Exercise and Weight Management

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Weight Loss and Weight Management
Factors Contributing to Overweight and Obesity

• Genetic and Physiologic Factors
• Environmental Factors
• Psychosocial and Economic Factors
Genetic and Physiologic Factors

• Genetic Influence & Various Theories
• Metabolic Rates – There are 3 types of metabolic rates: BMR, RMR, EMR
• Hormonal Influences: Ghrelin, Leptin, and cholecystokinin
• Fat Cells and Predisposition to Obesity
Genetic Influence

- Familial history of Obesity
- Genes may influence food regulation through the Central Nervous System (CNS) as well as fat cell synthesis and functioning.
- Thrifty Gene Theory – Ancestors may have passed on genetic, hormonal, or metabolic predisposition toward fat storage making fat harder to lose.
- Theory of Mechanism – The hypothalamus monitors nutrient levels in the blood, signaling the brain to eat when levels are low. This system may be dysfunctional in obese people.
Metabolic Rates

• Basal Metabolic Rate (BMR) - The rate of energy expenditure by a body at complete rest in a neutral environment. The average BMR for a healthy adult is usually between 1,200 – 1,800 calories/day.

• **Women**: BMR = 655 + (4.35 x weight in pounds) + (4.7 x height in inches) - (4.7 x age in years)

• **Men**: BMR = 66 + (6.23 x weight in pounds) + (12.7 x height in inches) - (6.8 x age in years)

• Resting Metabolic Rate (RMR) – The energy expenditure of the body under BMR conditions plus other daily sedentary activities (e.g. food digestion, sitting, or standing).

• Exercise Metabolic Rate (EMR) – The energy expenditure during exercise or physical activity (e.g. walking, climbing stairs, mowing the lawn, or exercise).
Hormonal Influences

Cholecystokinin

- Hormone associated with the feeling of satiation. This hormone is released when the stomach becomes distended after a meal signaling the brain to decrease hunger signals so you will stop eating.
Fat Cells and Predisposition to Obesity

• Some obese people may have excessive numbers of fat cells (hyperplasia).
• Hyperplasia may begin in early childhood or possibly prior to birth.
• Fat cells have the ability to shrink and swell (hypertrophy).
• Obesity may be linked to the number of fat cells in the body and their ability to swell.
  • Average-weight adult has 25-35 billion fat cells.
  • Moderately obese adults have 60-100 billion fat cells.
  • Extremely obese adults have 200 billion fat cells.
Environmental Factors

- Increased sedentary activities and desk jobs.
- Greater access to high fat, high calorie foods.
- Increased portion sizes.
- Increase in the number of women in the work force.
Psychosocial and Economic Factors

• Eating has become a social ritual associated with companionship, celebration, and enjoyment.

• Eating, and types of food eaten, are often associated with various cultures.

• Food is sometimes used as an emotional crutch, hence the term “comfort food”.

• Socioeconomic factors, such as income and housing, also play a role in one’s nutrition.
Managing Your Weight
Improve Your Eating Habits

- Add more fruits and veggies to your diet making sure to eat variety of colors.
- Choose whole grains instead of refined products.
- Eat lean meats, poultry, and fish.
- Choose low-fat and fat-free dairy products.
- Choose Mono and Polyunsaturated fats.
- Keep healthy munchies around.
- Choose natural beverages.
- Eat nuts instead of candy.
Understanding Calories

- A calorie is a unit of energy; calories are gained from food and expended through activity.

- Each time you consume 3,500 calories more than your body needs, you gain 1 lb of fat.

- Conversely, expending 3,500 calories will help you to lose 1 lb of fat.

- Depending on your weight you may burn more or less calories than someone else doing the same types of activities.
Keys to Successful Weight Management

• Keep a positive can do attitude – write down the positive things about modifying your diet and exercise plan and how this can improve your quality of life.

• Make a plan:
  • Set realistic short- and long-term goals.
  • Set goals on a weekly basis until you’re able to look further ahead and the changes become easier.

• Change your habits
  • Be adventurous
  • Use mindful eating concepts

• Incorporate exercise
  • Be active and vary your routine
  • Find an exercise partner
  • Make it fun
Physical Activity and Exercise
Benefits of Physical Activity

• Increases Cardiovascular Health
• Increases Mental Health/Stability
• Decreases your risk for Obesity, Diabetes, and other diseases
• Improves Bone and Muscle Health
• Decreases Cholesterol
• Can help control addiction (smoking) and withdrawal symptoms
Cardiovascular Health

• Increases heart performance and heart muscle contractibility
• Reduces and improves blood pressure
• Improves cardiac endurance
  • The ability of the heart and lungs to supply oxygen to the body. This can be achieved by exercising for at least 20 minutes (non-stop) 3-5 times a week.
Mental Health/Stability

- Improves Brain Function, Mental Alertness & Concentration, and Sharpens Memory
- Increases Endorphins making you happier
- Increase Self Esteem and Self Image
- Improves Sensorimotor skills
- Reduces Stress & Anxiety
- Prevents Cognitive Decline
- Improves quality of sleep
Bone and Muscle Health

• Exercise builds **muscular strength** *(the ability to exert the maximal force at any given time)* and **muscular endurance** *(the ability of a muscle group to work over a given period without becoming overly tired)*.

• Increases and promotes flexibility of the joints.

• Builds bone strength which helps prevent osteoporosis thru **weight bearing** *(walking, jogging, dancing, etc)* and **resistance exercises** *(weight lifting, free weights, resistance bands)*.

• Reduces falls and fractures and increases reaction time.
Diabetes and Overweight/Obesity

- Exercise helps control blood sugar by increasing insulin sensitivity.
- Risk of DM II is reduced, and blood sugar control is improved in individuals who have DM II.
- Exercise burns excess stored body fat resulting in leaner body mass.
- People who have moderate cardiorespiratory fitness have less total fat and less belly fat.
Cholesterol

• Exercising regularly will help lower triglycerides and raise HDL.

• Consistent regular exercise can lower triglycerides by 30% to 40% and boost HDL by 5 to 8 mg/dL.

• Walking 3 miles per week can lower your risk for heart disease by 10%.
Exercise and Smoking

- Exercise helps limit weight gain when quitting smoking.
- Studies have shown that even moderate physical activity, especially aerobic exercise, reduces the urge to smoke.
- Withdrawal symptoms and cravings for cigarettes decrease during exercise and for as long as 50 minutes afterwards.
- Exercise increases dopamine levels which helps ease addiction behaviors and withdrawal, improving mood.
- Exercise is a great coping mechanism for stress and distract a person from thoughts of smoking.
Types of Exercise

• Cardiorespiratory – exercise that involves continuous activities that use large muscle groups. Reduces stress, lowers risk of heart disease, and helps maintain normal body weight.

• Strength training – helps maintain muscle strength and endurance.

• Stretching – Improves flexibility, balance, posture, and circulation of blood and nutrients throughout the body. Types of stretching include; static, dynamic, yoga (which includes both static and dynamic), and ballistic stretching.
<table>
<thead>
<tr>
<th>Effort Level</th>
<th>Activities</th>
<th>Range Needed to Stay Healthy</th>
</tr>
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<tbody>
<tr>
<td>Very Light Effort</td>
<td>- strolling</td>
<td></td>
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<tr>
<td></td>
<td>- dusting</td>
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<tr>
<td>Light Effort</td>
<td>- light walking</td>
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<tr>
<td>(60 minutes)</td>
<td>- volleyball</td>
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<td>- easy gardening</td>
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<td></td>
<td>- stretching</td>
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<tr>
<td>Moderate Effort</td>
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<tr>
<td>(30-60 minutes)</td>
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<td></td>
<td>- raking leaves</td>
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<td></td>
<td>- swimming</td>
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<td></td>
<td>- dancing</td>
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<tr>
<td></td>
<td>- water aerobics</td>
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<tr>
<td>Vigorous Effort</td>
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<td>(20-30 minutes)</td>
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<td>- fast swimming</td>
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<tr>
<td></td>
<td>- fast dancing</td>
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<tr>
<td>Maximum Effort</td>
<td>- sprinting</td>
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<td></td>
<td>- racing</td>
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</table>
MUSCLE GROUPS & EXERCISES

Anterior

Deltoids
- Shoulder Press
- Lateral and Front Raises
- Upright Rows and Shrugs

Pectorals
- Bar & Dumbbell Flys
- Dumbbell Press

Upper Abdominals
- Crunches
- Y-Ups
- Plank

Lower Abdominals
- Bent and Straight Leg Raises
- Barbell Rollouts
- Plank

Biceps
- Bicep Curls
- Flex-Ups
- Reverse Curls

Obliques
- Lower Body Rotates
- Wood Chopper
- Oblique Crunches

Posterior

Triceps
- Tricep Dips
- Tricep Extensions
- Tricep Kickbacks

Trapezius
- Shrug
- Upright Rows
- Lateral and Front Raises

Latissimus Dorsi
- Barbell Pull-Downs
- Rows
- Pull-Ups

Gluteals
- Lunges
- Squats
- Dead Lifts

Adductors
- Lateral Lunges
- Machine Adductions
- Squats

Quadriceps
- Lunges
- Squats
- Body Lift

Calf Raises
- Squats
- Dead Lifts

Hamstrings
- Lunges
- Leg Curls
- Squats
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