

# 13. Physical activity

## Health status

### Key point

- ▶ *The limited data that exist indicate good levels of participation in physical activity by most New Zealand children, but there is some reduction in participation in adolescence, especially for girls.*

- A 1986 study of sport participation of Dunedin 11-year-olds found that 81 percent of boys and 82 percent of girls played interschool sport and 72 percent of boys and 39 percent of girls played club sport (Russell and Isaac 1986).
- There is a decline in physical activity levels in adolescents, especially amongst girls (Riddoch and Boreham 1995).
- However, Ross (1995) found that between 44 and 64 percent of male adolescents and 44 and 54 percent of female adolescents meet guidelines of vigorous activity lasting at least 20 minutes three days per week, and these figures compare favourably with other countries, especially for females (Pate et al 1994).
- While there is no direct research on whether children are moderately active each day for 30 to 60 minutes, there is indirect evidence to suggest that this might be so (Ross and Cowley 1995).

## Implications

### Key point

- ▶ *Regular physical activity in childhood has positive effects on mental and physical health in both the short and long term.*

An important aspect of physical activity in youth is its role in establishing lifelong activity patterns that protect against chronic diseases in adulthood (USPSTF 1996; Dwyer et al 1983; Raglin 1990; Grimston et al 1993; Riddoch and Boreham 1995). Various groups have made recommendations which call for all children and adults to take part in at least 30 minutes per day of moderate-intensity physical activity (USDHHS 1996).

Physical activity plays an important part in preventing obesity in adolescence and in adulthood (Kemper et al 1990; Dwyer et al 1983). In adults, physical activity has been found to enhance general feelings of wellbeing and improve self-esteem (USPSTF 1996; Raglin 1990) and this may be the case for children too. Weight-bearing physical activity during childhood has been shown to be an important factor in determining bone mineral density and is thought to provide protection against fractures in later life (Grimston et al 1993). Physical activity may reduce the severity of some chronic childhood illnesses, for example asthma (Turner-Warwick et al 1991).

### Key point

- ▶ *Although injury is a possible outcome of some physical activity it is mostly readily preventable. The benefits of increasing physical activity outweigh risk of injury.*

- Injury can be a major adverse outcome of physical activity in some circumstances (Koplan et al 1985; Jones et al 1994). However, the majority of injuries associated with physical activity are readily preventable (USPSTF 1996).

## Factors influencing health status

### Key point

- *A number of factors have been identified as likely to encourage involvement in activity.*

The following factors that promote activity in adults are also considered applicable to children (Pate et al 1995):

- normal body weight
- safe neighbourhoods
- limited television watching
- confidence
- positive role models and encouragement (especially parents).

Factors associated with risk of inactivity include:

- Adolescence appears to be a risk factor for inactivity. Activity levels in children peak at about 13 or 14 years of age then markedly decline especially in girls (Riddoch and Boreham 1995).
- Children may start competitive sports too young, not enjoy these sports and drop out (Russell and Issac 1986).
- Among teenagers, factors reported as discouraging participation in sport included lack of time, interest in other leisure activities, having to sit on the sideline, coaches being more interested in winning than in the players, cost, and having to travel to matches (Hillary Commission, personal communication, March 1998). (The same young people reported parents, friends, the school, and individual teachers as positive influences for participation.)

Adverse effects associated with specific physical activities include:

- overuse injuries
- musculoskeletal injuries, traumatic injuries (for example, spinal injuries from contact sport)
- road traffic injuries (from walking, cycling)
- ear and eye infections (from swimming)
- hypothermia (for example, from skiing and tramping)
- heat exhaustion (for example, from athletics)
- eating disorders (sometimes associated with athletics training and preparation)

(Koplan et al 1985; Jones et al 1994).

# Interventions

## 1 Advice and publicity to encourage participation in physical activity

### Counselling and advice

Despite insufficient evidence of effectiveness, the USPSTF (1996) recommends counselling children and adults on the benefits of physical activity as a means of preventing physical illness.

#### Key point

- ▶ *School-based programmes have positive effects on increasing participation in physical activity.*

### School programmes

Physical education is part of the health curriculum for schools in New Zealand. This review did not find any evaluation of the impact of the curriculum on levels of physical activity. However, the current physical education syllabus recommends daily physical education for primary school children and if this occurs children will have at least some physical activity each day they are at school.

A review of research literature in the United States on interventions among young people reveals that school-based approaches have had consistently strong effects on increasing physical activity in elementary school students when intervention orients the physical education programme toward delivering moderate-to-vigorous physical activity. The same report says: 'Data are lacking on ways to tailor interventions to the needs and interests of young people and to prevent the rapid decline in physical activity that occurs during late childhood and adolescence' (USDHHS 1996).

### Community-wide campaigns

#### Key point

- ▶ *There is some supportive evidence of the effectiveness of mass media campaigns in setting the scene for the provisions of programmes.*

There is limited evidence about the effectiveness of mass media campaigns to promote physical activity but they may make an important contribution to setting the scene for the provision of programmes and local campaigns (Redman et al 1990).

### Sponsorship

#### Key point

- ▶ *Cost is a factor limiting participation in some physical activities, and it is likely that sponsorship increases participation.*

It is likely that sports sponsorship increases participation in the sports being sponsored by reducing cost barriers. Fifty-nine percent of young males and 54 percent of young females in

the Lifestyle in New Zealand (LINZ) survey stated that cheaper equipment/facilities would help increase participation (Hopkins et al 1991). However, sponsorship can have a negative impact. Sponsors need to be credible and ensure a holistic approach to health. Sponsorship from the alcohol or tobacco industry, for example, is inappropriate.

## 2 Providing facilities and programmes which encourage physical activity and ease and equity of access

### Key point

- ▶ *Proximity and ease of access to facilities are likely to be positively associated with physical activity levels.*

Proximity to exercise facilities is positively associated with physical activity levels (Blair et al 1996). The Department of Internal Affairs administers programmes to assist local authorities and community organisations in providing for the recreational needs of young people (Statistics New Zealand 1996).

In New Zealand, promotion activities include those of the Hillary Commission, which has close links with national sports and leisure bodies and encourages organisations to ensure appropriate opportunities for young people to participate.

## 3 Support for parents to encourage their children's involvement in physical activity

### Key point

- ▶ *There is evidence that parental activity patterns are positively associated with physical activity in children.*

There is evidence that parental activity patterns are positively associated with their children's physical fitness (Pate et al 1994) and parents should be encouraged to act as role models. It is also plausible that television coverage of sport (and role models for physical activity) may promote participation in sport, as may attendance at sporting events, visits from other schools and club visits from sporting personalities. However, television viewing itself is associated with physical inactivity.

## Preventing injuries associated with physical activities

### Key point

- ▶ *Risks attached to physical activities can be minimised and are not significant at the level of activity regarded as necessary to promote health.*

Possible preventive measures in regard to sports injuries include:

- avoiding excessive levels of activity
- avoiding sudden increases in activity level
- using appropriate techniques for activity
- using appropriate protective measures.

The programme review did not find many evaluations related to these measures or other campaigns designed to prevent injuries from physical activities. Evidence supporting the use of mouth guards for rugby seems good, but evidence is unclear in relation to the use of headgear (Gibbs 1994).

## Implications for policies and services

### 1 Providing programmes and facilities

#### Key points

- ▶ *There are positive benefits from policies and services which encourage involvement in physical activity and ensure that there are appropriate opportunities for participation and ease and equity of access to facilities.*
- ▶ *Responsibility for promoting the benefits of physical activity and developing programmes and facilities is intersectoral.*

Responsibility for providing programmes and facilities is an intersectoral one, as is responsibility for promoting physical activity. The Department of Internal Affairs and the Hillary Commission are the lead agencies in the promotion of physical activity. Other agencies with a part to play include the Ministry of Health, Ministry of Education, local authorities, New Zealand Sports Foundation Inc., Ministry of Youth Affairs, Department of Conservation, Accident Rehabilitation and Compensation Insurance Corporation, and local and national sporting organisations.

Managers of facilities like swimming pools need to be mindful of encouraging participation by not setting adult fees for adolescents.

### 2 School curriculum

#### Key point

- ▶ *The health and physical education curriculum provides an important opportunity for participation and the promotion of healthy physical activities.*

Physical education is part of the health and physical education curriculum for schools and compulsory for children until age 14 years. The Ministry of Education has released a new draft Health and Physical Education Curriculum which is undergoing a six-month trial period. This promotes participation, skill development and positive attitudes towards physical activity.

Sleap and Warburton (1994) believe that schools could be active in creating an environment that encourages physical activity. Some of their suggestions are:

- encouraging children to play outside during breaks
- ensuring that there is a school policy regarding the provision of daily lessons that involve physical activity
- ensuring schools have outdoor areas available to them

- implementing cycle safety measures
- encouraging caregivers to walk or cycle with their children to school.

DiGuseppi et al (1998) report on a survey in London which found that the distance walked to school by children has fallen 28 percent since 1972, partly because car travel has replaced walking on many school journeys. Another study (Roberts et al 1997) found that children's travel to school in three Australian cities and in Auckland is characterised by high car use, low levels of cycling, a steep decline in walking and an increase in car ownership. Safety fears are one issue involved, and parents who drive their children to school might forgo this transport option if safety fears were addressed.

### 3 Levels of physical activity

#### Key point

- ▶ *More research into optimal levels of activity for children and young people in New Zealand is indicated as is monitoring levels of activity, identifying risk groups and further consideration of how to promote participation.*

The adult level of physical activity in New Zealand is considered to be sub-optimal (Arroll and Swinburn 1994). Optimal levels of physical activity for children and young people have not been established in New Zealand although the Food and Nutrition Guidelines for Healthy Children (2–12 years) (Ministry of Health 1997) recommend at least 30 minutes of moderate intensity activity on most or preferably all days of the week (USDHHS 1990).

Guidelines for preadolescent children have recently been advocated by Pangrazi et al (1996), who recommend that children should accumulate 30–60 minutes of moderate-intensity physical activity per day. This activity should include lifestyle activities like walking to school and household chores in order to establish lifelong behaviour patterns.

An international consensus conference was held in 1993 to develop guidelines for appropriate levels of physical activity that adolescents should undertake in order to maintain their health and to ensure they adopt lifelong patterns (Sallis and Patrick 1994).

All adolescents should be physically active daily, or nearly every day, as part of play, games, sports, work, transportation, recreation, physical education, or planned exercise, in the context of family, school, and community activities (Sallis and Patrick 1994).

Adolescents should engage in three or more sessions per week of activities that last 20 minutes or more at a time and that require moderate to vigorous levels of exertion (Sallis and Patrick 1994).

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