


Chapter 5

Infection Control: Principles and Practices

MILADY
STANDARD COSMETOLOGY INSTRUCTOR SUPPORT SLIDES



**“What progress, you ask, have I made? I
have begun to be a friend to myself.”**

— Hecato, Greek Philosopher

Objectives

- Understand state laws and rules and the differences between them.
- List the types and classifications of bacteria.
- Define hepatitis and HIV and explain how they are transmitted.
- Explain the differences between cleaning, disinfecting, and sterilizing.

Objectives *(continued)*

- List the types of disinfectants and how they are used.
- Discuss universal precautions.
- List the responsibilities of a salon professional.
- Describe how to safely clean and disinfect salon tools and equipment.

OSHA

- Occupational Safety and Health Administration (OSHA)
- Material Safety Data Sheets (MSDS)
 - Product content
 - Associated hazards
 - Combustion levels
 - Storage requirements

Environmental Protection Agency

- EPA registration number
- Hospital disinfectants
- *Tuberculocidal disinfectants*
- Disinfectant myth

State Regulatory Agencies

- Protect consumers' health, safety, and welfare
- Laws (statutes)
- Rules (regulations)

Principles of Infection

- Careless actions can cause injury or the invasion of body tissues by disease-causing pathogens.
- Prevention is key and it begins with you!

Potential Infectious Organisms

- Bacteria
- Fungi
- Viruses
- Parasites



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Salon Disinfectants

- **Bactericidal** (destroy bacteria)
- **Fungicidal** (destroy fungi)
- **Virucidal** (destroy viruses)

Bacteria

- Minute, one-celled microorganisms
- Prominent in dust, dirt, refuse, and diseased tissue
- Can exist almost anywhere
- 1,500 rod-shaped bacteria will fit on the head of a pin.

Types of Bacteria

- Nonpathogenic – helpful or harmless
- Pathogenic – harmful and disease producing

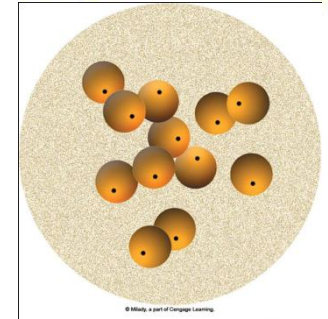
Causes of Disease

CAUSES OF DISEASE	
TERM	DEFINITION
BACTERIA	One-celled microorganisms having both plant and animal characteristics. Some are harmful and some are harmless.
DIRECT TRANSMISSION	Transmission of blood or body fluids through touching (including shaking hands), kissing, coughing, sneezing, and talking.
INDIRECT TRANSMISSION	Transmission of blood or body fluids through contact with an intermediate contaminated object, such as a razor, extractor, nipper, or an environmental surface.
INFECTION	Invasion of body tissues by disease-causing pathogens.
GERMS	Nonscientific synonym for disease-producing organisms.
MICROORGANISM	Any organism of microscopic to submicroscopic size.
PARASITES	Organisms that grow, feed, and shelter on or in another organism (referred to as the host), while contributing nothing to the survival of that organism. Parasites must have a host to survive.
TOXINS	Various poisonous substances produced by some microorganisms (bacteria and viruses).
VIRUS	A parasitic submicroscopic particle that infects and resides in cells of biological organisms. A virus is capable of replication only through taking over the host cell's reproductive function.

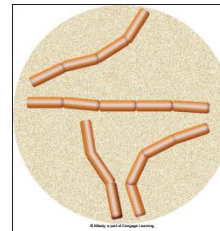
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Pathogenic Bacteria Classifications

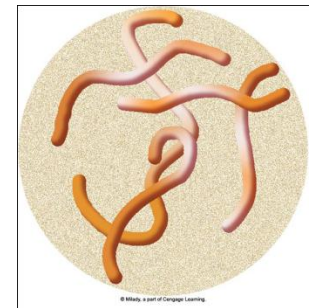
- Cocci – round shaped
 - *Staphylococci* (grow in clusters)
 - *Streptococci* (grow in curved lines)
 - *Diplococci* (grow in pairs)



- Bacilli – rod shaped



- Spirilla – spiral or corkscrew shaped



Movement of Bacteria

- Cocci – rarely show motility (self-movement)
- Bacilli and Spirilla – use slender, hairlike extensions (flagella or cilia) for locomotion

Growth and Reproduction

- Active
 - Takes 20 to 60 minutes to reach full growth
 - Divides into two cells (**binary fission**)
- Inactive or spore forming
 - Resistant to adverse conditions

Bacterial Infections

- Staphylococci
 - Food poisoning
 - Toxic shock syndrome
 - MRSA
- Local infection
- Systemic infection or disease
- Contagious or communicable disease

Viruses

- Live by penetrating cells
- Resistant to antibiotics
- Prevented by vaccination
- *Human papilloma virus* (HPV)

Bloodborne Pathogens

- Hepatitis – inflammation of liver
- Hepatitis A
- Hepatitis B (HBV)
- Hepatitis C (HCV)

HIV/AIDS

- Passed through blood and body fluids
 - Unprotected sex, sharing of IV needles, accidents with needles, cuts and sores
- Methods that do not transmit the disease:
 - Hand holding, hugging, kissing, sharing food or household items
- Can be infected for many years without symptoms

Fungi

- Microscopic plant parasites that include molds, mildews, and yeasts
- Can be spread by contaminated implements or by not preparing nail plate before applying enhancements
- More common on feet than hands

Fungi (*continued*)

- *Tinea barbae* (barber's itch)
- *Tinea capitis* (fungal infection of scalp)
- *Tinea pedis* (ringworm fungus of the foot)



Courtesy of Godfrey F. Mix, DPM Sacramento, CA.

Parasites

- Grow, feed, and shelter on or in other living organisms
- Must have host to survive
- Found in food, plants, trees, water
- *Pediculosis capitis* (head lice)
- Scabies (caused by itch mite)

How Pathogens Enter the Body

- Break in skin
- Mouth
- Nose
- Eyes or ears
- Unprotected sex

How Body Fights Infection

- Unbroken skin
- Body secretions
- White blood cells
- Antitoxins

Immunity

- Natural immunity – inborn ability
- Acquired immunity – developed after overcoming disease or through inoculation

Principles of Prevention

- Contamination (presence of potentially infectious materials)
 - Contaminate (make impure by contact)
 - Contaminant (substance that causes contamination)

Principles of Prevention (*continued*)

- Decontamination
 - Cleaning
 - Scrubbing with a brush
 - Using an ultrasonic unit
 - Using a solvent
- Disinfection
 - Method 1: cleaning and then disinfecting with an EPA-registered disinfectant
 - Method 2: cleaning and then sterilizing

Decontamination Method 1: Two Steps

- Step 1: Cleaning methods
 - Washing with soap, water, and a scrub brush
 - Using an ultrasonic unit
 - Using a cleaning solvent
- Step 2: Disinfection methods
 - EPA-registered disinfectants
 - Avoid skin contact!

Decontamination Method 2: Two Steps

- Step 1: Cleaning
- Step 2: Sterilizing using high-pressure steam autoclaves (steam penetrates the spore coats of spore-forming bacteria)
 - Dry heat (less effective and requires more time; not recommended in salons)

Choosing a Disinfectant

- Correct efficacy (effectiveness against bacteria)
- Hospital-level disinfectant.
 - Pseudomonacidal, bactericidal, fungicidal, and virucidal

Benefits of Sterilizing

- Most reliable means of infection control
- Increased client confidence.

Choosing a Disinfectant

- Correct efficacy
- Ideal disinfectant qualities
 - Bioburden effectiveness
 - Longer renewal time
 - Low cost
 - Nontoxic and nonirritating
 - Effectiveness strips
 - Readily available

Choosing a Disinfectant (*continued*)

- Hospital-level disinfectant
 - EPA-approved
 - Environmentally friendly
 - Odorless
 - Noncorrosive

Proper Use of Disinfectants

- Use on precleaned, nonporous surfaces.
- Dilute according to directions.
- Contact time per directions.
- Spray on contact time per directions.
- Spray can't be used if immersion required.
- Use only as directed.
- Use only EPA-registered disinfectant in pedi-spa.

Types of Disinfectants

- Quats – nontoxic, odorless, fast-acting
- Phenolics – powerful tuberculocidal disinfectants (high pH and can damage skin, eyes, plastic, and rubber)

Types of Disinfectants (*continued*)

- Accelerated hydrogen peroxide (AHP) – long-lasting
- Bleach (5.25 percent sodium hypochlorite)

Fumigants

- Formalin tablets (paraformaldehyde)
- Glutaraldehyde (used to sterilize surgical instruments in hospitals – not safe for salon use)

Disinfectant Safety

- Keep Material Safety Data Sheets (MSDS) on hand.
- Wear gloves and safety glasses.
- Avoid skin and eye contact.
- Add disinfectant to water, not water to disinfectant.
- Use tongs, gloves, and draining basket.
- Keep away from children.



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Disinfectant Safety (*continued*)

- Carefully measure products.
- Measure and use per instructions.
- Follow replacement instructions.
- Never allow disinfectant to come in contact with your skin.
- Never place in unmarked container.

Disinfect or Dispose

- Multi-use – reusable and can be cleaned
- Single-use – disposable items used only once
- Porous – constructed of absorbent material
- Logbook

Disinfection Procedures

- Towels and linens: Launder and store in closed container.
- Electrical tools and equipment
- Work surfaces: Wipe clean and then disinfect.
- Foot spas and pedicure equipment

Disinfection Procedures *(continued)*

- Detergents and soaps
- Additives, powders, and tablets
- Dispensary

Disinfection Procedures (*continued*)

- Single-use supplies (wooden sticks, cotton, gauze, wipes, porous files, paper towels, etc.)
- Proper hand washing (important action)
- Antibacterial soap (can dry skin; use lotion)

Universal Precautions

- Guidelines published by OSHA
- Assumption that all human blood and body fluids are infectious
- Asymptomatic – no symptoms or signs of infection

Exposure Incident Disinfection

- Stop service and put on gloves.
- Stop bleeding.
- Clean injured area.
- Apply antiseptic and/or liquid/spray styptic.
- Bandage cut.
- Clean and then disinfect workstation.
- Discard contaminated objects.
- Disinfect all tools in EPA-registered disinfectant.
- Remove gloves and wash hands.
- Refer to physician if needed.

Professional Salon Image

- Keep floors clean.
- Control dust, hair, and debris.
- Keep trash contained.
- Clean fans, ventilation systems, and humidifiers weekly.
- Keep all work areas well lit.
- Clean and disinfect restroom surfaces.
- Supply restrooms.

Professional Salon Image (*continued*)

- No cooking or sleeping.
- Store food separate from products.
- Prohibit eating, drinking, and smoking.
- Empty waste receptacles.
- Mark containers.
- Place tools properly.

Professional Salon Image (*continued*)

- Disinfect tools.
- Properly store tools.
- Don't touch face or mouth.
- Clean and then disinfect work surfaces after each client.
- Use clean, disposable paper towels.
- Wash hands before/after each client.
- Use clean linens.
- Use exhaust systems.

Professional Responsibility

- Follow state/federal laws.
- Keep licenses current.
- Monitor state rule changes.

Disinfection Procedures

- Disinfecting nonelectrical tools and implements
- Disinfection of whirlpool foot spas and air-jet basins
 - Pipeless foot spas
 - Nonwhirlpool foot basins or tubs
- Proper hand washing

Summary and Review

- What is the primary purpose of regulatory agencies?
- What is an MSDS? Where can it be obtained?
- List four types of microorganisms pertinent to cosmetology.
- What is a contagious disease?

Summary and Review (*continued*)

- Is HIV a risk in the salon? Why or why not?
- What is the difference between cleaning, disinfecting, and sterilizing?
- What is complete immersion?
- List at least six safety tips to follow when using disinfectants.

Summary and Review (*continued*)

- How do you know if an item can be disinfected?
- Can porous items be disinfected?
- What are universal precautions?
- What is an exposure incident?

Summary and Review (*continued*)

- Describe the procedure for handling an exposure incident in the salon.
- List the steps for cleaning and disinfecting whirlpool foot spas and air-jet basins after each client.

Congratulations!

You have completed one unit of study
toward course completion.

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