

Clean needle techniques

Prevention of
infectious diseases

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The immune response to pathogens

- **Natural barriers:**

 - Intact skin

 - mucous membranes of nose, throat, urethra and rectum

 - Stomach acid

 - Healthy cells of the nose and lungs

 - Normal mucus and saliva

- **Potential sources of infectious disease in an acupuncture office:**

 - Hands, blood, saliva and other bodily secretions, dust, clothing and hair

- **Autogenous infections**

 - Infections cause by pathogens that the patient is already carrying

- **Cross-Infections**

 - Infections caused by pathogens acquired from another person or by the environment.

Blood borne pathogen

- Blood borne pathogen are microorganisms that are carried in blood (and other body fluids) that can cause disease in humans.
- Common blood borne pathogen diseases
 - Hepatitis B (HBV)
 - Hepatitis C (HCV)
 - Human immunodeficiency disease (HIV)

- Blood borne pathogens may be present in:
 - Blood
 - Body fluids containing visible blood
 - Semen and vaginal secretions
 - Torn or loose skin

- Blood borne pathogens can cause infection by entering the body through:
 - Non-intact skin: open cuts and nicks; skin abrasions, dermatitis, acne, etc
 - Mucous membranes of the mouth, eyes, nose, urethra, rectum, etc.
- Transmission potential
 - Contact with another person's blood or other contaminated body fluid
 - Needle stick with contaminated needles

Comparison of Hepatitis A, B, C, D, and E

Hepatitis	Incubation	Transmission	Onset	manifestations	Chronic	Vaccine
A	15-50 days	Fecal-oral	Abrupt	Abdominal discomfort, loss of appetite, fatigue, nausea, dark urine and jaundice	No	Yes
B	50-180 days	Bloodborne; HBV can survive for at least one week in dried blood	Insidious	Begin with mild flu-like signs and symptoms such as fever, general malaise, or insidious onset of anorexia and abdominal pain. Also chills, nausea, joint pains, rash and diarrhea. Last 2-6 weeks. Followed by extreme fatigue and depression for several months 30% no signs or symptoms	5-10% 70% who have recovered are still infectious for three months or more	Yes
C	20-90 days	Bloodborne	Insidious	Anorexia, nausea, vomiting, and jaundice	50%	No
D	Unknown	Unknown	Unknown	Requires concurrent HBV infection	Unknown	No
E	15-60 days	Fecal-oral	Abrupt	Fever, malaise, nausea, anorexia, jaundice	No	No

HIV: Human Immunodeficiency Virus

- **Transmission:**
 - Blood borne pathogen
blood, semen, vaginal secretions, etc.
 - Note: Non-risk casual contact include shaking hands, touching, hugging, holding hands, casual kissing, etc.
- **Individual at risk of infection with HIV**
 - Homosexuals, IV drug users, sex workers, and transfusion recipients
 - Unsafe sex between partners of different sexes, and transplacental transmission
 - Health care workers that has a high risk of blood exposure

- Incubation period: 2-15 years
- Infection process:
 - Initial infection:
 - within 2-4 weeks: febrile illness resembling mononucleosis or influenza, resolves spontaneously
 - Some people asymptomatic.
 - Common symptoms :
 - Fever, malaise, body aches, maculopapular rash, lymphadenopathy, and headache
 - Also persistent fever and night sweats; rapid, unexplained loss of weight; unexplained chronic diarrhea; persistent cough; flat or raised pigmented skin lesion

- Clinical presentations of AIDS
 - HIV wasting disease: severe, involuntary weight loss, chronic diarrhea, constant or intermittent weakness, fever for 30 days or longer.
 - HIV encephalopathy, myelopathy, peripheral neuropathy, dementia with symptoms ranging from apathy and depression to memory loss and motor dysfunction and death.
- Opportunistic infections and neoplastic disorders:
 - Candidiasis
 - Cytomegalovirus
 - Kaposi's sarcoma
 - Pneumocystis carinii pneumonia---the most common opportunistic infection and cause of death in AIDS patients.
- Secondary infections:
 - Tuberculosis
 - Staphylococcus
 - Herpes
 - hepatitis

Protection

- Most typical mode of transmission in the health care workplace:
 - Percutaneous exposure that occurs from contaminated instruments (mostly from needlesticks)
 - Contact of contaminated blood with non-intact skin
- It is critical to use universal precautions with every patients.
- Universal precautions:
 - Treat all blood and bodily fluids as if they are contaminated, handle all patients as if they were potentially infectious
 - Handwashing
 - The use of PPE to prevent contact with infected body fluids: gloves, masks, gown, goggles, etc.
 - Standard sterilization and disinfection measures as well as infectious waste disposal procedures

Personal Protective Equipment

- Anything that is used to protect a person from exposure
 - Lab coat
 - Latex or nitrile gloves
 - Face shields
 - CPR mouth barriers
 - Goggles, Aprons, etc
- PPE rules to follow
 - Always wear PPE in exposure situations
 - Always check PPE for defects or tears before using
 - Remove and Replace PPE that is torn or defective
 - Remove PPE before leaving a contaminated area
 - Do not reuse disposable equipment
 - PPE should be removed and disposed of in biohazard containers
 - Wash hands immediately after removing PPE

Recommended Testing of HCWs for TB, HBV, HCV and HIV

- Yearly physical that includes testing for TB(PPD type)
- Practitioners who work in an inner city clinic, with AIDS patients or drug addicts, have a PPD test every 6 months.
- HCWs who perform exposure-prone procedures should know their HBV or HIV antibody status.
- HCWs who are infected with HIV or HBV should not perform exposure-prone procedures unless they have received counseling from an expert review panel regarding the circumstances under which they may continue to perform these procedures.
- Infected HCWs should notify prospective patient of their seropositive status before undertaking exposure-prone invasive procedures.