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Child and Adolescent Physical Activity in Alaska

Obesity in children is at epidemic proportions in the United States. According to the National Health and Nutrition Examination Survey (NHANES), the prevalence of obesity among children ages 6-19 years has risen from 4% to 15% over the past 30 years.[1,2] Obesity in childhood is associated with later heart disease, diabetes, hypertension, arthritis, and poor mental health. Furthermore, as rates of overweight and obesity increase, the prevalence of type 2 diabetes among children and adolescents has become increasingly prevalent.[3] Two broad interventions exist to combat obesity: change in diet and physical activity. In addition to its effects on obesity, physical activity is also associated independently with decreased risk of cardiovascular disease, improved mental health, and improved muscle function and physical performance.

Seriousness

Healthy People 2010 Targets and National Data

Indicator	Alaska 2003†	Nation 2003^	Healthy People 2010 Goal*
Proportion of adolescents who engage in moderate physical activity for at least 30 minutes on ≥ 5 of the previous 7 days	28.2%	24.7%	35%
Proportion of adolescents who engage in vigorous physical activity that promotes cardio-respiratory fitness ≥ 3 days/week for ≥ 20 minutes/occasion	67.8%	62.6%	85%
Proportion of adolescents who participate in daily school physical education	18.2%	28.4%	50%

- The proportion of Alaskan adolescents that engaged in moderate or vigorous physical activity for the recommended minutes/days per week was slightly higher compared to youth nationally; but significantly lower than the Healthy People 2010 (HP2010) goals.

- The proportion of Alaskan adolescents that participate in daily school-based physical education is lower than that of their peers nationally and less than half of the HP2010 goal for this measure.

Severity

Lack of exercise among school children contributes substantially to childhood obesity.[4] From 1998-2003, 18% of all Anchorage School District students were at risk for becoming overweight and 18% were overweight.[5] This outcome occurs early: of children entering kindergarten and 1st grade, 14% were overweight and 18% were at-risk for overweight. Furthermore, physically inactive children are more likely to become physically inactive adults. Currently, 30% of the Alaska adult population report that they engage in regular, moderate activity while 18% engage in regular, vigorous activity.

Urgency

- Among Anchorage School District children, the mean body mass index does not appear to have increased from the 1998-1999 to the 2002-2003 school year. Although rates of overweight appear stable during this time period, approximately 1 in 6 were at risk of becoming overweight and 1 in 6 were overweight.[5]

- Data from the Alaska Behavioral Risk Factor Surveillance System (BRFSS) found substantial increases in adult overweight or obesity prevalence from 1991-2002 – an increase of 27%, from 49% to 62%, respectively.[5]

- More than 1 in 4 (27.9%) Alaskan high school students in grades 9-12 do not participate in a sufficient amount of physical activity.[†]

- Among Alaskan high school students, more than one-fourth reported watching 3 or more hours of television per day.[†]

Disparities

In general, race, education, income, and disability status are associated with physical activity. Persons with lower levels of education and income and those with disabilities are more likely to be less active in their leisure time.

- In Alaska, the 2000 BRFSS found that Alaska Natives and Asian/Pacific Islanders are less likely to report adequate physical activity than other groups. This is reflected in an increased risk of obesity among non-white children in the Anchorage school district, a disparity that is most pronounced among females.[6]

- Among Alaskan high school students, females were significantly more likely to participate in an insufficient amount of physical activity than males (34.8% and 21.4%, respectively).[†]

- Among Alaskan high school students, males were significantly more likely to be enrolled in physical

education and do strength training exercises than females.[†]

Economic Loss
Economic loss was not evaluated.

Interventions & Recommendations
The US Centers for Disease Control and Prevention and the American Academy of Pediatrics have called for schools to be leaders in the effort to control childhood obesity by establishing policies to incorporate comprehensive daily physical education and comprehensive health education for children in grades kindergarten through 12.[6,7] In Alaska, by contrast, a single year of high school physical activity is required for graduation and there are no requirements for physical activity in earlier grades.

Additional interventions include making exercise easier outside of school, particularly for disadvantaged children, by increasing the number of miles of walkways and bikeways and supporting community recreation centers and sites such as baseball and soccer fields and ski trails. The miles of walkways and bikeways is a developmental Healthy Alaskans 2010 measure. Recently, the State of Alaska has spent more funds per capita on bicycle and pedestrian facilities than any other state.

Other activities include development of a physical activity promotion resource kit by Take Heart Alaska, development of public service announcements, and development of a statewide physical activity coalition.

Intervention Effectiveness
The links among physical activity, fitness and health are well established scientifically and medically. However, studies assessing the effectiveness of interventions that promote physical activity are not well documented.

Capacity
Propriety
The Division of Public Health will play an important role in providing data on physical activity and the consequences of lack of physical activity through programs such as BRFSS and the Youth Risk Behavior Survey as well as special surveys like the recently completed evaluation of obesity among Anchorage School District children. The Section of Epidemiology, rather than Women's, Children's, and Family Health (WCFH) currently houses BRFSS and YRBS and its chronic disease unit has taken the lead in addressing obesity. If these roles change, WCFH would assume more responsibility for this topic.

Economic Feasibility
Provision of data to monitor trends in physical activity and obesity is well within the reach of the Division of Public Health as it only requires continued support of BRFSS, YRBS, and periodic additional evaluations. The economic feasibility of the broader role of the State in supporting physical activity through funding bike and pedestrian facilities as well as recreation sites will depend on a host of factors beyond the control of Public Health.

Acceptability
Increased physical activity is a well-accepted goal; however, debate exists over how to achieve this. Some resistance to required school physical education programs exists because this will either lengthen the school day or take time away from academic classes. Others question government's role in funding development of trails and walkways as evidenced by the recent debate over funding of baseball fields and the extension of the coastal trail in Anchorage.

Resources
Take Heart Alaska; Alaskans Promoting Physical Activity; Youth Risk Behavior Survey.

Legality
Not an issue.

References
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3 Rosenbloom AL, Joe JR, Young RS, Winter WE. Emerging Epidemic of Type 2 Diabetes in Youth. Diabetes Care; 22(2):345-354. 1999.
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6 Centers for Disease Control and Prevention. Guidelines for School and Community Programs to Promote Lifelong Physical Activity among Young People. MMWR;46(RR-6):1-36. 1997
7 American Academy of Pediatrics, Committee on Sports Medicine and Fitness and Committee on School Health: Physical Fitness and Activity in Schools. Pediatrics;105:1156-1157. May 2000.

Data Sources
[†] Alaska Youth Risk Behavior Survey (YRBS), 2003 Data in: Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance Summaries – United States, 2003.MMWR; 53(SS-2). May 2004.

[^] Youth Risk Behavior Survey (YRBS), 2003 Data in: Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance Summaries – United States, 2003.MMWR; 53(SS-2). May 2004.

[*] Healthy People 2010. U.S. Department of Health and Human Services. Healthy People 2010. 2nd ed. With understanding and improving health and objectives for improving health. 2 Vols. Washington, DC: U.S. Government Printing Office. 2000.

Notes
Moderate physical activity is defined as at least 30 minutes of physical activity for ≥5 days per week. These types of activities include fast walking, slow bicycling, skating, pushing a lawn mower, or similar activity that does not make you breathe hard or sweat.

Vigorous physical activity is defined as physical activity that promotes cardio-respiratory fitness ≥3 days per week for ≥20 minutes per session. These types of activities include basketball, soccer, running, swimming laps, fast bicycling, fast dancing, or similar aerobic activity that makes you breathe hard and sweat.

Using age and sex specific reference data from the 2000 CDC BMI-for-age growth charts, children and youth can be categorized as acceptable, underweight, at risk of overweight, or overweight. At age- and sex-specific BMI values below the 5th percentile, children may be underweight. From the 5th up to the 85th percentile, they may have an acceptable weight. From the 85th to 95th percentile, they are at risk of being overweight. At the 95th percentile and above, children and adolescents are classified as overweight.