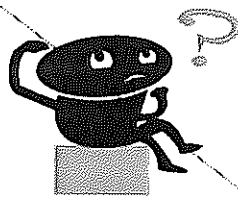
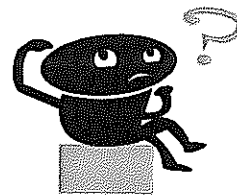


# Exercise Technician Training

**Care Ventures Cooperative**  
A Presentation of the Minimum  
Information for Training ETs



## WHY



- ◎ The loss of muscle and bone mass as a consequence of aging has a negative effect on strength, aerobic capacity and functional independence which ultimately leads to a reduced quality of life (Candow, 2008).
- ◎ Older adults who are physically active have a lower morbidity and mortality rate (Brach, Simonsick, Kritchevesky, Yaffe, & Newman, 2004).
- ◎ From a facility perspective there will be less care needs and cost associated with chronic diseases and physical declines.

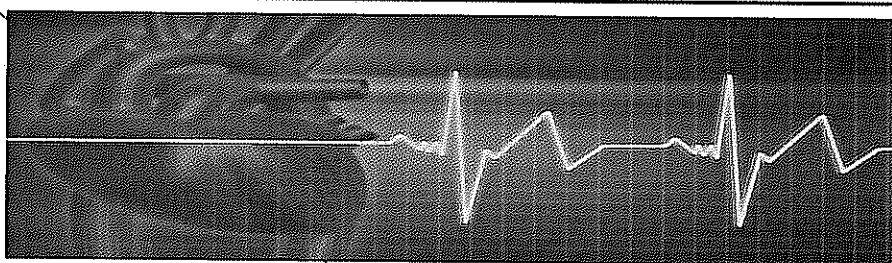


## Elderly Stats

### Age does not cause weakness



- ⊙ The aging population is the fastest growing group in the nation
- ⊙ In Western cultures: the death rate from heart attack and stroke nearly doubles every decade after 30
  - ⊙ Adults over 75:
    - > 32% have trouble climbing 10 steps
    - > 40% have trouble walking 1/4 mile
    - > 1 in 5 cannot lift over 10 lbs.



**Heart Rate:** # of times the heart beats per minute

**Resting Heart Rate**

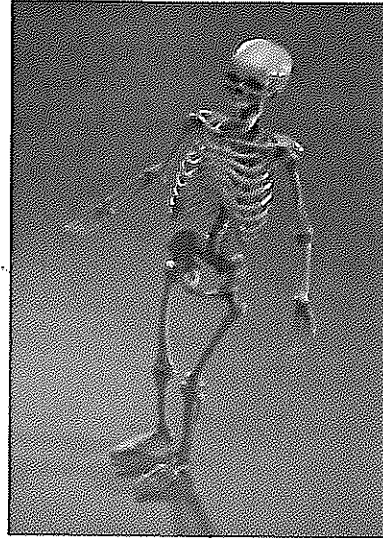
**Maximal Heart Rate**

**Target Heart Rate**  
 $(MHR - RHR) \times (Intensity) + RHR$

# Skeletal Anatomy

Axial Skeleton  
Appendicular Skeleton

Four Classifications:  
Long  
Short  
Flat  
Irregular



## How Bones Work

## Types of Joints



Pivot



Ball and Socket



Hinge



Saddle

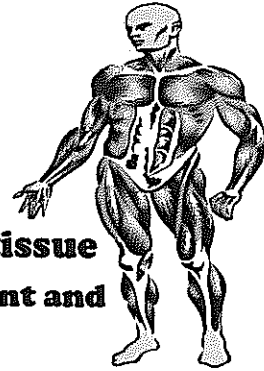


Gliding



Conyloid

# Muscle Anatomy



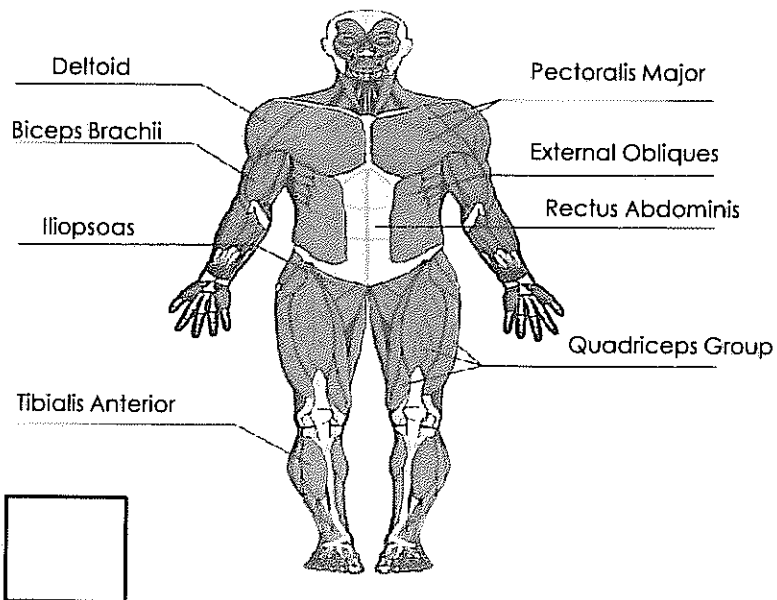
## ◎ Three general types of muscle tissue

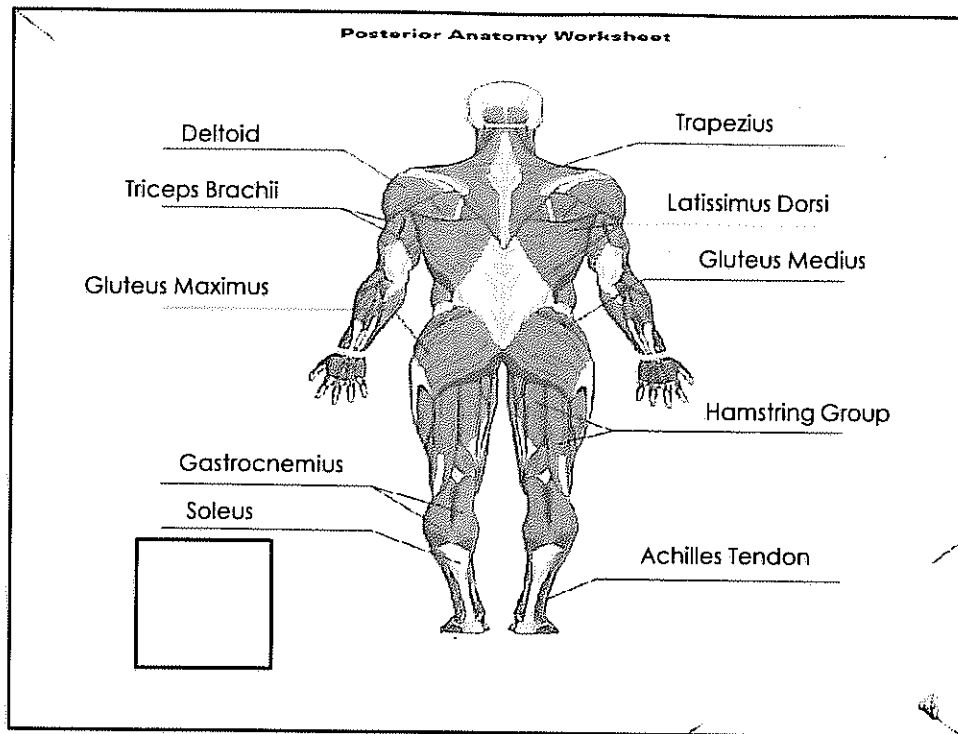
- > **Cardiac** - efficient, fatigue resistant and adapted to heart needs
- > **Smooth** - lines the internal organs and artery walls, aids digestion and blood flow
- > **Skeletal** - 40% of body and focus in fitness

## ◎ Muscle Fiber Types

- > **Slow twitch (Type 1)**
- > **Fast twitch (Type 2)**

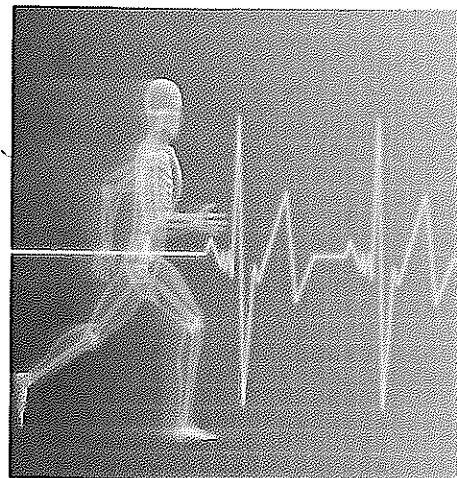
### Anterior Anatomy Worksheet





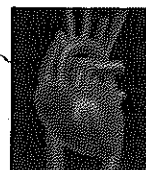
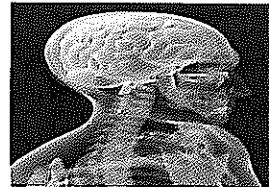
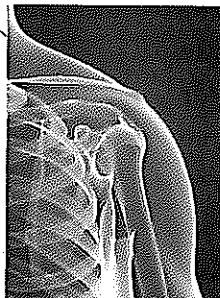
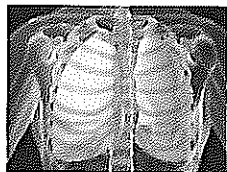
## Physiology of the Aging Process

- ⊙ Respiratory
- ⊙ Cardiovascular
- ⊙ Neurological
- ⊙ Musculoskeletal



## Considerations

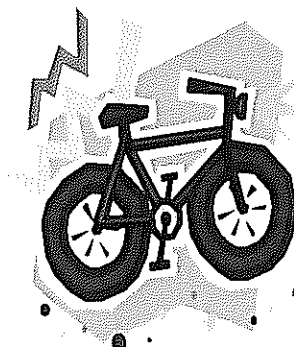
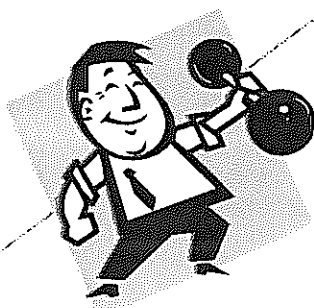
- ⊙ Osteoporosis
- ⊙ Diabetes
- ⊙ Arthritis
- ⊙ Heart Disease
- ⊙ Behavioral & Cognitive States
- ⊙ Hypertension
- ⊙ COPD



## Exercise Programming & The FITT Principle

A focus on the physical dimension of wellness

Group Exercise Classes



NuStep

## Benefits of Physical Activity

**DECREASES RISKS OF:**

- > Premature death
- > Heart disease and stroke
- > Developing diabetes
- > Osteoporosis
- > Body fat and weight
- > Certain types of cancers
- > Feelings of anxiety and depression

**INCREASES:**

- Motor skills
- Relaxation and stress relief
- Increases oxygen carrying capacity of blood
- Reaction and response time
- Functional neurological capacity
- Muscular strength
- Endurance
- Flexibility
- Balance

Maintains Independence

Important Points

Pace

Warm Up

◎ **A nice slow steady pace allows for**

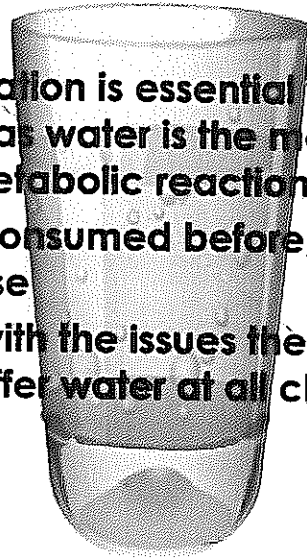
- > Good biomechanics
- > Good posture
- > Full range of motion
- > Controlled movements
- > Proper body alignment

◎ **Proper Warm Up Increases**

- Respiratory rate
- Blood flow
- Muscle oxygenation
- Mental agility

## Benefits of Water Intake

- ⊙ Proper hydration is essential for energy production as water is the medium in which all metabolic reactions take place.
- ⊙ Should be consumed before, during and after exercise
- ⊙ Especially with the issues the aging must deal with, offer water at all chances



**Questions**



## References

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