OCCUPATIONAL
HEARING LOSS

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OCCUPATIONAL HEARING LOSS

- NOISE INDUCED HEARING LOSS
- NON-NOISE INDUCED HEARING LOSS

NON-NOISE INDUCED HEARING LOSS

- Barotrauma
- Decompression Sickness
- Air Embolism
- Chemical & Slag Burns
- Ototoxic Agents
- Blunt Head Trauma
- Vibration
- Heat

NOISE INDUCED HEARING LOSS

- Noise? *
- Epidemiology
- Mechanism of *NIHL*
- Risk factors of *NIHL*
  - Exposure intensity
  - Exposure duration
  - Individual susceptibility
  - Other factors
- Clinical findings
- Approach to patient
- Differential diagnosis
- Prevention

NON-AUDITORY EFFECS OF NOISE

- Cardiovascular Effects (hypertention)
- Reproductive Effects
- Sleep Disturbance
- Psychologic Effects
- Effects On Hyperlipoproteinemia & Diabetes

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EPIDEMIOLOGY

- Noise exposure contributes to 22% of workplace related health issues
- Over 4 million DALYs (16% of the disabling hearing loss) globally are a result of occupational noise exposure
- Over a billion young people are at risk of NIHL due to listening to music (WHO, 2015)
- 24 percent of U.S. adults aged 20 to 69 years has features of NIHL
- 17% of US workers reported exposure to hazardous workplace noise

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RISK FACTORS OF NIHL

- Hyperlipoproteinemia?
- Diabetes (NIDDM)
- Exp. To Solvents
- Cigarette Smoking
- Eye color?
- Thyroid Abnormalities

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CLINICAL FINDING

- Difficulty in comprehending speech
- Need to be near or look at the person speaking
- Familiar sounds are muffled
- Complaints that people don’t speak clearly
- Ringing noises in the ear

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APPROACH TO PATIENT WITH HEARING LOSS

- History
- Physical examination

  Complete H & N Examination

  Tympanic Membrane Mobility

  Cranial Nerve Evaluation

  Cerebellar Function

- Laboratory and radiologic studies
- Audiologic tests*

HEARING EVALUATION

- Test of spoken words
- Tuning fork tests
  - Rinne test
  - Weber test
  - Stenger test
- PURE TONE AUDIOMETRY
- BEKESY AUDIOMETRY
- SPEECH AUDIOMETRY
  - Speech Reception Threshold
  - Speech Discrimination Score

HEARING EVALUATION

- Impendence audiometry
  - tympanometry
  - acoustic reflex testing
- Evoked response audiometry
- Otoacostic emissions
  - TEOAE
  - DPOAE

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DIFFERENTIAL DIAGNISIS

- Presbycusis
- Hereditary hearing impairment
- Metabolic disorders
- Sudden *SNHL*
- Infections origin
- *CNS* diseases
- Mender's diseases
- Non-organic hearing loss

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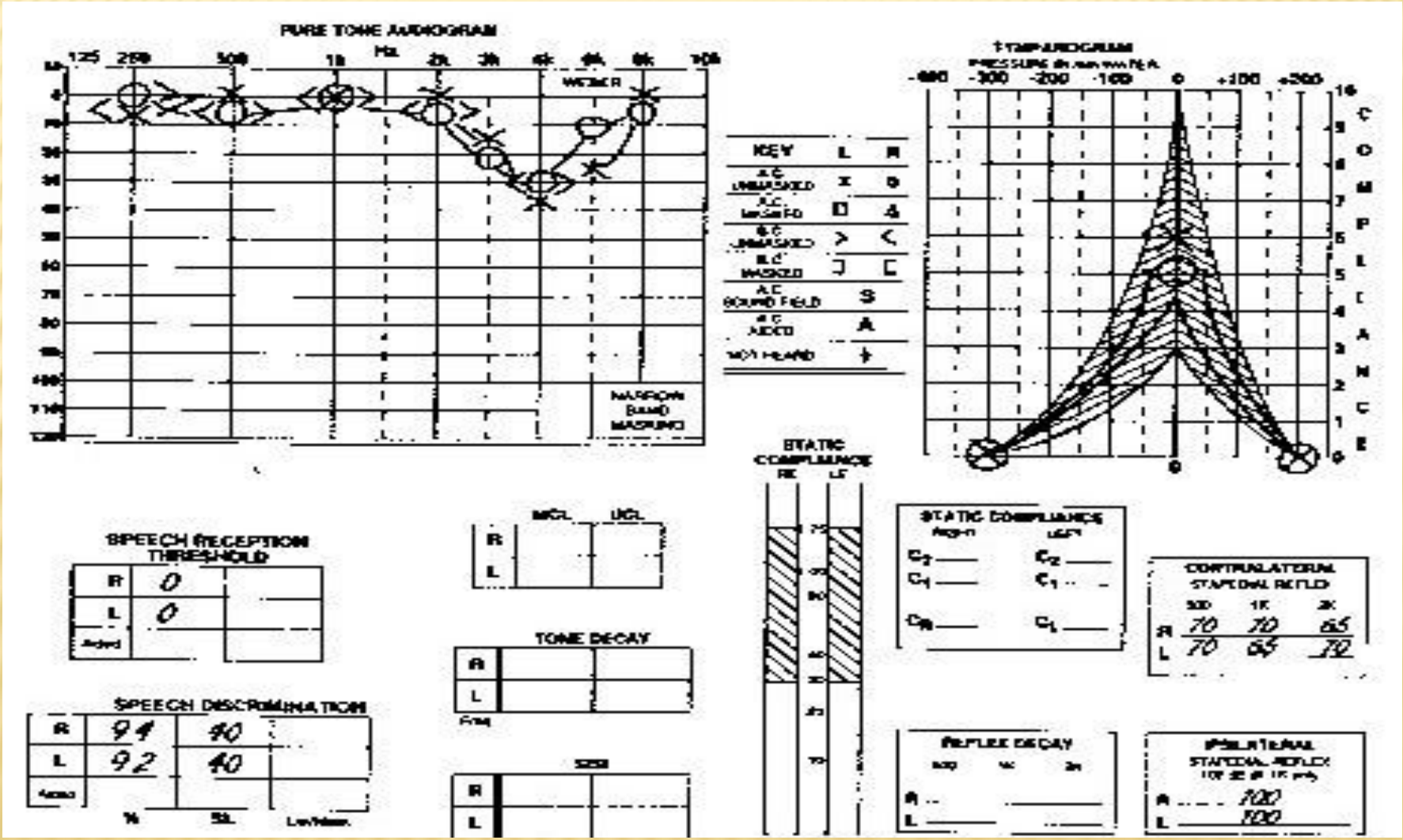
PREVENTION (HCP-HLPP)

- Initial and annual audits
- Exposure assessment
- Engineering & administrative controls
- Audiometric evaluation*
- Selection & use of *HPD*
- Workers education
- Record keeping
- Program evaluation

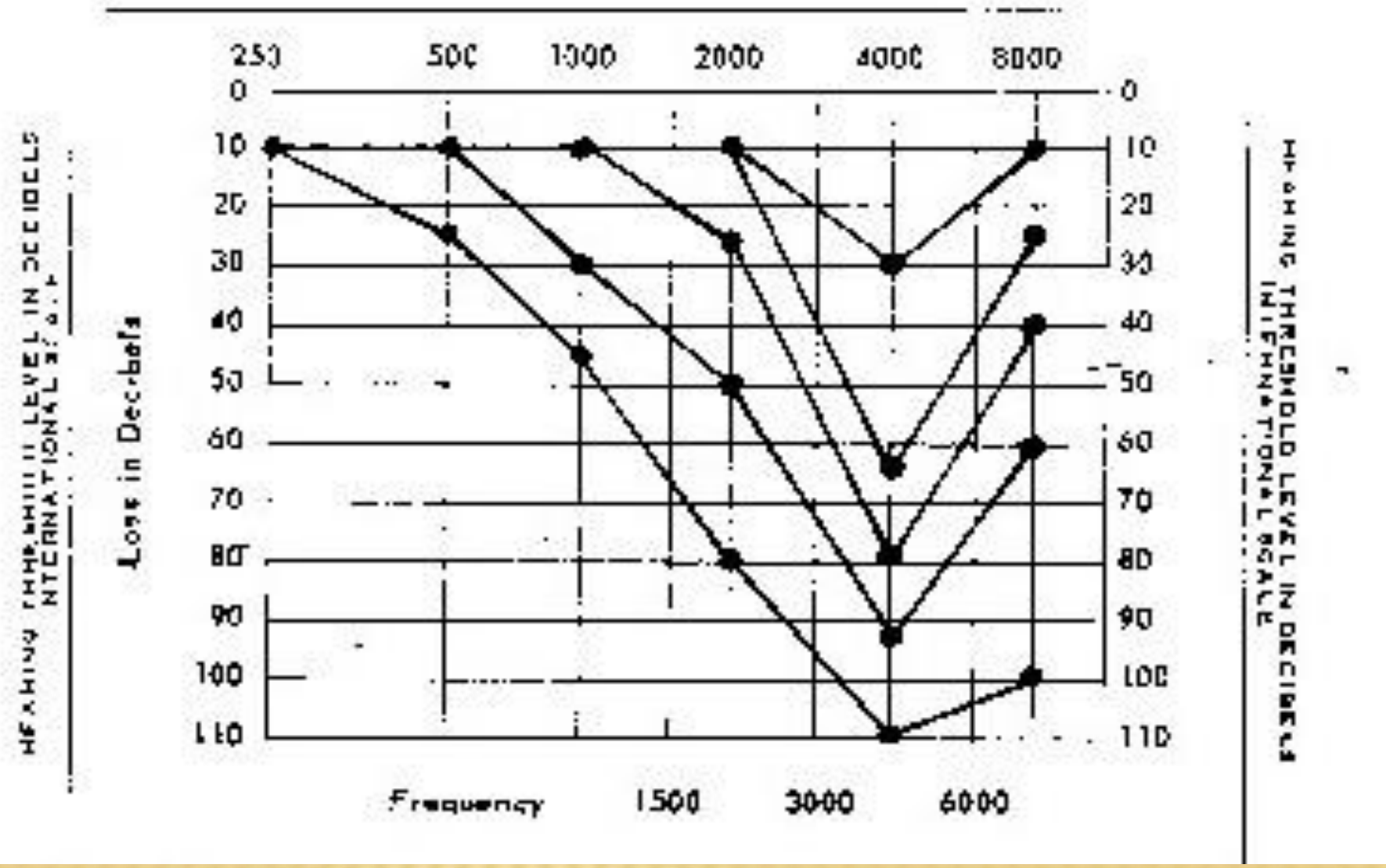
AUDIOGRAMS

- Baseline Audiogram
- Monitoring Audiogram
- Retest Audiogram
- Confirmation Audiogram
- Exit Audiogram

NOISE INDUCED HEARING LOSS



NOISE INDUCED HEARING LOSS



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HEARING PROTECTION DEVICES

- Personal hearing protectors
  - Canal caps

  - Ear plugs

  - Ear muffs

NOISE CANCELLATION TECHNOLOGY

Active noise control utilizes sound waves of equal amplitude and frequency but opposite phase to cancel out unwanted sound.

- Tactical Communication and Protective System (TCAPS)

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EDUCATION&MOTIVATION

- Requirements of and rationale
- Company policy for the elimination of noise
- Hazardous noise sources at the worksite
- Training in the use of hearing protectors
- Audiometry
- Individual responsibilities

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RECORD KEEPING

- Noise Exposure Records
- Audiometric Records
- Hearing Protection Records
- Education Records
- Other Records

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SIGNIFICANT TRESHOLD SHIFT

- OSHA STS
- OSHA STS Twice
- AAO-HNS Shift
- 1972 HIOSH Shift
- 15-dB Shift
- 15-dB Twice
- 15-dB Twice 1-4 kHz
- 10-dB Avg. 3-4 kHz


QUESTIONS?