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The Research File

Information for professionals from the Canadian Fitness and Lifestyle Research Institute

Tracking Activity into Adulthood

Current thinking in public health is that childhood and adolescent physical activity and fitness influence health status during that stage of life and may even have an impact on adult physical activity and health.

Numerous studies have been done over the years to examine these potential associations. Robert Malina, in survey articles in the *American Journal of Human Biology* and *Research Quarterly for Exercise and Sport*, critically evaluated these studies and their attendant associations. The ones tracking physical activity and fitness from childhood into adulthood are of particular interest.

Looking for Patterns

Tracking, notes Malina, refers to the maintenance of relative rank or position within a group over time. To capture this, longitudinal observations of the same individual on at least two points in time are required. *Correlations* between the measurements are most often used to estimate tracking. Correlations of less than 0.30 are deemed low; those ranging from 0.30 to 0.60, moderate; and those above 0.60, high. Other approaches to tracking use various *percentiles* or *risk analysis*.

Physical Activity

Generally, as the time between observations increases, interage correlations decline. Results of the studies examined confirmed this, showing considerable variations as well. Here are some highlights.

- ***Childhood and adolescence***. A summary of European studies with adolescents—in Finland, Belgium, and Holland—shows interesting results. While the methods used to document activity levels varied, the correlations for estimates of physical activity over three-year periods were close in the three studies—ranging from 0.33 to 0.44, with one exception, 0.58 in Dutch girls.

  For longer periods, the correlation in Belgian boys from age 13 to 18 was 0.37. It was lower in Finnish youth (over six years)—0.17 for girls and 0.18 for boys. Viewed in terms of the probability of remaining active over the six-year period, 41% of Finnish boys and 29% of girls active at age 12 were still active at 18.

- ***Adolescence to adulthood***. One Swedish study showed youth with more experiences of sport and physical activity at age 15 had a higher psychological readiness for activity at age 30 and tended to be more active then, too.

  In a study of Belgian males followed from age 18 to their mid-30s, 73% of those active at 18 were active at 30. Going out to age 35, 59% were still active. In Finnish youth, the probability of remaining active over six years from age 18 to 24 was 54% for men and 57% for women.

  An interesting study in the United Kingdom included longitudinal contacts with subjects in infancy and during childhood, adolescence, and adulthood. Subjects rated with above-average sport ability at age 13 and with high energy levels at age 15 had a greater likelihood of being active at age 36.

  A study in the U.S. showed that preteen participation in team sports and teen skill level in physical activity were positively related to adult activity, albeit at low levels. The trends suggested that being forced to exercise during the preteen and teen years was inversely related to adult activity levels.

Physical Fitness

In one study of U.S. males, those physically active at ages 23–25 had better motor fitness scores as children and adolescents than their inactive peers. In a Swedish study, aerobic potential (as measured by VO_2max and percentage of type I muscle fibres) at age 16 alone accounted for 31 and 24% of the variation in leisure-time physical activity for 27-year-old women and men respectively.

Malina reports that, generally, measurements of performance- and health-related physical fitness (strength, flexibility, motor fitness, aerobic power) track significantly across childhood and adolescence, with correlations being low to moderate. Overall, measures of physical fitness track better than measures of physical activity.

Limited data spanning adolescence into adulthood indicate somewhat higher interage correlations for flexibility, for static strength, and for power.

More Info …

Malina, R.M. (2001). Physical activity and fitness: pathways from childhood to adulthood. *American Journal of Human Biology*, 13, 162–172.

Malina, R.M. (1996). Tracking of physical activity and physical fitness across the lifespan. *Research Quarterly for Exercise and Sport*, 67 (3), S48–S57.

Positive Programs Pay Off

Physical activity for children and youth should provide a firm foundation for continued participation in the adult years. To help do this, programs should:

- develop adequate motor skills *and* abilities in a wide range of activities,
- ensure good levels of performance-related fitness are attained,
- provide enjoyable, non-threatening activities, including lots of team sports,
- allow choice so participants do not feel that they are being forced to exercise or to pursue activities they do not like.

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