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How to perform a 'Healthy Kids Check'

Background
The Healthy Kids Check aims to gather health information, identify health problems and promote healthy lifestyles around the time of the 4 years of age vaccinations. It consists of a checklist of examinations and assessments, six of which are mandatory.

Objective
A series of evidence based examinations that fulfil the mandatory requirements for a Healthy Kids Check and which can be applied in general practice are proposed. Consideration is also given to nonmandatory examinations and additional assessments which have some evidence for their application.

Discussion
The proposed examination enables general practitioners to remain positively engaged with families and contribute toward the health surveillance of preschool children. Changes to the Medicare Benefits Schedule, which support time based reimbursement for preventive healthcare may encourage greater uptake of the Healthy Kids Check.

Keywords: guidelines as a topic; health promotion; preventive medicine; paediatrics

The Healthy Kids Check, introduced in July 2008, aims to gather health information, identify health problems and promote healthy lifestyle around the time of the 4 years of age vaccinations, in preparation for starting school.[1] It can be conducted by the child's usual general practitioner, or delegated to, or combined with an assessment by, the practice nurse.

The Healthy Kids Check consists of a checklist of examinations and assessments, some of which are mandatory (*Table 1*). In addition, the patient's history needs to be updated, the 4 years of age immunisations completed and a 'Get Set 4 Life' health promotion booklet given to the family, for a Medicare rebate to be claimed.

The authors propose an examination which takes 30 minutes to administer, provides useful information, and is compliant with the mandatory requirements. Most of the components of the Healthy Kids Check are already recommended as preventive activities in general practice[2] and, where available, evidence based clinical practice guidelines have informed this guide.

Mandatory assessments

Following consent from the parent, begin the Healthy Kids Check with examinations which are nonthreatening and familiar to most young children. The practice resources required to perform the checks are listed in *Table 2*.

Height and weight

Measure the child's height and weight to calculate and plot the body mass index (BMI) on a BMI centile chart.[3] A BMI above 85th centile suggests overweight (above 95th centile suggests obesity) and requires later assessment for additional risk factors.[4] As a measure of thinness, a BMI less than the third centile may also require follow up.[5]

Eyesight

Check with the parent for concerns about the child's vision, or a family history of squint. A number of screening tests for amblyopia can be effectively conducted in primary care.[6,7] Test the child's uniocular visual acuity using an age appropriate visual acuity chart, with one eye effectively covered. Ensure the child is standing 3 m from the chart and indicate a line of figures to be 'read'. Check the eye movements. Then, using a pen torch, conduct a 'corneal light reflection' test (Hirschberg, *Figure 1*, *2*) followed by a 'cover test' (*Table 3*).

Hearing

Ask the parent if they have any concerns about their child's hearing. For a well child it is not

necessary to perform otoscopy, nor is there any evidence that screening for otitis media with effusion in the general Australian paediatric population is beneficial.[8]

Oral health

Most GPs have not received training in the assessment of oral health in children. The 'Lift the Lip' tool (*Figure 3*), developed in New South Wales, is easy to apply.[9] Request the parent wash their hands and raise the upper lip of their child. Using a pen torch, examine the gingival border for plaque, and check the teeth for decayed, missing or filled teeth. Emphasise the importance of brushing (assisted by an adult) twice per day with fluoridated toothpaste and promote drinking tap water.

Table 1. Healthy Kids Check

Checklist of mandatory assessments

- Measure height and weight*
- Check eyesight*
- Check hearing*
- Check oral health*
- Question toilet habits
- Note known or suspected allergies

Additional (nonmandatory) assessments to consider

- Discuss eating habits*
- Discuss physical activity*
- Question speech and language development*
- Check fine and gross motor skills*
- Question behaviour and mood*
- Others as necessary, eg. injury prevention (car restraints)*
- Environmental tobacco smoke

Note: Medicare item 10986 for Healthy Kids Check conducted entirely by the practice nurse, and Medicare items 701, 703, 705, 707 (time based health assessments) for Healthy Kids Check requiring GP input

* Also recommended as preventive activity in general practice for children 2–5 years of age in the RACGP 'red book'[2]

Table 2. Practice resources for a Healthy Kids Check

Mandatory components

- Stadiometer for measuring height
- Balance beam or electronic scales
- BMI calculator and centile charts (www.bcm.edu/cnrc/bodycomp/bmiz2.html)
- Visual acuity charts (eg. Snellen, Lea, Tumbling E, HOTV)
- Eye occluder, pirate's patches or modified wrap-around sunglasses
- Pen torch
- Knowledge of local fluoridation of water supply
- The 'Get Set 4 Life' booklet

Nonmandatory components

- Parents' Evaluation of Development Status questionnaire (www.rch.org.au/ccch/resources.cfm?doc_id=10963)
- The Australian guide to healthy eating (www.health.gov.au)
- Walking school bus lists for regional schools (www.travelsmart.gov.au/schools/schools2.html)
- Pencil and paper with pre-drawn cross for the child to copy
- Eight wooden blocks
- Sleep questionnaire[21]

Toilet habits

While it is desirable for a child who is 4 years of age to be independent using the toilet, questioning for enuresis will raise many false positives. One-fifth of children aged 5 years still wet the bed at night.[10] Enuresis, defined as the repeated voiding of urine into bed or clothes at least twice per week for three consecutive months, can be investigated when the child is at least 5 years of age and where distress or concern is expressed.[11]

Known or suspected allergies

Questioning about food allergies presents an opportunity to discuss any previously identified allergens. Obtaining medical information about children at risk is identified as an important first step toward prevention of anaphylaxis in the school environment.[12] If required the GP can prepare a management plan, consider prescribing medication and/or arrange a follow up appointment with a specialist for

Figure 1. Performing a Hirschberg test

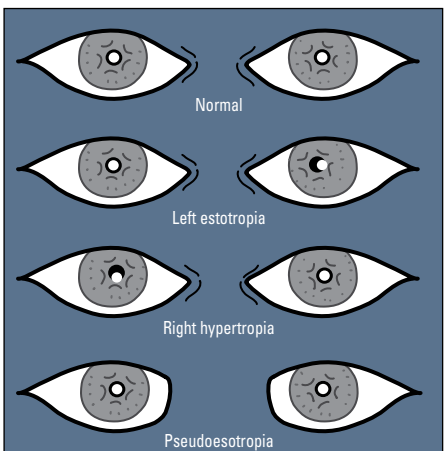

Figure 2. Interpretation of Hirschberg test

Table 3. Examination techniques for assessment of vision

Visual acuity using age appropriate chart

- Test one eye at a time with nontested eye effectively covered
- Testing distance is 3 m from chart
- Use a line of figures rather than single figures
- A minimum of four out of six correct figures at 6/12 line is normal
- A difference of two lines or more between the eyes should be referred

Check ocular motility

- Ask the child to look at the roof, down at the ground and side-to-side.

  Or

- Request for the child to follow a toy or pen torch

Test ocular alignment

- Corneal light reflection (Hirschberg) test: hold a pen torch and distraction toy together 40 cm in front of child's face. To check alignment switch on torch and note the position of the reflected light in the pupils (manifest squint)

  And

- Cover test: hold the distraction toy 40 cm in front of the child and cover one eye with an occluder. Uncover the eye and move the occluder to cover the other eye. Any movement of the eye as it is uncovered by the occluder should lead to a referral (latent squint)

Note: A child, 4 years of age, who is unable to cooperate with a component of vision testing should be re-examined within a month and referred after a second unsuccessful examination[7]

review before the child commences school. It is worth noting that many early onset food allergies to important food groups (dairy, egg, soy) are outgrown by school age, so specialist review may also allow these foods to be reintroduced.[13]

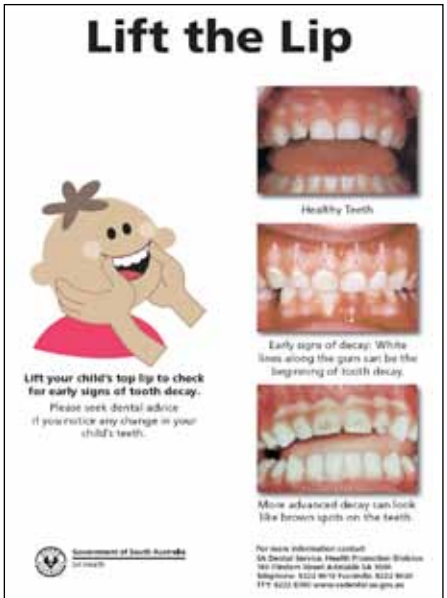

Figure 1. SA Dental Service 'Lift the Lip' tool. Reproduced with permission

This set of examinations completes the mandatory components of the Healthy Kids Check.

Nonmandatory assessments

Eating habits

Concerns about eating habits are frequently raised by parents. Consistent messages from food guides, also promoted in the 'Get Set 4 Life' booklet, include eating more vegetables, fruit, legumes and whole grains, using less sugar and saturated fats, and promoting plant oils.[14,15]

Physical activity

Health professionals need to promote physical activity at every opportunity. Activity, as part of daily life, can be encouraged by providing information on programs such as the 'walking school bus'.[16] In addition, there is some evidence that limiting inactive screen time to less than 2 hours per day of television, computer, and video games may benefit health in this age group.[17]

Advice to sit as a family around the table with the television off as often as possible can also promote healthy eating and less screen time.[18]

Table 4. Assessing behaviour and development at 4 years of age[23]

Behaviour development – questions for the parent

Suggested questions to encourage more in depth discussion

- How is your child doing at preschool or childcare?
- What questions or concerns do you have about your child? Your child's health? Your child's ability to get along with other people?
- How are things going for your family?
- How are things going for your child?
- What changes or stresses have occurred in your family lately?

Physical development – questions for the child

Assess gross and fine motor activities

- Can you hop on one foot?
- Can you balance on one foot for 2 seconds?
- Can you build a tower of eight blocks?
- Can you copy a cross?
- Can you draw a person with three parts, eg. body (1), head (1) and legs (1)?
- Can you cut and mash your own food and pour a drink?
- Can you brush your own teeth?
- Can you dress yourself, including buttons?

Cognitive development – questions for the child

Assess understanding

- Can you name four colours?
- Are you a boy or a girl? (Should be aware of gender of self and others)

Speech and language development

Speech by 4 years of age should be clear to others. Questioning for parental concern about a child's speech is equally as effective as applying formal screening instruments in the primary care setting, and is more time and cost efficient.[19] The consultation provides an opportunity to observe how the child engages, and may prompt more formal assessment.

Motor skills, behaviour and mood

Developmental and behavioural problems may coexist. Undetected developmental problems may present as behavioural problems,[20] and disruptive behaviour may impede a child from attaining social and emotional developmental milestones.[21] It therefore makes sense to combine behavioural and developmental screening (*Table 4*). There are many standardised developmental screening tests, and some have been validated for use in primary care.[20] Less than half of developmental and behavioural health problems are identified before a child begins school, and the use of such 'tools' increases their detection.[20]

In the setting of a Healthy Kids Check, the Parents' Evaluation of Development Status[22] questionnaire is a good first line screen of child behaviour and development,[23,24] and in some practices could be obtained from parents in the waiting room, making consultation time more efficient. The check list of 10 'open ended' questions can be utilised informally as a prompt for parental concerns, or can be scored and interpreted to obtain a level of risk, with suggested management outcomes.[22]

Sleep behaviours, often highlighted as a concern for parents, are also more likely to be identified by using questionnaires (eg. BEARS – 'Bedtime, Excessive daytime sleepiness, Awakenings, Regularity, and Snoring').[25] The prevalence of paediatric sleep problems (25%)[26] is surprisingly consistent across all cultures but parental knowledge of healthy sleep varies widely. A Chinese belief that a snoring child reflects 'strength' will mean that this is not recognised as a health problem, and information on the child snoring may have to be specifically elicited by the clinician.[26]

Injury prevention

Injury prevention, including the assessment of safety in the car is another matter that may be regarded as important and has some evidence for its application. Recent legislation simplifies the use of child restraints and booster seats in Australia, with the requirements now being based on age, as opposed to being based on weight (*Table 5*).[27] There is insufficient evidence to assess the incremental benefit of counselling regarding car restraints[28] but passenger motor vehicle accidents remain a major cause of death and disability in children.

Environmental tobacco smoke

There is good evidence that exposure to environmental tobacco smoke increases a child's risk of ear and respiratory infections, asthma and meningitis.[29] Parents who smoke may not be aware that in a 1 year period, their children will inhale the equivalent of 60–150 cigarettes.[29] Smoking in cars that have children in them is now illegal in most Australian states and territories, and counselling may benefit the entire family.

Table 5. Car travel and young children[31]

The national age based changes to child restraint and booster seat rules require:

- all children up to the age of 7 years to be secured in an approved restraint or booster seat when travelling in vehicles
- children younger than 6 months to be secured in an approved, properly fastened and adjusted, rear facing child restraint, such as an infant capsule
- children from 6 months to younger than 4 years must be secured in an approved, properly fastened and adjusted, rear facing child restraint or a forward facing child restraint with an inbuilt harness
- children aged 4–7 years must use an approved, properly fastened and adjusted forward facing restraint or an approved booster seat which is properly positioned and fastened

New safety laws relating to children up to 7 years of age travelling in vehicles with two or more rows of seats state:

- if a car has two or more rows of seats, then children under 4 years of age must not travel in the front seat
- if all seats, other than the front seats, are being used by children under the age of 7 years, children aged between 4–6 years (inclusive) may travel in the front seat, provided they use an approved restraint or booster, appropriately fitted

Note: Implementation dates vary by states and territories

Discussion

The Healthy Kids Check invites young children into the general practice office to be seen on an occasion when they are not sick, to undergo examinations which are relatively enjoyable. This consultation has the potential to reaffirm positive relationships between families and GPs.

The level of evidence behind the components of the Healthy Kids Check is either not high, or lacking in the primary care setting.[30] In addition, health outcomes for young children are more difficult to measure when compared to outcomes for groups such as diabetic patients. Nevertheless, opportunities for prevention and promotion of healthy lifestyle, which may impact on the whole family, need to be embraced.

In addition, the prevalence of behavioural health problems, with significant under-recognition by health professionals and the barriers that prevent parents' disclosure, means that opportunities to offer early intervention may be lost without specific countermeasures such as the PEDS questionnaires.[32]

Time based preventive healthcare reimbursements for GP services, introduced in May 2010,[33] allow for practice nurse and GP evaluations to be combined, and may encourage greater uptake of the Healthy Kids Check. Childhood health surveillance, the repeated application of screening tests by various health professionals, together with clinical assessment and knowledge of family risk factors, inclusive of parental input, can benefit from increased GP involvement. If a practice decides to implement screening and preventive care for young

children, the Healthy Kids Check presents an opportunity for GPs to maintain a stake in this evolving area of health.

Authors

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