



National Environmental Health Association

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The National Environmental Health Association (NEHA) represents more than 6,700 governmental, private, academic, and uniformed services sector environmental health professionals in the U.S. and its territories and internationally. NEHA is the profession's strongest advocate for excellence in the practice of environmental health as it delivers on its mission to build, sustain, and empower an effective environmental health workforce.

Policy Statement on Ear Piercing Guns

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In the U.S., approximately 83% of the population has their earlobes pierced and 14% has a piercing outside the earlobe (The Academy of Responsible Tattooing, 2018). Commonly regulated separate from other piercing techniques, ear piercing guns are frequently used to pierce the ear lobe, outer ear, and other areas of the body despite their inability to meet the same sterilization requirements as other piercing methods. This inability increases health risks such as infection, disease transmission, and tissue damage, including cartilage shattering (Centers for Disease Control and Prevention [CDC], 2008, 2018; Keene, Markum, & Samadpour, 2004), as well as potential hospitalization in severe cases (Cicchetti, Skillman, & Gault, 2002; Margulis, Bauer, & Alizadeh, 2003).

Environmental health professionals regulate piercing procedures to protect public health. Not all states, however, classify the use of ear piercing guns as a piercing procedure and it can be exempt from these regulations. This situation creates an environment that allows for insufficient hygiene standards that have been shown to produce greater rates of infection, complications, and disease transmission. These discrepancies highlight the need to update requirements for ear piercing guns and limit their use to the ear lobe to protect public health and safety.

The National Environmental Health Association (NEHA) advocates for national, state, and local policies, regulations, research, and resources that will enhance the ability of environmental health professionals to ensure the practice of safe body art procedures to better protect public health.

NEHA recommends the following for state, local, tribal, and territorial government agencies:

- Classify establishments that use ear piercing guns in the same category as body piercing facilities and enforce body piercing and biomedical waste regulations on these establishments as governed by state and local health jurisdictions.
- Ensure that sterilization procedures can be monitored, sanitary practices can be established, and regulations will allow for uniform inspections and improve consumer health.

- Hold the use of ear piercing guns to the same standards as other piercing techniques. As stated in the NEHA Body Art Model Code, “individuals who perform piercings with a pre-sterilized, single-use, stud-and-clasp ear piercing system must adhere to [general body art] regulations and meet the requirements of a body art practitioner.”
- Limit the use of ear piercing guns to the ear lobe.
- Educate lawmakers and health agencies on the dangers of unregulated facilities and untrained personnel using ear piercing guns on the public. Piercings performed with ear piercing guns that cannot be fully sterilized might result in serious infection, tissue damage, and disease transmission. These issues can be exacerbated with untrained staff in unregulated facilities.
- Ensure that regulatory agencies have the resources, training, and jurisdiction to conduct inspections of all piercing facilities, including those that use ear piercing guns.
- Hold establishments using ear piercing guns to the standards outlined in the NEHA Body Art Model Code.

Analysis

The perception of body piercing has changed from extreme to generally accepted. While exact numbers are hard to come by, some studies have stated that 83% of the U.S. population has their ears pierced, and only 10–20% of women do not (The Academy of Responsible Tattooing, 2018; Hallman, 2005). As piercings are becoming more common, further studies and experiences have shed more light on the most common methods used.

Ear piercing guns are frequently used to pierce the ear lobe, high ear, and occasionally other areas of the face and body. The instruments are designed to pierce the skin by driving a starter earring through the desired area. The most common type of ear piercing gun is spring loaded and when the trigger is released, the earring is driven through the skin and into the provided earring back. Some models of ear piercing guns use disposable cartridges (the stud-and-clasp holder is entirely disposable), while more traditional ear piercing guns require manual loading of the earring and back into the device for each procedure. In either case, most ear piercing guns are made at least partially of plastic and cannot be sterilized to the same extent as other piercing equipment, leading to a greater risk of infection. Ear piercing guns are typically used in mall kiosks or cosmetic shops and are rarely found in tattoo and piercing studios (More, Seidel, & Bryan, 1999).

Regulation of ear piercing guns varies across the country. The Food and Drug Administration (FDA) maintains the position that ear piercing devices should be restricted to prescription dispensing, which means they cannot be used by people without medical training. Furthermore, FDA has attempted to regulate such devices on an ad hoc basis. Due to the lack of uniformity in state regulations, however, FDA is unable to enforce this position. In fact, many states do not require prescription dispensing as FDA suggests. A recent opinion from the California attorney general stated that because “ear piercing does not constitute the practice of medicine, it follows that . . . there are no circumstances that would prohibit a nurse or any other licensed or unlicensed person from performing earlobe piercing” (Food and Drug Administration, 2015). Indiana and Tennessee piercing regulations exclude ear piercing guns from piercing instrument definitions, thereby eliminating most sterilization requirements (Indiana State

Department of Health, 2017; Tennessee Department of Health, 2002). In contrast, several state regulations limit the use of ear piercing guns to the ear lobe or the lobe and the outer ear due to the increased potential for tissue damage. Ear piercing guns use blunt force to pierce the skin and can damage the surrounding cartilage and lead to serious infection. Ohio, Oklahoma, and Massachusetts limit the use of the ear piercing gun to the lobe alone, while Mississippi and Texas allow the device to be used on the entire ear but nowhere else on the body (Mississippi State Department of Health, 2012; Ohio Administrative Code, 2014; Oklahoma State Department of Health, 2017; Ridley, 2001; Texas Department of State Health Services, 2005).

Some ear piercing gun operators have reported that the guns malfunction at times, requiring removal of the jewelry with pliers that are later used on other clients, creating a pathway for disease transmission. Occasionally the force of the gun is insufficient to force the earring stud through the client's ear, leading to contamination from the employee attempting to remove the earring or excessive trauma if the earring is forced through the lobe. Ear piercing guns are also misused despite manufacturer instructions. Piercings have been documented on ear lobes, upper ear cartilage, nostrils, navels, eyebrows, tongues, and other areas of the body although many manufacturers label ear piercing guns for use on ear lobes only (Association of Professional Piercers [APP], 2018). Infections from ear piercing gun procedures on the tongue or navel often result in serious complications.

Due to widely varying regulations and underreporting, well documented data on ear piercing gun procedure complications are lacking. Nonetheless, infection and injury have been documented. When used on the high ear, piercing guns drive the blunt end of the earring through the cartilage, using sheer force to complete the piercing. Rather than creating a clean cut, the cartilage can be fractured around the piercing, which can lead to infection and a difficult, lengthy healing process (Lyons, Stephens, Wasson, DeZoysa, & Vlastarakos, 2012). In rare cases, infection from this type of injury can lead to choroiditis and the collapse of the upper ear, resulting in a difficult reconstruction process with varying success (Cicchetti, Skillman, & Gault, 2002; Margulis, Bauer, & Alizadeh, 2003). Keloid formation, or excessive scarring, has also been documented after high ear piercing infections using an ear piercing gun (Bashir, Afzal, Khan, & Abbas, 2011).

In any piercing area, the posts of the jewelry used in ear piercing guns are often too short to accommodate the swelling that occurs after the procedure, pushing the stud up against the back of the ear. This occurrence can lead to cases of embedded earrings, increased pain, and infection. Jewelry that fits too closely to the skin prevents normal discharge from piercing sites to escape, creating a fluid barrier that traps bacteria against the skin (APP, 2018). Furthermore, the jewelry used in ear piercing guns is typically not high quality, implant-grade metal suitable for body piercing and could contain common allergens such as nickel. In one study, more than 26 cases of embedded earrings were identified after using a spring-loaded ear piercing gun (Cohen, Nussinovitch, & Straussberg, 1994). This issue is particularly worrisome for young children who often have their ear lobes pierced with ear piercing guns, since they might not be able to communicate that the earring has become embedded and parents might assume the jewelry is missing (Tiong, Sattler, & O'Sullivan, 2008).

Justification

The percentage of the U.S. population with piercings has grown steadily in recent decades, prompting a rapid expansion in piercing methods and locations (APP, 2018). The ear piercing gun is popular because it is easy to use. Its inherent design and the lack of training for employees, however, demands more regulation. While some states have begun to limit the locations on the body where ear piercing guns can be used, few states have standards that consider the increased likelihood of contamination from

improper sterilization, procedures, or training. Ear piercing guns should be held to the same standards as all other piercing techniques and should be limited to use on the ear lobe. Streamlining sterilization regulations will allow for uniform inspections and improve consumer health.

Ear piercing guns have been shown to cause more damage than the techniques typically used in professional piercing studios. Cases of shattered cartilage and keloid formation have been reported when ear piercing guns are used on the upper ear. Many mall kiosks or cosmetic stores are entirely prepared to use the ear piercing gun on any part of the ear, creating a greater risk for these types of injuries. Employees have also not hesitated to use the gun for cartilage piercings on children under 16 years (Jervis, Clifton, & Woolford, 2001). In contrast, the technique used by most professional piercers involves piercing the ear with a sterile, disposable, hollow needle that cleanly breaks the skin and removes unwanted tissue. This method decreases the likelihood of injury and infection as sterilization procedures are more in-depth and there is not a high risk of blunt force trauma (APP, 2018). Ear piercing gun use should be limited to the ear lobe, where tissue damage is less likely to occur.

In professional piercing studios, any nondisposable equipment is autoclaved, a process that uses heat, steam, and pressure to sterilize all nondisposable piercing tools between each use, killing most pathogens. In contrast, ear piercing guns cannot be autoclaved as they are usually made from plastic. Instead, piercing guns are simply wiped down with disinfectant between each use. Wiping down the external surfaces rarely eliminates all the bacteria outside the gun and cannot kill pathogens within the working parts of the gun. Blood from one client could easily contaminate another, leading to potential infection and transmission of diseases such as hepatitis or methicillin-resistant *Staphylococcus aureus*, which can live for extended periods of time on inanimate surfaces (CDC, 2008, 2018). Pathogens and disease can also be spread from client to technician, and from technician to client. Infection or injury are also likely to lengthen the healing time for piercings, which can already take months to completely heal. While ear lobe piercings typically heal in 6–8 weeks, cartilage and navel piercings can take anywhere between six months and one year if no complications occur. Ear piercing guns need to be regulated with the same sterilization standards as all other piercing establishments to alleviate these issues.

Risk of infection is magnified by unsanitary workspaces that do not meet regulations or recommendations for general piercing studios. For any type of piercing, all surfaces should be nonporous and easily cleanable. These surfaces include floors, counters, chairs, and walls. Many ear piercing guns are used in unregulated procedures in mall stores or kiosks, which can emphasize comfort and appearance over cleanliness. In addition to limited separation from other areas of the store, ear piercing gun procedure areas might have pillows, sheets, or rugs. These surfaces are absorbent and could contain blood particles from multiple clients. A tuberculocidal disinfectant should also be used to regularly clean all surfaces. Lighting and washing are also important for hygienic workspaces. Body piercing and sterilization areas should all be adequately lit and contain hand sinks to facilitate proper hand washing practices.

While ear piercing guns might seem easier to use, that does not make them less harmful. Training procedures at establishments using ear piercing guns should match their equivalents at professional piercing studios. Videos, demonstrations, and direct supervision are sometimes used to train employees to use ear piercing guns, although there is no specified training period (More et al., 1999). Employees at establishments that use ear piercing guns commonly do not have bloodborne pathogen training or do not follow appropriate aseptic techniques. Employees have also shown a lack of knowledge concerning potential complications from piercing procedures (Jervis et al., 2001). For example, employees at a mall kiosk in Oregon neglected to wash the bottle used to spray disinfectant onto earring studs, leading to an

outbreak of *Pseudomonas aeruginosa* infections and several cases of auricular chondritis. Four of the cases had to be hospitalized and undergo drainage surgeries (Keene et al., 2004). In contrast, most professional piercing studios require apprenticeships, typically lasting at least one year, before an employee can perform procedures individually (Grant, 2002; More et al., 1999). Increased regulation of ear piercing guns requiring standard sterilization, training, and workplace practices would alleviate injury and infection.

Many state regulations exclude ear piercing guns from disinfection and sterilization requirements, which causes a public health concern. Indiana requires that any “equipment that penetrates the skin (i.e., needles) or comes into direct contact with an instrument that penetrates the skin, except a piercing gun, requires sterilization.” Similarly, Tennessee regulation defines body piercing as “the piercing of any part of the body for compensation by someone . . . who utilizes a needle or other instrument for the purpose of inserting an object into the body for nonmedical purposes; body piercing includes ear piercing, except when the ear piercing procedure is performed with an ear piercing gun” (Tennessee Department of Health, 2002). If exceptions continue to be given to ear piercing guns in state regulations, manufacturers and users will have no incentive to alter disinfection practices, innovate or use newer methods, or improve training practices.

Regulation of ear piercing guns in the U.S. lags behind policies in other countries. In 2013, Mexico became the first country to ban ear piercing gun use entirely (Zapata, 2013). At the federal level in Canada, disposable cartridge ear piercing guns are recommended for use on the ear lobe only and legally regulated as such in several territories. Additionally, sterilizers used with ear piercing guns must be tested for effectiveness monthly in Alberta (Rideout, 2010). The Australia Government Department of Health (2011) requires that ear piercing guns are used only on the ear lobe and specifies disinfection and storage requirements. U.S. regulation at the state level is sporadic and sometimes grants exceptions to ear piercing guns.

Streamlining regulations for ear piercing guns and other piercing techniques, in addition to limiting use to the ear lobe, will elevate policy and prevent infection. Increased regulation for ear piercing guns has received support from the professional piercing community, elected officials, and public health organizations. The Association of Professional Piercers (2018) states that because ear piercing guns cannot be fully sterilized, traditional piercing techniques from reputable organizations should always be used. Additionally, some states have already begun to limit the use of ear piercing guns to certain areas of the body.

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