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GLOBAL EXPOSURE MANAGER

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OTOTOXICANTS:
CHEMICALS THAT IMPACT HEARING

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Ototoxicants are chemical substances that can enter the body through inhalation, absorption, and ingestion. These substances target different components of the inner ear to adversely affect hearing. The adverse effects of these substances range from blurring sounds to hearing loss.

Although the ototoxic effects of different medications are well documented in the pharmaceutical industry, further studies are needed to understand the health effects of dual occupational exposures to ototoxicants and noise.

This article aims to provide a summary of the etiology of ototoxicants, classifications of ototoxicants, and recommended control measures.

Historical Perspective

The knowledge that chemicals can cause hearing loss is not new. It was first documented in the XI century when Avicenna, a Persian philosopher, described how individuals exposed to mercury vapor to treat head lice experienced deafness. XIX-century literature documents temporary hearing loss from quinine and chloroquine. Research into the adverse effects on hearing from occupational exposures to noise and ototoxicants increased rapidly in the 1970s and 1980s.

At least two countries, Australia and Brazil, have enacted worker compensation laws that include hearing loss caused by ototoxicants.

Etiology

Occupational hygienists are typically well versed on the inner workings of hearing loss due to noise exposures. Hearing loss from noise is a purely mechanical process where high-pressure waves structurally damage hair cells in the cochlea. Ototoxicants, on the other hand, cause hearing damage from various bio-chemical and metabolic mechanisms. Examples of these mechanisms include constriction of blood vessels that deliver oxygen to the inner ear, over-generation of radicals that destroy hair cells, reduction of antioxidant levels in the inner ear, and poisoning of the auditory nerve. The auditory nerve transforms the vibrations into electrical impulses to the brain. These actions can disable the tensor tympani, the muscle that tightens the tympanic membrane to attenuate incoming sound pressures. Additionally, there is evidence that some of these processes remain present in the inner ear for days after initial exposure and continue to cause hearing damage even after an ototoxicant's exposure ceases to exist.

Example of Ototoxicants

Global occupational health and safety organizations classify ototoxicants as (a) confirmed/potential, (b) definitive/suspect/questionable, or (c) possible/non-conclusive. Occupational hygienists must exercise caution as ototoxicant classifications can vary between organizations responsible for classification. One option to address the classification variability is to develop a company-specific list of ototoxicants and their classifications.

Ototoxicant chemicals include various solvents, such as carbon disulfide, ethylbenzene, styrene, toluene, trichloroethylene, and xylene. Metals like lead and mercury and at least one asphyxiant, carbon monoxide, are also identified as ototoxicants. Carbon monoxide can potentiate hearing loss from concurrent high noise and carbon monoxide exposure.

Credible organizations that have published a listing of ototoxicants and their rationale include the European Agency for Safety and Health at Work (EU-OSHA), Institut de recherche Robert-Sauvé en santé et en sécurité du travail (IRSST, Canada), Nordic Expert Group for Criteria Documentation of Health Risks from Chemicals, Safe Work Australia, and the National Institute of Occupational Safety and Health (NIOSH, USA).

In many workplaces, employees are potentially exposed to ototoxicants in the presence of high noise levels. Although research is limited in this area, evidence suggests that there are synergistic effects from dual exposure to noise and chemicals such as toluene, styrene, and lead. Hearing damage could also occur from ototoxicant exposure even when noise exposures are below regulated exposure limits (e.g., 85 dBA).

Control Measures

The organizations that have researched and published chemicals considered to be ototoxicants have also promulgated measures to control hearing loss from potential exposures to ototoxicants. The hierarchy of controls can be effectively applied to eliminate or mitigate the risk of exposure to hazards such as ototoxicants. Once ototoxicants are identified in the workplace and when noise exposure is likely, a risk assessment for noise should also include concomitant potential exposure to noise and ototoxicants.

Examples of specific control measures for ototoxicant exposure include (a) developing and implementing a hearing conservation program for

workers with ototoxicant exposure above 50 percent of an ototoxicant's occupational exposure limit, (b) requiring periodic audiometric examinations for workers where inhalation and dermal exposure to an ototoxicant is uncontrolled, and c) including occupational and non-occupational ototoxicant (e.g., medications) exposures and potential health effects in a company's hazard communication program.

Control measures for potential exposure to noise and ototoxicants may include (a) reducing the eight-hour noise occupational exposure limit to below the regulatory limit (e.g., 80 dBA from 85 dBA) and/or (b) lowering the occupational exposure limit for an ototoxicant of concern.

Ototoxicants do not always cause hearing loss but may create difficulty in understanding speech for the exposed person. As a result, a Distortion Product Otoacoustic Emissions Test may be conducted to determine overall hearing function compared to the conventionally used pure-tone air-conduction audiometry.

Globally, occupational and non-occupational noise exposures are a concern. Ototoxicants potentially contribute to adverse effects on hearing. Including ototoxicants in an occupational noise risk assessment program and developing a risk control strategy reduces the potential risk of hearing damage and impairment resulting from exposure to ototoxicants and noise.

References

1. European Agency for Safety and Health at Work: Combined Exposures to Noise and Ototoxic Substances (2009).

2. Proceedings of the International Workshop "Synergistic exposure to noise, vibrations and ototoxic substances" (PDF, September 2010) [Morata, Thais and Johnson, Ann-Christin: Chemical interactions in the auditory system: implications for occupational health

AIDII'S PILLS OF INDUSTRIAL AND ENVIRONMENTAL HYGIENE AS A COMMUNICATION TOOL

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The "Pills of Industrial and Environmental Hygiene" (in Italian: "Pillole di Igiene Industriale e Ambientale") represent a continuing series of short communications edited by the Italian Association of Industrial Hygienists (AIDII) beginning in 2022, and now numbering 28 issues.

The pills are distributed free and open access through the website and LinkedIn page of AIDII. With this series of publications, AIDII aims to cover topics, peculiar to Occupational and Environmental Hygiene, in a way that is, hopefully, more enjoyable for readers, whether they are experts in the subject or not in order to promote and spread the occupational hygiene in the community.

Because of their accessibility and ability to provide clear and concise information, the "Pills" are a valuable tool for disseminating information on environmental and occupational hygiene.

Indeed, the style adopted is one-page document, which presents an essential and schematic summary of each topic. Pills published to date include those on basic concepts and the history and future prospects of occupational hygiene, as well as those related to more specific topics such as aerosols and nanoparticle monitoring, biological monitoring, respiratory protective equipment, or legislative updates.

The pills are published (in Italian only) monthly, but they can be more frequently according to needs or in case it is interesting to publish a pill on topical issues.

AIDII website: https://www.aidii.it/pillole-di-igiene-industriale-e-ambientale-2/

IOHA UPDATES

IOHA 2024 Collaboration Award

IOHA congratulates the Occupational Hygiene Training Association (www.ohtatraining.org) for receiving the IOHA 2024 Collaboration Award. This recognition is bestowed upon groups and projects that exemplify exceptional collaboration within the occupational hygiene community.

From the size of the population directly impacted to the level of inspiration it offers to occupational hygienists worldwide, OHTA's work excelled in every aspect. Moreover, the long-term collaboration efforts and dedication to sustainable improvement genuinely align with IOHA's mission to provide a safe and healthy working environment for all. Congratulations to OHTA members and volunteers on this telling achievement!

IOHA 2024 Lifetime Achievement Award

IOHA congratulates Deon Jansen van Vuuren for being selected as the Lifetime Achievement Award recipient this year. IOHA Lifetime Achievement Award honors individuals who have made significant contributions to the promotion and development of occupational hygiene practice that improve the health and welfare of working men and women. Deon's rousing nomination from the Southern African Institute for Occupational Hygiene can perhaps best described by a direct quote from their letter of recommendation as follows here;

"It is truly difficult to overemphasize Deon's worthiness for a "lifetime" achievement award in Occupational Hygiene. His consistent and enduring contributions have left an indelible mark on the field, impacting the lives and well-being of countless individuals. Deon's legacy is one of selflessness, expertise, and a profound passion for the improvement of occupational hygiene standards."

Congratulations to Deon for his latest award and "Thank You" for your lifelong leadership and commitment to worker safety and our profession!

Join us at IOHA2024 to celebrate the winners on Wednesday, June 12.

IOHA Code of Ethics

Nancy Wilk, IOHA President-Elect nancy.wilk@wsp.com

The IOHA is dedicated to improving, promoting, and developing occupational hygiene worldwide through its member organizations and to improving and maintaining a safe and healthy working environment for all.

As part of IOHA's commitment to continual improvement, IOHA has established a 2024 IOHA Code of Ethics that provides guiding principles for its members, member associations, and IOHA Board Members.

The IOHA Code of Ethics is intended to guide behavior and decision-making, enhance accountability, and promote ethical behavior. Thank you to the IOHA Executive Committee and Board members for their review and feedback in this crucial continual improvement process.

Please refer to the link for a copy of the 2024 IOHA Code of Ethics.

Community of Practice on Sensor Technologies

Samantha Connell, IOHA President, president@ioha.net
Emanuele Cauda, COP Chair, cuu5@cdc.gov

The IOHA Community of Practice for particulate matter sensors met for the first time in two virtual meetings (due to time zone constraints) on March 6, 2024. Less than one year ago, the COP was an idea brought to the IOHA Executive by Emanuele Cauda of the NIOSH Center for Direct Reading and Sensor Technologies. With the support of Past President Maharshi Mehta and current President Samantha Connell, the COP was presented to the board in October 2023 and taken onboard.

Several efforts are being made in each country, and the IOHA COP intends to document them and increase their visibility and dissemination.

The first meetings included COP members with various backgrounds and perspectives from 11 countries where IOHA member organizations are present: Switzerland, Mongolia, United States, Australia, Vietnam, New Zealand, Peru, South Africa, Taiwan, Italy, and Sweden.

Stay tuned for more to come!

The COP's goal is ultimately to support practitioners around the globe in their efforts to consider the selection, adoption, and operationalization of PM sensors in their occupational hygiene practice.

Emerging Leaders Institute Update

Samantha Connell, IOHA President, president@ioha.net

Applications for the inaugural Emerging Leaders Institute (ELI) came in from 21 countries around the world! The Selection Committee was amazed at how many applications were received and the high standard seen across the range of backgrounds, experiences, and roles.

The Committee was impressed with the candidates' involvement in the industrial/occupational hygiene field and their diverse volunteerism with professional societies and the community. From 77 complete applications, 41 participants were chosen to participate in the inaugural ELI Program (pending confirmation on attendance due to visa approvals).

The 2024 ELI will be held the weekend before in conjunction with the IOHA 2024 conference. ELI is scheduled for midday Friday, June 7th, to afternoon Sunday, June 9th, 2024, at the Clayton Ballsbridge Hotel in Dublin, Ireland.

The committee would like to extend a thank you to ELI Supporters thus far: IOHA, British Occupational Hygiene Society, Dutch Occupational Hygiene Society (NvvA), Indorama Ventures PCL, Institute of Occupational Medicine, Casella, Shaw City, and the Stephen Davis Memorial Fund.

IOHA Webinars

IOHA continued to offer most engaging webinars on unique aspects of occupational hygiene.

Peter Wilson from the UK based Industrial Noise and Vibration Center offered a webinar on practical noise control solutions. The most significant number of IOHA webinar participants (91) attended the webinar and gave rave reviews on the webinar: "Fascinating Presentation!" and "Great webinar!"

IOHA will offer a webinar on Ototoxicants from Eduardo Shaw on April 24, 2024, from 8:00 to 9:30 am New York time. The webinar is free for all members of IOHA associations. The registration fee for industry-sponsored non-IOHA members is 85 GBP. Please encourage industry-sponsored participants to register for the webinar.

Registration link for Ototoxicant Webinar

MEMBER UPDATES

AIHN 2024 Council and Webinar

Ifeyinwa Anya, AIHN President, ifyndalaku@gmail.com

The Association of Industrial Hygienists Nigeria (AIHN) conducted its official Changing of the Guard ceremony on February 10, 2024. The event was significant as we recognized and celebrated the outgoing 2023/24 Exco for their unwavering commitment to achieving significant milestones for the AIHN during their tenure. As we embrace a new era for our esteemed Association, we remain optimistic about achieving even more exceptional accomplishments and reasons to celebrate in the coming year.

To kickstart our activities for the 2024 calendar year, we organized a webinar titled "**New Directions in Air Sampling: For Particulates, Mixed Phase Contaminants, and Nanoparticles.**" Debbie Dietrich, a seasoned Certified Industrial Hygienist with a wealth of knowledge in the field, facilitated the session. The session was engaging and insightful, and we had a peak attendance of thirty-six (36) people.

Images from 2nd AIHN Conference

UPCOMING EVENTS

SOFHYT (France) Annual Conference

Nathalie Argentin, President, SOFHYT, presidence@sofhyt.fr

SOFHYT will organize its annual conference on May 13 and 14, 2024. The conference theme is "Health at Work: Prevention in a Changing World". This one-and-a-half-day conference will focus on chemical risk evolution, nanoparticles, endocrine disruptors, sedentary lifestyle, exoskeletons, and connected PPEs. Attending this conference is a great opportunity for EHS managers and industrial hygienists to share their practices and opinions on those new challenges.

Registration link for the conference: FORUM 2024 – SOFHYT

AIDII (Italy) 40th National Congress of Industrial and Environmental Hygiene – 2024

Mariella Carrieri, President, AIDII, mariella.carrieri@unipd.it

The 40th National Congress of Industrial and Environmental Hygiene will be held at the Palazzo della Salute in Padua from June 26 to 27, 2024. Please refer to AIDII website for additional information https://www.aidii.it/events/

First Occupational Health, Safety and Environment Conference Viet Nam Vietnamese Industrial Hygiene Association (VIHA)

Tuan Nguyen, MBA, CIH, CSP, ARM, FAIHA, Vice President, VIHA tuancihcsp@gmail.com

The first Occupational Health, Safety, and Environment conference will be held in Hanoi,Vietnam, from October 14- to October 26, 2024. The conference is hosted by the Faculty of Environmental Sciences, University of Science, Vietnam National University, Hanoi (FES-HUS-VNU), and the Central Institute for Natural Resources and Environmental Studies (CRES-VNU)). The organizers invite you to attend the conference and **participate as session moderators, presenters, or abstract reviewers.** This pivotal event will bring together experts, practitioners, and stakeholders from around the globe.

MIHA-ICE '24 & 7th ANOH Conference 2024

Philip Hibbs, President, ANOH philip.hibbs@hibbs.com.au

The Malaysian Industrial Hygiene Association (MIHA) & the Asian Network of Occupational Hygiene (ANOH) will jointly host the MIHA International Conference & Exhibition 2024 (MIHA-ICE '24) & the 7th ANOH Conference 2024. The conference will be held on October 17 to October 23, 2024 at Kuala Lumpur Convention Centre, Malaysia.

The conference theme is “Connect for Innovative Change—The Asian Way,” with the aim of fostering collaboration, exchanging best practices, sharing lessons learned, and promoting innovative solutions to enhance Industrial Hygiene (IH) / Occupational Hygiene (OH) standards in the region.

You are invited to submit an abstract for a technical paper to technical.mihaanoh@gmail.com.

MIHA/ANOH are looking forward to receiving abstracts for papers covering various technical issues in occupational hygiene.The submission deadline for the Call for Papers is May 17, 2024. Please refer to the website for more information. https://mihaice.anoh2024.org/

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UPCOMING EVENTS

ISRP conference

21st International Conference on “Respiratory Protection Use and Users” from the European Section of the International Society for Respiratory Protection (ISRP) will be held at Oxford, UK from September 22 to September 24, 2024.

The conference is a great opportunity to hear about and to share the very latest in respiratory protection research, innovations, applications, and many other topics, with the international community. The conference will include a technical presentation program, a poster session, an exhibition and many networking opportunities.

Registration and Information Link for the Conference

The conference aims to promote occupational hygiene and worker health protection by the minimisation of worker exposure to hazardous agents globally through plenary sessions, keynote lectures, parallel talks, workshops, and poster presentations, as well as networking opportunities and social functions.

Free professional development courses

Alongside the conference programme, we will also host a number of Professional Development Courses on **Sunday 9th June 2024**.

Each PDC will provide **3 hours of free training** to IOHA2024 delegates.

Bookings will open for registered conference delegates in April and will be on a **first-come, first-served basis.**

The PDC titles can be found below, to find out more about each course visit www.ioha2024.org.

- Pharmaceutical Industries
- Ventilation Systems
- Leadership Skills
- Ethics
- Presentation Skills
- Basic Characterisation
- Emergency Response
- Elongate Mineral Particles/Asbestos
- Nanoparticles
- Biological Monitoring
- Sustainable Development Goals
- Performance-Based Approach

Conference Programme

We're excited to announce the preliminary programme for IOHA 2024 is **now live!**

This conference aims to bring together professionals, researchers, and practitioners from **around the world** to discuss the latest advancements and best practices in the field of occupational hygiene.

The conference theme is: **Protecting workers from health hazards: Advancing in this changing world.**

Click here to view the preliminary programme

Early Bird Booking Fee

Did you know you can save over £200 by booking your place at the conference today?

Early-bird booking rate will only be available until April 12th 2024 so act fast to avoid disappointment!

Click here to secure your place today.

IOHA 2024

Protecting Workers From Health Hazards: Advancing in This Changing World

BOHS British Occupational Hygiene Society

IOHA

OHSI Occupational Hygiene Society of Ireland

vent-tech
industrial environment control

BOHS British Occupational Hygiene Society
Approved Training Partner 2024

IP601 - BOHS International Proficiency Qualification.
Examination and Testing of Local Exhaust Ventilation Systems
June 4th - 7th 2024, Dublin, Ireland

LEV Awareness - Professional Development Course
June 9th 2024, Dublin, Ireland

Examinations & Qualifications provided by the BOHS

Vent-Tech are proud to announce that Managing Director and industry thought leader Adrian Sims will be hosting 2 great LEV courses in Dublin this Summer.

Already attending IOHA 2024? Why not arrive early and get even more out of your visit.

IP601 - BOHS International Proficiency Qualification. Examination and Testing of Local Exhaust Ventilation Systems 4th - 7th June @Dublin, Ireland (4 day course)

The IP601 is a four-day course and is one of four modules designed to make you proficient in working with LEV systems. It will provide the methodology, theoretical knowledge and practical skills to enable you to undertake thorough examinations and tests of LEV systems.

The IP601 syllabus differs from the P601 syllabus in that it doesn't focus on legislation. Instead, it focuses on teaching candidates the best practice methods for testing and examining ventilation systems, based on guidance documents created by internationally- recognised organisations such as ACGIH and HSE.

LEV Awareness - Professional Development Course - 9th June @Dublin, Ireland (1 day course)

This is a fantastic one day course similar to our P600 course to help give a foundation level of insight into basic principles of LEV. Attending this course will give you an understanding of the basic components of LEV systems, qualitative visualisation techniques, quantitative measurement techniques and practical application.

joe getliffe
1 review
★★★★★ 2 months ago
I recently did the P601 course in Liverpool. The course was very informative and I really enjoyed it. Adrian is a great tutor and kept me engaged throughout. I learned a lot on the course and would recommend.
Like

Josh
1 review
★★★★★ 5 months ago
I recently had the pleasure of meeting Adrian on the P601 course and it was very informative and well structured. All the information is given to you and in a way that is easy to learn and easy to remember for your exams. There is multiple chances throughout the course to go through any concerns you may have whether they're big or small and nothing is ever too much. Highly recommend this course and Adrian himself and will more than likely be coming back for future courses. Thanks.
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OTOTÓXICOS:

SUSTANCIAS QUÍMICAS QUE AFECTAN A LA AUDICIÓN

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Los ototóxicos son sustancias químicas que pueden entrar en el organismo por inhalación, absorción e ingestión. Estas sustancias se dirigen a diferentes componentes del oído interno para afectar negativamente a la audición. Los efectos adversos de estas sustancias van desde la borrosidad de los sonidos hasta la pérdida de audición.

Aunque los efectos ototóxicos de diferentes medicamentos están bien documentados en las industrias farmacéuticas, se necesitan más estudios para comprender los efectos sobre la salud de la doble exposición profesional a ototóxicos y ruido.

Este artículo pretende ofrecer un resumen de la etiología de los ototóxicos, las clasificaciones de los ototóxicos y las medidas de control recomendadas.

Perspectiva histórica

El conocimiento de que las sustancias químicas pueden causar pérdida de audición no es nuevo. Se documentó por primera vez en el siglo XI, cuando Avicena, un filósofo persa, describió cómo las personas expuestas al vapor de mercurio para tratar los piojos experimentaban sordera. La literatura del siglo XIX documenta la pérdida temporal de audición causada por la quinina y la cloroquina. La investigación sobre los efectos adversos para la audición de la exposición laboral al ruido y los ototóxicos aumentó rápidamente en las décadas de 1970 y 1980.

Al menos dos países, Australia y Brasil, han promulgado leyes de compensación a los trabajadores que incluyen la pérdida de audición causada por ototóxicos.

Etiología

Los higienistas ocupacionales suelen conocer bien el funcionamiento interno de la pérdida de audición debida a exposiciones al ruido. La pérdida de audición por ruido es un proceso puramente mecánico en el que las ondas de alta presión dañan estructuralmente las células ciliadas de la cóclea. Por otro lado, los ototóxicos causan daños auditivos por diversos mecanismos bioquímicos y metabólicos. Algunos ejemplos de estos mecanismos son la constricción de los vasos sanguíneos que suministran oxígeno al oído interno, la generación excesiva de radicales que destruyen las células ciliadas, la reducción de los niveles de antioxidantes en el oído interno y el envenenamiento del nervio auditivo. El nervio auditivo transforma las vibraciones en impulsos eléctricos que llegan al cerebro. Estas acciones llegan incluso a inutilizar el tensor del tímpano, el músculo que tensa la membrana timpánica para atenuar las presiones sonoras entrantes. Además, existen pruebas de que algunos de estos procesos permanecen presentes en el oído interno durante días tras la exposición inicial y siguen causando daños auditivos incluso después de que cese la exposición a un ototóxico.

Ejemplo de ototóxicos

Las organizaciones mundiales de salud y seguridad en el trabajo clasifican los ototóxicos como (a) confirmados/potenciales, (b) definitivos/sospechosos/cuestionables, o (c) posibles/no concluyentes. Los higienistas laborales deben actuar con cautela, ya que las clasificaciones de los ototóxicos varían de una organización a otra. Una opción para abordar la variabilidad de las clasificaciones es elaborar una lista de ototóxicos y sus clasificaciones específicas para cada empresa.

Entre los productos químicos ototóxicos se incluyen diversos disolventes, como el disulfuro de carbono, el etilbenceno, el estireno, el tolueno, el tricloroetileno y el xileno. Metales como el plomo y el mercurio y al menos un asfixiante, el monóxido de carbono, también se identifican como ototóxicos. El monóxido de carbono puede potenciar la pérdida de audición provocada por una exposición elevada al ruido y al monóxido de carbono.

Entre las organizaciones creíbles que han publicado un listado de ototóxicos y su justificación se encuentran la Agencia Europea para la Seguridad y la Salud en el Trabajo (EU-OSHA), el Instituto de Investigación Robert-Sauvé en Salud y Seguridad Laboral (IRSST, Canadá), el Grupo Nórdico de Expertos para la Documentación de Criterios de Riesgos para la Salud derivados de Productos Químicos, Safe Work Australia y el Instituto Nacional de Seguridad y Salud en el Trabajo (NIOSH, EE.UU.).

En muchos lugares de trabajo, los empleados están potencialmente expuestos a ototóxicos en presencia de altos niveles de ruido. Aunque la investigación es limitada en este ámbito, las pruebas sugieren que existen efectos sinérgicos derivados de la doble exposición al ruido y a sustancias químicas como el tolueno, el estireno y el plomo. También pueden producirse daños auditivos por la exposición a ototóxicos incluso cuando la exposición al ruido está por debajo de los límites de exposición regulados (por ejemplo, 85 dBA).

Medidas de control

Las organizaciones que han investigado y publicado sustancias químicas que se consideran ototóxicas también han promulgado medidas para controlar la pérdida de audición por exposiciones potenciales a ototóxicos. El principio de higiene industrial de la jerarquía de controles también se aplica a los ototóxicos. Una vez identificados los ototóxicos en el lugar de trabajo y cuando la exposición al ruido es probable, una evaluación de riesgos para el ruido también debe incluir la exposición potencial concomitante al ruido y a los ototóxicos.

Entre los ejemplos de medidas de control específicas para la exposición a ototóxicos se incluyen: a) desarrollar e implantar un programa de conservación de la audición para los trabajadores con una exposición a ototóxicos superior al 50 por ciento del límite de exposición ocupacional de un ototóxico, b) exigir exámenes audiométricos periódicos para los trabajadores en los que la exposición por inhalación y dérmica a un ototóxico no esté controlada, y c) incluir las exposiciones ocupacionales y no ocupacionales a ototóxicos (medicamentos ototóxicos) y los efectos potenciales sobre la salud en el programa de comunicación de peligros de la empresa.

Las medidas de control para la exposición potencial al ruido y a los ototóxicos pueden incluir (a) la reducción del límite de exposición ocupacional al ruido de ocho horas unos decibelios por debajo del límite reglamentario (por ejemplo, 80 dBA desde 85 dBA) y/o (b) la reducción del límite de exposición ocupacional para un ototóxico de interés.

Los ototóxicos no siempre provocan pérdida de audición, sino que pueden crear únicamente dificultades para comprender el habla. En consecuencia, puede realizarse una prueba de otoemisiones acústicas de productos de distorsión para determinar la función auditiva global en comparación con la audiometría de conducción aérea de tonos puros utilizada convencionalmente.

En todo el mundo, la exposición ocupacional y no ocupacional al ruido es motivo de preocupación. Los ototóxicos contribuyen potencialmente a los efectos auditivos adversos. La inclusión de los ototóxicos en el programa de evaluación de riesgos del ruido ocupacional y el desarrollo de una estrategia de control de riesgos reducen el riesgo potencial de daños auditivos por ototóxicos y ruido.

Referencias:

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Proceedings of the International Workshop "Synergistic exposure to noise, vibrations and ototoxic substances" (PDF, septiembre de 2010) [Morata, Thais y Johnson, Ann-Christin: Interacciones químicas en el sistema auditivo: implicaciones para la salud laboral