Hearing and Vision Screening for Children and Youth

In the Child and Teen Checkups (C&TC) setting

What’s new and different?

March 2016
Objectives

By the end of this training the participant will be able to:

1. Identify new MDH hearing and vision screening recommendations and C&TC requirements.

2. Discuss how to apply these recommendations in the clinical setting to ensure:
   - Accurate and valid screening results
   - Appropriate follow up
   - C&TC reimbursement
## Minnesota Child and Teen Checkups (C&TC)

### Schedule of Age-Related Screening Standards

#### Early and Periodic Screening, Diagnosis and Treatment (EPSDT)

<table>
<thead>
<tr>
<th>C&amp;TC Screening Components by Age</th>
<th>Infancy</th>
<th>Early Childhood</th>
<th>Middle Childhood</th>
<th>Adolescence</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0-1 mo</td>
<td>2 mo</td>
<td>4 mo</td>
<td>6 mo</td>
</tr>
<tr>
<td></td>
<td>9 mo</td>
<td>12 mo</td>
<td>15 mo</td>
<td>18 mo</td>
</tr>
<tr>
<td></td>
<td>24 mo</td>
<td>3 yrs</td>
<td>4 yrs</td>
<td>5 yrs</td>
</tr>
<tr>
<td></td>
<td>6 yrs</td>
<td>8 yrs</td>
<td>10 yrs</td>
<td>12 yrs</td>
</tr>
<tr>
<td></td>
<td>14 yrs</td>
<td>16 yrs</td>
<td>18 yrs</td>
<td>20 yrs</td>
</tr>
</tbody>
</table>

#### Anticipatory guidance & health education
- • Required component for the visit
- R Recommended screening with standardized instrument
- □ Risk assessment followed by appropriate action
- □ Indicates range to provide component at least one time

### Measurements:
- • Head circumference
- • Height and weight
- • Body mass index (BMI)
- • Blood pressure

### Health history - including nutrition, chemical use

<table>
<thead>
<tr>
<th>Developmental/social-emotional/mental health</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Surveillance</td>
</tr>
<tr>
<td>• Developmental screening</td>
</tr>
<tr>
<td>• Social-emotional/mental health screening</td>
</tr>
<tr>
<td>• Maternal depression screening</td>
</tr>
</tbody>
</table>

### Physical exam - head to toe, including sexual development and oral exam

### Immunizations/review

#### Laboratory tests:
- • Blood lead
- • Hemoglobin/hematocrit
- • Tuberculosis
- • Sexually transmitted infection (STI) risk assessment - and lab testing for sexually active youth

#### Vision

#### Hearing

#### Dental checkups - verbal referral starting at the eruption of the first tooth and no later than 12 months of age

#### Use a C&TC HIPAA compliant referral (condition) codes NU, ST, AV or S2

### Key

- * Required component for the visit
- R Recommended screening with standardized instrument
- □ Risk assessment followed by appropriate action
- □ Indicates range to provide component at least one time
Child and Teen Checkups Website
http://www.health.state.mn.us/divs/cfh/program/ctc/
MDH Hearing Screening Website

http://www.health.state.mn.us/divs/cfh/topic/hearingscreening/index.cfm

Hearing Screening

Children After the Newborn Period Through Age 20 Years

The Minnesota Department of Health (MDH) Hearing Screening Training program provides screeners with the necessary skills to identify children in need of further diagnosis and treatment.

This website is for programs such as:

- Child and Teen Checkups (C&TC)
- Early Learning Programs (including Early Head Start and Head Start)
- Early Childhood Screening
- School programs
- Other wellness programs that screen children's hearing and vision
MDH Hearing Screening Guidelines 2014

- JCIH risk factors for hearing loss
  - Refer as soon a concern is identified

- Pure tone audiometry
- Immediate rescreen recommendation

- OAE screening
- Referral recommendations

- Follow up and referral algorithms for audiometry and tympanometry
Hearing Screening C&TC Requirements and Recommendations

• **Newborn hearing screen (NHS)**
  • By 0-1 months: copy of NHS results in chart
  • Continue to document NHS results until 3 years of age or when pure tone can be performed
  • Refer to audiology if result is “REFER” on 1st screen or no NHS results available

• **Risk Assessment (JCIH)**

• **Physical exam of the ear**

• **Pure tone audiometry**
  • *Recommended* at 3 years of age
  • *Required* at every C&TC visit, 4 to 14 years of age and at age 18 years
JCIH Risk Factors
Late-Onset Hearing Loss

• Caregiver concern *
• Family history
• Prenatal history
• Newborn History
  • NICU > 5 days
  • Infections: herpes varicella, meningitis
  • Medicines
• Congenital
  • Cranial-facial anomalies
  • Stigmata
  • Syndromes associated
  • Neurodegenerative disorders
• Skull trauma/fracture*
• Chemotherapy*
• Meningitis*

For all risk factors:
AAP recommends hearing screen by audiology at least once by 24-30 months or as soon as a risk is identified

• C&TC initial interview ask all ?s
  * Interim HX at all visits
Bright Futures Recommendations

• Pure tone audiometry at well child checks 4 years through 10 years of age
  • Catches most congenital hearing loss
• 11 Years and older: risk assessment
  • Screens for noise-induced hearing loss
  • Questions not validated or normed
• C&TC schedule differs:
  • Pure tone audiometry at 12, 14, & 18 years of age
  • Population at higher risk of undiagnosed hearing loss
  • More at risk for educational setbacks due to undiagnosed hearing loss

*In practice, many clinics choose to perform hearing and vision screening on all children and youth*
Hearing Screening in the Clinic Setting

<table>
<thead>
<tr>
<th>Volume (dB)</th>
<th>25</th>
<th>20</th>
<th>20</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (Hz)</td>
<td>500</td>
<td>1000</td>
<td>2000</td>
<td>4000</td>
</tr>
</tbody>
</table>

**PASS result:** Responds to all sounds  
**REFER result:** Does not respond to one or more sounds  
**Perform an immediate rescreen:** Repeat all 8 sounds
Follow Up and Referral

Based on Hearing Screening Guidelines

Pure tone audiometry

REFER

PASS

Middle ear evaluation

- OME refer to Audiology

+ OME rescreen 8-10 weeks

Developmental surveillance or screening
Hearing Screening Resources

- Hearing Screening Guidelines after the Newborn Period to Kindergarten Age
- C&TC Web modules on Hearing Screening in the Clinic setting
  [www.health.state.mn.us/divs/cfh/program/ctc/ctcmodules.cfm](http://www.health.state.mn.us/divs/cfh/program/ctc/ctcmodules.cfm)
- Hearing Screening website
  [www.health.state.mn.us/divs/cfh/topic/hearingscreening/](http://www.health.state.mn.us/divs/cfh/topic/hearingscreening/)
- E-Learning module
  [www.health.state.mn.us/divs/fh/mch/webcourse/](http://www.health.state.mn.us/divs/fh/mch/webcourse/)
- American Academy of Audiology [www.audiology.org](http://www.audiology.org)
- National Center for Hearing Assessment and Management (NCHAM) [www.infanthearing.org/](http://www.infanthearing.org/)
- Joint Committee on Infant Hearing [www.jcih.org/](http://www.jcih.org/)
MDH Vision Screening Website
http://www.health.state.mn.us/divs/cfh/topic/visionscreening/index.cfm
• Risk assessment
• Eye occlusion
• Screening distance
• Recommended charts
• Updated PASS/ REFER recommendations for 3 year olds
• Plus Lens screening for 5 years & older
• Instrument based vision screening
C&TC Requirements

• Risk assessment
  • For all ages, but especially important before visual acuity can be performed at 3 years

• Physical exam of the eye

• Visual acuity screening
  • Required at every C&TC visit, 3 to 14 years of age and at age 18 years*

* Differs from AAP 2016 Bright Futures which recommends screening on “cooperative” 3 year olds & risk assessment for 18 year olds.
Risk Assessment

• Added based on AAP Bright Futures 2008 recommendations

• Includes:
  • Parent teacher concerns
  • Observed behaviors

• AAP risk factors requiring referral to an ophthalmologist
  • Prematurity <32 weeks
  • Family history
  • Significant developmental delay
  • Neurological difficulties
  • Systemic diseases associated with eye abnormalities
Visual Acuity Screening

*Screen all children at 10 feet*

**Occlusion: Kids peek!**

- Not okay:
  - Hands
  - Paper square
  - Paper cup

- Recommended
  - Occlusion glasses: Buy or make your own
  - Adhesive screening patches or 2 inch Micropore paper tape
  - Plastic occluders **ONLY** for 10 years and older
Recommended charts for 3-5 years old

LEA 10 foot

HOTV 10 foot
Or 10 Foot Lea/HOTV Flip Charts for 3-5 years old
Recommended charts:
6 years and older

**RECOMMENDED:**
SLOAN 10 foot

**NO LONGER RECOMMENDED:**
SNELLEN
PASS criteria

• PASS criteria
  • 3-5 year olds must identify any 4 out of 5 symbols on the lowest line they can see
  • Critical Passing Line
    • 3 years old: 10/25 line (20/50) NEW
    • 4 years old: 10/20 (20/40)
    • 5 years and older: 10/16 (20/32)
  • Without a two line difference
• In the PASS range
  • Visual acuity between the right and left eye should not differ by more than one line
  • Example: right eye 10/16 and left eye 10/12.5
Plus Lenses

• Screen children 5 years and older
  • After passing visual acuity screening
  • Use same chart at 10 foot distance
  • Screen with both eyes together, uncovered
  • +2.50 Lenses
    • PASS: Cannot read letters with glasses on
    • REFER: Can read all letters with glasses on
Instrument Based Vision Screening (IBVS)

AKA automatic vision screening equipment

• Visual acuity charts are still the recommended standard

• AAP, USPSTF, AAPOS recommendations:
  • IBVS is elective for children as young as 6 months
  • IBVS is an alternative method for children 3-5 years who are difficult to screen

• See MDH guidelines for:
  • Information on what to consider when obtaining equipment
  • Links to articles with best practice equipment recommendations
Vision Screening Resources

• Vision Screening website
  www.health.state.mn.us/divs/cfh/topic/visionscreening/

• C&TC Web modules on Vision Screening in the Clinic setting
  www.health.state.mn.us/divs/cfh/program/ctc/ctcmo0dules.cfm

• E-Learning modules
  www.health.state.mn.us/divs/cfh/program/ctc/elearning.cfm

• American Association for Pediatric Ophthalmology and
  Strabismus www.aapos.org/

• National Center for Children’s Vision and Eye Health
  http://nationalcenter.preventblindness.org/year-childrens-vision

• National Eye Institute www.nei.nih.gov/
Hearing References


Vision References


