# Module
# Noise, Noise-Induced Hearing Loss and Practice of Audiometry

*Hello everybody!*

*These two weeks we look at noise and its effects: noise-induced hearing loss and extra-aural effects. We also learn how to conduct a screening audiometry and how to evaluate an audiogram.*

*The goal is that you will be able to conduct audiometries in your companies alone after the course, that you know the referral criteria and can advise management on hearing conservation and noise reduction.*

*Okay, let's go to work!  Wagner*

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## Learning objectives:

*At* the *end of this module you will be able to*

1. Describe the effects of noise and the symptoms of noise induced hearing loss
2. Describe the correct procedure for a screening audiometry
3. List the referral criteria after evaluation a screening audiometry
4. Suggest preventive and hazard control measure to reduce noise
5. Incorporate hearing conservation program into the occupational health practice for the company

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## Mandatory Reading:

1. Please read the following chapter from **LaDou "Occupational & Environmental Medicine"** 3rd edition, chapter 10: Hearing Loss

2. Read the summary paper on **Noise and Hearing Loss** from ….. It is available in Course Material/Noise&NIHL, the file name is: Noise & NIHL Summary _PJ_2.doc [to be uploaded]

3. Read the **Standard for Audiometry** of the American Speech-Language-Hearing Association (www.asha.org): It is available in Course Material/Noise&NIHL, the file name is: ASHA Audiometry Method handout.doc

4. Read **Otologic Referral Criteria for Occupational Hearing Conservation Programs** of the Subcommittee on Medical Aspects of Noise of the American Academy of Otolaryngology-Head and Neck Surgery available at http://www.entlink.net/education/resources/otologicreferral.cfm

*Note: I suggest that you download (and maybe print out) these links for further reference. We will use these documents several times in the course of the next year.*

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## Assignments

### *A. Answer the following questions:*

1 What are the criteria to suspect and diagnose a noise-induced hearing loss in an audiogram?

2 How frequently would you organise audiometry in your company as per legal requirement if any? Mention the name and section of the law.

2 What are the different components of a hearing conservation program?

3 How important are audiograms in regard to prevention in comparison to noise-reduction activities by your company engineers? Explain

4 Describe the procedure how you determine the hearing threshold during an audiometry!

***Send the answer to these four questions to us by using your Digital Dropbox.***

*Note: We suggest that you just download or copy the following questions into a text document. Then fill in your answers in the same file and send it to us using your* ***Digital Dropbox*** *in* ***Students Tools****. You should use the ADD FILE command in your dropbox to upload. Only you and the faculty can see that.*

*Do not forget to mention your name, module number in the filename!!!!*

***B. Post a contribution in the Discussion Board:***

**Short case study:**

60 years old Raman is retired since two years from one of the companies in Chennai. Industrial noise was high, measurements have shown more than 90 dBA.

He has filed a suit against the company that he is deaf because he worked in the company. He accuses that his deafness is occupationally induced since it started while he was still working in the company. He claims his due compensation according to the Workmen's Compensation Act. There was no hearing conservation program adapted by the company so far.

- What are the points in favor and against the worker and the company?

- As you are the company doctor who has recently joined: Which steps are necessary to prevent such problems in future in the company?

***Give your expert opinion on these questions and post it here on the website. Please go to Discussion Board, open the discussion thread of this module and post your contribution***

Note: I will open this thread of discussion on by posting this first email. Post your comment by answering to the first email of this new thread **using the REPLY button**. Only responses which are posted in the correct discussion thread will be considered for grading.

**C. Voluntary Assignment:** Respond in a "substantial" way to a posting of one of the other students in this discussion thread on this topic.

Your comment should be "substantial". This means it should improve, amend, complement or discuss and contradict the other student's statement. You will have to include examples or references to substantiate your reply to get the full marks.

**D. Audiogram Evaluation:** Please evaluate the first ten audiograms in your exercise book (no. 1 thru 10).

**Answer to following questions for each audiogram:**

- What is the hearing loss at 2 kHz and at 2, 3 and 4 kHz together in left & right ear?

- Any difference in bone vs. air conduction?
- Any dip around 4 kHz?
- Preliminary diagnosis and next step!

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## Marks

A. You will get **20 marks** in total for these five questions on legislation based on the fact that they are correct, comprehensive and concise. Your assignment has to be posted in the **Digital Dropbox**. If it is not there it will not be graded.

B. You will get **20 marks** in total for a good comment on the **Discussion Board**.

C. **Voluntary Assignment:** You will get **10 marks** for a substantial comment on a posting of one of the other students in this discussion thread on ethics.

D. You will get **20 marks** for the 10 correctly evaluated audiograms

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## Additional Resources

Please go to **Course Material** and **Other Resources** to find additional links and documents in **Audiometry, Noise & Hearing Protection**.

Some explanations on noise measurements are also given in **LaDou "Occupational & Environmental Medicine"**, 3rd edition, chapter 35: Industrial Hygiene

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N. Wagner