



## Strength and Conditioning Considerations for Patients with Common Injuries and Diseases

- Most of America is deconditioned
- Adults lose roughly ½ pound of muscle mass per year after 20 years old
- This gradual reduction in muscle tissue is largely responsible for a decrease in RMR (resting metabolic rate) of 0.5% per year; therefore, you can increase weight (in fat).

Benefits of strength training include:

- 1) Improve sleep
- 2) Decrease stress
- 3) Lose body fat
- 4) Improve balance
- 5) Increase metabolism
- 6) Decrease injury rate
- 7) Postpone degenerative problems

### Guidelines for Cardiovascular Exercise:

1. 30 minutes per day to prevent chronic disease
2. 60 minutes per day to avoid weight gain
3. 90 minutes per day to lose weight

### Cardiovascular Diseases

- 120/80 is now considered borderline for high blood pressure
- One in four Americans has high blood pressure, nearly 1/3<sup>rd</sup> don't know it
- Try to maintain cholesterol below 180
- *It is better to be "fit and fat" than "thin and unfit"*
- Walking 10 or more blocks a day cuts your risk of heart disease by 35%
- Researchers from the UK found that only intense exercise lowers blood cholesterol

### Diabetes

- In the past decade, Type II Diabetes among both men and women in their 30s has jumped 70% (this is now considered an epidemic!) -1/3 of people don't know they have it.
- 95% of all diabetics are type II, 85 % of whom are obese when diagnosed.
- Extra weight strains the pancreas' ability to make insulin and hinders the hormone's ability to maintain normal blood sugar levels.
- Eating fast food twice a week or more is associated with a weight gain of 10 pounds or more in the course of a 6-12 month period.



### **Exercise Consideration with Type I:**

- Hypoglycemia, avoid exercise late at night, no straining or breath holding because of retinal detachment and eye fluid hemorrhage, no blisters or cuts.

### **Exercise Consideration with Type II:**

- Weight reduction and caloric restriction
- Stay hydrated- dehydration can adversely affect glucose levels (increase).
- Moderate resistance (8-12 repetitions) for all diabetics
- Many persons with diabetes have a history of limited physical activity; therefore, you need to start slow.

### **Obesity**

- While there may be a genetic or medical basis for obesity, most people are overweight because they eat too much and don't exercise.
- In 1971 less than 20% of the population was overweight
- 64.5% of the population is overweight, and more than 30.5% are obese.
- Mortality rates for individuals with Body Mass Index (BMI) > 30 are estimated to be 50-100% higher than in the 20-25 range.
- Lack of exercise and poor diet will overtake smoking as the leading lifestyle factor causing death in the US by 2005.

<b><u>Classification</u></b>	<b><u>BMI (kg/m<sup>2</sup>)</u></b>	(BMI body weight (kg)/ height (m) squared)
Underweight	<18.5	1" = 2.5 cm
Normal	18.5-24.9	1kg = 2.2 pounds
Overweight	25.0-29.9	
Obesity Class I	30.0-34.9	
Obesity Class II	35.0-39.9	
Extremely Obese, Class III	≥ 40	

**Because of the occurrence of being overweight or obese is so prevalent and their consequences so serious, we must begin to address this issue just as we would any other chronic health problem.**

### **COPD**

- Exercise is recommended- Symptom limited high intensity aerobic training
- Flexibility in the upper extremity and chest (improved functional capacity and quality of life)
- Exercise can help reduce the number of respiratory infections.

### **Osteoporosis**

- Osteoporosis is really a condition of childhood
- By the age of 20 a body has built up to 98% of bone mass. 45% is put on in adolescence.



- Quicker repetitions are appropriate because fast application of force is more effective for achieving an osteogenic response than slow application of force.
- Jumping activity and strength training in premenopausal women is reported to increase BMD (bone mineral density) by 1-5%, but gains are lost when the weight-training activity ceases. Jumping exercises should not be started until 1 to 3 months after beginning other types of exercises. Individuals with osteoporosis should not participate in the jumping exercises.
- Weight-bearing exercises are good!!!
- Eccentrics are good!
- Good website: [www.toneyourbones.org](http://www.toneyourbones.org)

### Arthritis

- Reduce weight! One extra pound means over 4,000,000 pounds on your joints each year.