Descriptives. Descriptive statistics for the self-perception variables, dietary restraint, and body mass index are shown in Table I. All PSPP scales demonstrated acceptable internal consistency: GSE (0.85), PSW (0.90), Sport (0.85), Body (0.89), Condition (0.87), Strength (0.87), with scale correlations consistent with the model

TABLE III
Hierarchical Regression Analysis Predicting Dietary Restraint

Step	Variable	B	SE B	β	R^2_A	R^2
1	BMI	0.103	0.012	0.319*	0.102*	0.102*
2	BMI	0.032	0.013	0.102*	0.127*	0.229*
	Body	-0.589	0.065	-0.403*		
	Conditioning	-0.069	0.089	-0.045		
	Sport	0.008	0.077	0.066		
	Strength	0.057	0.076	0.034		
3	BMI	0.046	0.013	0.143*	0.066*	0.295*
	Body	-0.374	0.068	-0.255*		
	Conditioning	0.028	0.086	0.018		
	Sport	0.030	0.074	0.021		
	Strength	0.097	0.073	0.058		
	GSE	-0.449	0.057	-0.321*		

* significant at $p < 0.05$; intercepts for steps 1, 2, and 3 were 0.10, 2.93, and 2.03 respectively

TABLE IV
Descriptive Statistics and Effect Sizes for Body Mass Index, Dietary Restraint, and Self-perceptions for Smokers and Non-smokers

Variable	Non-smokers (n=491)		Smokers (n=176)		p	Eta ²
	m	sd	m	sd		
BMI	20.53	3.11	20.88	3.04	0.195	0.003
DEBQ-R	2.08	0.92	2.61	1.14	0.001*	0.052
GSE	3.02	0.69	2.63	0.75	0.001*	0.057
Body	2.36	0.69	2.21	0.70	0.016*	0.010
Conditioning	2.81	0.65	2.65	0.65	0.006*	0.012
Strength	2.59	0.60	2.58	0.59	0.965	0.000
Sport	2.64	0.71	2.56	0.64	0.186	0.003

TABLE V
Descriptive Statistics and Effect Sizes for Body Mass Index, Dietary Restraint, and Self-perceptions for those Smokers Categorized as Using (SSQ+) or Not Using (SSQ-) Smoking as a Means to Control Weight

Variable	SSQ- (n=139)		SSQ+ (n=27)		p	Eta ²
	m	sd	m	sd		
BMI	20.86	3.11	21.11	2.82	0.707	0.001
DEBQ-R	2.36	1.05	3.52	1.01	0.001*	0.145
GSE	2.71	0.74	2.26	0.67	0.003*	0.053
Body	2.28	0.69	1.92	0.64	0.015*	0.036
Conditioning	2.69	0.64	2.37	0.59	0.020*	0.033
Strength	2.59	0.59	2.43	0.59	0.179	0.011
Sport	2.57	0.63	2.41	0.62	0.200	0.010

(Table II). The four PSPP subdomain values are consistent with previous studies with older children and young adolescents that show that body and strength perceptions are lower than conditioning and sport perceptions.^{20,35} The global self-esteem and physical self-worth values are also typical for this age group.^{30,35} The dietary restraint values are similar to those reported for young adolescent British girls.¹⁸ BMI values are also typical for Canadian girls of this age.³⁶

Six hundred ninety-six students provided complete data for smoking behaviour, with 422 (60.6%) reporting they had smoked at least once. The median age for

smoking the first cigarette was 12 years old. Of the 422 students who had tried smoking, only 187 (44.3%) had smoked in the last 30 days. For smokers, smoking consumption was as follows: less than 1 cigarette a day (n=98), 1 to 5 cigarettes daily (n=63), about ½ pack per day (n=15), about 1 pack per day (n=5), about 1½ packs per day (n=1), 2 or more packs per day (n=5). The percentage of smokers (26.7%) is much higher than estimated by Health Canada²⁶ for this age. However, the percentage who are smoking 1 cigarette or more per day (about 13%) is more congruent with Health Canada estimates.

Primary analyses

Dietary Restraint. The DEBQ-R demonstrated acceptable internal consistency (0.94). Pearson product correlations indicated that dietary restraint was associated with all self-perceptions (Table II), with body attractiveness being the prominent correlate ($r = -0.47$). A multiple regression analysis forced BMI into the equation at step one, followed by a direct entry of PSPP variables and then GSE (Table III). BMI was a significant predictor ($R^2 = 0.10$), but body attractiveness and global self-esteem both added significant explained variance ($R^2_A = 0.193$).

Smoking Consumption. We divided the sample into two groups, active smokers (those who had smoked in the last 30 days) and non-smokers. Group differences were examined by MANOVA with the dependent measures being the four PSPP subdomain scales, GSE, BMI, and DEBQ-R. There was a significant group effect, Wilks' Lambda = 0.91, $F(7, 659) = 9.41$, $p < 0.01$. Follow-up univariate tests found the non-smoking group had higher perceptions of GSE, body attractiveness, conditioning, and lower dietary restraint (see Table IV). There were no group differences for BMI, sport and strength perceptions.

Smoking as a Means to Control Weight. The SSQ demonstrated acceptable internal consistency (0.83). Only participants who had smoked in the last 30 days were examined. The sample was split into two groups, with those with scores on the SSQ over 2 (out of 6) being classified as using smoking as a means to control weight. A MANOVA entering the four PSPP subdomains, GSE, BMI, and DEBQ-R found a significant group effect, Wilks' Lambda = 0.838, $F(7, 158) = 4.37$, $p < 0.01$. Follow-up univariate analyses found that those girls classified as using smoking as a means to control weight had higher dietary restraint, and lower perceptions of GSE, body attractiveness, and conditioning (see Table V).

DISCUSSION

This study demonstrated a relationship among physical self-perceptions, smoking consumption, dietary restraint, and using smoking as a means to control weight in

young Canadian female adolescents. Surprisingly, body mass index (BMI) was not related to smoking behaviour, although it was predictive of dietary restraint. Our data on linking physical self, especially physical appearance, to health-related behaviours are consistent with previous research.^{10,11,15,18} The data have important implications that warrant further attention. Even after controlling for BMI, dietary restraint was negatively related to body appearance and global self-esteem. Consistent with previous findings,^{18,37} those young adolescents who restrict their food intake have lower global self-esteem and lower physical self-perceptions. Girls who smoked in the last 30 days were more likely to engage in dietary restraint and have negative physical self-perceptions and global self-esteem. This pattern extended to using smoking as a means to control weight. The findings reaffirm the consistent link between low physical self-perceptions and global self-esteem and adopting high-risk health behaviours.^{2,38,39} Follow-up of this cohort will help us to determine the strength of relationships and the directions of causality.

The smoking and dietary restraint data should also raise concerns for health professionals. Over 60% of the girls had at least experimented with cigarettes, with 27% smoking in the last 30 days. Although many of these smokers are likely in an experimenting stage, the early onset of smoking is associated with later adolescent and adult smoking.⁴⁰ Further, concerns with body appearance and engaging in dietary restraint are also precursors to more serious disordered eating.¹ The findings point to the need for significant educational interventions before the high school years.

The strengths of this study include incorporating a validated physical self-perception model and instrument, a large regionalized sample of grade nine girls from various socio-economic areas, and including a measure of using smoking as a means to control weight. Limitations include the cross-sectional design, the low prevalence of smoking and dietary restraint behaviour, not assessing other weight control strategies, and the use of self-report data. Previous research, however, indicates

a high agreement between objective and self-report data for height and weight^{11,28} and smoking levels.⁴¹ Research using results from the NHANES III study has noted, however, that females from 12-16 years tend to under-report body mass,⁴² a limitation noted in other Canadian studies on BMI.⁴³ Nevertheless, the present study contributes Canadian data to the converging evidence that the construction of the adolescent's physical self is a major factor in the adoption and maintenance of health-related behaviour.^{2,3,11,15,44}

REFERENCES

- Davis C. Body image, exercise, and eating behaviors. In: Fox KR (Ed.), *The Physical Self: From Motivation to Well-being*. Champaign, IL: Human Kinetics, 1997; 143-74.
- Fox KR. The physical self and processes in self-esteem development. In: Fox KR (Ed.), *The Physical Self: From Motivation to Well-being*. Champaign, IL: Human Kinetics, 1997; 111-40.
- Harter S. *The Construction of the Self: A Developmental Perspective*. New York: Guilford Press, 1999.
- Leary MR, Tchividjian LR, Kraxberger BE. Self-presentation can be hazardous to your health: Impression management and health risk. *Health Psychol* 1994;13:461-70.
- Page A, Fox KR. Adolescent weight management and the physical self. In: Fox KR (Ed.), *The Physical Self: From Motivation to Well-being*. Champaign, IL: Human Kinetics, 1997; 229-58.
- Wiseman C, Turco R, Sunday S, Halmi K. Smoking and body image concerns in adolescent girls. *Int J Eat Disord* 1998;24:429-33.
- Turner S, Hamilton H, Jacobs M, et al. The influence of fashion magazines on the body image satisfaction of college women: An exploratory analysis. *Adolescence* 1997;32:603-14.
- Wiseman C, Gray J, Mosimann J, Aherns A. Cultural expectations of thinness in women: An update. *Int J Eat Disord* 1992;11:85-89.
- French SA, Perry CL, Leon GR, Fulkerson JA. Weight concerns, dieting behavior, and smoking initiation among adolescents: A prospective study. *Am J Public Health* 1994;84:1818-20.
- Friestad C, Klepp KI. Smoking, body image and reducing diet. A three-year follow-up of adolescents aged 15-18 years. *Nord Med* 1997;112:334-38.
- Tomeo CA, Field AE, Berkey CS, et al. Weight concerns, weight control behaviors, and smoking initiation. *Pediatrics* 1999;104:918-24.
- Camp DE, Klesges RC, Relyea G. The relationship between body weight concerns and adolescent smoking. *Health Psychol* 1993;12:24-32.
- Crisp AH, Stavrakaki C, Halek C, et al. Smoking and pursuit of thinness in schoolgirls in London and Ottawa. *Postgrad Med J* 1998;74:473-79.
- Frank RE, Serdula MK, Adame D. Weight loss and bulimic eating behavior: Changing patterns within a population of young adult women. *South Med J* 1991;84:457-60.
- French SA, Jeffery RW. Weight concerns and smoking: A literature review. *Ann Behav Med* 1995;17:234-44.
- Klesges RC, Elliott VE, Robinson LA. Chronic dieting and the belief that smoking controls body weight in a biracial, population-based adolescent sample. *Tobacco Control* 1997;6:89-94.
- French SA, Story M, Downes B, et al. Frequent dieting among adolescents: Psychosocial and health behavior correlates. *Am J Public Health* 1995;85:695-701.
- Fox K, Page A, Armstrong N, Kirby B. Dietary restraint and self-perceptions in early adolescence. *Person Individ Diff* 1994;17:87-96.
- Fox K, Corbin C. The physical self-perception profile: Development and preliminary validation. *J Sport Exerc Psychol* 1989;11:408-30.
- Crocker PRE, Eklund R, Kowalski KC. Children's physical activity and physical self-perceptions. *J Sports Sci* 2000;18:383-94.
- Eklund RC, Whitehead JR, Welk GJ. Validity of the children and youth physical self-perception profile: A confirmatory factor analysis. *Res Q Exerc Sport* 1997;68:240-56.
- Hayes S, Crocker PRE, Kowalski KC. Gender differences in physical self-perceptions, global self-esteem, and physical activity. Evaluation of the physical self-perception profile model. *J Sport Behav* 1999;22:1-14.
- Page A, Ashford B, Biddle SJH, Fox KR. Evidence of cross-cultural validity for the Physical Self-Perception Profile. *Person Individ Diff* 1993;14:585-90.
- Page A, Fox KR. Psychological and physical factors associated with adolescent weight management. *Int J Obes* 1994;18:838.
- Boreham CA, Twisk J, Savage MC, et al. Physical activity, sports participation, and risk factors in adolescents. *Med Sci Sports Exerc* 1997;29:788-93.
- Health Canada. 1994 Youth Smoking Survey: Technical Report, 1996: http://www.hc-sc.gc.ca/lehl/lehd/catalogue/tobacco_publss.htm
- Drygas WK, Salacinska A, Sapinski W. Physical inactivity and other coronary risk factors in young women in Poland: Results of cindi survey. *Can J Cardiol* 1997;13:S333B. (Abstract).
- Childress A, Brewerton T, Hodges E, Jarrell M. The kids' eating disorder survey (KEDS): A study of middle school students. *J Am Acad Child Adolesc Psychiatry* 1993;843-50.
- Marsh HW, Richards GE, Johnson S, et al. Physical Self-Description Questionnaire: Psychometric properties and a multitrait-multimethod analysis of relations to existing instruments. *J Sport Exerc Psychol* 1994;16:270-305.
- Harter S. *Manual for the Self-Perception Profile for Adolescents*. Denver, Colorado: University of Denver, 1988.
- van Strien T, Frijters JER, Bergers GPA, Defares PB. The Dutch Eating Behavior Questionnaire (DEBQ) for assessment of restrained, emotional, and external eating behavior. *Int J Eat Disord* 1986;5:295-315.
- Gritz ER, Crane LA. Use of diet pills and amphetamines to lose weight among smoking and nonsmoking high school seniors. *Health Psychol* 1991;10:330-35.
- Weekley CK, Klesges RC, Reylea G. Smoking as a weight-control strategy and its relationship to smoking status. *Addict Behav* 1992;17:259-71.
- Stevens J. *Applied Multivariate Statistics for the Social Sciences*. Hillsdale, NJ: Lawrence Erlbaum, 1996.
- Whitehead JR. A study of children's physical self-perceptions using an adapted physical self-perception profile questionnaire. *Pediatr Exerc Sci* 1995;7:132-51.
- Stephen T, Craig CL. The Well-being of Canadians: Highlights from the 1988 Campbell Survey. Ottawa: Canadian Fitness and Lifestyle Research Institute, 1990.

37. Davis C, Shapiro CM, Elliott S, Dionne M. Personality and other correlates of dietary restraint: An age by sex comparison. *Person Indiv Diff* 1993;14:297-305.
38. Leary MR, Schreindorfer LS, Haupt AL. The role of low self-esteem in emotional and behavioural problems: Why is low self-esteem dysfunctional? *J Soc Clin Psychol* 1995;14:297-314.
39. Kowalski NP, Crocker PRE, Kowalski KC. Physical self and physical activity relationships in college women: Does social physique anxiety moderate effects? *Res Q Exerc Sport* 2001;72:55-62.
40. Chassin L, Presson CC, Rose JS, Sherman SJ. The natural history of cigarette smoking from adolescence to adulthood: Demographic predictors of continuity and change. *Health Psychol* 1996;15:478-84.
41. Leukper R, Pallonen V, Murray D, Pirie P. Validity of telephone surveys in assessing cigarette smoking in young adults. *Am J Public Health* 1989;79:202-4.
42. Strauss RS. Comparison of measured and self-reported weight and height in a cross-sectional sample of young adolescents. *Int J Obes* 1999;23:904-8.

43. Trembley MS, Willms JD. Secular trends in the body mass of Canadian Children. *CMAJ* 2000;163:1429-35.
44. French S, Story M, Downes B, et al. Frequent dieting among adolescents: Psychosocial and health behavior correlates. *Am J Public Health* 1995;85:695-701.

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COMING EVENTS ACTIVITÉS À VENIR

To be assured of publication in the next issue, announcements should be received by **January 15, 2002** and valid as of **February 28, 2002**. Announcements received after **January 15, 2002** will be inserted as time and space permit.

Pour être publiés dans le prochain numéro, les avis doivent parvenir à la rédaction avant le **15 janvier 2002** et être valables à compter du **28 février 2002**. Les avis reçus après le **15 janvier 2002** seront insérés si le temps et l'espace le permettent.

The Early Years: Building Family Capacity/Building Supportive Communities

Sponsored by Interprofessional Continuing Education, University of British Columbia and BC Association of Infant Development Consultants
31 January-2 February 2002 Vancouver, BC
Contact:

Elaine Liau, Director
Interprofessional Continuing Education, UBC
Tel: 604-822-4965 Fax: 604-822-4835
E-mail: elaine@cehs.ubc.ca

Better Breathing 2002

The Ontario Thoracic Society's Annual Conference on Respiratory Health
1-2 February 2002 Toronto, ON
Contact:

The Ontario Thoracic Society
Tel: 416-864-9911 Fax: 416-864-9916
E-mail: julianaq@on.lung.ca www.on.lung.ca

8th Annual Qualitative Health Research Conference
Sponsored by International Institute for Qualitative Methodology (IIQM) and University of Alberta
4-6 April 2002 Banff, AB
Keynote speakers: Jeanie Kayser-Jones, Margaret Lock
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IIQM
Tel: 780-492-9041 Fax: 780-492-9040
E-mail: qualitative.institute@ualberta.ca
www.ualberta.ca/~iiqm/qhr2002/

6th National Health Promotion Conference
Partnership Research for Health and Social Change
The Community Health Promotion Coalition at the University of Victoria, in collaboration with the Canadian Consortium for Health Promotion Research
7-10 April 2002 Victoria, BC
www.hp2002.uvic.ca

Health Policy, Practice and Research in the 21st Century – Making a Difference

Organized by the Faculty of Health Sciences, Auckland University of Technology
6-9 May 2002 Auckland City, New Zealand
The conference will have 2 themes: 1) the application of health research to health policy, health education/promotion and health practices; 2) highlighting some of the range of research methodologies

used to address health policy, health education and health practice problems.

Contact:
Jim Borrows, Conference Coordinator
E-mail: jim.borrows@aut.ac.nz
http://www.aut.ac.nz/conferences/healthpolicy

ALCOA Forum 2002: A Lifelong Odyssey - Active Living for Older Adults

Saskatchewan Seniors Mechanism
9-12 May 2001 Regina, SK
Contact:

ALCOA office 1-800-549-9799 and/or the website: <http://www.alcoa.ca> or the Saskatchewan Seniors Mechanism
Tel: 306-359-9956

6^e Conférence mondiale sur la Prévention et contrôle des traumatismes / 6th World Conference on Injury Prevention and Control
Traumatismes, suicide et violence : construire un savoir, des politiques et des pratiques pour promouvoir un monde en sécurité / Injuries, Suicide and Violence: Building Knowledge, Policies and Practices to Promote a Safer World
12-15 mai/May 2002 Montréal, QC

Contact / Contact:
Congress Secretariat
Tel: 514-848-1133 or 1-877-213-8368 (Canada & US)
Fax: 514-288-6469
E-mail: trauma@coplanor.qc.ca
www.trauma2002.com

Travel & Epidemics

IIIrd European Conference on Travel Medicine
Sponsored by WHO and CDC Atlanta
15-18 May 2002 Florence, Italy
Contact:

Prof. Walter Pasini
Director, WHO CC for Travel Medicine
Tel. +39-0541-24301 Fax. +39-0541-25748
E-mail: wpasini@rimini.com

The 5th Annual Dietitians of Canada Practice, Research and Networking Event
6-9 June 2002 Saint John, NB
Contact:
Meredith Hunt, DC Central Information

Dietitians of Canada
Tel: 416-596-0857 Fax: 416-596-0603
E-mail: centralinfo@dietitians.ca
After 1/7/2002, visit
http://www.dietitians.ca/resources/pd_events.htm

79th Annual Meeting of the Canadian Paediatric Society

12-16 June 2002 Toronto, ON
Contact:
Canadian Paediatric Society
Tel: 613-526-9397, ext. 229 Fax: 613-526-3332
www.cps.ca

24th Annual Guelph Conference and Training Institute on Sexuality

Healthy Sexuality: Expanding Knowledge, Broadening Perspectives
17-19 June 2002 Guelph, ON
Contact:

Office of Open Learning, University of Guelph
Tel: 519-767-5000, Fax: 519-767-1114
E-mail: info@open.uoguelph.ca
www.open.uoguelph.ca/sexconf

93rd Annual Conference of the Canadian Public Health Association/ 93^e conférence annuelle de l'Association canadienne de santé publique

Our Environment, Our Health/ Notre environnement, notre santé
Co-sponsored by the Northwest Territories/Nunavut Branch, CPHA/ Co-parrainée par la Division des Territoires du Nord-Ouest et du Nunavut, ACSP
7-10 July/ juillet 2002 Yellowknife, NWT/ TN-ON
Contact/ Contacter :

CPHA Conference Department
Département des conférences de l'ACSP
Tel/ Tél : 613-725-3769, ext. 126
Fax/ Téléc : 613-725-9826
E-mail/ Courriel : conferences@cpha.ca
www.cpha.ca

3rd World Congress & Exposition Child Health 2003

12-16 May 2003 Vancouver, BC
Contact:
Venue West Conference Services Ltd.
Tel: 604-681-5226 Fax: 604-681-2503
E-mail: congress@venuewest.com