

UNILATERAL HEARING LOSS PROGRAM & CURRICULUM (0 - 3YRS):

FROM CONCEPTUALIZING & PILOTING, TO DISTRICT-WIDE IMPLEMENTATION

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Early Childhood Education
Infant Support Services

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Disclaimer

- **The photos, illustrations, maps, and clip-arts found on this presentation were found on various internet sites.**



Deaf and Hard-of-Hearing Infant Support Services





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- **A Walk in Time: The Making of ...**
- **Curriculum**
- **Where we go from here?**



A Walk in Time



The Making of the
Unilateral
Hearing Loss
Family
Support Center



Long time ago ...
... in a land far, far away ...

- Before 1998 – Diagnosis:
 - High-risk babies: NICU
 - Bilateral microtia/atresia
 - Parent to pediatrician,
to audiologist
 - screenings at schools



Problems with this model?



- Late diagnosis & the price we pay:
 - Language delays
 - Other issues (i.e. academic, social/emotional)
 - Cost to taxpayers

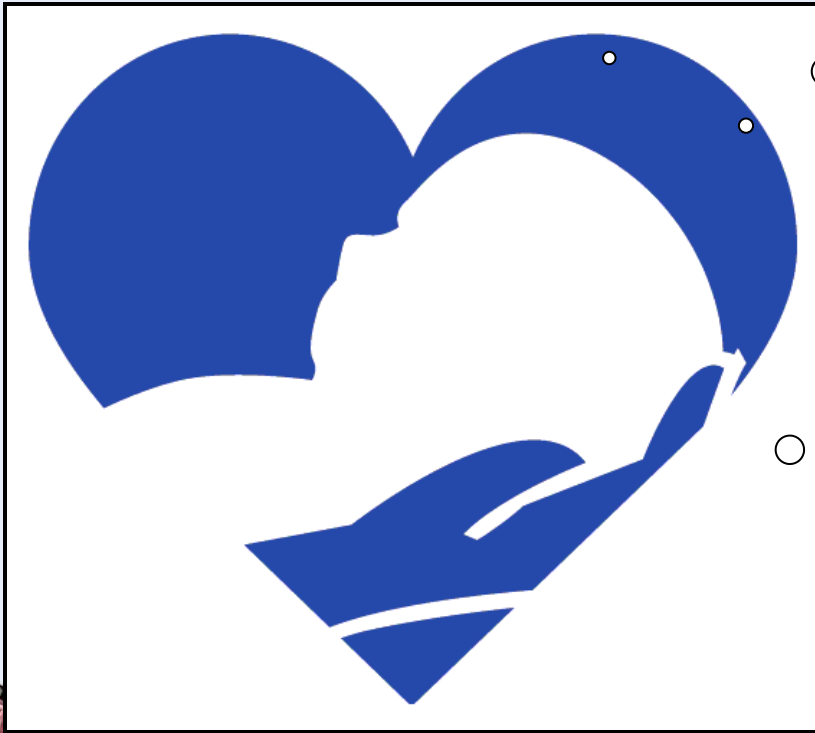
1998

EHDI?

NHSP?



HCC?

HELP !!!
Are these
things good or
bad?





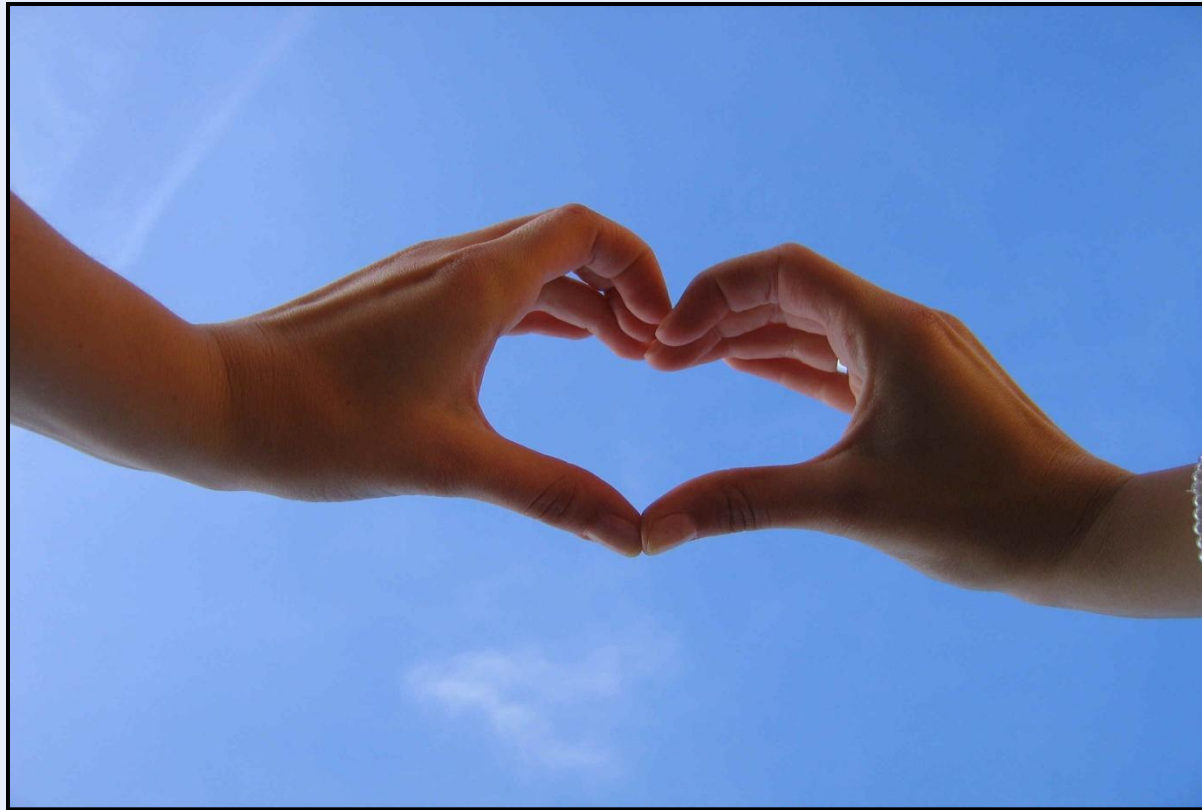
1998 and Beyond

- **EHDI:** Early Hearing Detection Intervention Laws
 - **NHSP:** Newborn Hearing Screening Program
 - **HCC:** Hearing Coordination Center
 - **Early Start** (already existed before 1998):
IDEA Part C
- 
- 

That's why we are here ...



Early Intervention for Education & Support



LAUSD DHH Infant/Toddler (as of 05/20/08)

. unilateral microtia/atresia	40
. unilateral sensorineural hearing loss (SNHL)	22
. bilateral microtia	9
. bilateral mild SNHL	9
. bilateral moderate-severe SNHL	33
. bilateral profound SNHL (not getting CI)	18
. CI recipient or candidate	18
. auditory neuropathy	11
. mixed hearing loss	4
. recurring conductive issues	3
. multiple disabilities	45

This means:



- Of the 200+ students, about a third of the children have a unilateral loss.



- About 65-70% have unilateral hearing loss due to microtia (malformation of the outer ear) and/or atresia (smaller or closed ear canal).

Characteristics

- By definition: One ear hears within normal hearing limits
- Before NHSP: NOT referred
- Parents still grieve, specially those due to microtia/atresia



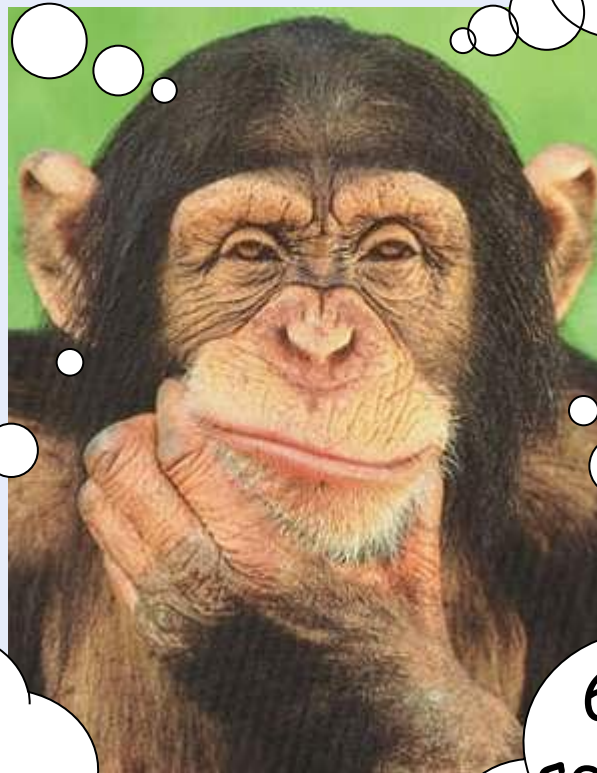


Sheryl Lewin, M.D.
Director of Microtia Reconstruction
CHLA

- Parent education for microtia/atresia has added component:
 - Cosmetic &/or reconstructive surgeries

Can these kids develop typical language? Do they need services?

Can we service ALL without benefiting one and shortchanging another?



Can we design a program that will address the unique needs of the unilats?

YES!

6 hours per day to service ALL families? These DHH teachers must be miracle workers!!



How?

Individual Family
Service or
Family Support
Groups?



YES!





The Goal:

**To optimize quality of services,
without sacrificing quantity,
while minimizing
cost and effort.**





... of a



Birth of a
Pilot!



Unilateral Support Group



'Wh...'
questions

WHERE?

WHEN?

WHO?

WHAT?





WHO?

- Natasha's families with babies & toddlers with unilateral hearing loss:
 - Hispanic background: Spanish only
 - Non-working parent(s)
 - Some had other children at home
 - No car

2006

WHEN?

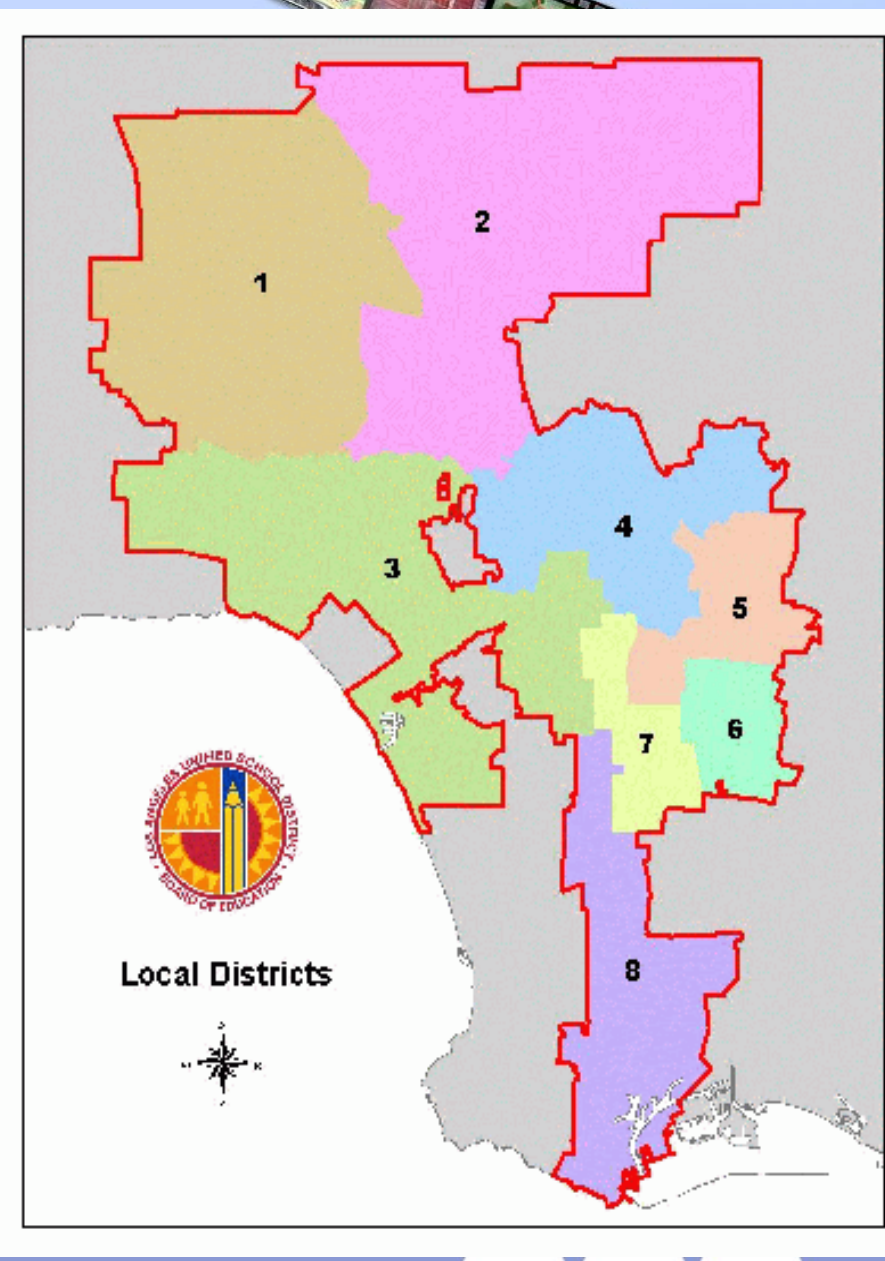


- Alternating months –
 - 1 Home:
5x/yr
 - 1 Group:
5x/yr





WHERE?





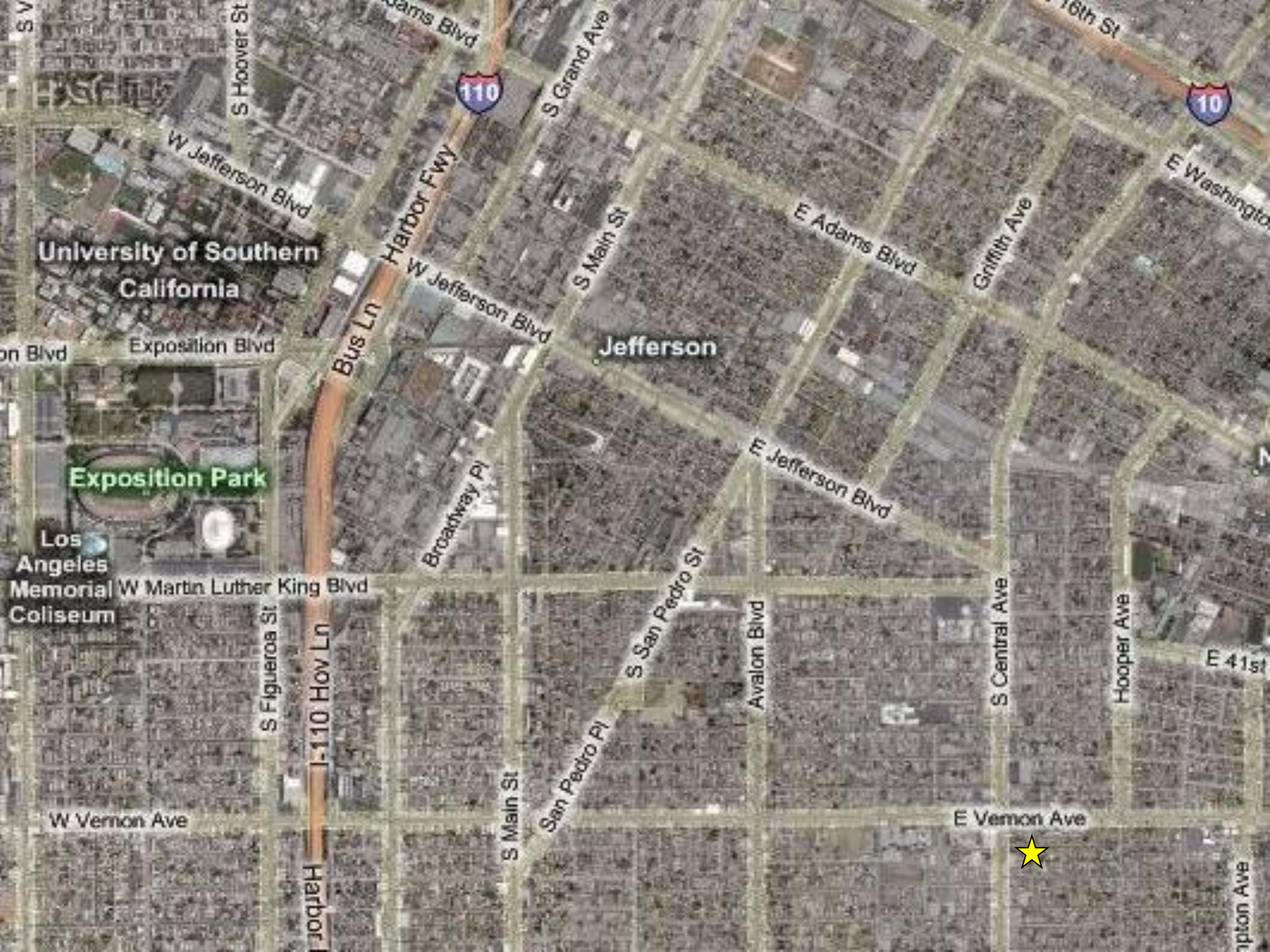
NARROWING DOWN THE POSSIBILITIES

GEOGRAPHY

- Mid-point
- Accessibility
- Safe
- Familiar neighborhood and surroundings

FACILITY

- Economical
- Bathroom: clean
- Room: min. sq. ft.;
privacy
- Availability
- Food, drink, strollers:
OK !!



University of Southern California

Exposition Park



Los Angeles Memorial Coliseum

Jefferson



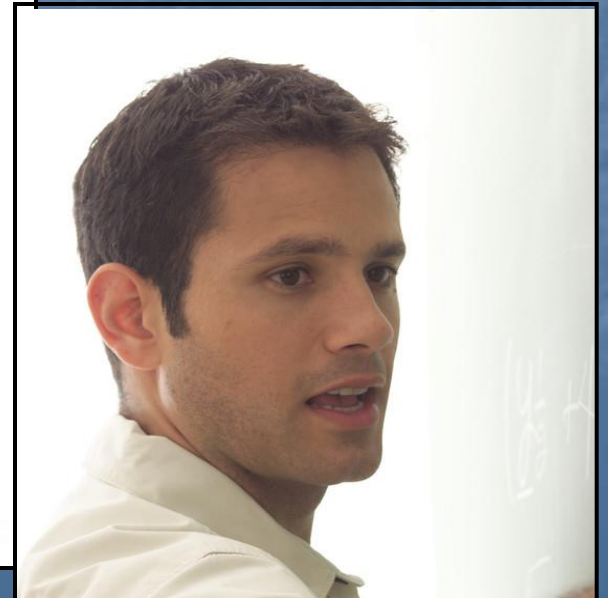
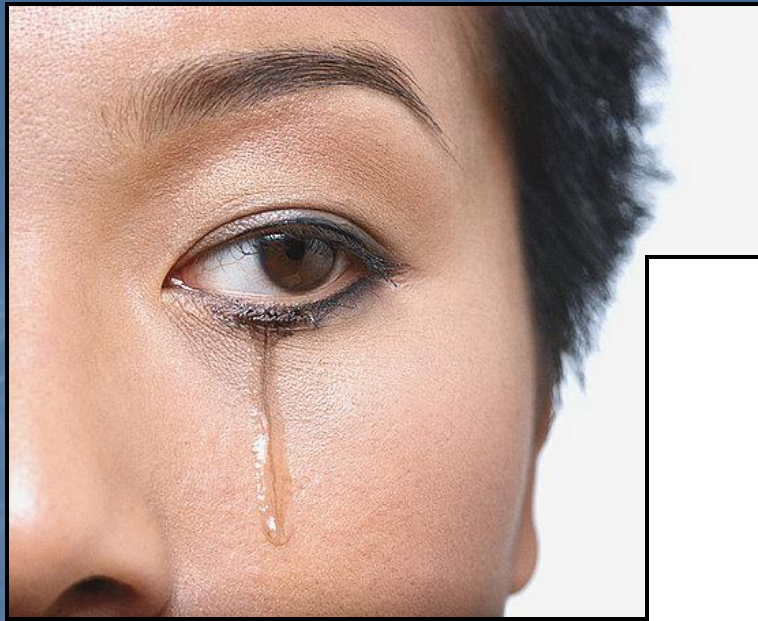


WHAT?

- Unilat Curriculum:
 - LAUSD DHH Curriculum:
some topics (exclude: CI, ...)
 - Unilat Topics
 - Guest speaker
 - Support group:
 - Icebreaker
 - Grief
- 
- 

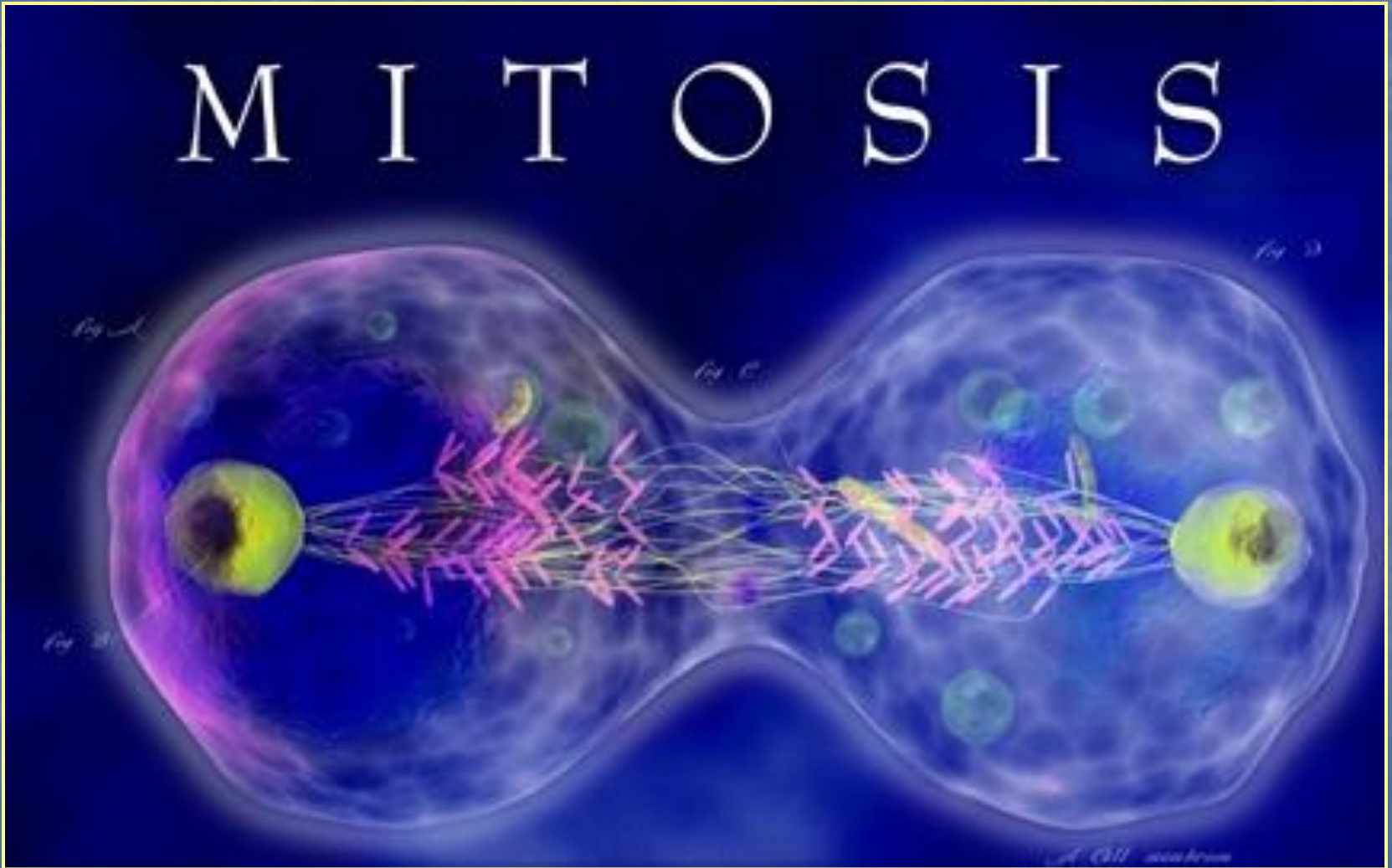


Outcomes





Next Steps ...

MITOSIS





SUPPORTING ALL FAMILIES

- **How Do We Support Families Of Children Who Have An Unilateral/One Sided Hearing Loss In The Entire District?**
 - **13 DHH Infant Teachers**
 - **Tarzana: local districts 1 and 2**
 - **Marlton: local districts 3, 4, 5, 6, 7, and 8**
- 
- 





September, 2007 to June, 2008

- **Tarzana-ten week sessions, once a week**
- **Marlton-ten months session, once every other month**

September, 2008 to June, 2009

- **Tarzana & Marlton: 10-week sessions, 2x/year**

September, 2009 to Present

- **Tarzana & Marlton: 10-week sessions, year round**
- 
- 



PARENT COMMUNICATION MARLTON

Support Group For Families with a child with Unilateral Hearing Loss

Guest: Scott -Adult with unilateral atresia who underwent reconstructive surgeries for microtia.

**Where: Marlton Family Support Center
4000 Santo Tomas Drive,
Los Angeles, CA 90008**

**Date: Tuesday, June 17, 2008
Time: 10:00 a.m. to 12:30 p.m.**



Grupo de apoyo para familias que tienen niños con pérdida auditiva unilateral.

Invitado: Scott --Adulto con atresia que paso por cirurgias reconstructivas para microsia.

**Lugar: Marlton Family Support Center
4000 Santo Tomas Drive,
Los Angeles, CA 90008**

Fecha: Martes, 17 de junio, 2008

Horario: 10:00 a.m. to 12:30 p.m.





INDIVIDUAL SESSIONS

- **Parents arrive with their child**
- **Greeting and Socialization**
- **Transition To Separation**
- **Children Outside/Parents Meet With Teacher and Guest Speaker**
- **Break/Snack Time**
- **Review of Information**



SUPPORT SERVICES

- **Interpretation**
 - **Infant Program Assistants**
 - **Translation Unit**
 - **Audiologist**
 - **Social Worker**
 - **OT/PT: Consultation**
 - **Nurse**
 - **Transportation**
- 
- 



CHALLENGES WE FACED

- **Support for parents that cannot come**
- 

Lydia Sussman



DHH Infant Family Support Centers

- Every family shall have the opportunity to meet and learn with others who have children with similar hearing loss.
- Every family shall have the opportunity to participate in a support group.



We designed a Curriculum for Home Visits



- Taking time to bond and fall in love
- Keeping track of your records/information:
 - The Parent Notebook
- How do I Feel?
- Early Development
- Siblings and extended family members



Audiological to Auditory – 1

- ACCESS TO BRAIN & BRAIN DEVELOPMENT
- EAR ANATOMY
 - Parts & Functions
 - How Sound Travels
- HEARING LOSS
 - Location:
 - Outer, Middle, Inner
 - Unilateral or Bilateral
 - Type
 - Conductive
 - Sensorineural (sometimes separated: Sensory or Neural)
 - Mixed
 - Auditory Neuropathy
 - Degree
 - Hearing WNL
 - Mild
 - Moderate
 - Severe
 - Profound

Audiological to Auditory - 2

- MY CHILD'S HEARING LOSS
 - Scanned samples from NHS referral form
- ETIOLOGY
 - Known
 - Genetic: Syndromic vs. Non-syndromic
 - Trauma/Injury
 - Ototoxic
 - Unknown
- TYPES OF HEARING DEVICES & HOW THEY WORK:
 - Hearing Aids
 - BAHA
 - Cochlear Implants
- AUDIOGRAM 01: Intro
 - Pitch & Loudness: Frequency in Hertz; Decibels
 - Degree of Loss by Decibels
 - What's the Speech Banana
 - Computer software simulation: This is what you hear if you a _____ hearing loss.
- AUDIOGRAM 02: My Child's Audiogram
 - Unaided results: Plot on Familiar Sounds Audiogram
 - Aided results: Plot on Familiar Sounds Audiogram

Audiological to Auditory - 3

AUDIOGRAM 03:

- "Muddy In = Muddy Out"; "Quickest way into speech is through audition." Demonstrate learning speech through audition, vision, tactile.
- What to do if Aided one cannot hear all sounds of speech at 6 ft?
 - 6dB Rule
 - FM system
 - CI

TYPES OF AUDIOLOGICAL TESTS

- OAE
- ABR
- Tympanometry
- Soundfield
- Bone conduction
- Masked
- ...

SURGERY FOR MICROTIA

- Reconstruction of pinna:
 - Rib cartilage
 - Medpor
 - ...
- Opening of ear canal &/or middle ear

Audiological to Auditory - 4

AUDITORY SKILLS DEVELOPMENT

- Detection
- Discrimination
- Identification
- Comprehension
- All the above + Distance
- All the above + NOISE: Hearing in Noise

AUDITORY STRATEGIES

- Auditory sandwich
- Acoustic highlighting
- Other strategies learned from Teresa Caraway

6 LING SOUNDS

- Where are they in the Speech Banana
- Why these 6 sounds
- Chart: Detection & Discrimination at varying distances, up to 30 ft.
Importance of charting a baseline

SUPRASEGMENTALS

- Duration (rhythm); Intensity (dynamics); Pitch (+ timbre)
- Suprasegmentals and Language: what cues are gained?
- Suprasegmentals and frequencies: where in Hz?

Audiological to Auditory - 5

- FORMANTS

- Definition

- 6 Ling Sounds & their formants: relate to XI.b

- MAPPING FORMANTS ON MY CHILD'S AUDIOGRAM

- MUSIC, THE BRAIN, AND LANGUAGE

- Music & Intelligence

- Rhythm: motor development; language cadence; prosody; literacy;

- Pitch + timbre: discrimination; hearing in noise

The Ling Six Sounds

Auditory Skills:

- Detection
- Discrimination
- Identification
- Comprehension
- + distance
- + noise

- For Infants
- For Toddlers



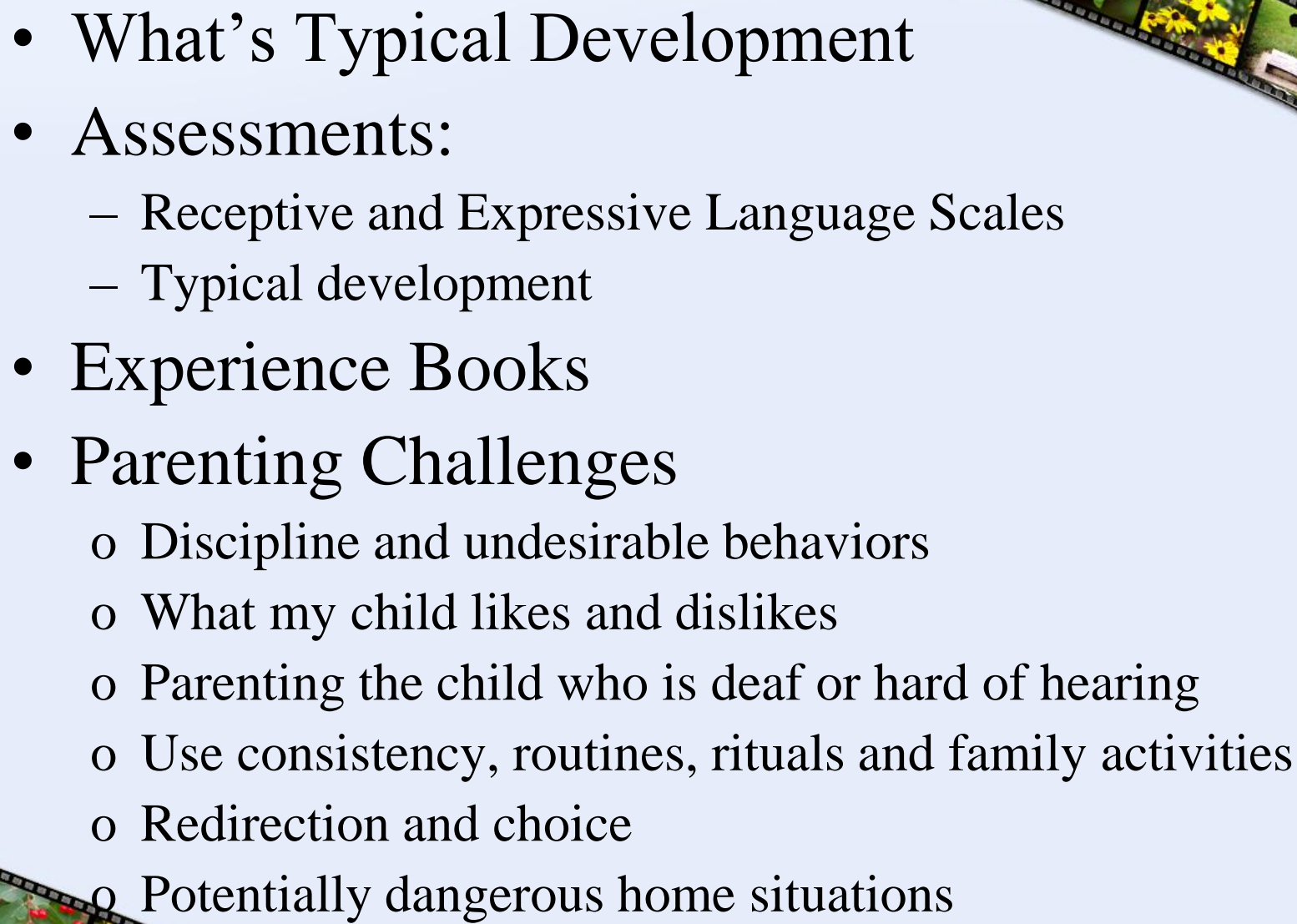
Making communication choices



Communication

– *Hey, Baby, what's up???*



- 
- What's Typical Development
 - Assessments:
 - Receptive and Expressive Language Scales
 - Typical development
 - Experience Books
 - Parenting Challenges
 - Discipline and undesirable behaviors
 - What my child likes and dislikes
 - Parenting the child who is deaf or hard of hearing
 - Use consistency, routines, rituals and family activities
 - Redirection and choice
 - Potentially dangerous home situations

Talk Around the Clock



We designed a specialized curriculum for the Unilateral Hearing Loss Support Group



Day One: Introduction: Taking Care of Me



Day Two: Sharing our Stories How I Found Out and How I Feel

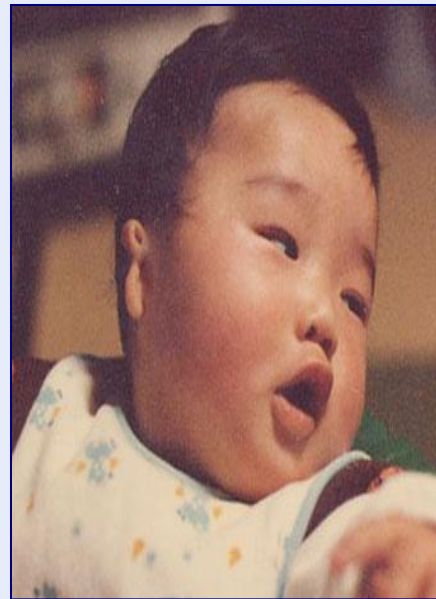


Day Three: Types of Hearing Loss

- **Bilateral**
- **Unilateral**
- **Sensory-neural**
- **Conductive**
- **Microtia/Atresia/Stenosis**



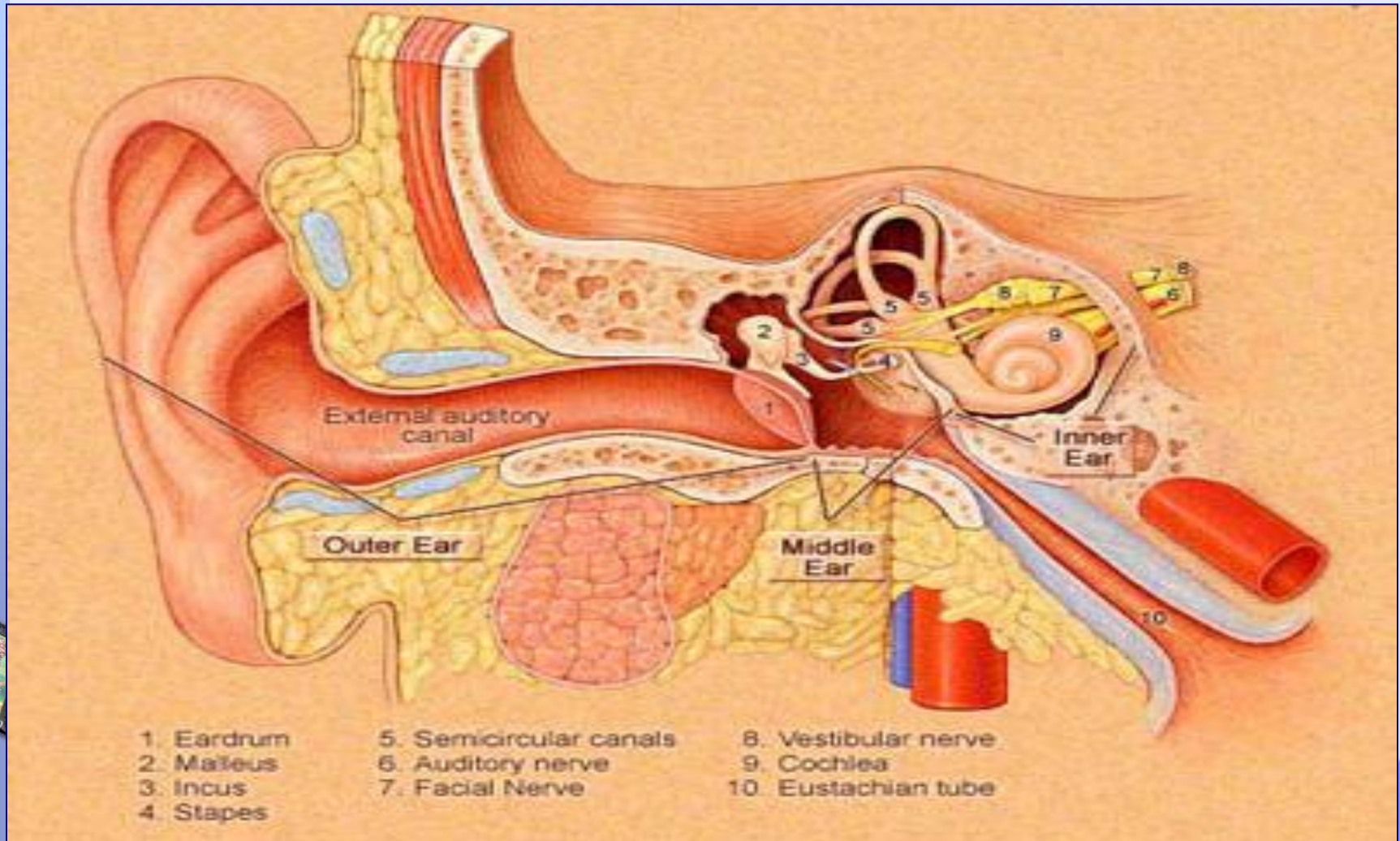
Day Four: Types of Microtia



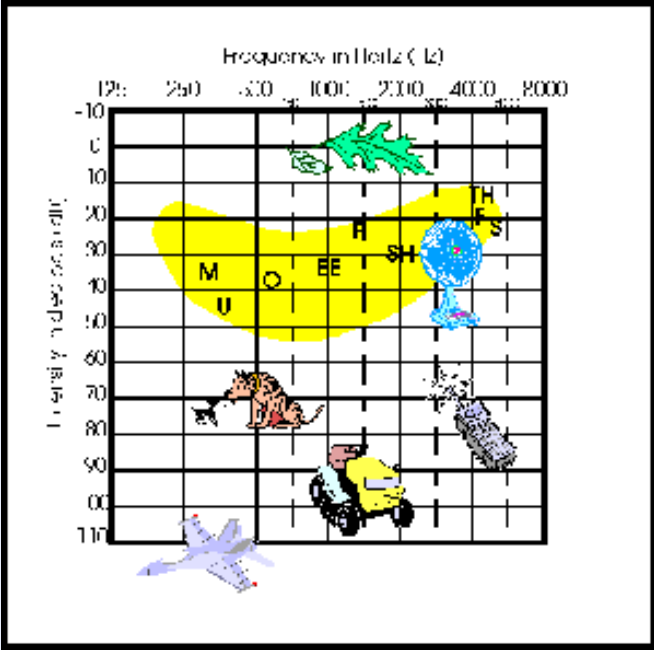
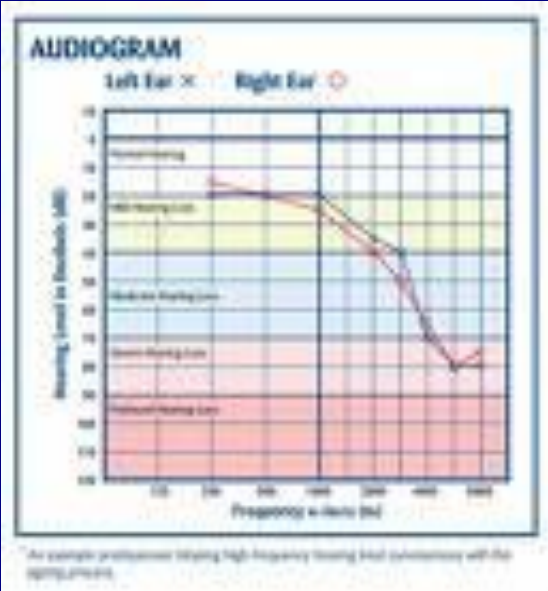
Atresia



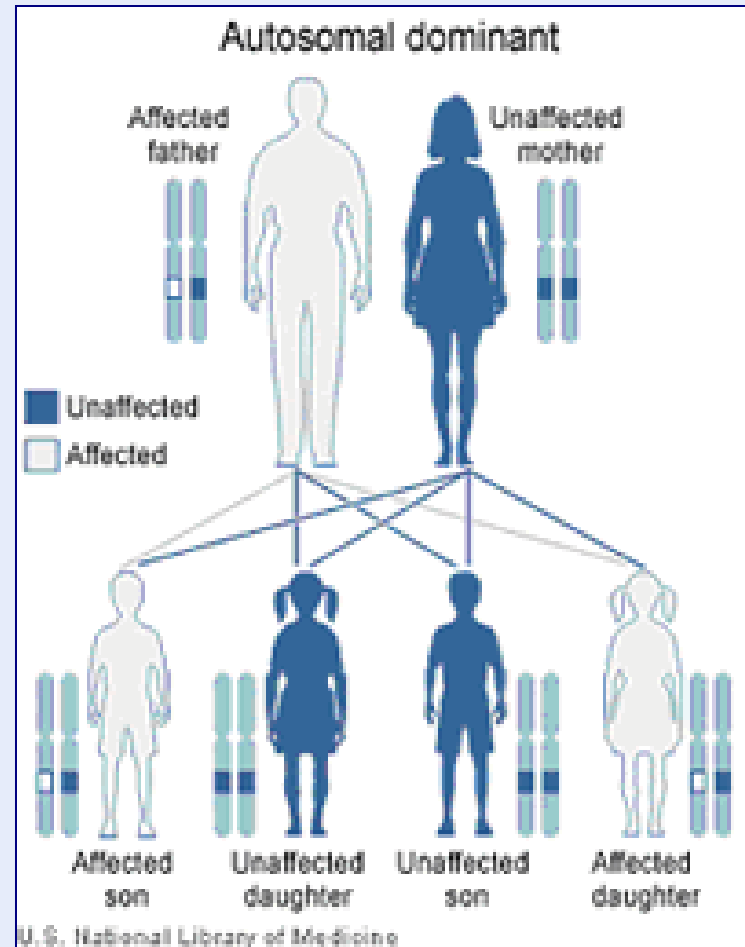
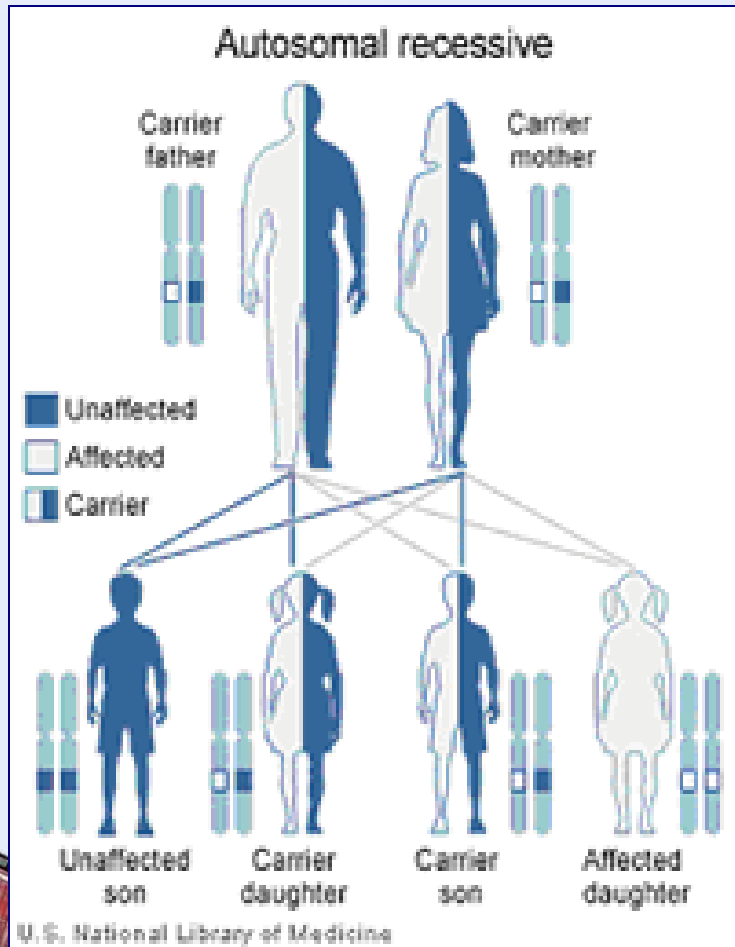
Day Five: How the Ear Works



Day Six: Understanding Audiograms and Hearing Testing



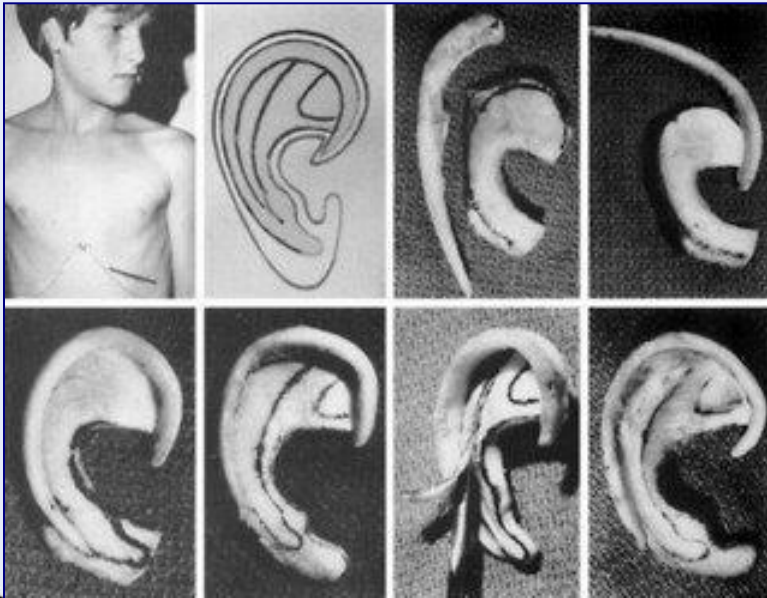
Day Seven: Genetics



Day Eight: Surgery to Repair Microtia

Rib Cartilage

Medpor



Guest Speaker



Surgery to repair Atresia



Day Nine: Sensible Monitoring



Typical Language Development



Day Ten: Hearing Aids and the BAHA

Hearing Aids



BAHA





We wish to thank:

- *LAUSD DHH administration**
- *The families of our infants**
- *Our amazing teachers and**
- *Infant Support Staff**

*for their support and belief in
our ideas*

