

Body Art Biological Safety Guidelines

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2010

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Introduction

The purpose of this manual is to provide necessary information on infection prevention and control for personal services including tattooing and ear/body piercing. These guidelines are based on potential and/or documented risks of infection posed by tattooing and other forms of skin piercing procedures. These guidelines of infection prevention, if followed properly, will reduce risks of infection.

The manual is written for practitioners who perform tattooing and/or ear/body piercing. The recommendations for infection prevention and control incorporate suggestions from industry representatives. This document may also be useful for environmental health officers and infection control officers and practitioners.

This manual reflects practice standards for the prevention of infection for tattooing and ear/body piercing. The regulatory process and documentation can be found at the Everett Department of Health.

For more information on the current tattoo and body piercing enforcement, please refer to the Everett Board of Health Regulations on Tattoo and Body Piercing. A current copy can be picked up at the Everett Health Department located at City Hall at:

Everett Health Department

484 Broadway Rm. 20

Everett, MA 02149

(617) 394-2255

(617) 387-2139 (Fax)

Section I

Overall Preventative and Control Measures of Infection

- Contains descriptions as to why infection control and prevention is necessary.
 - Evaluation of the infection risks posed by tattooing and piercing.
 - Overall information of safe business operation.
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Necessity of Prevention

Guidelines are developed to reduce or prevent the spread of infectious disease and other blood borne pathogens. Spread of blood borne pathogens such as Hepatitis B or C (HBV & HCV) or Human Immunodeficiency Virus (HIV) can occur when there is an exposure to blood or other bodily fluids that are infected. The more infected clients that were infected with a pathogen before piercing or tattoo, the higher the likelihood of a person being exposed during tattooing or piercing *unless the needles and instruments are sterile*. If the standards set forth in this packet are followed, they will help body art practitioners protect both their own health and the health of their clients.

Sources of Infection

To properly prevent infection from procedures that involve piercing of the skin, it is important to understand the possible sources of infection and where these pathogens are located. Skin and mucous membranes are a human's first line of defense against infections by preventing the entrance of pathogens into the body.

Risks During Procedures:

a. Transfer of pathogens can occur if the object used for piercing the skin is contaminated. Pathogens can contaminate the piercing tool through body fluids transferred from the client and/or the practitioner. Contamination can also occur through an unclean work surface or non-sterile hands and tools. These pathogens can still be present on piercing tools even if they are not visible to the naked eye. It is necessary to always begin a new procedure with a fresh and sterile needle, workstation and other materials used during the procedure.

b. The source of contamination may be the clients themselves. Pathogens are present on the skin of the client at all times. Usually these pathogens are harmless until the skin is pierced. The pierced area provides an entrance to the body and the blood stream. These pathogens can include but are not limited to human papillomavirus (warts) and *Staphylococcus aureus* (Staph infection/boils). Great care must be taken when puncturing a mucous membrane, e.g. bar bell through the tongue. When possible, the area to be punctured should be sterilized prior to performing the procedure.

c. The tools used to hold sharps can also be and have been documented as sources of contamination. Even if a new, sterile needle is used, there has been documented evidence that the Hepatitis B Virus (HBV) has been transferred from a lancet (piercing instrument) holder to uninfected people caused by the holder being contaminated despite a sterile lancet being used each time. It is important to clean

and disinfect all items that hold sterile, sharp objects that pierce the skin. Blood does not need to be visible on the objects to still be able to transmit infections. All items must be appropriately cleaned and sterilized.

Risks After Procedures:

There is a documented risk of infections happening after skin piercing or tattoo procedures. The most frequently reported infections occur after tattooing. Complications can include but are not limited to sensitivity to tattoo pigments, scar tissue and skin reactions to metals contained in the jewelry inserted into the body. Complications may not always be noticed immediately or at all.

Safe Business Practices

Shop

When taking into consideration the piercing procedures and tattooing, the area allowed for tattooing should be organized, sanitary and uncomplicated. All designs should meet the regulations and requirements of the local health department. Those planning to open or renovate a tattoo or piercing studio should contact the local health authority to acquire a copy of their respective regulations and standards.

It is recommended to have two separate areas in the shop to prevent cross-contamination of the sterile work equipment and the dirty equipment.

I. “Clean” or “Sanitary” area:

- The customer waiting and procedure area should also be considered clean areas.
- All disinfected equipment and sterilized packages should be kept in this area

II. “Dirty” or “Unsanitary” area:

- area set up for cleaning contaminated equipment
- should contain holding and cleaning basins.
- Contains autoclave, ultrasonic cleaner and other cleaning and disinfecting equipment.

The shop also has a recommended set of amenities that should be functional and accessible at all times.

The shop in general should contain:

- proper lighting and ventilation
- Surfaces made of non-porous material that can be easily cleaned and disinfected
- Hot and cold running water that is not subject to cross-contamination
- Storage that is protected from particulates and humidity
- Public wash rooms

Equipment

There is a wide variety of equipment available for the various procedures involved in body art. Following is a list of instruments and equipment recommended for these procedures:

- All re-usable parts of instruments should be able to withstand sterilization
- Controls should be operated by foot if possible
- An ultrasonic cleaner may be used to clean instruments, but should not be used to sterilize the equipment as it cannot do so
- Appropriate steam or dry heat equipment should be used for sterilization
- Sterile instruments and needles should be in appropriate packages.
- Storage containers that hold sterile items (Cotton balls, sterile packages, etc...) should have lids
- Objects that cannot be cleaned easily (tattoo machine, cord, plastic bottles) should have a plastic scabbard or bags covering them to avoid contamination

Supplies

- Nitrile, neoprene, vinyl or latex medical style gloves
- Single use tongue-depressors or cotton swabs for removal of ointments or other gels from containers into small, single use receptacles

- Disposable towels and/or clean cloths
- Proper containers used to hold equipment prior to sterilization.
- Autoclave/sterilization monitoring supplies i.e. autoclave tape, strips, pellets etc...
- Spore testing supplies for monthly sterilizer analysis
- Liquid hand washing soap. Preferably, in a wall-mounted or “touchless” unit
- Equipment cleaning detergent
- Sharps containers for disposal of sharp garbage
- Hospital level disinfectants

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Section II

Cleaning, Sterilization and Hazard Control

- Contains step by step instructions on cleaning and sanitation procedures in regards to the object being cleaned
 - Descriptions of cleaning products, hazards and storage.
 - Maintaining sterilization
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Cleaning requires many processes to ensure a thorough and successful sterilization. These processes are outlined in the following pages. Most of the cleaning will be done in the “Dirty” area. General cleaning of potentially contaminated items is the first step in the sterilization process.

Prioritize the items being cleaned by their potential or actual level of contamination. Contaminated items (Blood spilled or spattered items, items that enter the skin, etc...) should be assigned the highest priority. Mid-priority items would include such items as needle holders and other items that come into contact with broken skin. The lowest priority should be given to items of everyday usage (chairs, door handles, etc...).

Cleaning: Equipment And Other Instruments

This step removes visible contaminants and other “Grime” that may build up on the various surfaces of the equipment and the practice environment. This is to be done in the “Dirty” area.

Step 1: If the item cannot be cleaned immediately, soak in cool water. This prevents biological material from drying on the item. A detergent can be used during soaking. DO NOT soak items in

warm water. A warm soak would cause debris, both organic and inorganic, to stick to the surface of the item.

Step 2: Using heavy-duty gloves, take the instruments apart and rinse in running water.

Step 3: Add warm water to the sink and a detergent. Clean the instruments by scrubbing and other forms of friction while ensuring that you do not splash any liquid into your eyes or clothing. Make sure to clean all crevices and seams thoroughly. This step can also be accomplished with an ultrasonic cleaning apparatus.

Step 4: Drain the dirty water and rinse all instruments with warm water to remove any residual impurities. Then dry with a lint free towel or air dry to prevent the formation of a biofilm (a tiny film of microorganisms).

Step 5: Store all instruments in a clean, covered container to await disinfection or sterilization (if needed). Ensure proper containment to prevent contamination by dust or other residues.

Step 6: Remove gloves, wash, rinse and dry them (Only if gloves are reusable). Wash hands thoroughly and dry them.

Cleaning: General Areas

The shop in general should be kept clean. This avoids cross contamination during tattooing and other body art procedures.

Daily Cleaning:

Everyday, all surfaces that may be contaminated by a dirty instrument, equipment or a hand must be cleaned. At the very least, a water and detergent solution should be used to clean dust and soil from these surfaces. Surfaces and equipment that have been touched and may be contaminated should have special attention.

Cleaning of Contaminated Surfaces:

A thorough cleaning of possibly contaminated areas should be performed after every client. A lower to mid level disinfectant should be used to disinfect the area according to the manufacturer's instructions.

Cleaning of Blood Contamination:

Step 1: Put on impermeable gloves.

Step 2: Blot the blood with a disposal towel or wipe

Step 3: The towels or wipes used for cleanup should be disposed of in an appropriate waste receptacle.

Step 4: Apply a hospital level disinfectant to the area and allow for the manufacturer suggested contact time.

Step 5: Properly dispose of all contaminated items in appropriate containers.

Sterilization

After proper cleaning of each item, select those which can withstand the heat and pressure produced in an autoclave. Place these items in the autoclave according to the instructions provided by the manufacturer. As autoclaves vary in manufacture, capacity, temperature and method of sterilization (dry heat vs steam), it is important to read the instructions prior to sterilization and to follow these instructions during each cycle of sterilization.

Proper monitoring of the autoclave is also necessary to ensure proper sterilization. Always use autoclave tape and/or autoclave bags that change color to ensure proper sterilization. At least once per month, the autoclave must be subject to a spore test to ensure proper function.

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Tattoos: Awareness

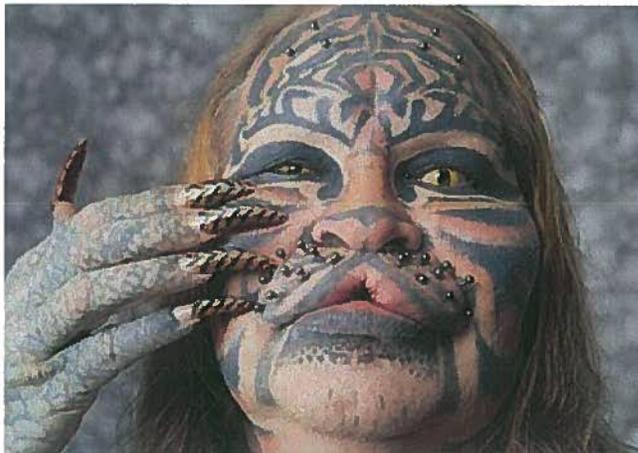
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Tattoo Culture:

Once seen as taboo or merely as a part of low-socioeconomic, gang or foreign and indigenous cultures, tattoos have quickly become one of the fastest growing industries in the United States. It has been estimated that 20%-25% of the United States population has at least one tattoo. For those born between 1975 and 1986 that number is estimated to be near 36%. It is also estimated that at least 60% of those born between 1981 and 1986 have or have strongly considered tattooing their body.

Tattoos range from simple displays of a person's individuality, to a personal way to immortalize a memory of an event or person. Interviews with individuals in the tattooed population revealed that some of the most common reasons for seeking a tattoo is rebellion to the "institutionalization" experienced during their childhoods and their teenage years. They are rebelling against, either familial pressure or what they perceive as society's "oppressive" nature. Similar and more intense feelings are seen in the piercing community.

These tattoos can be miniscule or can cover over 90% of an individuals body. Tattoos are an individualized art form that expresses the innermost or outermost feelings of an individual. Dennis Avner (aka "Stalking Cat", "Cat Man"), is most known for having tattooed and modified his entire body to represent his Native American "Totem": a tiger. He perceives the extreme modifications to his body as a modern take on an ancient Huron tradition of body modification to resemble one's Totem. His take on this tradition has earned him the world record for most body modifications (both surgical and cosmetic).



<Image of Stalking Cat Here>

(Photo from: Kaiser's Weird World Weekly)

Tattoo motivation or psychology.

More often than not, tattoo motivation falls into one of three categories: Rebellion, independence or to memorialize a person or event.

Rebellion is the least common of the major motivations for tattoos. A small population cited their “repressed” or “oligarchic” upbringing as a motivation for at least one tattoo. Many people in the tattoo culture find that tattooing their bodies is a way to show their parents, guardian or any other system that is perceived as oppressive that they are not a controllable individual. This form of defiance psychologically satisfies the individual's need for rebellion.

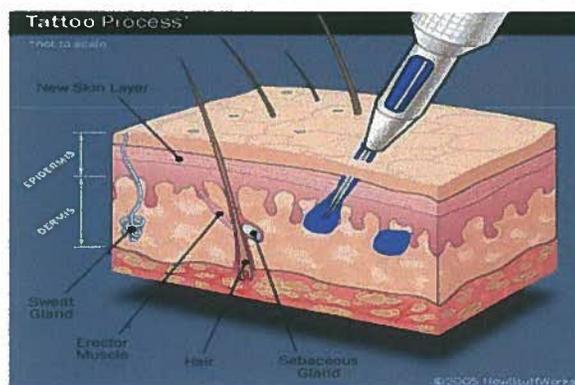
Often, an individual's tattoo(s) express a unique form of independence. This independence is found by having a custom design, or combination of designs placed on their bodies in a way that no other person has. There may always be similar ideas, but no two custom tattoos are identical and no two people will ever unintentionally have identical tattoos. This individualism is, many times, perceived as something “that can never be taken away from them”.

Memorializing an individual or event is perhaps the most common, single reason for a tattoo. These tattoos can range from portraits of an individual or individuals to a simple object, shape or phrase that reminds the customer of those memorialized. These tattoos are usually of friends, family or pets (both alive and deceased). Some also commemorate a significant event in the customer's life.

As motivation is a multifaceted concept, true motivation is usually a combination of these three main associations and many other contributing factors.

What is a tattoo and how are they made?

Tattooing is a type of permanent alteration to the dermis using pigments mixed with a carrier to create an image in the skin. The pigment and the carrier is injected under the epidermis and into the dermal layer. This is done using an electrically powered machine that punctures the skin between 50 and 3000 times per minute with a solid needle. Each time the needle punctures the skin, a small amount of insoluble ink (pigment & carrier) is deposited in the dermal layer. Over the course of the healing process, the carrier is absorbed into the body and the solid pigment is left in the dermis layer and remains visible through the epidermis.



<insert image of tattoo needle depth in dermis>

What are the risks associated with tattoos?

As with any invasive procedure, there is always an inherent risk of infection. During the

healing process, a tattoo can be considered an open wound. As such, proper precautions should be taken to prevent any such infection. However, tattoo complications are not limited to bacterial infections. Reuse of tattoo needles or improper cleaning of the tattoo equipment can increase the risk of infections by blood borne pathogens. A well-known complication is allergic reactions to the pigment. These allergic reactions can be mistaken as an infection due to the similar style of inflammation.

Blood borne diseases have been known to be transmitted through the use and reuse of needles. However, these diseases can also be transmitted via the reuse of tattoo inks. In order to avoid the risks of disease transmittal, the tattoo industry has switched to the use of single-use, blister packaged needles. When inspecting or interviewing a potential tattoo artist's work, the customer should make sure that the artist is using fresh, sterile needles and the ink is poured into single-use receptacles. All single-use items should be disposed of in an appropriate waste container.

Tattoo inks are a mixture of pigment and carrier. The most common used pigments are a mixture of various metals. These metals are treated as foreign substances by the body. This treatment may include allergic reactions. This is a complication that is easily confused with infectious due to the redness and swelling. These reactions can occur immediately after a tattoo procedure or years later. If the allergy develops, and the reaction becomes severe, tattoo removal is recommended.

The tattoo healing process will take a matter of days. Instructions as to how to take care of the tattooed area should be provided by the tattoo artist or the establishment to the customer. A gauze dressing is kept over the tattooed area and an antibacterial ointment is placed on the tattoo surface to prevent infections. During the healing process, the tattooed area must be kept moist in order to prevent accidental removal of the pigment through the skin punctures.

What is entailed in tattoo removal?

With today's modern technology, people are considering tattooing as a safe, fun and semi-permanent procedure. There is a substantial amount of pain associated with the procedure of receiving a tattoo with an equal amount of pain associated with its removal if considered necessary. Modern tattoo removal is performed with the use of a laser. These lasers break down the pigments into smaller components that are able to be absorbed and excreted by the body. Each pigment absorbs different wavelengths of light and therefore, tattoo removal is time consuming. As the laser tends to heat the area around the pigment. This heat causes sub-dermal and dermal blisters that are very painful. If not properly taken care of, these blisters may result in scarring.

How are tattoo artists trained?

It is common knowledge among the tattoo community that tattooing is an acquired skill that requires hours of practice. This "practice" is usually found in the form of an apprenticeship. During this apprenticeship, the artist learns the proper depth, pressure and other minute details that prevent tattoo mishaps.

In order to assess an apprentice's skills, the supervising tattoo practitioners will often

provide or request that the apprentice get a hold of "Tattoo Skin." Tattoo skin is a synthetic skin analog designed with the intention of providing a safe, clean workspace to practice their skill. Often times, an apprentice is also required to tattoo the skin of a citrus fruit (usually an orange) in order to observe the manner in which an apprentice handles contoured skin. The design on the citrus fruit as well as the designs on the tattoo skin, are dissected to assess needle depth and proper pressure techniques based on the "type" of skin.

Only after the supervising practitioner decides the apprentice is ready, can an apprentice tattoo living human skin. An apprentice is often required to identify his skill-level and gain permission from a customer before any procedure is negotiated. In most tattoo establishments, this apprenticeship period can range from 1 to 5 years. The apprenticeships can also be based on procedures. This may include to guideline of 150 procedures or 500 hours of procedure time for the apprenticeship.

What is contained in the pigment and what type of carriers are used?

Most pigments are made out of some metal salt. In a survey of 56 pigments, it was found that fourteen different metals were found in nearly all the pigments in different concentrations. These metals include but are not limited to Iron, Chromium, Mercury and Lead. The great majority of the metals used are considered inert in the human body. Many companies specialized in the creation of tattoo pigments have voluntarily removed metals and substances that have been found to be hazardous to human health. These pigments are typically sold and transported in ink bottles containing the pigment diluted and suspended in a manufactured carrier (usually deionized water). However, solid pigments can be purchased, diluted, suspended and injected at a tattoo artist's discretion.

As of February 2011, the Food and Drug Administration has not approved any pigments for injection into the skin as many consider tattoo inks outside of the FDA's jurisdiction. As with all materials injected into the skin, the body will attempt to absorb the foreign material and metabolize or excrete the contaminant. Typically, the pigments are injected deep enough into the dermis to prevent the ink from leaking out but shallow enough to prevent absorption by the body. However, during the apprenticeship period, artists may produce deep-penetration tattoos that result in pigment and carrier absorption.

Dry pigments can be purchased at any art supply establishment and suspended by the artist. The carrier (pigment diluent) used varies at the tattoo artist's discretion. These carriers and their amount determine the shade, dilution and healing process of tattoos. There is currently no standard of practice that includes what to use as a carrier. It has been reported that these carriers include but are not limited to, Witch Hazel, glycerine, deionized water, denatured ethyl alcohol and mouth wash.

Tattoo Addictions?

Many have argued that there can be a psychological and/or chemical addiction to tattoos and other forms of body modification (ie piercing, branding, scarification). As tattooing can be defined as a dermal trauma, a body's natural response releases endorphins. This "endorphin rush" produces a feeling of exhilaration that is brought on by the pain of the

needle. Other exhilaration associated with tattoo procedures is the "adrenaline rush." This is brought on by the surge of adrenaline in the body produced by the anticipation and apprehension associated with the time leading up to and immediately following a tattoo procedure. It has been argued that these two types of "rushes" are addictive. Terms associated with this addiction are the "Adrenaline Junkie" and the "Runner's High". However, the first is a pejorative term whereas the latter term is associated with health and happiness. At what point can a regulatory agency consider one of these two so-called "natural" addictions as illegitimate while the other is entirely legitimate while both are the result of identical mechanisms in the human body?

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