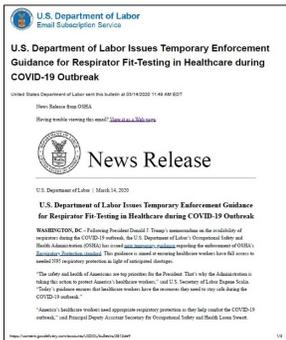


Respiratory Protection Newsletter March 2020

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Featured Courses:	Respirator Overview & Fit Testing Workshop:	April 21-23, 2020
	Fit Testing Refresher & Advanced Topics:	April 28, 2020
	Respirator Selection & Change Out Schedules	April 29-30, 2020

Temporary Enforcement Guidance for Respirator Fit Testing in Healthcare



Effective March 14, 2020. Following President Trump’s memorandum on the availability of respirators during the COVID-19 outbreak, the U.S. Department of Labor’s Occupational Safety and Health Administration (OSHA) has issued new temporary guidance regarding the enforcement of OSHA’s **Respiratory Protection standard**. This guidance is aimed at ensuring healthcare workers have full access to needed N95 respiratory protection in light of anticipated shortages.

This temporary enforcement guidance recommends that healthcare employers change from a quantitative fit testing method to a qualitative testing method to preserve integrity of N95 respirators. Additionally, OSHA field offices have the discretion to not cite an employer for violations of the annual fit testing requirement **as long as employers:**

- Make a good faith effort to comply with the respiratory protection standard;
- Use only NIOSH-certified respirators;
- Implement strategies recommended by OSHA and CDC for optimizing & prioritizing N95 respirators;
- Perform initial fit tests for each healthcare employee with the same model, style, and size respirator that the employee will be required to wear for protection from coronavirus;

Continued on page 2, column 1

A better way to administer qualitative 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. 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/>

Global Equivalents to N95 FFRs

During global emergencies, such as COVID-19, respirator shortages can occur. In these situations, governmental agencies may make exceptions and permit “equivalent” respirators to be used in an attempt to mitigate expected shortages. With respect to N95 filtering facepiece respirators (N95 FFRs), the following respirators from other countries around the world are essentially equivalent:

Continued on page 2, column 2

from page 1, column 1:

- Tell employees that the employer is temporarily suspending the annual fit testing of N95 respirators to preserve the supply for use in situations where they are required to be worn;
- Explain to employees the importance of conducting a fit check after putting on the respirator to make sure they are getting an adequate seal;
- Conduct a fit test if they observe visual changes in an employee's physical condition that could affect respirator fit; and
- Remind employees to notify management if the integrity or fit of their N95 respirator is compromised.

To help maintain supply of respiratory protective devices, this temporary order also recommends that healthcare personnel who provide direct care to patients with known or suspected coronavirus can use with other respirators that provide equal or higher protection, such as N99 or N100 filtering facepieces, reusable elastomeric respirators with appropriate filters or cartridges, or powered air purifying respirators. With respect to fit testing elastomeric facepieces which include removable/replacement filters, quantitative fit testing can be used. This is because these respirators don't require destructive probing.

The temporary enforcement guidance is in effect beginning March 14, 2020, and will remain in effect until further notice. To read the entire Temporary Enforcement Guidance copy and paste this URL: <https://content.govdelivery.com/accounts/USDOL/bulletins/2812de9>
Or [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 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).

Next course date is April 28, 2020

from page 1, column 2

Equivalent respirators are:

FFP2	European standard
P2	Australia/New Zealand
KN95	China
DS	Japan

Test procedures in other countries generally use the same test aerosol (Sodium chloride) alone or with paraffin oil. However, challenge flow rates and subsequent inhalation and exhalation resistance's may differ. Yet despite differences in test procedures, all of the above respirator classifications are essentially similar to U.S. testing requirements for N95 FFRs.

COVID-19 & SARS-CoV-2

What's the Difference, if Any?

Viruses, and the diseases they cause, often have different names. One name is used to identify the disease itself, the other identifies the virus. For example, people often know the name of a disease, such as German measles, but not the name of the virus that causes it (rubella). Viruses are named based on their genetic structure by the International Committee on Taxonomy of Viruses (ICTV). This allows scientists to facilitate the development of diagnostic tests, vaccines and medical treatment approaches. Once appropriately named, this allows discussion on disease prevention, spread, transmissibility, severity and medical treatment.

The ICTV announced "severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)" as the name of the new **virus** on 11 February 2020. This name was chosen because the virus is genetically related to the coronavirus responsible for the SARS outbreak of 2003. While related, the two viruses are different. The WHO announced "COVID-19" as the name of this new **disease** on 11 February 2020, following guidelines previously developed with the World Organization for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO).

Unfortunately, or fortunately, depending upon your perspective, the WHO has decided from a risk communications perspective, that using the name SARS for the virus can have unintended consequences in terms of creating unnecessary fear for some populations. In particular, they're concerned that using the name of the virus SARS-CoV-2, especially in Asia which was affected by the SARS outbreak in 2003, would create

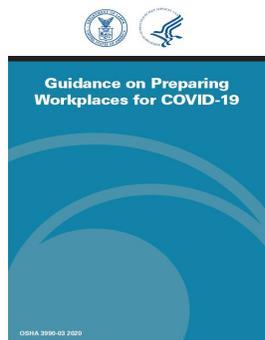
unnecessary fear. For that reason and others, WHO has begun referring to the virus as “the virus responsible for COVID-19” or “the COVID-19 virus” when communicating with the public. However, neither of these designations are intended as replacements for the official name of the virus as agreed by the ICTV.

Here’s the bottom line:

Disease is: coronavirus disease (COVID-19)

Virus is: severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)

Respirator Selection & Development of Cartridge Change Out Schedules
April 29-30, 2020 in Cincinnati
Go to www.DrMcKay.com for details.



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OSHA Issues Guidance on Preparing Workplaces for COVID-19

On March 9, OSHA issued a document entitled "Guidance on Preparing Workplaces for COVID-19" (PDF). The document addresses safe work practices and appropriate use of PPE, based on the risk of exposure to COVID-19.

The OSHA document divides workers into four risk categories based on the likelihood that they will be exposed to SARS-CoV-2 through their work: very high risk, high risk, medium risk, and lower risk. Here’s a brief description of these risk categories:

Very high exposure risk jobs have high potential to be exposed to known or suspected sources of the virus through specific procedures involving airborne droplets produced by known or suspected COVID-19 patients. This category includes healthcare workers such as doctors, nurses, and dentists performing aerosol-generating procedures, such as cough induction procedures and dental exams on known or suspected patients; healthcare or lab workers collecting or handling specimens from known or suspected patients; and morgue workers performing autopsies on the bodies of people who are known or suspected to have had COVID-19 at the time of their death.

High exposure risk jobs are those which involve close contact with known or suspected COVID-19 patients. These include healthcare delivery and support staff, such as doctors and nurses; medical transport workers, such as ambulance drivers; and mortuary workers involved with preparing the bodies of people known or suspected of having COVID-19 at the time of their death.

Jobs categorized as **high or very high** exposure risk should adopt engineering controls such as isolating patients if possible; administrative controls such as requesting patients and family members to immediately report symptoms of respiratory illness following their arrival at a facility; following safe work practices; and using PPE such as face masks and respirators.

Medium exposure risk jobs involve frequent or close contact with people who **may** be infected with the virus causing COVID-19 but are not known or suspected patients. OSHA recommends that employers and workers in this category provide face masks to ill workers and separate them from healthy workers until they can leave the workplace, among other engineering and administrative controls.

Low exposure risk jobs are those that do not require contact with known COVID-19 patients, suspected patients, or the general public.

To understand these risk categories, go to the source: [OSHA Publication 3990](https://www.osha.gov/Publications/OSHA3990)
Or copy and paste this URL:
<https://www.osha.gov/Publications/OSHA3990.pdf>



History Repeats Itself Lessons Not Learned from SARS in 2003

The current situation with coronavirus reminds me of the SARS outbreak in Toronto, Canada back in 2003. Based on my email and news reports, many of the same questions are coming up. So I thought I'd share some of the findings from that 2003 corona virus outbreak.

In response to the SARS outbreak, the government of Canada put together an expert panel to investigate what went right and what went wrong. The 5 volume report was published in December 2006.

Here are some things to think about.

375 people in Ontario contracted SARS
44 died

The largest group of victims was health care workers. With respect to health care workers, 169 became infected, and 3 died (2 nurses, 1 physician).

In the wake of SARS many questions were specifically addressed in the 2006 Report.

They are:

- Why does SARS matter today?
- How bad was SARS?
- What went right?
- What went wrong?
- Were precautions relaxed too soon?
- Who is there to blame?
- Was information withheld?
- Did politics intrude?
- Was SARS I preventable?
- Was SARS II preventable?
- Were health workers adequately protected?
- Are we safer now?
- What must be done?

Does this sound familiar?

SARS was a vicious disease causing “untold suffering to its victims and their families, forced thousands into

quarantine, brought the health system in the Greater Toronto Area and other parts of the province to its knees and seriously impacted health systems in other parts of the country.”. Does this sound familiar?

On page 4 of the report it says:

“We should care about SARS because it was a wake-up call and it holds the lessons we must learn to protect ourselves against future similar outbreaks and against the global influenza pandemic predicted by so many scientists.”.

One of the most contentious issues during SARS was the N95 respirator. To ensure an acceptable level of protection, since 1993, Ontario law required anyone using an N95 filtering facepiece respirator (FFR) to be properly trained and fit tested. However, few hospitals complied with this law and some even denied its existence. Fit testing became a lightning rod for all the underlying problems of worker safety in hospitals.

The report says:

“Part of the heated debate during the SARS outbreak was over whether N95 respirators were really necessary. Those who argued against the N95, which protects against airborne transmission, believed SARS was spread mostly by large droplets. As a result, they said, an N95 was unnecessary except in certain circumstances and a surgical mask was sufficient in most instances. They made this argument even though knowledge about SARS and about airborne transmission was still evolving.”.

Fit Testing Tip

Improper performance of the grimace maneuver could lead to rejecting a properly fitting respirator. Therefore, I decided to reprint the following information from my February 2018 Respiratory Protection Newsletter. This may assist fit test operators who may not have seen my past issue.

The Grimace Exercise and Respirator Fit Testing

My previous issue discussed variability in how the “bending” exercise is conducted and my recommendations for improving this exercise. For this issue, we’ll explore the “grimace” exercise, which is often administered with little instruction to the person being fit tested. Observe enough fit test operators and you’ll be amazed how differently this exercise is performed.

During the grimace exercise, the face-to-facepiece seal may be broken. Therefore, one purpose of the grimace exercise is to determine if the face-to-facepiece seal returns to an acceptable level on the

subsequent exercise (bending) or does it continue to leak. In the great majority of cases, leakage during the grimace exercise is excluded from the calculation of the overall fit factor.



The OSHA Respirator Standard 1910.134 provides descriptions for fit testing exercises in mandatory Appendix A. Some exercise are well described and easily understood by those that read them. However, the “Bending over” and Grimace” exercise lacks sufficient detail for all readers to interpret in the same way.

Here what OSHA says regarding the grimace exercise:

“(6) **Grimace.** The test subject shall grimace by smiling or frowning. (This applies only to QNFT testing; it is not performed for QLFT).”

OSHA **doesn’t** define or specify how the grimace maneuver should be conducted. On some respirator models, if I aggressively smile and frown, I can pop my chin out of the chin cup. Is this too aggressive? Alternatively, I can be so passive that the facepiece seal isn’t challenged. A little guidance would be helpful. Without specific instructions, the wearer is left to their imagination as to how this exercise is performed.

How does ANSI Z88.10-2010 define the grimace exercise? With respect to instructions for the respirator wearer, it’s essentially the same as OSHA. ANSI Z88.10-2010 says:

“This elective exercise is used for QNFT only. The person shall grimace for approximately 15 seconds followed by the normal breathing exercise. The grimace is an attempt to break the seal of the respirator to the face by smiling or frowning. The purpose is to determine if the respirator reseals itself to the face. The fit factor for the grimace portion of this exercise is excluded from the calculation of the overall fit factor.”

Dr. McKay’s Grimace Recommendation:

It’s my belief that the grimace exercise should be conducted consistently



from one year to another and in a manner similar for each person to be fit tested. One way to reduce variability is to provide the respirator wearer with a better description as to how the grimace exercise should be conducted.

Here’s my description for the grimace exercise:

Grimace. Keeping your upper and lower lips together, smile and frown, moving your cheeks from side to side continuously for 15 seconds while breathing normally.

I then demonstrate the grimace exercise without a respirator so the respirator wearer can see that my lower and upper lips remain in contact. This reduces the likelihood of an overly aggressive grimace exercise. It also reduces the likelihood that a person exaggerates the exercise by fully opening and closing their mouth. In my experience, this description reduces variability and probability of an overly aggressive maneuver.

Some researchers have suggested that the grimace exercise should be eliminated due to increased variability. Researchers hate variability, so this is understandable. However, they would be wise to use a better description for this exercise, such as the one I recommend above.



Fit Testing Record Keeping Requirements

If you’re new to fit testing or need a refresher, don’t forget recordkeeping requirements for fit testing found in paragraph m of the OSHA Respirator Standard 1910.134. It says:

(m)(2) Fit Testing:

- (i) The employer shall establish a record of the qualitative or quantitative fit tests administered to an employee including:
 - (A) The name or ID of the employee tested;
 - (B) Type of test performed;
 - (C) Specific make, model, style, and size of the respirator tested;
 - (D) Date of the test; and
 - (E) The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.
- (ii) Fit test records shall be retained for respirator users until the next fit test is administered.



Here's a Sample of OSHA Respirator Violations

Respirator Tidbits

This section explores respirator related facts, points of interest, and tidbits.

During fiscal year 2019, lack of respirator fit testing was one of the most common violations within the category of Respiratory Protection. And, violations of the Respiratory Protection Standard ranked 5th on the list of OSHA's "Top 10" most frequently cited standards.

Test Your Respirator Knowledge:



Question:

When conducting qualitative fit testing using the saccharin (sweetener) method, the employee reports detecting the sweet taste on the 4th squeeze of the hand-held nebulizer during sensitivity threshold screening. When the 2nd stage of testing with the stronger concentration of fit test solution is used, the correct number of squeezes to administer is:

- 4 squeezes initially, followed by 4 squeezes every 30 seconds
- 4 squeezes initially, followed by 2 squeezes every minute
- 10 squeezes initially, followed by 4 squeezes every minute
- 10 squeezes initially, followed by 5 squeezes every 30 seconds

Answer appears in "Training Opportunities" toward the end of this newsletter.

OSHA Cites Dana Rail Care Again

In my previous newsletter I reported on a situation where an employee was asphyxiated while servicing a rail car containing crude oil sludge. OSHA cited the company for four willful and three serious violations for failing to protect employees from the hazards of entering permit-required confined spaces and inadequate respiratory protection procedures. This same company has been cited again.

As reported in the *Safety.BLR.com* on February 25, 2020, OSHA cited tank railcar cleaning and repair provider Dana Rail Care for workplace safety and health violations at its facility in Wilmington, Delaware. The company faces \$371,276 in penalties. Last year, OSHA cited this same company and proposed more than \$550,000 in penalties for safety and health violations following a May 2019 employee fatality at another location in Pennsylvania. On February 20th, OSHA issued citations for 23 violations overall, including improper use of respirators and lack of medical clearance for respiratory users. OSHA also issued citations for repeat violations of the respiratory protection standard. This company was also cited on July 25, 2016, for lack of medical clearance for respiratory protection use. Among a variety of "serious" violations was one for failing to conduct annual respirator fit testing.



Announcements from NIOSH

R95 Filter Testing Revision

Jan 31, 2020, NIOSH made minor changes to R95 filter testing for Non-Powered, Air-Purifying Respirators. The revision, Standard Test Procedure No. TEB-APR-STP-0056 has the greatest impact occurring in Section 4. This revision represents an update to current content and editorial standards, with no change to method or criteria. To obtain a copy, copy and paste the link below, or try and [Click here](https://www.cdc.gov/niosh/npptl/stps/pdfs/TEB-APR-STP-0056-508.pdf).

<https://www.cdc.gov/niosh/npptl/stps/pdfs/TEB-APR-STP-0056-508.pdf>

R99 Filter Testing Revision

Also on Jan 31, 2020, NIOSH made minor changes to R99 filter testing for Non-Powered, Air-Purifying Respirators. The revision, Standard Test Procedure No. TEB-APR-STP-0055 also has the greatest impact occurring in Section 4. This revision represents an update to current content and editorial standards, with no change to method or criteria. To obtain a copy, copy and paste the link below, or try and [Click here](#).



<https://www.cdc.gov/niosh/npptl/stps/pdfs/TEB-APR-STP-0055-508.pdf>

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. For additional information, email us at info@DrMcKay.com

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, please share this information with us. We are 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



ISRP 2020 in Oxford, England

The 20th International Society for Respiratory Protection conference will be held September 27 through October 1, 2020 at Pembroke College in Oxford, England. The purpose of the conference is to share the latest in respiratory protection research with the international community. The conference will include presentations, posters, and an exhibition. The conference offers a number of networking opportunities and serves as a platform for you to share your research, ideas, and products with experts in respiratory protection.

Email oxford@isrp.com with any questions you may have about the conference. Or, click this link to [visit ISRP 202 Oxford Conference](#)

2020 McKay Publications

Respirator Use at High Altitudes. Does an SCBA Respirator Protect Wearers from Oxygen Deficient Atmospheres Due to Increasing Altitude? *The Synergist*. Pages 26-29, January 2020.

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.



Respirator Training Courses:

The University of Cincinnati is pleased to announce the following programs on Respiratory Protection and Fit Testing that may be of interest to your staff. They are:



Overview of Respiratory

Protection:

<http://www.drmckay.com/rtc-overview.shtml>

April 21, 2020

October 20, 2020

Fit Testing Workshop (2-day):

<http://www.drmckay.com/rtc-workshop.shtml>

April 22-23, 2020

October 21-22, 2020

Fit Testing Refresher & Advanced Topics

<http://www.drmckay.com/rtc-resp-refresher-advanced.shtml>

April 28, 2020

Respirator Selection & Cartridge Change Out Schedule Workshop.

http://www.drmckay.com/rtc-resp_selection.shtml

April 29-30, 2020

Fit Testing Workshop Quantitative (1-day):

<http://www.drmckay.com/rtc-workshop1day.shtml>

Dates to Be Determined

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.

Next dates are: **April 29-30, 2020** in Cincinnati

Answer to Test Your Respirator Knowledge:

When conducting qualitative fit testing using the saccharin (sweetener) method, the employee reports detecting the sweet taste on the 4th squeeze of the hand-held nebulizer during sensitivity threshold screening. When the 2nd stage of testing with the stronger concentration of fit test solution is used, the correct number of squeezes to administer is:

- d. 10 squeezes initially, followed by 5 squeezes every 30 seconds

In addition, remember this procedure is conducted for seven (7) continuous minutes (1 minute per exercise times 7 exercises).

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. 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 with the TSI PortaCount and AccuFIT 9000, although many of the concepts are applicable to other 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 (1 day)
- * Fit Testing at your workplace. Not a course, but a hands-on program with your staff and equipment.

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Thank you for your continuing support. Students attending our programs help support our graduate training programs and respirator research projects. We hope to see you at a future training course.

Roy McKay, Ph.D.
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Dr. McKay does not receive any public or private funding for this educational service. The opinions in this newsletter are those of Dr. McKay and not the University of Cincinnati.

Spirometry Refresher Reminder

If you took your initial NIOSH-approved spirometry training in 2015, you're due for a refresher in 2020.

