



COUNTY OF SAN LUIS OBISPO HEALTH AGENCY
Public Health Department
Children's Medical Services

Child Health and Disability Prevention Program Online Vision Screening Training

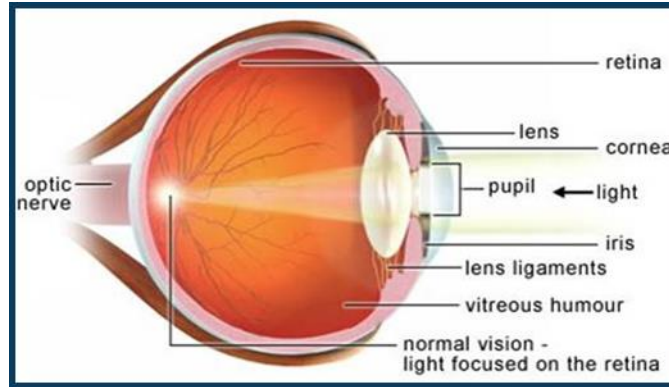


Common Visual Problems



Refractive Errors - Myopia

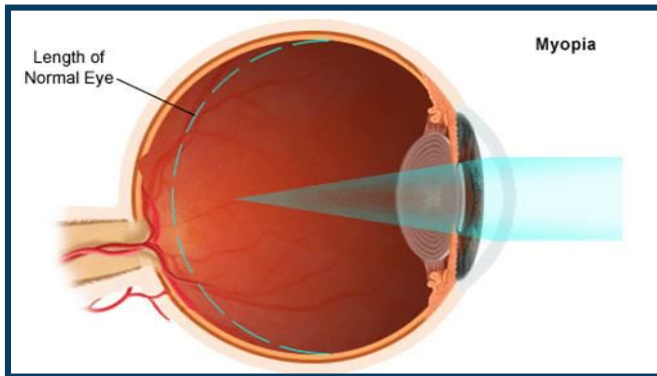
Normal Vision



Refractive Error – means that there is a problem with focusing light accurately onto the retina due to the shape of the eye, resulting in blurry vision.

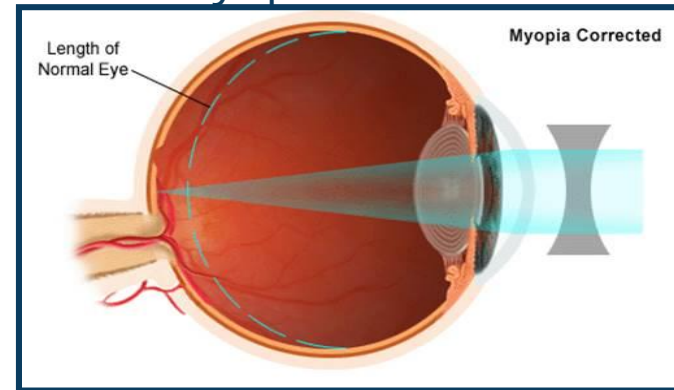
Myopia - means nearsightedness or the person can only see objects up close and objects in distance are blurry.

Myopia



Myopia = Nearsighted

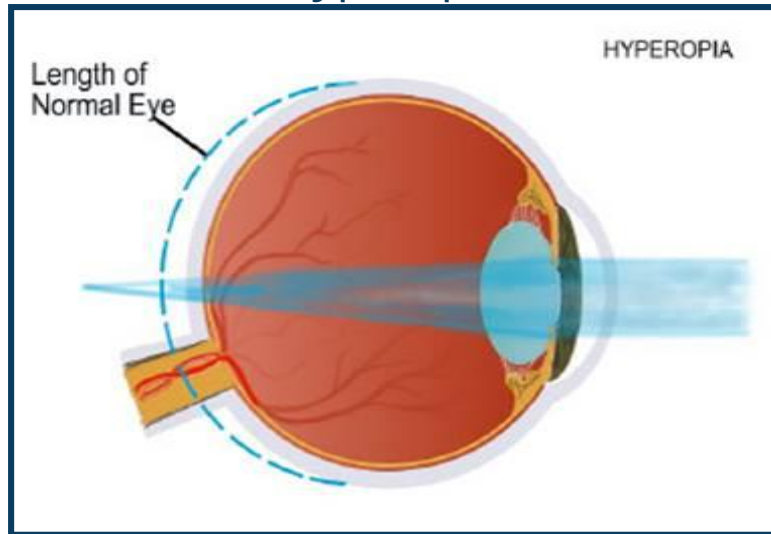
Myopia Corrected



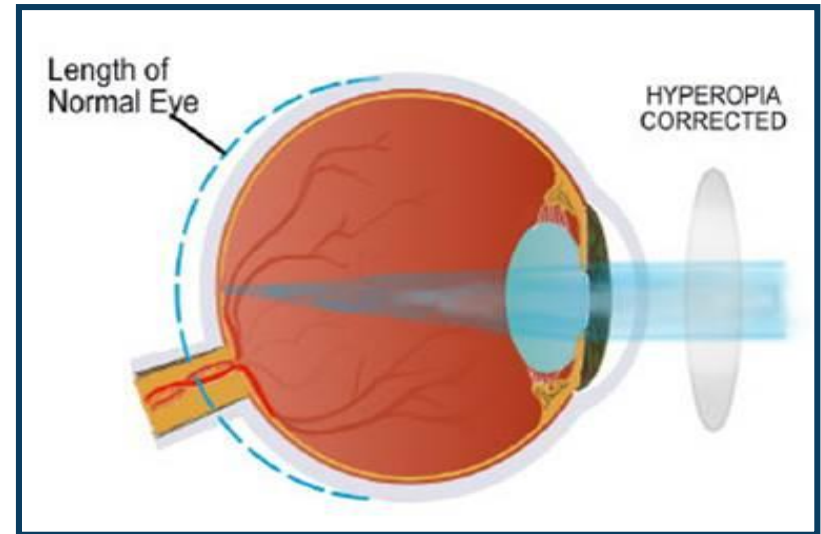
Objects are blurry in the distance

Refractive Errors - Hyperopia

Hyperopia

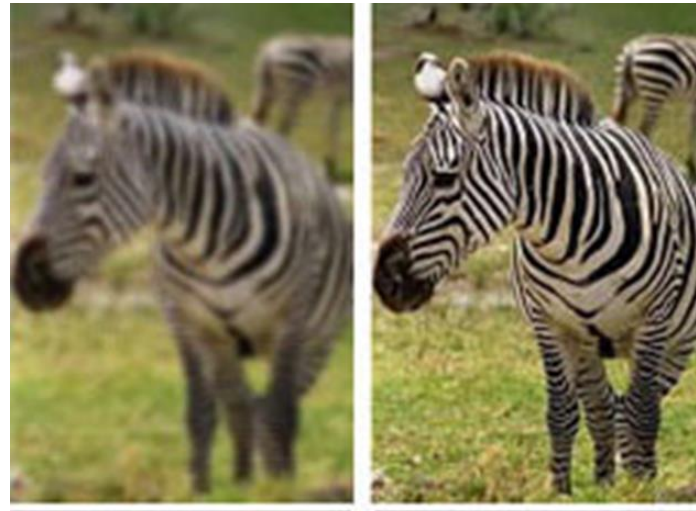


Hyperopia - Corrected



Hyperopia = Farsighted
Objects are blurry up close

Amblyopia



Blurred View

Normal View

Fig. 1 Amblyopia occurs when one eye experiences a blurred view and the other a normal view, but the brain only processes the normal view

Amblyopia is the most common cause of vision problems in children

Common Causes of Amblyopia

- **Anisometropia** – The eyes have unequal refractive powers
- **Deprivation** – Anything that clouds the lens or blocks light from entering the eye
- **Strabismus** – The eyes are misaligned
- **Obstruction** – When a condition blocks the vision. It can be due to ptosis (drooping of an eyelid due to a weak muscle) or cataract (lens becomes progressively cloudy)



Importance of Screening for Amblyopia

- Children who have amblyopia often go unnoticed because their eyes look perfectly normal
- It is the most common cause of monocular visual impairment among children and young adults
- Amblyopia can cause permanent loss of vision early in life
- The effectiveness of treatment drops dramatically after age 10

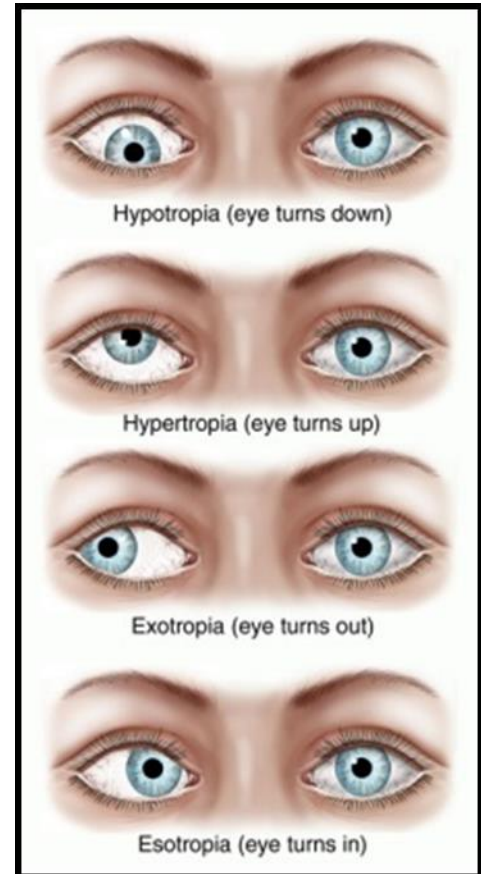


Types of Strabismus

Strabismus – abnormal alignment of the eyes

- **Hypotropia**- Eye turns downward
- **Hypertropia** – Eye turns upward
- **Exotropia** – Eye turns outward
- **Esotropia** – Eye turns inward

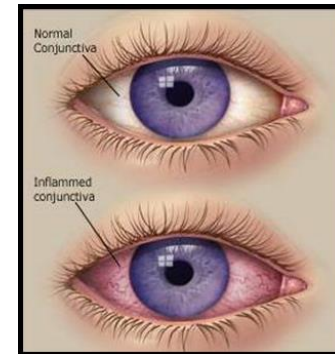
Up to 2-3% of children have some type of Strabismus



Other Vision Conditions

- **Conjunctivitis** (pink eye) – Infection of the conjunctiva
 - May be caused by virus or bacteria
 - Can be contagious
 - Symptoms include: redness, itchiness, gritty feeling, and discharge on the affected eye

- **Ptosis** – Drooping of an eyelid due to a weak lid muscle
 - May obstruct vision
 - May cause amblyopia
 - May tilt chin up



Vision Screening



Importance of Vision Screening, Early Identification and Treatment

- It can prevent permanent loss of vision or blindness
- Children may not realize that they cannot see properly
- Most eye problems do not cause pain and often goes undetected
- Problems that are found early have a better chance of being treated successfully
- Vision loss can cause poor school performance



Importance of Vision Screening, Early Identification and Treatment

- The difficulty of treatment for amblyopia increases with age
- The likelihood of curing the eye disorder decreases with increasing age of the child
- Undetected congenital cataracts, glaucoma, or ptosis can lead to blindness in early infancy
- Untreated refractive errors may affect learning



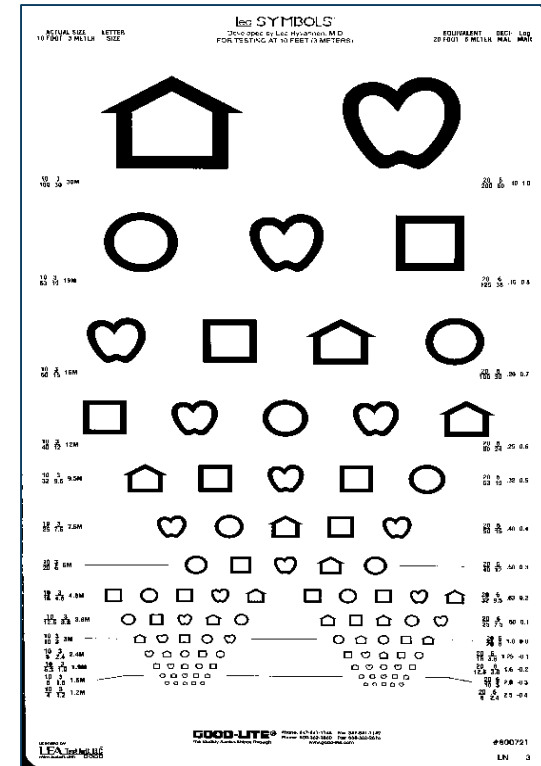
Definition of Visual Acuity

- **Visual acuity** - The measurement of the ability to identify black symbols (optotypes) on a white background at a standardized distance
- Common optotypes used are letters, numbers or shapes (ex. house, heart, square, circle)



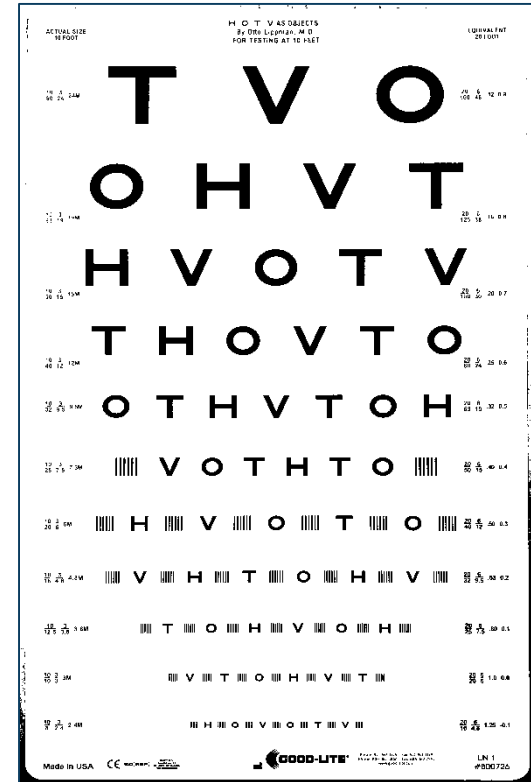
Eye Charts Lea Symbols

- Lea Symbols – Eye chart with common shapes that children can easily identify. It is named after Lea Hyvarinen, the ophthalmologist who developed the chart
- Used for children ages 3-5 or older children who cannot recognize alphabet letters

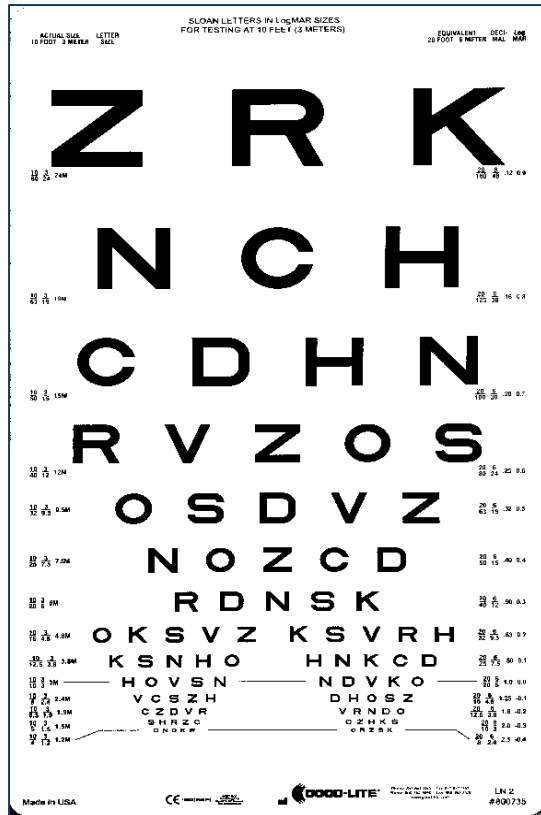


Eye Charts HOTV Letters

- **HOTV letters** – Alternating letters of H,O,T, and V that is used instead of LEA symbols for children ages 3-5. It can be taught to children prior to screening
- Lea symbols and HOTV letters are standardized charts and have validated optotypes that provide the most accurate vision assessments

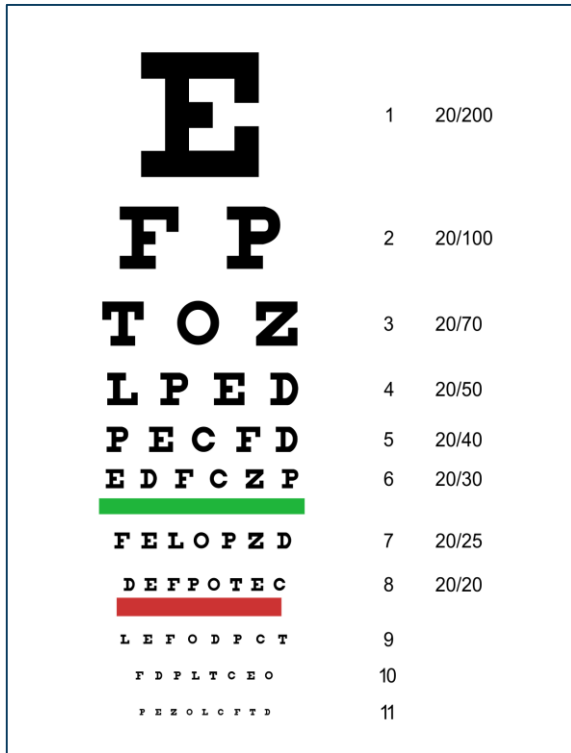


Eye Charts Sloan Letters



- Sloan Letters - Designed by Louise Sloan in 1959
- CHDP prefers the use of Sloan letters over the Snellen Chart
- They are standardized
- They have the same spacing between each letter
- Gives a more accurate vision assessment
- Can be used for children >5 years old or those who can recognize letters

Eye Charts Snellen



- **Snellen** – Named after ophthalmologist Herman Snellen, who developed the chart in 1862
- Although the Snellen chart is more widely used, Sloan letter charts present letters in a standardized fashion and should be used for acuity testing
- Still used by optometrist and ophthalmologists for children >5 years old
- Can be used instead of Sloan letters if Sloan letters are not available for use

Acceptable Occluders

- Adhesive patches
- Two inch wide hypoallergenic paper tape
- Occluder glasses
- Paddle can be used for older children



- Re-usable occluders must be cleaned after each use!
- It is important to eliminate the possibility of peeking for an accurate screening outcome

Automatic Referral to Optometrists/Ophthalmologists

Do not perform Visual Acuity Screening for these children

- Recognized eye disorders
- Known neurodevelopmental disorders
- Hearing impairment
- Motor abnormalities (e.g. cerebral palsy)
- Down syndrome
- Cognitive impairment
- Autism spectrum disorders
- Speech delay
- Systemic disease present
- Taking medications that may cause eye disorders
- First-degree relative with strabismus or amblyopia
- Prematurity – less than 32 weeks of gestation
- Parent believes child has visual problem



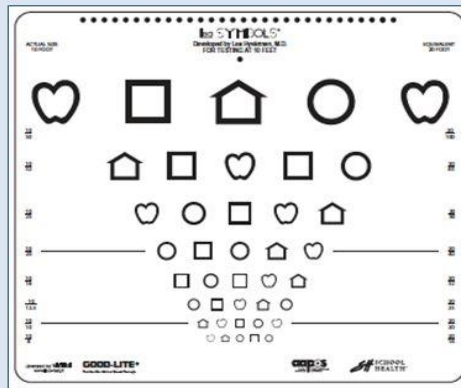
Critical Line or Threshold Screening



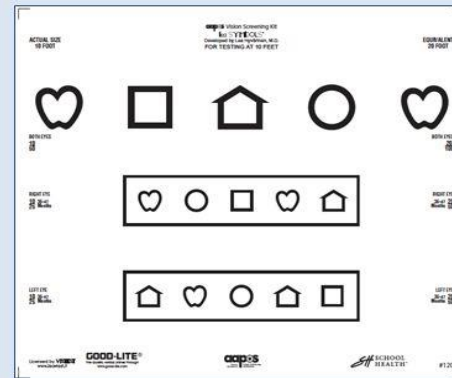
American Association for
Pediatric Ophthalmology
and Strabismus

Threshold and Critical Line Options

Threshold



Critical Line



Threshold screening begins by asking the child to identify optotypes at the top line of the eye chart and continue down each line until the child can no longer identify the majority of the optotypes in a line.

Critical line screening is an alternative to threshold screening that requires less time to administer. The “critical line” is the age-dependent line a child is expected to see normally and pass.



Visual Acuity Screening

- Select the eye chart based on the child's age and cognitive level
 - For children ages 3-5, use LEA symbols or HOTV chart
 - For children older than 5, use SLOAN chart
 - Use LEA symbols or HOTV chart for older children who cannot recognize letters
- If the child wears glasses, screen with the glasses on
- Show chart to child close up, explaining the procedure in detail and simple terms the child can understand
- Review the optotypes (symbols) with the child to make sure the child is familiar with the optotypes (symbols)



Visual Acuity Screening

- Adjust appropriate eye chart with referral line close to the child's eye level
 - 3 years old: eye level should be at the $\frac{10}{25}$ line ($\frac{20}{50}$ line on 20 ft. chart)
 - 4 years old: eye level should be at the $\frac{10}{20}$ line ($\frac{20}{40}$ line on 20 ft. chart)
 - 5 years old & older: eye level should be at the $\frac{10}{16}$ line ($\frac{20}{32}$ on 20 ft. chart)
- The child should stand with their heels on the "heel line" 10 or 20 feet away depending on child's age or eye chart used
- Give occluder to parent or child on the 10 or 20 ft. line, depending on chart used and age of child
- Be sure the eye is covered
- Examiner stand by the chart



Visual Acuity Screening

- Examine the right eye first by covering the left eye
- Watch the child to make sure that the left eye is completely covered with the occluder
- Point to the letter/symbols the child is to identify, being careful not to touch or cover the figure
- Start screen one line above the referral line
 - 3 years old, start at line $\frac{10}{32}$
 - 4 years old, start at line $\frac{10}{25}$
 - 5 years and older, start at line $\frac{10}{20}$ or $\frac{20}{40}$ (20 ft. chart)
- Acknowledge the child's response with "good", "right" each time even if the child is incorrect



Visual Acuity Screening

- To pass a line, the child must correctly identify more than half of the figures on the line without squinting
- Record the smallest line of figures the child can identify for the right eye
- Repeat the above procedures for the left eye by covering the right eye
- Then, repeat above procedure with both eyes uncovered
- If a child fails on the referral line, repeat line in reverse order (from right to left)
- Record the number from the line that the child successfully identified all of the optotypes



Pay Attention...

- To how you point to the letters/symbols on the chart
- The best practice is to place your finger/pointing device directly under the letters/symbols
- Make sure not to cover any part of the letter or symbols
- Make sure the child is not peaking!



What Does $\frac{20}{20}$ Mean?

- **Top Number** – How far you are from the chart
- **Bottom Number** – How far away a person with normal vision can read the chart
- As the bottom number increases, the vision worsens



Age-Dependent Referral Criteria for Visual Acuity Screening

- **Age 3 years** – Failure to correctly identify the majority of optotypes on the $\frac{10}{25}$ ($\frac{20}{50}$ on some charts) line, or worse, in either eye
- **Age 4 years** – Failure to correctly identify the majority of optotypes on the $\frac{10}{20}$ ($\frac{20}{40}$ on some charts) line, or worse, in either eye
- **Ages 5 years and older** – Failure to correctly identify the majority of optotypes on the $\frac{10}{16}$ ($\frac{20}{30}$ or $\frac{20}{32}$ on some charts) line, or worse, in either eye
- **Age 3 years and older** (threshold method only) – Two line difference between eyes, even within the passing range (e.g. a 4 year old with $\frac{20}{20}$ in one eye and $\frac{20}{32}$ in the other eye)



Untestable Children and Rescreening Guidelines

- If the child is unable to cooperate during the screening, a second attempt should be made the same day (i.e. later during the same visit)
- If the same day rescreening is not possible, reschedule as soon as possible, but no later than 6 months
- When vision screening is unsuccessful, refer the child to an ophthalmologist or an optometrist who is experienced in the care of children for an eye examination
- Shyness, inattention or poor cooperation may be related to a vision problem



CHDP VISION SCREENING DOCUMENTATION AND REFERRALS



Documentation

- Record the smallest line of optotypes that the child can read more than half of the line
- If the child does not pass, record the failed screen on the medical record and refer to appropriate provider. For example, result for a three year old after the threshold screen:

OD $\frac{10}{25}$ (right eye)

OS $\frac{10}{32}$ (left eye)

OU $\frac{10}{25}$ (both eyes)

This child failed because there is a difference of screening result in each eye



Documentation

Sample CHDP Vision & Hearing Screening Results Form

Last Name:	First Name:	MRN#
PLACE OF SCREENING: OFFICE		SCORING: Child responds at 25 dB: <input type="checkbox"/>
AUDIOMETER MODEL:		Child does not respond at 25 dB: <input type="checkbox"/>

DATE OF LAST CALIBRATION:				AGE:				
1 st Screen	RIGHT EAR:			LEFT EAR:				
Date:	1000	2000	3000	4000	1000	2000	3000	4000
2 nd Screen								
Date:	1000	2000	3000	4000	1000	2000	3000	4000

Vision Screen Date: _____ Comments: _____

	Right Eye	Left Eye
Without Glasses	/	/
With Glasses	/	/

Referred To: _____

Signature & Title of Person Performing Test

DATE OF LAST CALIBRATION:				AGE:				
1 st Screen	RIGHT EAR:			LEFT EAR:				
Date:	1000	2000	3000	4000	1000	2000	3000	4000
2 nd Screen								
Date:	1000	2000	3000	4000	1000	2000	3000	4000

Vision Screen Date: _____ Comments: _____

	Right Eye	Left Eye
Without Glasses	/	/
With Glasses	/	/

Referred To: _____

Signature & Title of Person Performing Test

This is a sample documentation form. You would indicate the vision screen result on the medical record of the child.



CHDP Care Coordination Form

Child Health and Disability Prevention Program Care Coordination / Follow-up Form

Submit to the County CHDP Program within 5 business days of the examination - eFax: (805) 781-4492 - ATTN: REGINA SAMSON, PHN (805) 781-5558
Do not complete this form if child is in the foster care system. Health Care providers are required to submit a HCPCFC Foster Care Medical (Specialty)/Dental Contact Form for all types of appointments. For foster children - providers only complete page 2.

Patient Name (Last)			Patient Name (First)			Patient Name (Initial)			Language			Date of Service				
Doe, John									English			05 01 2018				
Birthdate			Age		Sex		Gender		Patient's County of Residence			Telephone # (Home or Cell)				
01 18 2013			5		M		Male		San Luis Obispo			(805) 335-3333				
Responsible Person (Name)			Responsible Person (Street)			Responsible Person (Apt/Space #)			Responsible Person (City)			Responsible Person (Zip)				
Patient Eligibility			County		Aid Code		Identification Number			Next CHDP Exam Date			Ethnic Code			
			40		P9		9722333F			01/18/2019			1			
A. Medical Assessment and Referral Section																
<input type="checkbox"/> No Medical Problems Suspected Significant Medical History or Special Conditions: <input type="checkbox"/> No <input type="checkbox"/> Yes, Specify: _____																
Physical Exam		Problem Suspected			Referred To & Contact #			Or			<input type="checkbox"/> Return Visit Scheduled			Comments: OS - 20/60 OD - 20/60 OU - 20/60 refer to an optometrist		
		Problem Suspected			Referred To & Contact #			Or			<input type="checkbox"/> Return Visit Scheduled					
		Problem Suspected			Referred To & Contact #			Or			<input type="checkbox"/> Return Visit Scheduled					
Nutritional Assessment		Problem Suspected			Referred To & Contact #			Or			<input type="checkbox"/> Return Visit Scheduled					
Developmental Screening		<input type="checkbox"/> Speech Delay <input type="checkbox"/> Social/Emotional <input type="checkbox"/> Cognitive <input type="checkbox"/> Fine Motor Delay <input type="checkbox"/> Gross Motor Delay <input type="checkbox"/> Other			Referred To & Contact #			Or			<input type="checkbox"/> Return Visit Scheduled					
Vision Screening		<input checked="" type="checkbox"/> Problem Suspected <input type="checkbox"/> Not screened - rescheduling <input type="checkbox"/> Other: _____			Referred To & Contact #			Or			<input type="checkbox"/> Return Visit Scheduled Primary Eye Care Center - 543-1447					
Hearing Screening		<input type="checkbox"/> Problem Suspected <input type="checkbox"/> Not screened - rescheduling <input type="checkbox"/> Other: _____			Referred To & Contact #			Or			<input type="checkbox"/> Return Visit Scheduled					
B. Dental Assessment and Referral Section																
<input checked="" type="checkbox"/> Class I: No Visible Problems Mandated annual routine dental referral (beginning no later than age 1 and recommended every 6 months)				<input type="checkbox"/> Class II: Visible decay, small carious lesion or gingivitis Needs non-urgent dental care				<input type="checkbox"/> Class III: Urgent - pain, abscess, large carious lesions or extensive gingivitis Immediate treatment for urgent dental condition which can progress rapidly				<input type="checkbox"/> Class IV: Emergent - acute injury, oral infection or other pain Needs immediate dental treatment within 24 hours				
Fluoride Varnish Applied: <input type="checkbox"/> Yes <input type="checkbox"/> No, parent refused <input type="checkbox"/> No, teeth have not erupted <input type="checkbox"/> Other reason for not applying: _____																
<input type="checkbox"/> Dental home referral Referred To and Contact Number: _____																
C. Referring Provider Information																
Service Location: Office Name, Address, Telephone Number								Provider Office NPI Number								
Dr. Joe Moe Pediatrics								12567899								
330 S. Higuera St., San Luis Obispo CA 93401								Referring Provider Name (Print Name)								
								Dr. Joe Moe								
Contact Person: Cindy Lou (805) 222-3335								Provider Signature								
								Dr. Joe Moe								
								Date								
								5/1/18								

Revised 09/2017

Since the state discontinued the use of PM 160, they have come up with a new care coordination form. This form is a way to communicate to the local CHDP program. For any fee-for-service or Gateway Medi-Cal child who has failed a vision screen, please complete this form and send it back to the CHDP department. Our fax # is: (805) 781-4492.



Referrals

- Refer all children with abnormal screening results to a pediatric ophthalmologist or an eye care specialist
 - Refer children at high risk regardless of screening results
 - Head Start – Refer the child to the primary care provider
- Please refer the child to CHDP for any care coordination needs. CHDP contact:
phone (805) 781-5527 and fax (805) 781-4492
- Explain to parents the importance of early intervention as some may not understand the benefits of early treatment



Please Complete:

In order to receive your certificate of completion, please complete the post-test & evaluation and submit to:

rsamson@co.slo.ca.us

For any questions, please contact the local CHDP office
(805) 781-5527

If you feel that you need a 1:1 practicum please notify us at rsamson@co.slo.ca.us or (805) 781-5527 so that we can schedule a day to do the practicum with you



Thank you for participating in the County of San Luis Obispo Vision Screening Training!



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COUNTY OF SAN LUIS OBISPO

www.slocounty.ca.gov