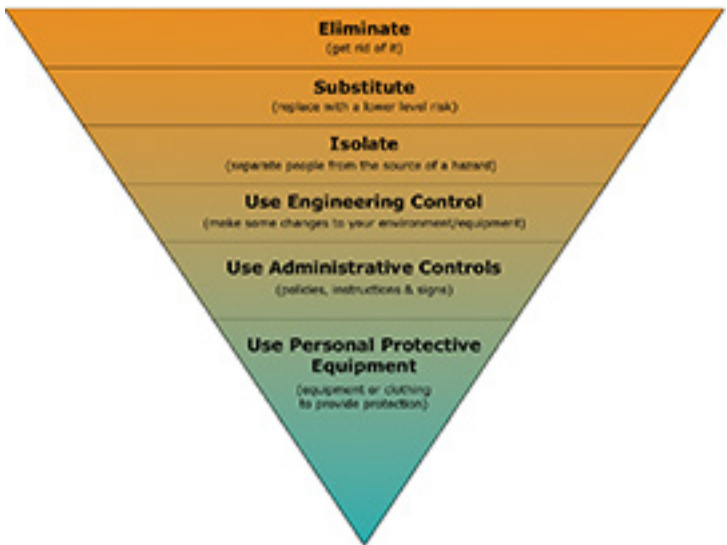




# The adverse health effects of communication.

Who would have thought that the simple art of communication could actually pose a serious health and safety risk in the workplace? When workplace risks cannot be eliminated or reduced to an acceptable level following the hierarchy of controls: elimination, substitution, isolation, engineering and administrative controls, then the use of personal protective equipment (PPE) provides the best line of defence to protect workers against a variety of hazardous exposures. Then why is it that many workers in industrial and commercial environments risk their health and safety to communicate by either:



- 1. Not using PPE
- 2. Not wearing it in an appropriate manner
- 3. Not wearing it at the appropriate times

The factors mentioned above leaves workers exposed to the dangers they are supposed to be protected from, leading to dire consequences that could otherwise have been avoided. Could it be that in some scenarios there is a perception that the use of PPE may actually pose a safety risk? Without effective management, that is, providing (or using) appropriate equipment relative to the work environment, it could potentially pose a serious health and safety risk.

## Does PPE really have pitfalls when it comes to communicating?

In busy or noisy workplaces, particularly industrial settings, effective communication is critical when it comes to worker safety. Communication can be hindered by a number of factors, however one common complaint when it comes to certain types of PPE, namely hearing protection devices and respiratory protection devices, is how they interfere with the ability to communicate. If you work in a loud environment and require the use of hearing protection, or work in conditions where the use of a respirator is required, or do both, then you likely struggle with communication.

**Hearing Protection Devices** - Noise is an inherent component of many work environments and working in noisy surroundings usually requires the need to wear hearing protection, but it's also common that you need to speak or listen to others around you. When it comes to this form of PPE the main complaint is that it interferes with the ability to hear speech as well as other important sounds. Trying to hear and converse with co-workers in noisy surroundings requires extra concentration and strain. Messages and instructions can be misunderstood and warning signals or a warning shout drowned out, creating confusion and a host of safety concerns potentially resulting in workplace accidents and injuries. As a result, the most common and instinctive thing to do is lift your earmuffs. In doing so, you are now exposed to the dangerous noise levels you are trying to filter out and exposed to the risk of noise induced hearing loss.


**Respiratory Protection Devices** - In situations where a respirator is required, the ability to communicate effectively is also impaired. When wearing a respirator, the lips and a portion of the face are concealed, so not only is speech muffled, but any visual cues are hidden. This makes it difficult to talk, be heard, and to recognise who is actually speaking. You can often see workers lifting or removing their respirators to communicate, however not wearing a respirator for even short periods during exposure will reduce protection. Unfortunately, this leaves workers overexposed to hazardous airborne contaminants and under-protected from the plethora of potential respiratory diseases.

## So what is the solution?

In light of the fact that PPE works by functioning as a barrier to hazardous substances, providing the necessary and critical protection required, many workers still find it difficult to wear PPE that makes it challenging to verbally communicate and collaborate with colleagues. So what is the solution? Some workers rely on hand signals, that may be a solution if you already have someone's attention, however there are many scenarios where non verbal communication just won't cut it. How can you warn someone of imminent danger if they don't have you in their line of sight, or they can't hear you?


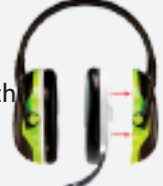



Using the right tools to do the right job is common sense advice that applies to a wide range of applications. Not only is it essential to have good tools, but it is also essential that the tools be used in the right way. When it comes to PPE It is absolutely essential that you use the right PPE for the task at hand and use it correctly to ensure your health and safety and that of those around you. Luckily with the advances in technology the range of respiratory and hearing solutions that allow for communication are available to meet virtually every need and application. The traditional method of simply providing boxes of earplugs and respirators, a one size, one application approach, rendering some PPE not fit for purpose is no longer a reasonable approach and options should be carefully weighed up in order to ensure worker safety is prioritised and respiratory and hearing risks minimised.

The tables below provide a selection of solutions available for workers who need the ability to communicate while requiring respiratory protection, hearing protection or a combination of both.

Solution	Application	Communication capable	Speech diaphragm	Silicone flex-joint face seal	Exhalation valve	Push button seal check	Push to click cartridge connection	Dual-flow cartridges
3M™ Secure Click™ Half Mask Reusable Respirator HF-800 Series 	<ul style="list-style-type: none"><li>Ideal for use in non-noisy environments where the use of a respirator and communication in close proximity is required.</li><li>Utilises the inclusion of a speaking diaphragm designed to help provide easier communication while working.</li></ul>	✓	✓	✓	✓	✓	✓	✓


[View the Secure Click™ Half Mask Reusable Respirator with Speech Diaphragm Brochure](#)

### Hearing Protection Solutions

Solution	Application	Communication capable	Situational awareness	Bluetooth®	In-built AM/FM radio*	Noise cancelling mic	External audio input jack	In-built two-way radio
3M™ PELTOR™ WorkTunes™ Pro Headset 	<ul style="list-style-type: none"><li>Helps protect you from potentially harmful workplace noise while at the same time allowing you to enjoy listening to the built in AM/FM radio.</li></ul>				✓		✓	
3M™ PELTOR™ Wireless Bluetooth Accessory 	<ul style="list-style-type: none"><li>Designed as an add on accessory to existing X series earmuffs for communicating in noisy environments</li></ul>	✓		✓		✓		
3M™ PELTOR™ ProTac™ III Headset 	<ul style="list-style-type: none"><li>Built-in level-dependent function allows the wearer to hear ambient sounds, such as conversations, machine sounds and warning signals</li></ul>	✓	✓				✓	
3M™ PELTOR™ WS™ Alert™ XPI Headset 	<ul style="list-style-type: none"><li>Allows connection of one or two devices via Bluetooth® Multipoint technology and speak in a normal volume even in noisy environments with the noise-cancelling microphone.</li></ul>	✓	✓	✓	✓	✓		
3M™ PELTOR™ LiteCom™ Series Headset 	<ul style="list-style-type: none"><li>Built-in programmable two-way radio, level dependent functionality and a VOX function mic for hands free communication.</li></ul>	✓	✓			✓		✓

 <b>Situational Awareness</b>	 <b>Bluetooth</b>	 <b>In-built AM/FM Radio</b>	 <b>Noise Cancelling Mic</b>	 <b>External Audio Input</b>	 <b>In-built Two-way Radio</b>
Be aware of your surroundings without the need to remove your hearing protection	Wireless connection to your mobile phone or communication radio	Listen to the built-in AM-FM radio whilst still protecting your hearing	Filter out noise for clear speech and voice command	Connect to your mobile phone or similar device with the 3.5mm jack	Talk hands-free and work safely with the built-in two-way radio
<a href="#">View the Range of Protective communications</a>					

### Integrated Respiratory and Hearing Protection Solution

Solution	Application	Communication capable	Respiratory protection	Hearing protection	Head protection	Eye protection	Face protection	All in one integrated protection
3M™ VersaFlo™ Helmet with 3M™ PELTOR™ communication headset 	<ul style="list-style-type: none"><li>Ideal for use in environments where the use of a respirator, hearing protection and full communications is required.</li><li>Typical applications include: Smelting &amp; foundry, grinding, chemical processing &amp; plant maintenance, agricultural, construction &amp; renovation, demolition.</li></ul>	✓	✓	✓	✓	✓	✓	✓

[View the Integrated Solutions Brochure](#)

The above is only a selection of possible solutions, however every scenario is different, reach out to a [3M Safety Specialist](#) for more information if you need help choosing the right respiratory and/or hearing protective equipment for your application or to organise a demonstration for your work site. Alternatively visit our 3M Centres of Worker Health and Safety Expertise: the [Centre for Respiratory Protection](#) and the [Centre for Hearing Conservation](#), where you will find tools and resources to help achieve your respiratory and hearing conservation safety goals.