

Tattooing and Piercing Risks

By ACSH Staff — February 1, 2002

Tattooing and body piercing are somewhat trendy now, having gained popularity in the 1990s. However, these forms of "body modification/body art" are anything but new. Both have been around since ancient times and are practiced in many cultures. Although their popularity attests that millions of customers feel both procedures are worth doing, there are some potential risks and complications.

Tattooing

Tattooing involves multiple punctures of the skin to instill pigment into the dermal or second layer. It is permanent, although over time some of the colors may fade. Dermatologist Dr. Audrey Kunin notes some risks to keep in mind when considering getting a tattoo. First, self-tattooing or giving someone else a tattoo as an amateur should never be done. People have been known to use objects such as pencils, pens, straight pins, or needles. Amateurs have been known to use mascara, India ink, carbon, soot, and charcoal as pigments. The unclean conditions and types of dyes used increase the chance of infection and can risk a person's health.

What's In Tattoo Ink?

"The vast majority of tattoo pigments are derived from metals, which makes them a potential source for developing a skin reaction," Dr. Kunin says. Red, for example, is the color most commonly associated with reactions within a tattoo. Mercury is the base metal in red tattoo dye and reactions may be eczematous (inflamed, oozing, crusting/scaling skin) or granulomatous (lesions). "These reactions are often seen several years from the time the tattoo is placed and may be associated with exposure to cross reactants," she says. These include such chemicals as mercurochrome, thimerasol (preservative), and some vaccines that also contain thimerasol.

Yellow is a common cause of reactions within tattoos, Dr. Kunin says, and associated with phototoxicity when exposed to light. "Blue dyes are notorious for deep granulomas as well as causing localized hypersensitivity reactions and a few reported cases of uveitis (an inflammation of the eyes)," Dr. Kunin notes. Green dyes may cause significant and long-term itching and other eczematous reactions. Complete removal of the tattoo is sometimes required. Purple and violet dyes may cause the formation of tattoo granulomas, and brown dyes have been associated with phototoxic swelling upon exposure to sunlight.

There is some pain and minor bleeding involved in tattooing, so a topical anesthetic may be used to help diminish the discomfort. "A scab or shiny skin patch will form over the tattoo and will remain for approximately 3-7 days," Dr. Kunin explains. "Wound care is vital to prevent secondary bacterial infections, just like any open wound." Dr. Kunin is the medical director of Kunin Cosmetic Dermatology as well as the founder of the website DERMAdoctor.com.

Infectious Concerns

"Tattooing may potentially result in the accidental inoculation of infectious particles into the skin," Dr. Kunin says. "While most commonly thought to be a risk for the tattoo client, realistically, a needle stick from the client into the artist also exposes the artist to these risks," she adds. Some of the most common infectious agents that may be transmitted via a needle stick include hepatitis B and C, tuberculosis, mycobacterium, syphilis, HIV, malaria, and Hanson's Disease a.k.a. leprosy, Dr. Kunin points out.

Some skin diseases may flare when insulted by local skin injury. Psoriasis may flare locally at the tattoo site. This is called the Koebner phenomenon. "Initial reactions from the tattoo include local swelling, redness, bleeding, and scab formation," Dr. Kunin notes. She says, however, that years down the road, problems may occur such as the development of lichenoids (small bumps or papules of reactive tissue), sarcoidal granulomas (firm balls of reactive tissue beneath the surface of the skin), scaling, itching, swelling, ulcerations, delayed hypersensitivity, and lymphocytoma cutis (a skin reaction that mimics lymphoma of the skin). Large, raised scars known as keloids may also develop.

Industry Standards

In addition to making sure a tattoo parlor is reputable, there are certain standards to keep in mind. The Alliance of Professional Tattooists (APT) is a nonprofit organization that, together with the Food and Drug Administration (FDA), has developed a set of infection control guidelines for tattooists to follow:

- Use an autoclave, a heat sterilization machine regulated by the FDA.
- Have customers fill out consent forms before tattooing begins.
- Wash and dry hands immediately before tattooing.
- Wear latex gloves at all times before tattooing.
- Clean all surfaces that can't be autoclaved with a disinfectant or a chemical that kills germs.
- Dispose of used tissues in a special leak-proof container.

Body Piercing

Body piercing, like tattooing, has become popular, but it has its own set of possible problems. Recent medical journals have chronicled hundreds of cases of injury, infection, and even death caused by piercings gone bad. Body piercing involves the insertion of sharp implements, most often large-bore hollow needles, to create an opening for decorative ornaments such as jewelry. The desired area of skin is held taut, punctured, and then threaded with jewelry through the hole. Parts typically being pierced today include eyebrows, belly buttons, lips, cheeks, tongues, noses, the genitals, and multiple earrings. "Additionally, there seems to be more creativity and risk taking,

especially with body piercing, in an attempt to see what kind of unusual piercings can be created," writes Myrna Armstrong of the School of Nursing at Texas Tech University. Armstrong has conducted extensive research on body art and health risks. Her latest study, "Tattooing, Body Piercing, and Branding Are on the Rise: Perspectives for School Nurses," appeared in the February 2001 issue of *The Journal of School Nursing* (vol. 17, no. 1).

Piercing the skin risks infection of the piercing site. This can cause a deformity, or blemish, and a scar. Infections can result from a piercing done in unsanitary conditions. "In general, hepatitis B is the major threat with body art because it can be transmitted in as little as 0.00004 ml of blood and can survive on blood-contaminated surfaces, such as instruments or countertops, for more than two months," Armstrong writes. In addition, she adds, hepatitis C is now being reported, but the transmission of HIV attributable to body art is questionable.

Even piercings done in sanitary conditions can become infected. This can happen because of improper aftercare. Jewelry may also irritate other parts of the body. For example, a nose piercing may irritate the upper lip; bottom-lip jewelry may rub against the gum line and wear away the gum causing tooth loss. Clothing can irritate navel piercings waistbands and tight-fitting clothing do not allow air circulation, so moisture can collect because of this and infections can form. There are also concerns about studios that use spring-loaded guns to do piercing. "The problems are that many people wipe the gun clean with an antiseptic between piercing procedures and perform the procedure in unregulated cosmetic shops, shopping malls and earring kiosks," Armstrong writes. This equipment cannot be effectively sterilized or even decontaminated, as a result of its size and complexity.

Keloids can also develop around piercings. Other risks of piercings include nerve damage and paralysis from improperly placed piercings, elongated or extended holes from heavy earrings, injuries from jewelry getting caught in other objects, and rejection of jewelry by the body. Jewelry worn for body piercing should be specifically designed for the site and the procedure, advises Armstrong. "Utmost care should be taken in the selection of the jewelry, i.e. high-quality surgical stainless steel, niobium, titanium, or 14-karat gold." Aftercare of the piercing site is essential.

Regulations

"The amount of legislation surrounding body art practices in individual states is changing in response to client safety concerns," Armstrong writes. However, she adds, "For the body artists, there is virtually no specific curriculum or national body of knowledge that has been developed for performing these invasive procedures. Few states require specific education on subjects such as anatomy, universal precautions, diseases, sterilization procedures, sanitation, personal hygiene and aftercare instructions, which can prevent transmission of disease or injury."

Oral Piercings

According to Leslee Williams, media manager for the American Dental Association (ADA), the ADA has prepared a policy statement opposing oral piercings (revised October 2000). "Oral piercings have been implicated in a number of adverse oral and systemic conditions," the statement says. "Common symptoms following piercing include pain, swelling, infection, and increased salivary flow. Potential complications of intraoral and perioral piercings are numerous,

although available scientific literature is rather limited and consists mainly of case reports. Possible adverse outcomes secondary to oral piercing include gingival injury or recession; damage to teeth, restorations, and fixed porcelain prostheses; interference with speech, mastication, or deglutition; scar-tissue formation; and development of metal hypersensitivities."

Because of the tongue's vascular nature, prolonged bleeding can result if vessels are punctured during the piercing procedure. In addition, the technique of inserting tongue jewelry may abrade or fracture anterior dentition, and digital manipulation of the jewelry can significantly increase the potential for infection. Airway obstruction poses another risk as well as accidental ingestion of jewelry. In addition, oral ornaments can compromise dental diagnosis by obscuring anatomy and defects in x-rays. "The ADA opposes the practice of intraoral/perioral piercing," states Williams.

Representing nearly five hundred people who do piercing, the Association of Professional Piercers (APP) is an organization that circulates vital health, safety, and educational information for the professional piercing industry. They lobby state legislatures for tougher health and safety regulations on piercing and offer a procedural manual that provides an overview of in depth piercing safety suggestions and basic guidelines. They also provide information on what to expect during the healing process as well as how to care for a new piercing (aftercare guidelines).

Of course, there are no guarantees all tattooists will follow the APP's advice. Let the buyer beware.

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