Respiratory Protection Newsletter March 2022

Featured Courses:

Respirator Selection & Change Out Schedules: May 17-18, 2022 (limited space available)
Fit Testing Refresher & Advanced Topics: May 19, 2022

In the this issue:

Paper Bag N95 FFR Storage for SARS-CoV-2

A pre-publication study by Fisher in the *JOEH* supports the 5-day paper bag method for re-use of N95 filtering facepiece respirators (FFRs) for protection against the SARS-CoV-2 virus. Back when N95 FFRs, shortages were prevalent, re-using FFRs for multiple patient encounters was suggested as an alternative to using chemical or physical decontamination methods (hydrogen peroxide, heat, UV light, etc.). This passive method simply required the FFR to be placed into a breathable container, such as a brown paper bag, for a minimum of five (5) days to allow the virus to naturally decay in an ambient environment. The concept was based on the viability of the SARS-CoV-2 virus to survive on a variety of other surfaces (steel, plastic, etc.). In the pre-publication report by Fisher, they confirmed the paper bag method works very well. Studying the effects of temperature and humidity, they also determined that storing used FFRs in areas having higher temperatures and relative humidity can even enhance decontamination.

As part of their investigative study, they also clarified virus survival on other surfaces. They reported:

> Survival time of the SARS-CoV-2 virus is higher in commonly used nutrient-rich cell culture media than it is with saliva. This is important, because when the virus is expelled from the human body it's surrounded by body fluids, not nutrient-rich culture media, and survival time in saliva is shorter.
>
> Previous studies evaluating SARS-CoV-2 survival on surfaces such as steel, plastic, and other surfaces, used high viral titers. These high titers tended to exaggerate virus survival.
>
> In addition, these previous investigations using high viral challenges of SARS-CoV-2 may not be representative of contamination loads experienced in real life, such as health care settings.

The SARS-CoV-2 virus survival is more dependent on material composition, rather than porosity.

The survivability of SARS-CoV-2 is greatly reduced at higher relative humidity. This is consistent with other studies and other corona viruses.

In summary, the brown paper bag method works very well as a decontamination method for the SARS-CoV-2 virus. One last point, just because the FFR may be successfully decontaminated from the SARS-CoV-2 virus, it doesn't mean it's clean. There are a countless number bacteria, viruses, and other pathogens living in our mouth and respiratory system. You can also find small pieces of decomposing food and other particles that get trapped in masks and FFRs when we breathe out, cough, sneeze, eat, or talk.

As far as rotation of facepieces, I used a 7-day, rather than 5-day rotation method, throughout this pandemic. I discarded facepieces as soon as the straps started to show signs of being stretched out. While seal checks were helpful, they were not as sensitive as quantitative fit testing to determine when facepieces reached the end of their useful life.

Canada Releases New Standard for Filtering Facepiece Respirators

In response to the need for filtering facepiece respirators (FFRs) that meet the needs of Canadians, the Canadian Standards Association (CSA) has released its own performance and quality requirements for these respirators. The new Standard is designated as CSA Z94.4.1:21 (Performance of Filtering Respirators) and is available for purchased from the csagroup.org. This new standard will replace Health Canada guidance issued earlier for COVID-19. The new CSA standard will be similar to NIOSH requirements, with additional specifications to address some of the shortcomings identified during COVID-19. Changes to NIOSH requirements is a time-consuming process. The CSA is able to move quickly to address their identified need.

Here are some highlights:

Quantitative Fit Test Capability Testing: Similar in scope to an ASTM requirement, this test will help eliminate poorly fitting respirators from the marketplace. Yea!!!

Shelf Life: Includes a requirement for manufacturers to validate the expected life of the FFR.

Airflow Resistance & Breathability: More options for improving breathability and comfort have been added.

Fluid & Flammability Resistance: This incorporates some of the requirements the U.S. has for surgical and medical use applications.

To purchase the 82 page document or view access (Canadian viewers only): Click Here

FDA No Longer Authorizes Use of Non-NIOSH-Approved Respirators

Apparently, not everyone took notice that the FDA rescinded the use of non-NIOSH-approved disposable respirators. So as a reminder, effective this past July (July 6, 2021) the FDA no longer authorizes use of non-NIOSH-approved disposable respirators (re: Letter to Health Care Personnel and Facilities dated June 30, 2021). This means that as of July 6, 2021 these devices will no longer be authorized for use by health care personnel in health care settings. These actions are in follow-up to the May 27, 2021 letter in which the FDA recommended a transition away from non-NIOSH-approved disposable respirators. Based on the increased domestic supply of respirators approved by NIOSH), this is now consistent with CDC's updated recommendations.

Therefore, if you have a supply of non-NIOSH-approved KN95's from China, use them for other purposes.

To Mask or Not Mask? That is the Question

At various times during the COVID-19 pandemic, public policy required the use of a mask or other barrier facepiece covering when indoors. This recommendation was initially to reduce the amount of potentially infectious airborne virus as a method for source control. Over time, the use of "masks" evolved as something that also provided a level of personal protection. There is certainly data to support both of these claims to some level, but effectiveness in both cases can vary very widely. Unfortunately, governmental agencies have created rules regarding mask usage, which don't take into account potential level of exposure. In some localities, this creates a situation where a mask must be worn whenever two people share indoor space.

Let's explore two scenarios with differences in exposure time, distance and ventilation. In both cases, two (2) people occupy an office having the following dimensions: 10 ft wide, 14 ft long, with an

8 ft high ceiling (1,120 ft^3).

Scenario #1:

The two employees have work stations 4 feet apart and face each other for an entire work day. The room has office ventilation designed to meet government criteria for a "green" building. In other words, it minimizes introduction of outside air and the occupants are not able to alter ventilation settings.

Scenario #2:

The two employees have work stations at opposite ends of the office. They go in and out of the office and rarely occupy the space simultaneously (less than 30 minutes). The ventilation system has been enhanced to increase the number of air changes per hour, upgrade to high efficiency filters, and increase the contribution of fresh, outside air. Furthermore, each work station is provided a portable HEPA air purification unit.

The level of potential viral exposure in scenario #1 is well more than 15 times higher than scenario #2.

The point is:

If an individual believes a "mask" must be worn in scenario #2 for personal protection, then they should also recognize that a "mask" is inadequate for scenario #1 where the exposure is much higher. For the higher exposure, respiratory protection must be used.

If an individual believes a "mask" is appropriate for personal protection for the 1st scenario, then they should also recognize that a "mask" is not necessary in the 2nd scenario, since the exposure is so much lower.

In other words, the belief or regulation for these two spaces should not be the same. Exposure time, distance, ventilation, and other factors must be taken into consideration.

Let me share a personal experience. I recently attended an event at a prestigious University. The event was held in a relatively large conference room with stationary seating. The event lasted slightly more than an hour. At the conclusion of the event, I overheard a small group of faculty discussing face mask policy. To them it was unclear if a mask was required or not, but agreed they were adequately protected because they wore a "mask". Some attendees wore a KN95with ear loops and a small handful wore a N95 Filtering facepiece respirator (FFR).

To be clear, University policy requires wearing a face "mask" whenever 2 people occupy the same space. So if two people occupy this space for 15 minutes, the University requires both people to be masked, even if separated by a large distance.

During the event mentioned above, approximately 50 people were in attendance. Due to the large number of people and stationary seating, physical distancing was not always possible. Mask use was universal, but not always properly worn. The probability of being exposed to the virus is 25 times more likely with 50 people in the room, than just 2.

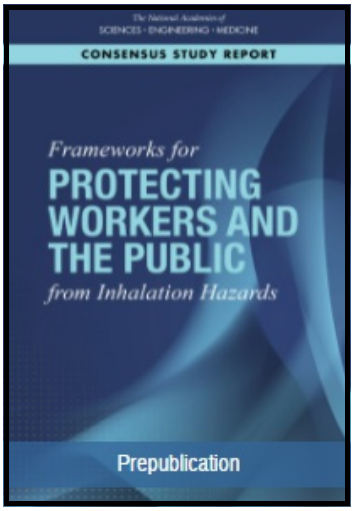
My comment is:

If this group of concerned faculty were satisfied that their "mask" offered an acceptable level of protection during this event, then why do they believe it's needed when just 2 people are present, for a shorter period of time and physically distanced?

If on the other hand, they believe the mask is needed when 2 people are present for a short period of time and physically distanced, then how can they feel adequately protected during the one-plus hour event with 50 people, not maintaining physical distancing?

It's not difficult to get the answer to these and other scenarios. Since the onset of this pandemic, I've argued for a simple tool that could answer these questions. Could such a tool be developed for personal and professional use? YES. Unfortunately, government hasn't adequately addressed when masks are not needed, as we're transitioning back to normal. CDC & NIH hasn't adequately addressed this issue either. Since some have questioned the credibility of their leadership, they may not be the best organizations to address this anyway. The solution is to identify the best experts in respiratory protection, aerosol science, ventilation, mathematics, statistics, pulmonary toxicology, pulmonary physiology, virology, hazard assessment, epidemiology, spreadsheet/app development, and others. Experts should be selected based on their willingness to "get it done", rather than those who believe "it can't be done". This is not an assignment for volunteers, who waste too much time. Experts should be paid for their time and expenses. Given the appropriate leadership, with face-to-face meetings, I believe a product could be completed in 3 days. Test it over 2 weeks, revise it at a 2nd in-person meeting and the final product would be available for download. The necessary information to complete this task is readily available, it just needs to be done.

National Academy of Sciences: Protecting Workers and the Public from Inhalation Hazards



The National Academy of Sciences, Engineering and Medicine just released the following report: Frameworks for Protecting Workers and the Public from Inhalation Hazards.

The report focuses on the unmet need for Respiratory Protection outside of occupational settings characterized by well-defined hazards and employer-employee relationships. The 573-page report recommends federal and state agencies expand programs to protect workers from future airborne pandemic's and other hazards. The framework builds upon an existing programs and recommends expansion of OSHA and NIOSH's roles to protect public health. The document emphasizes that respiratory protective devices do not eliminate risk, rather they reduce risk. This is something the public doesn't always recognize.

Here's a description taken from their website:

Individuals in the United States and Americans abroad are exposed to inhalation hazards from a variety of sources, and these hazards can have both short- and long-term adverse effects on health. For example, exposure to wildfire smoke, which contains particulate matter and toxic chemicals, can lead to respiratory problems, increased risk for heart attacks, and other adverse health outcomes. Individuals also may be exposed to airborne infectious agents through aerosol or droplet transmission, and as demonstrated by the COVID-19 pandemic, the individual and public health consequences of these exposures can be severe. Storms, floods, and hurricanes can increase exposure to moisture-driven hazards, such as mold, and to accidental releases from production facilities or transport vehicles that may result in chemical exposures.

To order a copy at $79 use the citation above or Click Here

National Academies of Sciences, Engineering, and Medicine 2022. Frameworks for Protecting Workers and the Public from Inhalation Hazards. Washington, DC: The National Academies Press. https://doi.org/10.17226/26372

Let's Think About This:

Face Masks in the Food Service Industry

Regardless of your personal position on the use of face masks in workplace settings, I believe we can all agree it's time to change the manner in which face masks are used in restaurants and food service.

Most of us have seen a waiter or waitress wearing a barrier ace covering (often incorrectly), constantly reaching up to re-position the mask or lifting it to talk. Then, transporting glasses and/or silverware with contaminated hands. Worse, is holding plates with food contacting their dirty fingers as they walk from the kitchen to your table. As for me, if they're going to touch my food, I prefer they weren't touching a dirty, contaminated mask.

Even though this is not a respirator issue, let me share a recent experience in a candy store. A customer comes in and orders four (4) pounds of chocolate covered raisins. Due to COVID, the employee is required to wear a procedural mask with ear loops. The nose was **not** covered. The employee wore disposable gloves, but were never changed. There was no scoop to remove the raisins from the display case, so the employee repeatedly reached in with her gloved hand and piled the raisins onto a scale. During the process of transferring raisins from the display case to the scale, the employee frequently reached up to re-position her mask. Once positioned, the process of manually handling raisins continued. Halfway through this process, the employee sneezed. Remember, the mask never covered the nose, so the downward explosion of visible and non-visible liquid aerosols, contaminated the outside surface of the mask. The sneeze also physically moved the mask. This was not a problem, since the employee simply reached up with her hands and re-positioned the mask and the process of transferring chocolate covered raisins continued. The customer paid for her raisins with cash, and the exchange of money was completed, without ever changing gloves. I wonder if the same

mask was worn the following day?

With this in mind, If you administer respirator fit tests, give some thought as to how you handle employee respirators. See, I was able to make this into a respirator training issue.

Note: "Let's Think About This" is intended to provide readers information "outside the box" of traditional thinking. The content may at times be funny, light-hearted, spirited or identify unusual observations. It's tongue and cheek and doesn't necessarily represent the views of Dr. McKay.

Substances Added to List of Human Carcinogens

The U.S. Department of Health and Human Services (HHS) released the 15th Report on Carcinogens on December 21, 2021. The newly released report adds 8 substances to its Report on Carcinogens. The report now lists 256 factors that are known or "reasonably anticipated" to cause cancer in humans. According to the report, approximately 1 out of 3 people living in the United States will develop cancer at some point in their lifetimes. The report includes a useful figure displaying the number of new cancers and death rates for calendar year 2021 in the U.S. For example, lung cancer is the 3rd highest with respect to number of new cases, but highest with respect to deaths. Here's a list of the eight (8) new substances added:

Known to be a human carcinogen:

Helicobacter pylori: chronic infection

Reasonably anticipated to be a human carcinogen:

Antimony trioxide

Six haloacetic acids:

- Bromochloroacetic acid
- Bromodichloroacetic acid
- Chlorodibromoacetic acid
- Dibromoacetic acid
- Dichloroacetic acid
- Tribromoacetic acid

Infection with the **Helicobacter pylori bacterium** is typically contracted from another infected person, but can also occur from drinking contaminated water.

Antimony trioxide is used to produce flame-retardants for plastic and textile-based consumer products. Each year, about 70 million pounds are used to produce flame-retardants. It's found in ceramics, cement, paints, and glass art. Inhaling dust from the "wear and tear" of products treated with flame retardants doesn't usually result in high exposure to antimony trioxide, but manufacturing or working with this chemical compound increases the risk of exposure.

The six (6) **haloacetic acids** (HAAs) are by-products of water disinfection treatments using chlorine-based agents. The report says more than 250 million people in the US are potentially exposed to HAAs in chlorinated drinking water.

To get a copy of the report Click Here

Fit Testing Refresher & Advanced Topics

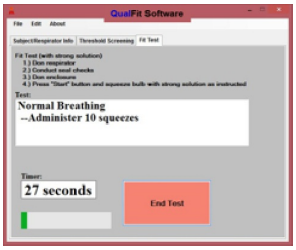
This 1-day course is specifically designed for the person who has been conducting fit testing, but needs a better understanding as to why poorly fitting respirators pass can pass a fit test and why good fitting respirators fail. This class provides an opportunity to discuss advanced topics not covered during a typical 2-day fit testing workshop due to time limitations. This course is also valuable for respirator program administrators who need a better understanding of fit testing procedures and assurance that their fit testing program is being run properly. **This program identifies tricks and omissions some fit test operators' use to allow poorly fitting respirators to pass fit testing (QLFT & QNFT).**

May 19, 2022 in Cincinnati

If one is good, more is better?

An easier, more accurate way to administer respirator fit tests using sweet or bitter fit test methods.

QualFit™ software automates and records qualitative respirator fit testing using Saccharin and/or Bitrex aerosol solutions. The software prompts the operator to deliver the aerosol solution with the correct number of squeezes for each exercise, at the proper time, and in the proper order. This improves fit testing accuracy. The software displays the current exercise in progress, automates the timing sequence and calculates the number of squeezes to be administered, based on threshold screening results. Visual and audible prompts allow the operator to focus their attention on the respirator wearer. The entire procedure becomes less frustrating for the operator and subject being tested. The software tracks each step of the fit testing procedure required in mandatory Appendix A of the OSHA Respirator Standard. **QualFit**™ software improves the quality and efficiency of respirator fit testing. An OSHA compliant report can be printed or electronically saved. The employer benefits by knowing the test procedure was properly administered and provides written documentation for compliance with record keeping requirements specified in paragraph "m" of the OSHA standard. The employee benefits by knowing a standardized procedure was followed, rather than what often appears to be a random procedure.



For Information visit: www.QualFit.net
To place a secure online credit card order visit: https://qualfit-software.square.site/

Respirator Program Administrator Training
Attend at least four days of respirator training from three different training categories and earn a certificate for Respirator Program Administrators.
This program can be given onsite.
For additional information, email us at info@DrMcKay.com

Respirator Selection & Development of Cartridge Change Out Schedules
May 17-18, 2022 in Cincinnati
Go to www.DrMcKay.com for details.

Question:
For protection against the Omicron variant, there has been a push away from using cloth face masks and to using facepieces with better filtration performance. Do you have a simple recommendation to identify what to look for?

Answer:
Here's my suggestion for identifying masks and respirator facepieces having filter media, listed in order of increasing performance:

a) ASTM F3502-21 level 2 for filtration efficiency
b) NIOSH Workplace Performance Mask
c) NIOSH Workplace Performance Plus Mask
d) NIOSH-approved filtering facepiece respirator, such as an N95
e) Any NIOSH-approved particulate filter elastomeric facepiece

Is the Grimace Maneuver Required for Fit Testing?
On more than one occasion this question comes up. The short answer is it depends on the fit test method you choose to use and whether or not you want/need to comply with OSHA. With respect to OSHA requirements, the grimace maneuver is **not** required when using the qualitative fit test methods listed below.

Isoamyl acetate (banana oil)
Sodium saccharin aerosol (sweetener)
Bitrex™ aerosol (bitter agent)
Irritating aerosol (irritant smoke)

Note: **QualFit**™ ensures the correct exercises are conducted.

However, when conducting quantitative fit testing with ambient or generated aerosols using the TSI PortaCount or AccuFIT 9000 fit test systems, OSHA requires the grimace exercise maneuver to be conducted when using standard protocols. It's **not** required if using the "Fast" fit test protocols designed specifically for these two methods.

OSHA News

Two Workers Die Following Exposure to Respiratory Hazards

A January 5, 2022 OSHA News Release described an incident at a chemical company resulting in the deaths of after two workers following exposure to respiratory hazards in the workplace. According to the OSHA News Release, exposure to dangerous toxins at an Alabama chemical manufacturing plant lead to the deaths of two workers and sickened another worker after the employer failed to provide appropriate protective equipment and implement safe work practices during maintenance activities on chemical processing equipment.

Investigators determined the three chemical operators were exposed to toxic fluorocarbon and other hazardous chemicals resulting in respiratory failure. One worker spent nearly a week in a local hospital for respiratory failure treatment before returning home. The other two employees were treated for respiratory failure at local hospitals, but later died.

The News Release reported: "The exposure occurred while the workers were conducting maintenance activities requiring a processing line break, a nitrogen purge, and atmospheric venting of equipment, resulting in the release of toxic fluorocarbons and other hazardous chemicals.". The investigation revealed that the company failed to institute critical safe work practices required under OSHA's Process Safety Management standard and ensure workers used appropriate respiratory protection and personal protective equipment. The employer also failed to perform air monitoring to assess chemical exposures, provide written procedures that clearly identify the required level of respiratory protection, and communicate to workers the hazards associated with the chemicals.

OSHA cited the chemical company for nine serious and one willful violation and faces $232,103 in proposed penalties. For a copy of the OSHA News Release Click Here

Spirometry Refresher:

May 12, 2022

Interpretation of Spirometry: Beyond the Numbers
September 21, 2022

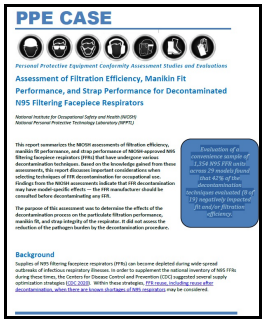
Go to www.DrMcKay.com for details.

NIOSH News

Announcements from NIOSH

NPPTL Report Number P2021-0101
Assessment of Filtration Efficiency, Manikin Fit Performance, and Strap Performance for Decontaminated N95 Filtering Facepiece Respirators

This report summarizes the NIOSH assessments of filtration efficiency, manikin fit performance, and strap performance of NIOSH-approved N95 filtering facepiece respirators (FFRs) that have undergone various **decontamination** techniques.


PPE CASE

Personal Protective Equipment Conformity Assessment Studies and Evaluations

Assessment of Filtration Efficiency, Manikin Fit Performance, and Strap Performance for Decontaminated N95 Filtering Facepiece Respirators

National Institute for Occupational Safety and Health (NIOSH)
National Personal Protective Technology Laboratory (NPPTL)

Evaluation of a convenience sample of 1,354 N95 FFR units across 29 models found that 42% of the decontamination techniques evaluated (8 of 19) negatively impacted fit and/or filtration efficiency.

Background

Results from this evaluation are mixed. Evaluation of a convenience sample representing of 1,354 N95 FFR units across 29 models found that 42% of the decontamination techniques negatively impacted fit and/or filtration efficiency. Some FFR decontamination techniques did **not** substantially impact filtration efficiency, manikin fit factor, or strap integrity while other techniques had a negative impact. FFR decontamination may be model and/or lot specific. Some decontamination techniques had a negative outcome on all tested FFRs, while some had a negative impact on just some. The bottom line is that NIOSH recommends the FFR manufacturer should be consulted before decontaminating any FFR facepiece.

To read the full 25 page report Click Here

More NIOSH News continues on the next page.

Report on Fit and Strap Extension Performance of Stockpiled FFRs

In another report released by NIOSH, they evaluated stockpiled N95 FFRs from one of these ten facilities to determine if long-term storage (9-13 years) affected fit or strap performance. Using human subjects, quantitative fit testing identified product- and lot-specific differences between the control and stockpiled respirators. Substantial differences were detected for some products. Clearly some stockpiled respirators had similar performance as controls. However, inspection of the data clearly shows some make & models did not fit as well as their controls.

To read this 24 page report Click here

Construction Toolbox Talk - Respiratory Protection

During the middle of December 2021, NIOSH and the CPWR released a new fact sheet to help construction workers understand when respiratory protection is needed to protect themselves in the workplace. A December 14, 2021 news release says the *Construction Toolbox Talk* describes how to select, use, and maintain NIOSH-approved respirators to promote proper respiratory protection practices and limit the number of construction workers exposed to unsafe airborne contaminants.

To obtain a copy, go to the cdc.gov/niosh website and conduct a search for DHHS (NIOSH) Publication No. 2022-102. Or, Click Here

Note: The December 2021 publication has a 2022 publication number. I wonder if they change dates on checks too. Sorry, I just can't help myself.

ALG Health Voluntarily Rescinds All Respirator Approvals

On January 11, 2022 NIOSH announced a request by ALG Health to voluntarily rescind all NIOSH respirator approvals issued to ALG Health. Effective Jan 6, 2022, any respirator marked with a NIOSH approval label with any of the approval numbers below is no longer NIOSH-approved, nor will they be listed on the NIOSH Certified Equipment List.

TC-84A-9259, TC-84A -9262, TC-84A-9270, TC-84A-9271, TC-84A-9273, TC-84A-9274, TC-84A-9275, TC-84A-9280, TC-84A-9281, TC-84A-9282, TC- 84A-9288, TC-84A-9290, and TC-84A-9292

When a respirator is voluntarily removed from the NIOSH approved list it can may no longer be manufactured, assembled, sold, or distributed in the U.S. or used for respiratory protection when required to be worn. To view details of the NIOSH notice, Click Here

To read the Conformity Assessment announcement (CA 2022-1042), Click Here

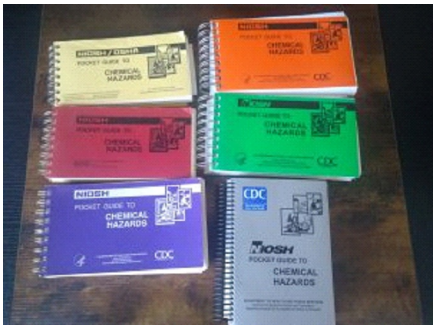


Photo Source: NIOSH Blog, Jan 21, 2022

Revised NIOSH Pocket Guide to Chemical Hazards

In a January 21, 2022 NIOSH blog by Julie Tisdale-Pardi, MA, and Debbie Hornback, MS,.they announced a revised 7th edition of the NIOSH Pocket Guide to Chemical Hazards will be released later this year. I routinely rely on this guide for my work and classes on respiratory protection. The first pocket guide was released in 1978. The 6th version is currently in use. Each version has a different colored cover, and users of the guide frequently refer to the color of the cover. At this time the color for the7th edition has not been announced, but I'm guessing it will be blue. According to the blog, the Pocket Guide is the most popular NIOSH document produced to date. It provides a concise summary for

over 677 chemicals or substance groupings found in workplaces, such as exposure limits, IDLH values, and information on respiratory protection. When details become available, I'll share this information with my readers.

NIOSH Conformity Assessment Notices
NIOSH posted two Conformity Assessment Letters to Manufacturers with new information on the prioritization of approval applications and the use of NIOSH marks.

NIOSH CA 2022-1040

NIOSH provides new guidance about the prioritization of approval applications. NIOSH will continue to prioritize applications for particulate filtering air-purifying respirators (full and half facepiece), including filtering facepiece respirators (FFRs), Surgical N95 FFRs, and powered air-purifying respirators produced in the United States, with preference to domestic approval holders and new domestic applicants. **This prioritization does not include private-label requests.**

This notice supersedes NIOSH CA 2021-1032. For more information, including the order in which NIOSH will prioritize applications, view the NIOSH Conformity Assessment Letter to Manufacturers (CA 2022-1040).

NIOSH CA 2022-1041

NIOSH updated the fraud and fraudulent statements information to inform NIOSH approval holders that the marks N95, N99, N100, P95, P100, the NIOSH logo, and the term "NIOSH-approved" have been recorded with the U.S. Patent and Trademark Office as certification marks. NIOSH, as the certifying federal entity for the Respirator Approval Program, owns the certification marks meaning that NIOSH controls who can use the marks. Accordingly, NIOSH allows approval holders to use these certification marks only if their respirators meet NIOSH's regulatory standards set forth 42 C.F.R. Part 84.

Any misuse of the certification marks on products released to the market, *including respirators that have failed to satisfy NIOSH's regulatory requirements or have not received NIOSH approval*, is a direct violation of applicable trademark law and NIOSH may pursue action as necessary.

This notice supersedes NIOSH CA 2021-1032. For more information, view the NIOSH Conformity Assessment Letter to Manufacturers (CA 2022-1041).

NIOSH Ownership of Respirator Certification Marks

NIOSH-approved®

Someone at NIOSH finally recognized the value of running their organization like a business and has successfully recorded the NIOSH stylized logo with and without text, as well as the certification marks N95, N99, N100, P95, P100, and the term "NIOSH-approved" with the U.S. Patent and Trademark Office (USPTO). NIOSH, as the certifying federal entity for the N95 Respirator Approval Program, owns these certification marks, meaning that NIOSH controls who can use these marks. Good news is NIOSH will allow manufacturers to use these certification marks, but only if they become NIOSH-approval holders. To achieve this, manufacturers will need their products to satisfy NIOSH's regulatory standards set forth in 42 C.F.R. Part 84. These marks are now registered with the USPTO as federal registrations, as well as in various foreign countries, and are subject to additional protections under U.S. and foreign trademark laws. Any misuse of these marks, such as respirators that have failed to receive NIOSH approval, is a direct violation of applicable trademark laws and NIOSH may pursue action as necessary.

To get a copy, Click Here

ISRP News

ISRP International Conference
The ISRP is holding its 20th international conference May 10 - 12, 2022. The conference will be preceded with a professional development session, the day before (May 9th). This will be the first time the international conference will be held as a virtual event. Held once every two years, the ISRP Conference 2022 serves as a global forum for the exchange of knowledge related to the science, technology, regulation, development, and practice of respiratory protection.

The deadline to submit abstracts is February 28,2022.

To register, go to: https://isrp2022.vfairs.com/

For any general enquiries, contact:
isrp2022@isrp.com
For any questions related to program content:
isrp2022.technical@isrp.com

Respirator Use for Asbestos Work
Notice from Washington State Department of Labor & Industries
Stakeholder Meeting: Request for Input
March 16, 2022 – 9 AM to 12 PM

The following information was taken directly from Washington State Department of Labor & Industries email received on 2/28/22. Since this is a respirator selection issue, I felt it might be helpful to pass along not only the opportunity to participate, but think about the role of the respirator.

There are supply issues with a specific type of respirator used in asbestos abatement work. We are requesting feedback from asbestos abatement workers, asbestos abatement contractors, consultants, asbestos training providers, and others on possible replacements for pressure-demand supplied-air respirators with HEPA (high-efficiency particulate air) egress cartridges. These respirators are used in most Class I asbestos work. The Division of Occupational Safety & Health (DOSH) of the Washington State Department of Labor and Industries (L&I) is holding a meeting to seek input from asbestos abatement workers, contractors, and training providers about a safe and practical alternative to using this type of respirator.

Summary of Respirator Use:

Class I asbestos abatement work allows for the use of continuous flow supplied-air respirators when sampling indicates the concentration of asbestos fibers is not going to exceed 10 fibers per cubic centimeter. Supplied air respirators with HEPA egress cartridge or the use of an auxiliary self-contained breathing apparatus' (SCBAs) must be used when there is no sampling, or if sampling indicates asbestos fiber concentrations to be over 10 fibers per cubic centimeter. L&I is seeking input on options to resolve the supply issue with pressure-demand supplied-air respirators with HEPA egress cartridge matter safely and feasibly.

Intent of this Stakeholder Meeting:
This stakeholder meeting is an opportunity to provide input. L&I is not conducting rulemaking on this matter at this time. However, L&I may release an enforcement directive that may influence what is required of asbestos contractors performing Class I work.

Stakeholder Meeting – Agenda:
1. Background and Timeline
2. Presentation from Chris Pyke, Asbestos Program Supervisor, including sharing of survey data
3. Discuss questions posed to stakeholders
4. Additional Stakeholder Feedback

Questions for Stakeholder Consideration and Discussion at the Stakeholder Meeting:

What frequency are projects occurring involving extreme high asbestos fiber exposure (>10 fibers/cc)? What materials are associated with these exposures?

Are there specific materials reliably found to have no more than moderate exposure such as popcorn ceilings, flood cuts, wall texture, fire proofing, and so forth?

What data has been collected to show consistent moderate or low exposure associated with specific common projects?

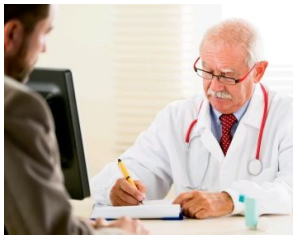
What respiratory protection can be used reliably and effectively for protection of workers?

Supplied-Air Respirators in Class I Asbestos Work Overview:

The agency recognizes the hazard of asbestos to workers in the asbestos abatement sector. Exposure to asbestos can lead to developing asbestosis, mesothelioma, and lung cancer. Since the 1980s, L&I has had regulations in place to control worker exposure to asbestos. These regulations require that if thermal systems insulation (TSI) and surfacing materials that contain asbestos are to be removed, the contractor abating them must adhere to controls for Class I removal. Since the 1980s, L&I has required the use of supplied-air respirators for Class I removal of surfacing materials inside a negative pressure enclosure. This requirement was established under Washington State rules before asbestos abatement was addressed by national rules and has been retained in the Washington rules based on stakeholder input as L&I adopted rules at least as effective as the national rules.

Contact Tari Enos or David Gaw with any process or meeting questions.
Please contact Chris Pyke with any technical questions about this topic.

Medical Complications from Respirator Use



OSHA requires respirator medical clearance for persons required to wear respiratory protection. Researchers at the University of Cincinnati are collecting information on persons who:

1) Developed a medical complication while wearing a respirator, and
2) Identify pre-existing medical conditions causally related to the complication that developed.

If you have information (published or un-published) that establishes a link between a specific medical condition and a complication that developed as a result from wearing a respirator or during fit testing, please share this information with us. We're particularly interested in cases where a medical complication was induced by respirator use. Information such as the specific type of respirator worn, work environment, duration of use, level of physical exertion, underlying medical conditions that contributed to the complication, etc., is needed. You can send this information to: info@DrMcKay.com

Share Your Respirator Experience

Here's an opportunity to contribute your knowledge and experience to others. If you have an interesting respirator selection or other challenging respirator problem (and solution), please submit it to info@DrMcKay.com. I may use your real-life problem to help train students in our graduate and continuing education programs in respiratory protection. This transfer of information will benefit others, maybe even your children or grandchildren.

Wanted: Damaged Fit Test Adapters

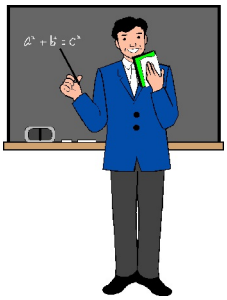
Rather than throwing away damaged fit test adapters, consider donating them to our fit testing workshops. We strive to make our fit testing workshops as realistic as possible. Incorporating damaged along with good fit testing adapters can provide a valuable training experience. If you wish to send a damaged fit test adapter or a damaged facepiece with unusual or difficult to find leakage for our respirator inspection workshops, send us an email at info@DrMcKay.com and we'll provide shipping information.

Undamaged fit test adapters are also needed. On average, we lose one (1) fit test adapter every workshop due to wear and tear, poor adapter design, and other causes.

Wanted: Photos & Videos of Improper Fit Testing

Far too often respirator fit testing is conducted incorrectly. If you have a good photo or video, send it to us at info@DrMcKay.com. I might incorporate it into a future fit testing workshop or newsletter.

Respirator Training Courses:



Dr. McKay and the University of Cincinnati is pleased to announce the following programs on Respiratory Protection and Fit Testing to your staff. They are:

Overview of Respiratory Protection:
http://www.drmckay.com/rtc-overview.shtml
April 19, 2022 **(course full)**
October 18, 2022

Fit Testing Workshop (2-day):
http://www.drmckay.com/rtc-workshop.shtml
April 20-21, 2022 **(course full)**
October 19-20, 2022

Respirator Selection & Cartridge Change Out Schedule Workshop.
http://www.drmckay.com/rtc-resp_selection.shtml
May 17-18, 2022

Fit Testing Refresher & Advanced Topics
http://www.drmckay.com/rtc-resp-refresher-advanced.shtml
May 19, 2022

All courses are held in Cincinnati, unless noted otherwise. On-site training is available.

Respirator Selection & Change Out Schedules

This workshop provides guidance on respirator selection and the development of OSHA compliant change out schedules for respirator cartridges. A combination of lecture with practice problem sessions is used. The course is designed to teach students how to select a respirator based on workplace conditions (exposure level, type of contaminant, length of time to be worn, etc.). The selection process goes beyond the typical recommendation to "use a NIOSH approved air purifying respirator". Students will learn how to select a specific respirator as well as a specific filter/cartridge (when appropriate). More than a dozen guidelines for development of an OSHA compliant cartridge change out policy will also be taught, including common computer models and how to use them.

Partial Listing of Topics

Respirator Selection

* Review of facepiece definitions and modes of operation.
* Practical and theoretical basis for respirator selection based upon:
  Assigned Protection Factors (APF)
  - MUC's, HR's, IDLH, etc.
* OSHA guidelines for respirator selection.
  - IDLH and non-IDLH atmospheres.
* Selection steps and information gathering procedures.
* Minimum respiratory protection versus practical alternatives.
* Filter selection issues
  - How to select an N, R, or P filter.
  - Why filter selection is influenced by exposures below the exposure limit.
  - How to choose a 95 versus 100 filter.
* Practical methods for handling unknown concentrations without defaulting to an SCBA.
* Calculating MUC's for mixtures.
* Saturated Vapor Concentrations (SVC's) and selection concerns.
* When a particulate filter may be needed for organic solvents.
* Equilibrium Vapor Concentrations.
* Selection Workshop
  - Practical problems and solutions.

Development of Cartridge Change Out Schedules

* OSHA recommendations for a change out policy.
* Factors that affect cartridge service life.
* Learn how to develop an OSHA compliant change out schedule.
* Understanding the breakthrough curve.
* Common methods used to define breakthrough.
* What level of breakthrough should be used?
* Work rate tables.
* Effect of high relative humidity.
* Methods for determining service life (use, limitations, and practice problems)
  - OSHA recommendations
  - Rules of thumb
  - Using laboratory data
  - Using math models
  - Using computer (software) models
  - Cartridge testing methods (3 methods) Combining methods
* Learn how to develop a change schedule when computer models are not available.
* Recommendations for mixtures:
  - OSHA compliance method
  - mole fraction method
  - multi vapor model
* How to confirm your change-out schedule.
* Storage and migration concerns.
* Immediate Breakthrough Upon Reuse (IBUR) concepts

Gain confidence your current procedures are correct! Former students have found this information to be extremely valuable.

Fit Testing Workshop:

This two (2) day workshop provides comprehensive lecture and "hands-on" training for students who need to learn how to conduct an OSHA accepted qualitative or quantitative respirator fit test. Students will have an opportunity to fit test a variety of different style facepieces, including filtering facepieces, half, & full. A combination of lecture and "hands-on" testing in the presence of a trained and experienced instructors will be used to help participants learn how to conduct respirator fit testing to satisfy regulatory requirements. Hands-on fit testing will include qualitative and quantitative methods. The following types of fit testing equipment will be available: Saccharin (sweetener) and Bitrex (bitter) qualitative fit test kits using squeeze-bulb nebulizers, including **QualFit**™ software. Quantitative fit testing with the TSI PortaCount, AccuFIT 9000, and the OHD QuantiFit©. Class size will be limited to ensure a favorable faculty to student ratio. Students will learn how to set-up, operate, maintain, troubleshoot, analyze, and interpret fit test results. Where appropriate, students will learn how to calibrate testing equipment and record results. All course materials, supplies, equipment, and reference manuals will be provided.

Students will also disassemble, reassemble, and inspect respirators for common problems. The workbook alone is a valuable reference for solving fit testing problems in the future.

This course uses a combination of lecture and small practicum groups to ensure students have ample time

to practice and learn fit testing techniques. The second day provides students sufficient time to concentrate on the particular methods of interest to them. The "Hands-On" approach is emphasized in this course. Students will have the opportunity to fit test several different make and model respirators. The fit testing workshop provides an opportunity to see and experience many different types of commonly used fit testing methods (qualitative and quantitative).

Individuals who plan to attend the fit testing workshop, but have little or no experience with respiratory protection should take our 1-day "Overview" class, routinely offered before the fit testing workshop. A substantial discount is given when both courses are taken.

Dr. McKay is the past chair of the ANSI Z88.10 Respirator Fit Testing sub-committee, a voting member of the full ANSI Z88 Respiratory Protection Committee, the AIHA Respiratory Protection Committee, and others.

Fit Testing Refresher & Advanced Topics:
This 1-day course is specifically designed for the person who has been conducting fit tests, but has not had formal training or needs a review. This course reviews OSHA fit testing requirements and helps the operator understand **why poorly fitting respirators pass fit testing and why good fitting respirators fail**. It also provides an opportunity to discuss advanced topics not covered during a typical 2-day fit testing workshop due to time limitations. This course is also valuable for respirator program administrators who need a better understanding of fit testing procedures and assurance that their fit testing program is being run properly. The emphasis of this course is on quantitative fit testing, although many of the concepts are applicable to all fit test methods.

Partial Listing of Topics
Review of fit test procedures
- Facial hair: issues & solutions
- Selection process
- Comfort assessment
- Interference with PPE

Establishing pass/fail criteria
Interpretation of fit test results
Why user seal checks fail to detect leakage
Why user seal checks create leaks not present
Proper use of fit test adapters
Selecting sample probe location
Why leaking respirators pass fit testing
Why good fitting respirators fail fit testing
What does a high fit factor really mean?
Wear time & non wear time issues
- Understanding fit factor vs protection
- When is quantitative fit testing required?
- Opportunity to get answers to your questions

This course can also be given on-site.

Overview of Respiratory Protection:
This one day course provides a practical overview of respirators, standards, guidelines, use, and limitations of commonly used air purifying respirators. This class also provides an excellent overview of the OSHA Respirator Standard. Little or no prior formal training is required. The morning session includes lectures on the types and use of respirators and basic respirator selection procedures using APFs and MUCs. The advantages and disadvantages of different respirator facepieces, filters (N, R, & P), cartridges, PAPR's, and the physiologic effects of wearing a respirator will also be discussed. Respirator standards and program requirements will be reviewed to help the student comply with OSHA regulations. Discussion of qualitative and quantitative fit testing, user seal checks, worker training, and respirator medical clearance requirements will be provided. This course is essential for those individuals who oversee respirator users in their work place or new to respiratory protection.

Respirator Training at Your Location:
A variety of respirator training programs are available on-site. Courses available include:
* Fit Testing Refresher & Advanced Topics
* How to Develop a Cartridge Change Out Schedule (1 day)
* Respirator Selection (1 to 1.5 days)
* Fit Testing for Health Care Professionals (1 day)
* Basics of a Respiratory Protection Program (2 days)
* Overview of Respiratory Protection (1 day)
* Respirator Fit Testing: Quantitative (1 or 2 days)
* Respirator Fit Testing: Qualitative (1day)
* Fit Testing at your workplace. Not a course, but a hands-on program with your staff and equipment.

Respirator Training Videos are on the next page.

For information about **QualFit™** Software for qualitative respirator fit testing with sweet and/or bitter agents, go to www.QualFit.net

What is **QualFit™** software?
12 minutes
https://youtu.be/RwdMfrQXdTY

Basic Operation of **QualFit™** Software:
18 minutes
https://youtu.be/vfwfuVOkAKw

Comprehensive Fit Test Training Video
54 minutes
https://youtu.be/FxpVsm3OhLY

Respirator Fit Testing Errors and Solutions - 21 minutes
https://youtu.be/0RsQEeOcS7o

New Video

QualFit™ Full Screen Option - new video (5 minutes)
https://youtu.be/RJr-IIKTLas

The new full screen exercise option makes it easier for the test operator to visualize the exercise testing screens during the test procedure, even when standing 8 or more feet away. In addition, audio beeps and changes in font color help to ensure the aerosol is delivered at the proper time and sequence as required by OSHA, ANSI, ASTM, ISO and other organizations.

I hope you enjoy this newsletter. Dr. McKay volunteers his time to many standard setting organizations and governmental agencies. Dr. McKay does not receive public or private funding for these services. Therefore, donations are appreciated and help this practice to continue. The opinions in this newsletter are Dr. McKay's and not the University of Cincinnati.
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Roy McKay, Ph.D.
University of Cincinnati
www.DrMcKay.com

Dr. McKay has approximately 40 years of national and international experience in all areas of respiratory protection including **research, teaching, clinical practice, peer reviewed publications, and consultation** as a faculty member at the University of Cincinnati. Dr. McKay is past chair of ANSI/AIHA Z88.10 (now ASTM), the committee responsible for "*Respirator Fit Test Methods*" and a member of ANSI/ASSE Z88.2-2015, which published the "*American National Standard - Practices for Respiratory Protection*". Respirator committee assignments also include the American Industrial Hygiene Association's Respiratory Protection committee. He has conducted respirator fit testing, training, and consultation services for governmental agencies, including OSHA, NIOSH, NPPTL, CDC, private industry, and respirator manufacturers. He's developed more than a dozen different continuing education courses on respiratory protection, which include fit testing, respirator selection, cartridge change out, program administration, filter penetration, protection factors, and other topics.