

# ACHPER National Position Statement

## The Relationship Between Fitness and Health and Physical Education

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This ACHPER Position Statement on the relationship between fitness and the Health and Physical Education learning area is based on ACHPER's philosophy of learning and teaching in HPE, research related to fitness and fitness testing and current curriculum.

### **ACHPER's Philosophy**

ACHPER believes in the value of active and healthy living and embraces a holistic view of the health of children, including physical, social and mental health development.

ACHPER believes that the purposes of health and physical education are **to develop physically educated individuals who have the knowledge, skills, and confidence to enjoy a lifetime of healthful physical activity and to guide students in the process of becoming physically active for a lifetime.**

ACHPER believes teaching in Health and Physical Education should recognise that enjoyment of physical activity is a major influence on whether a person chooses to be active and, therefore, create a positive environment in which all students can be successful.

### **The Nature of "Fitness"**

Some definitions are helpful in order to present ACHPER's position in these matters. Whilst research defines multiple types of fitness, this position statement confines itself to physical fitness, including Health-Related fitness and Skill-related fitness as defined in the Australian Curriculum – Health and Physical Education, 2014 (AC-HPE). The definitions in this curriculum document are consistent with considerable research.

*"Physical fitness - Physical fitness is considered a measure of the body's ability to function efficiently, effectively and without injury in work and leisure activities, to pursue recreational activities and to cope with emergency situations. It is commonly conceptualised as being made up of health-related components (such as cardiovascular fitness, flexibility, muscular endurance, and strength) and skill-related components (such as agility, balance, coordination, reactions, rhythm, power and speed)."*

Thus, physical fitness relates to attributes that people have or achieve relating to their ability to perform physical activity.

### **Factors Influencing Fitness Status and Improvement**

Fitness components that have been shown to relate directly to health are cardio-respiratory fitness, flexibility, muscular strength and endurance and body composition. While aspects of health-related fitness may or may not be improved, all aspects of skill-related fitness can be improved through regular practice. Research shows that people with good health-related fitness are more likely to be physically active for a lifetime, while those with good skill-related fitness are more likely to be active in sports and games for a lifetime.

For most (but not all) individuals, changes in the frequency, intensity, duration or type of physical activity will produce changes in fitness. The *potential* for levels of both health and skill-related fitness is based on maturation, hereditary predisposition, environment (e.g. where physical activity can take place, weather, air pollution) and lifestyle (e.g. nutrition intake, parental physical activity, sibling physical activity, parental work requirements, socio-economic status).

### *Maturation*

There is considerable discrepancy between chronological and skeletal age. Skeletal age varies up to three years on each side of chronological age and age differences of as little as 3 months impact fitness performance scores.

Pre-adolescent children have no muscle fiber differentiation and there are no major male-female differences in physical performance until adolescence. From about 3 years of age until puberty for boys, and until about 15 years of age for girls, children's muscular strength and endurance increases linearly and are closely related to changes in body size and movement skills. After puberty for boys, muscular strength dramatically accelerates until age 17 or beyond. For girls, after age 15, they show a noticeable plateauing and regression in late adolescence and beyond.

Cardiorespiratory endurance increases from childhood through adolescence in boys, but plateaus at about age 13-14 in girls. At a point during adolescence (as early as age 11), cardiorespiratory endurance declines due to: body weight increasing faster than cardiorespiratory endurance, changes in body composition, and reduced levels of physical activity.

80% of perceived movement competencies are established by age 8. Once children reach adolescence, muscle fiber differentiation occurs, training effects can occur and rapid growth slows skill development.

### *Hereditary Predisposition*

Between 25% and 40% of differences in individuals on health-related fitness components are attributable to genetics. Even more importantly, differences in the response to regular, structured physical activity (exercise) are 3 to 10 fold between low and high responders. In addition, there are non-responders represented in the population.

### *Environment and Lifestyle Factors*

The AC-HPE addresses these factors, saying, "This (strengths-based) approach affirms that all students and their communities have particular strengths and resources that can be nurtured to improve their own and others' health, wellbeing, movement competence and participation in physical activity. The curriculum recognises that students have varying levels of access to personal and community resources depending on a variety of contextual factors that will impact on their decisions and behaviours."

### **Concerns with Teaching "Fitness" in HPE**

One concern with respect to the relationship between teaching "fitness" and HPE is that fitness is a *product* that some children/adolescents will never achieve, no matter how hard they "try". This is due both to genetics and to the fact that some people are non-responders to fitness activities.

Not only is the relationship poor between fitness and physical activity in school children, government guidelines are not set in terms of fitness, but in terms of physical activity time, frequency and intensity. The beauty of such guidelines is that physical activity is something that all children can achieve. Importantly, in pursuit of fitness, children may lose sight of the other social and mental health benefits of physical activity; or teachers may lose sight of the aspects of HPE that can be improved with quality

instruction and practice – movement skills and the motivation to be active.

The AC-HPE states,

“Integral to Health and Physical Education is the acquisition of movement skills, concepts and strategies to enable students to confidently, competently and creatively participate in a range of physical activities. As a foundation for lifelong physical activity participation and enhanced performance, students develop proficiency in movement skills, physical activities and movement concepts and acquire an understanding of the science behind how the body moves. In doing so, they develop an appreciation of the significance of physical activity, outdoor recreation and sport both in Australian society and globally. Movement is a powerful medium for learning, through which students can acquire, practise and refine personal, behavioural, social and cognitive skills.”

Health-related fitness components such as cardiovascular endurance, muscular strength and endurance and flexibility, are not fitness areas that can be improved in HPE classes. It takes about 10-12 weeks of using training principles (FIT) to achieve a fitness training effect. It is doubtful that schools will, by themselves, be able to provide students with the amounts or types of physical activity required to actually develop a fitness training effect.

Physical activity done at a level to improve the defined components of health-related fitness is still very useful. Metabolic fitness is a positive state of the physiological systems associated with reduced risk for chronic diseases, such as diabetes and heart disease. Metabolic fitness is evidenced by healthy blood fat (lipid) profiles, healthy blood pressure, healthy blood sugar and insulin levels (all of which are “non-performance” measures). Research shows that 30 min/day of accumulated physical activity has a beneficial health effect on metabolic fitness.

### **Concerns with Fitness Testing and Fitness Goal-Setting**

The use of criterion-based standards (standards is to detect whether the individual is able to meet a predetermined standard of performance) has become a part of some fitness testing. Whilst these standards for health-related fitness intend to represent the minimal level thought to provide protection against the health problems related to a sedentary lifestyle, they are both inequitable and non-inclusive in an educational setting. Individual differences in maturation, genetic predispositions, environment and lifestyle factors, and the knowledge that research has shown some individuals to be non-responders to fitness training are significant in enabling or preventing achievement of such standards.

These understandings preclude the notion of there being any equity or inclusiveness in fitness testing, whether it be self-testing or otherwise. Asking children to compare themselves against a standard (criterion based or normative) or asking them to set goals for improvement are fraught with potential for total failure. In addition, genetically gifted children may learn the wrong thing, that is, if you meet the standard, you are healthy and don't need to be active.

Sometimes fitness testing is done in the belief that it will help motivate “unfit” children to be more active. In actuality, research shows that children who receive negative feedback from fitness testing are *less* motivated to be active. Thus, those who are most unfit are motivated the least by fitness testing. There will always be children and youth who seek to be 'fit' for their chosen participation in elected sports and recreational pursuits.

Children who look lean are not necessarily active. Genetics play a strong role in percent body fat and influence health related fitness by up to 50%. It is not possible to tell if a person is healthy just by looking at them – health is multidimensional, so mental, emotional and social health are important as well as the physical dimension. Activity can and should be done for both enjoyment and health reasons.

There is no acceptable premise, physiological or psychological, for insisting that all children run the same distance regardless of ability or body type. All children should not have to do the same workload. We would not expect pre-schoolers to be capable of the same workloads of 5th graders. Overweight children require a higher oxygen uptake capacity to perform a given task than normally weighted children. This greatly affects the child's aerobic power because he/she must perform at a higher percentage of their maximal oxygen uptake (which is already lower than lean children). This gives overweight children less reserve capacity and causes them to perceive higher exertion when performing a task.

Workloads in health-related fitness activities conducted in HPE should be based on time rather than distance or number of repetitions. For obese children, research shows that lifestyle activities are actually more effective than higher intensity exercise in keeping them active and controlling body fat. It is important not to structure activities so that overweight children might be embarrassed because they are the last people we want to be turned off to physical activity.

### **Alternatives to Fitness Training and Testing**

#### *HPE Curriculum*

The Rationale of the AC-HPE states,

“Healthy, active living benefits individuals and society in many ways. This includes promoting physical fitness, healthy body weight, psychological wellbeing, cognitive capabilities and learning. A healthy, active population improves productivity and personal satisfaction, promotes pro-social behaviour and reduces the occurrence of chronic disease. Health and Physical Education teaches students how to enhance their health, safety and wellbeing and contribute to building healthy, safe and active communities.”

AC-HPE curriculum addresses fitness primarily through the “Understanding movement” focus area of the Physical Education strand. This begins in Years 3-4 and provides opportunities to teach movement concepts and skills to enable physical activity participation and effect health-related fitness as part of a healthy lifestyle to the extent to which it is genetically possible.

The curriculum also provides opportunities for children to learn:

- the principles of developing and maintaining fitness
- what types of activities develop what types of fitness
- an awareness and understanding of the importance of fitness to health
- how to avoid harmful fitness activity practices

#### *HPE Pedagogy*

Fitness activities do not have to be push-ups, sit-ups and running laps of the oval. Inclusion of fitness in the HPE program can be done through enjoyable, active games or use of music or other strategies to motivate movement during health-related fitness activities.

To help to ensure equity and inclusion, teachers can:

- Personalise fitness activities. Students who can't perform exercises are not likely to develop a positive attitude towards physical activity. Allow children to personalise their workloads by using time as the variable. Ask children to do the best they can within a time limit.
- Provide children with the opportunities to participate in a variety of fitness activities. This not only decreases monotony but allows children to discern their strengths.
- Give positive feedback - immediate, accurate and specific - to encourage effort, even if students can't perform the fitness activity well.
- Care about children's attitudes. Don't force fitness on children. Training does not result in lifetime fitness. Students must enjoy the activity. Give them some options rather than funnel all children into the same activities.
- Start easy and progress slowly. It's a journey, not a destination. Make fitness a challenge that participants feel they can accomplish. Research shows that a focus on high intensity activity can discourage some children and burn them out. Use low intensity activity to start with.

### **A Role for Parents and Carers with Respect to the Physical Fitness of Children**

Parents and carers can influence children to be active, in particular by being active themselves. Fitness is short term compared to physical activity, which is a lifetime event.

- Value all types of activity. Try not to create a "hierarchy" of physical activity, where competitive team sport is highly valued and walking to school is scoffed at. All activity is good.
- Ensure that every child gets at least 30 minutes of moderate physical activity daily.
- Encourage lifestyle activity: walking, bike riding, active tasks at home and games at lunchtime/morning tea.
- Provide opportunities to develop behavioural skills that lead to lifetime activity.

## **Appendix - Fitness as addressed in AC-HPE**

- Yrs 3-4  
*Understanding movement:* Examine the benefits of physical activity and physical fitness to health and wellbeing (ACPMP046)
- Yrs. 5-6  
*Moving our Body:* Design and perform a variety of movement sequences (ACPMP062)  
  
*Understanding movement:* Participate in physical activities designed to enhance fitness, and discuss the impact regular participation can have on health and wellbeing (ACPMP064)
- Yrs. 7-8  
*Understanding movement:* Participate in physical activities that develop health-related and skill-related fitness components, and create and monitor personal fitness plans (ACPMP083)
- Yrs. 9-10  
*Understanding Movement:* Design, implement and evaluate personalised plans for improving or maintaining their own and others' physical activity and fitness levels (ACPMP102)