A Personal Approach to Hearing Conservation
Simply stated, VeriPRO is a program that identifies a person’s individual earplug attenuation. VeriPRO provides Hearing Conservation Program managers with a way to provide a more personal approach to training and evaluation.

During this training, you will learn about the Who, What, Where, Why and How of VeriPRO, and prepare you to be a VeriPRO User.
This eLearning experience is broken into several chapters.

Chapter 1 – Earplug Fit Effectiveness
Chapter 2 – VeriPRO
Chapter 3 – How VeriPRO Works
Chapter 4 – VeriPRO Test Sequence
Chapter 5 – Key Benefits
Chapter 6 – Customer Support
Chapter 7 – Getting Started
Chapter 8 – Main Menu
Chapter 9 – Taking the Test
Chapter 10 – Test Results
Chapter 11 – Putting It All Together
We recommend that you take your time and thoroughly review each part of this eLearning program. This may take you approximately one hour to complete. While the information is rather straightforward, though beware – there are some red herrings thrown in!

GOOD LUCK!
Chapter 1
Earplug Fit Effectiveness
Since the 1970s, hearing protectors have been sold with a rating number on the package showing the amount of estimated protection – the Noise Reduction Rating (NRR). But the NRR is simply an estimate of protection based upon population averages, not measurement of actual protection. It is a population estimate based upon ten subjects tested in the acoustical lab. And the widespread misunderstanding of how to apply the NRR adds even more confusion.

How much protection will an individual worker achieve with a particular earplug used in the field? That’s unknown. And the safety manager who assumes that all workers achieve the rated attenuation on the package will likely see incidence of noise-induced hearing loss continue to climb at his worksite.
Even a visual inspection of earplug usage can be misleading. The safety manager who observes the two workers below, both wearing earplugs, might assume both are protected. He is wrong. The worker on the left is obtaining 0 dB of protection from his poorly fit earplugs, while the worker on the right is obtaining 33 dB of protection.

• Left photo: Improper fit of an earplug
• Right photo: Proper fit of an earplug
• Although a cursory compliance inspection might assume both earplugs are performing well, the earplug shown on the left has significantly lower attenuation (30-40 decibels across most frequencies) when compared to the earplug with a good fit.
Let's take a minute to fit an earplug!

As a refresher, take out a pair of Single-Use earplugs, such as Laser Lite, and fit the earplug following these three simple steps.

<table>
<thead>
<tr>
<th>STEP ONE</th>
<th>STEP TWO</th>
<th>STEP THREE</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Earplug being rolled" /></td>
<td><img src="image2" alt="Ear being pulled over head" /></td>
<td><img src="image3" alt="Earplug fully expanded" /></td>
</tr>
</tbody>
</table>

**STEP ONE**
With clean hands, roll the entire earplug into narrowest possible crease-free cylinder.

**STEP TWO**
Reach over your head with a free hand, pull your ear and back, and insert the earplug well inside your ear canal.

**STEP THREE**
Hold for 30 – 40 seconds, until the earplug fully Expands in your ear canal. If properly fitted, the end of the earplugs should not be visible to someone looking at you from the front.
After you inserted the earplugs, perform two simple checks to determine your earplug fit effectiveness:

<table>
<thead>
<tr>
<th>VISUAL CHECK</th>
<th>ACOUSTIC CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Visual Check Image" /></td>
<td>• While looking at yourself in front of a mirror, if either or both earplugs</td>
</tr>
<tr>
<td></td>
<td>can be seen protruding from your ear, your earplugs may not be fit properly,</td>
</tr>
<tr>
<td></td>
<td>• Remove the earplug and reinsert.</td>
</tr>
<tr>
<td></td>
<td>• Note that the stem of Multiple-Use earplugs may protrude a bit out of the</td>
</tr>
<tr>
<td></td>
<td>ear - and that is ok.</td>
</tr>
<tr>
<td><img src="image" alt="Acoustic Check Image" /></td>
<td>• In a noisy environment, with earplugs inserted, cup your hands over your</td>
</tr>
<tr>
<td></td>
<td>ears and release.</td>
</tr>
<tr>
<td></td>
<td>• Earplugs should block enough noise so that covering your ears with your</td>
</tr>
<tr>
<td></td>
<td>hands should not result in a significant noise difference.</td>
</tr>
</tbody>
</table>
YOUR FIT?

With the Visual Check:

**Was your earplug protruding outside your ear canal?**

With the Acoustic Check:

**Did you notice a change in noise levels?**

If you answered **YES** to both, take a moment to refit your earplugs or try another Howard Leight model.

If you answered **NO** to both, you have achieved optimal fit and most likely optimal published attenuation!

FIDDING TIP!

Most people **do not** fit an earplug properly. The tighter you roll the earplug, the harder and thinner it will become and the easier and deeper it will go in the ear canal.

**Try it – this is the ONLY way you will achieve a good PAR.**
"WHAT WE NEED IS A RESPIRATOR FIT TEST . . . BUT FOR EARPLUGS!"

That comment from a corporate safety manager typifies the frustration of well-meaning safety managers worldwide who are trying to adequately protect their noise-exposed worker, but without any real tool to measure effective protection.

After several years of cooperative research and field testing, Howard Leight developed VeriPRO - an intuitive and accurate tool for measuring the fit of any earplug on any user in the workplace.
QUESTION 1

Identify the order of steps to insert a roll-down foam earplug into your ear canal.

(First Step) With clean hands, roll the entire earplug into narrowest possible crease-free cylinder.

(Third Step) Hold for 30 – 40 seconds, until the earplug fully expands in your ear canal.

(Second Step) Reach over your head with a free hand, pull your ear up and back, and insert the earplug well inside your ear canal.
QUESTION 2

Which is **not** a method to check your earplug’s fit?

- Acoustic Check
- ✓ Sound Check
- ✓ Brake Check
- Visual Check
If I am wearing a single-use foam earplug and it protrudes past my ear canal:

- Everything is fine
- ✓ I should re-fit the earplug
- ✓ I should try another style of earplug
- Earplug, schmearplugs! My ears can handle the noise!
Developed in conjunction with the House Ear Institute (www.hei.org), VeriPRO is a field verification technology that makes it easy to get an accurate, real-world picture of an employee's hearing protection.

Find out whether they are receiving optimal protection, require additional training on how to fit their earplugs, or need to try a different model. VeriPRO uses sophisticated software in user-friendly format to find out the Personal Attenuation Rating (PAR) employees receive from their earplugs.
VeriPRO's three part process checks the effectiveness of a noise-exposed worker's earplug fit in each ear over a range of frequencies. This information is then captured in individual reports, accessible by the safety manager.

1. Measures **REAL-WORLD ATTENUATION FIT** of unmodified earplugs
2. **SIMPLE** software installation and hardware set-up
3. Fast, accurate, **EASY-TO-UNDERSTAND** results displayed in minutes
4. Captures and stores historical information on employee **PERSONAL ATTENUATION RATING**
5. Fulfills OSHA requirement to "ENSURE PROPER INITIAL FITTING" of hearing protectors
6. Works with **ANY EARPLUG**

By verifying earplug effectiveness and providing an ideal opportunity for education, VeriPRO becomes an integral part of a successful Hearing Conservation Program.
VeriPRO uses a real-ear method, similar to the method used in official attenuation tests. VeriPRO utilizes a relative measurement of hearing level called "LOUDNESS BALANCE" - the loudness of a tone in one ear is balanced to a tone in the opposite ear at a known level.

This unique loudness-balance method allows an accurate hearing test to be performed in normal background noise levels found in a typical office or worksite - NO SPECIAL SOUND BOOTH is needed. Employees are tested with no earplugs, then with the right earplug inserted, and finally with both earplugs inserted, to determine the amount of protection in each ear.
KEY BENEFITS

QUANTIFIES INDIVIDUAL ATTENUATION

• The published NRR is a laboratory estimate of attenuation someone may receive, but not a real-world indicator of protection.
• VeriPRO provides a measurement of **REAL-WORLD ATTENUATION** for employees.
KEY BENEFITS

IDENTIFIES UNDERPROTECTED OR OVERPROTECTED EMPLOYEES

- Should the PAR indicate that an employee is either under-protected or over-protected, this provides safety managers with the OPPORTUNITY TO REFIT THE EARPLUG for optimal published attenuation or SELECT A DIFFERENT Howard Leight earplug that may be more suitable for the noise environment.
- You can incorporate the new Howard Leight Hearing Protector Selector on www.howardleight.com in this selection process.
KEY BENEFITS

MAKES HPD SELECTION AN OBJECTIVE PROCESS

• As we've identified and promoted in our brand marketing, one earplug or earmuff will not be the solution for every employee's hearing protection needs. In fact, **COMFORT IS A PRIMARY DRIVER** behind employee acceptance and proper fit of hearing protectors.

• VeriPRO provides the opportunity to assess an employee's earplug fit and identify if they **REQUIRE ADDITIONAL FITTING INSTRUCTION** or would be **BETTER SUITED WITH ANOTHER** earplug.
KEY BENEFITS

PROVIDES + DOCUMENTS TRAINING

- VeriPRO provides an excellent tool to improve both individual training, which studies have shown to be the most effective means of improving earplug attenuation, and overall hearing conservation program effectiveness.

- **VeriPRO DOES FULFILL OSHA REQUIREMENTS FOR TRAINING** on proper fit, and provides a hard copy and electronic documentation of this training.

- This is particularly valuable for workers in a Hearing Conservation Program who demonstrate a Standard Threshold Shift (STS) – a significant decline in hearing due to noise exposure.
Using VeriPRO, we visited eight different locations to test 104 workers. Locations and workers were not pre-screened. Workers were asked to use the earplug they typically wear, inserting it in a normal manner. They received no training or coaching as part of the test.

The results below show that the distribution of earplug fit follows a predictable one-tailed bell curve. The majority of workers achieved attenuation within ±5 dB of the published attenuation, regardless of the model of earplug used.

**But nearly 1/3 of the workers achieved attenuation more than 5 dB lower** than the labeled NRR. Armed with these individual measurements, a safety manager can target these low performers who are at risk for noise-induced hearing loss.
IMPORTANCE OF PROPER EARPLUG FIT

This scattergram shows the DANGER IN USING DE-RATING POLICIES like the oft-misapplied 50% de-rating by OSHA. If we were to summarily just assume that all earplugs only achieve 50% of the published NRR in the field, then clearly 2/3 of the workers are seriously overprotected, since they are achieving much higher protection than 50%.
In 2008, the EPA will announce a proposed CHANGE to the current Noise Reduction Rating (NRR) label. The EPA may take a few years to implement the change, but the announcement will create some market buzz on the topic of real-world attenuation of hearing protectors.

Instead of the current label that displays the ideal lab-generated NRR, the EPA has announced their intention to require a new label that displays a HIGH-LOW RANGE OF MEASURED VALUES. This high-low range will make verification of NRR a critical topic for safety managers in North America, and Sperian Hearing Protection will have the tool to address this need.

With this change from a fixed number to a range of attenuation, VeriPRO will eliminate any confusion on protection levels.
Another important factor in achieving good attenuation in the field is the option of trying a second hearing protector. *If a worker obtains low attenuation with one type of earplug, will he obtain low attenuation with all types of earplugs? Our study showed the answer is definitely NO.* Workers who tried a second pair of earplugs often had major leaps in attenuation, bringing them closer to the published attenuation.

Like a respirator fit test, field verification of hearing protectors provides valuable information—but also has its limits. Fit testing verifies the *capability* of an earplug in the hands of a user. But it only provides a snapshot of attenuation at the time of test; it does *not* tell us what the noise exposure is for that worker a day later — or even an hour later.
While measuring the attenuation of an earplug is useful, the most valuable contribution of field verification systems will likely be in employee training. *Fit testing of earplugs provides immediate feedback — users will know right away whether their fit is good or bad, and can make immediate adjustments.*

And study after study confirms that the best predictor of whether a worker will achieve good protection from an earplug is one-on-one training, not group hearing conservation training.
VeriPRO can be used in the following situations:

1. ✓ Annual employee training
2. ✓ Periodically with employees with a Standard Threshold Shift (STS)
3. Noise Reduction Rating test
4. ✓ For new employees' PPE training
5. ✓ Hearing protector selection/trial process
QUESTION 2

Which of the following does VeriPRO not do?

1. ✓ Measure the Noise Reduction Rating of an earplug
2.  Measure the Personal Attenuation Rating of an earplug
3.  Provide earplug fit training videos
4.  Work with competitor's earplugs
5. ✓ Insert an earplug into a user's ear canal
Which of these statements are FALSE?

1. VeriPRO eliminates the need to de-rate the Noise Reduction Rating

2. OSHA has incorporated field verification into its Occupational Noise Standard

3. In 2008, the EPA is expected to change the Noise Reduction Rating from a fixed number to a range

4. With Loudness-Balance, we are matching the sound of the tone, not the volume of the tone

5. Re-training employees on how to fit an earplug can improve their overall fit and protection
During the VeriPRO test, the user adjusts the loudness of the ...

- Right ear only
- ✓ Left ear only
- Both ears
In this section, you will learn about the hardware and software that makes up VeriPRO, and their basic functionality.

- Software/Hardware Components
- Software Functionality by Mode
  - Complete Check
  - Quick Check
  - Reports
  - Fit Training
## COMPONENTS

<table>
<thead>
<tr>
<th>CD</th>
<th>AUDIO PROCESSOR</th>
</tr>
</thead>
</table>
| • Includes all software and installation functionality.  
• Can only be used on PCs with Windows XP or higher. | • Powers the system and serves as an external sound card and headphone amplifier.  
• Plug the Audio Processor into the USB port of your computer and plug the Headphones into the Audio Processor.  
• USB cable is included with VeriPRO. |
COMPONENTS

AUDIOMETRICALLY OPTIMIZED HEADPHONES

• Audiometrically balanced specifically for use with VeriPRO, these headphones provide optimal audio output and GREATER BACKSET OF SPEAKER for testing earplugs.

• COLOR CODED EARCUPS: Red for right, Blue for left.

• Note: Do not use other headphones with VeriPRO, as this will affect test results and may cause discomfort if the earplugs make contact with the headphone.

QUICK REFERENCE GUIDE

• Each VeriPRO kit comes with a Quick Reference Guide that provides BASIC INSTRUCTION on getting started, program functionality, reporting and troubleshooting.
VeriPRO software has 4 functions

- Complete Check
- Quick Check
- Fit Training
- Reports
FUNCTIONALITY
• Tests 5 frequencies in each ear (250, 500, 1000, 2000, 4000 Hz)
• Recommended first test for new VeriPRO users
• Includes reliability check to ensure user is providing valid results
• Includes minimum attenuation warning if earplug is not providing adequate attenuation
• Takes 8-10 minutes per test for novice users

SPECIFICATIONS
• Higher degree of accuracy
• Longer time to take test for novice users

WHEN TO USE
• Annual hearing protection fit training, per OSHA
• Upon hire of new employees
• Employees who utilize dual protection - this may validate or eliminate their need to use both earplugs and earmuffs
• Employees who experience an STS during annual audiogram
• Use during earplug evaluation and selection trials - helps safety manager identify earplugs that gain employee acceptance and wear, as well as identifies protection that matches noise environments
QUICK CHECK

FUNCTIONALITY
• Test 1 critical frequency in each ear (500 Hz)
• Ideal for employees with moderate-to-severe hearing loss who cannot hear high frequencies
• Ideal for periodic employee testing
• Takes 2-3 minutes per test

SPECIFICATIONS
• Lower degree of accuracy
• Shorter test time

WHEN TO USE
• Employees with Standard Threshold Shift (STS) in hearing or documented hearing loss
• Periodic safety checks
• Training reinforcement throughout the year
FUNCTIONALITY

- Allows safety managers to pull employee reports
- Can view current VeriPRO test, as well as employee's historical results
- View on screen or print/save as PDF
FUNCTIONALITY

- Training videos with text that demonstrates proper earplug insertion
- Includes all available Howard Leight earplugs
- Can be used as a stand-alone training aid for employees throughout the year
QUESTION 1

What is the difference between a COMPLETE CHECK and a QUICK CHECK

- The Complete Check tests a user three times and Quick Check only one time
- ✔ The Complete Check runs a user through 5 frequencies and Quick Check 1 frequency
- Complete Check tests the fit of both ears and Quick Check only one ear
- Complete Check must be performed online and Quick Check offline
Which of the following statements are TRUE?

- VeriPRO can be run on a Mac
- You can use any type of headset with VeriPRO
- ✔ The Complete Check runs through 5 frequencies
- ✔ We can test the fit of any earplug with VeriPRO
When you take either the Complete Check or Quick Check, you will run through three sets of tests to determine your Personal Attenuation Rating (PAR).

1. For each test, you will don the Headphones (red for right, blue for left).
2. You will hear a pulsing tone in the RIGHT EAR AT A CONSTANT VOLUME.
3. You will hear an alternately pulsing tone in your LEFT EAR AT A LOWER VOLUME.
4. Using either your computer mouse or up/down arrows on your keyboard, raise or lower the volume in the left ear to match the volume in the right ear.
5. You are MATCHING THE VOLUME only - not the quality or pitch of the tone. In fact, the pitch in one ear may sound different than the other, and that is ok.
Part 1
Both Ears Unoccluded
- Sets baseline level for each ear
- Measures any asymmetry between ears

Part 2
Right Ear Occluded
- Right ear attenuation measured

Part 3
Both Ears Occluded
- Left ear attenuation measured
Once you complete all three parts of the Complete or Quick Check, the screen will display your results. You may view this either on the screen or as a 2-paged PDF as displayed below with your:

- Personal Attenuation Rating (PAR)
- Safe Exposure Level (SEL)
- Protected Exposure Level (PEL)
The Personal Attenuation Rating is the amount of protection (measured in decibels) achieved with an earplug fitting. The same earplug will likely give a good PAR with a good fit, and a lower PAR with an improper fit. This feedback in earplug fitting is one of the major benefits of VeriPRO - it trains employees in obtaining a proper fit with measurable results.

Your results will show a PAR for both RIGHT and LEFT ears. This demonstrates the individual fit that occurs in each ear:

<table>
<thead>
<tr>
<th>Personal Attenuation Rating (PAR)</th>
<th>Left Ear</th>
<th>Right Ear</th>
<th>Published NRR</th>
</tr>
</thead>
<tbody>
<tr>
<td>The amount of protection provided by the earplug.</td>
<td>30 dBA</td>
<td>28 dBA</td>
<td>32 dB</td>
</tr>
</tbody>
</table>

- If both Left and Right PARs are not appropriate for the exposure level, you should re-insert the earplugs and retest.
- If one ear is lower than the other, this may identify a poor fit in one ear and the need to re-insert.
- This may also identify the need to re-assess the employee's earplug choice and instigate the selection of a different earplug.
SAFE EXPOSURE LEVEL

The report will also display two other ratings:

<table>
<thead>
<tr>
<th>Safe Exposure Level</th>
<th>Protected Exposure Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>The highest level of noise to which this worker can be safely exposed.*</td>
<td>108 dBA</td>
</tr>
<tr>
<td>74 dBA</td>
<td></td>
</tr>
</tbody>
</table>

SAFE EXPOSURE LEVEL
The highest time-weighted average noise level an employee can safely be exposed to, based upon the current earplug fit measured by VeriPRO. It is calculated by taking a safe noise exposure of 80* dBA and adding the lower PAR.

Example: Safe Noise Exposure 80 dB
          Lower PAR 28 dB
          Safe Exposure Level 108 dB

The employee may be exposed to up to 108 dB of noise with this fit of this earplug without additional risk of hazardous noise exposure or underprotection.

* The safe noise exposure level can be set by the operator to any number 80-85.
<table>
<thead>
<tr>
<th>IF YOUR . . .</th>
<th>THEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEL &gt; Noise</td>
<td>User is properly protected and can safely wear the tested earplug in the given noise exposure.</td>
</tr>
</tbody>
</table>
| SEL < Noise   | User is underprotected. Here is what you should do:  
   – Review the Fit Training video for that earplug and re-test.  
   – Try another style of earplug and take the VeriPRO test again. |
PROTECTED EXPOSURE LEVEL

Estimates the noise level that this employee experiences wearing earplugs, while exposed to the noise level previously entered for that person. It is calculated by subtracting the lower-ear PAR from the noise level previously entered in the VeriPRO set-up.

Example:  

<table>
<thead>
<tr>
<th>TWA Exposure Level</th>
<th>102 dBA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower PAR</td>
<td>28 dB</td>
</tr>
<tr>
<td>Protected Exposure Level</td>
<td>74 dBA</td>
</tr>
</tbody>
</table>

The employee's listening level with that fit of that earplug is 74 dB.
<table>
<thead>
<tr>
<th>IF YOUR . . .</th>
<th>THEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>PEL &gt; 85 dB</td>
<td>User may be at risk of underprotection and could be at risk of additional noise exposure.</td>
</tr>
<tr>
<td>PEL = 70 – 85 dB</td>
<td>User is within safe listening with this fit of the earplug.</td>
</tr>
<tr>
<td>PEL &lt; 70 dB</td>
<td>User may be overprotected, and the earplugs may be blocking sounds that they need to hear, such as warning signals and co-worker’s voices.</td>
</tr>
</tbody>
</table>
The report also displays a Noise Thermometer at the bottom, which provides a graphical interpretation of all of this data. This is an excellent talking point for use with employees, enhancing their understanding of the VeriPRO test and their earplug fit.
A low PAR is not by itself a problem. For example, a worker in 90 dB of noise might obtain a PAR of 10 dB, and be adequately protected. But when the PAR is too low for the worker’s noise exposure, then there’s a problem, and intervention is needed.

- **REVIEW THE INSTRUCTIONAL VIDEO** - how to properly fit the selected earplug
- **RE-TEST WITH THE SAME EARPLUG** - that extra minute of training often improves attenuation dramatically
- **TRY A DIFFERENT STYLE OF EARPLUG** - simply trying a different earplug can improve attenuation by 10 dB or more, due to a better personal fit

The improved attenuation is documented, and can be stored in the worker’s safety records.
WHAT IF AN EMPLOYEE OBTAINS A VERY HIGH PAR?

A high PAR often means the worker is obtaining the published attenuation value or higher. Usually, this is not a problem. But if the worker is in a hearing-critical job or is hearing-impaired, then overprotection may be a concern: verbal communication may be hindered, and warning alarms might not be heard.

In certain hearing-critical jobs, overprotection might be just as hazardous as underprotection. VeriPRO is a valuable tool in identifying and avoiding overprotection. As a general guideline, hearing protection should bring Protected Exposure Levels (the noise level under the earplugs) to between 70-85 dB (from ISO Guideline EN-458).

As part of its standard reports, VeriPRO calculates the Protected Exposure Levels for any worker whose noise exposure is entered into the system.
QUESTION 1

Which is not part of the test protocol?

- Both ears occluded
- Earplug in left ear only
- Earplugs in both ears
- Earplug in right ear only
VeriPRO reports several numbers at the conclusion of a test. Match a description to each title:

A. Safe Exposure Level
B. Personal Attenuation Rating
C. User Exposure Level
D. Protected Exposure Level

_C_ Noise level to which a worker is exposed (entered by system operator)
_A_ The highest noise level to which this worker can be safely exposed when using the earplugs just the way they are currently fit.
_D_ The noise level reaching the eardrum when using the earplugs just the way they are currently fit.
_B_ The amount of protection measured in each ear with a specific earplug fitting.
QUESTION 3

Which of the following statements are true?

- ✓ Attenuation that is too low for their environment may put people at a risk of noise exposure.
- ✓ Matching protection with the noise exposure level can help avoid overprotection.
- Everyone will obtain the published NRR.
QUESTION 4

What are some tactics to deal with a user’s Safe Exposure Level that is less than the noise exposure level?

- ✓ Try a different earplug style and re-test
- Send the employee for an audiogram
- ✓ Review the Fit Training video and re-test
- The user is not required to wear any hearing protection
Chapter 5

Key Benefits
VeriPRO offers five key benefits to both the Safety Manager and the Employee:

- One-on-One Training
- Eliminates Confusion Over De-Ratings
- Fulfills OSHA Training Requirement - With Documentation
- Improves the Selection Process
- Enhances Information For Using New EPA Labels (when introduced)

During this module, you will learn more about each key benefit!
Our research has revealed that one-on-one Hearing Conservation training has a more memorable effect on employees, increasing overall HPD acceptance and proper use. Use of the VeriPRO test, along with its earplug fit training videos, enhances this experience.

In addition, if an end-user has a respiratory program, they can certainly understand that VeriPRO is to earplug fit as the Portacount or Fit Checking is to their respiratory program.
Everyone is confused by the many derating schemes promulgated by OSHA, NIOSH, et al. Not only that, de-ratings do not take into consideration the individual employee - de-ratings apply to a population, not a person. In our research, we identified the following attitudes about NRR amongst Industrial Hygienists and Safety Managers:

- 26% said NRR should be taken at face value
- 63% said HPDs should be de-rated by a given amount to estimate protection
- 78% said NRR should remain on the packaging, but needs to be de-rated in order to predict real-world performance

VeriPRO eliminates that confusion - safety managers and employees can verify the real-world attenuation immediately.
It is the responsibility of the Hearing Conservation Program manager to ensure that employees receive annual training on HPD fit. VeriPRO's database and reporting functionality records all employee test results, and provides documentation for both the safety manager and employee.

Hearing Conservation Program managers can pull reports to identify trends in their program, and assess further follow-up action. In addition, should a company need to respond to worker's compensation claims, VeriPRO's reporting provides documentation of an employee's test history.
In our research, industrial hygienists and safety managers identified the following factor as important in choosing hearing protectors:

- 100% - Comfort
- 98% - NRR Appropriate to Noise Environment
- 98% - Ease of Insertion

VeriPRO enhances a safety manager's ability to determine the effectiveness of current and new earplugs for his/her employees. Coupled with our Hearing Protector Selector, VeriPRO also demonstrates your ability to provide the right Howard Leight products for an end-users' Hearing Conservation Program.
VeriPRO will help users know how to apply the proposed change to the EPA’s NRR label. The current label displays the ideal lab-generated NRR, however, in 2009, the EPA has announced their intention to require a new label that displays a *high-low range* of measured values. This high/low range will make verification of NRR a critical topic for safety managers in North America, and VeriPRO users will have the tool to address this need.

*With this change from a fixed number to a range of attenuation, VeriPRO will eliminate any confusion on protection levels.*
Which statement about the NRR is true?

- The published NRR should be taken at face value
- ✓ The NRR should never be the primary number to determine individual user protection
- ✓ Multiple de-rating schemes have made determining actual earplug effectiveness difficult for Hearing Conservation Program managers to figure out
- ✓ In 2009, the EPA announced a proposed change to the NRR that will go into effect at a later date
QUESTION 2

There will be a change in the OSHA Hearing Conservation Amendment in 2011.

- True
- ✓ False
Which of the following statements are true regarding a company’s Hearing Conservation Program?

- Training employees in large groups is highly effective.
- ✅ Performing annual training one-on-one is more effective than large groups.
- Employees who experience an STS on their initial audiogram are automatically recorded into the OSHA 300 Log.
- ✅ According to OSHA regulation, a worker who experiences an STS must be retrained and refit with hearing protection.
Chapter 6
Customer Support
THE VERIPRO SYSTEM

All VeriPRO systems include:

• CD with software
• Audiometrically Balanced Headphones
• Audio Processor
• Replacement Ear Cushions – 1 pair
• USB Cable - connects Audio Processor to your computer
• Sample Container – with assortment of Howard Leight earplugs
• Quick Reference Guide - provides an overview of VeriPRO function, step-by-step instructions and basic troubleshooting
• Carrying Case

Note: Replacement parts are available for: Headphones, Audio Processor, Replacement Ear Cushions and USB Cable.
VERIPRO HAS A SINGLE-USER SOFTWARE LICENSE

• This allows the purchaser to install and use one copy of VeriPRO software on a single computer only (back-up copies and reinstallations on a replacement computer are permitted).

• Users who wish to run VeriPRO at multiple sites or on multiple computers should contact VeriPRO Technical Support for a quote on an Enterprise (multi-user license) installation of VeriPRO.
FREE UPDATES TO REGISTERED USERS

• **Maintenance releases** - updates to VeriPRO software that are critical to the program's overall function - are free of charge to all registered VeriPRO users. Pricing for future versions and upgrades that add significant new functionality will be announced when those upgrades are released.
There is a dedicated Customer Care Representative and a dedicated Technical Support Specialist in San Diego, CA. These two resources will process all VeriPRO customer orders and be there to answer any technical questions related to VeriPRO.

1-877-VeriPRO
1-877-837-4776
QUESTION 1

Which of the following are included with each VeriPRO system?

- ✔ Audio Processor
- ✔ Ear Model
- ✔ CD with Software
- ✔ Audiometrically Optimized Headphones
- ✔ USB Cable
- 3.5mm Cable
- ✔ Quick Reference Guide
Chapter 7

Getting Started with VeriPRO
In this section, you will learn how the VeriPRO software works. We will take you screen-by-screen through the following functions:

- Basic Program Navigation
- Admin Functions
- Upload User Information
- Selecting Users
- Fit Training Videos
- Running Complete Check/Quick Check
- Pulling Reports
- Exporting Results
If you have double-clicked the VeriPRO icon on your desktop and receive the following message, please check the connections of:

- Headphones to Audio Processor
- Audio Processor to Computer
ENTERING VERIPRO

• Once you have launched VeriPRO, you will be greeted by this entry screen.
• Click the “Continue” button to proceed.
GETTING STARTED
Admin Menu

ADMIN MENU
The “wrench” icon represents the Admin menu
• Click on the wrench and you will need to enter the password into the field.
• Your default password is “password.” This should be typed all as one word in lowercase letters.
• Once entered, hit “Enter” on your computer keyboard
ADMIN MENU

In the Admin menu, you may:

- **Manage Users** – add/delete/update users
- **Preferences** – control audio outputs
- **Upload Company Logo** – displayed in lower right corner
- **Reports** – quick access to user reports
- **Quick Start Guide** – access PDF of guide that accompanies kit
- **Change Administrator Password** – update your own password
MANAGE USERS
This screen identifies everyone who is listed in this copy of VeriPRO

• You may **Add, Edit or Delete Users** in this function
ADD USERS

In this box, you will enter ID information for each user.

• Exposure Level – enter users’ known noise exposure level either as dBA or dBC.

• If you do not know their level, you may leave this field blank. However, test results will not include a Protected Exposure Level.

• Once fields are completed, click “OK” and the user will be entered.
GETTING STARTED
Admin Menu: Upload Users

• You can upload employee demographic information from an Excel spreadsheet with **tab-delimited, .csv file**.

• The information must be in the prescribed format.
PREFERENCES

This screen allows you to adjust the operation of the test: audio output levels, signal on-times, etc. Typically, no adjustment is needed in these settings – the recommended default settings work best in most environments.
Which parts of the VeriPRO program can only be accessed through password protection?

- ✔ Adding name of a new user
- ✔ Selecting an earplug
- ✔ Starting the VeriPRO test
- ✔ Uploading the company logo
- ✔ Accessing a PDF of the Quick Reference Guide
QUESTION 2

If a Safety Manager doesn’t know or enter the noise levels of each worker (and therefore cannot enter this into the user data), how does this affect the VeriPRO test?

• VeriPRO test cannot be run without a worker’s noise exposure.
• VeriPRO test can run, but cannot calculate PAR
• VeriPRO test can run, but cannot calculate Safe Exposure Level
• ✓ VeriPRO test can run, but cannot calculate Protected Exposure Level
Chapter 8
Main Menu
SELECT NAME

To select an existing user to take a VeriPRO test:

1. Type either first or last name and choices will be filtered
2. Select his/her name from the list
MAIN MENU

From this screen, you may activate:

- **Complete Check** – runs user through 5 frequencies in each part
- **Quick Check** – runs user through 1 frequency in each part
- **Reports** – pull reports on user’s test results, including infographic on most recent test and listing of historical results
- **Fit Training** – access videos that demonstrate proper insertion of available Howard Leight earplugs
FIT TRAINING VIDEOS

1. To access videos that demonstrate proper earplug fitting for all available Howard Leight earplugs, you may click on the Fit Training button on the Main Menu or the icon located in the top right corner.

2. The training will be documented for the user that is selected.
FIT TRAINING VIDEOS
To view the training videos, select the earplug you wish to view.
FIT TRAINING VIDEOS

• Before each video segment, instructional text will appear on the screen.
• Once you have read through this, click OK to continue.

Please view the following training sequence. Reach over your head with your free hand and pull your ear up and back to straighten the ear canal.

OK  Cancel
FIT TRAINING VIDEOS

• Video will automatically play a segment of the earplug fitting.

• You can pause the video to provide one-on-one training.
QUESTION 1

Which statement about Fit Training Videos is TRUE?

• The training videos in VeriPRO can be accessed only after a user has completed the earplug check with VeriPRO.
• ✓ The training videos in VeriPRO can be accessed at any time.
QUESTION 2

What is the difference between Complete Check and Quick Check?

- ✓ Quick Check only checks attenuation at one test frequency.
- Quick Check only checks attenuation in one ear.
- ✓ Quick Check takes only a couple minutes, while Complete Check takes about nine minutes.
- ✓ Quick Check is less accurate
COMPLETE CHECK/QUICK CHECK
Once you have selected either Complete Check or Quick Check, you will proceed to this screen. Please note the following:

1. **User Name** – identifies the user taking this test
2. **Progress Bar** – identifies your status within each Part of VeriPRO and the test overall
3. **Explanation Text** – this section will identify the required action on the screen
EARPLUG SELECTION

On this screen, you will select the earplug that the user will fit.

• Click on the product square and click on “Next”
EARPLUG SELECTION

• Once you select the earplug, click “Next” to proceed to the next screen.

• If you would like additional information about an earplug, hold the cursor over any earplug for just a few seconds – a pop-up box about that earplug appears on the screen.
TAKING THE TEST

Earplug Selection

Earplug Selection
• Once you select the earplug, click “Next” to proceed to the next screen.

• Sized earplugs will ask you to select the size used.
TAKING THE TEST
Earplug Selection: Other

EARPLUG SELECTION: OTHER EARPLUGS
• If you click on “Other,” a pop-up box allows you to enter a model and NRR of any earplug you wish to use.
• The info you enter will appear in the test report.
• After entering this “Other” earplug info, click “OK” to proceed to the next screen.
SET-UP

• This screen explains how to don the headphones on your head.
• Right on Red, Blue on Left

• Single click on double arrows to raise (top arrows) or lower (bottom arrows) the slider bar range.
SLIDER BAR INSTRUCTION

1. Using the **Up/Down arrows** on your keyboard or the mouse, raise or lower the slider on the bar to match the volume in your left ear to that constant volume in your right ear.

2. Click MATCH when the **loudness in the left ear matches the right ear**.

3. It is normal for some users to want to move the slider bar beyond its limits.
STOP TONES BUTTON
• The STOP TONES button is a “panic button” that stops the test if there are uncomfortably loud tones in the right reference ear.
• STOP TONES should not be used in normal operation of the test (use the slider bar to adjust loudness of left ear tones).
500 Hz RETEST

- *The tone at 500Hz is repeated as a reliability check in the Complete Check only.*
- *Even though the slider bar changes visually, the user must listen carefully and match within 5 dB of his/her first response at 500 Hz for the test to continue.*
PART 1: RELIABILITY ERROR MESSAGE
This message identifies if a user’s test results on the 500Hz retest are not within 5 dB of their first test.

COMPLETE CHECK
The user will proceed through 5 frequencies: 500, 250, 1000, 2000 and 4000 Hz.

QUICK CHECK
The user will proceed through 1 frequency only: 500 Hz
PART 1: COMPLETED!
Once you have completed Part 1 (unoccluded), this screen identifies what you need to do for Part 2:

• Insert an earplug into your RIGHT ear
• If a foam earplug is used, wait for the foam to expand fully for a good fit.
• Don the headphones and click “Continue” to start Part 2.
PART 2: TOO LITTLE ATTENUATION

ERROR MESSAGE

• During your 500Hz test in Part 2, if your attenuation seems a bit too low, you are provided the opportunity to refit your right earplug.

• You do not have to select this option. You will receive two warnings if attenuation is too low, but the test will proceed.
PART 2: COMPLETED!
Once you have completed Part 2 (earplug in right ear), this screen identifies what you need to do for Part 3:

• While keeping the earplug in your right ear, insert an earplug into your LEFT ear so you are completely occluded
• Don the headphones and click “Continue” to start Part 3.
FINISHED!

• This screen identifies that the user has completed the entire VeriPRO test. You may now remove both earplugs.

• To proceed to the users’ results, click “Continue.”
During a VeriPRO test, a user who is trying to match the loudness raises the slider bar until it maxes out . . . but the tones still do not match. What should he/she do?

- Select “Too Loud”
- ✓ Single click on the “Double Arrows” above the slider bar
- ✓ Select “Cannot Match” – *The sound in my left ear is softer than in my right ear*
  (either way will work)
QUESTION 2

During a VeriPRO test, a user who is trying to match the loudness lowers the slider bar until it bottoms out . . . but the tones still do not match. What should he/she do?

- Select “Too Loud”
- Single click on the “Double Arrows” below the slider bar
- Select “Cannot Match” – The sound in my left ear is louder than in my right ear
  (either way will work)
If a user cannot hear the tones in the right ear at 500 Hz, VeriPRO discontinues the test.

- ✓ True
- False
The task in the VeriPRO test is to adjust the loudness of the left ear so that it matches the loudness of a reference tone presented to the right ear.

- ✓ True
- False
Chapter 10
Test Results
PERSONAL ATTENUATION RATING (PAR)

• This screen displays the users’ PAR for both ears, along with the Safe Exposure Level and Protected Exposure Level.

• The administrator may either display a report on screen by clicking “View on Screen” or save as a PDF for future use by clicking “Export to PDF.”
LOW PAR
If your PAR is lower than needed to provide appropriate protection, consider the following:

You may have receive a “low attenuation” warning along the way.

- Review the Fit Instruction Video.
- Consider re-testing with the same earplug, taking extra time and care with the fitting.
- Try a Different Style of Earplug – another style may be easier for you to fit to achieve optimal attenuation for your noise environment.
REPORTS
Reports allows you to pull a specified user's results either as:
• **Print Version** for screen view
• **PDF File** to save to your computer.
Exporting Data

• Select dates that include all of the data to be exported.
• Select “Export to CSV file”
• Click on Export button.
• A “Save As” window will appear. Name the file and save it in a location where you can easily retrieve it.
• Open Excel the open the file that you just saved at the destination file location and save the file with the Excel extension: “filename.xls.”
If there is a large difference in PAR values between left ear and right ear, how does VeriPRO determine which PAR value to use in determining a safe exposure?

• ✓ VeriPRO uses the worst-protected ear in calculating a safe exposure.
•   VeriPRO uses an average of the two ears in calculating a safe exposure.
•   VeriPRO uses the best-protected ear in calculating a safe exposure.
There are two good responses if a user obtains poor attenuation results with VeriPRO. What are they?

- ✓ Try a different style of earplug that may provide you with a better fit
- Move to a quieter room and retest with VeriPRO
- ✓ Review the Fit Training videos to review the steps and importance of inserting an earplug deep into the ear canal.
QUESTION 3

If a worker wears an earplug with NRR of 30 dB, but is only achieving a PAR of 18 dB with that earplug when tested with VeriPRO, is this adequate protection?

• Yes
• No
• ✓ Depends on worker’s noise exposure
QUESTION 4

When a user completes the VeriPRO test, he/she is wearing both earplugs, and can walk into a noisy area knowing how much protection is being achieved.

- ✓ True
- False
I am comfortable with operating VeriPRO.

- ✓ True
- False
In this chapter, we will wrap-up everything you have learned about VeriPRO, and answer other related questions.
Q. Does VeriPRO favor Howard Leight earplugs in any way?
A. No. VeriPRO measures the attenuation of *any earplug*, any manufacturer. Since VeriPRO was developed by a partnership between Howard Leight and the renowned House Ear Institute in Los Angeles, the Howard Leight earplugs are used as the example earplugs in the training videos. But a worker who fits comparable earplugs from two different manufacturers will obtain comparable results, provided the earplugs were fit the same way.

In our research, we find that people find a more comfortable fit when the earplug is deeply inserted in the ear canal.
Q. Will the Personal Attenuation Rating of VeriPRO replace the NRR?

A. The U.S. EPA has announced its intentions to change its decades-old NRR rating in the near future. Instead of a single number estimate of attenuation, the NRR will become a range of attenuations. Low numbers on the attenuation range will be the results expected from most untrained users, while high numbers on the attenuation range will be the results expected from most highly trained users. But how is an employer to know how much attenuation is being achieved when the label on the box shows a range like “NRR 18-28 dB”? VeriPRO will not replace the NRR, but will allow users to measure exactly how much attenuation is being obtained by a user.
Q. Can I test two different earplugs at the same time, one in the right ear and one in the left, to see which one is better for me?

A. No, this will not give meaningful results. Nearly every user will have anatomic differences between ears that affect the fit, even with the same earplug. To compare two different models of earplugs, it is best to run a Complete Check with model A in both ears, then run a second Complete Check with model B in both ears. However, after testing each, a user may decide to use different earplugs in each ear.
Q. Why does VeriPRO use frequencies that are not the same as those on the NRR chart?

A. VeriPRO uses the frequencies that contribute the most to accurately measuring proper fit of a hearing protector. Other test frequencies (such as 3000 Hz and 6000 Hz) are used in the laboratory to calculate NRR, but these frequencies contribute very little to the rated attenuation of an earplug, and are often not included when calculating certain attenuation ratings.
Q. Are there any users who cannot obtain valid attenuation results with VeriPRO?

A. A small number of users have a hearing loss of such severity that it interferes with hearing VeriPRO’s reference tones, particularly in the high frequencies. For these users, valid results can still be obtained with VeriPRO using the Quick Check mode (500 Hz only) to at least obtain a pass/fail indication of adequate attenuation.

Do note that there are some people with such severe hearing loss that will not be able to perform even a Quick Check test.
THANK YOU!

Thank you for taking the time to complete the VeriPRO training!