

# SPAU 332

## Hearing Aids I

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# Lecture Objectives

- Introduction
- Module objectives
- Housekeeping
- Assessments
- Describe the psychosocial impact of hearing loss and the framework of aural rehabilitation within the World Health Organization's classification of functioning, disability, and health (2001).

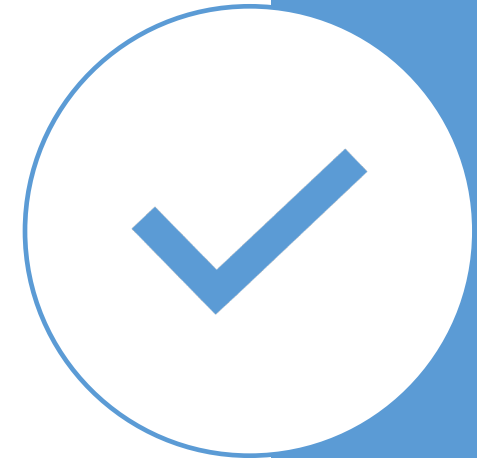
# Introduction

- Why Speech Therapy and Audiology?
- What excites you the most about this major?
- What are you most looking forward to learning about in this course?
- Potential fears?



# Course Objectives

- To provide an introduction to various technologies used in the treatment of hearing loss, including hearing instruments.
- To establish a framework of aural rehabilitation to be used in the holistic treatment of hearing impaired persons and their communication partners.
- To develop an understanding of amplification options, selection criteria, verification, and validation procedures.
- To introduce current thinking on disability based on World Health Organisation definitions.



# Housekeeping

- T, R: 11:25 - 12:40
- Interactive – please ask questions, discuss and participate!
- Moodle – Student version of the slides will be uploaded
- Camera's need to be switched on, random attendance checks will be in order
- Attendance – In case of absence, course-instructor must be notified by email prior to class
- Late attendance – Do send an email if you are going to be late



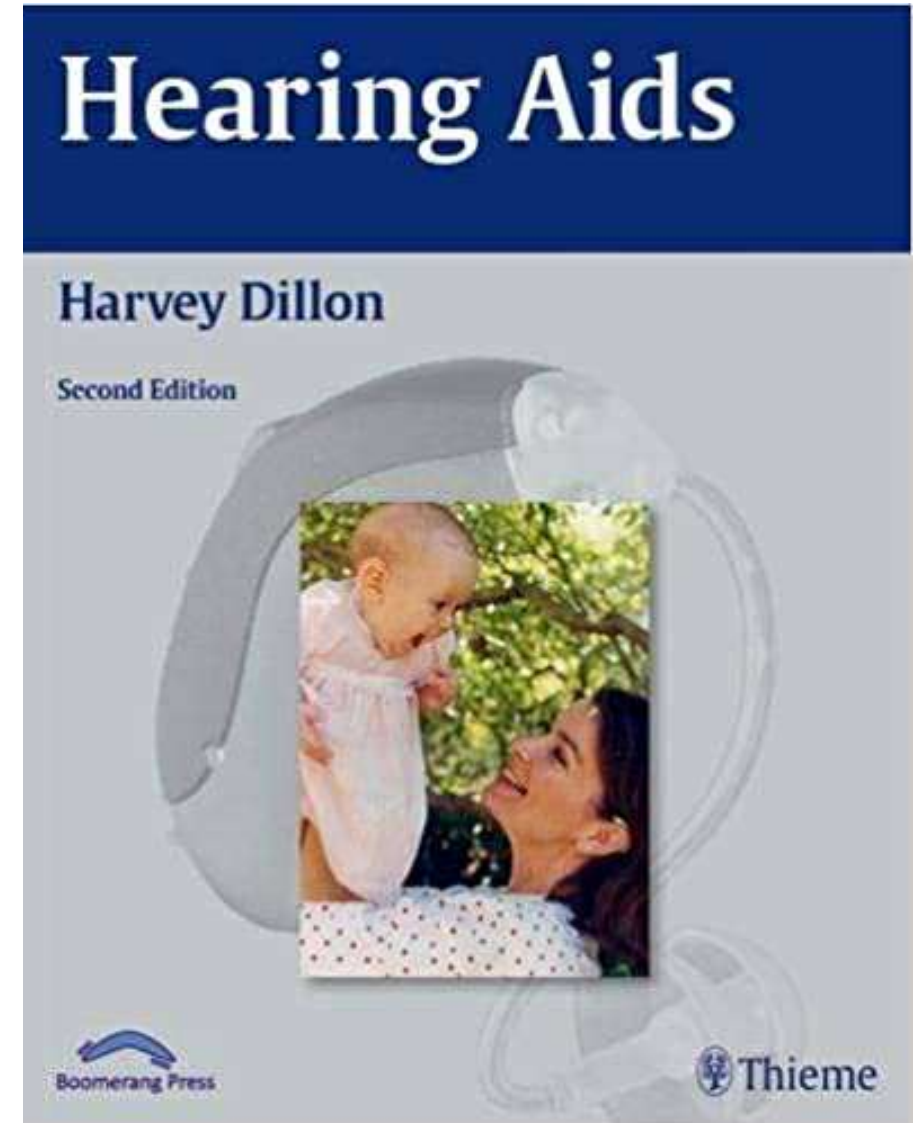
# Assessments

• Attendance & Participation	10%
• Assignment 1	10%
• Assignment 2	10%
• Midterm	25%
• Final Exam	45%



# Main References

- Hearing Aids by Harvey Dillon (2nd Edition)
- The Compression Handbook Fourth Edition: An overview of the characteristics and applications of compression amplification



# What does psychosocial mean?

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What does  
psychosocial  
mean?

Of or relating to processes or factors  
that are both, social and psychological  
in origin

What does  
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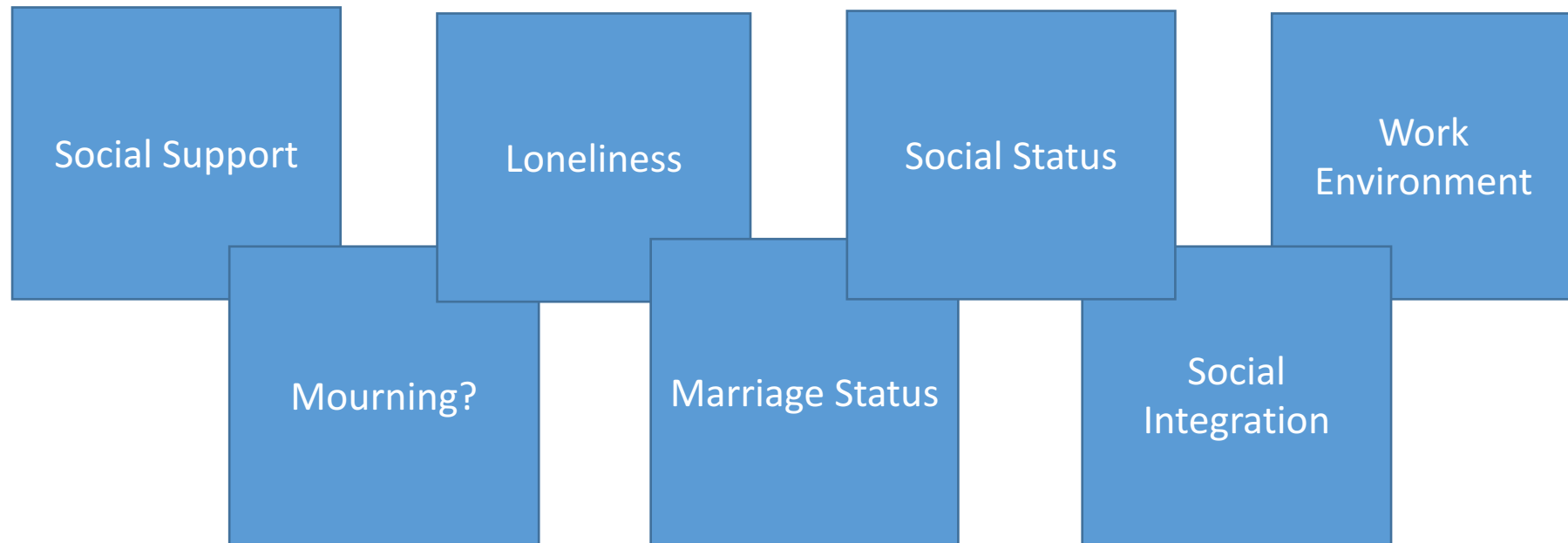
Psychosocial problems in the context of  
hearing loss?

- Think of some examples!

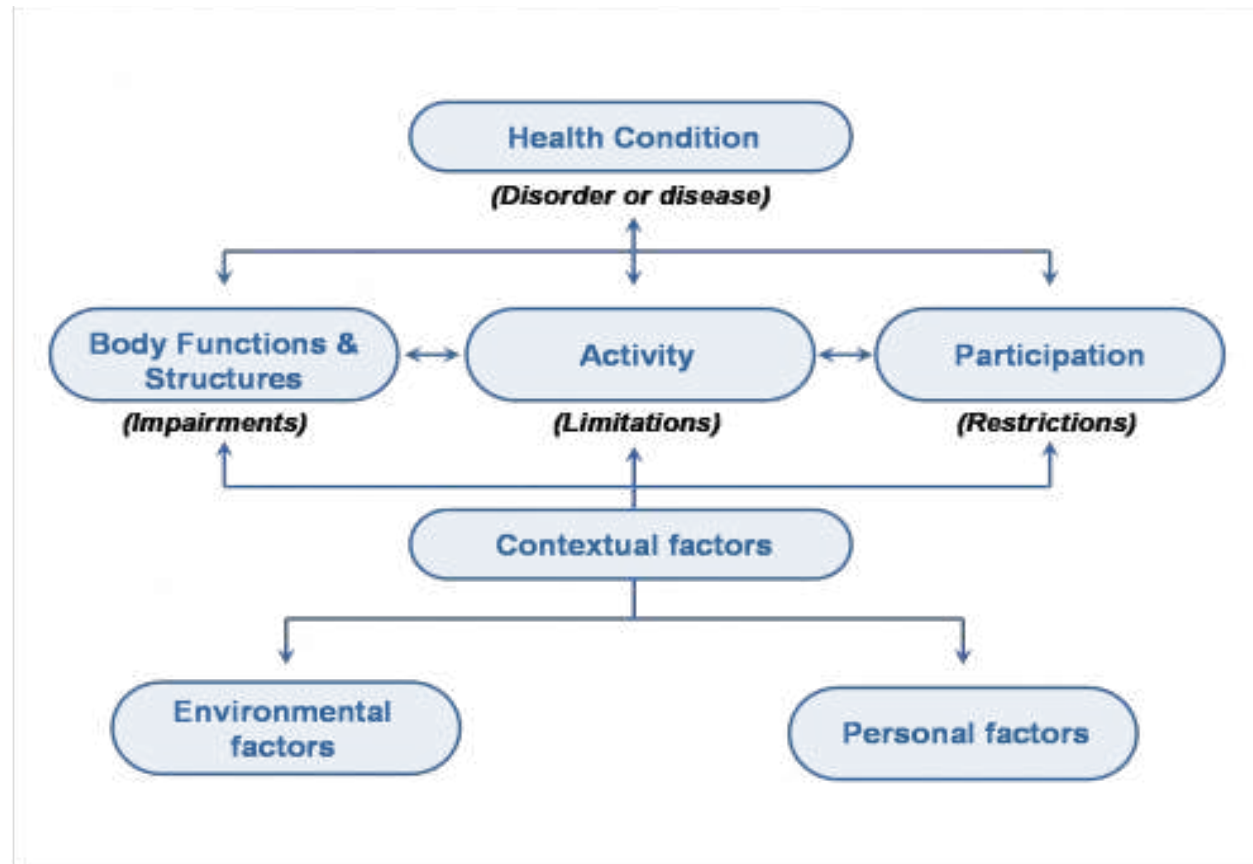
# Psychosocial problems in the context of hearing loss

- Think of some examples related to hearing loss ...
- <https://www.menti.com/>
- The digit code is: **38 61 39**

# Psychosocial problems in the context of hearing loss

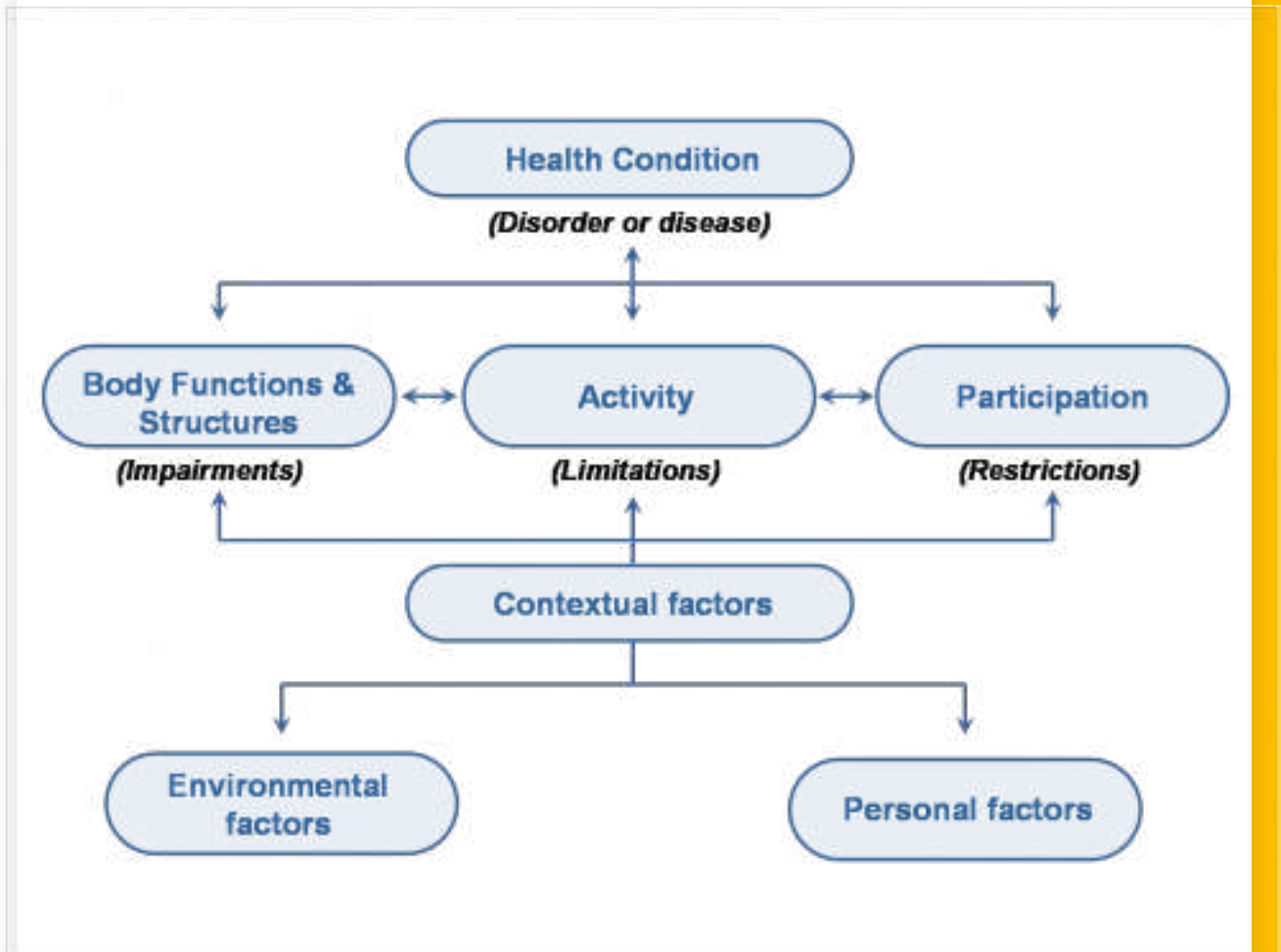


# World Health Organization's classification of functioning, disability, and health (2001)



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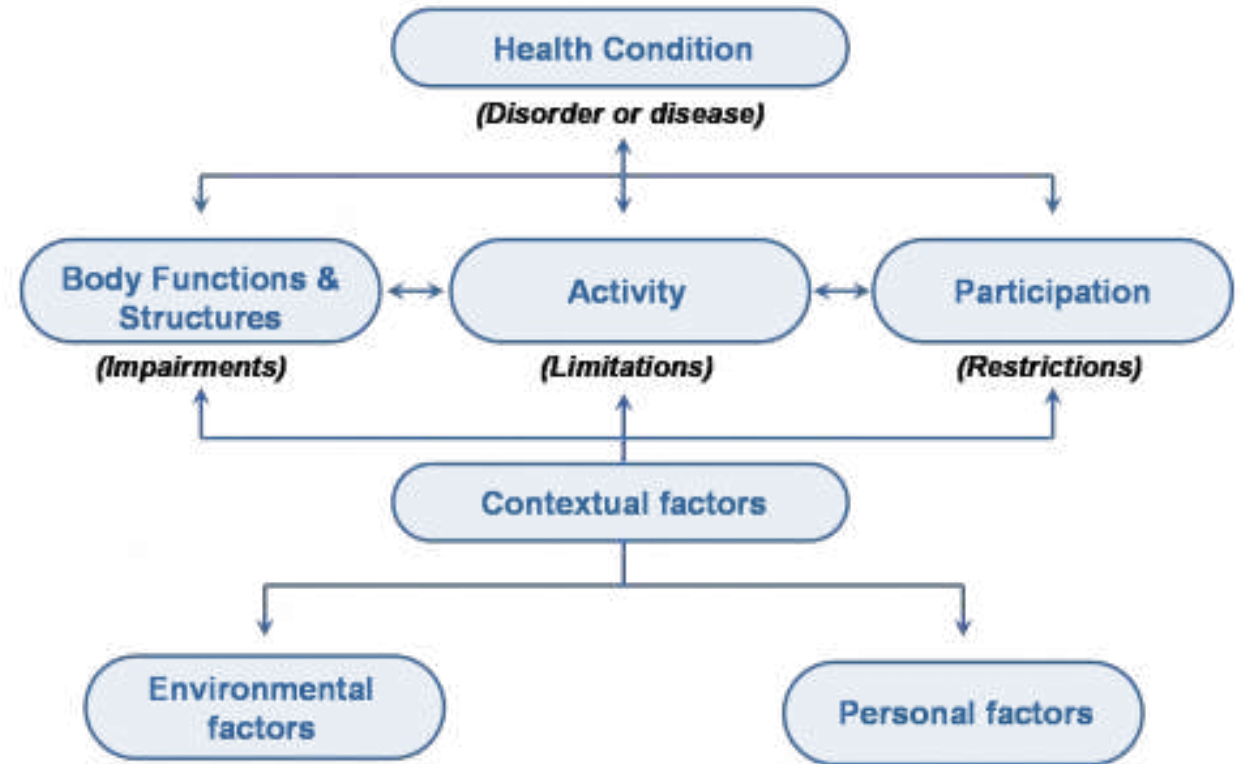
- Based on the biopsychosocial model
- Highlights individual health rather than disability
- Describes functioning from three perspectives:
  - Biological
  - Individual
  - Social
- The International Classification of Functioning, Disability and Health (ICF) organizes information in two parts:
  - Functioning and disability
  - Contextual factors



# WHO, 2001

- **Body functions**

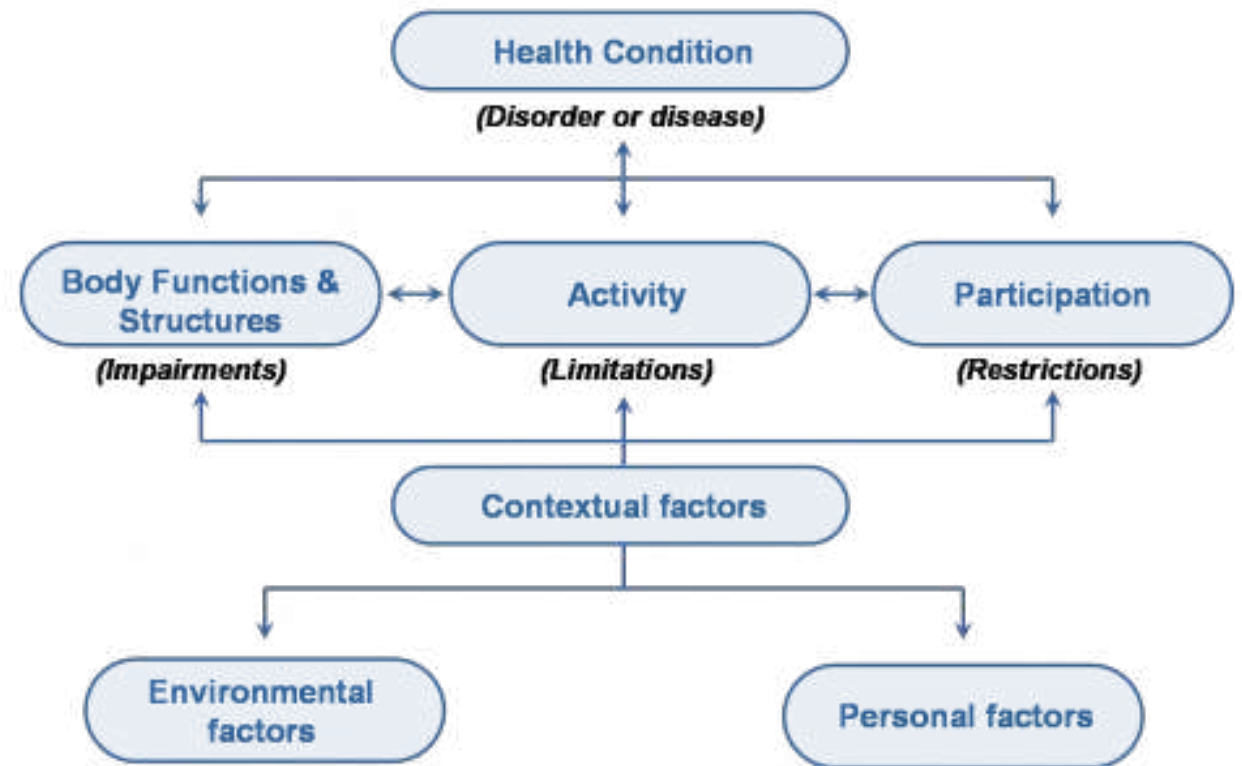
- The physiological functions of body systems (including psychological functions)
- Hearing
  - Presence of sounds
  - Discriminating location, pitch, loudness, quality of sound
- Others related
  - Cognition –attention, memory
  - Emotion
  - Vision
  - Personality



# WHO, 2001

- **Body structures**

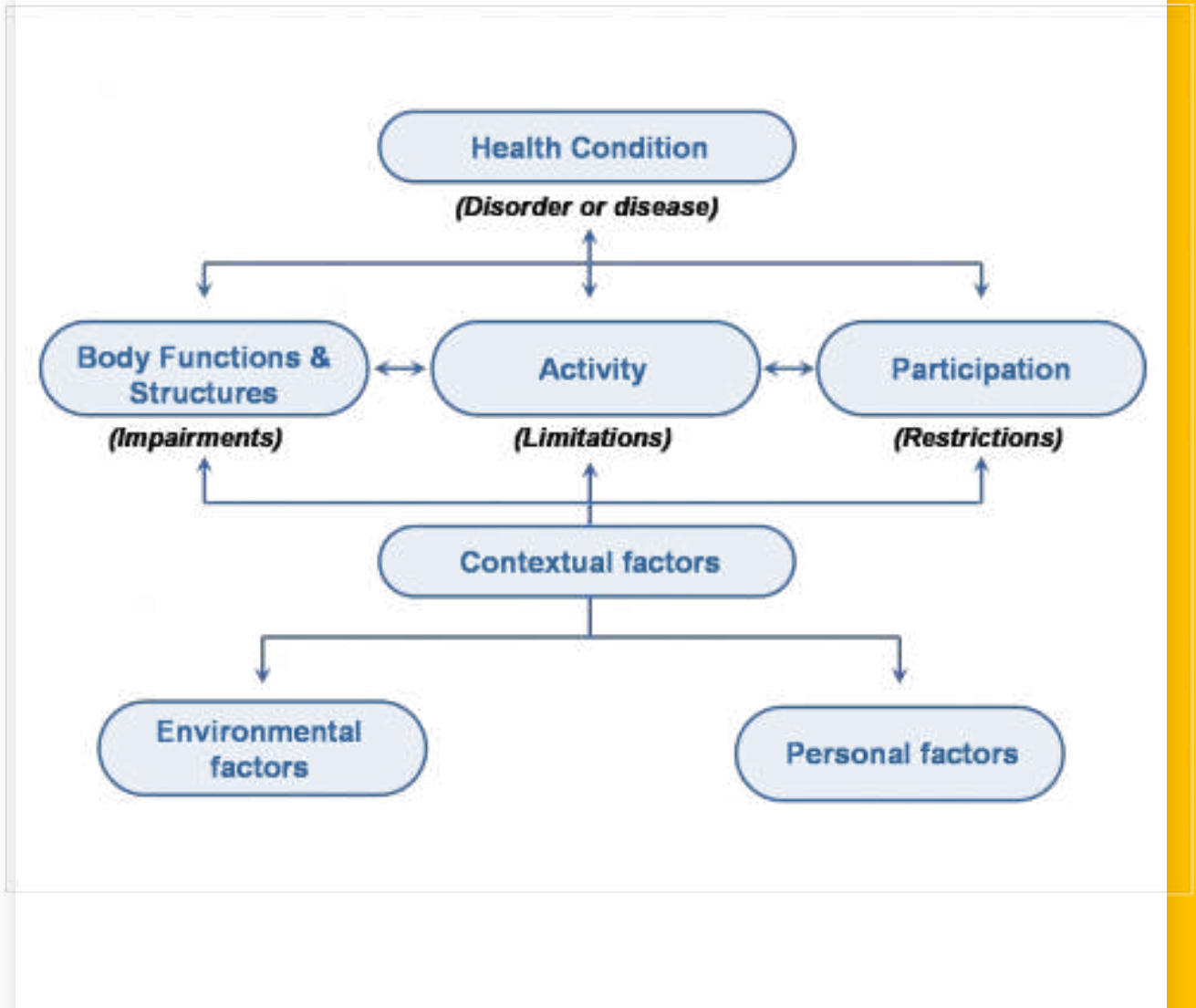
- Anatomical parts of the body such as organs, limbs and their components.
- Hearing
  - External ear
  - Middle ear
  - Inner ear





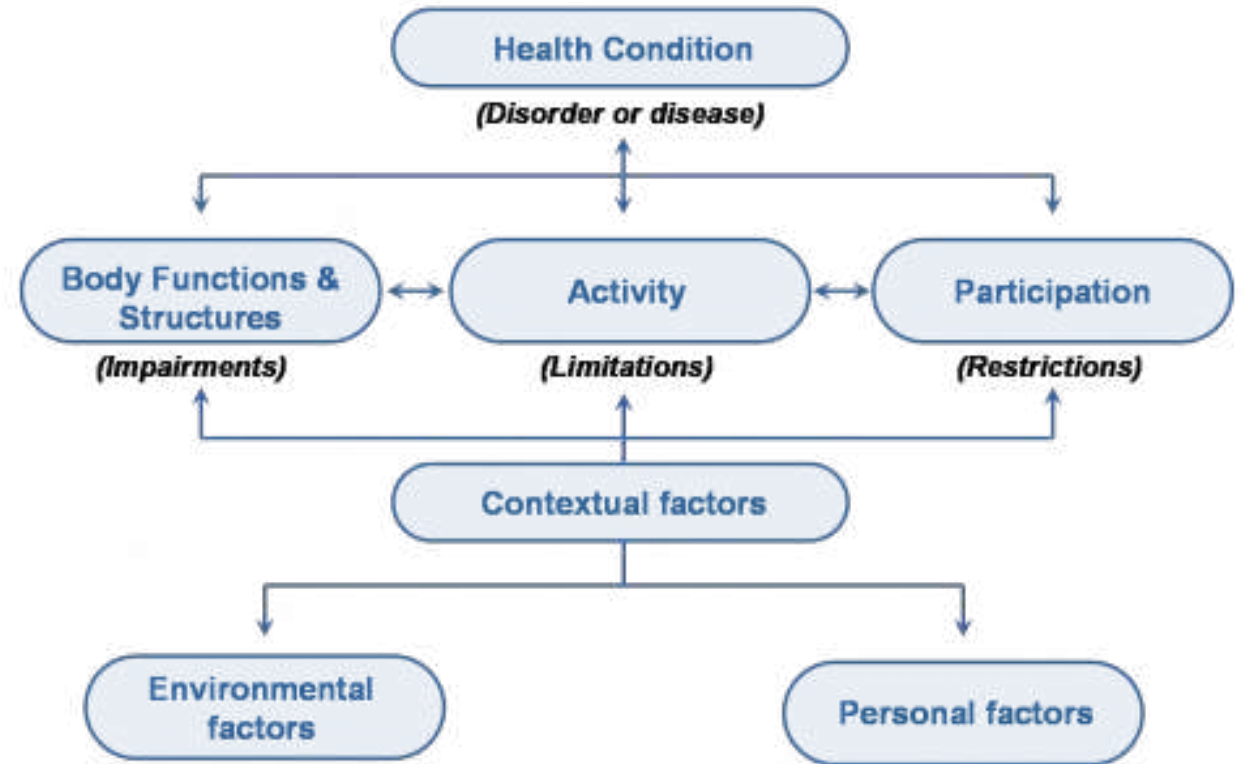
# WHO, 2001

- **Impairments** - Problems in body function and structure such as significant deviation or loss.



# WHO, 2001

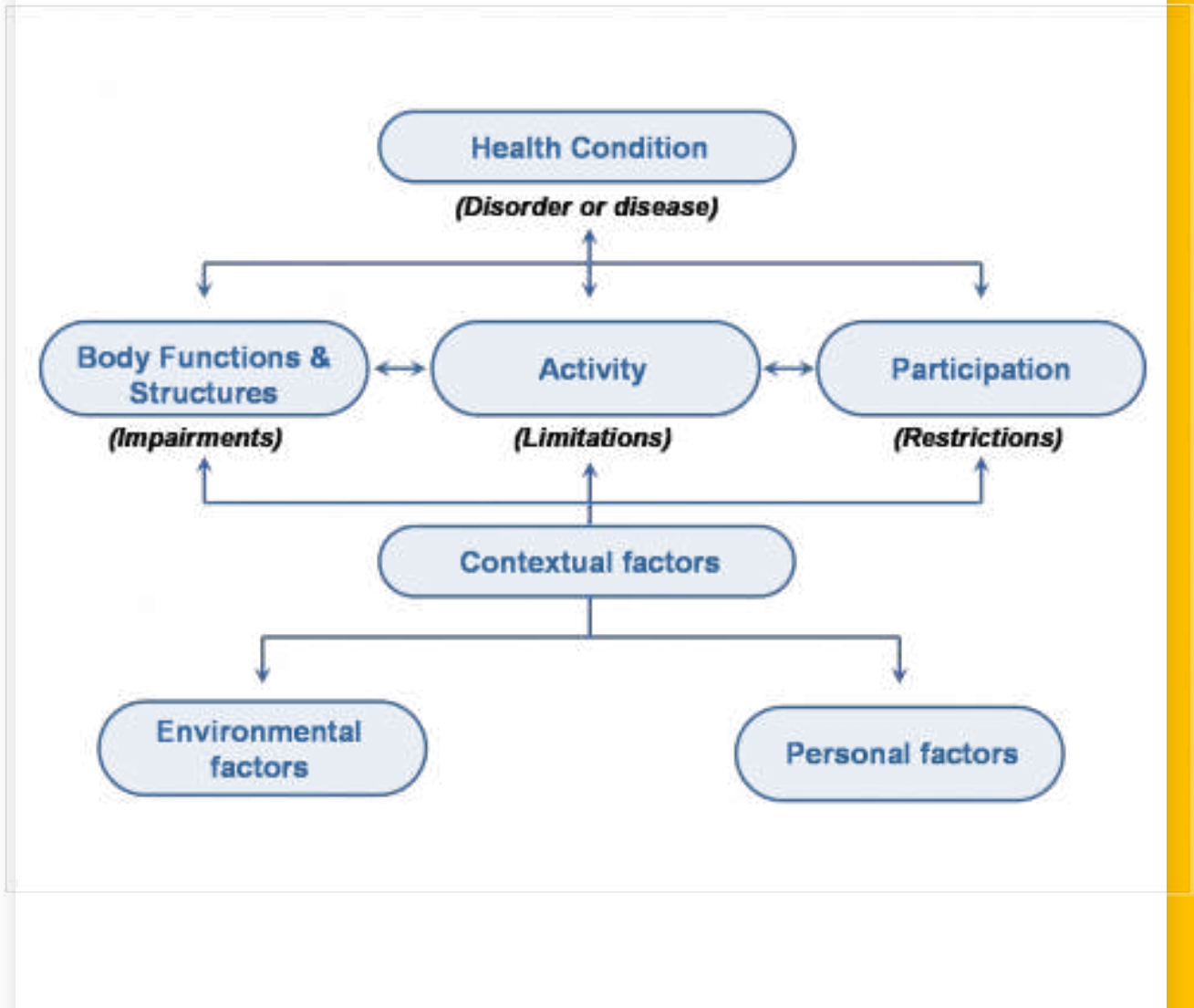
- **Activity** - Execution of a task or action by an individual
- **Participation** - Involvement in a life situation
- Activity limitations - Difficulties an individual may have in executing activities.
- Participation restrictions - Problems an individual may experience in involvement in life situations.
- Hearing
  - Listening
  - Conversation
  - Family relationships
  - Community life



# WHO, 2001

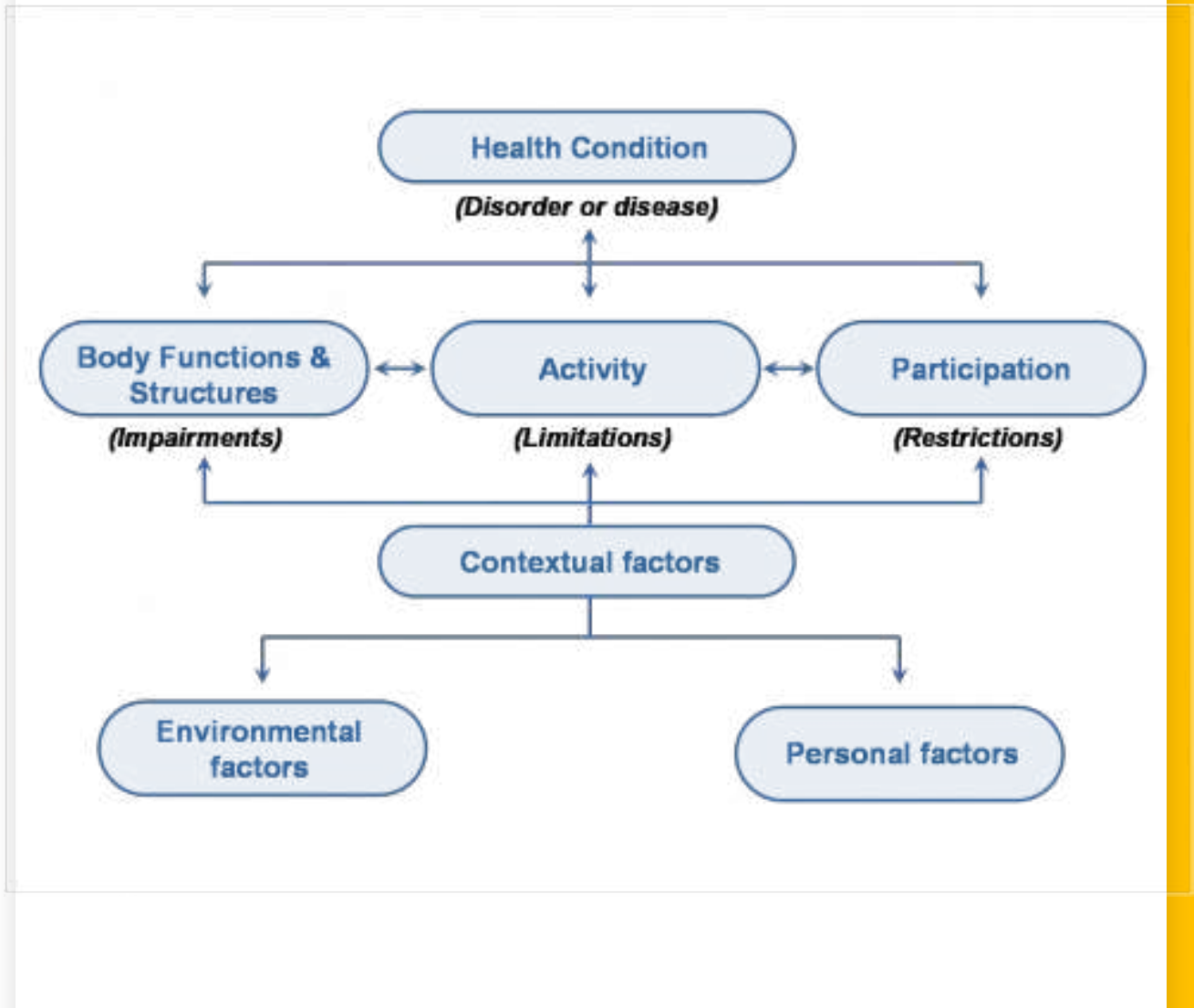
- **Environmental factors**

- Physical, social and attitudinal environment in which people live and conduct their lives
- Immediate family
- Health professionals
- Education and work
- Societal attitudes
- Health services, systems and policies



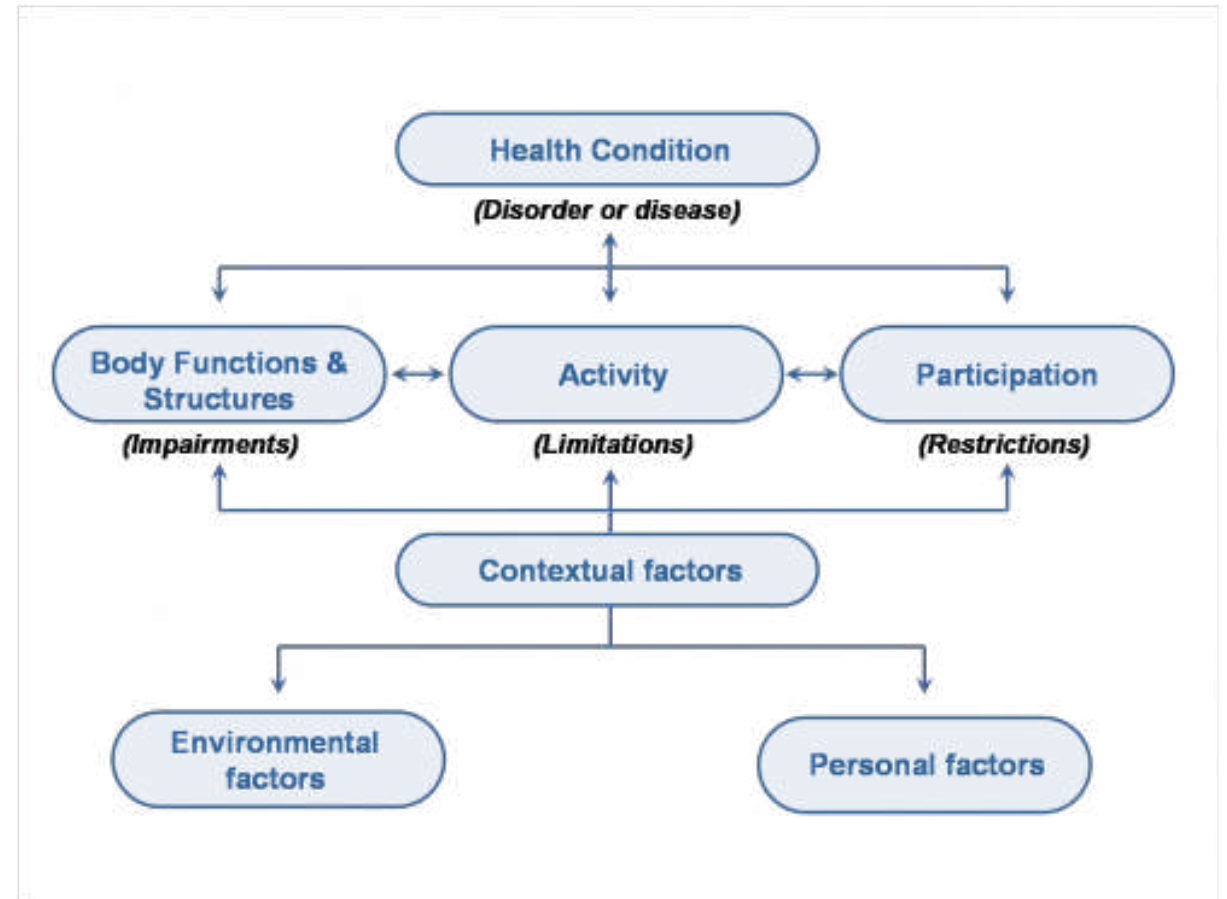
# WHO, 2001

- Personal Factors

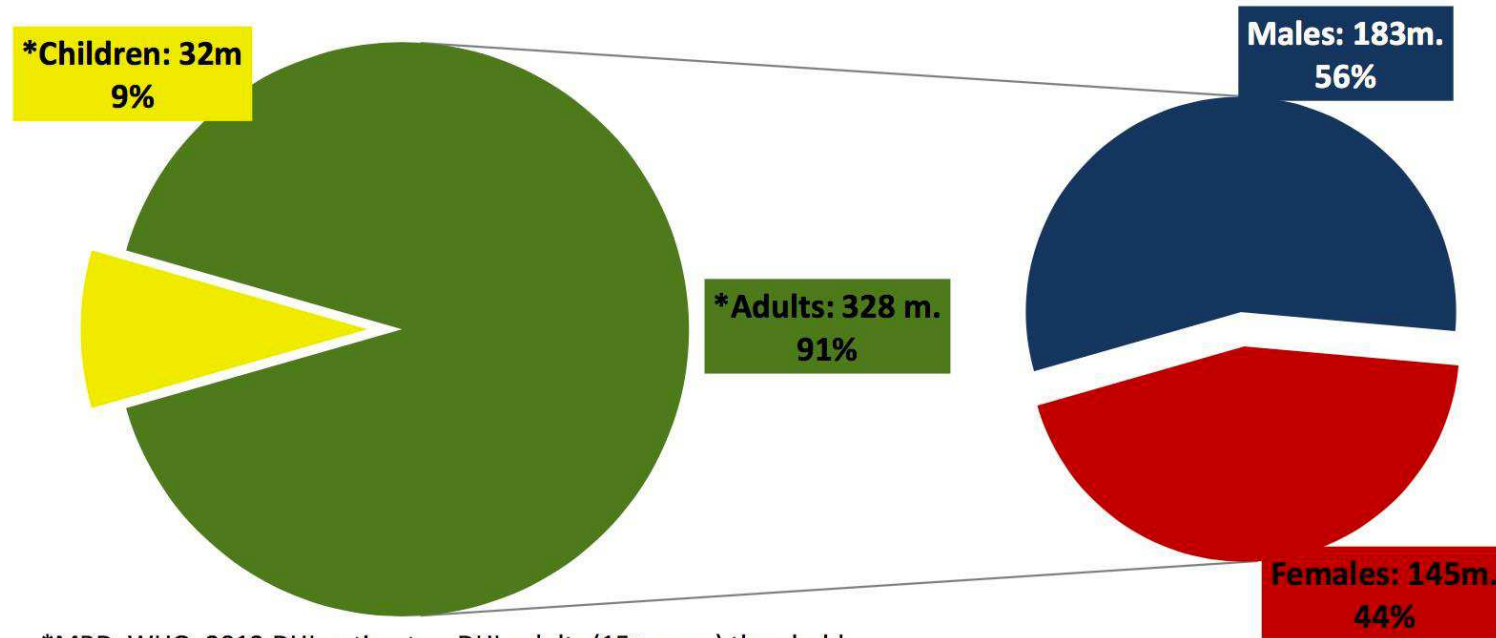


# WHO, 2001

- A catalyst for change in health management
  - Move towards a holistic approach to patient care
- The traditional hierarchical structure of the team?
  - Team members become equal partners in the team where their contributions are valued and an environment is created in which any appropriate team member may coordinate the management of a patient



# Prevalence of hearing loss: WHO global estimates



\*MBD, WHO, 2012 DHL estimates; DHL adults (15+ years) threshold is  $\geq 41$  dB and children threshold is  $\geq 31$  dB.

# Economic consequences of hearing loss

- In developing countries, children with hearing loss and deafness rarely receive any schooling
- Adults with hearing loss also have a much higher unemployment rate
- Among those who are employed, a higher percentage of people with hearing loss are in the lower grades of employment compared with the general workforce
- Total global burden of adult onset HL estimated to be 24.9 million YLD's (years lived with disability)
- This represents 4.7% of total YLD due to all causes
- HL is 2nd leading cause of YLD after depression & gives it a larger non-fatal burden than alcohol use disorders, osteoarthritis and

# Impact of hearing loss on quality of life

- Only 39% of people with hearing loss report excellent global (QoL) compared to 68% of people without hearing loss.
- Almost one-third of the population with hearing loss report being in fair or poor health, compared to only 9% of the population without hearing loss.
- People with hearing loss are less satisfied with their “life as a whole” than people without hearing loss.



# Hearing loss, anxiety and depression

- Studies have shown relationships between hearing loss and anxiety and depression
- <https://www.youtube.com/watch?v=r7zqQHxOuY0>

# Different experiences of hearing loss/deafness

- [https://www.youtube.com/watch?v=SarMSwv\\_aHI](https://www.youtube.com/watch?v=SarMSwv_aHI)
- Contains swearing!

**Table 1:** *Anxiety-provoking situations related to hearing healthcare practice. These situations can provoke varying levels of anxiety in normal individuals. However, the way in which individuals react to these situations determines if it becomes a disorder.*

- ❖ entering an unknown office (vulnerability)
- ❖ being pressured (coerced) into the office by family members
- ❖ facing the financial burden of services to be rendered (even if paid by someone else)
- ❖ meeting new people (staff and others in waiting room) and struggling to hear
- ❖ filling out questionnaires/case history (having to reveal related/unrelated health issues)
- ❖ being in a small booth (feeling "claustrophobic")
- ❖ taking hearing exam and discussing test results (documentation = confrontation of problem)
- ❖ feeling concern about cosmetic/visibility issues of hearing aids
- ❖ feeling incapable of understanding and using amplification successfully
- ❖ being given a limited trial period ("what if it doesn't work during this limited time?"); any "trial" period automatically implies "the risk" of failure
- ❖ realizing after hearing aid use that amplification does not solve all hearing difficulties
- ❖ dealing with the nuisance or burden of wearing and/or caring for hearing aids

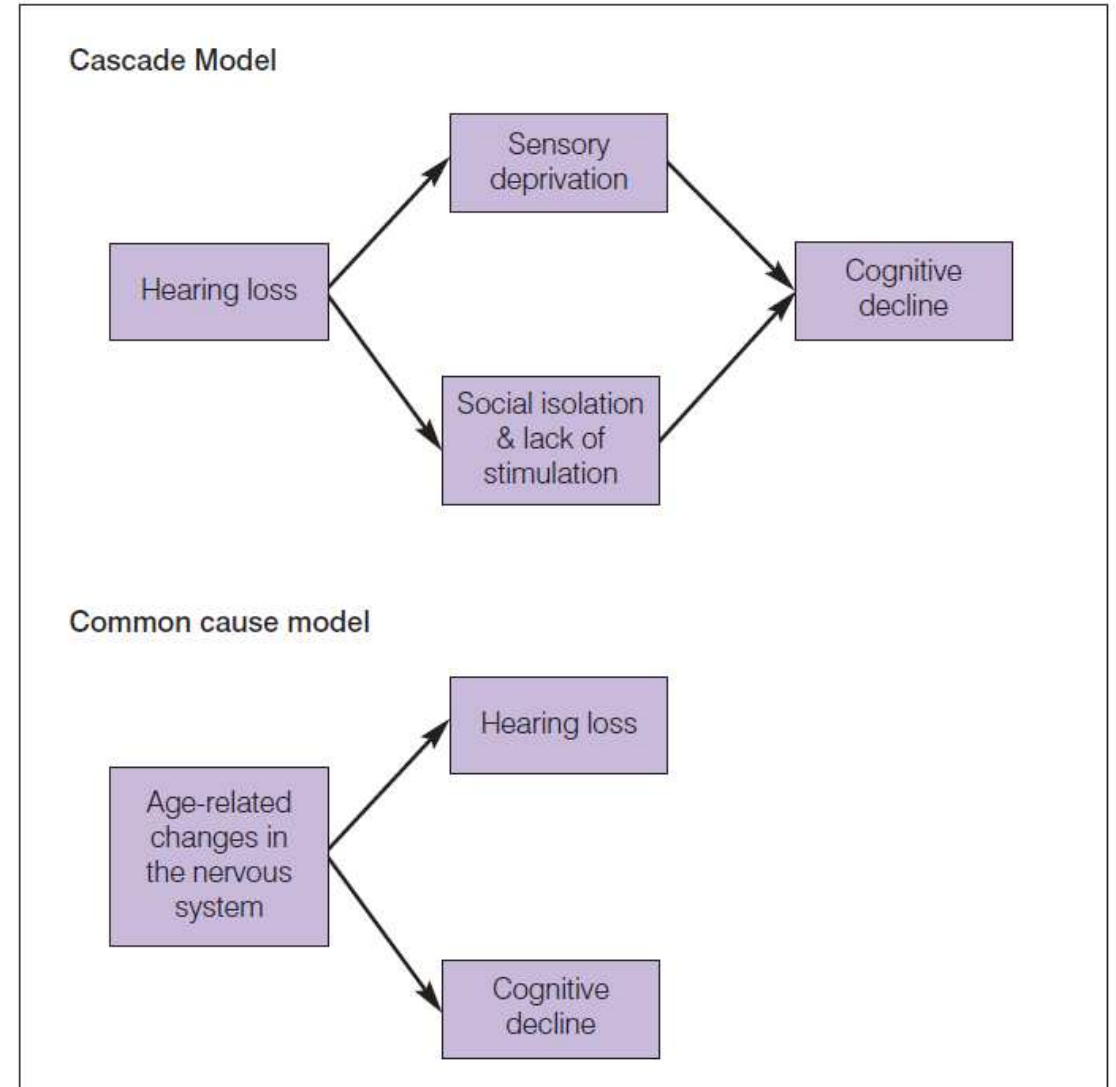
# Hearing loss, anxiety and depression

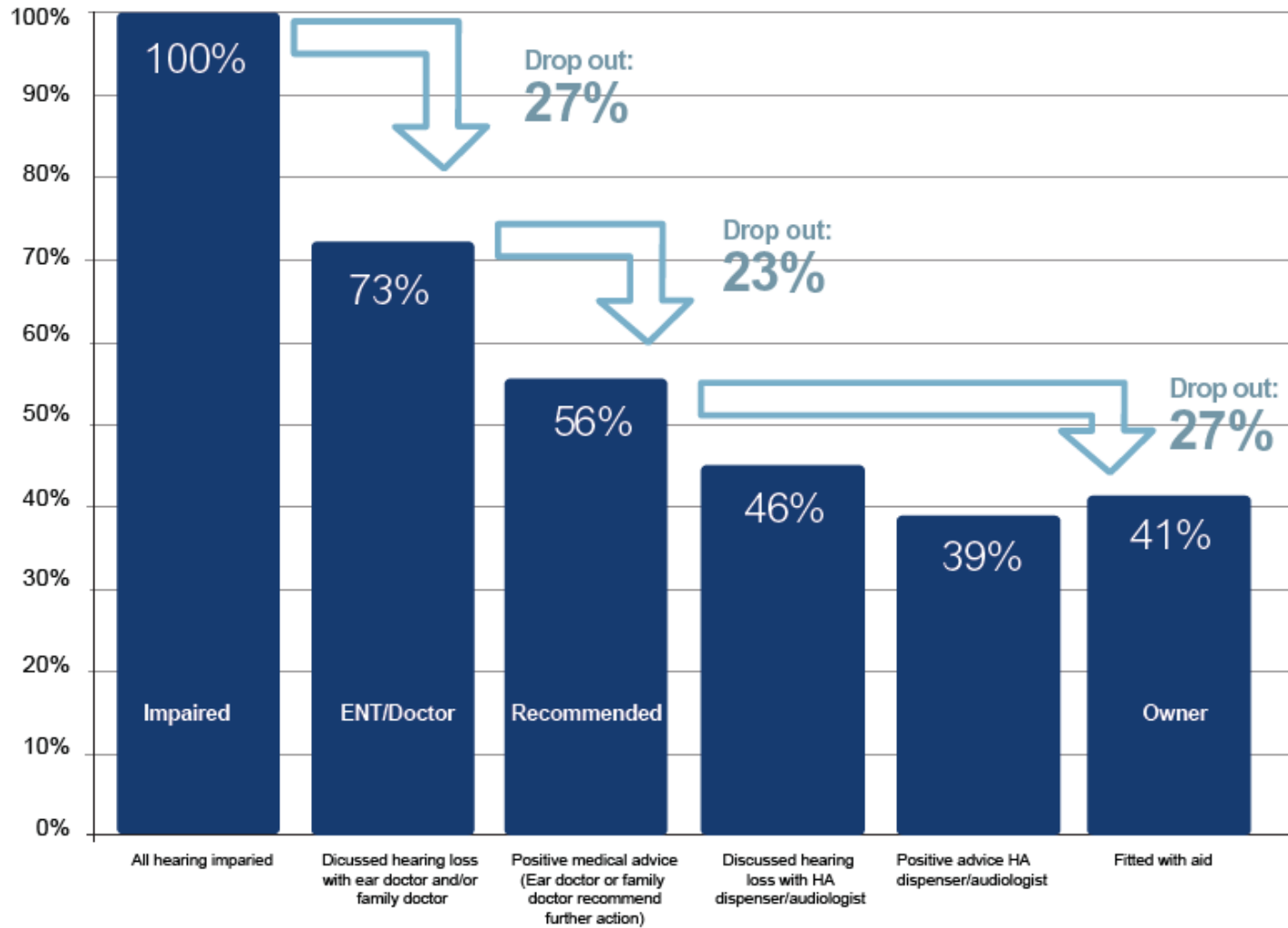
# Hearing loss and cognition

- Recent studies show correlations between:
  - Hearing loss
  - Cognitive function
  - Risk of developing dementia
- <http://jamanetwork.com/journals/jamaneurology/fullarticle/802291>
- <https://www.theguardian.com/science/2017/jul/17/hearing-loss-could-pose-greater-risk-of-potential-dementia-in-later-life-study>

# Hearing loss and cognition

- Group discussion: Which model is most plausible?





Source: EuroTrackUK

The journey  
for those  
with  
hearing loss

# Reading

- BSA practice guidance: common principles of rehabilitation for adults in audiology services
- <http://www.thebsa.org.uk/wp-content/uploads/2016/10/OD104-52-Practice-Guidance-Common-Principles-of-Rehabilitation-for-Adults-in-Audiology-Services-2016.pdf>

# Resources

- [International Classification of Functioning, Disability, and Health \(ICF\)](#)
- [Interprofessional Education/Interprofessional Practice \(IPE/IPP\)](#)
- [SIG 9 Perspectives: Family Support in Early Hearing Detection and Intervention \(EHDI\) Systems](#)
- [SIG 10 Perspectives: Interprofessional Education and Practice: A Primer for Training Future Clinicians](#)
- [American Journal of Audiology: Research Forum on Challenges in Hearing Health Care for the Oldest Older Adults](#)

