



Conductive hearing loss and classrooms

Research, policy and practice

TEACHER OF THE DEAF CONFERENCE
ADELAIDE MARCH 2006

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Classroom listening problems

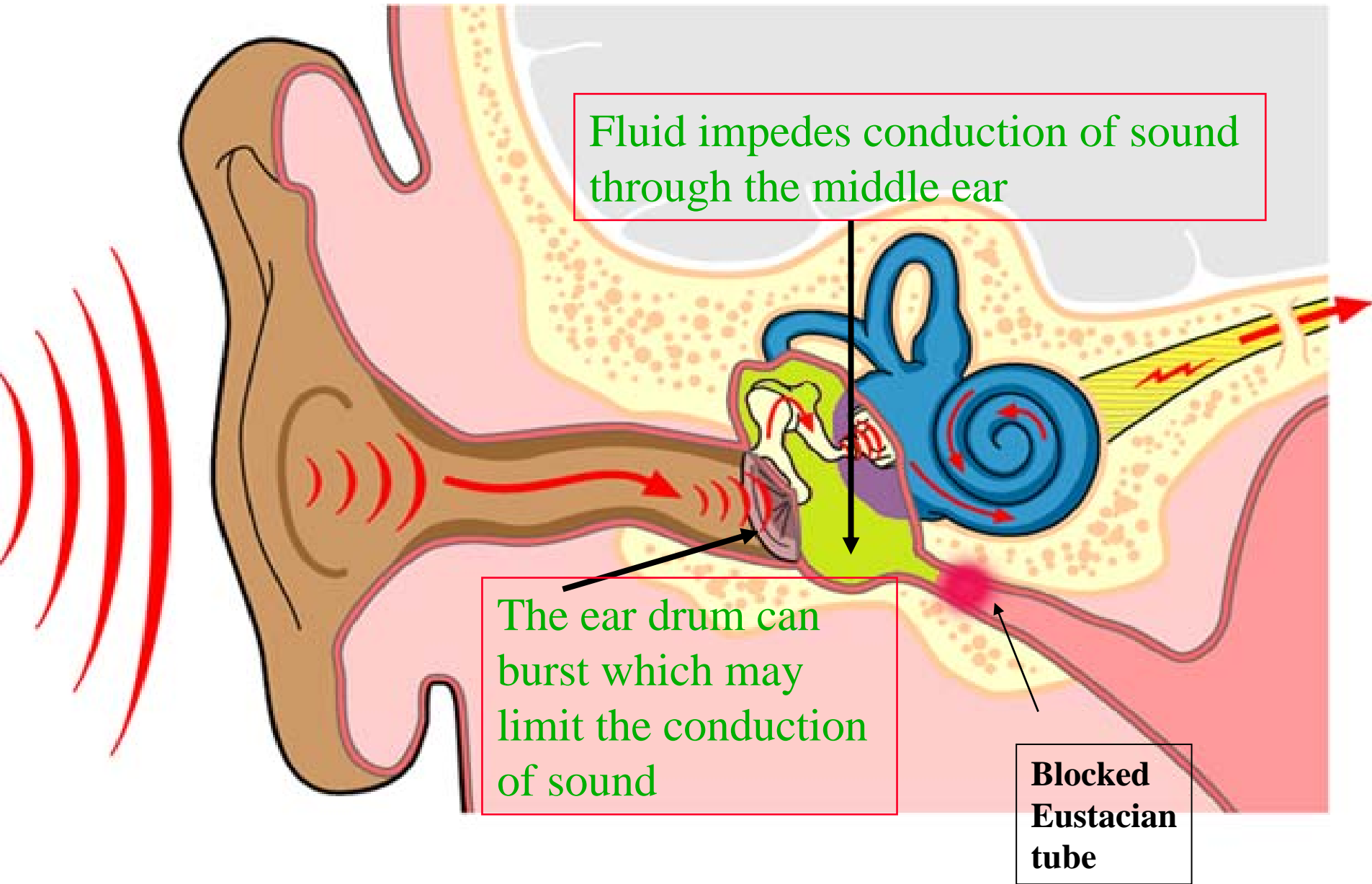
A quick overview

Middle ear disease



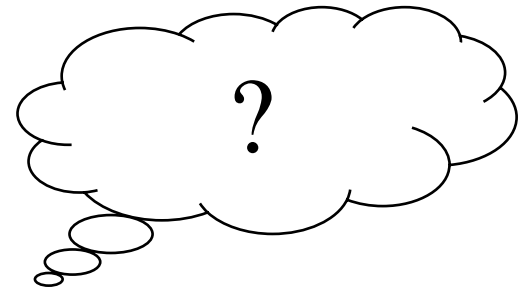
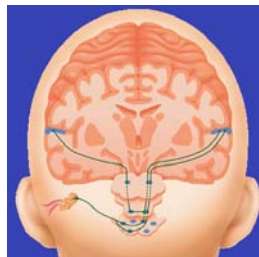
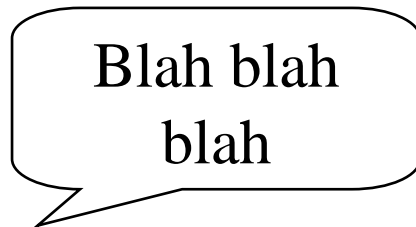
- Middle ear disease is one of the most common childhood illnesses.
- It causes mild to moderate, temporary conductive hearing loss.
- Around 30% of children in mainstream early childhood classes have conductive hearing loss at any point in time.
- In some Aboriginal schools up to 90% of children have conductive hearing loss.

Middle ear infection often leads to conductive hearing loss (CHL)



Auditory Processing Problems

- With conductive hearing loss, children have a partial sensory deprivation
- This can impact on the child's developing their ability to process and interpret sounds of language.
- So temporary hearing loss in childhood can lead to permanent auditory processing problems in adulthood




Conductive hearing loss

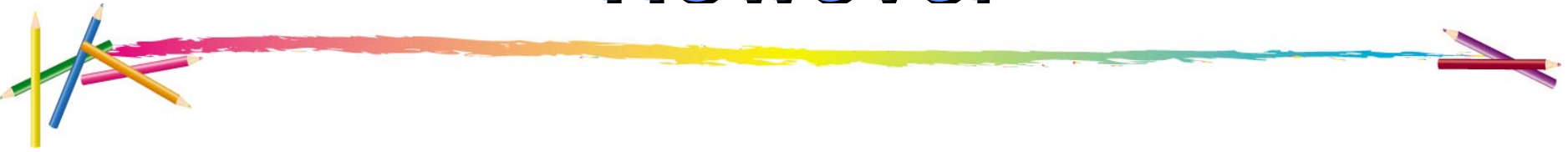


- In the past mild to moderate conductive hearing loss has generally not been treated as a significant educational issue.
- Training of teachers of deaf pays little attention to it.
- School support services most often provide minimal support to children with mild to moderate conductive hearing loss (CHL).

Why is CHL ignored ?

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- A decorative graphic at the top of the slide features a horizontal brushstroke in shades of pink, orange, yellow, and green. On the left side, several colored pencils (yellow, blue, green, pink) are arranged in a cluster. On the right side, two purple pencils are arranged in a cluster.
- Research results are inconsistent on effects of early CHL and later education or social outcomes
 - Since children who have had CHL cannot consistently be shown to have later disadvantage, the conclusion has been that CHL has no ‘proven’ educational effects.

However



- There are problems with this research that make this an unsound conclusion.



Problems with the research



Prospective studies

- Prospective studies (which follow children over time) involve more intervention than happens in real life.
 - There is more active treatment of middle ear disease than happens in real life
 - Knowledge that ear disease and hearing loss is present is itself a powerful intervention.
 - This knowledge shapes parent/teacher attitudes and responses to the child.
- In real life not knowing that a child's responses are related to hearing loss results in different attitudes and responses by parents, teachers and peers.



Problems with measures



- Psycho-educational assessments are the most common educational and social outcome measures used in research.
- However, these assessments are carried out in ideal listening conditions
 - one to one interaction
 - In a quiet environment
- In noisy classrooms children with listening problems often perform differently to what the tests indicate. Tests have poor 'ecological validity'.
- This results in research under estimating the impact of listening problems on children in classrooms
- Research that use parent and teacher reports of 'real life' show consistent negative outcomes of ear disease.



Risk profile

- Research indicates a range of factors interact with CHL which can either ‘compound’ or ‘minimise’ effects of CHL.
- For example family resources, socio-economic status, cultural and linguistic differences.
- These further confound research results but are important in terms of identifying which children will be disadvantaged by CHL.
- Research suggests that some children are at a high risk of later effects of early hearing loss.



Those at risk

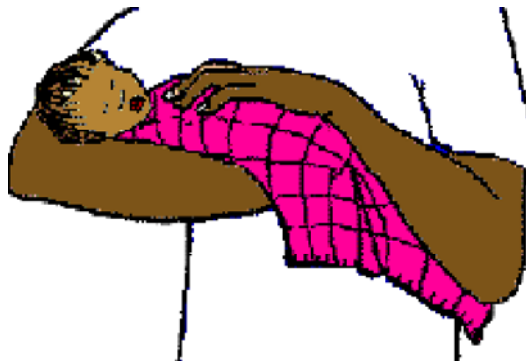


- Ear disease starts early.
- Persists through childhood.
- Child has other disadvantages and few supports.
 - One important support factor is level of school support.
- Children from some backgrounds are at higher risk

Aboriginal Middle Ear Disease

Compared with other populations

- Disease starts earlier and lasts longer
- Occurs more often for longer into childhood



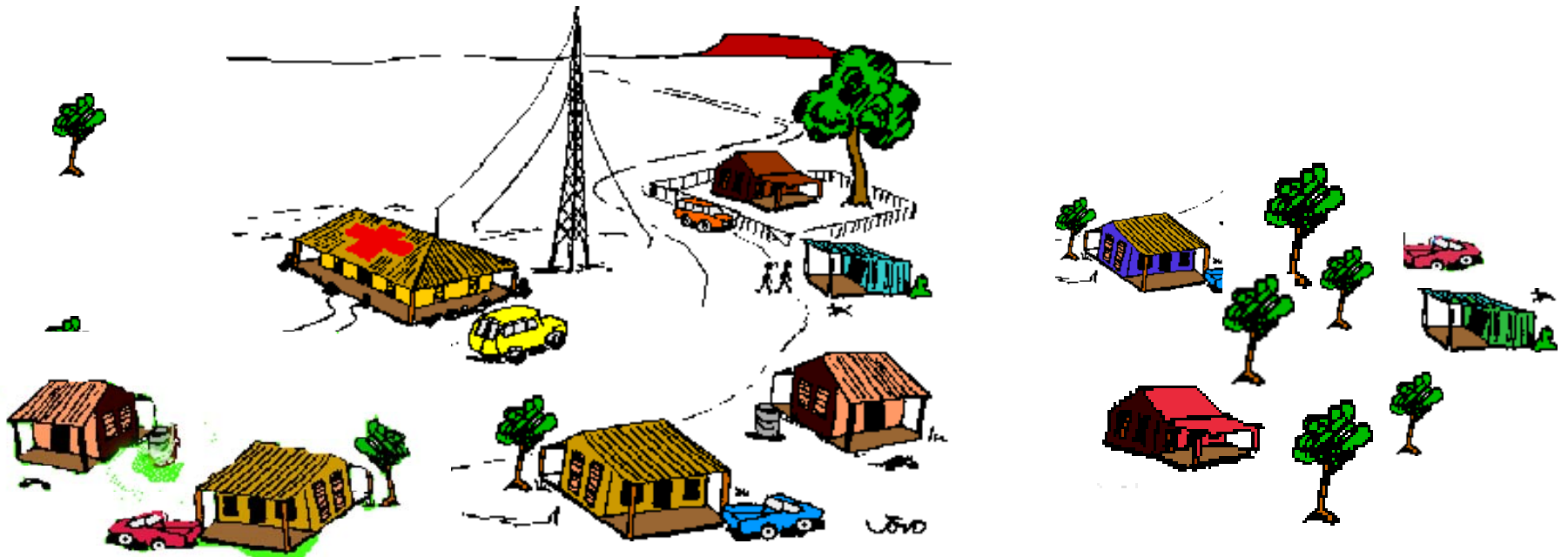
Average 2.6 years
Aboriginal children

Average time with
hearing loss during
childhood compared



Average 3 months
white children

MULTIPLE AREAS OF SOCIAL AND ECONOMIC DISADVANTAGE COMPOUNDS NEGATIVE EFFECTS OF HEARING LOSS



Current hearing loss

- Most research has looked at later effects of early hearing loss.
- There are some children who experience persistent CHL during their school years.
- These research results show consistent classroom effects from current conductive hearing loss.



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Effects of inadequate research on educational policy and support

Limited current support




- Limited knowledge of how fluctuating but persistent CHL impacts on children.
- Little known about best classroom support strategies.
- Experts (teachers of deaf) not well trained in area.
- CHL support programs often focus on 'what it is' rather than on 'what to do'.

Ear disease an educational problem ?




- Education has treated conductive hearing loss as a health problem
- Educational programs that focus on health aspects of ear disease are often educationally counter-productive
- Teachers learn about an issue without learning what they can do about it educationally


Who is most disadvantaged?

- 
- Children from some communities experience more middle ear disease.
 - Aboriginal
 - Those in crowded, disadvantaged living conditions
 - Children from these backgrounds are more disadvantaged by inadequate educational policy and support on CHL.
 - Need for advocacy from professionals to prevent educational discrimination.

Support Problems

- 
- Identification
 - Few school screenings,
 - Support based on Special Ed. model
 - Limited individual support
 - Psycho educational assessments as gate keepers

Limited individual educational support

- 
- Special education model assumes a few children with ‘special needs’, but
 - The majority of children in many Aboriginal communities and some lower socio economic areas may have listening problems
 - In many Aboriginal communities 80% of children have listening problems

Psycho-educational tests



- As well as being used in research psycho educational tests are used in allocation of support resources.
- They have poor ecological validity for problems that are evident mainly in noisy, multi speaker classrooms
- Also they have poor cultural validity with Aboriginal students

Chain of system problems



inadequate research that informs,



discriminatory and inadequate policy which directs,



a limited model of service delivery,




that uses tests of questionable validity as resource gatekeepers

SYSTEM REPORT CARD

- Awareness of a problem
 - Fair
- Research
 - Poor
- Policy
 - Poor
- Practice
 - Poor
- Application
 - Poor


We need to do much better

From the teacher's perspective



can't find out easily if child has a hearing loss

if child does have hearing loss this is often considered not 'educationally relevant'



usually limited additional support resources and limited information to guide teachers and schools

How listening problems are masked



- System masking by
 - Poor identification processes
 - Seeing issue as not ‘educationally relevant’
- Language, literacy and culture mask listening problems




Language

A decorative graphic at the top of the slide features a speech bubble containing the word 'Language' in blue. Below the bubble is a horizontal brushstroke with a rainbow gradient. On the left, several colored pencils (yellow, blue, green, pink) are scattered. On the right, two purple pencils are crossed.

- Harder to learn language when child does not hear some sounds, especially sounds not present in first language.

Literacy

- 
- Reading instruction reliant on relating sounds to letters
 - But this is difficult if it is hard to hear sounds
 - People with listening problems often find it more difficult to learn to read.



Cultural differences



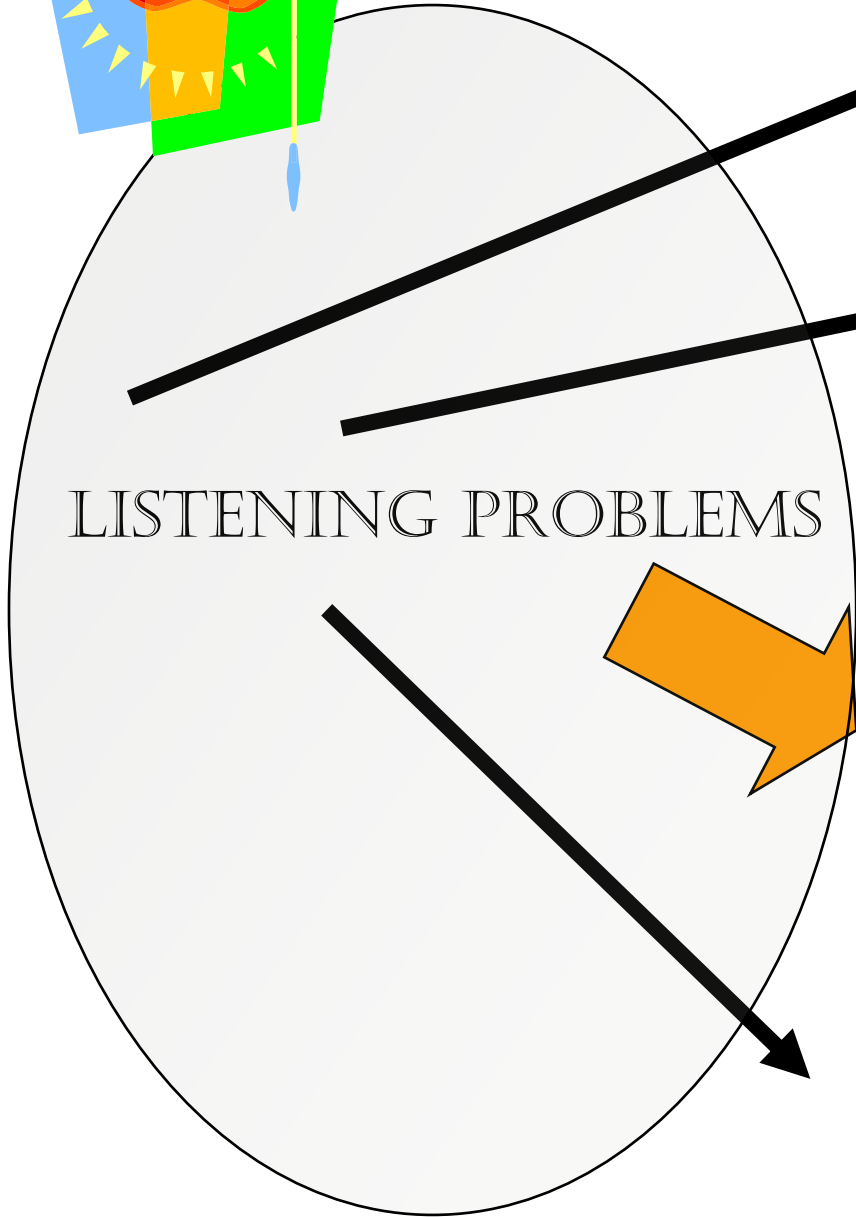
- Listening problems compound cultural differences
- Those with listening problems have more communication problems when involved in cross cultural communication



Social and emotional wellbeing



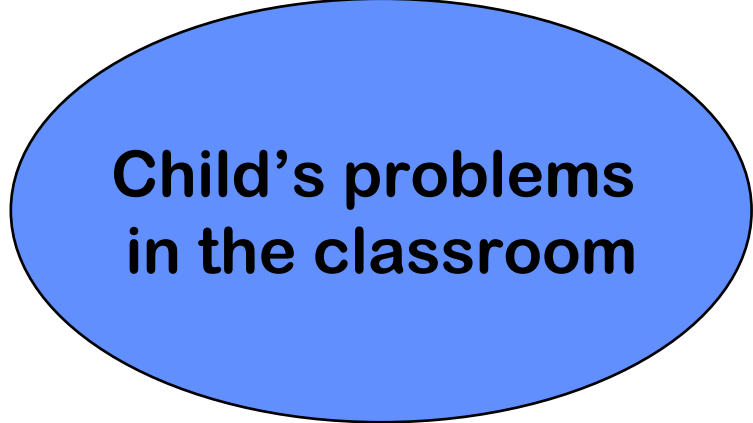
- Past and current CHL associated with antisocial behaviour and diminished social and emotional well being.



LISTENING PROBLEMS

LIMITED LANGUAGE
AND LITERACY

SOCIAL AND
EMOTIONAL
WELLBEING



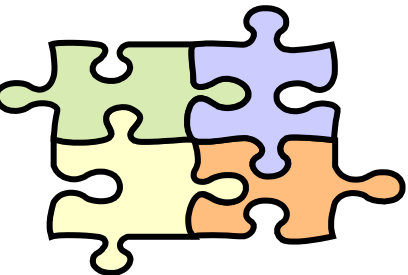
**Child's problems
in the classroom**

CULTURAL ISSUES

One piece of the puzzle



- Listening problems are one important piece of the puzzle of many children's learning and social problems.
- Understanding its contribution can help
 - provide new intervention strategies
 - change teacher attitudes





Main Australian research

We need to consider local research especially with Aboriginal students

Rowe and Rowe (1999)

- 80% of children referred Melbourne's Royal Children's Hospital for behaviour/learning problems had auditory processing difficulties.
- Improvement in literacy outcomes by teacher training

Anti social behaviour and current CHL

- 90% of children with behaviour problems in early childhood classes had current conductive hearing loss or middle ear problems in **five Melbourne schools** (Moore and Best 1987).
- Disruptive students were overwhelmingly those with a conductive hearing loss among 167 students in **two NT remote schools** (Howard 1992).

One class (Howard 1992)




- In one classroom children with current hearing loss
- participated less in classroom talk (answering questions, making contributions in class)
- Needed more one-to-one help
- Were more disruptive than other students

Two remote schools (Howard 2004)



- In nine classrooms in two remote schools children with a current conductive hearing loss
- Participated less in class conversations
- Needed most one-to-one help
- Were most disruptive in class

Group effects

- 
- Demands on teachers to manage disruptive behaviour and provide one-to-one support for large number of children with CHL impacts on education of all children in class (Howard 1992)
 - One class where almost all children had CHL was unmanageable (Howard 2004)

Bilingual school (Lowell 1994)

There were less problems experienced by Indigenous children with listening problems when

- Students were taught by an Indigenous teacher
- In their language of greatest familiarity
- In a wholly Indigenous class group with whom there is a lifelong familiarity
- Sign language is used to supplement speech
- Teachers seated on the floor in close proximity to children, so face watching and non-verbal cues are most visible.

What works


What Indigenous family and teachers do that works to achieve good communication is



- Simplify spoken language
- Use more frequent repetition
- Get close to the child when speaking
- Increase the use of sign language
- Encourage face watching including lip reading
- Have more intensive communicative interaction.

Lowell (2001)

Massie (1999)

- 
- When sound field systems used in classrooms main benefits were in classrooms taught by non Aboriginal teachers
 - Aboriginal teachers were using communication strategies that already minimised effects of CHL

Cross cultural issues

- Indigenous people, especially those who know the child, often use more gesture and repetition, while non-Indigenous people mostly don't have as well developed non-verbal communication skills.
- This means Indigenous children with listening problems are likely to have more difficulty in communication with non-indigenous peers and teachers
- Indigenous children may think this is because they don't like them or are picking on them



How listening problems can lead to social and behaviour problems

Howard 2005



Conductive hearing loss shapes children's social responses at school, especially when its noisy

Schools and Noise



- *Schools are often noisy places because of the talk and activity of many children*
- *Noise levels range from highest on the playground and in whole school activities through to teacher instigated quiet*
- *Children with hearing loss and/or auditory processing problems have most difficulty perceiving speech when it is noisy.*

When it was quiet at school



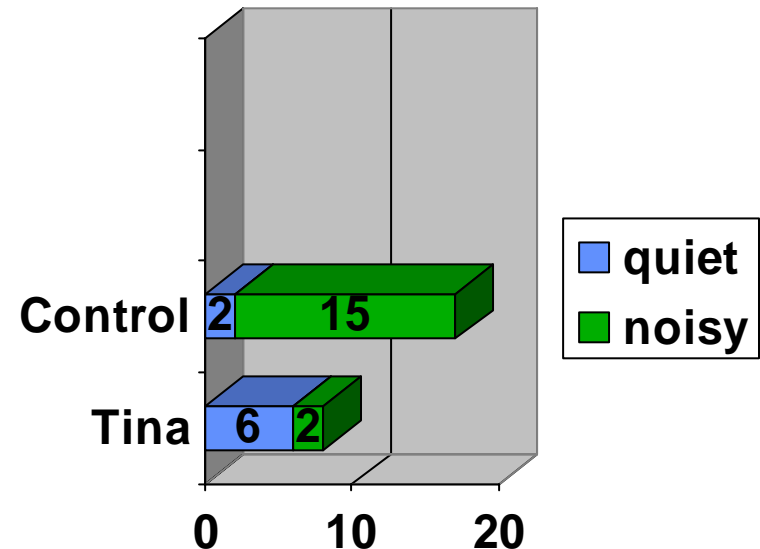
The times that it is quiet in class provide the best times for children with listening difficulties to be able to hear what others are saying

Talking when quiet



because teachers are trying to manage noise levels to 'instruct', or to allow children to work

- Since the low background noise creates the best opportunity for children with CHL to listen
- Many children with CHL take this opportunity to talk when it is quiet.



Less talk when its noisy



- Children with CHL talk least when it is noisy
- As noise levels increase verbal interaction of many children with CHL decreases

High Noise Low Noise

With CHL
No CHL

6%	29%
45%	2%

Most talk

Teasing when noisy



- Taking others things, monopolising class materials and damaging others' work
- Students may prod, poke and even hit others
- This type of teasing is often seen as bullying



Restricted social opportunities



There are restricted social opportunities for children with conductive hearing loss and/or auditory processing difficulties

- At the times when children are allowed to talk it is usually too noisy to be able to listen
- At the times it is quiet enough to be able to listen, children are mostly not allowed to talk
- Children are presented with a forced choice between 'break the school rules or become socially isolated at school'

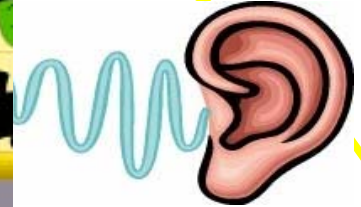
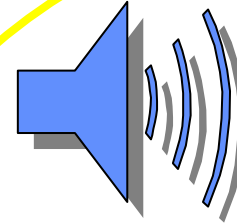


Thinking about class problems



- Individual deficit
- Diagnose-
 - adhd/odd
 - Low literacy
- Change the child

Medical model



- Interaction of child/teacher/peer/acoustic factors
- Change environment/communication/teaching

Ecological model



How educators can help

Articles to download at
www.eartroubles.com





Processes

People

PLACES

What you will hear about if you come
To my afternoon session

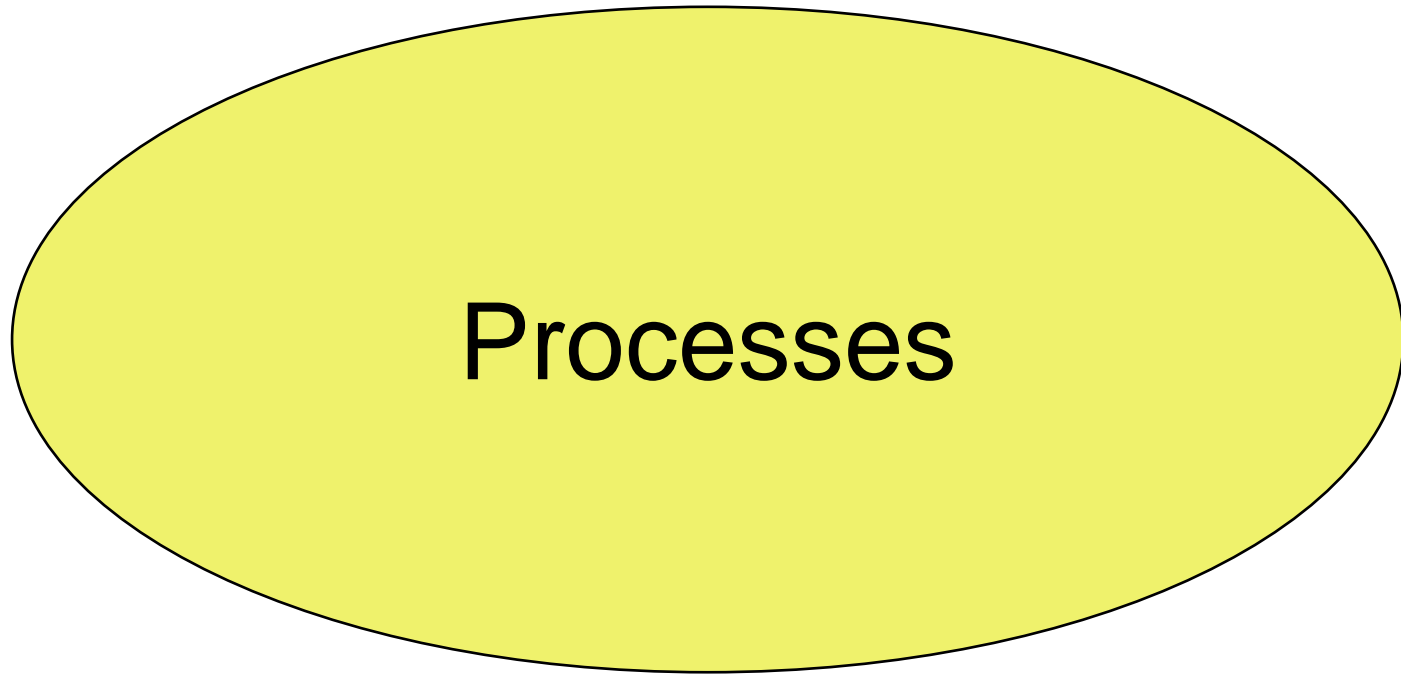
Two stage learning

Avoiding listening overload

Topic changes

Visual cues

Managing change



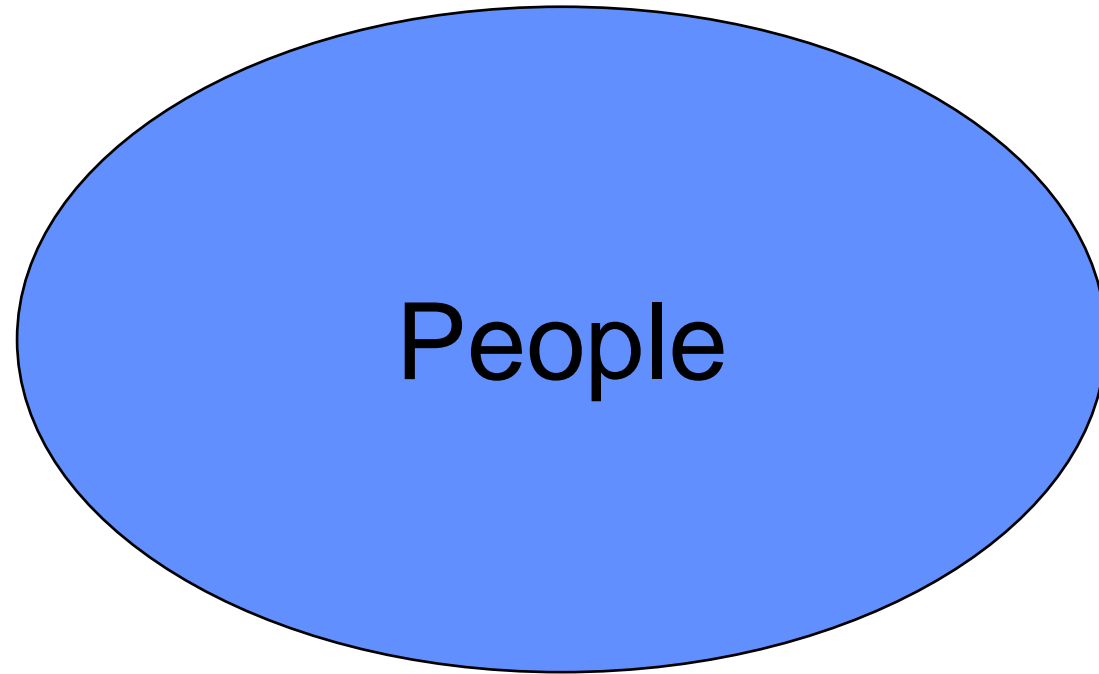
Watch your language

Build relationships

Make things predictable

Same culture support

Familiar people



Aboriginal
adults

Relationships

Special friends

Noise

Sound field amplification

Distance



Visual distractions

Acoustics

More information

- For more information on listening problems go to www.eartroubles.com
- For information on communications training contact Damien Howard on 08 89484444 or damien@phoenixconsulting.com.au

