HPB Introduces BMI-for-Age Charts to Monitor Physical Growth and Development in Children and Youth

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The Health Promotion Board (HPB) has introduced Body Mass Index (BMI)-for-age charts to monitor the growth and development of children and youth aged between 6 and 18 years. These charts will replace the existing weight-for-height charts that schools and healthcare professionals in Singapore have been using.

2 Dr K Vijaya, Director, Youth Health Division, HPB, explains, Unlike the weight-for-height charts, which only compare a child’s weight relative to his or her height, the BMI-for-age charts assess if a child’s height and weight (calculated as BMI) is appropriate for his or her age by comparing the child’s BMI to a reference population of children of the same age and gender.

3 Apart from providing an indication of how a child’s growth and development compares with that of his or her peers, the BMI-for-age charts also identifies the child’s weight status and its associated health risks.

Health risks associated with weight

4 Maintaining an acceptable weight is important for a child’s healthy growth and development. Obese children have a three times higher risk of developing hypertension as compared to non-obese children¹. They also have higher risks of cardiovascular disease and diabetes even during their childhood, or later in adulthood. Overweight children are generally more likely to experience a lower quality of life physically, emotionally and socially, and have a much higher probability of becoming obese adults.

5 It is important for parents to be aware of the consequences of excessive weight gain in childhood. Parents should nurture healthy eating habits and regular physical activity in their children from an early age as these are key tenets of healthy living to help children achieve acceptable weight, says Associate Professor Lee Yung Seng, Senior Consultant, University Children’s Medical Institute, National University Hospital.

6 On the other hand, underweight children may have a lower immunity to infections, reduced muscle strength and may develop osteoporosis in adulthood.

Rationale for introducing BMI-for-age charts

7 Professor Lee adds, BMI-for-age provides a practical and reasonably good estimate for the amount of body fat in children, and the BMI-for-age correlates with risk factors for cardiovascular diseases including high lipid levels, elevated insulin levels, abnormal glucose levels and high blood pressure. BMI is also a consistent measure that can be used to track an individual’s weight status from childhood through to adulthood.

Interpreting BMI for children

8 BMI is calculated by dividing an individual’s weight (in kilogrammes) by the square of his/her height (in metres). While the calculation of BMI is the same for children and adults, the interpretation is different.

9 For adults, the calculated BMI provides an indication of their risk (low risk, moderate risk, high risk) of developing health problems such as cardiovascular diseases, diabetes and other chronic conditions.

10 For children, the BMI derived from the same formula is plotted on gender-specific BMI-for-age percentile charts. The percentile or percentile range where the child’s BMI value lies indicates his or her weight status.
(severely underweight, underweight, acceptable weight, overweight or severely overweight). It also reflects how the child's BMI compares with that of his or her peers of the same age and gender.

11 Attached is a Fact Sheet on BMI-for-age for further reference. For more information, visit the Health Promotion Board website www.knowyourbmi.sg/children.

Managing underweight and overweight children

12 Children who are severely underweight or overweight will be referred by schools to the Student Health Centre (SHC) at HPB for a medical assessment to exclude any medical conditions associated with their weight status. In addition, the parents and their children will also attend nutrition counselling sessions where they will be equipped with knowledge and skills to eat healthily and remain physically active.

13 HPB leverages on a multi-pronged approach comprising a variety of strategies to help the young achieve acceptable weight. These include capacity building of key stakeholders such as parents and teachers to empower them to shape the dietary and physical activity habits of the young. Health education programmes for the young leverage on various youth-centric channels including interactive skits, health fairs and the online media. Initiatives such as the Model School Tuckshop ensure that the school environment supports healthy nutrition. Dietary guidelines also provide evidence-informed recommendations of dietary requirements.


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