

CONSENSUS STATEMENT

SINGAPORE INTEGRATED
24-HOUR ACTIVITY
GUIDELINES
FOR early childhood
(0 - 6 years)

October 2021



**ACADEMY OF MEDICINE
SINGAPORE**



**COLLEGE OF PAEDIATRICS AND
CHILD HEALTH, SINGAPORE**

INTRODUCTION

Early childhood is a critical period for growth and development, forming the foundation for future and lifelong well-being. (1) Adopting healthy lifestyle behaviours in early childhood can potentially influence and shape behaviours later in life. (2) Frameworks have been developed and are advocated for early childhood health promotion and disease prevention; (3) these form key strategies in reducing future non-communicable diseases (NCDs). The World Health Organization's (WHO's) Global Action Plan for the Prevention and Control of Non-Communicable Diseases (2013-2020), highlighted that exposure to risk factors of NCDs often starts in early life and interventions in early childhood often offer the best protection against these NCDs. (4)

Current national guidelines on physical activity and sedentary behaviour for children less than 7 years were updated in 2013. (5) Over recent years, there has been emerging evidence surrounding physical activity, sedentary behaviour and sleep for this group of children, and how these concepts relate to one another, within a 24-hour period, for better health outcomes.(6-10) This workgroup has also integrated eating behaviours and dietary choices, which are closely linked to movement behaviours in terms of, but not limited to, the overall calorie intake and that required to support physical activity. Encapsulating all these elements, we have developed the Singapore Integrated 24-hour Activity Guidelines for the Early Years (0 - 6 years).

HEALTH OUTCOMES OF LIFESTYLE BEHAVIOURS

Physical activity provides many health benefits in early childhood, including motor and cognitive development, cardiometabolic, musculoskeletal and psychosocial health. (11) Children in this age group should be encouraged to participate in a variety of activities regularly; those who engage in more overall and/or at a higher intensity (i.e. moderate- to vigorous- or vigorous-intensity), consistently demonstrated favourable health benefits. (12-14) Infants are recommended to spend at least 30 minutes in the prone position daily, (15, 16) and risky outdoor play (under adult supervision) has also been reported to confer health benefits for pre-schoolers. (17)

Excessive sedentary behaviour and screen time exposure can cause detrimental health effects to children in their early years. (18) Sedentary screen time is adversely associated with adiposity, poor motor and cognitive development and impaired psychosocial health. (19-21) Indeed, prolonged seating or supine lying are also unfavourably associated with adiposity or motor development. (22, 23)

Sleep is essential for growth and health in the early years. (24) As the newborn grows, he/she regulate his/her sleep through the establishment of a circadian cycle with less daytime naps and more night-time sleep. (25, 26) There are also different recommended optimal sleep durations for children from the different age groups. (27-29) However, shorter sleep duration can result from increased screen time and be associated with higher levels of adiposity, poor growth and emotional dysregulation. (30)

A healthy diet provides optimal nutrition for a child's physical and cognitive development. (31) The types of food and eating habits, will become more sophisticated with each progressive stage of the childhood. (32) Instituting a national nutrition policy, using a life-course

approach, can help to shape the eating behaviours in the early years, which can then reduce the future risks of overweight or obesity, as well as protect against NCDs. (33)

LOCAL STUDIES

A cross-sectional study of 78 Singaporean pre-schoolers, using wrist-worn accelerometers, showed that the children spent a median of 7.8 hours/day in sedentary behaviour and 0.5 hours/day in moderate- to vigorous-intensity physical activity. The same study also revealed that the pre-school teachers were not familiar with physical activity guidelines and that parents reported very little outdoor playtime after preschool. (34) The Growing Up in Singapore Towards healthy Outcomes (GUSTO) study is a longitudinal cohort investigation that commenced in 2009, to investigate what influence early development has on body composition and metabolic health. (35) Studies of screen time and sedentary behaviour in the GUSTO cohort showed that the average screen-time for infants (12 months) and toddlers (2 years) was 2.0 and 2.4 hours/day respectively. (36, 37) Screen-time in infants was negatively associated with later cognition (composite IQ and verbal IQ), while for toddlers, higher screen time was associated with less physical activity and greater sedentary behaviour. (36, 38) The sleep duration of children less than 2 years of age in the GUSTO cohort was significantly associated with body length; shorter sleep duration was also associated with higher body mass index and shorter body length for those at 3 months of age. (39) Infants in the GUSTO cohort who were fed breast milk showed better gross motor skills at 2 years and better cognitive performance at both 2 and 4.5 years of age, when compared to formula-fed infants. (40) Intake of sugar sweetened beverages in young childhood led to higher levels of adiposity and, hence, greater risk of overweight or obesity. (41) A separate study examined the proportion of pre-schoolers meeting the WHO guidelines on physical activity, sedentary behaviour and sleep, and the effect on their quality of life. More than 2000 pre-schoolers were surveyed and only 9.6% met all of the recommendations, while 12.6% did not meet any of the recommendations. This study also showed that the health-related quality of life increased as the pre-schoolers achieved more recommendations. (42)

AIM OF CONSENSUS STATEMENT

This guidance provides a holistic healthy approach for good health amongst infants, toddlers and pre-schoolers in Singapore, by integrating physical activity, sedentary behaviour, sleep and eating habit advice. It is equally important to understand that these activities are closely related in influencing health outcomes and time consumption, and to organise them within a daily 24-hour period. Incorporating healthy eating habits with movement behaviours, it encourages children to adopt these recommendations at a young age and therefore an opportunity to achieve good health.

These recommendations are for all healthy infants (less than 1 year), toddlers (1-2 years) and pre-schoolers (3–6 years), irrespective of gender, cultural background or socioeconomic status. Children with special needs or medical conditions should consult a qualified medical professional for additional guidance.

METHODS

The consensus workgroup included physicians (neonatologists, paediatricians, sports physicians and family physicians), allied health professionals (dietitians, exercise physiologists), academics and researchers from multiple institutions and organisations.

The workgroup assessed the evidence reviews conducted for the World Health Organization Guidelines on Physical Activity, Sedentary Behaviour and Sleep for children under 5 years of age, and the 24-Hour Movement Guidelines for children less than 5 years of age from Canada, Australia and South Africa. (6-9) The literature was updated to September 2021 through an electronic search of Medline databases and the keywords used included “infant”, “toddler”, “preschool”, “physical activity”, “sedentary behaviour”, “sleep”, “eating habit” and “diet”. The update included systematic reviews, randomised control trials and cohort studies. Only results in English language were considered. The health outcomes included cardio-metabolic health, physical fitness, bone and skeletal health, motor and cognitive development, adiposity and psychosocial health.

The workgroup used the GRADE-ADOLPMENT approach, (43) which builds on the GRADE Evidence to Decision (EtD) framework, (44) to provide a structured and transparent methodology for healthcare recommendations. It evaluates the strength of recommendations from related guidelines and the quality of evidence supporting the recommendations. These recommendations were structured from the perspective of healthcare professionals when providing holistic care of infants, toddlers and pre-schoolers including education and promotion of healthy activities that form the foundation for life-long well-being. The full EtD frame work is included as an appendix.

CONSENSUS STATEMENTS FOR INFANTS (0 – 11 MONTHS)

***Physical Activity:* Be physically active several times a day in a variety of forms and within a safe and supervised environment, where more is better. Non screen-based interactive floor-based play is encouraged. For those not yet mobile, this includes at least 30 minutes of tummy time spread throughout the day. Planning a daily routine of physical activities may be helpful.**

Physical activity in children younger than 5 years is associated with improved measures of adiposity, motor skill development, psychosocial, and cardiometabolic health indicators. (11) For infants not yet mobile, tummy time is positively associated with multiple developmental aspects and is included in the World Health Organization guidelines for children below 5 years. (6, 45) Tummy time has positive effects on global development, (46) particularly gross motor development, (47, 48) body mass index z-score and prevention of brachycephaly. (49, 50) Tummy time in infants is defined as awake prone positioning on a firm surface, where play is encouraged and supervised by a responsible caregiver. A minimum of 30 minutes of tummy time daily is encouraged, in addition to interactive play with a caregiver, and may be spread throughout the day.

***Sedentary Behaviour:* Avoid restraining infants unattended for more than 1 hour at a time. Any form of screen time, including background screen time, is not recommended in infants. When sitting or lying down, it would be most beneficial for caregivers to engage the child in singing, reading, storytelling and imaginative play. Having a daily routine for activities, sleep and meals may be useful in reducing the amount of sedentary behaviour.**

Screen time in children below 5 years is associated with unfavourable measures of adiposity and decreased scores on measures of psychosocial health and cognitive development. (18) Screen time in infants confers no benefits and is unfavourably associated with cognitive development, (18) sleep duration and quality, (51, 52) and gross motor development. (53) Any form of screen time including background screen time, is not recommended in infants. (6) Infants should not be restrained unattended for more than 1 hour at a time. When sedentary, engaging in reading, singing, storytelling or imaginative play with a caregiver is encouraged.

***Sleep:* Have a total amount of 14-17 hours (for 0 - 3 months of age) and 12-16 hours (for 4 - 11 months of age) of daily sleep, including regular naps, to promote optimal health. It is recommended for infants to sleep on their back in their own cot, in the same room as their caregivers to maintain sleep safety. Develop a regular sleep time routine to help infants fall asleep easier.**

Newborns spend almost 80% of their life sleeping. (54) Good sleep is well known to improve cognitive, (55, 56) physical, (57) and social outcomes, (58) reduce obesity as well as reduce the risk of sudden infant death syndrome. (59-61) Good quality sleep improves family well-being and is an important predictor of maternal health. (62, 63) Although there are different cultural differences in sleep duration and practices, (64) setting bedtime routines and providing a conducive sleep location can improve duration. (25, 65-69) Good sleep safety practices include supine sleeping in their own cot and in the same room of the caregivers. (70-72)

***Eating Habit and Diet:* Breastfeeding is recommended for infants when possible. From 4 to 6 months of age, introduce a variety of developmentally- and culturally-appropriate solid foods of various textures and flavours, prepared with no added salt and sugar. Provide a daily routine of meals, spaced 2 - 3 hourly during the day, and avoid overfeeding.**

Breast milk supports an infant's nutritional requirements during the first 6 months of life, and provides antibodies to support an infant's health, growth and development. (73, 74) It is recommended that infants are exclusively breastfed for at least the first 6 months of life, not withholding any prescribed medication or vitamin and mineral supplementation. Mothers should adhere to food safety and hygiene recommendations if breast milk is expressed and stored. Should human milk be unavailable, infants should be provided with formula. In support of healthy bone development, vitamin D supplementation of 400IU per day is recommended for fully and partially breast-fed infants due to the low bioavailability in breast milk. (74) With increasing energy and nutrient requirements beyond what breast milk can

provide, infants should be started on complementary foods between 4 - 6 months of age, depending on developmental readiness.

Iron-containing foods should be encouraged as first line to prevent deficiency in infants. These include iron-fortified cereals, pureed meat and poultry, plain tofu or legumes, with textures suited to the infant's stage of development. Salt should not be added to foods for infants as their kidneys are immature and unable to excrete excess salt, thus presenting a safety concern. Food and drinks containing added sugars should be avoided for infants, reducing the risk of dental caries and preventing a learned preference for sugar. Overconsumption of sugar-laden food has been associated with an increased risk of becoming overweight or obese. (41, 74-76) There is no evidence that delaying the introduction of potentially allergenic food prevents food allergies. (74) Therefore, potential allergenic foods such as dairy products, egg, wheat, crustacean shellfish, fish, soy, tree nuts and peanuts should be introduced as part of complementary foods. For infants with a family history of atopy or mild eczema, it is recommended that egg and peanut be introduced one at a time, between 4 - 6 months of age, once the child is able to tolerate solid food. (77)

Repeated exposure to a variety of food across all the main food groups (grains and alternatives, lean proteins and alternatives, fruits, and vegetables) is necessary to promote food acceptance and provide infants with the range of required nutrients. Caregivers should strive to recognise a child's hunger and satiety cues which will support responsive consumption by timely initiation and termination of the feeding process. (77) Evidence suggests associations between non-responsive caregiver feeding practices and a higher risk of childhood obesity, thus it is recommended that guidance on responsive feeding is provided to caregiver, thus promoting appropriate weight gain among infants. (78, 79)

CONSENSUS STATEMENTS FOR TODDLERS (1 - 2 YEARS)

Physical Activity: Accumulate at least 180 minutes in a variety of physical activities at any intensity spread throughout the day within a safe environment, where more is better. Daily outdoor active play is highly encouraged. Caregivers should participate actively with child during all forms of active play.

Toddlers should participate in both light and moderate to vigorous physical activities. (11) This should include a variety of physical activities that are fun and encourage exploration, involving movement skills such as walking, running, crawling, climbing, balancing, bending, dancing and playing with balls. The more active play the toddlers achieve, the better. Children who engaged in at least an hour of moving freely each day had significantly stronger object and locomotor skills. (80) Caregivers should participate actively with child during play, as such positive interactions are associated with better developmental skills, reduced risk for obesity, and accumulate physical activity. (81)

Structured and unstructured play are important for a child's global development and these activities can take place in indoor and outdoor environments. (82) In childcare centres, more than half of toddler's indoor moderate to vigorous physical activities occur in modifiable open spaces and during class transitions. Enhancing child care structure quality and inclusion of modifiable open spaces can promote physical activity and less sedentary time for toddlers.

(83, 84) Being outdoors also increases physical activity, with more playtime and time spent engaged in moderate to vigorous physical activities. In turn, these are associated with better sleep outcomes in toddlers. (52) Furthermore, spending at least 1 hour in outdoor play daily can help prevent the early onset of myopia. Hence, outdoor play is highly encouraged. (52, 81)

Sedentary Behaviour: Avoid restraining toddlers on a seat for more than 1 hour at a time. Sedentary screen time, regardless of the type of device, is not recommended for children younger than 2 years of age. When sitting or lying down, it would be most beneficial to engage the child in singing, reading, storytelling or imaginative play.

Sedentary behaviour amongst toddlers, include use of any screen device, reading, drawing, eating, travelling in a vehicle, whilst sitting or lying. (85) Prolonged periods of being restrained in a seat or in a supine position have been found to be associated with high levels of adiposity and less than favourable motor development. (18, 86) Screen-based sedentary behaviours also have unfavourable effects on motor and cognitive development, psychosocial health, social skills (ability to develop positive relationships and interact with others effectively) and poor sleep outcomes across early childhood. (18, 52) International guidelines consistently recommend that children should not be restrained on their seats for more than 1 hour at a time, and those of less than 2 years of age should have no exposure to screens. (6-8, 87)

Early life experiences are key in the development of a child's physical, social, emotional, and cognitive domains. Avoiding screen time and sedentary behaviour is important for disease prevention and health promotion in their early years. Even when sedentary, engaging in interactive activities such as reading, singing and storytelling has greater potential for cognitive and social development, compared with screen time and solitary activities. (18, 88)

Sleep: Have a total amount of 11 - 14 hours of daily sleep with regular sleep and wake-up times. Develop a bedtime routine and keep to a consistent bedtime. Provide a conducive sleep environment and avoid screen time before bed.

Develop a bedtime routine and keep to a consistent bedtime. (89, 90) Provide a conducive sleep environment that is dark, quiet and of comfortable temperature, and avoid screen time before bed. (91) Recent literature supports that short sleep duration during toddlerhood is associated with greater risk of depressive symptoms and poorer temperament in later childhood. (92, 93) Short sleep duration is also linked to obesogenic eating behaviours. (94-97) Toddlers with short sleep durations also tend to have higher blood pressure later in life. (98)

Regular bedtimes and routines help toddlers to sleep longer and better, (89, 90) and may be important for obesity prevention. (99) Adaptive bedtime activities like storytelling or cuddling help toddlers sleep longer and have fewer sleep problems. (100) Screens emit blue light that suppresses endogenous melatonin production, in turn resulting in shorter sleep duration, later bedtimes and longer time to fall asleep. (101, 102) Poor quality sleep environment (e.g.

crowded, noisy and uncomfortable) is associated with shorter sleep durations, later bedtimes and longer sleep latency. (103, 104)

***Eating Habit and Diet:* Continue to increase the variety of foods offered to your child and wean off milk as the main source of nutrition. Introduce healthy family meals and offer whole milk and water, while establishing a structured routine for meal and snack times. Using food to soothe your child or as a reward is discouraged.**

Toddlers are reliant on caregivers to establish their feeding habits. These include what, when and how food is consumed. (74, 75, 105, 106) Fresh, minimally-processed foods should be prepared with little or no added sugar and salt, with continual exposure and/or provision of foods across all major food groups that are in unison with healthy family eating habits. As established in the latest Dietary Guidelines for Americans, (74) there is no clear evidence that formula milk should be continued beyond 12 months of age. Pasteurised full cream milk, or fortified unsweetened soy milk, can be incorporated in the toddler's diet from around 12 months of age to meet protein, calcium and vitamin D requirements, accompanied by adequate solid foods. (74, 75) Sugar-sweetened beverages (e.g. juice drinks, sports drinks and regular soft drinks) and caffeinated beverages (e.g. tea, coffee and cola drinks) should not be given before two years of age, and avoided as much as possible thereafter. (74, 107) Instead, plain water should be offered to meet hydration requirements.

Establishing a structured routine for meal and snack times for toddlers is an important component of effective responsive feeding practices, where caregivers also recognise and react to hunger and fullness cues of the child. (105, 106) Synthesising findings from randomised-controlled trials, Perez-Escamilla et al. (Year?) concluded that responsive feeding practices demonstrated improvements in weight outcomes among toddlers 1 to 2 years of age. (106) Picky eating is also a natural occurrence in the feeding process and children should not be pressured to consume new foods. (74, 75) Instead, they should be provided with regular and frequent exposure to non-preferred foods, increasing familiarity and promoting acceptance. Other behaviours that affect feeding habits such as active play, screen time, sleep and techniques to soothe the child, are also influenced by caregivers. Poor sleep routines in the first two years of life, as well as the use of food to soothe the child have been associated with poor dietary quality and increased risk of obesity in early childhood, (75) and are therefore not encouraged.

CONSENSUS STATEMENTS FOR PRE-SCHOOLERS (3 - 6 YEARS)

***Physical Activity:* Accumulate at least 180 minutes of physical activity, at any intensity spread throughout the day and within a safe environment. At least 60 minutes should be moderate- to vigorous-intensity, where more is better, and can be in various forms. Older children should be exposed to a variety of age-appropriate vigorous-intensity play and engage in muscle- and bone-strengthening activities several times a week. Daily outdoor active play is highly encouraged. Caregivers should participate actively with children during all forms of active play.**

Physical activity engagement amongst pre-schoolers is associated with multiple health benefits, especially when it is moderate- to vigorous-intensity. (11, 108, 109) Evidence supports a positive association between physical activity and motor and cognitive development. (108) Studies have shown that physical activity is associated with favourable adiposity, motor development, physical fitness, psychosocial, cardiometabolic and bone health. (7, 11) In addition, a strong foundation in childhood movement competence is associated with lifelong participation in physical activity; therefore, pre-schoolers should be encouraged to participate in a variety of activities encompassing fundamental movement skills and age-appropriate/modified sports in a safe environment. (110-112) Evidence from a local study showed that lower primary children failed to demonstrate age-appropriate movement proficiency, indicating a critical need for physical activity interventions at the preschool age. (113)

The high local prevalence of myopia is a serious health concern and daily energetic outdoor play for at least 1 hour provides respite from excessive 'near-work' (e.g. reading and screen time), which helps to prevent the early onset of myopia. (114, 115) Moreover, outdoor play confers many other learning opportunities for children, caregivers and educators. (116) Parents playing with children promote parent-child bonding and create meaningful memories for both parents and children that are enduring. (117)

As pre-schoolers spend many hours in school on weekdays, there is scope to capitalise more on children's natural tendency for movement and physical play. Policies/guidelines must be developed to encourage physical activity throughout the day, such as incorporating it as part of all subject domains, allowing movement breaks hourly and curating learning environments that facilitate pre-schoolers to move and stay active in childcare centres. (118)

***Sedentary Behaviour:* Limit the total daily amount of sedentary behaviour, such as sitting or lying down, and interrupt extended periods of time spent being sedentary. Recreational screen time, regardless of the type of screen device, should be limited to less than 1 hour.**

Recreational screen-based sedentary behaviour in pre-schoolers, such as television viewing and handheld device use is of particular importance. (85) The World Health Organization evidence-based guidelines acknowledged that sedentary behaviour, and in particular recreational screen time among children aged 3 - 6 years, bore detrimental effects on their fitness, adiposity and behaviour or sleep. (6, 119) The detrimental effects of early-life screen viewing, regardless of the type of screen device, on movement behaviours and adiposity later in life have also been observed in prospective cohort studies among young Singaporean children. (38, 120, 121)

While sedentary behaviour, for instance during educational periods, cannot be completely eliminated, regular movement breaks, such as in the form of active play are essential to minimise adverse health effects. (122) Instead of using screen devices during recreational periods, engaging in reading, drawing, storytelling or imaginative play with a caregiver is encouraged. (18, 88) When engaging in recreational screen time, age-appropriate and engaging content should be preferred.

***Sleep:* Have a total of 10 - 13 hours (for 3 - 5 years of age) or 10 - 11 hours (for 6 years of age) daily sleep. Older pre-schoolers may not need to nap if sufficient sleep has been obtained at night. Develop a bedtime routine and keep to a consistent bed and wake-up time. Provide a conducive sleep environment and avoid screen time before bed.**

Achieving the number of recommended hours of sleep is associated with better health outcomes in terms of physical, psychological, and cognitive well-being. Shorter sleep duration is associated with higher adiposity levels, (123-127) poorer emotional regulation, (128, 129) more screen time, (130-132) higher risk of injuries, (133, 134) poorer cognitive development, (135-138) increased hyperactivity-inattention, (139) reduced physical activity, (131, 140) and poorer quality of life. (141) The total, includes both naps and nocturnal sleep, but older pre-schoolers may not need the former if sufficient has been obtained at night. A bedtime routine should be developed that involves a wind-down period and avoiding screen time 1 hour before sleep. Aim to maintain this consistency across weekdays and weekends. Providing a conducive sleep environment that is dark, quiet and of comfortable temperature can help them sleep better. (91)

***Eating Habit and Diet:* Encourage healthy eating habits as a family, with caregivers as role models. Limit the amount and frequency of sugar-sweetened beverage consumption. Provide a structured routine for meal and snack times in appropriate portions that support growth and development. Teach your child to recognise hunger and satiety cues.**

Dietary habits are shaped at a young age and persist later into life. Through continuous positive caregiver modelling, a regular household eating routine provides opportunities for coordinated family meals and regulation of appetite, therefore influencing the overall diet quality of young children. (74, 142, 143) Limiting consumption of sugar-sweetened foods and beverages (including those naturally present in honey, syrups, fruit juices and fruit juice concentrates) to no more than 10% of total energy intake can curb the risk of overweight or obesity and dental caries in children. (41, 74, 76) Consuming a nutritious breakfast as part of their daily routine is strongly encouraged, as it has been associated with better diet quality and healthy body weight. (143) Structure-based or limit-setting strategies, such as serving appropriate portions, disallowing screen time during family meals, and exerting some caregiver control to moderate children's intake, can help children develop self-regulation and autonomy in eating behaviours. (74, 142)

Children are more likely to overeat when watching television or using a screen device during mealtimes and may learn unhealthy food habits from advertisements and programmes. A balance of allowance and control is needed, as being indulgent to a child's food requests may override his or her ability to eat according to internal hunger and satiety cue. Equally, excessive restraint of a child's food intake may unintentionally teach him or her to use food to manage negative emotions. (74, 142) Both of these may lead to unhealthy effects such as overeating and excess weight gain. (74, 142)

CONSENSUS STATEMENTS FOR ALL GROUPS (0 - 6 YEARS)

Integration: Aim to achieve most or all recommendations on physical activity, sedentary behaviour, sleep and diet for the best results

The recommendations for physical activity, sedentary behaviour, sleep and eating habits are closely related in terms of health benefits and making up the 24 hours of a child's day. The greatest health benefits can be achieved by meeting all the recommendations; more physical activity, less sedentary time, longer sleep duration, healthy eating habits and positive dietary choices. (10, 42, 144-146) Equivalent beneficial health outcomes can be obtained by achieving various combinations of the recommendations. Both combinations of more physical activity with longer sleep duration, and the combination of less sedentary time with longer sleep duration can improve cognitive development and reduce risks of adiposity. (6, 10) Replacing sedentary time with physical activity is associated favourably with fitness and motor development. (6, 10) Healthy and sensible dietary habits promote growth, development and maintenance of a healthy weight. (31, 33)

In conclusion, young children and their caregivers are recommended to adopt all domains of this guideline guide to achieve the best health outcomes. Families can start by identifying a domain that they can practically embed into their everyday life and encourage each other to achieve all the recommendations.

ACKNOWLEDGEMENTS

This document was developed by Singaporean Integrated 24-Hour Activity Guidelines for Early Childhood Study Workgroup which comprised key members from the Singapore community including members from the College of Paediatrics & Child Health of Academy of Medicine Singapore; Singapore Integrated Platform for Research in Advancing Metabolic Health Outcomes in Women and Children (IPRAMHO), led by KK Women's and Children's Hospital (KKH), in partnership with the SingHealth Polyclinics (SHP) and National Healthcare Group Polyclinics (NHGP), Perinatal Society of Singapore and Exercise is Medicine Singapore. The initiative is supported by the research group of IPRAMHO, an NMRC funded joint collaborative pot centre grant of KKH, SHP and NHGP. This multidisciplinary group is initiated by A/Prof Ng Kee Chong and Prof Tan Kok Hian and chaired by Dr Benny Loo.

This guideline summary, produced by the College of Paediatrics & Child Health of Academy of Medicine Singapore, supported by Health Promotion Board (HPB), Singapore and partnered with Exercise is Medicine Singapore and Sports Medicine Association Singapore, Perinatal Society of Singapore, Singapore Paediatric Society (SPS), The College of Family Physicians Singapore (CFPS) & Singapore Medical Association (SMA), acts as an educational aid and reference for healthcare professionals practicing in Singapore. The guideline summary does not define a standard of care, nor is it intended to dictate an exclusive course of management. It presents recognized clinical methods and techniques for consideration by practitioners for incorporation into their practice. It is acknowledged that management may vary and must always be responsive to the need of individual patients, resources, and limitations unique to the institution or type of practice.

WORKGROUP MEMBERS

Authors:	
(1) Dr Benny Kai Guo LOO	<i>Chair, Singapore Integrated 24-Hour Activity Guidelines for Early Childhood Study Workgroup Consultant General Paediatrics Service & Sports Medicine Service KK Women's and Children's Hospital</i>
(2) Dr Dinesh SIRISENA	<i>Consultant Sports & Exercise Medicine Khoo Teck Puat Hospital</i>
(3) Associate Professor Falk MUELLER-RIEMENSCHNEIDER	<i>Saw Swee Hock School of Public Health National University of Singapore</i>
(4) Professor Michael Yong Hwa CHIA	<i>Physical Education & Sports Science National Institute of Education Nanyang Technological University</i>
(5) Adjunct Associate Professor Benedict Chi'-Loong TAN	<i>Chief Department of Sport and Exercise Medicine Changi General Hospital Senior Consultant</i>

	<i>SingHealth Duke-NUS Sport and Exercise Medicine Centre</i>
(6) Associate Professor Ngiap Chuan TAN	<i>Family Physician and Senior Consultant SingHealth Polyclinics</i>
(7) Clinical Associate Professor Oon Hoe TEOH	<i>Head & Senior Consultant Respiratory Medicine Service KK Women's and Children's Hospital</i>
(8) Ethel Jie Kai LIM	<i>Dietician Nutrition & Dietetics KK Women's and Children's Hospital</i>
(9) Dr Mohammad Ashik ZAINUDDIN	<i>Head & Senior Consultant Sports and Exercise Medicine Service Department of Orthopaedic Surgery KK Women's and Children's Hospital</i>
(10) Joanne Shumin GAO	<i>Exercise Specialist Sport and Exercise Medicine Service KK Women's and Children's Hospital</i>
(11) Dr Poh Chong CHAN	<i>Head & Senior Consultant Division of General Ambulatory Paediatrics and Adolescent Medicine, Department of Paediatrics, Khoo Teck Puat - National University Children's Medical Institute National University Hospital</i>
(12) Dr Teresa Shu Zhen TAN	<i>Consultant Division of General Ambulatory Paediatrics and Adolescent Medicine, Department of Paediatrics, Khoo Teck Puat - National University Children's Medical Institute National University Hospital</i>
(13) Dr Nirmal KAVALLOOR VISRUTHAN	<i>Consultant Department of Neonatology KK Women's and Children's Hospital</i>
(14) Professor Victor Samuel RAJADURAI	<i>Senior Consultant Department of Neonatology KK Women's and Children's Hospital Vice-President, Perinatal Society of Singapore</i>
(15) Dr Moira Suyin CHIA	<i>Consultant General Paediatrics Service KK Women's and Children's Hospital</i>
(16) Dr Nur Adila Binte Ahmad HATIB	<i>Consultant General Paediatrics Service KK Women's and Children's Hospital</i>
(17) Dr Shirong CAI	<i>Principal Investigator Singapore Institute for Clinical Sciences Agency for Science, Technology and Research (A*STAR), Singapore</i>
(18) Dr Ju Lynn ONG	<i>Senior Research Fellow Centre for Sleep and Cognition Yong Loo Lin School of Medicine National University of Singapore</i>

(19) Associate Professor June Chi Yan LO	<i>Assistant Professor Centre for Sleep and Cognition Yong Loo Lin School of Medicine National University of Singapore</i>
(20) Associate Professor Mary Foong Fong CHONG	<i>Assistant Professor Saw Swee Hock School of Public Health National University of Singapore</i>
(21) Dr Le Ye LEE	<i>Senior Consultant Department of Neonatology Khoo Teck Puat - National University Children's Medical Institute National University Hospital</i>
(22) Dr Elaine Chu Shan CHEW	<i>Senior Consultant Adolescent Medicine Service KK Women's and Children's Hospital</i>
(23) Dr Ratnaporn SIRIAMORNSARP	<i>Family Physician Tampines Polyclinic SingHealth Polyclinics</i>
(24) Dr Miriam LEE	<i>Senior Manager Division of Children & Youth Programme Development Sport Singapore</i>
(25) Dr Aaron SIM	<i>Assistant Director Division of Physical Activity & Weight Management Health Promotion Board, Singapore</i>
(26) Jean ANG	<i>IPRAMHO Assistant Manager Division of Obstetrics & Gynaecology KK Women's and Children's Hospital</i>
(27) Dr Elaine Phaik Ling QUAH	<i>IPRAMHO Senior Research Fellow Division of Obstetrics & Gynaecology KK Women's and Children's Hospital</i>
(28) Professor Kok Hian TAN	<i>Head & Senior Consultant Perinatal Audit & Epidemiology Unit Department of Maternal Fetal Medicine KK Women's and Children's Hospital Lead, IPRAMHO, KK Women's and Children's Hospital President, Perinatal Society of Singapore</i>

First version published (date)

College of Paediatrics & Child Health of Academy of Medicine Singapore

SINGAPOREAN INTEGRATED 24-HOUR ACTIVITY GUIDELINES FOR EARLY CHILDHOOD (0 – 6 YEARS)

CONSENSUS STATEMENTS FOR INFANTS (0 – 11 MONTHS)

Physical Activity: Be physically active several times a day in a variety of forms and within a safe and supervised environment, where more is better. Non screen-based interactive floor-based play is encouraged. For those not yet mobile, this includes at least 30 minutes of tummy time spread throughout the day. Planning a daily routine of physical activities may be helpful.

- Regular physical activity in infants can improve their health and development.
- Include 30 minutes of tummy time for infants who are non-mobile.
- A safe and supervised environment should be provided in the presence of a responsible caregiver.

Sedentary Behaviour: Avoid restraining infants unattended for more than 1 hour at a time. Any form of screen time, including background screen time, is not recommended in infants. When sitting or lying down, it would be most beneficial for caregivers to engage the child in singing, reading, storytelling and imaginative play. Having a daily routine for activities, sleep and meals may be useful in reducing the amount of sedentary behaviour.

- When sedentary, it is encouraged to engage infants in interactive activities such as singing and reading.
- Screen time in infants may adversely affect their health, including psychosocial health and cognitive development.
- Any form of screen time is not recommended.

Sleep: Have a total amount of 14 - 17 hours (for 0 - 3 months of age) and 12 - 16 hours (for 4 - 11 months of age) of daily sleep, including regular naps, to promote optimal health. It is recommended for infants to sleep on their back in their own cot, in the same room as their caregivers to maintain sleep safety. Develop a regular sleep time routine to help infants fall asleep easier.

- Good quality sleep improves family well-being and child sleep is an important predictor of maternal health.
- Setting bedtime routines and providing a conducive sleep location can improve sleep duration.
- Good sleep safety practices include supine sleeping in their own cot and in the same room of the caregivers.

Eating Habit and Diet: Breastfeeding is recommended for infants when possible. From 4 to 6 months of age, introduce a variety of developmentally- and culturally-appropriate solid foods of various textures and flavours, prepared with no added salt and sugar. Provide a daily routine of meals, spaced 2 - 3 hourly during the day, and avoid overfeeding.

- It is recommended that fully and partially breast-fed infants be supplemented with 400IU of vitamin D soon after birth.
- Complementary foods should be started for infants when they are between 4 to 6 months of age, depending on developmental readiness.
- There is no evidence that delaying the introduction of allergenic foods prevents food allergies.
- It is recommended that guidance on responsive feeding practices is provided to caregivers.

CONSENSUS STATEMENTS FOR TODDLERS (1 - 2 YEARS)

Physical Activity: Accumulate at least 180 minutes in a variety of physical activities at any intensity spread throughout the day within a safe environment, where more is better. Daily outdoor active play is highly encouraged. Caregivers should participate actively with child during all forms of active play.

- Participate in physical activities comprising of both light activities and moderate to vigorous physical activities.
- Caregivers should encourage and/or participate actively with the child during play.
- Both structured indoor and outdoor activities are equally important.

Sedentary Behaviour: Avoid restraining toddlers on a seat for more than 1 hour at a time. Sedentary screen time, regardless of the type of device, is not recommended for children younger than 2 years of age. When sitting or lying down, it would be most beneficial to engage the child in singing, reading, storytelling or imaginative play.

- When sedentary, it is encouraged to engage toddlers in interactive and non-screen-based activities as these promote cognitive and social development.
- Prolonged periods being seated or spent on any screen device should be avoided as it is harmful for a child's physical, psycho-emotional and social health.

Sleep: Have a total amount of 11-14 hours of daily sleep with regular sleep and wake-up times. Develop a bedtime routine and keep to a consistent bedtime. Provide a conducive sleep environment and avoid screen time before bed.

- Regular bedtime and bedtime routine help toddlers sleep longer and better, and may be important for obesity prevention.
- Develop a bedtime routine such as reading bedtime stories or listening to lullaby.
- Provide a conducive sleep environment that is dark, quiet and of comfortable temperature.

- Avoid screen time 1 hour before bed.

Eating Habit and Diet: Continue to increase the variety of foods offered to your child and wean off milk as the main source of nutrition. Introduce healthy family meals and offer whole milk and water, while establishing a structured routine for meal and snack times. Using food to soothe your child or as a reward is discouraged.

- Caregivers decide what, when and how food is consumed at home.
- With increasing focus on a variety of minimally-processed foods across all major food groups, toddler should be weaned off milk as their main source of nutrition.
- Sugar-sweetened beverages and caffeinated beverages should not be given before two years of age and avoided as much as possible thereafter.
- Caregivers are encouraged to recognize and respond to hunger and fullness cues of the toddler, and should not pressure the toddler to eat new foods nor use food as reward.

CONSENSUS STATEMENTS FOR PRE-SCHOOLERS (3 - 6 YEARS)

Physical Activity: Accumulate at least 180 minutes of physical activity, at any intensity spread throughout the day and within a safe environment. At least 60 minutes should be moderate- to vigorous-intensity, where more is better, and can be in various forms. Older children should be exposed to a variety of age-appropriate vigorous-intensity play and engage in muscle- and bone-strengthening activities several times a week. Daily outdoor active play is highly encouraged. Caregivers should participate actively with children during all forms of active play.

- Regular physical activity, especially that which is moderate- to vigorous-intensity, is associated with multiple health benefits in pre-schoolers.
- Include at least 60 minutes of moderate-to-vigorous-intensity, preferably engaged outdoors.
- A strong foundation in movement competence in childhood is associated with lifelong participation in physical activity.

Sedentary Behaviour: Limit the total daily amount of sedentary behaviour, such as sitting or lying down, and interrupt extended periods of time spent being sedentary. Recreational screen time, regardless of the type of screen device, should be limited to less than 1 hour.

- Sedentary behaviour and in particular recreational screen time among children aged 3 - 6 years bore diverse detrimental effects on health and development.
- When sedentary behaviour cannot be avoided, regular movement breaks can minimize adverse health effects.
- Recreational screen time should be limited and age-appropriate content should be preferred.

Sleep: Have a total of 10 - 13 hours (for 3 - 5 years of age) or 10 - 11 hours (for 6 years of age) daily sleep. Older pre-schoolers may not need to nap if sufficient sleep has been obtained at night. Develop a bedtime routine and keep to a consistent bed and wake-up time. Provide a conducive sleep environment and avoid screen time before bed.

- Achieving the recommended hours of sleep is associated with multiple health benefits and may be important in prevention of obesity.
- Develop a bedtime routine that involves a wind-down period and avoid screen time 1 hour before sleep.
- Maintain a consistent bedtime across weekdays and weekends.
- Provide a conducive sleep environment that is dark, quiet and of comfortable temperature.

Eating Habit and Diet: Encourage healthy eating habits as a family, with caregivers as role models. Limit the amount and frequency of sugar-sweetened beverage consumption. Provide a structured routine for meal and snack times in appropriate portions that support growth and development. Teach your child to recognise hunger and satiety cues.

- A regular household eating routine provides opportunities for coordinated family meals and regulation of the child's appetite.
- Limiting consumption of added sugars, food products with natural sugars (e.g. honey) and sugar-sweetened beverages can curb the risk of overweight and dental caries in children.
- Consuming a nutritious breakfast as part of daily routine is strongly encouraged as it has been associated with better diet quality and healthy body weight.
- Caregivers can help children regulate their intake by serving appropriate portions, disallowing screen time during family meals and exerting some caregiver control to moderate their intake.

CONSENSUS STATEMENTS FOR ALL GROUPS (0 - 6 YEARS)

Integration: Aim to achieve most or all recommendations on physical activity, sedentary behaviour, sleep and diet for the best results.

- These recommendations may seem daunting. However once one can make this a way of life over each 24-hour day, it will become easier, more natural, and you will reap bountiful benefits, both physically and psycho-emotionally.
- Start with one or any combination of the recommended behaviours as you can achieve similar health benefits through the same number of recommendations in various combinations.
- Do this together as a family or with friends and encourage each other to achieve all the recommendations for the best health benefits.

PRACTICAL REFERENCE FOR PHYSICAL ACTIVITIES FOR EARLY CHILDHOOD

Physical Activity

Physical activity for early childhood refers any activity that gets children moving. All activity counts! This guide provides examples of activities that children in the early years can participate in to accumulate physical activity time throughout the day.

For infants, physical activity includes tummy time. For toddlers and pre-schoolers, physical activity should include a **wide variety movement experiences**, in **different environments**. This involves activities both **indoors and outdoors**, which takes place in various settings **in school and out of school**. **Daily outdoor active play** is highly encouraged as it provides opportunities for toddlers and pre-schoolers to develop **fundamental movement skills** and to explore their environment.

Tips on Tummy Time for Infants

- Your baby may start tummy time as soon as they are brought home.
- Place your baby on their tummy when they are relaxed and rested. Place them on a firm surface like a mat or on your chest so that they may see your face. Start with 1-2 minutes per session and lengthen to 5-10 minutes a few times a day as your baby grows and becomes stronger. Face your baby whilst talking or singing to them. If they appear tired or distressed, roll them onto their backs for a rest and try again later.
- When your baby is strong enough, they may try to roll over from their back to their tummy. You may place toys on a firm surface around your baby to encourage this.
- You may place toys just out of your baby's reach to encourage them to reach for or crawl towards the toy.
- Make tummy time part of your baby's daily routine, for example for a short duration before or after diaper changes.

Types of Physical Activities for Toddlers and Pre-schoolers

Toddlers and preschool children can be engaged in a wide variety of physical activities through a range of **fundamental movement skills (FMS)**. FMS underpin daily living activities and provide the foundation for participation in sports and other forms of complex movement skills as the children grow up. The early years are critical for establishing this foundation.

Parents/Caregivers play an important role in enhancing the FMS of their children at home and in school via facilitation, motivation and personal participation. Parents/Caregivers can also facilitate learning of FMS by providing simple cues, demonstration and playing with your child.

FMS are generally categorised into three main themes:

1. **Locomotor Skills** refers to body movement from one location to another. Many locomotor skills are used daily (e.g. running after a bus, leaping over a puddle), in many games and sports (e.g. jumping up to catch a ball) and during active play (e.g. crawling through a tunnel or climbing in the playground). Other examples of locomotor skills include walking, sliding, hopping, and skipping.
2. **Object Control (manipulative) Skills** require the child to control an object using part of the body or using an equipment. Object control skills involve:
 - Propulsive skills – Sending an object away (e.g. throwing or kicking a ball)
 - Receptive skills – Receiving an object (e.g. catching or dribbling a ball)
3. **Stability (non-locomotor) Skills** involve a child in maintaining and/or attaining balance. Stability is a key element for every human movement and necessary for all locomotor and object skills. Examples of stability skills include static and dynamic balance, bending and curling, turning, twisting, and stretching.

(Source: Fun Start Move Smart!: Fundamental movement skills for growing active learners)

Other types of physical activities to encourage participation of pre-schoolers include swimming, cycling and other forms of modified sport.

Older pre-schoolers should progress towards participating in a range of physical activities that involve age-appropriate energetic play. They are recommended to carry out moderate to vigorous physical activity (MVPA) for 60 minutes, which is a third of the total daily physical activities (PAs).

MVPA should include frequent periods of energetic and dynamic play, spread throughout the day. A useful guide is to observe if the child is huffing and puffing during the activity, or is not able to say more than a few words without pausing to catch a breath. Across an exertion scale of 10, these activities will score about 7 or 8. Examples of MVPA for the preschooler will include, playing tag (running or chasing playmates), ball games, skating or rapid cycling.

In addition to MVPA, pre-schoolers should also incorporate muscle and bone strengthening activities. These activities require the children to bear and lift their own body weight to work against a resistance. Examples include running, jumping, climbing activities such as scaling playground obstacles, skipping rope, dancing and playing games such as hopscotch. Dedicated resistance or weight training regimes are not necessary.

Physical activities for the toddler and preschooler may be organised broadly into two categories: i) structured physical activity with planned objectives and focus, and ii) unstructured physical activity that allows for “free” and unguided play. Both genres are synergistic (i.e. deliberate vs. self-regulated way of achieving activity goals) and should be incorporated into the child’s daily physical activity routine. For example, a structured and unstructured play in a PE session covers lesson for a child to balance on a beam and freedom to play alone or with others at a playground.

Physical Activity Out of School		
Different Environments to engage in Physical Activity	Tips for Parents/Caregivers	Suggested Activities/Examples
At Home (Indoors)	Create a home environment that encourages movement and exploration	<ul style="list-style-type: none"> • Set up safe spaces for movement (e.g. an area for physical play) • Position furniture in a way that allows child to move freely and encourages movement around the house • House rules that encourage safe movement (e.g. a toddler is allowed to climb up and down low furniture or sofa) • Devote spaces in the house for active play (e.g. Corridor for shuttle run, hopscotch, underarm rolling to a target) • Make accessible a bucket of balls of different sizes for children to play with • Paste pictures of favourite cartoon characters on the wall for child to aim and throw • Hang balloon or streamers from the doorway to encourage child to jump, reach and strike it
	Make use of household/recycled material for activities	<ul style="list-style-type: none"> • Create an obstacle course or a fort with cardboard boxes, pillows, chairs, and bedsheets to crawl through or jump over • Rolled up socks, crushed newspaper or soft toys for throw and catch games • Make DIY equipment (e.g. paper plate and short stick as an implement to send and receive a balloon to and fro) • Masking tape on the floor to balance on the line (dynamic balance)
	Play with your child (parent-child games)	<ul style="list-style-type: none"> • Hide and seek and Treasure hunt (use different locomotor skills) • Keep the balloon in the air with different body parts • Pillow fights • Simon Says • Animal movements • Alphabet poses • A game of twister • Musical statue

		<ul style="list-style-type: none"> • Dance to music
	Involve child in household chores (even if a helper is available)	<ul style="list-style-type: none"> • Clean up after meals (e.g., bring plate back to kitchen or wipe the dining table) • Tidy the house (e.g., put toys/books back, return items after use) • Fold clothes and put it back in wardrobe • Water plants
On-the-go (Outdoors/ Indoors)	Integrate as part of daily activity and commute	<ul style="list-style-type: none"> • Walk up and down stairs • Walk, cycle or scoot to and from school
Playground/Play gardens (Outdoors)	Make it a routine for child to visit the playground; Encourage unstructured play	<p>Playgrounds present numerous opportunities for children to explore and develop FMS. Some examples include:</p> <ul style="list-style-type: none"> • Balancing on a balance beam, a log or on an uneven surface • Climbing up a rock wall or rope ladders • Crawling through a tunnel • Jumping/hopping into coloured makers on the floor or on the trampoline • Sliding also involves stability skills such as bending, and transfer of weight to get down the slide
	Facilitate active play: Introduce games resulting in moderate to vigorous physical activity (MVPA)	<p>Introduce games with simple rules and play with your child:</p> <ul style="list-style-type: none"> • Create an obstacle course to challenge your child • Catching or Tag, Freeze-Tag, The Floor is Lava (use different locomotor skills)
Outdoor Spaces (e.g., basketball court, void deck, open spaces)	Identify available outdoor open spaces in your neighbourhood for your child to participate in MVPA	<ul style="list-style-type: none"> • Games with simple rules: Catching or Tag, Freeze-Tag, What's the time Mr Wolf (use different locomotor skills) • Ball games (e.g. throw and catch, kicking, bat and ball, badminton) • Bubbles (run, jump and strike or catch) • Scooter, Cycle (tricycle, balance

		bike, two-wheel bike), Roller skate
Parks/ Nature Parks/Beach (Outdoors)	Immerse your child in a new environment to engage in active play over the weekend	<ul style="list-style-type: none"> • Nature walks or hike • Walk, run, jump, hop, skip bare feet on different surfaces (e.g., grass, sand) • Walk on uneven ground • Balance on logs • Build sandcastles • Water play/ Wade in the water
Sport Facilities (e.g., stadiums, swimming pools, badminton courts, climbing gym) (Outdoors/ Indoors)	Let your child experience a variety of sports according to his/her interest	<ul style="list-style-type: none"> • Participating in a range of sports with an age-appropriate programme helps develop FMS. Some examples include: <ul style="list-style-type: none"> ○ Football ○ Athletics ○ Gymnastics ○ Basketball ○ Tennis ○ Hockey ○ Martial arts ○ Swimming ○ Rock climbing

Physical Activity in School

As toddlers and preschool children spend many hours in school on weekdays (especially those in childcare centres), preschool educators play a significant role in getting children to be active in physical activity throughout the day. Besides classes that directly involve movement (e.g., Music and Movement, Motor Skills Development), educators should provide other opportunities for young children to increase body movements throughout the day. Some suggestions include:

- **Modifying the physical environment to** increase movement of the children as part of their daily routine. Introduce
 - **Active Navigation Routes** – Design spaces and pathways linking different areas of the school using floor markers; install attractive signages to encourage children to jump, hop, balance etc. to get from one part of the school to another.
 - **Active Play Corners** (e.g., Giant game board that gets children to perform various FMS)
- Incorporate **movement as part of core curriculum** (e.g., numeracy with movement)
- Introduce **outdoor learning** or **MVPA in a different environment**
- Introduce **Brain breaks** every hour of sedentary time or when children are restless. This involves quick and simple activities to get children out of their seats to move (e.g., stretching, action songs, animal movements)

Physical Activities within a Pre-schooler's Day

There are many ways in which a preschooler is capable of fulfilling the physical activity recommendations on any given day. The following suggestions and examples aim to illustrate a typical school day and a weekend.

On weekdays:

- Preschool: Over 2 hours, 1 hour can be structured physical education class, and the remaining 1 covers other curriculum such as music or dance class, active involvement in story-telling
- Home (1 hour)
 - Playground after school (as part of daily routine, 45-60min)
 - Walk to school, climb up/down stairs (20min)
 - Active play at home.

On weekends

- Beach/Park (picnic, walking in nature, cycling); park connector
- Organised sport with modified games
- Playing at activity facilities (playground, water-park, beach)

Resources

Tummy time

1. <https://polyclinic.singhealth.com.sg/Documents/GrossMotorSkills.pdf>

Play activities for infants

1. <https://polyclinic.singhealth.com.sg/Documents/3month%20DA.pdf>
2. <https://polyclinic.singhealth.com.sg/Documents/6month%20DA.pdf>
3. https://polyclinic.singhealth.com.sg/Documents/12month%20DA_v2.pdf
4. <https://www.healthhub.sg/live-healthy/2030/activity-ideas-to-get-tot-moving>

Outdoor play for toddlers & pre-schoolers

1. <https://activeparents.myactivesg.com/activities/ap/lets-go-play-outside-5-unique-playgrounds-around-singapore-to-train-your-childs-fundamental-movement-skill>
2. <https://www.ecda.gov.sg/Educators/Pages/Outdoor-Learning.aspx>

ActiveSG programmes for pre-schoolers

1. www.myactivesg.com/programmes/academy
2. www.activeparents.myactivesg.com

Sedentary Behaviour

Parents, caregivers, and teachers can help children to reduce their sedentary behaviour and to engage in active lifestyles. Consider the following:

Infant	<ul style="list-style-type: none">• Talk and sing gently to your baby whilst holding them. When talking, try using a changing tone of voice and vary your expressions.• Read books that have simple, repetitive words and clear pictures to your baby, especially those with rhymes or songs.• Stimulate your baby with toys that are colourful or make noise, encouraging them to reach out for the toy. Encourage your baby to explore toys of different textures (soft, hard, rough) for exploratory play. Household objects like cups, spoons or boxes can be used. Blocks are useful for open-ended play.• Play peek-a-boo with your baby with your hands or another object like a book or napkin.• You may bring your baby outdoors to explore their surroundings.• When playing with your baby, follow their lead and change activities based on their needs.
Toddler	<ul style="list-style-type: none">• Playtime is a powerful way of showing love and connecting with your child.• A device cannot replace you. Your interaction with your child will benefit them extensively.• Allow your toddler to take on unstructured, free play. It enables them to develop creativity and learn at their own pace.• For toddlers >2 years old, if you allow screen time, consider setting consistent rules and limits. Ensure access to high quality educational programs for your children and co-view with them.• Face to face interactions is much preferred, which include talking, reading and singing
Pre-schooler	<ul style="list-style-type: none">• Active play and physical activity are important, and curb sedentary time when possible.• When sedentary behaviour cannot be avoided, break up extended periods of sitting or lying down with frequent breaks for movement.• While sedentary, engage in interactive activities together, such as storytelling, playing games and singing.• Set rules: to minimize the amount of screen viewing, to ensure age-appropriate content, and to avoid screen device use while eating meals, playing with toys or during family conversations.• Remove TV's or other screen devices from the child's bedroom and avoid screen viewing before bedtime.• Monitor media content and select high-quality programs appropriate to the child's age, engage in conversations with the child about the media content.

Resources

Play Activities for infants

1. <https://polyclinic.singhealth.com.sg/Documents/3month%20DA.pdf>
2. <https://polyclinic.singhealth.com.sg/Documents/6month%20DA.pdf>
3. https://polyclinic.singhealth.com.sg/Documents/12month%20DA_v2.pdf
4. <https://www.healthhub.sg/live-healthy/2030/activity-ideas-to-get-tot-moving>

Movement/Fun activities at home

1. <https://www.nuh.com.sg/our-services/Specialties/Paediatrics/Documents/Activity%20Resource%20Book%20-%20PLAY.pdf>
2. <https://www.nuh.com.sg/our-services/Specialties/Paediatrics/Documents/Movement%20activities%20at%20home%20for%20your%20child.pdf>

Advice about screen time

1. <https://www.nuh.com.sg/our-services/Specialties/Paediatrics/Documents/NUH%20CDU%20Screen%20Time%20E-Brochure.pdf>
2. <https://www.healthychildren.org/English/family-life/Media/Pages/Healthy-Digital-Media-Use-Habits-for-Babies-Toddlers-Preschoolers.aspx>
3. <https://childmind.org/article/media-guidelines-for-kids-of-all-ages/>

Family media Plan

1. <https://www.healthychildren.org/English/media/Pages/default.aspx>

Sleep

Parents, caregivers, and teachers can help children to meet the sleep recommendations. Consider the following:

Infant	<ul style="list-style-type: none">• Set a consistent bedtime routine to establish infant sleeping behaviors. A regular pre-bedtime plan can include bathing, baby massage, swaddling and dimming lights• Parents need to look out for infant body language indicating tiredness and need for sleep like rubbing eyes, arching back and baby not focusing• The infant is best put to bed while drowsy and not completely sleeping. Similarly nursing to sleep does not allow the baby to settle himself.• Babies who are unsettled may need rhythmic patting to quieten them but not to the point of sleeping• Provide the baby opportunities to self soothe when he wakes up. Your baby might fuss or cry before finding a comfortable position and falling asleep• In case he remains restless providing a comforter or pacifier may help. However, try to avoid carrying the baby or rocking the baby to sleep• An over-tired baby may not sleep better at night. Therefore, daytime naps are important
Toddler	<ul style="list-style-type: none">• Develop a bedtime routine that involves a wind-down period, which helps to relax and anticipate bedtime (e.g. reading a book, a relaxing shower, listening to music)• Avoid screen time (e.g. smart phones, tablets, computers) 1 hour before sleep• Avoid naps close to bedtime as it may prevent the child from falling asleep or staying asleep• Set and maintain a consistent bedtime across weekdays and weekends• Provide a conducive sleep environment that is dark, quiet and of comfortable temperature• Have good time management to ensure there is enough time for bedtime routine and that the child gets the recommended number of hours of sleep• Keep the bed only for sleep and rest• Avoid stimulating and vigorous activities such as exercise and consumption of caffeinated food (e.g. soft drinks, chocolates) or beverages before bedtime• Provide the child with an item that the child feels secure with (e.g. a favourite pillow, blanket or stuffed toy)
Pre-schooler	<ul style="list-style-type: none">• Develop a bedtime routine that involves a wind-down period• Avoid screen time 1 hour before sleep• Maintain a consistent bedtime across weekdays and weekends• Set a bedtime for your child

	<ul style="list-style-type: none">• Provide a conducive sleep environment that is dark, quiet and of comfortable temperature• During sleep time, phone should be on silent mode, switched off, and disallowed in the bedroom• Be a sleep role model for your child, i.e. sleep sufficiently yourself• Prioritise your child's sleep over other activities• Limit consumption of caffeinated/energy drinks• Set up an optimal sleeping environment for your child, i.e. dark and not too hot/cold, quiet (ensure phone is off/on silent mode)• Reserve the bed for sleeping only
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Resources


Helping baby sleep

1. <https://www.healthhub.sg/live-healthy/1660/helping-baby-sleep>
2. <https://www.healthxchange.sg/news/bedtime-options-for-babies>
3. <https://polyclinic.singhealth.com.sg/Documents/GoodSleepHabitsBabies.pdf>
4. <https://www.healthhub.sg/live-healthy/1195/baby-time-to-unwind>
5. <https://www.healthhub.sg/live-healthy/1936/how-can-i-get-my-baby-to-sleep-well-and-safely>

Eating Habit and Diet

Parents, caregivers, and teachers can help children to meet the eating habit and diet recommendations. Consider the following:

Nutrition for Breastfeeding Mothers	
<p>It is important to have a nutritionally-balanced diet, and of adequate portions, as this may affect the quality and quantity of breastmilk. Nutritional requirements during breastfeeding can be found on:</p>	
<ol style="list-style-type: none"> Integrated Maternal and Child Wellness Hub (SingHealth Polyclinics) weblink: <ul style="list-style-type: none"> https://polyclinic.singhealth.com.sg/Documents/NutritionDuringBreastfeeding.pdf SingHealth YouTube channel weblink: <ul style="list-style-type: none"> https://www.youtube.com/watch?v=NXEDiK0D0Is&list=PLwKZdOHmwfHG_SfEKdpAjarcQEvrXKbY&index=7 	

Nutrition for Young Children		
Nutrition-related information for parents	<p>For information on breastfeeding, childhood nutrition and recipes according to various age groups. It includes other information on general care, growth and development, sleep and activity, as well as parenting tips.</p> <p>Weblinks:</p> <ul style="list-style-type: none"> https://www.healthhub.sg/programmes/183/parent-hub https://www.youtube.com/watch?v=Zu-0WnjRzA8&list=PLwKZdOHmwfHG_SfEKdpAjarcQEvrXKbY&index=8 	<p>Search in browser:</p> <p>“Parent Hub HPB”</p> <p>“SingHealth Baby Feeding Tips”</p>
Early Childhood Nutrition	<p>For information on early nutrition according to the following age groups:</p> <ul style="list-style-type: none"> - 0 to 4 months - 4 to 6 months - 6 to 12 months - 12 to 24 months <p>Resource guides include recommended amount for each food group per day and recipes.</p> <p>Contact of helplines and support groups are available.</p>	<p>QR code:</p> 

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Glossary

Cardiometabolic health	The interplay of blood pressure, blood lipids, glucose and insulin on health.
Cognitive development	The process of learning, memory, attention, concentration and language development.
Emotional regulation	An individual's ability to manage and respond to emotional experiences such as stress, anxiety, mood, temperament, hyperactivity/impulsivity.
Energetic play	Active play that is equivalent to moderate-to-vigorous physical activity, when children get out of breath and feel warm. This may take many forms and may involve other children, caregivers, objects or not.
Exercise	Physical activity that is planned, structured, generally repetitive and has purpose.
Light-intensity physical activity	LPA is equivalent to 1.5–4 METs in children, i.e., activities with energy cost 1.5 to 4.0 times the energy expenditure at rest for that child. For young children, this can include slow walking, bathing, or other incidental activities that do not result in the child getting hot or short of breath.
Metabolic equivalent of task	The metabolic equivalent of task, or simply metabolic equivalent, is a physiological measure expressing the energy cost (or calories) of physical activities. One MET is the energy equivalent expended by an individual while seated at rest.
Moderate to vigorous intensity physical activity	Moderate PA is equivalent to 4–7 METs in children, i.e., 4–7 times resting energy expenditure at rest for that child. Vigorous PA is equivalent to >7 METs. For young children, this can include brisk walking, cycling, running playing ball games, swimming, dancing etc. during which the child gets hot and breathless.
Physical activity	Movement of the body that uses energy over and above resting. For young children, this can include walking, crawling, running, jumping, balancing, climbing in, through and over objects, dancing, riding wheeled toys, cycling, jumping rope etc.
Sedentary behaviour	Any waking behaviour characterized by an energy expenditure ≤ 1.5 metabolic equivalents (METs), while in a sitting, reclining or lying posture. For children under 5 years of age includes time spent restrained in car seat, high-chair, stroller, pram or in a carrying device or on a

	caregiver's back. Includes time spent sitting quietly listening to a story.
Tummy time	Time an infant spends lying on their front (in prone position) while awake with unrestricted movement of limbs.

Source: Guidelines on Physical Activity, Sedentary Behaviour and Sleep for Children under 5 Years of Age. Geneva: World Health Organization; 2019.

PUBLISHED: OCTOBER 2021

College of Paediatrics & Child Health, Singapore
Academy of Medicine, Singapore
81 Kim Keat Road
#11-00 NKF Centre
Singapore 328836