Financial Disclosures
See Vision, LLC – owner
Hill-Rom - consultant
Visual acuity in the office
Visual acuity in the pediatrician’s office

Visual acuity in the pediatrician’s office

Pediatric Ophthalmology Clinic at Eye Associates Northwest
Visual Acuity at Home
Visual Acuity at Home
Visual Acuity at Home
Methods for testing visual acuity
Paper acuity

Younger Children - HOTV

Bob Arnold, MD; ABCD Vision

Older Children – Snellen/ETDRS

AAO: AllAboutVision

Paper acuity – HOTV – Bob Arnold, MD


Paper acuity -- Older Children

AAO:  https://bit.ly/3dj57X2

1. Set up
10 feet (120 inches)
Standardization

1. Set up
   10 feet (120 inches)

11 sheet of printer paper
   (11 x 11 = 121 inches)
Standardization

1. Set up
   10 feet (120 inches)

Measure app – iOS

- iPhone SE and iPhone 6s or later
- iPad (5th Generation or later) and iPad Pro
- iPod touch (7th generation)

Google Measure - Android
Standardization

1. Set up
   10 feet (120 inches)
2. Testing
   occlusion
Standardization

1. Set up
   10 feet (120 inches)

2. Testing
   occlusion

3. Reporting

Handout provided

Method used:
- HOTV
- Snellen

Glasses on?
- Yes
- No

Vision:
- Right eye: 20 /
- Left eye: 20 /

Reliability:
- Low
- Medium
- High

1 2 3 4 5
Electronic acuity
<table>
<thead>
<tr>
<th>Product</th>
<th>VA Method</th>
<th>Testing Distance</th>
<th>Devices</th>
<th>Validated</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>GoCheckKids</td>
<td>HOTV Snellen Crowd-Match</td>
<td>5 feet</td>
<td>iOS (Apple)</td>
<td>FDA class I device</td>
<td>Possibly soon</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product</th>
<th>VA Method</th>
<th>Testing Distance</th>
<th>Devices</th>
<th>Validated</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peek Acuity</td>
<td>Tumbling E Boxed</td>
<td>2 meters</td>
<td>Android</td>
<td>✓</td>
<td>Yes - Free</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Product</th>
<th>VA Method</th>
<th>Testing Distance</th>
<th>Devices</th>
<th>Validated</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaeb Visual Acuity Screener©</td>
<td>HOTV ETDRS Crowd</td>
<td>5 feet</td>
<td>Windows</td>
<td>✓</td>
<td>Yes - Free</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product</th>
<th>VA Method</th>
<th>Testing Distance</th>
<th>Devices</th>
<th>Validated</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eye HandBook</td>
<td>Modified Jaeger Number X-O</td>
<td>14 inches</td>
<td>iOS , Android</td>
<td>X</td>
<td>Yes – Free</td>
</tr>
<tr>
<td></td>
<td>Tumbling E</td>
<td></td>
<td></td>
<td></td>
<td>(ads)</td>
</tr>
<tr>
<td>Product</td>
<td>VA Method</td>
<td>Testing Distance</td>
<td>Devices</td>
<td>Validated</td>
<td>Available</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>------------------------------------</td>
<td>------------------</td>
<td>---------</td>
<td>-----------</td>
<td>-----------</td>
</tr>
<tr>
<td>“Visual Acuity Charts” - iOS</td>
<td>Single optotype Snellen Tumbling E Landolt C ETDRS HOTV LEA Numbers</td>
<td>2-6 meters</td>
<td>iOS</td>
<td>X</td>
<td>Yes - Free</td>
</tr>
<tr>
<td>Snellen Chart - Android</td>
<td></td>
<td></td>
<td>Android</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td>VA Method</td>
<td>Testing Distance</td>
<td>Devices</td>
<td>Validated</td>
<td>Available</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------</td>
<td>------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>GoCheckKids</td>
<td>HOTV</td>
<td>5 feet</td>
<td>iOS (Apple)</td>
<td>✓</td>
<td>Possibly soon</td>
</tr>
<tr>
<td></td>
<td>Snellen</td>
<td></td>
<td>Android</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crowd-Match</td>
<td></td>
<td>(soon?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peek Acuity</td>
<td>Tumbling E</td>
<td>2 meters</td>
<td>Android</td>
<td>✓</td>
<td>Yes - Free</td>
</tr>
<tr>
<td></td>
<td>Boxed</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jaeb Visual Acuity Screener©</td>
<td>HOTV</td>
<td>5 feet</td>
<td>Windows</td>
<td>✓</td>
<td>Yes - Free</td>
</tr>
<tr>
<td></td>
<td>ETDRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Crowd</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eye HandBook</td>
<td>Modified Jaeger Number</td>
<td>14 inches</td>
<td>iOS</td>
<td>X</td>
<td>Yes - Free</td>
</tr>
<tr>
<td></td>
<td>X-O</td>
<td></td>
<td>Android</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tumbling E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Landolt C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>“Visual Acuity Charts”</td>
<td>Single optotype</td>
<td>2-6 meters</td>
<td>iOS</td>
<td>X</td>
<td>Yes - Free</td>
</tr>
<tr>
<td>- iOS</td>
<td>Snellen</td>
<td></td>
<td>Android</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tumbling E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Landolt C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ETDRS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HOTV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>LEA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Numbers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Home Visual Acuity Testing

During the COVID-19 pandemic, we will be performing telehealth visits. An important part of an eye examination is measuring vision—how well your child can see on an eyechart.

Prior to your telehealth appointment, please check and record your child’s vision in their right eye and their left eye. If they have glasses, please ensure they are wearing them during the test.

Method used:
- [ ] HOTV
- [ ] Snellen

Glasses on?
- [ ] Yes
- [ ] No

Vision:
- [ ] Right eye: 20 / ________
- [ ] Low
- [ ] Medium
- [ ] High
- [ ] Left eye: 20 / ________
- [ ] Low
- [ ] Medium
- [ ] High

Reliability:
- [ ] ________
- [ ] ________
- [ ] ________
- [ ] ________
- [ ] ________

Please follow these directions:

1) Print a full sized visual acuity chart:
- [ ] Children 6 or if they do not know their letters:
  - Fold chart so letters are on outside, and secure with a paper clip
  - [ ] Print matching guide for younger children
  - [ ] Children 6 or if children that know their letters
  - [ ] https://www.allaboutvision.com/eye-test/snellen-chart.pdf

2) Set up testing area
- HOTV chart:
  - Give your child the matching guide (if needed) and practice the test
  - Find a room that is at least 10 feet long
  - Place chair for child at the end of the room
  - Measure 10 feet from the back of the chair
  - Tape measure "Measure" app on iOS or Android
  - Lay 11 printer pages (8.5" x 11") end to end
  - Snellen chart:
    - Tape chart on a wall
    - Measure 10 feet from the wall (methods as above)

3) check your child’s vision
- If you have a patch, patch your child’s left eye
- If your child wears glasses, put them on
- HOTV: child can point to the matching letter or state the letter out loud
- Stand 10 feet away and randomly spin the chart and point to the first letter under the black line (20/40). If they can identify this letter, move to the next smallest letter. If they cannot read it, go up a line. Find the size of letters your child can read at least 3/4. Record this number: (2/1) Record how reliable you think the vision test was.
- Snellen:
  - Have your child stand 10 feet away from the eyechart on the wall
  - Ask your child to read the lowest line of letters they can
  - Identify the lowest line of letters your child can read at least half the letters. Record this number (20/) Record how reliable you think the vision test was.

Patch the right eye and repeat the test.

General tips:
- No cheating!
- Make sure your child’s eye is patched or completely covered and they are not peaking.
- Do not give your child any hints.
- Practice first
- Especially for the HOTV test, stand close to your child and practice. Make sure they understand the “game”.

Handout

Visual Acuity for Telemecine

03/24/2020

Children's Hospital of Richmond at VCU
Thank you
evan.silverstein@vcuhealth.org