PPE for Women: Finding the Appropriate Fit

Cristine Fargo is director of member and technical services at the International Safety Equipment Association (ISEA). In this interview, Fargo discusses how the size and fit of standard PPE can differ between women and men and explains what employers can do to ensure they obtain properly sized and proportioned PPE for their women employees.

Please provide a brief description of your professional background and of your position as Director of Member and Technical Services for ISEA.

By way of education, I have a degree in political science but have been employed by standards developing organizations in their technical departments my entire career. I have been with ISEA for more than 17 years. In my current position, I am responsible for the development, process management, marketing and advocating the acceptance of ISEA-standards ANSI standards.

In general, how does standard PPE (eye/face, foot, hand, head and hearing protection) differ between men and women when it comes to size and fit? How are anthropometry and ergonomics used in the design of PPE for women?

Numerous anthropomorphic studies have identified the differences in body part measurements between men and women.

It is known that female hands tend to be smaller, with shorter, narrower fingers than males. The same is true for foot measurements. Manufacturers have used this information to design items that can provide better fit in a variety of ways. They may reappoint the size of a glove to fit smaller hands or may incorporate materials into gloves that can conform better to the individual wearer’s hands.

Women also tend to have smaller facial features and profiles. With this knowledge, safety eyewear manufacturers have designed spectacles that have shorter temples so that the eyewear sits on the face better or have designed goggles with tighter fits to eliminate gapping at points where contaminates or particles could possibly enter the ocular area, causing an eye injury.

Why do many women in the workforce end up wearing ill-fitting PPE? What kinds of safety, health and occupational hazards can ill-fitting PPE present, particularly for women workers?

I think part of this has to do with the culture of the institution in which they work. Perhaps women do not want to draw attention to themselves by speaking up, or perhaps they are not part of the decision-making process. They may be unaware that PPE solutions exist that could overcome the ill fit of products they currently use. In some companies, PPE selection decisions may be made in the purchasing department, rather than by safety professionals. That fosters a one-size-fits-all approach, and workers are expected to wear whatever the company buys.

Inadequately fitting PPE can expose workers to greater risk. Stuffing cotton balls in the tips of gloves whose fingers are too long or wide for the wearer can create a loss of dexterity and tactility. This can increase the potential for hand injuries. Female workers who are given protective footwear sized for men may experience more trips or slips while walking or climbing ladders or they may experience blisters on their feet, creating greater discomfort.
Protective apparel that is too loose has the potential to become caught in machinery. Eyewear that does not fit well may continually slip off the face. The employee may become annoyed at the constant adjusting of the spectacles and may opt to not wear any eye protection at all, increasing the potential for eye injuries.

Why do not more manufacturers produce correctly sized and proportioned PPE for women specifically?

Demand is a factor. Given the extremely diverse workforces, manufacturers are challenged with designing equipment that is best suited for all employees, regardless of gender, ethnicity or other defining characteristics. Multiple decisions go into product development, research and marketing. And once those products are designed, the demand to get them in the marketplace must be present, meaning that employers must be asking for them.

Keep in mind that just because something is colored pink does not mean that it is designed for women. In some cases, unisex items can appropriately serve the needs of a female. A traditional hardhat comes with a headband that is adjustable to enable the device to fit most wearers properly. All workers can benefit from lighter-weight head protection material, so in the instance of head protection, it may be a matter of training to achieve the proper fit as opposed to specifying a uniquely designed item.

And, it is important to remember that not all females are the same size, so the fact that a line of PPE is designed for specifically women does not automatically mean that the proper fit will be attained. The employer and the wearer must evaluate the equipment to ensure that it fits properly and is comfortable to wear when performing work that requires PPE.

Are women at a higher risk of certain occupational injuries than men? If so, how can properly fitting PPE help protect women from such injuries?

With respect to the use of PPE, I have not seen anything that indicates that women are disproportionately more at risk than men, all things being equal. It is expected that data show that industries employing a larger percentage of female workers, such as the service sector, have a greater injury rate for women, but I am not certain this is directly attributable to PPE so much as it is to best practice and administrative-type controls. This is said with ergonomic injuries in mind.

Again, everything comes back to training, selection and communication when it comes to the use of PPE and the reduction of occupational injuries.

What challenges do women face in finding properly fitting fall protection equipment, such as harnesses? Why is this so?

Fall protection harnesses can create special problems for women. In addition to size differences, they must accommodate obvious differences in body shape, especially in the chest and pelvis. Harnesses are available that are designed to conform to a woman’s body. Other harnesses have different configurations of chest straps or leg straps that may fit women better. The challenge is to educate the company that such equipment exists and provides it when needed.

Has ISEA needed to revise its existing standards to take into account new advances in PPE for women?
Most ISEA standards are performance-driven for the product overall, so the concept of fit is not really a key discussion when the standard is revised. Topics, such as proper fit and selection, are often addressed in guidance materials or manufacturer’s product literature and are often differentiators from a marketing perspective. That being said, some of the standards ISEA administers include specific criteria related to sizing or adequate fit.

For example, the performance classes described in the ANSI/ISEA 107 standard on high-visibility apparel depend on a minimum amount of compliant materials used in the construction of an item. What product suppliers have been hearing is that an item meeting Performance Class 1, which includes the least amount of compliant visible material that will still enable the wearer to be seen, can still seem like a dress on some smaller-statured persons, including women. Our High-Visibility Group is exploring ways to address these sizing concerns while still preserving the protective function of the item, which is the original basis for the standard.

More recently, the ANSI/ISEA Z87.1 standard on safety eyewear has incorporated the use of a smaller headform when conducting product evaluation. This allows products specifically designed for smaller profiles to be properly tested and to become available to those who need them.

**What should employers do differently to ensure that both women and men don PPE when needed?**

Workplace surveys continually cite lack of comfort, fit and style as reasons why PPE is not worn when needed. There is no shortage of available products. Safety equipment manufacturers are continually expanding their product offerings to address these, such as by offering welding helmets that are stylish from a cosmetic perspective and that incorporate smaller headgear to ensure a better fit when needed; fall protection harnesses specifically designed for (and marketed to) women workers and eye and face protection that offers style as well as protection.

One important step an employer can take is to engage employees during the selection process. When they are involved in the decision about what PPE is provided to them, they are more inclined to wear it. The one-or-two-size-fits-all approach is not feasible in light of a diverse working community.

**If women are concerned their PPE is inadequate or ill-fitting, how can they best work with their employer to obtain appropriate gear?**

One mantra ISEA tries to push is to make the business case for the use of PPE. Even the most minor of workplace injuries can cost business thousands of dollars in both direct and indirect costs. If the potential to reduce incidences and to increase productivity can be tied to the availability and use of properly fitting PPE in the workplace, then employers have extra motivation to provide it.

Concerned employees should approach their employer or safety director armed with information that will articulate their concerns and offer solutions. Many vendor websites are dedicated specifically to PPE designed and marketed to women. Manufacturers have product literature that details the differences in equipment designed for women and highlights the item’s protective properties. They may even offer product samples so that employers can evaluate them before committing to a large order. In some cases, manufacturers may work with large customers to participate in pilot programs to test new designs before they are launched into the marketplace. The key is to know that the information is available.

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