11a H&H: Infection Control

11a H&H: Infection Control Class Outline

5 minutes	Attendance, Breath of Arrival, and Reminders
10 minutes	Lecture:
25 minutes	Lecture:
15 minutes	Active study skills:
60 minutes	Total

11a H&H: Infection Control Class Reminders

Quizzes and Exams:

- 14a Kinesiology Quiz
 - Tibialis anterior, fibularis longus and brevis, quads, rectus abdominis, and pec. major
- 17a Quiz
- 18a Kinesiology Quiz
- 19a Quiz
- 21a Exam (100 questions in 80 minutes)

Assignments:

17a Review Questions (A: 131-140)

Preparation for upcoming classes:

- 12a Kinesiology: Muscle Names and Locations Anterior
 - Trail Guide: quadriceps femoris group
 - Trail Guide: Pages 35-36, 61-62, 296-297, and 366-367
- **12b** Swedish: Technique Demo and Practice Anterior Lower Body and Abs
 - Packet F: 39-44

Classroom Rules

Punctuality - everybody's time is precious

- Be ready to learn at the start of class; we'll have you out of here on time
- Tardiness: arriving late, returning late after breaks, leaving during class, leaving early

The following are not allowed:

- Bare feet
- Side talking
- Lying down
- Inappropriate clothing
- Food or drink except water
- Phones that are visible in the classroom, bathrooms, or internship

You will receive one verbal warning, then you'll have to leave the room.

Tibialis Anterior Trail Guide, Page 379



Tibialis anterior

is large, superficial and the most clearly isolated of the group of extensors of the ankle and toes.

When do you use your tibialis anterior?



Lateral View

Actions of the Tibialis Anterior



Inversion of the foot



Talocrural dorsiflexion



Invert the foot

Dorsiflex the ankle (talocrural joint)

Lateral condyles of tibia Proximal, lateral surface of tibia Interosseous membrane

Medial cuneiform Base of the first metatarsal





Anteromedial View



Invert the foot

Dorsiflex the ankle (talocrural joint)

Lateral condyles of tibia Proximal, lateral surface of tibia Interosseous membrane

Medial cuneiform Base of the first metatarsal



Anteromedial View





Invert the foot **Dorsiflex** the ankle (talocrural joint)



Lateral condyles of tibia Proximal, lateral surface of tibia Interosseous membrane

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Invert the foot **Dorsiflex** the ankle (talocrural joint)

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Lateral condyles of tibia Proximal, lateral surface of tibia Interosseous membrane





Invert the foot **Dorsiflex** the ankle (talocrural joint)



Lateral condyles of tibia Proximal, lateral surface of tibia Interosseous membrane

Medial cuneiform Base of the first metatarsal





Anteromedial View

Fibularis Longus and Brevis Trail Guide, Page 376



Fibularis longus – and Fibularis brevis –

These slender fibularis muscles are located on the lateral side of the fibula with distal tendons that pass posterior to the lateral ankle bone, also called the lateral malleolus.

These muscles were previously called the peroneals (Peroneus longus and brevis).

When do you use your fibularis muscles?

Lateral View

Books of Disco

Anterior View

Actions of the Fibularis Longus and Brevis



Eversion of the foot



Talocrural plantar flexion



Evert the foot

Assist to plantar flex the ankle (talocrural joint)

Head of fibula Proximal two-thirds of lateral fibula





Anteromedial View



Evert the foot

Assist to **plantar flex** the ankle (talocrural joint)







Anteromedial View



Evert the foot

Assist to **plantar flex** the ankle (talocrural joint)







Evert the foot

Assist to **plantar flex** the ankle (talocrural joint)







Evert the foot

Assist to **plantar flex** the ankle (talocrural joint)







Anteromedial View



Evert the foot

Assist to **plantar** flex the ankle (talocrural joint)



Distal two-thirds of lateral fibula



Tuberosity of the fifth metatarsal





Anteromedial View



Evert the foot

Assist to **plantar flex** the ankle (talocrural joint)



Distal two-thirds of lateral fibula



Tuberosity of the fifth metatarsal





Anteromedial View



Evert the foot

Assist to **plantar flex** the ankle (talocrural joint)

Distal two-thirds of lateral fibula







Evert the foot

Assist to **plantar flex** the ankle (talocrural joint)



Distal two-thirds of lateral fibula

Tuberosity of the fifth metatarsal



11a Infection Control H-15







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Introduction

A system of infection control is needed to protect clients and minimize disease transmission. These measures include hand hygiene and sanitary lubricant dispensing. Part of client safety includes good personal hygiene on the part of the therapist.





Autoimmune disease Overactive <u>immune</u> system attacks the body. Examples: rheumatoid arthritis, lupus, and multiple sclerosis.





Cancer <u>Abnormal</u> cells metastasize (grow or spread) into <u>tumors</u>. Examples: lung cancer and *malignant melanoma*.



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Deficiency disease Lack of dietary <u>nutrients</u> interferes with growth and metabolism. Examples: *scurvy* (C), rickets (D), beriberi (B_1), and pernicious anemia (B_{12}).



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Degenerative disease Overuse or aging deteriorates <u>organ</u> function. Examples: *osteoporosis*, Alzheimer, Parkinson, and osteoarthritis.





Genetic disease Caused by abnormalities in <u>inherited</u> genetic material. Examples: Turner syndrome, *Down syndrome*, hemophilia, and *albinism*.







Metabolic disease Abnormal metabolic processes disrupt <u>homeostasis</u>. Examples: *Cushing disease* and *diabetes mellitus*.







Infectious disease Disease caused by <u>pathogens</u>. Examples: *impetigo*, malaria, influenza, lice, and mad cow disease.





Disease Awareness

PathogenInfectious agent capable of causing diseaseExamples: virus, bacteria, fungi, protozoa, prions, and pathogenicanimals.







Response Moment

Autoimmune disease Immune system.
Cancer Abnormal cells.
Deficiency disease Lack of dietary nutrients.
Degenerative disease Overuse or aging.
Genetic disease Abnormal genetic material.
Metabolic disease Abnormal metabolism.
Infectious disease Infection by pathogen.

Pathogen Infectious agent.



Disease Causing Agents (Pathogens)

Virus Non-<u>living</u> entities that can only <u>replicate</u> themselves within the cell of a living host.

Examples: common cold, influenza, AIDS, herpes simplex, and viral hepatitis.







Disease Causing Agents (Pathogens)

Bacteria Unicellular microorganisms.

Examples: boils, tuberculosis, Lyme disease, and strep throat.



Disease Causing Agents (Pathogens)

FungiWarm, moist environments promote their growth. Includemoldsand yeasts.Examples: ringworm, athlete's foot, jock itch, and thrush.




Disease Causing Agents (Pathogens)

Protozoa Pathogen that can only survive in a <u>host</u> organism. Examples: trichomoniasis, amoebic dysentry, African sleeping sickness, and malaria.





Disease Causing Agents (Pathogens)

Prions Pathogens composed of misfolded proteins. Involved in central nervous system diseases that are rare, currently <u>untreatable</u>, and fatal. Examples: bovine spongiform encephalitis (mad cow disease), and Creutzfeldt-Jakob disease.



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Disease Causing Agents (Pathogens)

Pathogenic animals Pathogens that rely on a host for <u>nourishment</u>. Examples: tapeworms, hookworms, lice, and *scabies mites*.







Response Moment

Virus Non-living. Replicate in host cells. Cold, influenza, AIDS, herpes.
Bacteria Unicellular microorganisms. Boils, tuberculosis, strep throat.
Fungi Molds/yeast in warm/moist areas. Ringworm, athlete's foot, jock itch.
Protozoa Can only survive in a host. Trichomoniasis, amoebic dysentry.
Prions Rare, untreatable, and fatal misfolded proteins. Creutzfeldt-Jakob.
Pathogenic animals Rely on a host for nourishment. Worms, lice, and scabies.



1. Direct contact

2. Vehicle transmission

3. Vector transmission





4. Respiratory droplets







1. Direct contact Most common route of disease transmission. Types: a. **Person to person**

b. Animal to person

c. Parent to fetus





1. **Direct contact** Most common route of disease transmission. Types:

a. Person to person Direct contact disease transmission from an <u>infected</u> person to an uninfected person by physical contact (including sexual), and through blood transfusions.

b. Animal to person

c. Parent to fetus



1. **Direct contact** Most common route of disease transmission. Types:

a. Person to person Direct contact disease transmission from <u>infected</u>
person to an uninfected person by physical contact
(including sexual), and through blood transfusions.

b. **Animal to person** Direct contact disease transmission that includes touching and a bite or <u>scratch</u> from an infected animal

c. Parent to fetus



1. **Direct contact** Most common route of disease transmission. Types:

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b. **Animal to person** Direct contact disease transmission that includes touching and a bite or <u>scratch</u> from an uninfected animal

c. **Parent to fetus** Direct contact disease transmission in which pathogens cross the <u>placenta</u> and can infect an unborn child.



Vehicle transmission Infectious organisms are transmitted in or on a common <u>object</u> such as *food*, water, *keyboard*, or *doorknob*.
 Examples: Salmonella, gastroenteritis., and some case of influenza









3. **Vector transmission** Disease transmission involving <u>stings</u> or <u>bites</u>, from insects and/or animals that act as intermediaries of disease exchange between two or more hosts. Examples: malaria (*mosquitoes*), Lyme disease (*ticks*), Rocky Mountain spotted fever (ticks).







4. **Respiratory droplets** Disease spread through the <u>air</u>,

propelled by <u>coughing</u> or sneezing. Example: colds.





Infection

InfectionThe period after disease transmission. Pathogens use host resources tomultiplywhich interrupts normal functioning of the host.



Response Moment

Direct contactMost common mode of transmission.Physical, sexual, and blood contact.Bite or scratch of an infected animal.Across the placenta.

Vehicle transmission Object to person.

Vector transmission Sting or bite transmits infection.

Respiratory droplets Transmitted by sneezing and coughing.

Infection The result of successful disease transmission.



1. Natural defenses

2. Immune response

3. Fever

4. Inflammation



1. Natural defenses

Barriers: intact *skin* and mucosa. Chemicals: digestive enzymes and vaginal secretions. Reflexes: coughing and *sneezing*.



Fig. 18-18. Anatomic position. Copyright © 2012, 2007, 2003, 1999 by Saunders, an imprint of Elsevier Inc.





2. **Immune response** Host defense in which infection triggers the production of white blood cells that destroy pathogens.





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3. **Fever** (AKA: pyrexia) Elevated body temperature.





4. Inflammation Protective mechanism in response to pathogens or tissue damage. Stabilizes the injured area. Contains infection. Initiates healing.
Heat
Redness
Swelling
Pain
Loss of function (rarely seen unless inflammation is severe)



8-15. Cardinal signs of inflammation.





Immune system suppressors Chronic stress, malnutrition, radiation, certain medications, pre-existing conditions (diabetes, AIDS).









Contraindication The presence of a disease or condition that makes it <u>unsafe</u> to treat a particular client in the usual manner. Usually determined during the intake. Types:

1. Local contraindication

2. Regional contraindication

3. Absolute contraindication









 Local contraindication Factor or condition in which massage can be administered safely while avoiding an <u>area</u> of the body. Examples: recent *injury*, inflammation, tender with pressure, lump, lesion, suspicious mole, or localized skin rash.





2. **Regional contraindication** Factor or condition in which massage can be administered safely while avoiding a body region.



From Habit: Clinical dermatology: a color guide to diagnosis and therapy, ed 4, St. Leuis, 2004, Mosby. Fig. 22-13. Eczema.



3. Absolute contraindication Factor or condition for which receiving massage might put you or your client at serious health risk or the client's condition may be made worse with massage; massage is not advised. Examples: reported disease that is highly contagious, widespread infection or inflammation, *fever*, exacerbated chronic disease, and medical emergency.





Response Moment

1. **Local contraindication** Recent injury, inflammation, tender with pressure, lump, lesion, suspicious mole, or localized skin rash.

2. **Regional contraindication** A body region.

3. **Absolute contraindication** Reported disease that is highly contagious, widespread infection or inflammation, fever, exacerbated chronic disease, medical emergency.

Infection Control for Massage Therapists

Ways that infection can spread in a massage context:

1. Unknowingly massage over an infectious rash.

2. Fluid from a boil may seep and enter broken skin.

3. Client with a cold sore touches their lip. Later you massage their hands. Later you touch your lip before you have washed your hands.

4. Contact with contaminated linens, massage tools, and open containers of massage lubricant.



Infection Control for Massage Therapists

Using sanitation to break the chain of infection:

1. Remove the infectious agent Hand washing and disinfecting linens and surfaces

2. Create a barrier against entry *Gloves and bandaids*

3. Prevent disease transmission Dispensing uncontaminated massage lubricant





1. Keep hair clean and off your face and pulled back.





2. *Fingernails* should be clean, short, and without colored polish.





3. Wear clean clothes with short sleeves.





4. No wristwatches or ornate jewelry while massaging.





5. Bathe daily. Use an antiperspirant or deodorant if necessary.





6. Brush your teeth at least twice a day, and floss daily.





7. Shave or keep facial hair trimmed and groomed.





8. Control heavy perspiration with *sweatbands*.




Human hands are the number one source of disease. *Cleaning your hands with soap and water* or hand sanitizer is the best measure to prevent infection.





When to wash hands:

- After using the toilet
- Before, during, and after food preparation
- Before eating
- Before inserting or removing contact lenses
- After touching animals or animal waste
- Before and after caring for or visiting someone who is ill
- Treating wounds
- Handling something that could be contaminated
- After sneezing or coughing

Hand washing

- 1. Wet hands, forearms, and elbows with warm running water.
- 2. Lather up to the elbows briskly for 15 seconds. Friction is essential.
- 3. Rinse thoroughly.
- 4. Use paper towels to dry your hands and forearms.
- 5. Use a paper towel to turn off the water and to open and close doors.



Hand sanitizer If hands are visibly soiled, wash them with soap and water before using hand sanitizer.



1. Use clean linens to cover or drape everything that touches your client.



2. Disinfect contaminated linens:

- Using gloves, remove the linens from the table.
- Wash with hot water, detergent, and 1/4 cup of bleach. Dry using hot air.
- Using a new pair of gloves, clean massage table with soap and water.
- Disinfect massage table using 1:10 solution of bleach and water.
- Wash and dry your hands.









3. Disinfect contaminated massage tools:

- Using gloves, immerse 10 minutes in 1:10 solution of bleach and water or a 1:7 solution of isopropyl alcohol and water.
- Wash and dry your hands



Fig. 9-3. Glove removal. A, Pulling off one glove, B, Putling the removed glove in the palm of the gloved hand. C, Removing the other glove with the first removed glove inside. D, Disposal of the used gloves. Copyright 972(2070;200);1999 (subsections, subsections, and subsections).



4. Use flip-top, *pump mechanism*, or single-use quantities of lubricant to avoid cross-contamination.





5. Clean hands by washing with soap and water or using hand sanitizer.





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6. Use gloves when therapist has open wound on hands.





7. Do not massage if ill or showing symptoms (sneezing, coughing, fever, or runny nose).





8. Do not massage clients who are *ill* or experiencing symptoms.





9. Maintain a *clean and sanitary office* and treatment environment







10. Do not massage while under the influence of *alcohol or recreational drugs*.





11. Follow a *personal health plan* and get regular physical examinations.











Any questions about Standard Precautions for Massage Therapy?

11a H&H: Infection Control