

# Now Hear This . . .



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## OSHA Inspections for Noise

Employers in the manufacturing sector with average noise levels over an 8 hour day of 85 dB HL or greater are required to have a comprehensive hearing conservation program. The Michigan OSHA program enforces this requirement. Table I shows that from 1995 to 2004 the number of companies that were cited by Michigan OSHA for a violation of the noise standard ranged from 47 to 109. Seven to thirteen percent of companies inspected each year were cited for a violation of the noise standard.

**Table I. Total Number of Companies with MIOSHA Health Inspections and Number and Percent cited for Violation of Noise Standard, Michigan 1995 to 2004**

Year	Total Number of Health Inspections	Noise Violations	
		Number of Companies	Percent
1995	700	48	6.9
1996	713	47	6.6
1997	739	54	7.3
1998	713	48	6.7
1999	801	71	8.8
2000	854	82	9.6
2001	893	103	11.5
2002	722	69	9.6
2003	812	109	13.4
2004	797	60	7.5

In order to examine what effect an OSHA inspection has on the development of hearing loss we have analyzed the data from the practice of one audiologist that has provided audiometric testing to the employees of 220 companies from 1989 to

date. We compared the results of audiometric testing in the 120 companies which had not had a health inspection by OSHA since 1989 with the 52 companies who had had one or more OSHA health inspections during this time period and for whom there were employees with audiometric testing before and after the OSHA inspection(s). There were another 48 companies that had had an OSHA health inspection but were not included in the analysis because these companies did not have the same employees who had had audiometric testing before and after the OSHA inspection.

The analysis consisted of 19,295 audiometric tests on 2,749 individuals from the 52 inspected companies and 81,185 audiometric tests on 19,044 individuals from the 120 non-inspected companies. What is being assessed is the effect of an OSHA inspection on a company that already is performing audiometric testing, not on a company that initiates audiometric testing because of an OSHA inspection.

Table II shows the reported difference in use of hearing protection in companies not inspected, those with one OSHA health inspection and those with two or more OSHA health inspections. For the non-inspected companies we used the median date of the OSHA inspections of the

*(Continued on page 2)*

**Table II. Change in Hearing Protection Use in Companies Providing Audiometric Testing by Whether Company Was Inspected by OSHA, Michigan 1989-2002**

Hearing Protection Use (0=never,5=Always)	Not Inspected		Single Inspection No Citations		Single Inspection No Noise Citations		Single Inspection Noise Citations		Multiple Inspection No Citations		Multiple Inspection No Noise Citations		Multiple Inspection Noise Citations	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
	2.96	3.46	2.73	2.53	2.52	2.46	3.73	3.63	4.01	4.40	3.09	3.39	3.63	3.53
	(.50)		(-.20)		(-.06)		(-.10)		(.39)		(.30)		(-.10)	

companies that were inspected to select a date to evaluate changes in the control non-inspected companies pre/post to compare to the inspected companies. There was no appreciable difference in hearing protection use, although the frequency of use of hearing protection showed the

greatest increase in non-inspected companies and decreased if there was a single OSHA inspection. A citation for violation of the noise standard did not increase hearing protection use.

(Continued on page 3)

**Licensing Rule for Audiologists were adopted  
December 12, 2005**

**AUDIOLOGIST—GENERAL RULES  
R 338.1—338.12**

You can view/print the licensing regulations at:

[http://www.state.mi.us/orr/emi/admincode.asp?  
AdminCode=Single&Admin\\_Num=33800001&Dpt=CH&RngHigh=](http://www.state.mi.us/orr/emi/admincode.asp?AdminCode=Single&Admin_Num=33800001&Dpt=CH&RngHigh=)

To find out more information, contact  
The Bureau of Health Professions:

On the internet:  
<http://www.michigan.gov/mdch/0,1607,7-132-27417---,00.html>

Email: [bhpinfo@michigan.gov](mailto:bhpinfo@michigan.gov) Telephone: 517.335.0918

**\*SAVE THE DATE\***

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Table III shows the average dB HL at three different frequencies and the percent  $\geq 25$  dB HL. There is less worsening of hearing for workers with companies that had a single inspection versus those not inspected (one exception is the 1000, 2000, 3000 hertz average). The results in workers in companies with multiple inspections was very similar to the results in workers in non-inspected companies. Workers in companies that were cited for noise violations had less worsening of their hearing.

Table III suggests less hearing loss among workers in OSHA inspected companies which had a single inspection, particularly if they were cited for a violation of the noise standard. This decrease in hearing loss was not due to increased use of hearing protective equipment (Table I), but rather suggests these companies either had lower noise levels or other controls such as administrative and engineering were implemented. The fact that companies with multiple inspections had more hearing loss suggests that these companies did not implement effective controls. This is consistent with OSHA performing multiple

inspections which implies there were multiple complaints and ongoing unresolved issues. One has to remember that these results refer to companies which perform regular audiometric testing and that an OSHA inspection in a company that did not provide this testing might have a different and more dramatic effect.

Another possible conclusion one can make from these data is that despite a hearing conservation program alone or a hearing conservation program and an OSHA inspection, hearing loss continues to increase over time (Table III). Additional emphasis on the components of a hearing conservation program including use of hearing protection are needed to determine ways to reduce this ongoing hearing loss.

Additional analyses are planned to examine the effect of noise exposure from hunting and other activities outside of work, and differences in noise levels in single and multiple inspection companies.

**Table III. Changes in the Average dB HI at three Different Frequencies: 1,2,3 KHz; 2,3,4 KHz; and 3,4,6 KHz and the Percent with  $\geq 25$  dB HI at these same Frequencies by Whether Company Was Inspected by OSHA, Michigan 1989-2002**

Frequency		Not Inspected Difference		Single Inspection No Citations Difference		No Noise Citations Single Inspections Difference		Single Inspections Noise Citations Difference		Multiple Inspection No Citations Difference		Multiple Inspections No Noise Citations Difference		Multiple Inspections Noise Citations Difference	
		Pre/Post dB HL	% $\geq 25$ dB HL	Pre/Post dB HL	% $\geq 25$ dB HL	Pre/Post dB HL	% $\geq 25$ dB HL	Pre/Post dB HL	% $\geq 25$ dB HL	Pre/Post dB HL	% $\geq 25$ dB HL	Pre/Post dB HL	% $\geq 25$ dB HL	Pre/Post dB HL	% $\geq 25$ dB HL
Average 1,2,3 KHz	Right	+1.7	+3.4%	+1.4	+4.0%	+0.9	+1.5%	+1.2	+0.6%	+2.0	+7.3%	+1.8	+7.6%	+1.6	+1.4%
	Left	+2.1	+5.1%	+1.0	+2.5%	+1.2	+2.2%	+1.6	+3.2%	+2.3	+5.4%	+2.1	+5.2%	+1.7	+2.9%
Average 2,3,4 KHz	Right	+2.6	+4.4%	+1.9	+6.2%	+1.5	+2.9%	+1.7	+1.7%	+2.7	+6.8%	+2.9	+5.4%	+2.2	+4.7%
	Left	+2.8	+6.1%	+1.7	+5.1%	+1.6	+3.0%	+2.3	+2.3%	+3.1	+6.3%	+3.0	+5.9%	+2.4	+5.1%
Average 3,4,6 KHz	Right	+3.0	+6.7%	+2.5	+6.5%	+1.7	+4.2%	+2.0	+3.3%	+3.5	+5.6%	+3.2	+7.9%	+2.8	+6.2%
	Left	+3.4	+6.8%	+2.1	+6.1%	+2.7	+4.2%	+2.4	+4.2%	+3.6	+7.5%	+3.1	+9.2%	+3.2	+7.2%

*Now Hear This...*

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**Address service requested.**

In this issue:  
OSHA Inspections for Noise

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**Michigan Law Requires the  
Reporting of Known or Suspected  
Occupational NIHL**

Reporting can be done by:

**Internet**

www.oem.msu.edu

**E-Mail**

ODREPORT@ht.msu.edu

**FAX**

517-432-3606

**Telephone**

1-800-446-7805

**Mail**

MIOSHA-MTS Division

P.O. Box 30649

Lansing, MI 48909-8149

**Suggested Criteria for Reporting  
Occupational NIHL**

1. A history of significant exposure to noise at work; AND
  2. A STS of 10 dB or more in either ear at an average of 2000, 3000 & 4000 Hz. And the employee's total hearing level is 25 dB or more at the same three frequencies. OR
  3. A fixed loss.\*
- \*Suggested definitions: a 25 dB or greater loss in either ear at an average of: 500, 1000 & 2000 Hz; or 1000, 2000 & 3000 Hz; or 3000, 4000 & 6000 Hz; or a 15 dB or greater loss in either ear at an average of 3000 & 4000 Hz.

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