



衛生防護中心  
Centre for Health Protection

# Non-Communicable Diseases Watch

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## Health Tips

Preschool children need a regular mix of indoor and outdoor, structured and unstructured physical activities in order to keep optimal body functions and stay healthy.

## Raising Healthy Preschool Children (Part II : Physical Activity)

Childhood obesity is a major public health issue, both globally and locally. In Hong Kong, data from the Family Health Service of the Department of Health (DH) revealed an obesity prevalence of 9.0% in children aged 4–5 years in 2011 (10.4% for boys and 7.4% for girls), with obesity defined as body weight exceeding 120% of the median weight for height based on the Hong Kong Growth Survey in 1993.<sup>1</sup> In the previous issue of *NCD Watch*, we covered the challenge of childhood obesity, and why helping young children develop good eating habits is an effective way to prevent and alleviate the problem. Yet apart from cultivating healthy eating habits, educating young children about the benefits of physical activity and facilitating them to take part in it plays a pivotal role in tackling obesity in early childhood. This is what we are going to discuss in this issue.

In fact, physical activity is an important component of early brain development and learning. Various studies have also shown that active kids are more likely to be happier, sleep better, have healthier weights and body fat composition, stronger bones and muscles, and better metabolic control and cardio-respiratory fitness than less active counterparts. Establishing appropriate physical activity habits in early childhood very often will carry over into later childhood, adolescence and adulthood, and thereby ward off fatness, heart disease, diabetes and other chronic diseases in later life.<sup>2-4</sup>

### Start Early with Active Living

Early childhood is the key time for promoting the development of motor skills and physical activity behaviours. During the preschool years, children need to learn a range of motor skills and how to coordinate their movements – from running and galloping to kicking a moving ball; from walking up- and down-stairs by alternating their feet to pedaling a tricycle or scooter; or from jumping with two feet to hopping forward on one foot. In fact, at no other time in life are so many motor skills being learnt. Yet that does not just happen as young children grow. They need relevant activity experiences to become proficient in these skills. For example, forbidding toddlers to use stairs may delay their acquisition of the skill in stair-climbing; preschoolers who are discouraged from playing bouncing balls

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may lag in the development of hand-eye coordination. Thus, it is important to give young children ample opportunities to develop movement skills that will serve as the building blocks for future motor skillfulness and the ability to perform physical activity.<sup>5</sup>

Physical activities include all bodily movements resulting in an increase in energy expenditure. They are typically categorised into light, moderate and vigorous intensities.<sup>2</sup> For young children, light-intensity physical activities may include dressing up, standing or slow walking. Moderate- to vigorous-intensity physical activities can involve climbing, running, jumping or playing ball games. Furthermore, physical activities can be unstructured or structured. Unstructured physical activities are supervised free time for children to play actively on their own or with other children with minimal direction from adults, such as pushing toy cars or doll strollers, chasing bubbles, riding bikes or playing hide-and-seek. For structured physical activities, they include games and activities that adults direct or do with children, such as gymnastics, karate, creative dancing and swimming. While unstructured free plays can help young children develop creativity, learn basic movement skills and explore their environments, structured physical activities enable them to better understand their physical abilities and body functions, and fine tune the acquired skills such as locomotion, manipulation, balance and coordination. For optimal growth and development, DH recommends preschool children to engage in at least 180 minutes (3 hours) of various intensities and types of age- and developmentally-appropriate physical activities per day.

Screen time refers to the time spent on watching televisions (TV) or videos, using computer or other screen-based entertainments. Long periods of

screen time in children mean less opportunity for active and creative play, and fewer of the associated benefits. It can also lead to less healthy eating habits, and slower development of language, memory and intellectual skills.<sup>6</sup> Thus, no screen time is recommended at all for children under 2 years. For preschool children, total quality screen time should be limited to no more than 120 minutes (2 hours) per day. In addition, children should not engage in sedentary activities for more than 60 minutes (1 hour) at a time.

### **Levels of Physical Activity among Preschool Children in Hong Kong**

As with most adults nowadays, many young children in Hong Kong are not active enough. An earlier study used electronic pedometer to evaluate the physical activity levels in 145 preschool children aged 3–5 years and observed that they generally performed low to moderate levels of physical activity. During the 25-minute activity period, very few preschool children achieved highly strenuous activities.<sup>7</sup> Another questionnaire survey of the person-in-charge of 464 pre-primary institutions reported that students of pre-primary institutions undertook on average 45 minutes of large muscle activities if they were in the whole-day class; on average 28 minutes if they were in the half-day class.<sup>8</sup>

While physical activity participation in school settings is important, opportunities for young children to participate in regular physical activity should also extend beyond the school days. The Child Health Survey (CHS) 2005/2006 of the DH reported that 67.2% and 60.1% of children aged 4–6 years had participated in moderate- and vigorous-intensity physical activities outside school hours in the 4 weeks preceding the survey respectively.

Among those children who had participated in moderate-intensity physical activities outside school hours, the median frequency was 2 days per week with a median duration of 30 minutes per day. For those children who had participated in vigorous-intensity physical activity outside school hours, the corresponding median frequency was 2 days per week with a median duration of 60 minutes per day.<sup>9</sup>

On the other hand, research showed that preschool children spent too much time on screen. The CHS 2005/2006 reported that 90.5% of children aged 2–6 years had watched TV or videos in the 4 weeks preceding the survey. Among them, close to three-fifths (59.2%) of them watched TV or videos 120 minutes or more per day. For children aged 4–6 years, over half (51.1%) reported that they spent 120 minutes or more per day in front of the screen (i.e. watching TV or videos plus using computer or playing computer games including access to internet).<sup>9</sup>

### **Promoting Physical Activity among Preschool Children**

As the National Association for Sport and Physical Education of US recommends, parents and carers in charge of preschool children's health should understand the importance of physical activity towards young children's growth and development, and promote their motor skills by providing ample opportunities for movement experiences.<sup>5</sup> Nevertheless, when parents and carers perceive physical activity as unimportant, over-protect children due to safety concerns or over-emphasise on their academic and intellectual development, time for physical activity would easily be dispensable and substituted by homework time.<sup>10-12</sup>

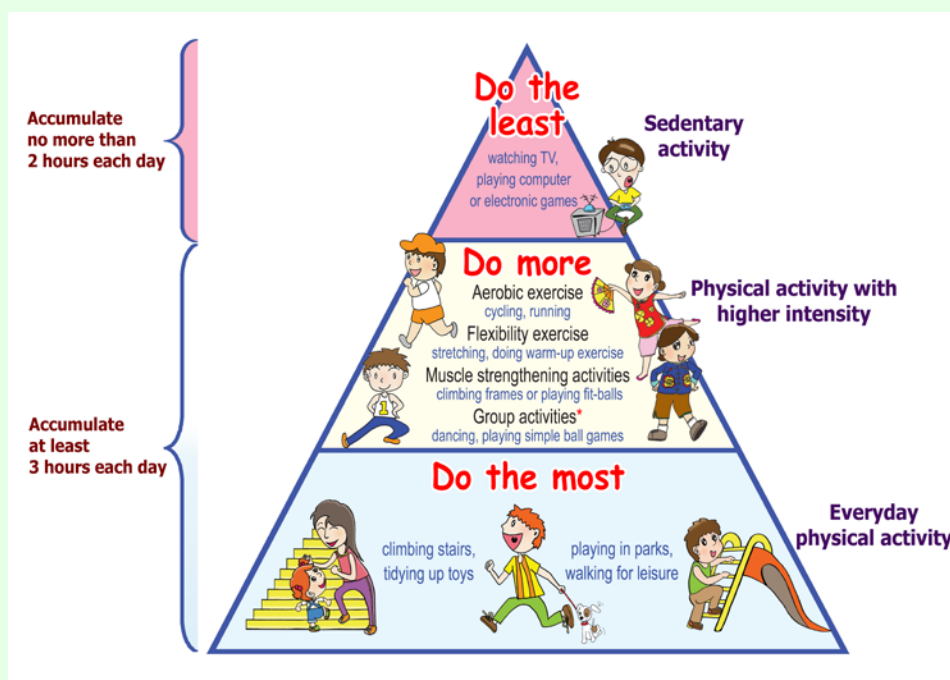
In fact, all children (including preschoolers) need a regular mix of indoor and outdoor, unstructured and structured physical activities. Parents and carers should support, rather than discourage, the inborn tendency of young children to be active and playful. Physical play should be valued and integrated into preschool children's daily living. It is noteworthy that the outdoors, such as the park and the beach, is the very best place for young children to exercise their large muscle groups and practise emerging physical skills. Active outdoor plays burn more calories than typical indoor activities that can further help young children maintain a healthy weight. Research also indicates that spending more time outdoors may moderate children's levels of stress, protect against vitamin D deficiency and reduce the risk of near-sightedness.<sup>13</sup>

Existing physical activity guidelines for adults and older children are commonly expressed in terms of frequency, time, and intensity parameters. However preschool children tend to engage in very brief bouts of movement when they are active. They would spend very little time at an intensity that could be considered vigorous. Besides, most young children prefer playful and intermittent type activity.<sup>3</sup> When planning physical activities for preschool children, parents and carers should consider young children's natural activity patterns. They could take reference from the Physical Activity Pyramid for Preschool Children (Box 1) for the appropriate mix and amount of physical activities. Pre-primary institutions are urged to allocate time for both structured and unstructured physical activities everyday, not just on 'special days'. The scheduling of activity sessions can be in intervals (ideally 10–15 minutes at a time) throughout the day, and as regular as lunch and nap-time that can help make physical activity a routine part of their daily lives.

Here are some suggestions that can also help parents and carers cultivate good physical activity habits among preschool children:

- ☉ Act as a good role model by being active.
- ☉ Encourage toddlers to walk short distances rather than sit in a stroller. Walk toddlers and older preschoolers to and from schools, parks or other places.
- ☉ Give preschool children toys or gifts that promote physical activity, such as balls, tricycles, skipping ropes or hula hoops. Use the recommended age labelling as a guide for toys suitable for their age and development.
- ☉ Plan activities within young children's ability so that they can achieve success. Begin with simple activities that develop basic motor skills for more complex activities, such as mimicking animal walks, tossing bean bags, playing hide-and-seek, kicking a ball or riding a tricycle. Recognise improvements with praises or small rewards (but not with foods).
- ☉ Emphasise fun and teach fundamental motor skills with varied activities, such as running, climbing, jumping, throwing, catching, kicking and stopping a ball. Do not just sit there, but teach young children how to play and play along.
- ☉ Encourage preschool children to offer their ideas or suggestions for physical activities and play.
- ☉ Play outside more often. Go to the park and help them climb and swing. Bring young children to beaches or swimming pools and swim with them.
- ☉ Limit screen time, including time watching TV and videos or playing computer games. Be choosy about what young children watch or play on the computer.
- ☉ Pay attention to safety at all times with appropriate supervision and protective equipment (such as helmets for cycling or scooters, life-jackets for paddling and water-based activities). Make sure indoor and outdoor play spaces are safe to prevent and minimise injuries while young children are active.

### Box 1: Physical Activity Pyramid for Preschool Children



Notes:

\* Teachers and parents are advised not to include excessive amounts of activities that are competitive or eliminative in nature, otherwise children may lose interest in exercise because of a sense of failure.

The Pyramid was co-compiled by the Department of Health and the Centre for Health Education and Health Promotion of the Chinese University of Hong Kong.

Of note, preschool children with disabilities or chronic diseases tend to have less motivation to join in active play and physical activity. However, they still need to be active in order to keep optimal body functions and stay healthy. Parents and carers could take them to see a family doctor for advice or a customized exercise prescription. For more health tips in promoting physical activity participation

and healthy eating among preschool children, please refer the ‘**StartSmart Parent Guide**’, the ‘**Physical Activity Guide for Children Aged 2 to 6 Years**’ and the ‘**Nutrition Guidelines for Children Aged 2 to 6 Years**’. These documents can be downloaded from the designated website at [www.startsmart.gov.hk](http://www.startsmart.gov.hk).



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To promote healthy eating and physical activity among preschoolers for the prevention of childhood obesity, the DH is now launching a territory-wide **StartSmart@school.hk Campaign** on 11 January 2012 in collaboration with the Education Bureau and the Leisure and Cultural Services Department, among others. The Campaign will be introduced to all pre-primary institutions at an event titled “**Eat and Play Smart Start Today: StartSmart@school.hk Launching Ceremony 2012**”.

Around 140 000 preschoolers are enrolled in pre-primary institutions in Hong Kong each year; as such, these institutions play a very important role; they instill the correct attitude towards healthy living in preschoolers, help them lead a healthy life and prevent childhood obesity. By means of effective resources and training, this Campaign aims to encourage and support pre-primary institutions, parents and care-givers -

- (1) to create an environment conducive to healthy eating and physical activity among preschool children in the school and at home; and
- (2) to help preschool children cultivate a sustainable healthy lifestyle.

To know more about the **StartSmart@school.hk Campaign**, please visit its thematic website at <http://www.startsmart.gov.hk>.





## Data Brief

Many young children in Hong Kong spend substantial amounts of time sitting for educational sedentary behaviours, such as doing homework and reading.

The Child Health Survey 2005/2006 of the DH used a structured questionnaire and face-to-face interviewed parents of over 1 200 preschool children aged 4-6 years on how much time children would spend on homework and reading for study or leisure in the 4 weeks preceding the survey. Results showed that 86.1% of children reported so. Among those children who had spent time on homework and reading for study or leisure in the 4 weeks preceding the survey, 86.2% of children reported 5 days or more per week. Overall, the median frequency was 5 days per week; the median duration was 60 minutes per day.

Parents and carers should understand that physical activity is important for all children. For healthy growth and development, young children needs plenty of time to learn a variety of motor skills through active play.

### Frequency and duration of doing homework and reading among children aged 4-6 years who had spent time on homework and reading in the 4 weeks preceding the survey

Days per week	Proportion	Minutes per day	Proportion
5 days or more	86.2%	120 minutes or more	26.8%
3-4 days	5.4%	60 - 119.9 minutes	45.6%
1-2 days	6.2%	Less than 60 minutes	27.4%
Unknown / Missing	2.2%	Unknown / Missing	0.3%
<b>Total</b>	100.0%	<b>Total</b>	100.0%
<b>Median</b>	5 days	<b>Median</b>	60 minutes

Source: Child Health Survey 2005/2006.

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