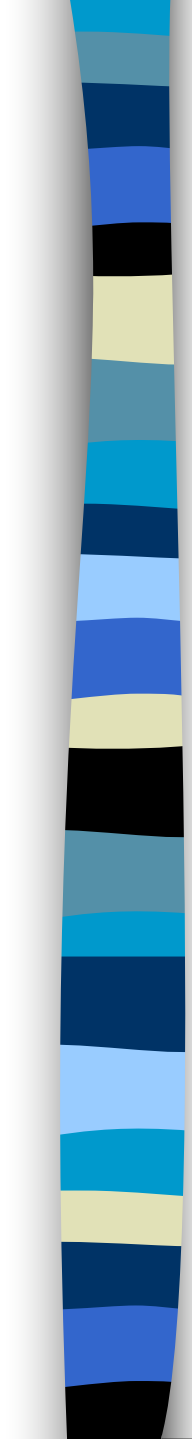
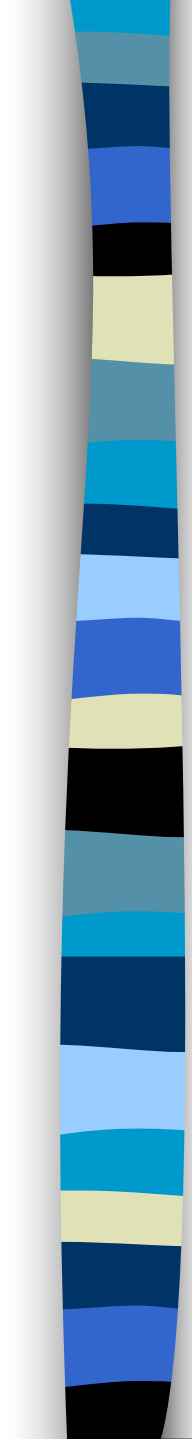


11a H&H: Infection Control



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:

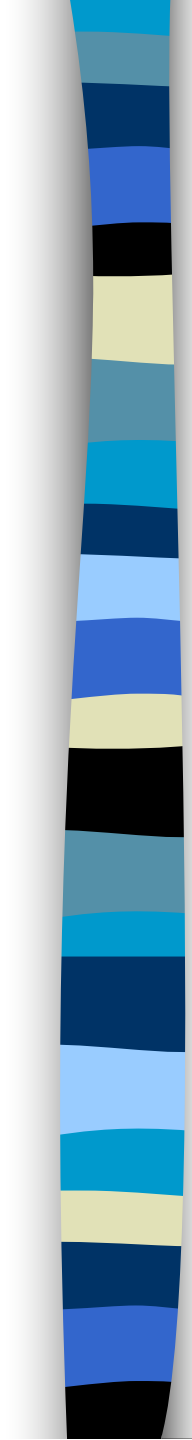
- 14a Kinesiology Quiz
 - Tibialis anterior, fibularis longus and brevis, quads, rectus abdominis, and pec. major
- 17a Quiz
- 18a Kinesiology Quiz
- 19a Quiz
- 21a Exam (100 questions in 80 minutes)

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

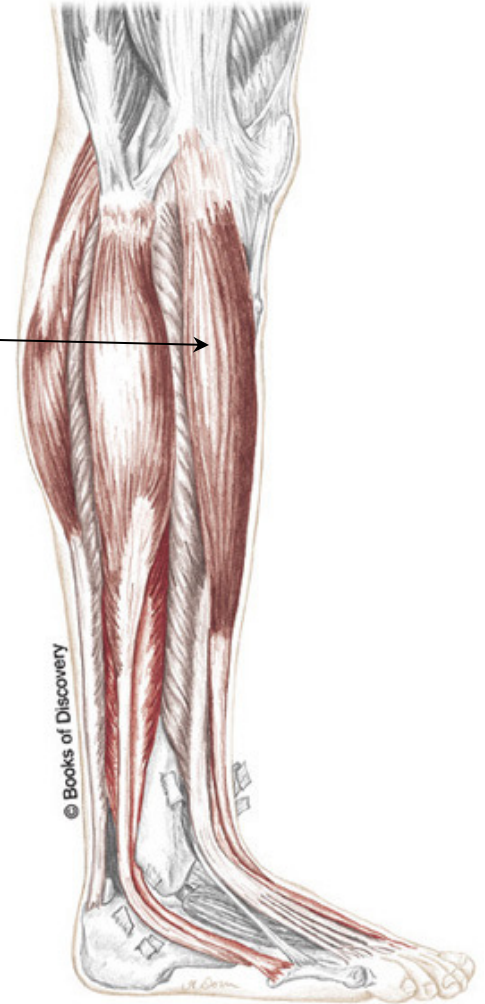


Anterior View

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?

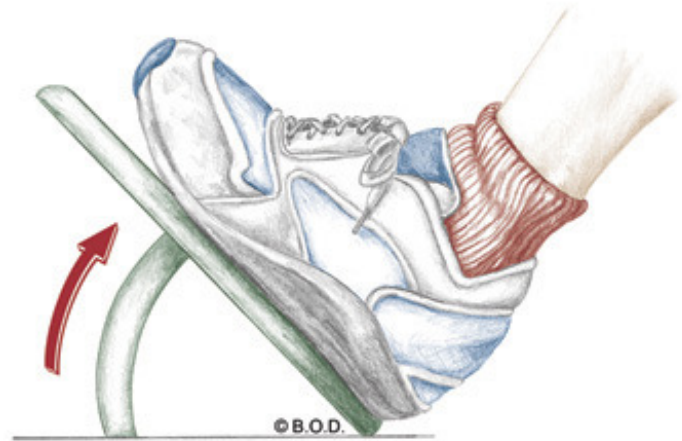


Lateral View

Actions of the Tibialis Anterior



Inversion of the foot



Talocrural dorsiflexion

Tibialis Anterior, page 379

A

Invert the foot

Dorsiflex the ankle (talocrural joint)

O

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

I

Medial cuneiform
Base of the first metatarsal



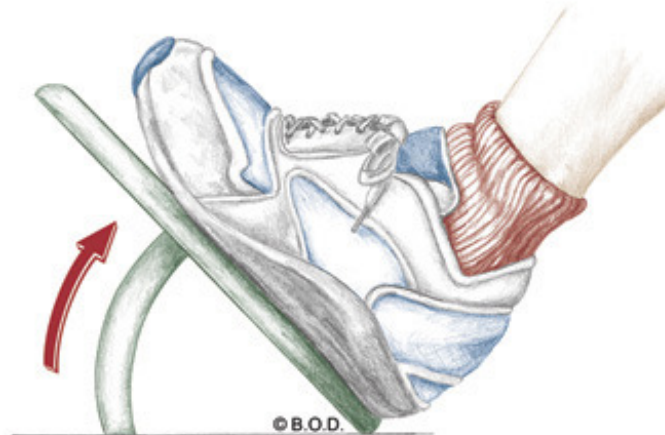
Anteromedial View

Tibialis Anterior, page 379

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

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

I Medial cuneiform
Base of the first metatarsal



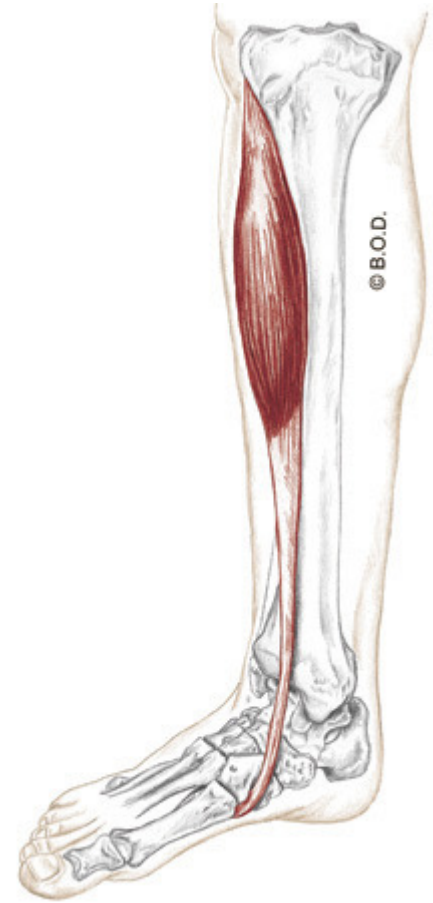
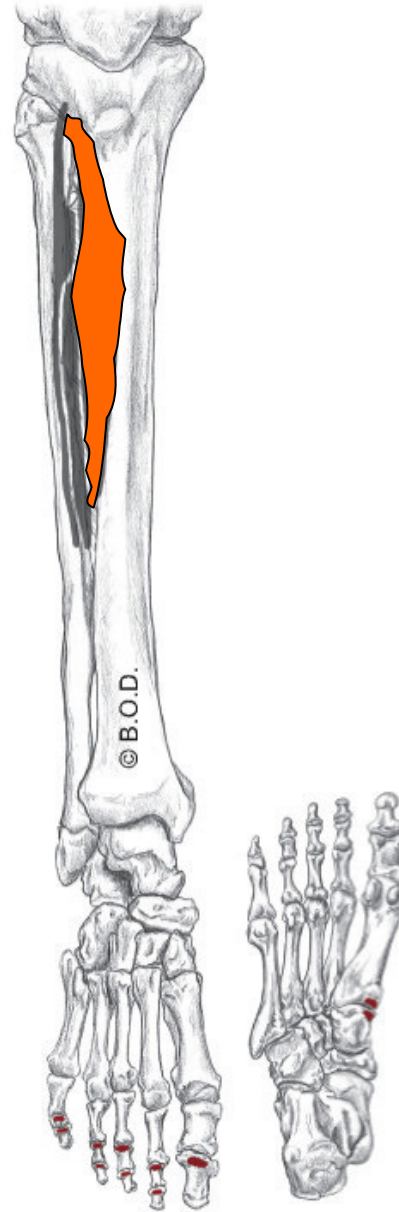
Anteromedial View

Tibialis Anterior, page 379

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

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

I Medial cuneiform
Base of the first metatarsal



Anteromedial View

Tibialis Anterior, page 379

A

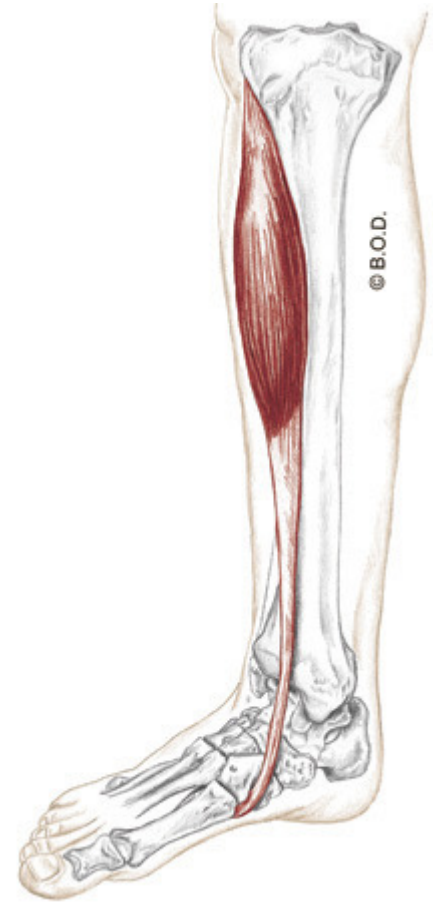
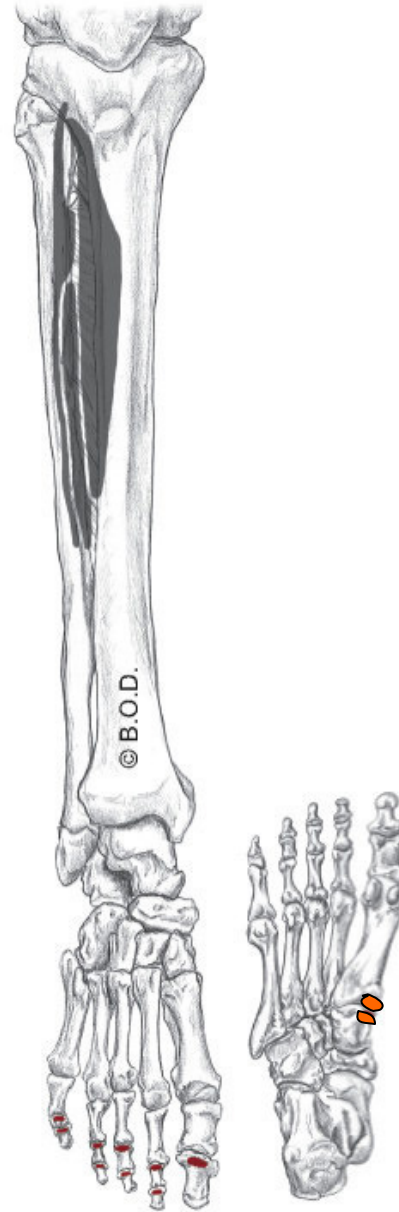
Invert the foot
Dorsiflex the ankle (talocrural joint)

O

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

I

Medial cuneiform
Base of the first metatarsal



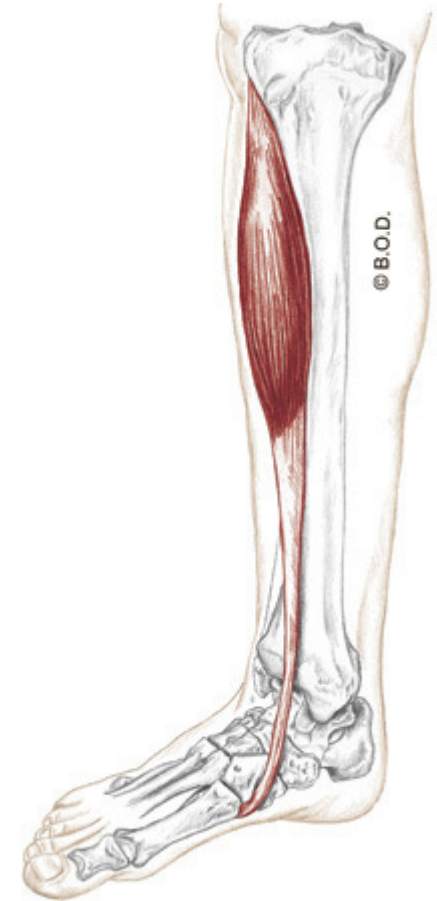
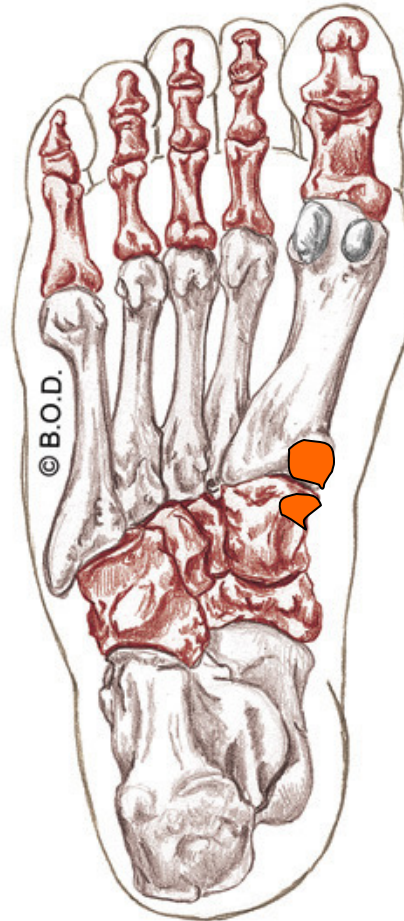
Anteromedial View

Tibialis Anterior, page 379

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

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

I Medial cuneiform
Base of the first metatarsal



Anteromedial View

Fibularis Longus and Brevis

Trail Guide, Page 376



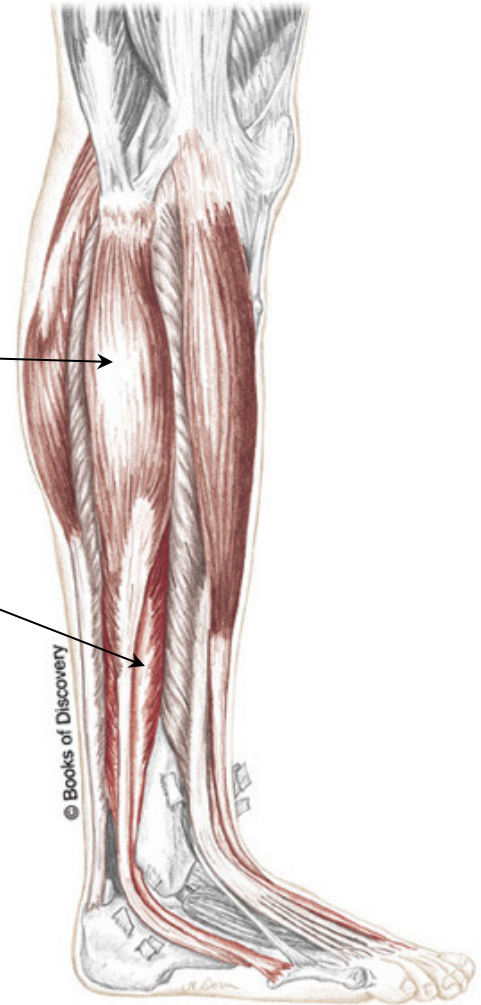
Anterior View

**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

Actions of the Fibularis Longus and Brevis



Eversion of the foot



Talocrural plantar flexion

Fibularis Longus, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Head of fibula
Proximal two-thirds of lateral fibula

I Medial cuneiform
Base of the first metatarsal



Anteromedial View

Fibularis Longus, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Head of fibula
Proximal two-thirds of lateral fibula

I Medial cuneiform
Base of the first metatarsal



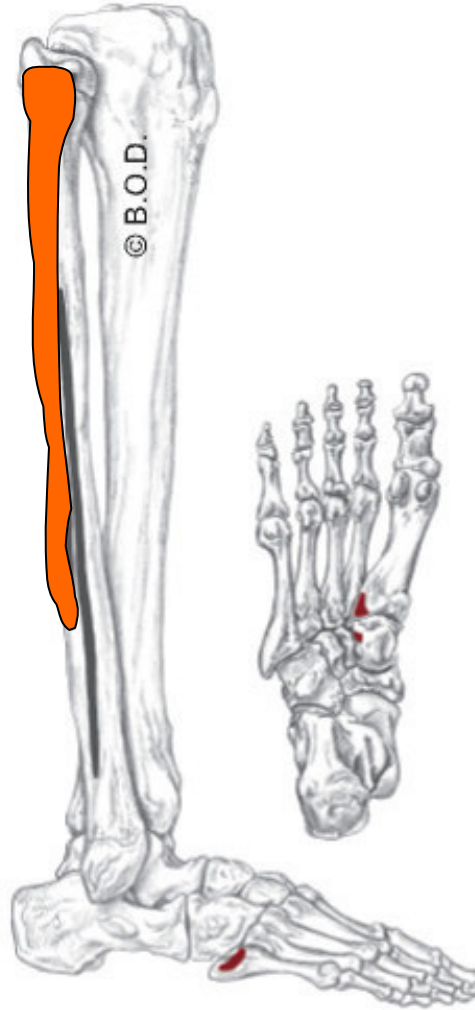
Anteromedial View

Fibularis Longus, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Head of fibula
Proximal two-thirds of lateral fibula

I Medial cuneiform
Base of the first metatarsal



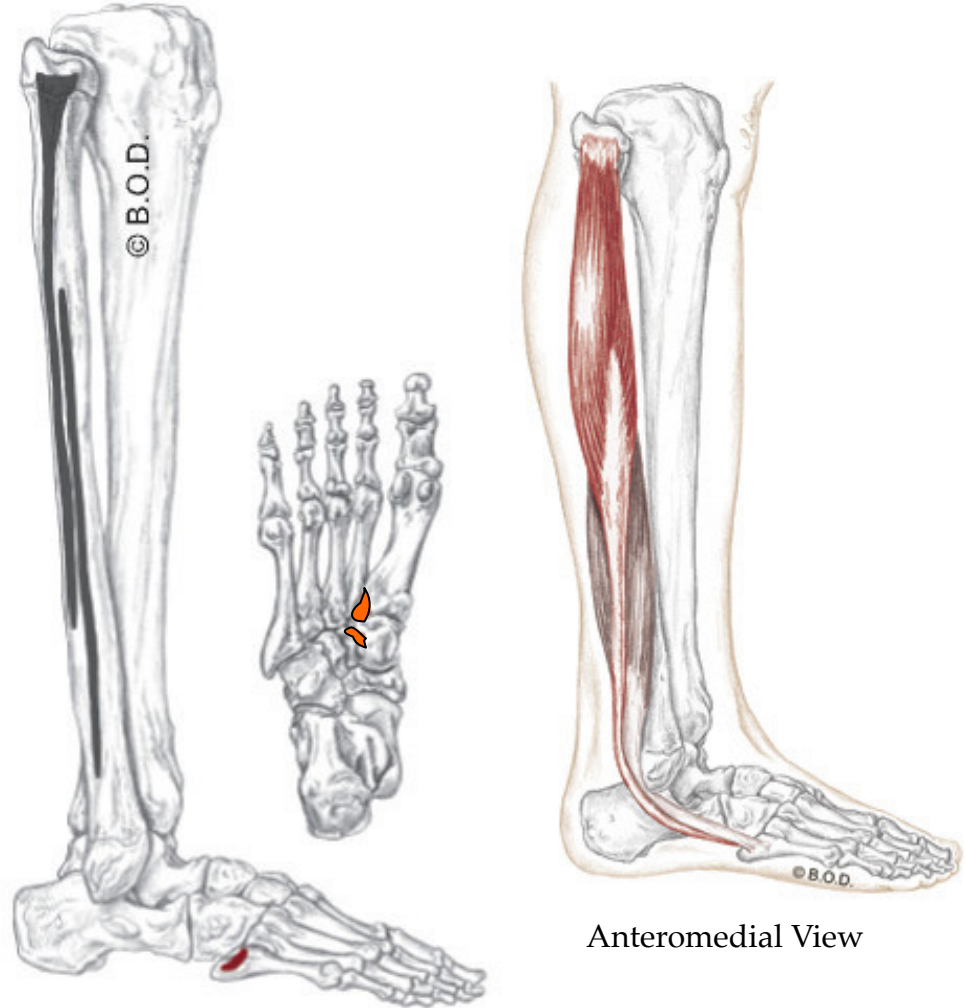
Anteromedial View

Fibularis Longus, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Head of fibula
Proximal two-thirds of lateral fibula

I Medial cuneiform
Base of the first metatarsal

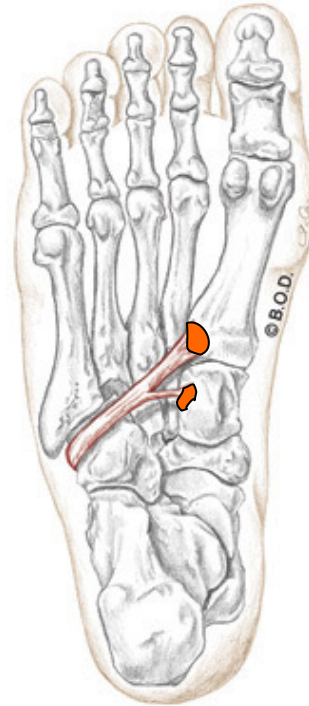


Fibularis Longus, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Head of fibula
Proximal two-thirds of lateral fibula

I Medial cuneiform
Base of the first metatarsal



Anteromedial View

Fibularis Brevis, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Distal two-thirds of lateral fibula

I Tuberosity of the fifth metatarsal



Anteromedial View

Fibularis Brevis, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Distal two-thirds of lateral fibula

I Tuberosity of the fifth metatarsal



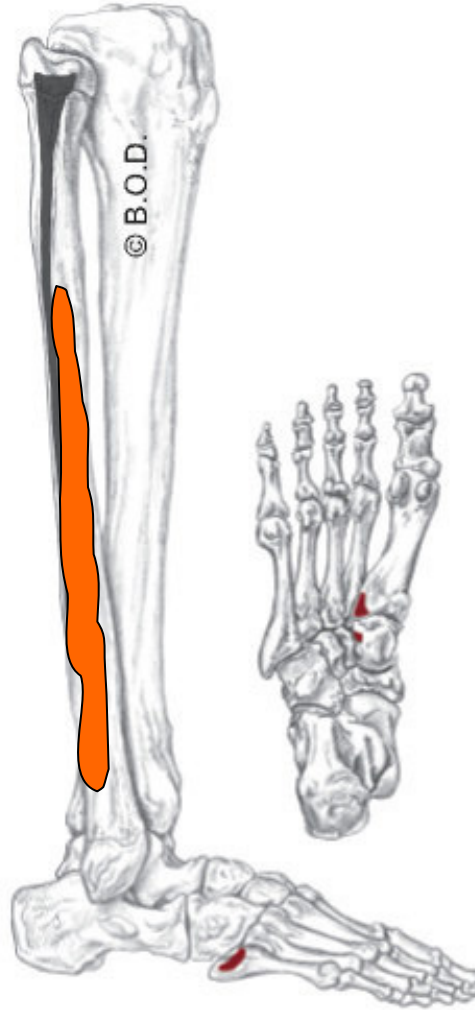
Anteromedial View

Fibularis Brevis, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Distal two-thirds of lateral fibula

I Tuberosity of the fifth metatarsal



Anteromedial View

Fibularis Brevis, page 376

A **Evert** the foot
Assist to **plantar flex** the ankle (talocrural joint)

O Distal two-thirds of lateral fibula

I Tuberosity of the fifth metatarsal



Anteromedial View

11a Infection Control

H-15



A



B



C



D



E

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.



Types of Disease

Autoimmune disease Overactive immune system attacks the body.

Examples: rheumatoid arthritis, lupus, and multiple sclerosis.



Types of Disease

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



Types of Disease

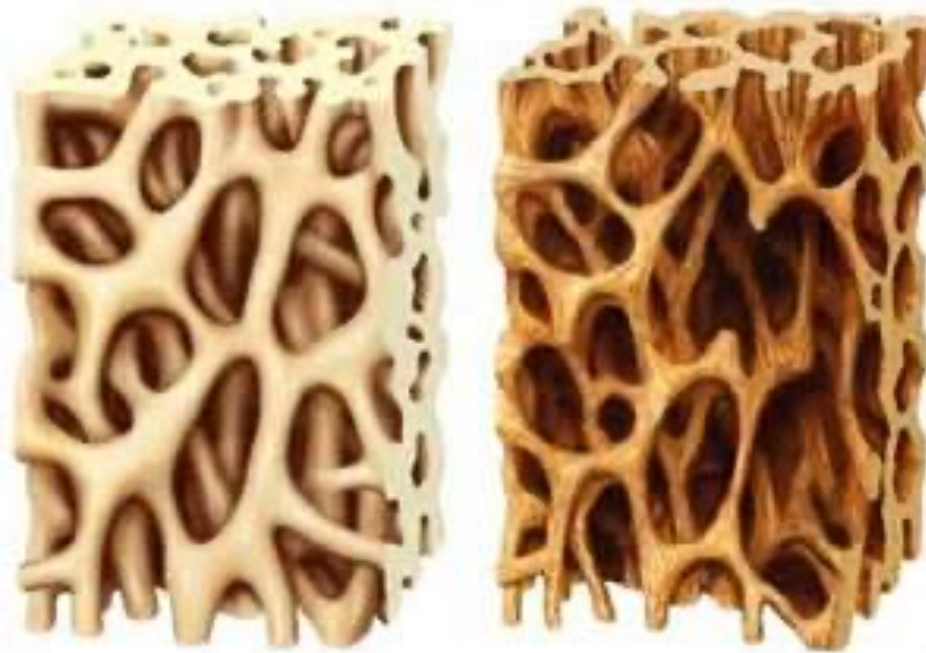
Deficiency disease Lack of dietary _____ nutrients _____ interferes with growth and metabolism. Examples: *scurvy* (C), rickets (D), beriberi (B₁), and pernicious anemia (B₁₂).



Types of Disease

Degenerative disease Overuse or aging deteriorates organ function.

Examples: *osteoporosis*, Alzheimer, Parkinson, and osteoarthritis.



Types of Disease

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



Types of Disease

Metabolic disease Abnormal metabolic processes disrupt homeostasis.
Examples: *Cushing disease* and *diabetes mellitus*.



Types of Disease

Infectious disease Disease caused by ____ pathogens ____.

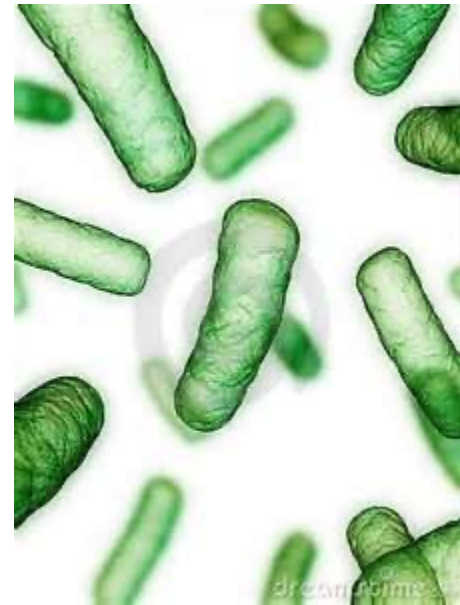
Examples: *impetigo*, malaria, influenza, lice, and mad cow disease.

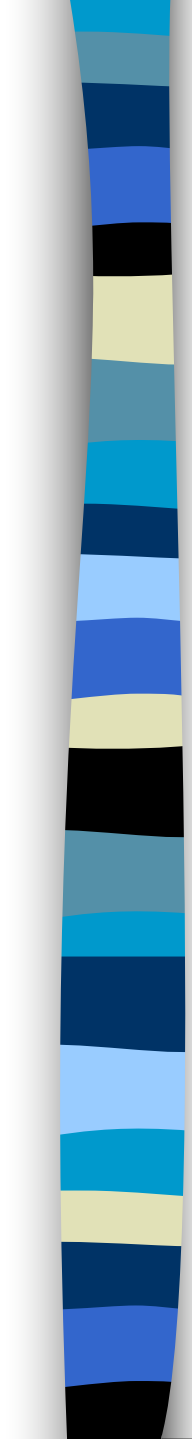


Disease Awareness

Pathogen Infectious agent capable of causing _____ disease _____.

Examples: *virus*, *bacteria*, fungi, protozoa, prions, and pathogenic animals.





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-living entities that can only replicate 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)

Fungi Warm, moist environments promote their growth. Include molds and yeasts.

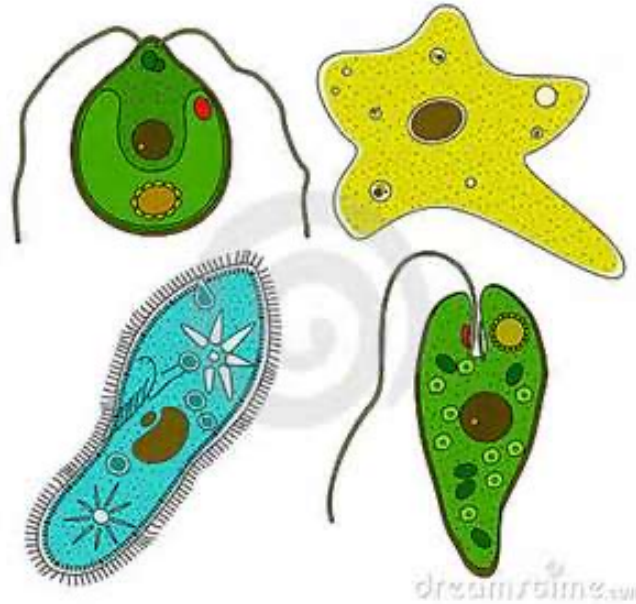
Examples: *ringworm*, athlete's foot, jock itch, and thrush.



Disease Causing Agents (Pathogens)

Protozoa Pathogen that can only survive in a host organism.

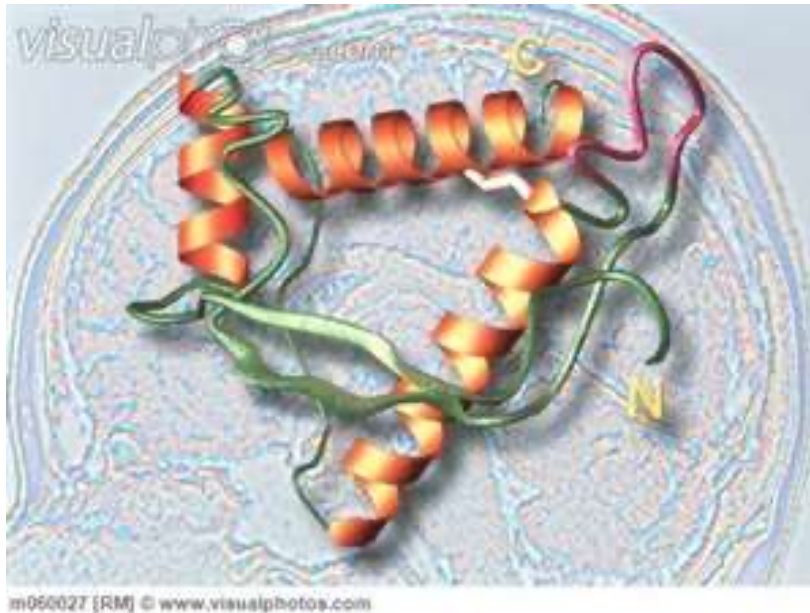
Examples: trichomoniasis, amoebic dysentery, African sleeping sickness, and malaria.



Disease Causing Agents (Pathogens)

Prions Pathogens composed of misfolded proteins. Involved in central nervous system diseases that are rare, currently untreatable, and fatal.

Examples: bovine spongiform encephalitis (mad cow disease), and Creutzfeldt-Jakob disease.

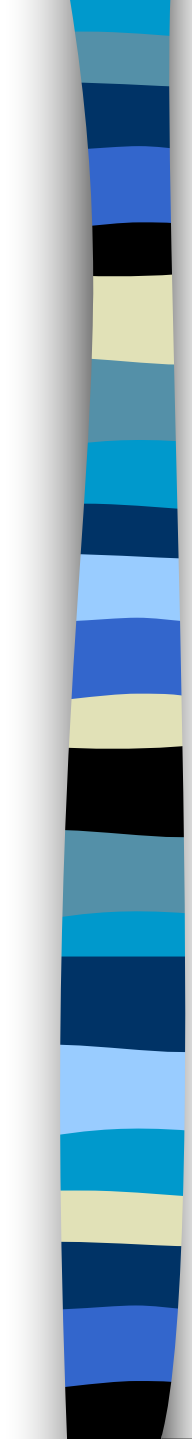


Disease Causing Agents (Pathogens)

Pathogenic animals Pathogens that rely on a host for nourishment .

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 dysentery.

Prions Rare, untreatable, and fatal misfolded proteins. Creutzfeldt-Jakob.

Pathogenic animals Rely on a host for nourishment. Worms, lice, and scabies.

Disease Transmission

1. Direct contact



2. Vehicle transmission



3. Vector transmission



4. Respiratory droplets



Disease Transmission

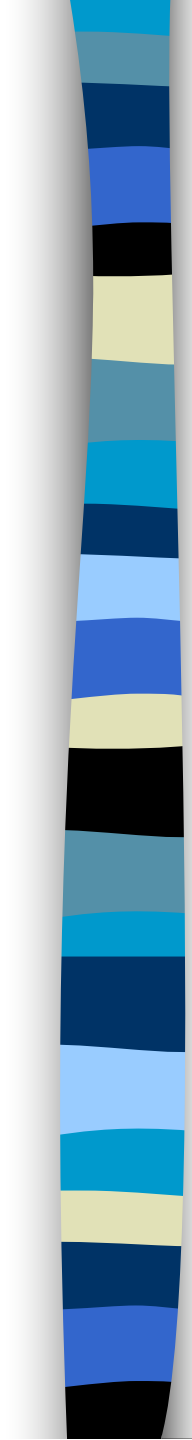
1. Direct contact Most common route of disease transmission. Types:

a. **Person to person**

b. **Animal to person**

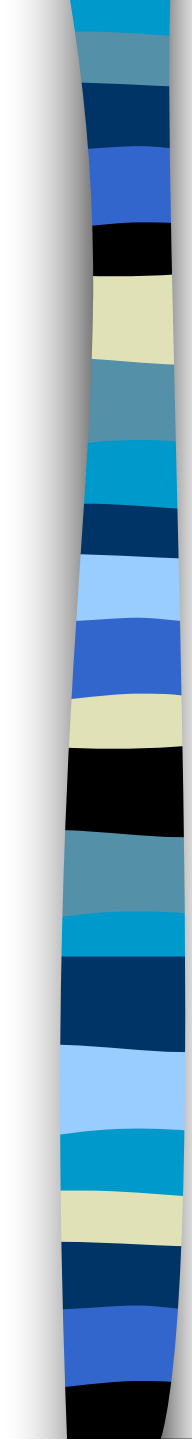
c. **Parent to fetus**





Disease Transmission

1. **Direct contact** Most common route of disease transmission. Types:
 - a. **Person to person** Direct contact disease transmission from an infected person to an uninfected person by physical contact (including sexual), and through blood transfusions.
 - b. **Animal to person**
 - c. **Parent to fetus**



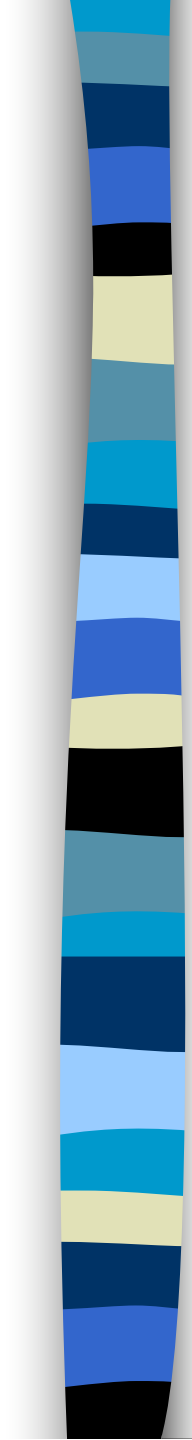
Disease Transmission

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

a. **Person to person** Direct contact disease transmission from infected 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 scratch from an infected animal

c. **Parent to fetus**



Disease Transmission

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

a. **Person to person** Direct contact disease transmission from an infected 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 scratch from an uninfected animal

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

Disease Transmission

2. **Vehicle transmission** Infectious organisms are transmitted in or on a common object such as *food*, *water*, *keyboard* ,or *doorknob*.

Examples: Salmonella, gastroenteritis., and some case of influenza



Disease Transmission

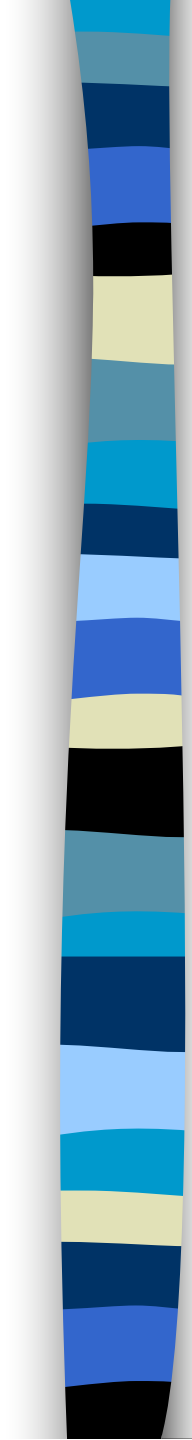
3. **Vector transmission** Disease transmission involving stings or bites, from insects and/or animals that act as intermediaries of disease exchange between two or more hosts. Examples: malaria (*mosquitoes*), Lyme disease (*ticks*), Rocky Mountain spotted fever (*ticks*).



Disease Transmission

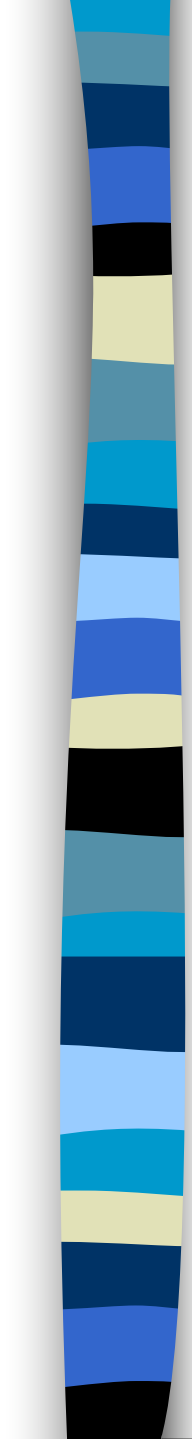
4. **Respiratory droplets** Disease spread through the air, propelled by coughing or sneezing. Example: colds.





Infection

Infection The period after disease transmission. Pathogens use host resources to multiply which interrupts normal functioning of the host.



Response Moment

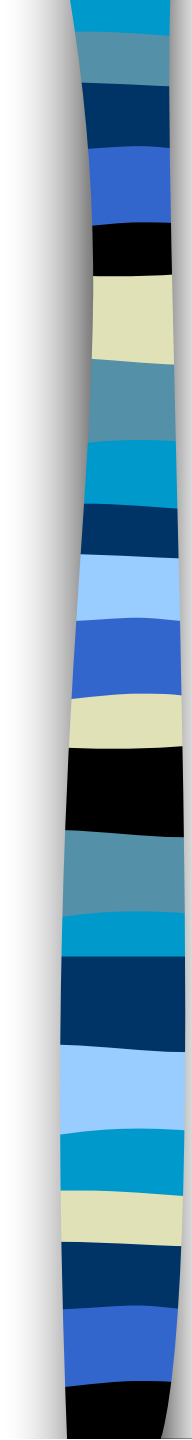
Direct contact Most common mode of transmission.
Physical, sexual, and blood contact.
Bite or scratch of an infected animal.
Across the placenta.

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.



Host Defenses

1. Natural defenses
2. Immune response
3. Fever
4. Inflammation

Host Defenses

1. Natural defenses

Barriers: intact *skin* and mucosa.

Chemicals: digestive enzymes and vaginal secretions.

Reflexes: coughing and *sneezing*.



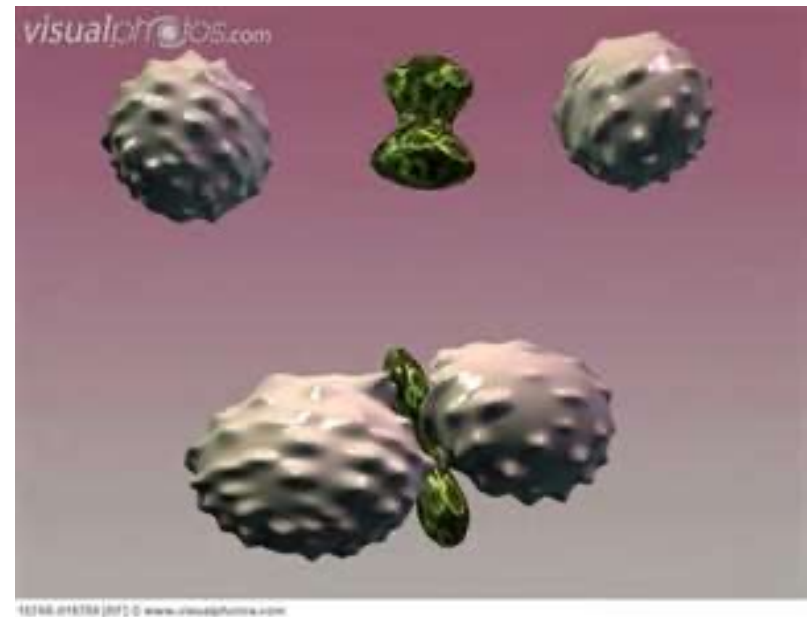
Fig. 18-18. Anatomic position.

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Host Defenses

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



Host Defenses

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



Host Defenses

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)

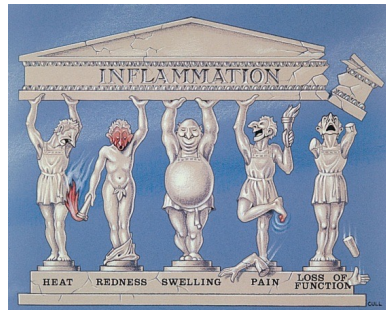
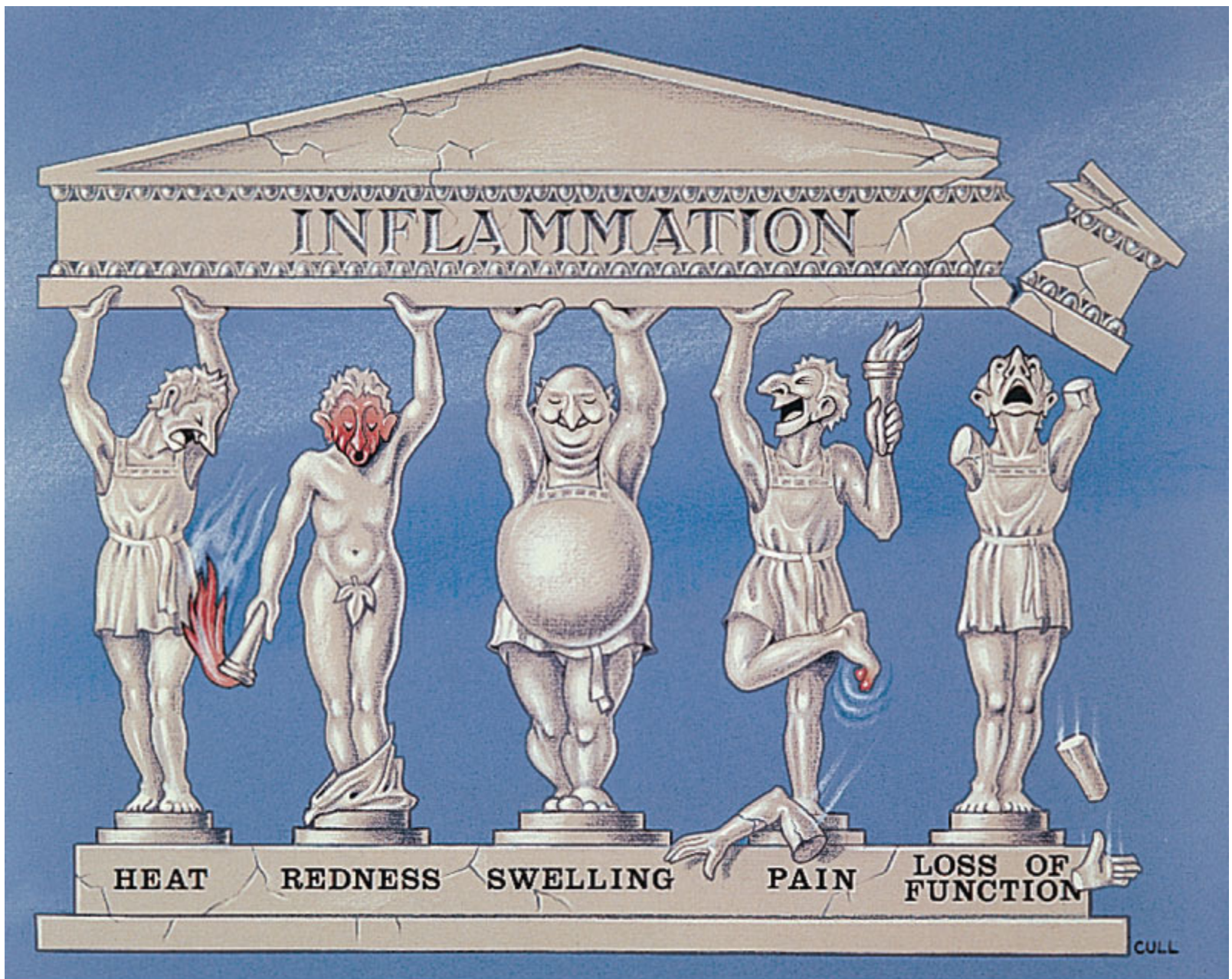


Fig. 18-15. Cardinal signs of inflammation. Reprinted by permission of Professor Peter Gell, London University.



Host Defenses

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



Contraindications

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

1. Local contraindication



2. Regional contraindication



FIGURE 22-15 Eczema

3. Absolute contraindication



Contraindications

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



Contraindications

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



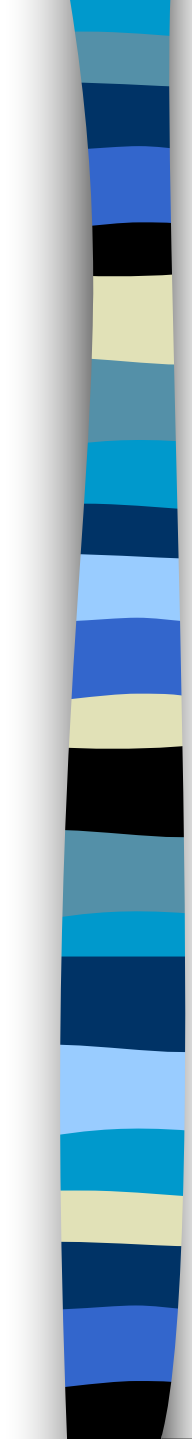
From Habif: Clinical dermatology: a color guide to diagnosis and therapy, ed 4, St. Louis, 2004, Mosby.
Fig. 22-13. Eczema.

Contraindications

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.

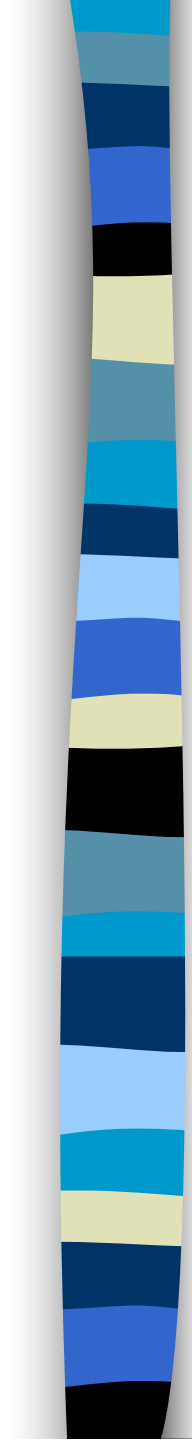
Examples: reported disease that is highly contagious, widespread infection or inflammation, *fever*, exacerbated chronic disease, and medical emergency.





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



Hygiene Guidelines

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



Hygiene Guidelines

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



Hygiene Guidelines

3. Wear clean clothes with short sleeves.



Hygiene Guidelines

4. No wristwatches or ornate jewelry while massaging.



Hygiene Guidelines

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



Hygiene Guidelines

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



Hygiene Guidelines

7. Shave or keep facial hair trimmed and groomed.



Hygiene Guidelines

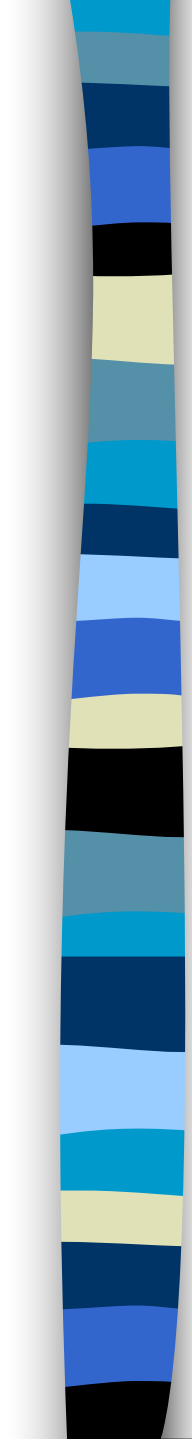
8. Control heavy perspiration with *sweatbands*.



Hand Hygiene

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.

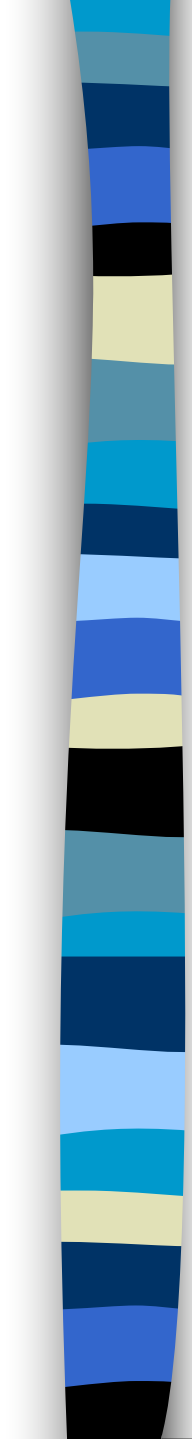




Hand Hygiene

When to wash hands:

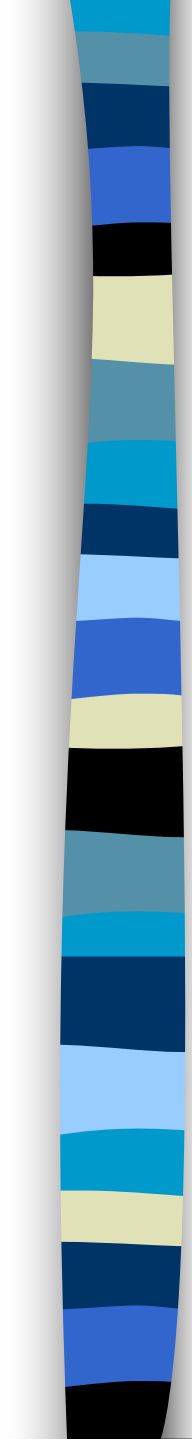
- After using the toilet
- Before, during, and after food preparation
- Before eating
- Before inserting or removing contact lenses
- After touching animals or animal waste
- Before and after caring for or visiting someone who is ill
- Treating wounds
- Handling something that could be contaminated
-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



Hand Hygiene

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 Hygiene

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

Standard Precautions for Massage Therapy

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



Standard Precautions for Massage Therapy

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.





A



B



C



D

Standard Precautions for Massage Therapy

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

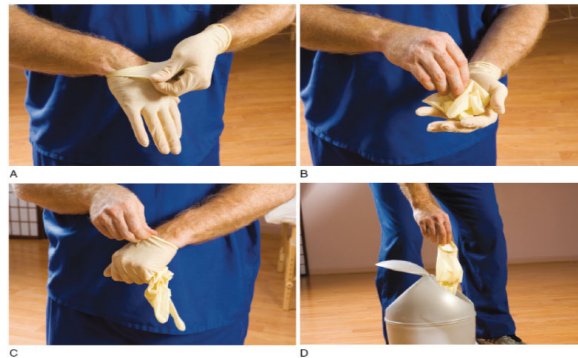


Fig. 9-3. **Glove removal.** A, Pulling off one glove. B, Putting the removed glove in the palm of the gloved hand. C, Removing the other glove with the first removed glove inside. D, Disposal of the used gloves.

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Standard Precautions for Massage Therapy

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



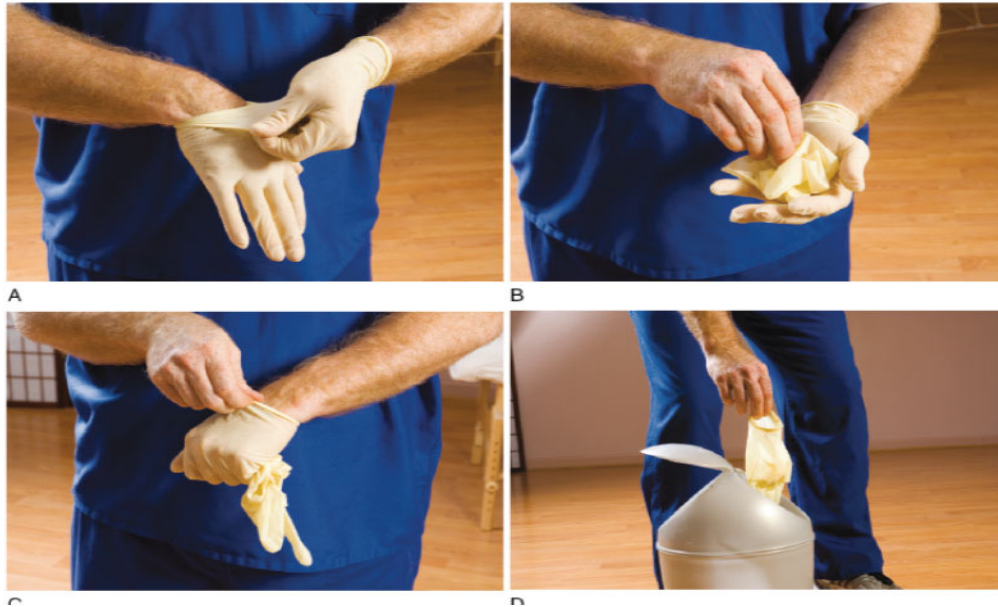
Standard Precautions for Massage Therapy

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



Standard Precautions for Massage Therapy

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



Standard Precautions for Massage Therapy

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



Standard Precautions for Massage Therapy

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



Standard Precautions for Massage Therapy

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



Standard Precautions for Massage Therapy

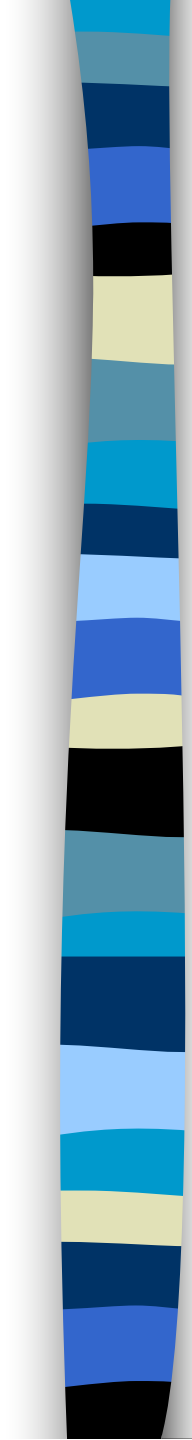
10. Do not massage while under the influence of *alcohol or recreational drugs*.



Standard Precautions for Massage Therapy

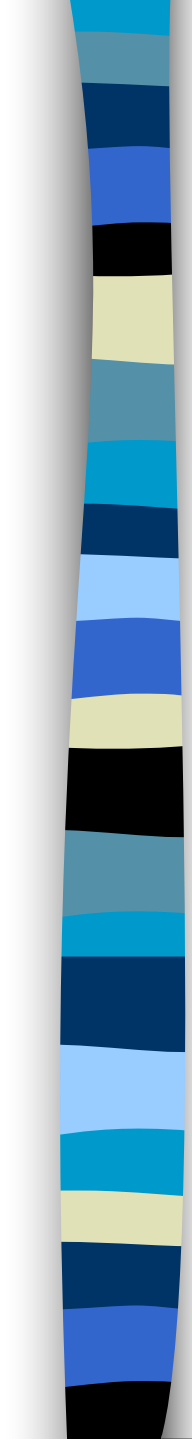
11. Follow a *personal health plan* and get regular physical examinations.





Response moment

Any questions about
Standard Precautions for Massage Therapy?



11a H&H: Infection Control