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Unstructured Time in Middle School

A Position Paper of the Middle and Secondary School Physical Education Council

(MASSPEC)

American Alliance for Health, Physical Education, Recreation and Dance (AAHPERD)

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Introduction

The purpose of this paper is to state the position of the Middle and Secondary School Physical Education Council of the American Alliance for Health, Physical Education, Recreation and Dance on the use and importance of unstructured time in the middle school.

Position

The Middle and Secondary School Physical Education Council (MASSPEC) of the American Alliance for Health, Physical Education, Recreation and Dance takes the position that unstructured time or recess is an essential component of education and that middle school children must have the opportunity to engage in regular, daily, unstructured periods of physical activity and play with their peers.

Unstructured Time/Recess

Unstructured school time, also referred to as recess, is defined as a break during the day allocated to allow children the time for physically active free play. There is usually a wide range of time devoted to unstructured time in middle schools. Unstructured time usually takes place outdoors in designated areas, yet, students may engage in unstructured time in the gymnasium or classroom during inclement weather.

Rationale

In a time when the United States' Surgeon General is calling for people to be more physically active and citing schools as a primary place to address this need, increased school accountability for some academic pursuits is pushing the time that could be dedicated to unstructured time aside. Thus, the time that children could use to learn to develop healthy relationships and engage in unstructured physical activity and free play is quickly becoming an antiquated aspect of the schooling experience. Children are more and more often tethered to their desks throughout the school day quietly learning to compute numbers and read words without developing the social and physical skills that will enable them to pursue physically and socially healthy endeavors and a wellness lifestyle as they pass through adolescence into adulthood. Furthermore, these same children go home to homework and structured after school activities that tend to absorb the remainder of their day. Yale University professor, Kelly Brownell, sums up the situation, "Going outside to play is a thing of the past," (In Preston, (2002), 6d].

We must bear in mind that unstructured time, or recess, is not merely a neat idea or an afterthought, but an adolescent right. Indeed, "Recess is the right of every child. Article 31 of the United Nations Convention on Children's Rights states that every child has the right to leisure time. Taking away recess, whether as a disciplinary measure or abolishing it in the name of work, infringes on that right." [Skrupskelis, in Clements (2000), 126]. Simply put, if we do not offer children the opportunity to obtain the life skills that are gained through unstructured time in the middle school, we are robbing them of the opportunity to learn the life skills and perspectives that will allow them to lead happy and healthy lives as they enter and experience adulthood.

The early adolescent is beginning to develop increasing competence that enables participation in a variety of activities. It is a time where the unstructured time allows for self-discovery, leadership, creativity, and new personal challenges. It allows the early adolescent to practice life skills such as conflict resolution, cooperation, respect for rules, taking turns, sharing, using appropriate language to communicate and problem solve in situations that are relevant to the middle school student. Furthermore, the United States Surgeon's General Reports (1999; 2001) indicate that adolescents and young adults ages 12-21 are not vigorously active on a regular basis. Perhaps then, the most significant aspect of unstructured time is that it can afford children with the opportunity to naturally pursue physical activity in a setting that will develop a foundation to support those behaviors as the early adolescents grow older.

Related Research

Researchers interested in the trend of modern adolescents to avoid participating in vigorous or even moderate physical activity have begun to research the biological and physiological results of a lack of physical activity on growing adolescents. The findings are not only alarming, but should be a wake-up call to politicians, parents, and other members of the community that we all should take a concerted interest in the development of opportunities for our children to learn how and to pursue physical activity throughout their lifetime. The opportunities that come with regular, daily unstructured time in the middle school are too dramatic to overlook. This time must be advocated for, and protected by, everyone in the community as we all have a stake in the growth and development of future adult population.

It is now well established that an inverse relationship exists between physical activity and risk for developing a number of chronic disease, including obesity, coronary heart disease (CHD), diabetes mellitus, certain types of cancer including colon cancer, osteoporosis, arthritis, lung disease, and even some chronic mental illnesses (Lean, et al., 1987; Helmrich, et al., 1991; Lee, et al., 1991; Cummings, et al., 1985; Taylor, et al., 1985, King et al., 1989). A number of unfavorable biochemical and physiological aberrations following physical inactivity probably explain these observations. However, recent studies also indicate that changes in physical activity, and especially changes that bring increases in physical fitness, can reverse these effects (Erikssen, 2001).

Even thought he clinical symptoms of many of these chronic diseases do not become apparent until much later in life, it is known that the origin of many chronic diseases lies in early childhood. Therefore, prevention strategies should be aimed at target populations of children at an early age, including strategies such as improvement in physical fitness.

The link among many of these chronic diseases is obesity. Lack of physical activity is hypothesized to be an important contributing factor in the development and/or maintenance of childhood obesity. The prevalence of obesity among United States children and adolescents is increasing at an alarming rate (Trost, et al., 2001). In the ten years between the second (1976-1980) and third (1988-1991) administration of the National Health and Nutrition Examination Survey (NHANES), the prevalence of obesity among children (6-11 years) and adolescents (12-17 years) (based on age- and gender-specific 95^{th} percentile body mass index (BMI) cut off points) increased from 6 to 10.7% respectively (Toriano & Flegal, 1998). This rising trend represents a critical public health

problem. Although for most children, complications of childhood obesity do not become apparent for decades, the metabolic consequences may be already evident in young children (Must & Strauss, 1999). Even a young child, if severely obese, can suffer serious morbidity including gallstones, hepatitis, sleep apnea, and increased intracranial pressure. There are few organ systems that childhood obesity does not affect.

In a review of the risks and consequences of childhood and adolescent obesity, Must and Strauss (1999) organized these sequelae into immediate, intermediate, and long term. Immediate consequences include orthopedic, neurological, pulmonary, gastroenterological, and endocrine risks that although largely limited to severely overweight children, are becoming more common as the prevalence of severe overweight rises. Intermediate consequences include the development of cardiovascular risk factors and the persistence of obesity into adulthood. The long-term consequences are those factors that increase morbidity and early mortality in adulthood. The following is a brief review of some of the more common sequelae as they are described in the literature today.

Orthopedic.

The presence of unfused growth plates and softer cartilaginous bones of children, contributes to the occurrence of orthopedic abnormalities in obese children (Must & Strauss, 1999). Permanent damage to the femoral head may occur when dislocation occurs at the femoral growth plate. The incidence of slipped unilateral capital epiphyses is approximately 3.4 per 100,000 children (Kelsey, 1971), with 50-70% occurring in obese children. Furthermore, this occurs in significantly younger ages among obese children than among non-obese children (Loder et al., 1993).

Another orthopedic outcome of childhood obesity is Blount's disease which involves bowing of the legs and tibial portion in response to unequal or early excess weight bearing. It is often progressive and recurrent requiring multiple surgeries to repair. In a study of Blunt's disease by Dietz and colleagues (1982), 80% of children affected were obese.

Neurologic.

Idiopathic increased intracranial hypertension has been associated with obesity. It is postulated that increased intra-abdominal pressure causes increased pleural pressure and cardiac filling pressure which, in turn, results in increased resistance to venous return from the brain (Sugerman et al., 1997). It produces symptoms such as headaches, vomiting, and visual disturbances. Also known as pseudo tumor cerebri, it most often occurs in females in their third decade. However, several studies have identified an association with obesity and children (Corbett et al., 1982; Scott et al., 1997). Epidemiological studies indicate a 14-fold increase in the presence of pseudo tumor cerebri in patients with weights > 10% above ideal, and a 20 fold increase in prevalence in people with weights 20% greater than ideal (Duncan et al., 1988).

Pulmonary.

Pulmonary consequences of childhood obesity may include asthma, sleep-associated breathing disorders, and Pickwickian syndrome. Although the studies on the association of asthma and obesity have had mixed results, it is postulated that increased bronchial hyperactivity may contribute to both higher rates of reactive airway disease and decreased exercise tolerance in obese children (Must & Strauss, 1999).

A number of studies have shown a relationship between childhood obesity, abnormal sleep patterns, and sleep apnea. Silvestri and colleagues (1993) reported a 94% incidence of abnormal sleep patterns in obese children. Children whose weight was greater than 200% above ideal, had severely abnormal sleep patterns; oxygen saturation was 90% for approximately half of the total sleep time, and 40% of the severely obese children demonstrated central hypoventilation. The impact of these findings is just beginning to surface. In preliminary data , concerns have been raised about possible neurocognitive problems including decrements in learning and memory function as a result of severe sleep apnea (Rhodes et al., 1995). Pickwickian syndrome refers to severe obesity associated with hypoventilation, somnolence, polycythemia, and right ventricular hypertrophy with heart failure (Must & Strauss, 1999). The prevalence of this syndrome is unknown; however, the obesity-hypoventilation syndrome is associated with pulmonary embolism and sudden death in children (Riley et al., 1976).

Gastroenterolocial.

Obesity accounts for 8-33% of gallstones observed in children (Friesen et al., 1989; Halcomb et al., 1980). And accounts for the majority of gallstones in children without underlying medical conditions. In addition, between 20-25% of obese children demonstrate radiographic evidence of steatohepatitis, with 40-50% of severely obese children demonstrating laboratory evidence of this liver disorder which can result in permanent liver fibrosis and cirrhosis (Kinugasa et al., 1984; Tominaga et al., 1995; Tazawa, et al., 1997; Baldridge et al., 1995).

Endocrine.

Childhood obesity is associated with several endocrine disorders including insulin resistance, hyperandrogenemia, menstrual abnormalities, and polycystic ovary syndrome. Insulin resistance is associated with higher levels of total cholesterol, low density lipoprotein (LDL) cholesterol, and triglycerides in obese children (Steinberger et al., 1995), placing these children at increased risk for the development of cardiovascular disease. The development of severe insulin resistance is also associated with the increased prevalence of non-insulin dependent diabetes mellitus (NIDDM) in obese children (Must & Strauss, 1999).

Menstrual abnormalities in obese children are also common and may include earlier onset of menarche or late or absent menarche. In addition, hormonal patterns typical of polycystic ovary syndrome have been found in obese children.

Psychosocial.

In addition to the physical impact of obesity, a number of social and economic consequences of childhood obesity have been described in the literature. These include social isolation, low self-esteem, disturbances in body image, eating disorders, and possible lower social, educational, and economic mobility.

Cardiovascular Disease.

Two major risk factors associated with adult cardiovascular disease are high blood pressure (hypertension) and hyperlipidemia. Numerous studies have been conducted evaluating hypertension in obese children. Data from the Muscatine study which looked at childhood risk factors for adult hypertension found that obese boys and obese girls (BMI >90th percentile) are 9-10 fold more likely to develop hypertension as

young adults than non-obese children (Lauer et al., 1984). In similar data from the Bogalusa Heart Study, overweight adolescents (BMI >75th percentile) were 8.5-fold more likely to have hypertension as adults than lean adolescents (Srinivasan et al., 1996). In addition, adolescent obesity, particularly in males is associated with deleterious effects upon total cholesterol and LDL-cholesterol in adulthood (Lauer et al., 1988) resulting in hyperlipidemia.

Adult obesity.

The persistence of obesity present in childhood or adolescents into adulthood represents another significant consequence of early obesity, inasmuch as adult obesity is an established independent risk factor for cardiovascular disease, non-insulin dependent diabetes, hyperlipidemia, gallbladder disease, osteoarthritis, and certain cancers (Burton, 1985). The likelihood of persistence appears to be related to severity of obesity and to the age during childhood at which it is present (Must & Strauss, 1999).

Long-term consequences.

There is a paucity of data available in the literature that evaluates the long-term impact of childhood obesity on adult morbidity and mortality. What data there is seem to indicate that the risk of morbidity is elevated in relation to overweight in childhood, although the results are far from conclusive (Must & Strauss, 1999). Morbid consequences of adolescent overweight include hypertensive vascular disease, cardiovascular disease, atherosclerosis, renal disease, arthritis, and colon cancer. As far as mortality, despite varying definitions of obesity and childhood age, six major studies show that all-cause mortality and CHD mortality are significantly elevated in relation to overweight childhood. Relative risk estimates of about 1.5 for all cause mortality and 2.0

for CHD mortality, coupled with an increasing prevalence of obesity in pediatric populations, suggest that premature mortality from these causes can be expected in the future. (Must & Strauss, 1999).

Action Statement / Set of Recommendations

In order to address the problems that are highlighted by this position paper, several recommendations have been in light of many recent discussions among professionals and interested parties that care about the growth and development of our children. Furthermore, although the Institute of Medicine (Ciotola, 2002) indicates that people need an hour of physical activity every day to stay healthy – twice the previous amount needed, and that studies are burgeoning which states that adolescents participating in moderate to vigorous physical activity can benefit by significantly lowering body fat, blood pressure, and other positive factors (http://web.lexis-nexis.com/universe/document?_m=55c5923477d2589b7bf6f6e79830; 2002) the societal trend is not moving in this direction. Indeed, our schools and communities are supporting inactivity and lack of attention to personal physical and health development.

Other findings from research reveal such things as that by the age of 16 or 17 that a significant number of females got no physical activity (http://content.health.msn.com/printing/article/3606.2181; 2002.). Adolescents are less active at home and schools and school administrators appear helpless to address the problem. For example, one curriculum developer for one Florida school district states, "I believe students need more PE. If I had my way, we'd have daily PE for every class from K-12. *But that's not going to happen.* [italics added]." (Seattletimes.com, 2002). The list of obstacles that prevent the addition of unstructured time to the school curriculum are

topped by schools existing in an era of standardized tests where schools are expected to boost academics leaving physical education, art, music, and, certainly, unstructured time to fight for the little to no time remaining. Therefore, the following recommendations are made to address these concerns.

Recommendations

- Middle Schools should develop schedules that provide daily supervised and significant unstructured time for all students to be physically active.
- Unstructured time in the middle school should be designed to encourage children to engage in one hour or more of moderate to vigorous activity each day.
- Middle schools should provide the facilities, equipment and supervision necessary to ensure that the unstructured time is productive, safe, and enjoyable. Developmentally appropriate equipment should be made available and should be checked regularly for safety reasons
- Unstructured activity time will not be viewed as a reward by teachers, but rather one of the necessary components of the school curriculum
- Teachers should not restrict student access to unstructured time as a means of punishment or to make up academic work. Thus, unstructured time should never be denied to a child in the middle school when it is offered.
- Unstructured time should never replace physical education. The goals of physical education are structured and differ from the opportunities afforded by the allocated unstructured time. They are not mutually exclusive and should not be treated as if they are.

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