

Exercise and Weight Management



Marissa Berry, RN, CHC

Stay Well Health Center, SONM

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

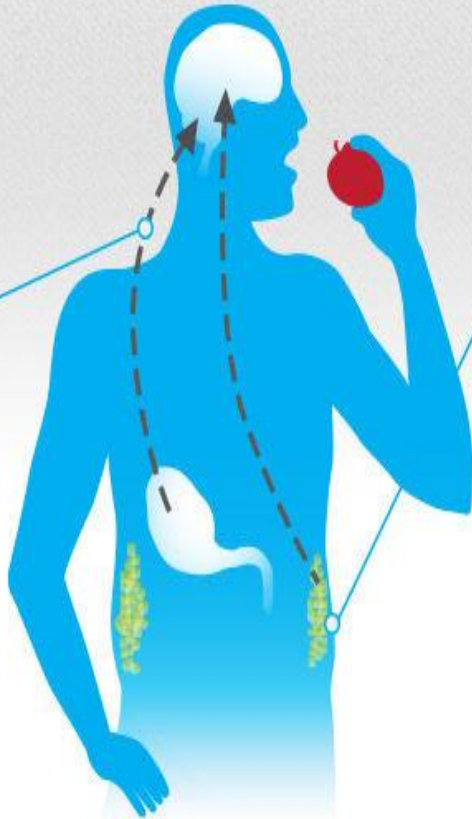
- Basal Metabolic Rate(BMR) - The rate of energy expenditure by a body at complete rest in a neutral environment. The average BMR for a healthy adult is usually between 1,200 – 1,800 calories/day.
- **Women:** $BMR = 655 + (4.35 \times \text{weight in pounds}) + (4.7 \times \text{height in inches}) - (4.7 \times \text{age in years})$
- **Men:** $BMR = 66 + (6.23 \times \text{weight in pounds}) + (12.7 \times \text{height in inches}) - (6.8 \times \text{age in years})$
- 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

HOW GHRELIN AND LEPTIN WORK IN THE BODY

GHRELIN THE APPETITE STIMULATOR

Ghrelin is released from the stomach, and when elevated, sends a signal to your brain letting you know you're hungry and it's time to eat! Age, gender, blood glucose, and leptin levels can all affect ghrelin levels.



LEPTIN THE APPETITE SUPPRESSOR

Leptin, which is stored and secreted by fat cells, is considered to be the master regulator of hunger. When you eat a meal, leptin is released from fat cells and sends a signal to your brain to let you know you're full and to stop eating.

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

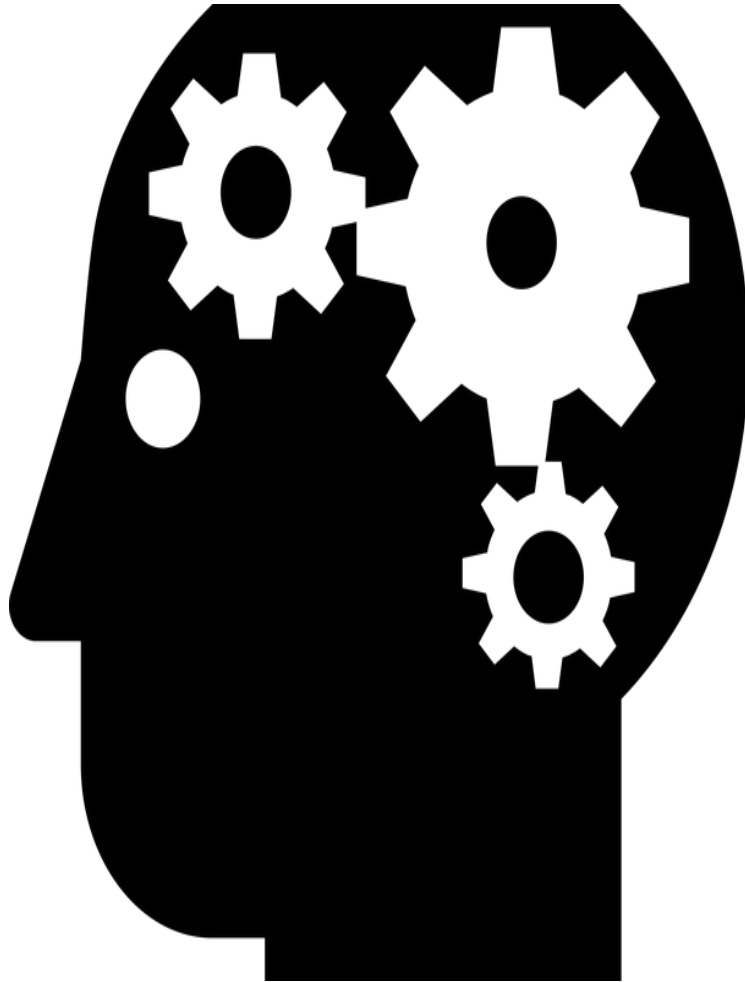


- Increases Cardiovascular Health
- Increases Mental Health/Stability
- Decreases your risk for Obesity, Diabetes, and other diseases
- Improves Bone and Muscle Health
- Decreases Cholesterol
- Can help control addiction (smoking) and withdrawal symptoms

Cardiovascular Health

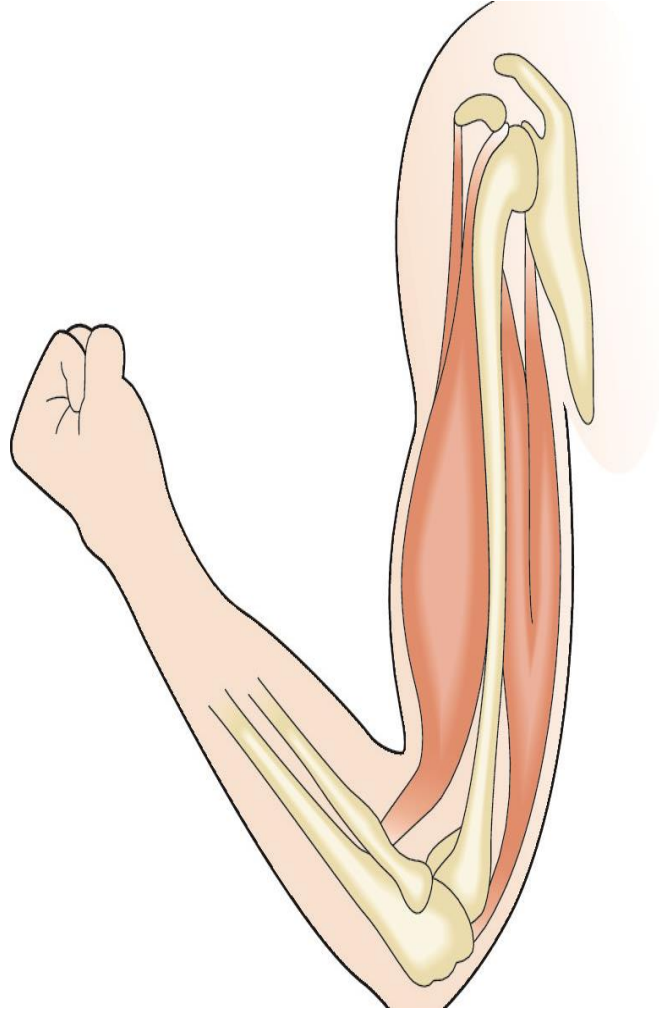
- Increases heart performance and heart muscle contractibility
- Reduces and improves blood pressure
- Improves cardiac endurance
 - The ability of the heart and lungs to supply oxygen to the body. This can be achieved by exercising for at least 20 minutes (non-stop) 3-5 times a week.

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.

Very Light Effort	<ul style="list-style-type: none"> - strolling - dusting 	
Light effort (60 minutes)	<ul style="list-style-type: none"> - light walking - volleyball - easy gardening - stretching 	Range needed to stay healthy.
Moderate Effort (30-60 minutes)	<ul style="list-style-type: none"> - brisk walking - biking - raking leaves - swimming - dancing - water aerobics 	
Vigorous Effort (20-30 minutes)	<ul style="list-style-type: none"> - aerobics - jogging - hockey - basketball - fast swimming - fast dancing 	
Maximum Effort	<ul style="list-style-type: none"> - sprinting - racing 	

MUSCLE GROUPS & EXERCISES

IMPORTANCE OF MUSCLES

Muscles are used every day, from the moment you wake up to the moment you go to sleep. They help you walk, sit and push or pull objects. Even when you are sleeping they are resting and recovering for the following day.

It is important that you maintain healthy and strong muscles through regular exercise and ensure that you work all major muscles and not just concentrate on one group.

▶ WHY EXERCISE YOUR MUSCLES?

▶ Prevent Injury

▶ Improve Posture

▶ Increase Strength

▶ Reduce Aches and Pains

▶ Reduce Muscle Imbalances

Anterior

Deltoids

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

Biceps

- Biceps Curls
- Pull-ups
- Reverse Curls

Pectorals

- Bench Press
- Dumbbell Flys
- Press-ups

Obliques

- Lower Body Twists
- Wood-Chopper
- Oblique Crunches

Upper Abdominals

- Crunches
- V-sits
- Plank

Lower Abdominals

- Bent and Straight Legs Raises
- Barbell Rollouts
- Plank

Adductors

- Lateral Lunges
- Machine Adductions
- Squats

Quadriceps

- Lunges
- Squats
- Dead Lift

Posterior

Triceps

- Triceps Dips
- Triceps Extensions
- Triceps Pulldowns

Trapezius

- Shrugs
- Upright Rows
- Lateral and Front Raises

Forearms

- Pull-ups
- Reverse Curls
- Biceps Curls

Latissimus Dorsi

- Lat Pulldowns
- Rows
- Pull-ups

Gluteals

- Lunges
- Squats
- Dead Lifts

Calves

- Calf Raises
- Squats
- Dead Lifts

Hamstrings

- Lunges
- Leg Curls
- Squats



STAY WELL HEALTH CENTER

Serving the State of New Mexico and Participating Local Public Body

Employees Covered under the State Employee's Risk Management Medical Plan

- We're here to meet your health care needs. Our clinic is open from 7:00 am – 6:00 pm Monday - Friday and Saturday 8:00 am – 12:00 pm. Call today for an appointment.
- 505-827-2485