



## THE BENEFITS OF BEING PHYSICALLY ACTIVE

**Sue Chedzoy and Craig Williams** explain the importance of being physically active and suggest how science can be linked to encouraging children to lead healthy lifestyles

In studies examining the effects of physical activity during adulthood, results have clearly shown a positive and beneficial effect on health. These benefits include:

- lower blood pressure;
- help with weight loss and maintaining a stable body mass;
- increase in aerobic fitness;
- protection against osteoporosis (loss of bone content);
- increased muscle strength;
- improved blood lipid profile;
- enhanced psychological well-being, including less anxiety and depression;
- improved quality of life;
- decrease in the overall mortality rate.

Regular physical activity, either as a structured form of exercise, such as regular keep-fit classes or participation in a sports team, or more habitual leisurely activity such as walking or gardening, are key components of staying healthy.

Both approaches can work but it is important that activity is undertaken regularly.

The benefits for adults are widely researched but what of children: do they experience the same benefits if physically active? It is generally thought that adult physical activity patterns are laid down during childhood and adolescence. It has been found that inactive young people are unlikely to become physically active adults and there is almost universal agreement that young people should be physically active and should continue this behaviour into adulthood to ensure the health benefits later in life.

### Why does being active matter?

The current recommendations for physical activity of primary-school-age children in the UK were devised in 1998 by the then Health Education Authority and are still the general guidelines today. The guidelines are twofold:

#### 1 Primary recommendations

- All young people should

participate in physical activity of at least moderate intensity for one hour per day.

- Young people who currently do little activity should participate in physical activity of at least moderate intensity for at least half an hour per day.

#### 2 Secondary recommendation

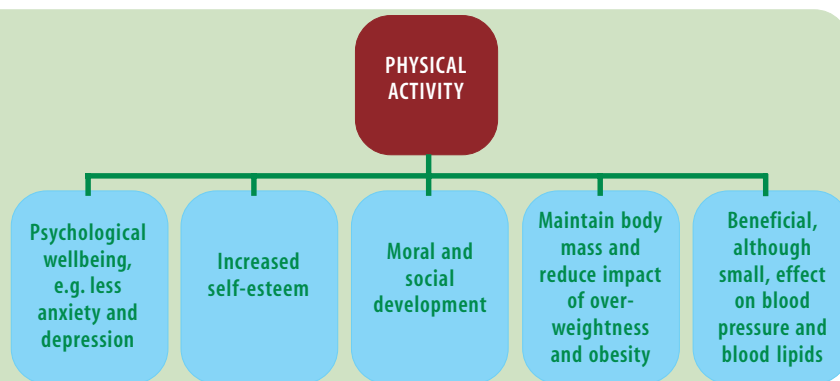
- At least twice a week, some of these activities should help to enhance and maintain muscular strength and flexibility, and bone health.

Having contributed to the construction of these guidelines, we must stress that these are guidelines: the empirical evidence for the actual value of one hour per day and twice a week for strength and flexibility work are in effect our best guesses. In fact, recently a research group from Scandinavia suggested that the current guidelines could be underestimating the amount of activity needed to control risk factors in young people. From a health perspective there are three main reasons for encouraging children to be physically active. These are:

- optimising physical fitness, health and wellbeing, which are important for growth and development;
- encouraging an active lifestyle during childhood that will continue in later life;
- reducing the risk of diseases such as cardiovascular disease, diabetes and obesity in adulthood.

The benefits of physical activity for

## Benefits of physical activity for children



children are shown in the diagram. There are of course some negative consequences for children who do too much physical activity, most usually in regard to sports training which can affect bone and muscle health. In addition, adventurous activities and contact sports can lead to increased risk of accidents, falls or collision. However, it is generally accepted that the positives of being active outweigh the negative aspects.

Currently, the rise in numbers of obese children in the UK is being made much of by the media. Because children are still growing, there is some lack of agreement about what being overweight and obese actually means for children, and comparative data for childhood and adult obesity are hard to come by. However, the latest surveys show 16 per cent of boys and 11 per cent of girls aged 2–10 years are obese. If being overweight is also considered, the figures rise to 32.6 per cent for boys and 34.1 per cent for girls. This weight gain poses a risk to their health.

### What can we do?

To encourage physical activity for life during primary school it needs to be seen as important for everyday living. It must be fun, enjoyable, challenging, instil confidence and increase children's self-esteem. Children must be educated to understand the importance of fitness, health and activity, to increase their knowledge of its benefits. Schools also need to plan the children's environment to encourage activity. For example, during some lessons it may not be necessary for children to be sitting. Experiments in US kindergarten and junior schools are manipulating the classroom

environment to encourage more low-level-intensity activity. For example, they are using desks where children have to stand rather than sit, and classroom activities that encourage children to walk around discussing their ideas with a partner before coming back to share with the rest of their classmates. Even better would be the opportunity for children to take a few minutes of 'time out' during lessons to take part in some simple coordination exercises or 'brain gym' activities. Some examples of this approach can be seen on 'Get Physical' clips from *Teachers' TV* (see *Website*), which focus on physical education and school sport.

We need to ensure that physical education (PE) classes are enjoyable and meaningful to children and that, whatever their level of achievement, they feel as though they are making progress and are rewarded in some way for their efforts. This might simply be by giving positive feedback and praising them throughout the year in their PE lessons. Try not to concentrate merely on their physical performance in activities but also to recognise and acknowledge and appreciate their skills in planning strategies, for example in games, problem-solving or creative tasks. It is also important to give them credit for the ways in which they are able to describe and evaluate their own and others' performances in a variety of activities against criteria. Success breeds success and if children feel that they are good at something, they are likely to want to do more of it.

There is no such thing as 'being good or bad' at physical education. However, some children arrive at

secondary school feeling that they are 'no good at PE'. It may well be that they are not high fliers in games, but they may have the potential to be excellent swimmers or very competent at cycling, skateboarding, dancing or orienteering. The important thing is that children feel good about themselves when they have been engaged in PE lessons and want to take part in more activities when they get the chance, either within the curriculum or in extracurricular school sport and activities.

### Links with science

One strand of the English National Curriculum for physical education is *Understanding about fitness and health*, which fits in perfectly with the science programmes of study. Any links that you can make between science and PE will go a long way towards reinforcing children's learning in both subjects. For example, children will enjoy naming parts of the body, and names of muscles and ligaments when warming up and cooling down before and after the main part of the PE lesson. They can learn how to perform safe stretching so as not to damage those parts of the body by overstretching, bouncing or performing with jerky actions. They can be taught the principles of warming up and the reasons why, after the stretching of muscles and mobility activities of the joints, they need to raise their heart rate to gradually get more oxygen to the muscles to make them 'ready for action'. They need to understand that gentle jogging activities will increase their temperature and they will feel warmer. This is natural, and as they engage in more vigorous activity it is likely that they will perspire and feel a bit sweaty. You can explain why this happens in science lessons and try it out in PE. You might explain the effects of deodorants and the reason why it is important to wear the correct sports clothes for exercise and to change and wash afterwards.

Health-related aspects of physical fitness involve the circulatory system, including the heart and lungs. Tag games are generally popular with children of all ages and are commonly played in playgrounds and on the field.

Other activities such as relay games and various forms of invasion games are good for this aspect of fitness. In school you might consider setting up fitness trails, orienteering courses, cycling areas or zoning on the playground to encourage a variety of activities where children can play safely without interfering with others.

### Looking at the heart

Skipping is excellent exercise for a healthy heart. The British Heart Foundation has some great schemes for encouraging skipping and these are supported with very useful resources to teach skipping skills and also to teach children about the benefits of physical activity for heart health. The Foundation also provides excellent ideas and resources which link science and PE. One idea is to paint a large body shape on the playground or mark it out in the hall (it needs to be big enough for groups of three or four children at a time to be able to travel from place to place on it in a clockwise direction). For the whole class to be active at the same time you might need to set up two 'bodies' or, if that is not possible, to have half the class watching and monitoring, and then change over.

This can be used to explain simple concepts such as: the muscles need energy to work and energy is transformed during exercise (into heat and motion); our bodies get food from eating and drinking and oxygen from breathing; energy gets to the muscles through the blood; after strenuous exercise, the blood gets low in oxygen; the lungs provide more oxygen through breathing; the heart pumps oxygenated blood out to the muscles.

The idea is that children jog around the circuit in threes or fours. When a group reaches an exercise station, which are at the various points around the circuit such as lungs, pulmonary vein, left side of the heart, etc., they perform exercises to music such as running on the spot, skipping, star jumps, knee lifts, hand claps over head. None of the groups overtake each other, and they each go through the same series of exercises.

If you provide red- and blue-coloured bands or bean bags to represent oxygenated and deoxygenated blood, the children

can carry blue from the muscles to the veins and through the right side of the heart into the pulmonary artery and then throw off the blue as they pass through the lungs and collect red to continue their journey. This works well with music with a very strong beat and, through enjoyable physical activity, reinforces in a practical way how the body works. Children could be encouraged to monitor their breathing rate and their heart rate at various points: for example, at rest, after three minutes' warm-up, after three minutes' activity, after six minutes' activity, after nine minutes' activity and after twelve minutes' activity.

### Muscles

Other aspects of health-related fitness include muscular strength and suppleness. Muscular strength enables a person to jump, lift, push, pull and do other activities with ease. Flexibility, sometimes referred to as suppleness, is the range of movement around a joint. In science lessons, gymnastic activities and dance activities, try never to miss an opportunity to explain the mechanics of activities involving muscles, such as travelling, jumping, turning, balancing and taking weight on hands – these all involve forces. In addition, in gymnastic activities children should have opportunities to hang, swing and climb to develop their upper body strength. It is important that you explain the effects of these activities on their development, as they are particularly beneficial.

### And ... relax!

It is important that children are introduced to simple techniques for relaxation. This involves being able to recognise the difference between tense and relaxed muscles.

Children who have learnt to recognise unnecessary tension in their bodies and how to release it are likely to cope well if faced with stressful situations. In your science lesson, get children to experiment with contrasting tense and relaxed muscles, recognising stress and developing personal calming strategies. This can be good fun, for example: the difference between a smiling face and a frowning face; between a sleeping face and an angry face; between worried hands

and relaxed hands; and between scary hands and 'couldn't care less' hands. It is impossible to be agitated and relaxed at the same time, so learning to relax can have a calming effect.

### And finally

A whole-school policy can develop an ethos conducive to increasing and sustaining physical activity. The journey to and from school is an obvious example. Some schools have organised 'walking buses' whereby adults take turns to supervise groups of children walking together safely along the route. Schemes such as 'Wake and Shake', 'Take Ten' and 'Fit for Life' are being increasingly used in primary schools to engage children in some fun activities in the playground prior to starting lessons. In some schools older pupils organise simple aerobic activities for younger children to join in, using pop music to stimulate the children to move first thing in the morning. Making equipment available at playtime and games resources for those supervising playtime can also provide enjoyable activity for children between lessons. Fitness trails, cycle areas, as well as special places where they can be quiet and relax, are all important for children's physical wellbeing outside lessons.

### Website

Teachers' TV Get Physical clips:  
[www.teachers.tv/getphysical](http://www.teachers.tv/getphysical)

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