The South African 24-hour movement guidelines for birth to five years: an integration of physical activity, sitting behaviour, screen time and sleep

Running title: SA 24-hour movement guidelines for birth to five years

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Abstract

Background:
In December 2018, the South African (SA) 24-hour movement guidelines for birth to five years were released. This paper describes the process used to develop these guidelines.

Methods:
The Grading of Recommendations Assessment, Development and Evaluation (GRADE)-ADOLOPMENT approach was followed, with some pragmatic adaptions, using the Australian guidelines for the early years as a starting point. A consensus panel, including stakeholders in early childhood development and academics, was formed to assist with the development process.

Results:
At a face-to-face meeting of the panel, global and local literature were considered. Following this meeting, a first draft of the guidelines (including a preamble) was formulated. Further reviews of these drafts by the panel were done via email, and a working draft was sent out for stakeholder consultation. The guidelines and preamble were amended based on stakeholder input, and an infographic was designed. Practical ‘tips’ documents were also developed for caregivers of birth to 5-year-olds, and early childhood development practitioners. The guidelines (and accompanying documents) were released at a launch event and disseminated through various media channels.

Conclusions:
These are the first movement guidelines for SA, and the first such guidelines for this age group from a low- and middle-income country.

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Background

In recent years, there has been a shift towards integrated guidelines for children’s physical activity, sedentary behaviour and sleep. This considers the natural integration of these behaviours – referred to as ‘movement behaviours’ – across a 24-hour period, and provides a more cohesive message for parents, caregivers, teachers and practitioners. Canada was the first country to take this integrated approach, and in 2016 released 24-hour movement guidelines for children and adolescents between 5 and 17 years of age. In November 2017, Canada co-released 24-hour movement guidelines for children (0-4 years of age), in conjunction with Australia (0-5 years of age). Earlier in 2017, the World Health Organization (WHO) initiated a process to develop the first global guidelines for physical activity, sedentary and sleep behaviour for the early years. These guidelines are responsive to the WHO Ending Childhood Obesity (ECHO) Reports, which highlighted the need to address 24-hour movement behaviours in early childhood for the prevention and management of obesity and non-communicable diseases (NCDs). Furthermore, these guidelines address the importance of these movement behaviours for other developmental outcomes that are important in early childhood, such as cognitive development and psychosocial health.

These developmental outcomes are important in South Africa (SA), which is a country with a high burden of NCDs, and the highest obesity prevalence in Africa, with 68% of women (15 years and older) being overweight or obese. In SA, there is a need for obesity prevention in early childhood. In 2013, 23% of 2-5-year-old children were reported to be overweight/obese, and research from a low-income urban SA setting has shown that obesity in the preschool years is highly predictive of obesity in adolescence. Despite these concerning statistics, there have been no guidelines developed for any of the 24-hour movement behaviours for any age group in South Africa, including the early years. Considering the ECHO Reports’ emphasis on early prevention of obesity, 24-hour movement guidelines for 0-5-year-old children could be considered a logical starting point, particularly in light of the progress made in countries such as Canada and Australia on 24-hour movement guidelines for the early years.

The aim of this paper was to describe the process of developing the SA 24-hour movement guidelines for birth to five years. This process happened concurrently with the development of global guidelines for physical activity, sedentary and sleep behaviours in the early years by the WHO.

Methods

GRADE-ADOLOPMENT process

For the SA guidelines, the Grading of Recommendations Assessment, Development and Evaluation (GRADE)-ADOLOPMENT approach was followed, which is the approach used by the Australian early years guideline development group to adapt the Canadian early years guidelines. This approach refers to the process of adopting, adapting, or de novo developing guidelines, and allows guideline groups to capitalise on previous work when developing or updating guidelines. This adaptive approach was deemed appropriate for SA, given that there may be contextual differences between SA (a middle-income country with extreme inequality and widespread poverty), and Canada and Australia (both high-income countries). Furthermore, the GRADE-ADOLOPMENT approach encourages the involvement
of a range of stakeholders in the development process (in the consensus panel and consultation process). Considering the novelty of these (or any) movement behaviour guidelines for SA, it was believed that the involvement of multiple stakeholders would encourage stakeholder buy-in and ownership of the SA guidelines, without the need to duplicate work already completed by highly competent research groups (for the Canadian and Australian guidelines) or to ‘reinvent the wheel’. In light of the somewhat limited resources available for the development of these SA guidelines, this was arguably the most inclusive, pragmatic and cost-effective approach.

A timeline and summary of the GRADE-ADOLOPMENT steps that were followed are provided in Figure 1. Some additional steps were included in the process, following the example of the Australian guideline development group. Steps 1-7 are described (for the SA guidelines) in this section as ‘Methods’. The results of Step 7, and the remaining steps are described (for the SA guidelines) in the ‘Results’ section.

[Insert Figure 1 here]

1. Establish leadership group

Funding for the guideline development process was confirmed in November 2017, and the Leadership Group was established shortly after this. The leadership group comprised academic researchers with expertise in movement behaviours in children (CED, SAT, AP, DER), including the leader of the Australian early years guideline development group (ADO), who was the international advisor for the SA guidelines. Other members of the leadership group included a representative from the funding body (CM), and a media and marketing specialist (TL). The leadership group was chaired by CED.

2. Form consensus panel

Stakeholders in the field of early childhood development (ECD) in SA, as well as knowledge users (including health practitioners) were identified through the networks of the leadership group. Representatives of the National Departments of Social Development, Health and Basic Education (who are responsible for various aspects of the care of 0-5-year-old children in SA) were invited to be members of the consensus panel (only one individual accepted the invitation, MLS). These ECD stakeholders and government representatives were seen as a vital part of the process, and would be able to provide insight into the acceptability and feasibility of disseminating these guidelines, given that movement behaviours are not currently a priority issue in early childhood in SA.

Other academic researchers with expertise in movement behaviours in the early years or with expertise in early childhood development were identified from the Scientific Advisory Group of the Healthy Active Kids South Africa Report Card and invited to be part of the consensus panel. All those invited were given an outline of the guideline development process and informed of the consensus panel meeting that was to take place in April 2018. The leader of the expert working group for the development of 24-hour movement behaviour recommendations for the Under 5s in the United Kingdom (JJR) was invited to be an international observer for the SA guideline group. The details of the consensus panel are provided in Supplementary Table 1.
3. Identify credible existing guidelines, and define criteria for selection of guidelines

As part of this step, the Australian guidelines were identified as the most recently developed credible guidelines on movement behaviours for the early years. These guidelines met the following criteria for selection of guidelines:

- Published in the last 5 years;
- Addressed clear research questions, contained all Population, Intervention / Exposure, Comparator, Outcomes (PICO) elements;
- Followed GRADE or GRADE-ADOLOPMENT process;
- Allowed for updating (access to full systematic reviews), and provided full access to search strategy;
- Existing and accessible GRADE tables and summaries of findings; and

GRADE-ADOLOPMENT steps not included

Following the advice of the Australian early years guideline development group, the following GRADE-ADOLOPMENT steps were not included, as they were deemed to be less relevant for these types of guidelines:

- Step 4: Evaluate and complete GRADE Evidence-to-Decision frameworks for each recommendation; and
- Step 5: Determine availability, completeness and currency of information about Evidence-to-Decision criteria.

6. Determine appropriateness of PICOs

The PICOs used to guide the update of the systematic reviews for the WHO guidelines were sent to the consensus panel prior to the consensus panel meeting in order to obtain feedback on the appropriateness of these PICOs for the SA guidelines. These PICOs were agreed upon by the SA consensus panel and are provided in Supplementary Table 2.

7. Updating of systematic reviews

The development of the SA guidelines took place in parallel with the WHO guideline development process. Three of the authors (CED, JJR and ADO) were part of the Guideline Development Group for the WHO guidelines, and the SA consensus panel (along with the UK expert working group, led by JJR) was given access to these updated systematic reviews to use for the SA guidelines.

While the updated systematic reviews provided the evidence base for the recommendations to be included in the SA guidelines, it was considered important to review SA literature that could provide insight into any contextual adaptions to the guidelines that may be necessary. This local literature would also be relevant for the consensus panel meeting to provide an overview of research on movement behaviours in early childhood in SA, since many of the consensus panel members did not necessarily have experience working in the field of movement behaviours and would not be familiar with local research. Comprehensive searches on PubMed, Africa Journals Online, and Africa Wide (EBSCOhost) databases for evidence published in the previous 10 years (prior to March 2018) on physical activity, sedentary behaviour, screen time and sleep in children 0-5 years old from SA were conducted. Search parameters are included in Supplementary Table 3.
Results

Updates to systematic reviews

The results of the WHO updated systematic reviews have been published elsewhere, and a summary of results is presented here. Physical activity was found to be positively associated with lower adiposity (infants, toddlers, pre-schoolers); cognitive development (infants, pre-schoolers); fitness (pre-schoolers); bone/skeletal health (pre-schoolers); and cardiometabolic health (pre-schoolers). Higher levels of sedentary behaviour were found to be associated with higher adiposity (infants, toddlers, pre-schoolers); poorer motor development (toddlers); poorer cognitive development (infants, toddlers, pre-schoolers); and poorer psychosocial health (pre-schoolers). Shorter sleep duration was found to be associated with higher adiposity (pre-schoolers); poorer emotional regulation (infants, toddlers, pre-schoolers); and poorer cognitive development (pre-schoolers).

Narrative review of South African literature

Overall, there was a paucity of literature describing the physical activity, sedentary behaviour and sleep of 0-5 year old children in SA. This was highlighted in the Healthy Active Kids South Africa 2018 Report. There were a number of recent studies on movement behaviours in this age group, and while these studies were done with relatively small, localised samples, they represent the best available evidence. However, the generalisability of these findings to all SA children is limited. These studies were presented to the consensus panel and are summarised as follows.

Physical activity

In a study of infants and toddlers (3-24 months) using accelerometry, those aged 3 and 6 months were reported to spend 20 and 10 minutes in tummy time per day respectively. Infants who were more mobile played more. Boys spent more time in higher intensity physical activity and less time in lower intensity activity than girls; and time spent in higher intensity activities was higher in the older age groups (controlling for BMI-z scores, weight and length).

Amongst preschool-aged children (3-5 years old) across income settings, objectively measured physical activity was reported to be in excess of 400 min/day, with all children meeting the recommended 180 min/day of total physical activity – the Australian recommendation (in 2011) when these data were published. Further analyses of these data (presented to the panel; being prepared for publication) indicate that for this sample, average moderate-to-vigorous-intensity physical activity (MVPA) was 124.4±37.5 min/day and total physical activity was 457.0±61.1 min/day; 96.9% of children met current guidelines published by the Canadians and Australians. Boys were significantly more active than girls, and urban high-income children were significantly less active than urban low-income and rural low-income children. Similar findings have been reported with preschool-aged children from another low-income, urban setting: 560.5±52.9 min/day of total physical activity and 90.9±30.0 min/day of MVPA (objectively measured), with 83% of children meeting current guidelines. Using direct observation at preschools, low-income urban children spent 11% of their time in MVPA, which was more than the 8% observed in mid-/high-income children.
Various studies have looked at associations between physical activity and measures of adiposity, and gross motor skills. In preschool-aged children from a low-income, rural setting, children who were overweight/obese were almost 80% less likely to engage in MVPA (directly observed) in the preschool setting. This is similar to findings from a study using the same methods with urban preschool children, although in this urban sample, underweight children were also less likely to be active. Amongst preschool children from urban low- and high-income settings, being less physically active (objectively measured) has been associated with thinness (prevalence of 19.4% in the total sample), but not overweight/obesity; and MVPA was in fact positively associated with BMI and BMI-z scores (mean BMI-z score -0.04±1.03). These studies highlight that undernutrition remains a concern in SA, particularly in early childhood; and that in SA, stunting is a persistent issue.

Although stunting has been found to have a limited effect on gross motor skills, it has a more pronounced effect on cognitive development in early childhood.

Gross motor skills were found to be good amongst 0-5 year old children in SA. In the study with preschool-aged children from a low-income, rural setting, better gross motor skills (as measured by the Test of Gross Motor Development-Version 2, TGMD-2) were associated with objectively measured MVPA and vigorous-intensity physical activity. This study also found that directly observed MVPA during preschool time was positively associated with gross motor skills. Another study conducted with preschool children from low-income settings reported that components of cognitive development were positively associated with gross motor skills (using the TGMD-2), but not with physical activity.

With regards to contextual factors influencing physical activity in SA settings, safety has been raised as a concern by parents, both in terms of crime and traffic safety. However, qualitative findings suggest that while safety is a perceived issue, it does not seem to stop children from being very active or playing without supervision, and children have been observed implementing their own safety precautions during games where road traffic was an issue. The lack of resources and facilities, particularly in low-income settings, have also been mentioned as a constraint to physical activity. But again, these constraints, such as the lack of conventional play equipment, have not always been observed to hinder play.

**Sedentary behaviour**

A small number of studies have investigated time spent in sedentary behaviour, including screen time. In the study on infants and toddlers mentioned above, 94% of children exceeded the recommendation of no television time based on maternal-report, with a median of 30min at 3-, 6- and 12- months old, and 25min at 18- months old. Total time spent restrained per day varied between age groups, and at 3-, 6-, 12- and 18- months was (median) 133, 150, 100, 75 min per day respectively. This included being strapped to the back of a caregiver (median of 30min at 3-, 6- and 12- months old) which during early childhood is a common practice in SA and has been found to restrict opportunities to crawl, impacting on neurological development.

In the studies using direct observation, urban preschool children were found to spend 73% of their time in preschool being sedentary. Time spent sedentary was 71% in rural, low-income preschools. Other findings presented to the panel (paper in review) reported that screen time, assessed using a parent questionnaire, was significantly higher in preschool-
aged children from urban high-income settings (1.71±1.18h/day) in comparison to urban
low-income (0.77±0.90h/day) and rural settings (0.45±0.37h/day). Overall, 81.9% met the
screen time guideline of <1h/day, but only 33.3% of the urban high-income children met
the guideline, versus 74.0% and 96.5% of low-income urban and rural children, respectively.
The low levels of screen time in the rural setting are most probably due to limited access to
screens (reported from questionnaire data). A high proportion (81.7%) of parents reported
that they believed their child’s screen time would not affect his/her health, which highlights
the importance of educating parents about the risks of screen time.

Sleep
The infant and toddlers’ study assessed nocturnal sleep using parent-completed sleep
diaries (measured as time-in-bed) and found that infants and toddlers aged 3 and 6 months
were getting 10.38h of time-in-bed on average (range 7.48h to 13.43h). Although this does
not account for naps during the day, this is substantially less than what is recommended for
0-3-month-old infants (14-17h) and 4-11-month-old children (12-16h) in a 24h period.

In the study of preschool children in a low-income, urban setting, objectively measured
nocturnal sleep duration was found to be low (9.28±0.80h/night), and although daytime
naps (1.42±0.31h) increased 24h sleep duration (to 10.17±0.71h/night), 38% were still
classified as short sleepers according to current guidelines for preschool-aged children (10-
13h). Bedtimes were late in this sample of preschool children: 21h29±00h49 on week
nights and 21h57±01h20 on weekend nights. This study found that 54.9% of participants
complied with available physical activity and sleep guidelines (from Canada and Australia),
but found no associations found between sleep and adiposity variables. One might
speculate that this was due to the limited variation in adiposity measures in this group.

In the study of preschool-aged children across settings, sleep was assessed using objective
measures, and these findings were presented to the panel (paper in preparation). Children
were reported to sleep for an average of 10.48±0.78h/night, and 73.7% met current sleep
guidelines. Urban low-income children slept significantly less than rural and high-income
children (9.91±0.68h/night vs. 10.76±0.61h/night and 10.76±0.68h/night respectively).
Urban low-income children were 1.88 times less likely to meet sleep guidelines than urban
high-income children. For every 1h less sleep, children were 1.41 times more likely to fall
into a higher BMI-z quartile. In the parent questionnaire study mentioned above (presented
to the panel), parents reported that children slept 11.6±1.3h/night. Overall, 73.7% met the
sleep guideline. Few children (8.7%) slept <10h/night, and 9.4% slept >13h/night. Only
children from low-income urban (16.1%) and rural (7.1%) settings exceeded 13h/night.

An important contextual consideration for young children’s sleep in SA is the sharing of beds
and/or rooms in low-income settings, particularly since the population density ranges
between 6000 and 40000 people/km² in the areas included in the studies presented above.
These areas are generally a mix of ‘informal’ housing, such as shacks, as well as brick and
cement houses, some of which are provided by the government to previously
disadvantaged individuals. These government houses are often, at best, 45m² in size, with
most houses being smaller than 30m². They generally consist of a single open-plan room,
which functions as the bedroom, lounge and kitchen, making it less than ideal for sleeping.
8. Consensus panel meeting, and 9. Adoption of recommendations from guidelines

The consensus panel met on the 11th-12th of April 2018 in Cape Town, SA. The aims of the consensus panel meeting were to: 1) review, discuss, debate and interpret findings from the global and local systematic reviews; 2) review and adopt/adapt the preamble and recommendations from the Australian guidelines; 3) discuss the consultation with stakeholders; 4) discuss the launch and dissemination of the guidelines; and 5) identify research gaps. All these aims were achieved except for the identification of research gaps, as time did not allow for any substantial discussion of this point.

Overall, the consensus panel agreed that the recommendations (from the Australian guidelines) would be feasible and acceptable in SA, and there was consensus that such guidelines were relevant and important in SA. The Australian guidelines were largely adopted, and there were no suggestions to change the actual recommendations based on the available South African literature reviewed.

Suggestions for adaptation (modification) of the recommendations from the Australian early years’ guidelines were mainly to the wording of the guidelines to make them more understandable for a wider South African audience, especially since English is not the home language of the majority of South Africans. The following changes were agreed on by the SA consensus panel:

- Refer to sedentary behaviour (only familiar to academics) as ‘steated’ or ‘sitting behaviour’.
- Replace ‘restrained’ with ‘being strapped in and unable to move’.
- Remove any references to car seats, since much effort is put into promoting the use of car seats in SA (many cannot afford them, and they are not commonly used). Any mention of reducing time in car seats could be open to misinterpretation.
- Replace ‘stroller’ with ‘pram’, which is the more common term in SA.

There was also extensive discussion about the preamble and what this should include. All suggestions for the guidelines and preamble were recorded (by SAT), and collated (by SAT, CED and ADO) into the first draft.

Following the example of the Australian guidelines, it was agreed that the stakeholder consultation would involve the distribution of an online survey, for those with access to internet; and that focus groups would be conducted with stakeholder groups for whom internet access is a challenge. Target groups for the online survey that were agreed by the panel included parents/caregivers, expectant mothers, ECD practitioners, health professionals, academics, and government representatives. For the focus groups, it was agreed that these should target parents/caregivers, ECD practitioners and community workers in low-income settings. An additional suggestion was made by the national government representative on the panel to arrange a meeting with national government and non-governmental representatives in ECD.

With regards to dissemination, language was discussed as a key issue (SA has 11 official languages), and low levels of literacy are common in low-income settings. The advice from those who had experience with translating documents for national dissemination was that the main guidelines (text) document would not be understandable to a large proportion of
the population (but would still be necessary to produce), and that those who would read it would be able to understand it in English. Any translation that should be done would need to include all the 10 other official languages, in order to be inclusive of all language groups. It was strongly suggested that the guidelines be disseminated in a form that was as visual as possible. This should include pictures that are simple and culturally appropriate for all SA children, and should depict activities that do not require significant resources. Another suggestion from panel members was to have some practical suggestions of how these guidelines could be achieved.

Panel members discussed ways in which the guidelines could be disseminated through their existing networks, and that relevant media channels for dissemination should be explored, where feasible and affordable, given the funding available. All were in agreement that an event should be arranged to launch the guidelines.

10. Drafting of SA guidelines
In the week subsequent to the consensus panel meeting, the first draft of the guidelines and preamble were circulated to the panel, and they were asked to provide input within 2 weeks. All comments were collated (by SAT, CED and ADO) in preparation for stakeholder consultation.

11. Stakeholder consultation
The stakeholder consultation process and results are described elsewhere (Tomaz et al, 2019). This process included an online survey (completed n=197 participants), nine focus groups with parents and caregivers, ECD practitioners and community health workers (n=70), and a meeting with stakeholders from government and non-government organisations (n=15). Overall, stakeholders agreed with the guidelines although issues including, but not limited to, safety and nutrition of children were highlighted. Training and provision of educational materials were identified as key in the dissemination and implementation of the guidelines.

12. Amend guidelines based on stakeholder input
Various amendments to the preamble and guidelines were suggested during the stakeholder consultation process, and these are also described in detail in Tomaz et al 2019. The final preamble and guidelines are provided as Figure 2. An infographic, provided as Figure 3, was designed to depict the recommendations within the guidelines. The infographic was reviewed and modified (by CED, SAT, CJC, DER) to ensure it was appropriate and comprehensible. Particular attention was paid to the neutrality of the pictures within the infographic, from the perspectives of gender, ethnicity, and socioeconomics.

Based on the suggestion for including practical suggestions of how to achieve these guidelines for key stakeholder groups, two additional documents were developed amongst panel members (coordinated by SAT): ‘Using the guidelines at home: Some tips for parents’, and ‘Using the guidelines at ECD facilities: Some tips for practitioners.’ These are provided as Figures 4 and 5 respectively. Colour versions of all documents are available at: http://www.laureus.co.za/moving-playing-sleeping-starting-early-with-healthy-habits/
13. Launch and disseminate final guidelines

The SA 24-hour movement guidelines for birth to five years were launched on the 4\textsuperscript{th} of December 2018 at the Nelson Mandela Children’s Fund Head Office in Johannesburg. The launch was attended by representatives of national government (Departments of Basic Education, and Health), non-governmental organisations, the media, funding partners, the health sector, and academia. A preschool from a low-income community was also invited to attend, so that the guidelines were launched not just ‘about’ children, but ‘with’ them as well. Short addresses were provided by the Programme Specialist: Child survival and development at the Nelson Mandela Children’s Fund, a representative from the Department of Health (Child, Youth and School Health Directorate), an Ambassador for the Laureus Sport for Good Foundation South Africa, the chair of the SA guideline consensus panel (CED), and the Centre Manager of the DST-NRF Centre of Excellence in Human Development. A panel discussion (with audience participation) was also held, and panel members included the Director of ECD at the National Department of Basic Education, a trustee of the Laureus Sport for Good Foundation South Africa, a paediatrician (TN), and the Marketing and Communications Manager at The Innovation Edge.

Details of the media dissemination associated with the launch are provided in Supplementary Table 4.

Further plans are underway for wider dissemination of the guidelines at a community level, particularly within low-income settings, in partnership with community-based organisations that work with parents/caregivers and ECD practitioners around SA.

Discussion

To our knowledge, SA is the first low- and middle-income country (LMIC) to produce 24-hour movement guidelines for this age group. The relatively novel GRADE-ADOLOPMENT approach, in a slightly adapted format, proved to be a feasible and appropriate approach for the development of the SA 24-hour movement guidelines for birth to five years. Furthermore, SA was able to retain the integrated nature of these guidelines and present recommendations for physical activity, sedentary behaviour (including screen time) and sleep in one set of guidelines. Adaptations to the Australian guidelines were relatively minimal, and related mainly to ensuring the content was locally relevant and understandable for end users. Along with these efforts to contextualise the guidelines for SA, it is also evident that the process of development had additional value for creating a sense of local ownership of the guidelines. These lessons learnt are important for any future movement guideline development in SA, as well for other LMICs that are considering developing their own guidelines for 24-hour movement behaviours in the early years, or in other age groups.

The use of the updated systematic reviews made available by the WHO is a strength of this process. The novelty of this process in SA is another strength of this initiative, as well the range of stakeholders who were involved in the process. The ‘ownership’ of these guidelines by all stakeholders, rather than a particular institution or government department, is also a strength. Although the widespread adoption of these guidelines is an ongoing process, this
at least suggests an approach that creates a favourable environment for the future development of evidence-based guidelines in SA.

A weakness was the limited availability of SA literature upon which to adapt the guidelines, although this is improving. Furthermore, in comparison with other high-income countries who have engaged in guideline initiatives, the SA initiative was smaller in scope, and had fewer human resources dedicated to the project (linked to limited funding availability). Despite these constraints, the SA 24-hour movement guidelines for birth to five years are an example of a successful and pragmatic application of the GRADE-ADOLOPMENT approach. In this LMIC, where early years movement behaviour research is limited in comparison to high-income countries, this guideline development process translated global and local evidence, and brought together a range of academic and non-academic stakeholders to place movement behaviours in the broader context of early childhood development, which is frequently stated as a priority in SA. This engagement provides a platform for future activities and partnerships to positively influence research and practice in this field in SA.

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References


Figure 1: GRADE-ADOLOPMENT process
SA 24-hour movement guidelines for birth to five years

A HEALTHY 24-HOUR DAY INCLUDES:

Babies (birth to 1 year old)

Sleeping
- 10 - 14 hours of good-quality sleep, including naps in the day, with consistent sleep and wake-up times.

Toddlers (1 and 2 years old)

Sleeping
- At least 10 hours of sleep, which includes naps in the day, with consistent sleep and wake-up times.

Crawling or walking
- Engaging in physical activities such as crawling, jumping, and walking with support.

Preschoolers (3, 4 and 5 years old)

Sleeping
- At least 10 hours of good-quality sleep, which may include a nap, with consistent sleep and wake-up times.

Toddlers
- Engaging in physical activities such as walking, jumping, and climbing.

Littles
- Engaging in physical activities such as running, jumping, and climbing.

Further details on how to achieve these guidelines are available at www.babyweb.co.za

Our children are the rock on which our future will be built, our greatest asset as a nation." Nelson Mandela

Figure 2: Final preamble and guidelines
A HEALTHY 24-HOUR DAY INCLUDES...

**BABIES (BIRTH TO 1 YEAR)**
- MOVING: 30 MINUTES
- SITTING: 0 HOURS
- SLEEPING: 14-17 HOURS

**TODDLERS (1 & 2 YEARS)**
- MOVING: 3 HOURS
- SITTING: 0 HOURS
- SLEEPING: 12-16 HOURS

**PRE-SCHOOLERS (3, 4 & 5 YEARS)**
- MOVING: 3 HOURS
- SITTING: 1 HOUR OR LESS
- SLEEPING: 11-14 HOURS

Figure 3: Guidelines infographic
SA 24-hour movement guidelines for birth to five years

Using the guidelines at home: Some tips for parents

**BABIES (BIRTH TO 1 YEAR OLD)**

**Moving**
- For babies not yet crawling, tummertime should take place for 30 minutes per day on a safe, flat surface, e.g., a soft bouncy mat or floor, and should be supervised. For babies who struggle during tummertime (e.g., they cry after a short while), tummertime can be done a few times every day in shorter bouts, e.g., for 5 to 10 minutes at a time.

**Pre-schoolers need 1 hour per day of energetic play.**
- Moving: Preschoolers can move for 3 hours every day by doing fun activities like dancing, playing with different sized balls, and playing games like “follow the leader” and “hide and seek.”

**Sitting**
- Instead of screen time, rather read, tell stories or sing to your baby. These activities support their development and will help you connect with them.

**Sleeping**
- Establishing regular bedtime habits (e.g., calming babies down in a quiet room, singing to babies before sleeping) may help babies get the sleep they need, and help them to sleep better.

**TODDLERS (1 AND 2 YEARS OLD)**

**Moving**
- Great activities to get your toddler moving and playing for 3 hours every day can include games and activities such as hide and seek, dancing to music, jumping and climbing. Teaching children to move, play and do activities that take place over, under and around obstacles (e.g., chairs, jungle gym equipment) is good for their physical and brain development.

**Sitting**
- Toddlers should play with toys (e.g., balls, bean bags) as they start learning skills like kicking, catching and throwing. Start with bigger balls (e.g., blow up beach balls or soccer balls) as they are easier for toddlers to manage, and progress to smaller balls (e.g., tennis balls).

**Sleeping**
- Establish a sleep routine with your toddler by having consistent bedtimes at night and consistent wake-up times in the morning.

**Pre-schoolers (3, 4 and 5 years old)**

**Moving**
- Preschoolers can move for 3 hours every day by doing fun activities like dancing, playing with different sized balls, and playing games like “follow the leader” and “hide and seek.”

**Sitting**
- Reduce screen time to less than 1 hour per day by setting screen time rules at home (so you would not watch a toddler), e.g., no screens at the dinner table, no screens allowed in the bathroom. 15 minutes of screen time only allowed after energetic play outside.

**Sleeping**
- Establish a sleep routine and ensure that pre-schoolers have a safe, quiet place to sleep well. Well-rested pre-schoolers are more likely to behave better and concentrate at preschool.

**Figure 4: Using the guidelines at home: Some tips for parents**
SA 24-hour movement guidelines for birth to five years

SOUTH AFRICAN 24-HOUR MOVEMENT GUIDELINES FOR BIRTH TO FIVE YEARS
An integration of physical activity, sitting behaviour, screen time and sleep

Using the guidelines at early childhood development (ECD) facilities: Some tips for practitioners

**BABIES (BIRTH TO 1 YEAR OLD)**

**Moving**
- **✓** During the day at the ECD centre, including some tummy time while babies are awake, helps babies physical development by helping them get strong and ready to crawl.
- **✓** Tummy time should take place on a flat, safe surface and while supervised. A soft blanket on the floor with other babies and some soft toys is a great way to get babies moving and interacting, and to make the tummy time fun.
- **✓** For babies who struggle during tummy time (e.g. they cry after a short while), tummy time can be done for just a few minutes at a time.
- **✓** For crawling babies, prepare a safe area to move and play with each other. Scattering age-appropriate toys like teddy bears and rattles, as well as blankets and pillows will encourage the babies to crawl and play while on their tummies. This helps the babies physical development.

**Sitting**
- **✓** If you work in an ECD centre with a TV, it is best to not let the babies watch any TV. Better activities for babies include crying, learning to sit-age-appropriate music and story-telling.

**Sleeping**
- **✓** Babies need sleep to help them develop and to grow. It is best for ECD centres to have a set sleeping time for babies.
- **✓** Ensure that the sleeping areas in the ECD centre are safe and quiet, and that sleep times are supervised by an ECD practitioner.

**TODDLERS (1 AND 2 YEARS OLD)**

**Moving**
- **✓** Toddlers should be encouraged to move and play during their time at home and at ECD centres. Play areas at the ECD centre should be safe, whether it is inside or outside.
- **✓** Toddlers should spend time playing with other toddlers, and they should play fun games like tag-on and hide and seek. To help physical and brain development, teach toddlers to play and do activities that take place over, under, behind and around obstacles (e.g. chairs, jungle gym equipment).
- **✓** Toddlers also benefit from playing games (e.g. Simon says) and doing activities that are guided by an ECD practitioner. Ball games and activities that teach toddlers skills like catching, kicking, bouncing and jumping are great. Try your best to make sure every toddler in the class gets a chance to play.

**Sitting**
- **✓** If you work in an ECD centre with a TV, try your best to keep the toddlers away from the TV. Also, keep other screens like cell phones and tablets out of toddlers reach.
- **✓** Story-telling, playing with blocks, doing puzzles and reading are excellent for toddlers’ development, and are good ways to keep a group of toddlers busy.

**Sleeping**
- **✓** Babies, toddlers need a lot of sleep and some of this sleep will take place in the ECD centre.
- **✓** Sleep routines are very important in toddlers. Keep an eye on toddlers who are unusually tired during the day at the ECD centre. It is necessary that you talk to toddlers’ parents about the importance of bedtime routines.

**PRE-SCHOOLERS (3, 4 AND 5 YEARS OLD)**

**Moving**
- **✓** Like toddlers, pre-schoolers should be active at home and at ECD centres. Pre-schoolers should be active indoors and outdoors (where possible), and should play with other pre-schoolers too! Playing games like follow-the-leader, ‘hide and seek’, and ‘on-on’ are good for pre-schoolers physical and social development.
- **✓** As an ECD practitioner, you can help develop some building, sports, and balance skills such as throwing, kicking and bouncing balls; balance skills such as walking like a flamingo, or movement skills like jumping and galloping.

**Sitting**
- **✓** Some TV programmes encourage learning in pre-schoolers, e.g. ‘Takalani Seselwane’, but it may be helpful to have screen time rules, since too much screen time (more than I know) can negatively affect children’s readiness for school.
- **✓** Rather get pre-schoolers to do sitting activities that will help prepare them for school (e.g. playing “make believe” games, drawing and painting).

**Sleeping**
- **✓** Pre-schoolers who sleep well and get enough sleep may do better at preschool. Make sure pre-schoolers sleep well in the right time.
- **✓** Encourage parents to send pre-schoolers to bed earlier at night. If a pre-schooler is sleeping during the day, it is an ECD centre.

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Figure 5: Using the guidelines at ECD facilities: Some tips for practitioners