

# Able to Be Healthy Resource Guide



505 Silas Deane Highway  
Wethersfield, CT 06109  
Phone: (860) 721-2822  
[www.ccthd.org](http://www.ccthd.org)

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County and City Health Officials



# Able to Be Healthy Resource Guide

Central Connecticut Health District

**“Healthy People in a Healthy Community”**

Berlin, Newington, Rocky Hill, Wethersfield

## **Able to Be Healthy Resource Guide**

**“Healthy People in a Healthy Community” is our vision for the Central Connecticut Health District.**

**We are the local health department serving the towns of Berlin, Newington, Rocky Hill and Wethersfield.**

**As a governmental agency, we are committed to providing essential local public health services through ongoing education, prevention of diseases, investigation of health problems, monitoring and advocacy.**

**Guide Written By:  
Laura J. Morris, MPH  
Nicholas Desrosiers  
Lauren Colello**

**Guide Prepared By:  
Nicholas Desrosiers**

## Able to Be Healthy Resource Guide

This book was produced by the Central Connecticut Health District through a grant from the National Association of City and County Health Officials.

The material contained in this guide is presented for the purpose of educating and informing readers about physical and sensory disabilities and their effects. Nothing contained herein should be construed as medical diagnosis or treatment advice. This information should not be used in place of the advice of a physician or other qualified health care provider. If any questions arise while reading this guide, the Central Connecticut Health District strongly recommends contacting a physician or the appropriate health care provider.

For more information contact:  
Central Connecticut Health District  
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Web Address: [www.ccthd.org](http://www.ccthd.org)

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# Chapter

# 1



## Program Description

**“Quit worrying about your  
health. It’ll go away”  
-Robert Orben**

## Program Description

### Program Description

Individuals with disabilities experience varying degrees of health just like the general population.

Many People with disabilities are highly susceptible to secondary health conditions such as obesity, hypertension, pressure sores and more.

Able to be Healthy is a community-based initiative that addresses the provision of health promotion for individuals with disabilities.

Able to be Healthy will enable individuals with disabilities to learn strategies and access information that will empower them to maintain and improve their current health status, regardless of their disability.

# Program Description

## Phases

### **Phase 1: Advisory Committee**

Create the Able to be Healthy Advisory Committee representative of individuals from Berlin, Newington, Rocky Hill, and Wethersfield.

### **Phase 2: Assess Barriers**

Assess perceived barriers that adult individuals with sensory and physical disabilities experience with regard to health promotion and disease prevention through a survey.

### **Phase 3: Facility Assessment**

Assess local area fitness facilities for ways to remove barriers

### **Phase 4: Able to be Healthy Guide**

Develop, design and distribute the Able to be Healthy Guide to residents of Berlin, Newington, Rocky Hill, and Wethersfield

The Able to be Healthy Guide will include:

- National, State and local fitness resources
- Adaptive resource list
- Healthy shopping list
- Easy to make, healthy meals
- Ways to reduce secondary health conditions (obesity, hypertension, pressure sores, etc.)
- Overview of area fitness facilities.

## Program Description



# Chapter

# 2



## Health Management

**Secondary health conditions are "those physical, medical, cognitive, emotional, or psychosocial consequences to which persons with disabilities are more susceptible by virtue of an underlying condition, including adverse outcomes in health, wellness, participation, and quality of life"**  
-Hough

## Health and Prevention on Secondary Promotion

### High Blood Pressure

The heart continuously pumps blood through arteries, veins, and capillaries, collectively known as blood vessels. Total blood pressure in these vessels is a combination of the force exerted by the blood against the inside vessel walls, and the resistance within the vessels to blood flow. Blood pressure is expressed as a measurement of two numbers. The first, or top, number is called the systolic pressure. It is a measure of the pressure against blood vessel walls when the heart is pumping blood to the body. The second, or lower, number is the diastolic pressure, which is the pressure exerted on the vessel walls when the heart is at rest between beats. Normal blood pressure is considered to be 120/80 mm Hg or less, and high blood pressure, or *hypertension*, is classified as a pressure of 140/90 mm Hg or higher. People with diabetes, however, should be treated if their blood pressure is at or above 130/80 mm Hg. High blood pressure can cause damage to the vessels and restrict blood flow to vital organs. An increase in blood pressure significantly increases the risk of cardiovascular disease, such as heart attack, stroke, and eye and kidney damage. About one-third of Americans have high blood pressure. It is important to regularly check your blood pressure, especially if you are in one of the high-risk groups, and to consult your doctor for advice about lowering high blood pressure.

Normal Blood Pressure	Less than 120/80
Pre-Hypertension	120/80 to 139/89
Hypertension	140/90 or higher

# Health Management

## Symptoms

- Frequent headaches
- Dizziness
- Blurred vision
- Nausea
- Usually NO symptoms

## Causes

- Narrow blood vessels – cause heart to work harder
- Stiff blood vessels that cannot expand when blood is pushed through them
- Hardening of the arteries
- Thickening of the artery wall
- Excess contraction of arterioles (small arteries)
- Blood with excessive sodium and water – increase blood fluid and pressure
- Other health conditions
  - ◊ Kidney abnormality
  - ◊ Tumor of the adrenal gland
  - ◊ Congenital defect of the aorta

## Risk Factors

- Blood relatives, especially parents, with high blood pressure
- Men over 55 years
- Women over 65 years
- Post-menopausal women
- African Americans (especially women)
- Women taking some birth control pills
- Little exercise and physical activity
- Smoking
- Drinking too much alcohol
- Eating too much salt
- Sodium (salt) sensitivity
- Being overweight or obese
- Stressful lifestyle
- High cholesterol

## **Risk Factors (Continued)**

- Diabetes mellitus
- Gout
- Kidney disease
- Pregnancy
- Certain medication use

## **Treatment and Prevention**

- Balanced diet, including:
  - Little sodium (salt)
  - Many fruits and vegetables
  - Fat-free and low-fat dairy products
  - Foods rich in potassium, calcium, magnesium, and protein
  - Foods low in saturated fat and cholesterol
  - Little or no alcohol
- Regular exercise
- Cutting down on or quitting smoking
- Medication
  - ACE inhibitors
  - ARBs
  - Beta-blockers
  - Calcium channel blockers
  - Diuretics
- Regular doctor visits and blood pressure screenings



# Health Management

## High Cholesterol

Cholesterol is a fat-like substance in the blood, cell walls, and membranes throughout the body. Despite receiving much negative attention, cholesterol is necessary for the body and is used for many important biochemical processes, such as producing hormones, vitamin D, and bile acids to digest fat. However, only a small amount of cholesterol is needed for these functions, and excess blood cholesterol is often stored in the walls of heart arteries. The buildup can cause “hardening of the arteries”, in which arteries narrow and impede blood flow to the heart. If arteries are hardened enough that no blood can flow through to reach the heart, the portion of the heart connected to those arteries is completely blocked from fresh blood and oxygen. The result is known as a heart attack. Therefore, cholesterol levels have a significant effect on a person’s chances of getting heart disease. There are two types of cholesterol, LDL (bad), and HDL (good) cholesterol. A cholesterol test will measure the amount of total cholesterol, LDL, HDL, and triglycerides (a form of fat in the blood). It is best to have low LDL and triglyceride levels, and high HDL levels, because HDL cholesterol protects against heart disease. As with any medical condition, it is important to consult your health care provider regularly to watch your cholesterol levels and determine how to prevent or lower high cholesterol.

## Symptoms

- NO symptoms, condition usually discovered by routine blood tests

## Causes

- Excess blood cholesterol that is stored in the walls of heart arteries (“hardening of the arteries”)
- High LDL (bad) cholesterol levels
- Low HDL (good) cholesterol levels
- High triglyceride levels

## Risk Factors

- High consumption of saturated fat and cholesterol
- Being overweight
- Little exercise and physical activity

## Risk Factors (Continued)

- Cigarette smoking
- High blood pressure
- Low HDL cholesterol
- Family history of early heart disease
  - ◊ One in 500 people inherit familial hypercholesterolemia
- Genetics
- Men over 45 years
- Women over 55 years
- Stressful lifestyle

## Treatment and Prevention

- Cholesterol level measurements at least once every 5 years after age 20
- Diet low in saturated fat and cholesterol
- Losing weight - reduces LDL levels, raises HDL levels, decreases amount of triglycerides in the blood
- Physical activity of 30 minutes or more nearly every day - lowers LDL levels, increases HDL levels, contributes to weight loss
- Medication
  - ◊ Statins
  - ◊ Bile acid sequestrants
  - ◊ Nicotinic acid
  - ◊ Fibrates
  - ◊ Cholesterol absorption inhibitors

Cholesterol Measurements	
Total Cholesterol	
Classification	Measurement (mg/dL)
Desirable	Less than 200
Borderline High	200-239
High	240 and above
LDL Cholesterol	
Classification	Measurement (mg/dL)
Optimal	Less than 100
Near Optimal	100-129
Borderline High	130-159
High	160-189
Very High	190 and above

# Health Management

## Obesity

In recent years, much attention has been given to the issue of obesity, because an alarming number of Americans are becoming overweight and obese. A measurement known as the Body Mass Index (BMI) is one method used to classify obesity. A BMI between 18.5 and 24.9 is considered normal, between 25.0 and 29.9 is overweight and 30.0 or above is classified as obese. However, BMI tends to overestimate fat in very muscular individuals, and underestimates fat in people who have lost body mass. Therefore, other measurements such as waist circumference and body fat assessment are also often used to help diagnose obesity. It is a slippery slope for disabled individuals to become overweight, because as weight increases and fitness decreases, the heart and other body systems are stressed further. These conditions can make it even more difficult to exercise, leading to more weight gain. Obesity can also aggravate and/or cause other conditions, such as hip and back pain, cardiac problems (such as stroke and coronary heart disease), cancer, diabetes type II, gall bladder disease, high cholesterol, high blood pressure, sleep apnea, osteoarthritis, gout, and others.

## Symptoms

- Excess weight and body fat
- Drop in energy level
- Breathing difficulty
- Snoring
- Decreased physical ability and quality of life

## Causes

- Sedentary lifestyle
- Consistent consumption of excess calories, especially fat calories
- Genetics
- Illnesses
  - ◊ Hypothyroid
  - ◊ Cushing's syndrome
- Medications such as glucocorticoids

## Risk Factors

- Disability that prevents or inhibits exercise
  - ◊ Wheelchair users
  - ◊ Amputees
  - ◊ Other physical handicaps
- Diet high in calories and fat, and low in nutrients
- Hormonal imbalances
  - ◊ Hypothyroid
  - ◊ Cushing's syndrome
- Quitting smoking
- Increasing age
- Genetics
- Race
  - ◊ African-Americans
  - ◊ Mexican-Americans
- Medications for other diseases (such as diabetes) that cause weight gain

## Treatment and Prevention

- Proper diet, including:
  - ◊ Little fat
  - ◊ Complex carbohydrates
  - ◊ High fiber intake
  - ◊ Proper calorie restrictions
- Regular exercise
- Consultation with nutritionist about diet and physician or physical therapist for exercises

# Health Management

## Treatment and Prevention (Continued)

- Medication
  - ◊ Appetite-changing drugs
    - ◆ Sibutramine
  - ◊ Metabolism-changing drugs
    - ◆ Orlistat
  - ◊ Drugs that increase energy expenditure
    - ◆ Ephedrine
  - ◊ Others that reduce eating
    - ◆ Leptin
    - ◆ Neuropeptide-Y
    - ◆ Cholecystokinin
    - ◆ Melanocortins
    - ◆ Glucagon

**Calculate your BMI:** Multiply your weight in pounds by 705; divide by your height in inches; divide this number by your height in inches a second time. For example, a 125 pound, 5'5" (65 inches) woman would calculate her BMI like this:

1)  $125 \times 705 = 88,125$

2)  $88,125 / 65 = 1,355.8$

3)  $1,355.8 / 65 = \mathbf{20.86 \text{ BMI}}$

Body Mass Index (BMI) Measurements	
Classification	Measurement
Normal Weight	18.5-24.9
Overweight	25-29.9
Obese	30 or greater

### Diabetes Mellitus

The word “diabetes” literally means “sweet urine” because too much glucose (sugar) stays in the blood and urine. Normally the hormone insulin stimulates body cells to uptake and use glucose from the blood, thereby supplying energy to cells and reducing the blood glucose level. Individuals with diabetes mellitus, however, have defects in insulin secretion, insulin action, or both, leaving abnormally high amounts of sugar in the blood, and preventing body cells from receiving sufficient energy. The condition of elevated plasma glucose levels is known as *hyperglycemia*, and can cause other problems such as nerve, eye, kidney, heart, and blood vessel damage. Diabetes is not infectious, and is a lifelong disease. It can be diagnosed by blood sugar tests after a period of fasting (at least 8 hours). If the blood glucose levels are less than 110 milligrams per deciliter (mg/dL), they are considered normal. Glucose levels greater than 126 mg/dL on two or more different days indicate diabetes. There are two main types of Diabetes, known as Type I and Type II Diabetes.

### Symptoms for all kinds of Diabetes

- Excessive thirst
- Excessive urination
- Thrush (a fungal infection cause by *Candida albicans*)
- Extreme hunger
- Unusual weight loss
- Extreme fatigue
- Irritability
- Nausea/Vomiting
- Sweet smelling breath

# Health Management

## Causes

- Damage to the pancreas usually caused by autoimmune disorder, in which immune cells attack insulin-producing beta cells
- The disorder is usually genetic, but may also develop after a viral infection such as:
  - ◊ Mumps
  - ◊ Rubella
  - ◊ Cytomegalovirus
  - ◊ Measles
  - ◊ Influenza
  - ◊ Encephalitis
  - ◊ Polio
  - ◊ Epstein-Barr virus

## Risk Factors

- Caucasian ethnicity
- If at least one parent has disease
- Presence of islet cell antibodies in the blood
- Certain viral (especially intestinal) infections during childhood

## Treatment and Prevention

- Daily injections of insulin to promote uptake of blood glucose into body cells
- Balanced diet
- Maintain blood glucose level
- Watch weight

## Type II Diabetes (Adult-Onset Diabetes)

This type of Diabetes usually develops after the age of 30. In this case, people do produce insulin, but they either do not produce enough to control the plasma glucose levels, or their body cells do not respond to the insulin, known as “insulin resistance”. In overweight people, fat can block the insulin from transporting glucose into somatic cells, which helps explain why overweight and obese individuals are at a much higher risk of developing the disease. Around 90% of diabetes cases are due to Type II diabetes, including 15 million Americans. It is no coincidence that as the obesity level in the United States has increased, so has the incidence of this type of diabetes. The disease also increases the risk for hardening of the arteries, stroke, and peripheral vascular disease, due to increased blood clotting, narrowing of blood vessels, and faster buildup of fat in blood vessels.

### Additional Symptoms

- Blurred vision
- Poor circulation
- Frequent infections
- Itchy skin
- Shiny leg skin
- Hair loss from legs
- Calves that hurt abnormally during exercise
- Erectile dysfunction in men

Blood Glucose Measurements	
Classification	Measurement (mg/dL)
Normal	Less than 99
Pre-diabetes	100-125
Diabetes	126 and above

### Causes

- Insulin resistance in muscle cells
- Normal or excessive levels of insulin, followed by a decrease in insulin production, leading to insufficient insulin secretion
- Excess glucose remains in blood



# Health Management

## Risk Factors

- Overweight/Obesity
- Age (over 45)
- Sedentary lifestyle
- Family history of type II diabetes
- History of diabetes during pregnancy
- Giving birth to a baby over 9 lbs.
- Aboriginal, African, Asian, or Latin American ethnicity
- High blood pressure
- High cholesterol
- Previous diagnosis of impaired glucose tolerance

## Treatment and Prevention

- Lifestyle change
- Proper diet, with a focus on replacing consumption of “bad carbs” with “good carbs” and limiting intake of fat and cholesterol
- Weight loss
- Regular exercise – helps improve insulin sensitivity

## Skin Irritation and Breakdown

It is common for amputees and people with physical disabilities to develop irritation, breakdown, and infection of the skin. Because sweat is salty and acidic, it forms crystals when it dries, and bacteria can grow in these areas. If there is a skin break in the area where sweat and bacteria accumulate, the bacteria can then cause an infection. This is especially dangerous for people with diabetes or circulatory diseases. People with such conditions should consult a physician immediately if anything more than a mild rash develops.

### Symptoms

- Swelling
- Pain
- Irritation
- Skin breakdown
- Infection

### Causes

- For amputees, the prosthetic socket can pull and rub against the skin
- Changes in limb size due to atrophy, disease, and soft tissue loss

### Risk Factors

- Amputees
- People with physical disabilities

### Treatment and Prevention

- Eat nutritious diet
- Exercise regularly
- Maintain muscle tone and weight
- Be careful with the detergents used to clean the residual limb
- Keep skin clean and well cared for
- Have a properly fitting prosthesis

# Health Management

## Contractures

Contractures are a chronic loss of joint motion, caused by structural changes in non-bony tissue (muscles, ligaments, tendons). They can occur at any joint, often as a result of nerve injury, such as spinal cord damage and stroke, or diseases affecting muscles, tendons, and ligaments. Most contractures cause shortening of the soft tissue of the joint, which can be reversible if treated properly. A physician can diagnose a joint contracture through a physical examination with physical and manual tests, including x-rays and measurement with a device called a goniometer.

## Symptoms

- Loss of mobility in a certain joint
- Pain

## Causes and Risk Factors

- Neurological damage – injury to central and/or peripheral nervous system
- Immobilization – a joint remains in the same position for a long period of time
- Trauma – tissue near the joint becomes strained, torn, or severed
- Disease
  - ◊ Rheumatoid arthritis
  - ◊ Muscular dystrophy
  - ◊ Discerns
- Muscle imbalance
- Pain
- Prolonged bed rest

## Treatment and Prevention

- Manual techniques
  - ◊ Stretching
  - ◊ Heat application
  - ◊ Exercise
- Mechanical techniques
  - ◊ Continuous passive motion machines (CPM)
  - ◊ Electrical stimulation
- Casts and splints
- Surgery
- Medication
- Alternative treatments
  - ◊ Chiropractic techniques
  - ◊ Massage therapy
  - ◊ Yoga

# Health Management

## Arthritis

Joints are places in the body where two bones meet. To cushion the ends of the bones, a tissue called cartilage is present in joints. When joints become inflamed, the condition is known as arthritis. There are several types of arthritis; including osteoarthritis, rheumatoid arthritis, and gout. While there are no cures for most forms of arthritis, there are many types of therapies for different symptoms.

## Osteoarthritis

Osteoarthritis is when the cartilage within joints breaks down and wears away either partially or completely. This allows the bones to rub directly against one another.

## Symptoms

- Stiffness
- Mild to severe pain
- Most common areas affected:
  - ◊ Hands
  - ◊ Lower back
  - ◊ Neck
  - ◊ Knees
  - ◊ Hips
  - ◊ Feet

## Causes

- No known causes

## Risk Factors

- Risk increases as people get older
  - ◊ Before age 45, men are more at risk
  - ◊ After age 45, women become the more likely victims
  - ◊ At age 65, over 50% of population has osteoarthritis in at least one joint
  - ◊

## Treatment and Prevention

- Exercise – improves mood and flexibility, decreases pain, maintains a healthy weight
- Rest and joint care
- Pain relief
- Weight control
- Alternative treatments
- Surgery
- Heat or cold application
- Shoes with insoles or extra cushioning – for osteoarthritis of the knee
- Canes and splints
- Medication
  - ◊ Acetaminophen (Tylenol) prescribed first
  - ◊ Non-steroidal anti-inflammatory drugs (ibuprofen and naproxen) prescribed next
  - ◊ COX-2 inhibitors
  - ◊ Corticosteroids
  - ◊ Hyaluronic acid
  - ◊ Topical creams

# Health Management

## Rheumatoid Arthritis

Unlike osteoarthritis, rheumatoid arthritis does not occur just in joints, but can also affect tissue in the skin, lungs, eyes, and blood vessels. It is classified as an autoimmune disease, which means that the body's immune system attacks its own cells. Usually, the arthritis occurs symmetrically, meaning that both members of a pair, such as hands, are involved, rather than just one. The disease is common, and affects over two million people in the United States.

### Symptoms

- Sickness
- Fatigue
- Fever
- Joint and tissue inflammation
- Swelling
- Pain
- Stiffness
- Redness
- Lack of appetite
- Time occurs between attacks in which no symptoms are present

### Causes

- Immune system deficiency, in which immune cells attack body's own cells
  - ◊ Cause of this deficiency is unknown

Viral and bacterial infections in people with rheumatoid arthritis susceptibility genes

### Risk Factors

- Genetic heritage
- Women are two to three times more at risk than men
- Age (usually occurs between ages 40 and 60)
- Smoking

## Treatment and Prevention

- Exercise
  - ◊ Should be used more when the disease is not active, and less when it is inactive
- Rest during the active stage of the disease
- Medication
  - ◊ Pain relievers
  - ◊ Anti-inflammatory drugs
  - ◊ Disease-modifying anti-rheumatic drugs – slow the course of the disease
  - ◊ Biological response modifiers – help reduce joint damage
- Surgery
- Special diets, supplements, and non-traditional approaches sometimes used
  - ◊ Currently no scientific research to support these techniques



# Health Management

## ***Gout***

Gout is a condition in which intense pain and swelling in the joints occur suddenly. The joints may become warm and red. Episodes often occur at night, especially after stressful events, alcohol or drug use, and/or another illness. About one million people in the United States suffer from gout.

## **Symptoms**

- Intense joint pain, especially in:
  - ◊ Small joint at base of big toe
  - ◊ Ankles
  - ◊ Knees
  - ◊ Wrists
  - ◊ Fingers
  - ◊ Elbows
- Swelling in joints
- Joints become warm and red
- Lumps of uric acid deposited near joints
- Decreased kidney function
- Kidney stones
- Attacks last for three to ten days
- Different attacks may be separated by months or years

## **Causes**

- Buildup of uric acid crystals in connective tissue and/or joints
- Inherited deficiency in processing uric acid correctly

## **Risk Factors**

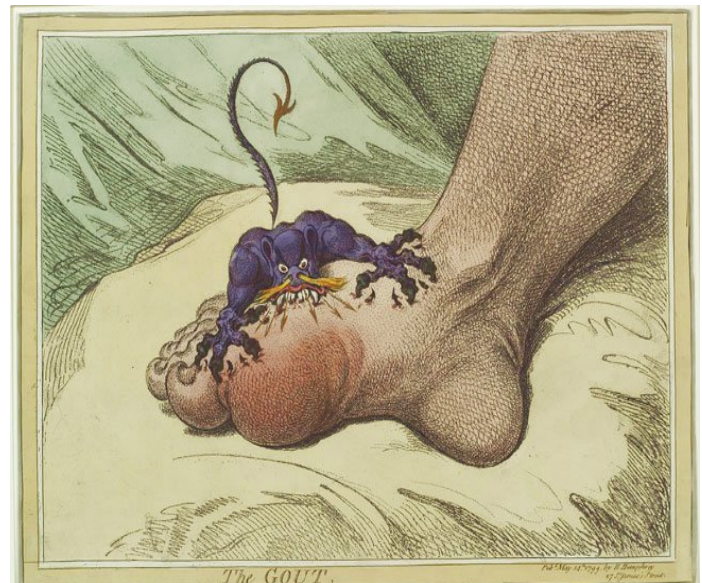
- Men ages 40-50
- Women after menopause
- Family history – up to 8% of gout victims have family history of it
- Diet
- Obesity and/or excessive weight gain, especially during youth

## Risk Factors (Continued)

- Moderate to heavy alcohol consumption
- High blood pressure
- Abnormal kidney function
- Other diseases
  - ◊ Leukemia
  - ◊ Lymphomas
  - ◊ Hemoglobin disorders
- Taking certain drugs
  - ◊ Thiazide diuretics
  - ◊ Low-dose aspirin
  - ◊ Niacin
  - ◊ Cyclosporine
  - ◊ Tuberculosis medications

## Treatment and Prevention

- Adequate fluid intake
- Weight reduction
- Dietary changes
- Reduction in alcohol use
- Rest
- Elevation of inflamed joint
- Ice pack application
- Medication
  - ◊ Pain relievers
    - ◆ Acetaminophen (Tylenol)
    - ◆ Other analgesics
  - ◊ Drugs that reduce uric acid levels in blood
    - ◆ Probenecid (Benemid)
    - ◆ Sulfipyrazone (Anturane)
    - ◆ Allopurinol (Zyloprim)
  - ◊ Anti-inflammatory drugs



# Health Management

## Bone Density and Muscle Loss

A number of disabilities can lead to inactivity, which can cause severe problems such as muscle atrophy and loss of bone density. When muscles are not used, they begin to diminish, and a similar effect occurs on bones. Bone scans and x-rays can diagnose both bone and muscle loss. The best treatment is exercise, so a physician and/or physical therapist should be consulted for developing a proper exercise plan.

### Symptoms

- Muscle atrophy
- Bone density loss
- Diminished muscles and bones

### Causes

- Inactivity
- Muscles are not used to pull on bones anymore

### Risk Factors

- Disabilities that restrict or inhibit activity

### Treatment and Prevention

- Frequent weight resistance training – builds and maintains muscles, improves health
- Exercise

### Osteoporosis

When bone density loss becomes severe, it may be due to a chronic, progressive disease known as osteoporosis. To understand the cause of osteoporosis, it is important to know some basic anatomy. Human bones are constantly being remodeled, with cells known as osteoclasts resorbing, or breaking down, bone to provide calcium and other nutrients to the body, and osteoblasts forming new bone. Bones known as trabecular bones are made of tissue that fills the inner cavity of long bones. These types of bones are especially active in remodeling. This process of constant change is important in recovery from microtrauma sustained by the bones. In osteoporosis, the overall rate of bone breakdown becomes greater than that of bone buildup. One of the most common effects of the disease is fracture, and people who have experienced a fracture are much more likely than those who have not to suffer another fracture. To diagnose the condition, doctors use a bone mineral density (BMD) measurement. Normal bone density is no lower than one standard deviation (SD) below the mean for a young adult reference population. Individuals in the range from 1 – 2.5 SD below the mean are considered to have low bone mass, a condition called osteopenia. Osteoporosis patients have a bone density 2.5 SD or more below the normal mean.

### Symptoms

- Low bone mass
- Microarchitectural deterioration of bone tissue
- Bone fragility
- Fracture, especially of the vertebral column, hip, and wrist
- Effects of a vertebra collapse:
  - ◊ Numbness in the right second toe
  - ◊ Acute back pain
  - ◊ Hunched stature
  - ◊ Height loss
  - ◊ Limited mobility
  - ◊ Disability

# Health Management

## Causes

- Overall rate of bone breakdown is greater than rate of bone buildup, due to:
  - ◊ Rates of bone breakdown and reformation are slower than that of sustaining microtrauma to bones
  - ◊ Supply of osteoblasts progressively declines more than supply of osteoclasts
  - ◊ In post-menopausal women, lack of gonadal hormones increases osteoclast progenitor cells, increasing osteoclast activity

## Risk Factors

- History of fracture as an adult
- Family history of fracture
- Gender (females are more at risk, especially after menopause)
- Advanced age
- European or Asian ancestry
- Tobacco smoking
- Low Body Mass Index (BMI)
- Low calcium and vitamin D intake
- Alcoholism
- Insufficient physical activity
- Excess physical activity
- Poor health
- Frailty
- Exposure to heavy metals
- Certain medications
  - ◊ Glucocorticoids
  - ◊ Barbiturates
  - ◊ Proton pump inhibitors
- Hypogonadal states
- Auto-immune and inflammatory diseases
- Endocrine, nutritional, gastrointestinal, rheumatologic, hematologic, and inherited disorders

### Treatment and Prevention

- Surgery to treat fractures, especially hip fractures
- Medication
  - ◊ Bisphosphonate (marketed by brands such as Fosamax, Actonel, and Boniva)
- Lifestyle changes
- Intake of 1200 to 1500 milligrams (mg) of calcium per day, via diet or supplementation
- Intake of enough Vitamin D, via diet or supplementation
- Exercise, especially weight-bearing exercise
  - ◊ Walking
  - ◊ Jogging
  - ◊ For at least thirty minutes, three times a week

# Chapter

# 3



## Mental Health

**"To most of those who have experienced it, the horror of depression is so overwhelming as to be quite beyond expression. . . if depression had no termination, then suicide would, indeed, be the only remedy. But, depression is not the soul's annihilation; men and women who have recovered from the disease-and they are countless-bear witness to what is probably its only saving grace: it is conquerable."**

**-William Styron**

### Depression

Nearly 19 million Americans with and without disabilities suffer from depression each year. What they may not realize, however, is that depression is a treatable brain disorder, and it does not have to be permanent. Depression is far worse than simply feeling sadness or grief. Rather, it is a persistent state of mind that interferes with normal functions such as sleeping, eating and working. There are three main types of the disorder, including major depression, dysthymia, and bipolar disorder (also known as manic depression). Women may also experience postpartum depression, which is depression triggered by giving birth to a baby. It is very important to treat depression, because it greatly diminishes a victim's quality of life, and can sometimes lead to drastic measures, such as suicide attempts.





# Mental Health

## Symptoms: Depression

*People suffering from depression may experience some or all of the following symptoms:*

- Persistent sad, anxious, or "empty" mood
- Irritable mood rather than depressed mood in children and adolescents
- Feelings of hopelessness, pessimism
- Feelings of guilt, worthlessness, helplessness
- Loss of interest or pleasure in hobbies and activities that were once enjoyed, including sex
- Decreased energy, fatigue, being "slowed down"
- Difficulty concentrating, remembering, making decisions
- Insomnia, early-morning awakening, or oversleeping (hypersomnia)
- Appetite and/or weight loss or overeating and weight gain
- Thoughts of death or suicide; suicide attempts
- Restlessness, irritability
- Persistent physical symptoms that do not respond to treatment, such as headaches, digestive disorders, and chronic pain
- Significant loss or gain of weight (5% or more change in one month)
- Decrease in appetite
- In children, not gaining an expected amount of weight
- Agitated or slow behavior
- Fatigue or decreased energy
- Symptoms are not due to normal grief or bereavement, and/or persist for over two months

## Symptoms: Mania

*People suffering from mania may experience some or all of the following symptoms:*

- Abnormal or excessive elation
- Unusual irritability
- Decreased need for sleep
- Grandiose notions
- Increased talking
- Racing thoughts
- Thoughts are continuous and lack pattern and focus
- Increased sexual desire
- Markedly increased energy
- Poor judgment
- Inappropriate social behavior
- Excessive self-esteem
- Mood is abnormally heightened for at least one week
- Easily distracted
- Increase in meaningful activity and productivity
- Agitated behavior
- Reckless decisions to partake in high-risk activities
- Symptoms cause difficulty in functioning in areas such as at home and at work
- Hallucinations, dreams
- Symptoms not caused by substance use or medical disorder

# Mental Health

## Treatment

It is important to seek treatment for depression if symptoms have lasted for two weeks or more, or if the symptoms are severe. Below is a list of individuals and organizations that may be able to provide treatment and aid:

- Family doctors and physicians
- Mental health professionals
  - ◊ Psychiatrists
  - ◊ Psychologists
  - ◊ Social workers
  - ◊ Counselors
- Insurance provider
- Community mental health centers
- Hospital psychiatry departments and outpatient clinics
- Hospital emergency rooms
- University and medical school programs
- Family service/social agencies
- Private clinics and facilities
- Employee assistance programs
- Local medical and/or psychiatric societies
- Religious clergy

For further resources, look in the Yellow Pages under the following terms:

- Mental health
- Health
- Social services
- Suicide prevention
- Crisis intervention services
- Hotlines
- Hospitals
- Physicians

## Mental Health

The following are some helpful tips on dealing with depression. Their effect may be gradual, but they are often effective:

- Set realistic goals and take on some responsibility
- Perform large tasks in manageable pieces, accomplishing what you can at a pace you can handle
- Socialize with other people and find someone in which to confide
- Participate in enjoyable activities
  - ◊ See a movie or show
  - ◊ Go to a sporting event
  - ◊ Participate in religious and/or social activities
- Exercise mildly
- Don't expect an immediate change
- Postpone important decisions until the depression has become less severe or completely lifted



# Mental Health

Depression medications can often be very effective. They must be taken for at least eight weeks before the full therapeutic effect is felt. A drug that works is often prescribed for four to nine months to prevent another depressive episode. It is very dangerous to stop a medication before the prescribed time, as quitting can lead to withdrawal symptoms and debilitating side effects. Consult a physician before stopping an anti-depressant medication. Below is a list of the most effective medications and therapies:

- Selective serotonin reuptake inhibitors (SSRI)
  - ◊ Fluoxetine (Prozac)
  - ◊ Sertraline (Zoloft)
  - ◊ Fluvoxamine (Luvox)
  - ◊ Paroxetine (Paxil)
  - ◊ Citalopram (Celexa)
- Tricyclics
  - ◊ Amitriptyline
  - ◊ Nortriptyline
  - ◊ Desipramine
- Monoamine oxidase inhibitors (MAOIs)
  - ◊ Phenelzine (Nardil)
  - ◊ Tranylcypromine (Parnate)
  - ◊ Isocarboxazid (Marplan)
- Anti-anxiety drugs
- Sedatives
- Stimulants
- Antimanic Medications
- Lithium – for bipolar disorder
- Anticonvulsants – for bipolar disorder
  - ◊ Carbamazepine (Tegretol)
  - ◊ Valproate (Depakote)
  - ◊ Lamotrigine (Lamictal)
  - ◊ Gabapentin (Neurontin)
- Insomnia medication

## Major Depression

Major depression is the most debilitating form of the disease, and it generally interferes with working, studying, sleeping, eating, and enjoying life. A combination of the symptoms listed above is usually manifested in the condition. People all react differently to major depression, but nearly everyone who suffers from it will experience a depressed mood and/or loss of interest in activities. Other health conditions, such as alcohol/drug abuse, anxiety and panic disorders, obsessive-compulsive disorder, eating disorders, and borderline personality disorder may all occur along with depression. An episode of major depression may occur only once, but often occurs several times during a lifetime. Within a lifetime, 10%-25% of women will experience major depression, and 5%-12% of men will suffer from it. About two-thirds of people who experience an episode of major depression will recover fully from it, while the remaining one-third will either recover partially, or not at all. About 15% of people with this disease commit suicide. Therefore, it is a very serious condition that should be treated as soon as possible.

## Causes

- Changes in brain structures and/or function
- Recurs in successive generations in some families, implying that it may be a genetic disease, but can also occur in people without a family history of it

## Risk Factors

- Persistent physical illnesses, such as:
  - ◊ Stroke
  - ◊ Heart attack
  - ◊ Malignant cancer
  - ◊ Parkinson's disease
  - ◊ Spinal cord injury
  - ◊ Head injury
  - ◊ AIDS
  - ◊ Diabetes
  - ◊ Alzheimer's disease
  - ◊ Hormonal disorders
  - ◊ Amputation
  - ◊ Disability

# Mental Health

## **Risk Factors (Continued)**

- Emotional events, such as:
  - ◊ Serious loss
  - ◊ Difficult relationship
  - ◊ Financial problem
  - ◊ Change in life patterns
  - ◊ Stressful situation or change
- Women – twice as likely as men to be diagnosed with depression
- Age (generally occurs first between ages 20 and 50)
- History of previous episode of major depression or dysthymia
- Family history of major depression

## Dysthymia

Dysthymia is less severe than major depression in that the symptoms do not disable the individual. Yet it is a chronic form of depression that prevents an individual from functioning well and feeling good. People with dysthymia may rarely feel happy, excited, and inspired. They generally are inactive and withdrawn, with frequent feelings of worry and self-criticism. They may experience many of the above symptoms of depression. The condition often develops early in life, causing many people who experience it to believe it is normal to always feel depressed. As with major depression, children with dysthymia can express the disorder as irritability rather than depression. About 6% of people will experience dysthymia within their lifetime. The symptoms are chronic, but treatment can offer great relief and simply requires a person affected by the disorder to recognize it and seek help.

## Causes

- Changes in brain structure and/or function
- Possible genetic link
- Possible hormonal and neural changes

## Risk Factors

- Family history of major depression
- Age (usually occurs early, from childhood to early adulthood)
- Substance use
- Illnesses and disorders, such as:
  - ◊ Anxiety disorders
  - ◊ Learning disorders
  - ◊ Attention-deficit/hyperactivity disorder (ADHD)
  - ◊ Conduct disorder
  - ◊ Mental retardation
  - ◊ Avoidant personality disorder
  - ◊ Dependent personality disorder
  - ◊ Histrionic personality disorder
  - ◊ Borderline personality disorder
  - ◊ Narcissistic personality disorder
- Physical illnesses, such as:
  - ◊ AIDS
  - ◊ Hypothyroidism
  - ◊ Multiple sclerosis



# Mental Health

## Bipolar disorder

Bipolar disorder differs from the other forms of depression in that the individual's mood does not remain depressed, but rather flip-flops between severe highs (known as mania) and severe lows (depression). The mood changes may be dramatic, but are more commonly gradual. A person experiencing mania may become hyperactive, extremely talkative, elated, and impulsive. Mania can inhibit proper thinking, judgment, and social skills, leading to embarrassment and social dilemmas. When the manic phase gives way to the depressed state, the individual experiences any or all of the symptoms of depression, as listed above. Bipolar disorder is recurrent for 90% of those who experience it, and 60%-70% of manic episodes occur immediately prior to or following a depressive episode. In between manic and depressive states, a person's mood may return to normal. About 10%-15% of bipolar disorder victims end up committing suicide; thus it is extremely important to diagnose the condition and seek treatment immediately.

### Cause

- An inherited genetic disorder

### Risk Factors

- History of previous episode of bipolar disorder
- Family history of bipolar disorder and/or depression



## Resources:

American Foundation for Suicide Prevention  
120 Wall Street, 22nd Floor  
New York, NY 10005  
Toll-Free Phone: 1-888-333-AFSP  
Phone: (212) 363-3500  
Fax: (212) 363-6237  
Website: [www.afsp.org](http://www.afsp.org)  
Email: [inquiry@afsp.org](mailto:inquiry@afsp.org)

Depression and Bipolar Support Alliance  
730 N. Franklin Street, Suite 501  
Chicago, Illinois 60610-7224 USA  
Toll free: (800) 826 -3632  
Fax: (312) 642-7243  
<http://www.dbsalliance.org>

National Mental Health Information Center  
P.O. Box 42557  
Washington, D.C. 20015  
1-800-789-2647 (M-F, 8:30A.M. – 12:00A.M.)  
TDD: (866) 889-2647

National Institute of Mental Health  
Public Information and Communications Branch  
6001 Executive Boulevard, Room 8184, MSC 9663  
Bethesda, Maryland 20892-9663  
Local: (301) 443-4513  
Toll-Free: 1-866-615-6464  
TTY: (301) 443-8431  
TTY toll-free: 1-866-415-8051  
E-mail: [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov)  
<http://www.nimh.nih.gov/>

# Mental Health

Psych Central  
55 Pleasant St., Suite 207  
Newburyport, MA 01950  
(978) 992-0008  
E-mail: [talkback@psychcentral.com](mailto:talkback@psychcentral.com)  
<http://psychcentral.com/disorders/depression/>

<http://www.healthypace.com>  
E-mail: [info@healthypace.com](mailto:info@healthypace.com)

## Phone Numbers:

The Kristin Brooks Hope Center: (202) 536-3200

National Hopeline Network: 1-800-SUICIDE  
(1-800-784-2433)

Emergency Hotline: 1-800-273-TALK  
(1-800-273-8255)

Connecticut Alliance for the Mentally Ill:  
(203) 586-2319

National Foundation for Depressive Illness:  
1-800-239-1295 (24 hours), 1-800-248-4344

National Depressive & Manic-Depressive Association: 1-800-826-3632

# Mental Health



## Chapter

# 4



# Physical Activity & Active Living

**“Make your own recovery the first priority in your life”**

**-Robert Norwood**

## **Basketball**

Since World War II veterans began the game of wheelchair basketball, it has become a widely popular and well-developed sport. There are wheelchair teams throughout the United States for men, women, and juniors, and some colleges sponsor teams as well. The National Wheelchair Basketball Association sponsors 181 teams within 22 conferences, and states the official rules for all wheelchair basketball teams. Wheelchair basketball is also a highly competitive sport in the United States Paralympics. Deaf players can join USA Deaf Basketball, Inc., an organization for deaf and hearing impaired players after high school and/or college. There is an annual tournament for the top teams for 8 different regions, with NCAA style brackets. The institution organizes local, regional, and national basketball competitions for adult players, and assists in preparing the United States teams for international competitions. Contact the organization for more information. Much less progress has been made for blind players, but researchers and engineers have been experimenting with sound emitters in the ball and on the backboard to enable blind people to play basketball. Thanks to such research, there may be a bright future for the sport of blind basketball.

## **Bicycling**

Although bicycling is not an option for individuals who have lost lower body mobility, it is a sport enjoyed by countless disabled people. The United States Deaf Cycling Association exists to promote cycling among hearing impaired and deaf individuals by providing deaf cyclists with benefits, activities, and opportunities such as national and regional races. Neither are blind persons excluded from biking. Blind cycling is actually a Paralympic Games event. Blind riders use a tandem bike, which features multiple seats on one bike. The disabled rider sits in the rear seat, or stoke seat, while the front-rider, or captain, steers the bike. The United States Association of Blind Athletes and other programs throughout the country sponsor blind cycling.





## Physical Activity & Active Living

### Billiards

The classic game of billiards is still easy to enjoy despite disabilities. The game can be played using a wheelchair, and specialized equipment, including modified pool cues and a roller attachment for the end of a cue stick, is available. The rules are nearly the same, but players must remain seated while playing. The National Wheelchair Pool Players Association provides information about wheelchair play, and offers many resources such as aids, links, membership, and more.

### Bowling

Bowling is another game that is fairly easy to adapt to wheelchair play. There are special tools available, such as push tools and ball-drop ramps, for players who lack arm strength and/or mobility. For visually impaired individuals, there are three types of aids available: a commercial bowling rail, a makeshift guide rope, or a carpet strip. Bowling is an official activity recognized by the United States Deaf Sports Federation (USADSF), the National Disability Sports Alliance (NDSA), Special Olympics International (SOI), and the American Wheelchair Bowling Association.



## Camping

The tent industry has designed a very spacious, easy accessible tent known as the Freedom Tent. It is zipper-less and has closed continuous pole sleeves with post and grommet assembly, which allows even wheelchair bound individuals to set it up. The Americans with Disabilities Act mandates that state and national parks have handicapped accessible accommodations and bathrooms, and level ground. However, not all parks have made their facilities accessible, so it is a good idea to call ahead before planning a trip to one. Permanently blind or disabled U.S. citizens or permanent residents can receive an America the Beautiful – National Parks and Federal Recreational Lands Pass – Access Pass, which allows lifetime entrance to Federal recreation sites that charge an Entrance or Standard Amenity, and a 50% discount on some Expanded Amenity Fees, such as camping, swimming, boat launching, and specialized interpretive services. The Passport can be obtained in person at a national or state site that charges an entrance fee.



Tent made for  
wheelchair users

[www.rollinggrains.com](http://www.rollinggrains.com)

## Flying

Despite disabilities such as paraplegia, quadriplegia, amputation, multiple sclerosis, spina bifida, polio, deafness, and others, hundreds of determined individuals have been able to enjoy the experience of flying. The International Wheelchair Aviators is an organization of disabled pilots, who have given hundreds of disabled children free rides over locations such as Pennsylvania, Oregon, and Disneyland. They also provide valuable information about FAA medical requirements, hand controls, and flight schools for disabled individuals. Another organization, Freedom's Wings International, provides specially adapted sailplanes for both disabled passengers and pilots. The sailplanes have no engines and are released by a regular airplane into the sky, to follow natural currents in the air and glide back to the airport. The first ride is free. Deaf people may also learn to fly, and resources are provided by the Deaf Pilots Association.



### Gardening

Gardening can provide both mental and physical benefits. It has often been hailed for its therapeutic effects, as it helps relieve tension and provides the gardener with a sense of accomplishment. The numerous physical benefits include exercise, increased flexibility, practice of coordination and balance, and strength building opportunities. Special adaptations are available for the physically challenged, including raised beds, special tools, and wheelchair-accessible greenhouses. The American Horticultural Therapy Association provides information about the plethora of benefits from gardening, and aids that are available to the physically handicapped.



## **Golfing**

Specially-designed golf clubs, special carts, mobility devices, gripping aides, and practice facility equipment, such as automated ball teeing devices, ball retrieval aides, and more, have helped numerous disabled golfers to still enjoy this classic sport. The National Center on Accessibility provides an extensive list of tools to aid the disabled golfer. In addition, golf courses are required by the Americans with Disabilities Act to accommodate disabled golfers with goods, services, and accessible facilities. It is recommended to call a golf course before showing up in order to inquire about the accessibility and aid offered at that location. On behalf of deaf golfers, the United States Deaf Golf Association sponsors national championships for the hearing impaired, and golf camps and classes for youth under age 18. The organization seeks to minimize barriers that hearing impaired players may encounter, and provides outreach, organizational support, listings of deaf golf associations by state, and other resources. The game of golf is even open to blind players. The United States Blind Golf Association provides detailed information about the role of a coach in helping a player to aim in the right direction, develop a proper swing, and learn how far each club will allow the ball to travel. Information on clinics, tournaments, and more is available from this organization.

## **Hand Cycling**

In the 1980s, new technology made it possible for people with limited or no leg mobility to cycle, with the development of hand cycling. Hand cycles requires only use of the upper body, and include innovative parts such as light weight components, high pressure tires, wide-range gearing systems, high-tech seating systems, hydration systems, and ingenious steering systems for optimal handling. There are several types of hand cycles, all of which are designed for easy mounting and dismounting. This low-impact sport provides significant health benefits, including improved cardiovascular and aerobic health and increased upper body strength. Popularity of this sport has recently increased, and it was included at the Paralympic Games for the very first time in 2004. The United States Hand Cycling Federation governs recreational and competitive hand cycling in America.

### Skiing

Ski lovers with disabilities do not have to give up their passion for skiing, thanks to technological advances. There are several types of special equipment for people with little or no leg and/or arm mobility. The mono-ski is best suited for individuals with good upper body strength and trunk balance. This device includes a molded shell in which the rider sits. The shell is mounted to a frame that is situated above a single ski. Two ski poles with outriggers provide balance and allow for turning. The mono-ski can be loaded automatically, without assistance, onto the ski lift. A similar device is the bi-ski, which has two skis instead of one. Two outriggers are used for independent use, or an instructor can be tethered to the bi-ski to provide more control. The sit-ski is best for those with very limited movement. If hand function is possible, the sit-ski can be used independently by leaning and using short ski poles. For those who lack hand function, a ski instructor can be tethered to this equipment as well. The National Sports Center for the Disabled and the National Ability Center both provide disabled ski programs. The Professional Ski Instructors of America provide instructors for adaptive skiing. They learn to work with the visually impaired, people with cognitively-related disabilities, the mono-ski and bi-ski, and other conditions and tools. In addition, deaf skiing is recognized by the United States Deaf Ski & Snowboard Association, which sponsors the biennial Deaf Ski & Snowboard Week, and selects members of the U.S. Deaf Alpine Ski Team and U.S. Deaf Cross-Country Ski Team for the Winter Deaflympics.



## Swimming

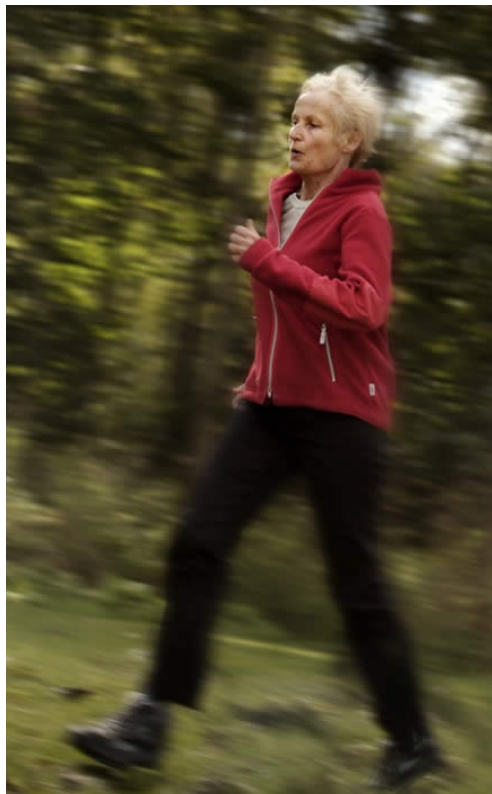
Believe it or not, even wheelchair users can swim. United States Wheelchair Swimming, Inc., is a national organization that promotes swimming for wheelchair-bound individuals. The organization has a list of the official rules for competition, and classifies disabled swimmers into specific categories for competitions. There are events ranging from local to national competitions. To find the Local Swimming Committee in your area, contact USA Swimming headquarters at (719)578-4578. Swimming is also an excellent sport for blind or visually impaired individuals. The rules for competitive swimming are governed by the International Blind Sports Association (IBSA), and include adaptations for visual disabilities. An important aspect of blind competitive swimming is the technique known as tapping. Swim coaches are positioned at each end of the pool, and use a rod with a firm foam tip to touch or tap the blind swimmer at the right moment to alert the swimmer that he/she is reaching the end of the pool, and may execute a racing turn. This method allows swimmers to compete at top speed without fear of crashing into the end of the pool. Contact IBSA for official rules, competition dates and locations, and further information. Additionally, there are national and international deaf swimming competitions, as governed by organizations such as United States Deaf Swimming, and the United States Aquatic Association of the Deaf.

## Tennis

Wheelchair tennis is a popular sport to share with friends and family. The rules are nearly the same as the stand-up game, with the exception that the ball may bounce twice on the wheelchair player's side of the court before the player returns it. The wheelchair is considered part of the person's body; therefore, all rules that apply to a player's body also apply to the wheelchair. The navigation of a wheelchair on the court while also keeping up with the game provides a challenging workout that improves cardiovascular health and strength. The National Foundation of Wheelchair Tennis promotes wheelchair tennis in the United States, and the United States Tennis Association actively promotes wheelchair tennis events, ranging from the beginner recreation level to a very competitive national and international level. The game can also be played by deaf individuals. Contact the United States Deaf Tennis Association, or the Ad Hoc Committee on Tennis of the USA Deaf Sports Federation, for more details.

### Walking

One of the best ways to exercise is simply to walk. The long list of benefits includes weight loss, fat loss, strengthening of muscles, bones, and joints, improved sleep, lowered stress, longer lifespan, and improved mood. Walking can also decrease the risk for cancer, heart disease, diabetes, obesity, high cholesterol, high blood pressure, fracture, osteoporosis, depression, and stroke. To begin walking, especially after a long period of inactivity, start walking each day for a short amount of time. You may begin with only two to five minutes per day. Rather than worrying about the length or pace of the walk, set a goal and stay determined to reach it. Gradually, increase the length of the walk by adding an extra thirty seconds or minute. It is best to begin on flat terrain. If your neighborhood does not have safe, flat land, try going to a park or school track. Once you have built up stamina and can walk for about 45 minutes, begin altering the terrain, attempting inclines and declines. This is also an appropriate time to increase walking speed. To boost walking speed and effectiveness, make sure to stand tall, focus on quick steps, bend and swing your arms, bend your knees for balance, and push off from your toes. It can help to warm up and cool down with some light stretching and easy walking, especially as you increase the distance and intensity of your walk. Remember to bring some water along with you, and wear footwear that provides proper support.



The ultimate goal of walking is to increase aerobic and cardiovascular fitness. The best way to do so is to reach your target heart rate (THR) while exercising. See directions on calculating your THR below

(from <http://www.wikihow.com/Calculate-Your-Target-Heart-Rate>):

- Find your resting heart rate as soon as you wake up. You can do this by counting your pulse for one minute while still in bed. You may average your heart rate over three mornings to obtain your **average resting heart rate (RHR)**. Add the three readings together, and divide that number by three to get the RHR. For example,  
 $(76 + 80 + 78) / 3 = 78$ .
- Find your maximum heart rate and heart rate reserve.
- Subtract your age from 220. This is your **maximum heart rate (HRmax)**. For example, the HRmax for a 24-year-old would be  
 $220 - 24 = 196$ .
- Subtract your RHR from your HRmax. This is your **heart rate reserve (HRmaxRESERVE)**. For example,  
 $HRmaxRESERVE = 196 - 78 = 118$ .
- Calculate the lower limit of your THR. Figure 60% of the HRmaxRESERVE (multiply by 0.6) and add your RHR to the answer. For example,  
 $(118 * 0.6) + 78 = 149$ .
- Calculate the upper limit of your THR. Figure 80% of the HRmaxRESERVE (multiply by 0.8) and add your RHR to the answer. For example,  
 $(118 * 0.8) + 78 = 172$ .
- Divide the values obtained in steps 3 and 4 by the number 6 to obtain your THR in beats per ten seconds. For example,  
 $149 / 6 = 25$  (**lower limit**)  
 $172 / 6 = 29$  (**upper limit**)



### Stretching

Regular stretching has been shown to increase flexibility and relax tight muscles. Stretching each muscle group for about 30 seconds per day can increase the range of motion of your joints, and improve blood circulation to muscles, which can hasten muscle injury recovery. After exercise, stretching can relax muscles and balance the tension placed on them from exercise. Before a workout, it is important to do a five to ten minute warm-up before stretching. The warm-up should be light exercise that uses the muscles to be stretched and worked out, such as walking while pumping your arms. Whenever you stretch, be sure to target the major muscle groups, including calves, thighs, hips, lower back, neck, shoulders, and any other muscles that you use regularly and/or will be using in your workout. One of the most effective ways to stretch is called static stretching. It involves slowly elongating a muscle through its full range of motion, and holding the stretch for about 15 to 30 seconds once it has been fully extended. Bouncing while stretching actually may cause injury and is not recommended. Stretching should create a tension in the muscle, but not pain. Be sure to relax and keep breathing regularly while holding a stretch. For appropriate stretches, especially if you have a disability, consult a physician or other health professional.



## Yoga

A more specific method for stretching is to participate in yoga. Many people use yoga as a program that increases their awareness of their bodies and how they are using them. It is also used to restore balance. Classes are often available in which an instructor demonstrates the yoga positions and explains how to do them. Participants are usually barefoot and do stretches on a sticky mat. The cushioned mat prevents slipping and provides cushioning for the body in yoga positions. There are many different types of yoga, each of which has a different focus. One popular form is Power Yoga, also known as Ashtanga Yoga, which focuses on strength, flexibility, building heat, breathing, gazing at a focal point, and achieving calmness and equilibrium. Bikram Yoga is practiced in heated rooms, at temperatures of 100 degrees Fahrenheit or more. Gentle Yoga includes slow stretches, flexibility, and deep breathing. Kundalini Yoga also focuses on deep breathing and other breathing techniques, along with poses, chanting, and meditation. Iyengar Yoga uses precise poses, using benches, ropes, mats, blocks, and chairs. The benefits of yoga are often both physical and mental, including improved flexibility, strength, balance, and stamina, reduced anxiety and stress, and improved mental clarity, to name a few. Many fitness centers and organizations such as the YMCA provide yoga classes. It is a good idea to check if the instructor is registered with the Yoga Alliance, which requires at least 200 hours of yoga training before teaching. Yoga videos, websites, CD-ROMs, and books are all available as well. There are also specialized classes for people with disabilities, so check out your local yoga classes to see if any accommodate disabilities. However, anyone with a health problem and/or disability should talk to a physician and the yoga instructor before beginning a yoga program.





### Weight Training

One of the best ways to improve muscular strength, endurance, flexibility, cardiovascular health, and functional ability is to weight train. The vast majority of strength training exercises can be performed while sitting. Nearly all upper body exercises are possible from a seated position, and a variety of abdominal and leg exercises can be performed from a sitting position as well. Before attempting an exercise with weights, it is a good idea to practice the motion with no weight at all, and then start with very light weights and build up gradually. While specialized equipment is available, it is easy to modify existing weight training equipment to meet disability needs. For increased gripping ability, cuffs, mitts, and splints are available. They can be used with any machine or weight that requires gripping, such as free weights, lat pull machines, and pulleys. If an individual has limited hand or limb mobility, ankle and wrist weights can be used in place of dumbbells and machines. To accommodate a person with restricted limb mobility, Velcro straps or clips can secure limbs in one position. One example is using a strap to keep a person's feet on the pedal of a bicycle. An adjustable webbed strap can be placed around a person's torso and attached to the exercise equipment if extra balance is desired. If rubbing or unwanted pressure is a problem, place pieces of dense foam or towels where desired. For the wheelchair-bound, some companies have created weight machines that are wheelchair accessible. One major supplier is the brand Freemotion. A small percentage of gyms and fitness facilities accommodate wheelchair users with accessible layout and equipment. The most unrestricted facilities tend to be universities and hospitals. Some examples of weight exercises that can be done are seated chair knee lifts, bicep curls, dumbbell shoulder press, seated dumbbell triceps extension, wrist curls, seated leg extension and pump (with or without a band), and many others. Other tools can be used as well, including rubber tubing or bands and medicine balls. Although there are a variety of adaptations that allow disabled individuals to weight train, it is very important to consult a physician for specific advice and precautions before beginning.



**International Competitions****Deaflympics**

The Deaflympics began in 1924 with the first Summer Deaflympics in Paris, thanks to the Comité International des Sports des Sourds (The International Committee of Sports for the Deaf). The Winter Deaflympics were added in 1949, and were first held in Seefeld, Austria. Today, the summer and winter competitions follow the same type of schedule as the regular Olympics, with a four year gap between each summer competition and each winter competition, and two years in between summer and winter competitions. About 2,200 deaf athletes from 70 nations participated in the 20<sup>th</sup> Summer Deaflympics in Melbourne, Australia in January 2005, and 298 athletes from 23 countries competed in the 16<sup>th</sup> Winter Deaflympics in Salt Lake City, United States. The 21<sup>st</sup> Summer Deaflympics will be held in Taipei, Chinese Taipei in September 2009, and the High Tatras, Slovakia plans to host the 17<sup>th</sup> Winter Deaflympics in February 2011. During the summer, there are 20 competitive disciplines, including athletics, badminton, basketball, beach volleyball, bowling, cycling (road), football, handball, judo, karate, orienteering, shooting, swimming, table tennis, taekwondo, tennis, volleyball, water polo, wrestling (both freestyle and Greco-Roman). The winter sports include alpine skiing, cross-country skiing, curling, ice hockey, and snowboarding. For more information, contact the International Committee of Sports for the Deaf.

### *Paralympics*

In 1948, the ancestor of the Paralympic Games was born, when Sir Ludwig Guttmann organized a sports competition for spinal cord injury veterans of World War II. The first competition was held in Stoke Mandeville, England. The second competition, held four years later, involved athletes from the Netherlands as well. By 1960, Olympic style games were organized for the competition in Rome, and the Paralympics were born. During the 1960 Games, only 400 athletes from 23 countries competed. Other disability groups were added as competitors in 1976, making the Games an international venue for people with different types of disabilities to unite and compete together. Also in 1976, Sweden hosted the first Winter Paralympic Games. Today, the Paralympics are widely popular, with the Summer Paralympic Games in Athens in 2004 involving 3,806 athletes representing 136 countries. The Paralympic Games have always been held in the same year as the Olympic Games, and since 1988, they have also been held at the same venue. The next Summer Paralympics are planned for Beijing, China in 2008, while Vancouver, Canada plans to host the Winter Paralympics in 2010. Athletes are classified into six different disability categories for competition, including amputee, cerebral palsy, visual impairment, spinal cord injuries, intellectual disability, and a group for all those that do not fit into the aforementioned categories. The summer sports include archery, athletics, boccia, cycling, equestrian, football (5-a-side and 7-a-side), goalball judo, powerlifting, rowing, sailing, shooting, swimming, table tennis, volleyball, and wheelchair sports, including basketball, dancing, fencing, rugby, and tennis. The winter sports include alpine skiing, ice sledge hockey, Nordic skiing, and wheelchair curling. The Paralympics are currently under the authority of the International Paralympic Committee, and the United States Olympic Committee coordinates preparation and selection of athletes to the United States Paralympic Teams for both summer and winter competitions. Contact either organization for more details.

## **Special Olympics**

Eunice Kennedy Shriver proved that one person really can make a difference. In 1962, she opened up her home in Maryland to 35 boys and girls with intellectual disabilities, and allowed them to experience a variety of sports and physical activities. The effort was known as Camp Shriver, a day camp that proved that people with intellectual disabilities are still capable of succeeding at physical challenges. Camp Shriver became an annual event, with help from the Kennedy Foundation, which gave grants to universities, recreation departments, and community centers. By 1963, the Foundation's money allowed 11 camps to be started throughout the United States. In the next few years, the idea took off, with other organizations sponsoring camps for a total of more than 300 camps in 1968. During the mid-1960s, Dr. William Freeberg from the Southern Illinois University at Carbondale, Illinois, and Anna Burke, a teacher from the Chicago, Illinois Park District, conceived the idea of having an Olympic-style track meet for people with intellectual disabilities. Working with Shriver, they expanded the program to include more sports and disabled athletes from across the United States and Canada. On July 20, 1968, the event took place, and Shriver called it the Chicago Special Olympics, or the First International Special Olympics. The Games were held in Chicago's Soldier Field, with 1,000 American and Canadian athletes from 26 states and Canada. Today there are both Summer and Winter Games. Currently, more than 2.25 million intellectually disabled people are served by the Special Olympics, representing more than 160 countries and more than 200 programs. The next Special Olympics World Summer Games are scheduled for October 2007 in Shanghai, People's Republic of China, and the next Special Olympics World Winter Games are planned to be held in Boise, Idaho, USA. The official and recognized sports of the Special Olympics include alpine skiing, aquatics, athletics, badminton, basketball, bocce, bowling, cricket, cross-country skiing, cycling, equestrian, figure skating, floor hockey, football (soccer), golf, gymnastics, judo, kayaking, netball, powerlifting, roller skating, sailing, snowboarding, snowshoeing, softball, speed skating, table tennis, team handball, tennis, and volleyball. For people who do not yet have the physical and/or behavioral skills to participate in the sports, there is a Motor Activities Training Program, and some participants of this program perform at the Games. Although the Special Olympics only take place every few years, the organization sponsors year-round sports training and athlete competition for children and adults. A program near you can be found on the Special Olympics website, or by contacting the organization.

**Resources**

The National Wheelchair Poolplayers  
Association, Inc.  
820 Coastal Beach Road  
Henderson, Nevada 89002  
Jeffrey Dolezal, President: (703)817-1215  
<http://www.nwpainc.org>

Special Olympics:  
1133 19<sup>th</sup> Street, N.W.  
Washington, D.C., 20036  
(202)628-3630  
E-mail: [info@specialolympics.org](mailto:info@specialolympics.org)  
<http://www.specialolympics.org>

USA Deaf Sports Federation  
102 North Krohn Place  
Sioux Falls, South Dakota 57103-1800  
Voice: (605)367-5760  
TTY: (605)367-5761  
E-mail: [homeoffice@usdeafsports.org](mailto:homeoffice@usdeafsports.org)  
<http://www.usdeafsports.org/>

National Disability Sports Alliance  
25 West Independence Way  
Kingston, Rhode Island 02882  
(401)792-7130  
E-mail: [info@ndsaonline.org](mailto:info@ndsaonline.org)  
<http://www.ndsaonline.org>

American Wheelchair Bowling Association  
Dave Roberts  
P.O. Box 69  
Clover, Virginia 24534-0069  
(434)454-2269  
E-mail: [bowlawba@aol.com](mailto:bowlawba@aol.com)

American Blind Bowling Association  
Jim Fleming  
1735 Blair Road SW  
Roanoke, Virginia 24015  
(540)982-3838  
[abbapres@aol.com](mailto:abbapres@aol.com)  
<http://www.geocities.com/blindbowlers/abba>

Freedom's Wings International Inc.  
P.O. Box 7076  
East Brunswick, NJ 08816  
E-mail: [president@FreedomsWings.org](mailto:president@FreedomsWings.org)  
<http://www.freedomswings.org/>

National Park Service  
<http://www.nps.gov>

International Wheelchair Aviators  
P.O. Box 2799  
Big Bear City, California 92314  
(909)585-9663  
E-mail: [IWAviators@aol.com](mailto:IWAviators@aol.com)  
[www.wheelchairaviators.org](http://www.wheelchairaviators.org)

Leslie Stayer, President  
Deaf Pilots Association  
P.O. Box 364  
Jeffersonville, Indiana 47131  
<http://www.deafpilots.com/index.html>

American Horticultural Therapy Association  
201 East Main Street, Suite 1405  
Lexington, Kentucky 40507-2004  
1-800-634-1603  
E-mail: Gaye Horton: [ghorton@amrms.com](mailto:ghorton@amrms.com)  
<http://www.ahta.org/>

## Physical Activity & Active Living

National Center on Accessibility  
501 North Morton St, Suite 109  
Bloomington, Indiana 47404  
Voice: (812) 856-4422  
TTY: (812) 856-4421  
E-mail: [nca@indiana.edu](mailto:nca@indiana.edu)  
<http://www.ncaonline.org/index.shtml>

United States Blind Golf Association  
Phil Blackwell, President: (864)987-9688  
Bruce Hooper, Vice President: (210)822-6366

United States Hand Cycling Federation  
P.O. Box 3538  
Evergreen, Colorado 80437  
(303)459-4159  
E-mail: [info@ushf.org](mailto:info@ushf.org)  
<http://www.ushf.org>

National Sports Center for the Disabled  
P.O. Box 1290  
Winter Park, Colorado 80482  
(970)726-1540  
<http://www.nscd.org/>

National Ability Center  
P.O. Box 682799  
Park City, Utah 84068  
(435)649-3991  
<http://www.nationalabilitycenter.org>

Professional Ski Instructors of America  
133 South Van Gordon Street, Suite 101  
Lakewood, Colorado 80228  
(303)987-9390  
E-mail: [psia@psia.org](mailto:psia@psia.org)  
<http://www.psia.org>

United States Deaf Ski and Snowboard Association  
1722 Saddle Hill Drive  
Logan, Utah 84321  
(435)752-2702  
E-mail: [USDSSA\\_Secretary@usdssa.org](mailto:USDSSA_Secretary@usdssa.org)  
<http://www.usdssa.org/default.asp>

National Foundation of Wheelchair Tennis  
940 Calle Amanecer, Suite B  
San Clemente, California 92672

United States Tennis Association  
70 West Red Oak Lane  
White Plains, New York 10604  
(914)696-7000  
<http://www.usta.com>

Ad Hoc Committee on Tennis  
Howard L. Gorrell, Chair  
261 North Franklin Street #514  
Hanover PA 17331-2461  
E-mail: [Gorrell@usdeafsports.org](mailto:Gorrell@usdeafsports.org)  
Forum: <http://sports.groups.yahoo.com/group/USADT/>

United States of America Deaf Basketball Inc.  
Alan Ander  
P.O. Box 503  
New York, New York 10022  
[www.usadb.org](http://www.usadb.org)

National Wheelchair Basketball Association  
6165 Lehman Drive, Suite 101  
Colorado Springs, Colorado 80918  
(719)266-4082  
E-mail: [toddhatfield@nwba.org](mailto:toddhatfield@nwba.org)  
<http://nwba.org>



## Physical Activity & Active Living

International Committee of Sports for the Deaf  
528 Trail Avenue  
Frederick, Maryland 21701  
USA  
E-mail: [info@ciss.org](mailto:info@ciss.org)  
<http://www.deaflympics.com>

United States Wheelchair Swimming  
229 Miller Street  
Middleboro, Massachusetts 02346  
(719)574-1150

United States Deaf Swimming  
P.O. Box 20275  
Rochester, NY 14602  
<http://www.usdeafswimming.org>

United States Aquatic Association of the Deaf  
Caroline (Carrie Miller)  
6808 40<sup>th</sup> Avenue NE  
Seattle, Washington 98115  
(206)616-6143  
E-mail: [cmiller@ocean.washington.edu](mailto:cmiller@ocean.washington.edu) or [USAADeaf@yahoo.com](mailto:USAADeaf@yahoo.com)  
<http://members.tripod.com/USAAD/>

International Paralympic Committee  
Adenauerallee 212-214  
53113 Bonn  
Germany  
Telephone: +49-228-2097-200  
E-mail: [info@paralympic.org](mailto:info@paralympic.org)  
[www.paralympic.org](http://www.paralympic.org)

Special Olympics  
1133 19<sup>th</sup> Street, N.W.  
Washington, D.C. 20036-3604  
(202)628-3630 or (800)700-8585  
E-mail: [info@specialolympics.org](mailto:info@specialolympics.org)  
<http://www.specialolympics.org>

United States Paralympics  
Joe Walsh  
One Olympic Plaza  
Colorado Springs, Colorado 80909  
(719)866-2035  
E-mail: [Joe.Walsh@usoc.org](mailto:Joe.Walsh@usoc.org)  
<http://www.usparalympics.org>

<http://www.amputee-online.com/amputee/sportrec.html#athletics>

<http://www.esmerel.org/misc/sports.htm>

<http://www.nehsa.org/>

<http://www.asrab.ab.ca/programs.html>

<http://www.sitski.com/pg3.htm#CT>

[http://www.paralympic.org/release/Main\\_Sections\\_Menu/index.html](http://www.paralympic.org/release/Main_Sections_Menu/index.html)

[http://www.lowvision.org/sports\\_and\\_recreation.htm](http://www.lowvision.org/sports_and_recreation.htm)

<http://www.usaba.org/>

<http://www.braillebookstore.com/view.php?C=Toys+and+Games>

<http://www.ncpad.org/index.php>

<http://www.wrad.org/>

<http://www.disabilityresources.org/SPORTS-SPECIFIC.html>

<http://www.usdeafsports.org/index.html>

<http://www.deaflympics.com/>

# Chapter

# 5



## Tools and Technology

It's no longer a question of staying healthy,  
It's a question of finding a sickness you like."  
-Jackie Mason

### Specialty Wheelchairs

#### All Terrain Chair ATC100

Hold up to 275 lbs.

This wheelchair features “Balloon tires” so it is able to easily move over sand and rough terrain. For more information go:

[www.pvcdme.com/9811/top\\_wheelchair.html](http://www.pvcdme.com/9811/top_wheelchair.html)



#### IBOT Mobility System

This wheelchair has 5 operating functions. The first is the 4-wheel option so it can travel on all terrains. The next is the balance option (shown right) where you can be at eye level or can reach up to grab high objects. The stair setting can go up and down stairs. The standard setting is for everyday use and remote setting is for going up ramps and hills. For more information please see:

<http://www.ibotnow.com/ibot/index.html>

## Tools and Technology

### Communication

#### Browsing GoTalk 20+

100 messages capacity  
20 one inch square keys  
Five recording levels

#### Overboard Communication Board Design

Over 5,500 communication symbols  
Over 55,000 keyword library



### Computers

#### Freedom 2001 Lite w/EZKeys and DECtalk

Features a light and portable communication device

#### Freedom 2001 Lite w/talking screen and DECtalk

Is Medicare approved  
Features a talking screen that communicates to users

### Computer Accessories

#### BigKeys LX, Black, QWERTY

#### BigKeys LX, Color, ABC

For more information on both go to

<http://www.assistivetechologies.com/gallery.asp?category=40&CT=Keyboards>

### Computer Accessories (Continued)

#### Independence One

Microphone that plugs into the computer and user is able to give orders to the computer

### Doors

#### Private Door

Automatic door opener, for styles and other options go to:

<http://www.privatedoor.com>

### Guide Dogs

Fidelco Guide Dog Foundation  
103 Old Iron One Rd.  
Bloomfield, CT 06002  
(860)243-5200  
<http://www.fidelco.org>



### Hearing

Sony MDK-IFZ40RK Wireless Headphones  
Can be found at RadioShack

### Telephones

Adapted Telephones  
Voice recognition  
<http://www.ablephone.com>

### Video Magnifier

Optelec's Compact  
Only 10 ounces, can fit into pocket  
Zoom modes 4X and 8X, in color



## Chapter

# 6



# Nutrition

**“Eating everything you want is not that much fun. When you live a life with no boundaries, there’s less joy. If you can eat anything you want to, what’s the fun in eating anything you want to?”**

**-Tom Hanks**

## Foods Not to Eat

### Foods to stay away from / Eat little of:

- Donuts
- Food from Fast food restaurants
- Soda
- Chips
- French Fries
- Fried Foods

### On the food label

- **Fat / Saturated Fat / Trans Fat**

You should consume between 50-70 grams of fat each day. Stay away from Saturated and Trans Fat as much as possible

- **Sugar**

Have as little as possible sugar in your meals.

- **Sodium**

Another word for salt, aim to consume less than 2,300 mg a day. If you have high blood pressure than aim to consume less than 1,500 mg a day.

- **Carbohydrates**

Main way your body gets energy. 60% of the calories you eat should come from Carbs. Multiply the number of Calories you eat everyday by 60%, then divide by 4 to get the total amount of Carbs you should consume in a day.

- **Calories**

Average person consumes around 1,000—2,000 Calories a day



# Nutrition

## Portion Size

For foods with labels on them, the portion size is on the label under serving size. Again, remember to follow your calories and be sure to count them everyday and eat foods that are in line with your eating goals.

For foods without labels:

**Fruits**—a handful is about a serving size

**Deli Meats**—depends on type of meat, and cut style, for the most part 2-4 slices is a good size.

Nutrition Facts			
Serving Size 1 cup (252g)			
Amount Per Serving			
Calories 355		Calories from Fat 103	
		% Daily Value*	
Total Fat 11g		18%	
Saturated Fat 2g		8%	
Trans Fat			
Cholesterol 5mg		2%	
Sodium 239mg		10%	
Total Carbohydrate 50g		17%	
Dietary Fiber 0g		0%	
Sugars 50g			
Protein 13g			
Vitamin A	25%	Vitamin C	50%
Calcium	20%	Iron	25%
*Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.			
NutritionData.com			

## Shopping List 1

### FRUIT

Apples, oranges, bananas, grapes, grapefruit, melon, strawberries, blueberries, exotic fruits, etc.

To save time, buy fruit already cut.

Frozen and canned fruit are just as good, but watch for heavy syrup in the canned fruit.

Any type of fruit blended with yogurt and juice makes a great treat.

### VEGETABLES

Potatoes, lettuce (the greener the better), tomatoes, onions, green/red/yellow peppers, mushrooms, carrots, celery, cucumber, squash, zucchini, broccoli, cabbage, etc.

Garden burgers for a quick and easy meal.

For salads: cut up vegetables or buy packaged salad fixings.

Frozen vegetables are a wise option because they're easy to prepare; canned vegetables are also a good choice as long as the salt content is not too high.

### MEAT

Extra-lean hamburger, other lean beef, chicken breasts (frozen) or whole chicken, turkey.

Fish and seafood - (frozen or fresh) most are low in fat but watch out - some can be 50% fat or more!

Beans - pinto, white, navy, black. There are a lot of dishes you can make with beans or add to other dishes to create a very healthful meal. Buy canned and rinse (to get excess salt off) or dry beans (very inexpensive).

Eggs - whites are nonfat, available without yolks in prepared versions.

# Nutrition

## Shopping List 1 (Continued)

### GRAINS

Whole grain bread for sandwiches and toast.  
High fiber/low-sugar cereal, oatmeal, grits,  
waffle and/pancake mix (whole wheat).  
Brown rice, wild rice, pasta (assorted varieties).  
Bagels (whole wheat preferably).  
Or make your own low fat recipe, tortillas, etc.

### MILKS

Nonfat milk, nonfat/low fat yogurt (plain or flavored - lower sugar better),  
nonfat/low fat cottage cheese, reduced fat cheese, nonfat/low fat frozen yogurt.  
There are other milk products that you may need for special recipes and/or meals  
but listed are the basics.

In an average grocery shopping trip, there may be items that you buy one week  
for a specific recipe and not buy the next. In other words, don't go out and buy all  
the items listed above but buy what you think you'll need and eat in a week. Some  
items are good to have on hand all the time because they make a good snack or  
meal by themselves. Frozen or canned foods are especially good to have handy.  
They keep well and are easily made into a meal.

# Nutrition

## Shopping List 2

### Vegetables

Lettuce, Asparagus, Green Beans, Cauliflower, Potatoes, Zucchini, Onions, Broccoli, Corn, Cucumbers, Radishes, Green Onions, Peas, Sweet Potatoes, Carrots, Tomatoes, Peppers, Celery, Squash, Other Greens



### Fruits

Bananas, Peaches, Apples, Nectarines, Oranges, Grapefruit, Pears, Berries

### Frozen Food

Green Beans, Chicken Breasts, Fish Fillets, Peas, Fruit Juice Bars, Onions, Mixed Vegetables, Blueberries, Vegetarian Burgers, Carrots, Corn, Shrimp

### Canned Foods

Black Beans, Salmon, Tomatoes, Pinto Beans, Marinara Sauce, White Beans, Tuna, Pineapples



# Nutrition

## Shopping List 2 (Continued)

### **Dairy and Eggs**

Low Fat Sour Cream, Low Fat Cream Cheese, Low Fat Milk, Colby Cheese, Cheddar Cheese, Mozzarella Cheese, Butter, Yogurt

### **Miscellaneous Items**

Herbs and Spices, Low Fat Mayonnaise, Pumpkin Seeds, Flax Seeds, Sesame Oil, Honey, Mixed Nuts, Olive Oil, Low Fat Dressings, Low Sodium Soy Sauce, Almonds, Walnut Oil, Mustard, Walnuts, Pecans, Garlic

### **Meats**

Lean Hamburger, Shell Fish, Pork Chops, Chicken, Steaks, Turkey, Fish, Ham

### **Grains and Cereals**

Whole Grain Bread, Whole Grain Pasta, Whole Grain Cereal, Oatmeal

### **Beverages**

100% Fruit Juice, Sparkling Water, Tomato Juice, Herb Tea

## Healthy Recipes

### Salads

You can make a small salad to eat before a meal or a larger one to eat as the meal.

**Fruit Salad**: mix of Watermelon, Melon, Grapes, Cherries, Strawberries, berries, and any of your other favorite fruits.

**Chef Salad**: start off with lettuce then from the deli section in the grocery store get sliced ham, turkey, cheese, and chicken. Cucumbers and cherry tomatoes also can be added to the salad along with low fat croutons. For the salad dressing, we recommend low fat or fat free Italian dressing.

**Tossed (Garden) Salad**: start off with lettuce, you can also use the pre-made packaged salad mix found in the grocery store. Next you can add sliced carrots, cucumbers, onions, tomatoes, etc. Next, you can add low fat or fat free croutons and/or low fat or fat free salad dressing of choice.



# Nutrition

## Healthy Recipes

### Breakfast

**Cereal:** Florida Orange Juice

Healthy breakfast cereal like Cheerios, Chex, Life, or Wheaties

Serve with Skim Milk and/or fresh fruit like

Bananas or Strawberries

**Bread:** Apple Juice or Skim Milk

English Muffin or wholegrain bread in the toaster. Add low fat jam, low fat honey, or low fat peanut butter. Also you can add some fresh fruit on the side.

**Healthy Omelet:** get three egg whites or egg substitute mixed together and put on a frying pan. Once egg begins to set at the bottom toss on chopped ham, onions, peppers, cheese, tomatoes, and/or broccoli over one half of the omelet. Next, fold the omelet in half and cook for 2 minutes. Orange Juice goes well with the omelet

**Breakfast Sandwich:** use a whole grain

English muffin for your base. For the middle, you can use peanut butter or any other high protein source.

## Healthy Recipes

### Lunch

**Sandwich**: Add your favorite smoked deli meat to a whole-wheat roll or bread. Add your favorite low fat condiment if you want. Lettuce and tomato can also be added to the sandwich.

**Open Face Turkey Melt**: Use one slice of bread or one side of a roll and put sliced turkey from the deli on. Then add a slice or two of tomatoes. Then put cheese over and heat it up until the cheese is melted.

**PBJ and Banana**: First get either whole grain toast, bread, or English muffin. Then add low fat jam on one side, next add a little low fat peanut butter on the other side. Now in the middle put slices of bananas to make the sandwich sweeter.

For the side, have an apple and some milk or fruit juice.

*\*If allergic to Peanuts, do not make/eat\**

**Soups**: Low fat Chicken Noodle Soup and low fat Clam Chowder and good options. Also low fat French onion soup and low fat cream of broccoli soup is good too.



# Nutrition

## Healthy Recipes

### Dinner

**Pasta with Vegetables:** Use wholegrain pasta, when the pasta is boiling, chop up onions and garlic. You can also use peas, mushrooms, and broccoli. Put water in your vegetables and put them in the microwave. When the pasta is done, fully stir the vegetables in along with pasta sauce.

**Chicken Parmesan:** Grilled Chicken breast topped with cheese and pasta sauce. Also can include pasta on the side with sauce.

**On the Grill:** We suggest that you use a George Forman Grill® or if you don't have one use a frying pan. You can cook veggie burgers, hamburgers, and hot dogs and the fat and grease will be removed if you use the George Forman Grill®. Some great toppings are onions, mushrooms, peppers, and tomato slices.

**Mini Pizza:** Pre-heat the oven to 200 degrees. Next get whole grain English muffins and spread them with tomato paste or salsa. Next add toppings like sliced mushrooms, onions, low fat cheese. Bake for 10 minutes or until golden brown.

## Healthy Recipes

### Snack

**Smoothie Drinks:** Put a Banana in a blender along with frozen Strawberries, Strawberry or plain yogurt, and milk

Put a Banana in a blender along with canned unsweetened pineapples with the juice, and apple juice.

Put frozen berries in a blender and mix it with soymilk. With all of these, mix in the blender until all ingredients are blended fully.



**Yogurt:** 1 cup of low fat yogurt is a good choice, especially if it is the kind with fruit on the bottom.

**Fruit:** A handful of fresh fruit is always good between meals.

**Whole Grain:** A handful of whole grain pretzels, whole grain crackers, or whole grain crisp bread is a healthy choice.

# Nutrition

## Links

Many different kinds of easy to make healthy recipes

<http://prevention.allrecipes.com/>

This site contains a food pyramid and explains why foods are health or not healthy

<http://www.hsph.harvard.edu/nutritionsource/pyramids.html>

This site is for people with Diabetes. It has healthy meals and a food guide specifically for a person with diabetes.

<http://www.diabetes.org/nutrition-and-recipes/nutrition/healthyfoodchoices.jsp>

Another great source is the food network. They have a section where if makes your unhealthy dish into a healthy one and has many other healthy recipes.

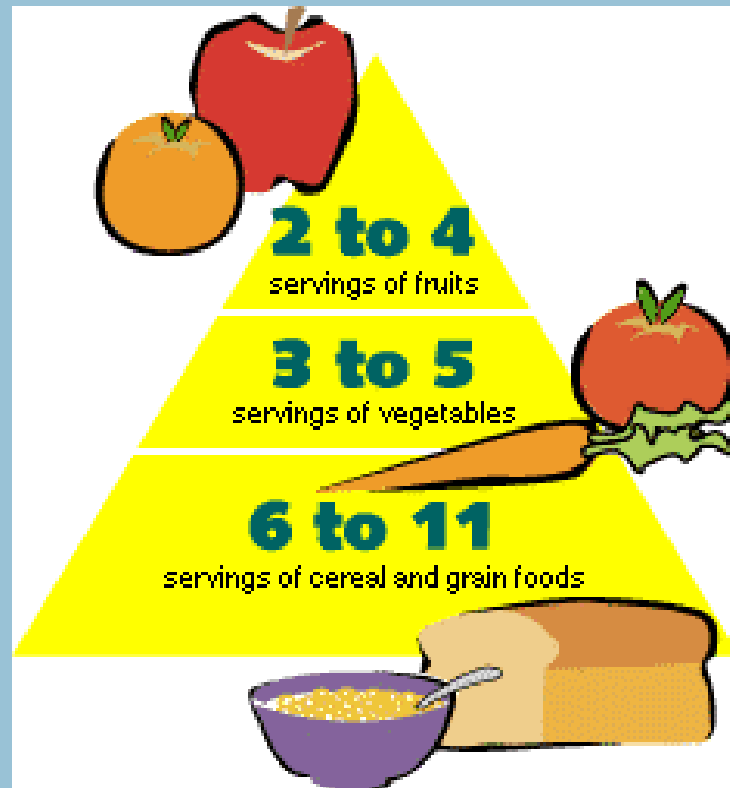
[http://www.foodnetwork.com/food/lf\\_health](http://www.foodnetwork.com/food/lf_health)

This site also has many healthy recipes that are quick and easy to make.

<http://www.mealtime.org/>

This site has over 100 quick and easy to make recipes that are healthy

<http://www.lifehack.org/articles/lifehack/over-100-quick-and-easy-healthy-foods.html>



# Chapter

# 7



# Transportation

**“Certainly, travel is more than the seeing of sights; it is a change that goes on, deep and permanent, in the ideas of living.”**

**-Miriam Beard**

# Transportation

## Town of Berlin

The Elderly and/or Disable Bus\* is equipped with a wheelchair lift and operates Monday through Friday from 8:30 a.m. to 3:30 p.m. Service is “curb to curb”, therefore, riders that may require assistance getting to or from the curb should be accompanied by a companion who can provide such assistance. The driver may use his/her discretion to determine whether or not transportation will be provided in the event that safety is a factor.

**A VOLUNTARY DONATION OF \$1.00 ROUNDTrip IS MOST APPRECIATED**

- **Transportation is available for medical appointments in Berlin and in New Britain.** All calls for medical rides **MUST BE MADE AT LEAST 48 HOURS IN ADVANCE**. Call the senior center at 860-828-7006 during our regular business hours to schedule your rides. All calls for rides home **MUST BE MADE BY 3:00 p.m.** We now have a “new” phone number 860-250-0510 that you must use to call for your ride home from an appointment.
- ♦ Transportation is also available in Berlin to grocery stores, banks, pharmacies, hair & nail appointments, the library, town hall and to lunch and programs at the senior center. Calls for these rides must be made at least 24 hours in advance. Call the senior center at 860-828-7006 during our regular business hours to schedule to schedule your ride. **An answering machine is available (after business hours) only for cancellations.**

♦ **WEEKLY GROCERY SHOPPING SCHEDULE IS AS FOLLOWS:**

**MONDAYS—STOP & SHOP**

**TUESDAYS—FOOD MART**

**WEDNESDAYS—ROGERS**

**\*THE DRIVER WILL PICK YOU UP AND TAKE YOU DIRECTLY TO THE GROCERY STORE. NO OTHER STOPS WILL BE MADE ON THESE SHOPPING TRIPS\***

\*This vehicle has been paid in part by a grant from the Federal Transit Administration-Section 5310 and therefore extends transportation services to disabled Berlin residents regardless of age. Please contact the senior center at 860-828-7006 to request transportation.

# Transportation

## Town of Berlin

### VAN TRANSPORTATION

Van transportation is available on Tuesdays, Wednesdays and Thursday. The Berlin Senior Center has received a grant from the State of Connecticut, Department of Transportation to supplement the bus transportation. We now have **nine (9) passenger (wheelchair equipped) vans** that will be available to **transport Berlin seniors and disabled residents (regardless of age)**. This van service will run:

**Every Tuesday from 9:00 a.m. to 1:00 p.m.**

**Every Wednesday from 12 noon to 4:00 p.m.**

**Every Thursday from 12 noon to 4:00 p.m.**

**All calls for van transportation MUST BE MADE AT LEAST 48 HOURS IN ADVANCE (NO EXCEPTIONS). Call the senior center at 860-828-7006 (only during our regular business hours 8:30 a.m. to 4:00 p.m. Monday through Friday) to schedule your van transportation.**

Van transportation is curb to curb service. If you need assistance getting to or from the curb, a capable companion must accompany you. **Please Note** - the driver does not make unscheduled stops without prior authorization from the dispatcher.

**This van will be available to transport you to the Motor Vehicle Department in New Britain, the New Britain Library and other non-medical stops in New Britain such as convalescent home, BUT NOT TO STORES in New Britain. Also, the van will be available to transport you to the VA in Newington. (All van rides **MUST BE SCHEDULED** during its regular hours of operation). The Berlin Senior Center Bus will **NOT BE AVAILABLE** to transport you to these stops.**

NOTE: The Berlin Senior "Center Lines" can now be found each month on the Town Web Page. Go to [www.town.berlin.ct.us](http://www.town.berlin.ct.us). The online newsletter can be found under Depts/Community Services/Senior Services/Newsletter.

# Transportation

## Town of Newington

### **Dial-a-Ride**

- ♦ Town funded curb to curb transportation program operated through the Senior & Disabled Center.
- ♦ Wheelchair accessible vans
- ♦ For Newington residents only, aged 55 and older, or younger than 55 who have a disability in accordance with the Americans' with Disabilities Act of 1990.
- ♦ Transportation provided in *Town of Newington only*.

### **Dial-a-Ride**

- ♦ Operates Monday—Friday from 9:00 a.m. to 3:30 p.m.
- ♦ Contact 860-665-8778 for further information on sign-ups and schedule

### **Greater Hartford Transit District**

- ♦ ADA Paratransit door-to-door van transportation for persons with disabilities.
- ♦ Call 860-724-5340 for further information.

### **Out-of-Town Medical Transportation**

- ♦ Available to Newington residents 55 and older or who have a disability in accordance with the Americans' with Disabilities Act.
- ♦ Service area includes the town of Hartford, Farmington, Bloomfield, East Hartford, West Hartford, Glastonbury, New Britain, Rocky Hill and Wethersfield.
- ♦ Call 860-665-8778 for registration and further information.

### **Private Transportation Services**

- ♦ Transportation services provided by a variety of individuals.
- ♦ Fee involved—call individual services for price quote.
- ♦ Call Main Office at 860-665-8778 for current listing.



# Transportation

## Town of Rocky Hill

### Mini-Bus Schedule

- ♦ Operates from 8:30 a.m. to 4:00 p.m. Monday through Friday
- ♦ Available on Sundays for church only.
- ♦ No Saturday service available.
- ♦ Reservations must be made one (1) working day in advance. Same day services cannot be guaranteed. Reservations must be made between 8:30 a.m. and 10:30 a.m. Monday through Friday by calling 860-258-2701.

**Eligibility:** Rocky Hill residents sixty (60) years of age or older and/or disabled who is unable to provide their own transportation. Riders are accepted on a first come, first serve basis. Services is not guaranteed, but provided as the schedule permits. Bus clients are expected to independently get on and off the buss. The driver should not be expected to handle packages or bags for the bus clients. All persons should be ready for the Mini-bus to arrive up to 15 minutes before or after their scheduled pick up time.

**Wheelchair Assistance:** The buses are equipped with wheelchair lifts. The bus drivers will assist the wheelchair confined client on and off the wheel chair lift. The clients home or apartment must be fully accessible fro the driver to transport. For example: The driver cannot push or lift a client up or down steps. The existence of safety and liability risks prohibits this practice.

**Areas Served:** Rocky Hill, Wethersfield, Glastonbury and Hartford are the towns served. The Mini-Bus will only service Hartford and Glastonbury on Mondays and Wednesday for medical appointments only. The following towns can be serviced ONLY when absolutely necessary and the schedule permits: Cromwell, Newington and Middletown.

**Cancellations:** Riders are responsible for cancelling reservations as soon as possible. Riders who are habitually late in cancelling trip reservations are subject to suspension from service after one warning.

All nursing home clients must have an aid travel with them to appointments and/or trips.

### Priority Uses of the Mini-Bus

**First Priority—Medical Appointment**

**Second Priority—Food shopping, banking, educational classes**

**Third Priority—Senior Groups, Social Events, Visiting, Hairdressers, Etc.**

# Transportation

## Town of Wethersfield

### **Dial-A-Ride Policies** **Effective July 1, 2007** (Revised; 08/09/2007)

Individuals interested in using the Dial-A-Ride services should refer to the following service policies and procedures. Guidelines may change as needs change and riders will be informed of any changes in policies or eligibility requirements. Dial-A-ride services may be suspended or terminated at anytime due to inappropriate behavior or misuse of service.

#### **1. Eligibility Criteria**

Any resident of Wethersfield who is 60 years of age or older is eligible to use the Dial-A-Ride service. The service is also available to any adult resident who has a permanent disability. (Those with disabilities who are unable to use public transportation should register for ADA through Greater Hartford Transit District at 860-247-5329).

This service does not transport Nursing/Convalescent Home Residents.

**Please Note:** Dial-A-Ride is not a Personal Taxi Service. Our main objective is to service as many Wethersfield residents as possible; by assisting them with transportation to their medical appointments. However, we have added shopping and other special needs days. (See Attachment A).

**2. SERVICE AREA:** Wethersfield Dial-A-Ride users may make trips to and from Town in the designated service areas which includes:

**Wethersfield**  
**Newington**  
**Rocky Hill**  
**Hartford**

**For Medical Purposes Only:** Glastonbury, East Hartford, Farmington, West Hartford, Bloomfield and New Britain have been added to the service region.

# Transportation

## Town of Wethersfield

**3. DAYS AND HOURS OF SERVICE:** The days and hours of operation are as follows:

SCHEDULE		
DAY	SERVICE	TIME
Monday through Friday	Medical Trips	8:00 a.m. to 5:00 p.m. Within the medical services region
Friday	Non-Medical	Senior Cafe & Grocergy Trip Only
Tuesday and Thursday	Non Medical Trips	8:00 a.m. to 5:00 p.m. To Wethersfield, Rocky Hill, Newington & Hartford
Saturday and Sunday		NO SERVICE
Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving and Christmas		NO SERVICE

**4. FARE POLICY:** Wethersfield charges a \$30 registration fee per year for each Dial-A-Ride subscriber. Escorts will not be charged. Please notify Customer Service if you require an escort card. If a fee waiver is requested, contact Wethersfield Social & Youth Services at 860-721-2977.

**5. TRIP PURPOSES:** Requests for all types of trip purposes will be scheduled on a priority basis: ***medically related trips receive the highest priority and are scheduled anywhere within the service area Monday through Friday. Non-medical trips outside of Wethersfield (to Hartford, Rocky Hill and Newington) are available Tuesday and Thursday only. See Attachment A for a list of trip priorities. Trips are scheduled on a “first come first served” basis.*** No money should be exchanged between the riders and the drivers. The designated annual registration annual fee covers all fees and gratuities (tips).

## Town of Wethersfield

**6. RESERVATION PROCEDURES:** Wethersfield residents will call the following number to schedule pick up and return trips:

**DIAL-A-RIDE RESERVATIONS** (For Reservations and Changes)

**1-888-737-0825 TOLL FREE**

*In order to avoid errors, please do not call Ambassador/Dispatch when making reservations and changes to previously made arrangements. The telephone number on the Call Back Card is to be used for return pick ups only.*

Dial-A-Ride clients may make a trip request no later than one day before the trip. The reservation office is not open on weekends. Medical trips should be booked two weeks in advance when possible.

- ♦ **Reservations must be made no later than 1:00 p.m. the day before the ride is requested. Requests made after that time may be denied.**
- ♦ **Riders may not request a specific type of vehicle. This is determined by the provider.**
- ♦ **Please have addresses ready when making your reservations.**
- ♦ **Pick up and returns are considered separate trips. There is a 3 trip limit (per day). Drivers will not wait for passengers to complete appointments or errands. Please do not ask drivers to wait. A call for pick up or time must be arranged in advance. No Same Day Add Ons. Please do not ask to leave packages in vehicles. All items must stay with passengers at all times.**
- ♦ **The provider will accept recurring reservations one month at a time. You would need to call at the beginning or each month to set up reservations for that month.**

**7. OPERATING PROCEDURES (Read Very Carefully):** Riders will **not** be given an exact pick up time, but a 30 minute period during which to expect their ride will be given. All passengers are expected to be ready during the 30-minute window time frame. *For example: A rider requests a pick-up time of 8:30 a.m. The Reservation Agent will give them a thirty minute window of 8:15 to 8:45 a.m. (15 minutes before and 15 minutes after the stated time).* The rider should be ready to go within the 30 minute window time frame. The driver will wait five minutes. If you have an appointment, please tell the reservation Agent when making your reservation and they will try to book your ride accordingly.

# Transportation

## Town of Wethersfield

Before hanging up with the Reservation Agent make sure of the following:

1. **The 30 minutes time frame and date for your ride.**
2. **The name of the Reservation Agent you spoke to.**

**For medical appointments, please book your arrival time to coincide with your appointment, but do not book a return trip. You will call the number given to you by the driver when you are ready to leave your doctor's office. Please note that requesting a ride does not guarantee that you will get a reservation. Reservations are "first come first served" and if all rides are already booked, your request may be denied.**

**Cancellations:** If a passenger has to cancel a trip, he or she is expected to contact the dispatcher at least two hours before the scheduled ride. As long as the passenger give at least two hours notice, cancelled trip is noted only as a cancellation. However, if the passenger give less than two hours notice of cancellation, it is recorded as a no show. "No shows" are different from cancellations.

**No Shows:** Dial-A-ride vehicles will wait no longer than 5 minutes after they arrive at the pick up location within the 30 minute pick up window. If possible, the dispatcher will attempt to contact passengers on the telephone before directing the vehicle to leave. (Please make sure customer service has your correct telephone number). Return trips will be cancelled automatically for passengers who are no shows at the time of initial pick up. Passengers who are not shows are **not** guaranteed a ride that day if they contact the dispatcher. *All no shows will be recorded and monitored. Trips missed by a rider for reasons beyond his or her control shall not be considered in determining if a pattern of missed trips has occurred. Logisticare will begin procedures to suspend riding privileges after an individual misses 3 trips or cancels 3 trips less than 2 hours notice (or any combination) within a 30 day period. Prior to suspending services Logisticare will take the following steps:*

- ♦ *Notify the individual (in writing) that Logisticare intends to suspend service, citing the specific instances missed or cancelled trips.*
- ♦ *Provide the rider with the opportunity to explain the reasons for the excessive no shows or cancellations.*
- ♦ *If Logisticare considers the reasons for the no-shows or cancellations are insufficient, Logisticare will notify the rider, in writing, of the suspension.*

# Transportation

## Town of Wethersfield

- ♦ *The initial suspension shall be for a time not exceeding 30 days and may be shorter subject to Logisticare's discretion and the rider's ability to confirm to confirm that the practice will stop.*
- ♦ *Once service has been reinstated, if an additional 3 no-shows or excessive cancellations occur in a 30 day period, the same procedures will be followed. However, the second suspension period extended to 60 days. A third series of missed trips may result in a 180 day suspension and a fourth series may result in a 365 day suspension.*

**Seat Belts:** Passengers are required to wear belts at all times when on the Dial-A-Ride vehicle. Passengers who refuse to wear seat belts will not be allowed to ride.

**Animals/Pets:** Services animals (such as Guide Dogs and monkey assistants) will be permitted on the vehicle. Other animals are permitted on board the vehicle as long as the animal is in a standard, lap size, pet carrier container. Driver are not to load or unload this container onto or off the vehicle.

**Mobility Aids and Securing of Devices:** Dial-A-Ride service will accommodate all three wheeled and four wheeled mobility devices that do not exceed 30" in width and 48" in length and do not weigh more than 600 pounds when occupied. Most mobility devices fit within these standards. Individuals in wheelchairs, scooters or stretchers that exceed these dimensions should contact the reservations agent. In these instances supervisors will determine on a case by case basis if service can be provided safely. Drivers may request that passengers in three Wheeled scooters transfer to vehicle seat. Not that all drivers have been trained in safely handling and securing mobility devices.

**Children (General):** Children 12 years and older may accompany a registered rider, but notify the reservations agent if you plan to have a child with you.

**8. SHOPPING BAGS/CARRY-ONS:** Please limit the number of shopping bags/carry on to no more than 3 bags/carry-ons. Packages should not be any larger than 25 lbs or 17" x 12" in size. Drivers will be happy to assist you with getting packages on and off the vehicle, only. If your packages exceed the listed sized you may be asked to call a taxi.

# Transportation

## Town of Wethersfield

**9. SERVICE COMPLAINTS:** Complaints may be sent in writing or by phone to: The Town of Wethersfield Dial-A-Ride Program, Social and Youth Services, 505 Silas Deane Highway Wethersfield, CT 06109, Phone: 860-721-2977

### ATTACHEMENT A

PRIORITIES IN SCHEDULING	
FIRST (Riders may call up to 14 days in advance)	Medical appointments including high-risk patients and their accompany caregiver if necessary. When sudden illness necessitates seeing doctor for an un-scheduled appopintment, call winthin 24 hours.
SECOND (Riders may call up to 1 days in advance)	Appointment for grocery shopping, banking, attendance at Wethersfield's Nutritional Lunch Program, and educational and instructional calsses.
THIRD (Riders may call 1 days in advance)	Town and club meetings, social events, and hospital and nursing home visits.
SPECIAL PRIORITIES	
Transportation for Therapeutic Recreation program to include regular day or evening programs and occasional out of service area trips. For other special needs, contact Social and Youth Services at 860-721-2977 for further information.	

### DIAL-A-RIDE SHOPPING SCHEDULE

*Plan your shopping within the specified destinations*

DAY	DESTINATION	TIME	
Tuesday	<u>Shaw's Supermarket</u> 206 Kitts Lane, Newington Or <u>Price Chopper supermarket</u> 2985 Berlin Tnpke, Newington	P/U Return	9-10 a.m 12 Noon
Wednesday	<u>Stop &amp; Shop Supermarket</u> 1380 Berlin Tnpke, Wethersfield Or <u>Big Y Supermarket</u> 1040 Elm Street, Rocky Hill	P/U Return	9-10 a.m. 12 Noon
Thursday	<u>Stop &amp; Shop Supermarket</u> 1380 Berlin Tnpke, Wethersfield	P/U Return P/U Return	9-10 a.m. 12 Noon 12:30 p.m 2:30 p.m.
Friday	<u>Stop &amp; Shop Supermarket or Wal</u> <u>-Mart</u> 80 Town Line Road, Rocky Hill	P/U Return	9-10 a.m. 12 Noon
95 1st & 3rd Fridays	WestFarms Mall	P/U Return	10 a.m. 2 p.m.



## Resources

### **Greater Hartford Transit Transportation Service**

Transportation Under American with Disabilities Act  
One Union Place, Hartford, CT 06103  
Telephone (860) 247-5329  
Website: [www.hartfordtransit.org](http://www.hartfordtransit.org)

ADA Paratransit services are provided for individuals who, because of their disability are unable to travel by a public city bus. ADA paratransit operates during the same hours as the public city bus service fixed routes. This includes Hartford, West Hartford, East Hartford, Manchester, Wethersfield and portions of Newington, Rocky Hill, Glastonbury, Vernon, Tolland, Ellington, South Windsor, Windsor, Windsor Locks, Bloomfield, and Farmington. An ADA application must be completed as well as a personal interview.

### **State of Connecticut Transportation Service/First Transit**

Department of Social Services clients may be eligible for medical transportation and must call 1-888-743-3112 regarding eligibility requirements.

### **Veteran Transportation Service**

Registration is required for this service through the Federal VA Hospital. Call 860-666-6951.

### **State of Connecticut Department of Motor Vehicles**

Telephone (860) 263-5700  
1-800-842-8222  
Website: [www.ct.gov/dmv](http://www.ct.gov/dmv)

You can obtain a handicapped parking permit application through the DMV website:

### **Disabled Commuters Handbook**

c/o Rideshare Co  
100 Corporate Drive, Suite 120  
Windsor, CT 06095  
Telephone: (860) 692-1260



# Chapter

# 8



## Links to Other Resources

**“All men by nature desire knowledge.”  
-Aristotle**

### Federal Departments, Agencies, and Offices

Administration on Aging  
U.S. Department of Health and Human Services  
<http://www.aoa.gov>

Administration on Developmental Disabilities  
Administration for Children and Families  
U.S. Department of Health and Human Services  
<http://www.acf.gov>  
<http://www.acf.dhhs.gov/programs/add/index.htm>

Center for Financing, Access and Cost Trends  
Agency for Healthcare Research and Quality  
U.S. Department of Health and Human Services  
<http://ahrq.gov>

Centers for Medicare and Medicaid Services  
U.S. Department of Health and Human Services  
<http://cms.hhs.gov>

Clearinghouse on Disability Information  
Office of Special Education and Rehabilitative Services  
U.S. Department of Education  
<http://www.ed.gov>

Disability Rights Section  
Civil Rights Division  
U.S. Department of Justice  
<http://www.usdoj.gov/crt/drs/drshome.htm>

Division of Human Development and Disability  
National Center on Birth Defects and Developmental Disabilities  
Centers for Disease Control and Prevention  
U.S. Department of Health and Human Services  
<http://www.cdc.gov>

## Links to Other Resources

Health Resources and Services Administration  
U.S. Department of Health and Human Services  
<http://www.hrsa.gov>

Interagency Committee on Disability Research (ICDR)  
<http://icdr.us>

National Center on Medical Rehabilitation Research  
National Institute of Child Health and Human Development  
National Institute of Health  
U.S. Department of Health and Human Services  
<http://www.nichd.nih.gov>

National Council on Disability  
<http://www.ncd.gov>

National Institute on Deafness and Other Communication Disorders  
National Institutes of Health  
U.S. Department of Health and Human Services  
<http://www.nih.gov/nidcd>

National Institute on Disability and Rehabilitation Research  
U.S. Department of Education  
<http://www.ed.gov>

Office of Civil Rights  
U.S. Department of Health and Human Services  
<http://www.hhs.gov/ocr>

Office of Disability Employment Policy  
U.S. Department of Labor  
<http://www.dol.gov/odep>

Office of Equal Opportunity and Diversity Management  
National Institutes of Health  
U.S. Department of Health and Human Services  
<http://nih.hhs.gov>

## Links to Other Resources

Office of Special Education and Rehabilitative Services  
U.S. Department of Education  
<http://www.ed.gov>

Office of the President's Council on Physical Fitness and Sports  
U.S. Department of Health and Human Services  
<http://www.fitness.gov>

Office on Disability  
U.S. Department of Health and Human Services  
<http://www.hhs.gov/od>

Office of Women's Health  
U.S. Department of Health and Human Services  
<http://www.4women.gov>

The President's Challenge Physical Activity and Fitness Awards Program  
<http://www.presidentschallenge.org>

Social Security Administration  
<http://www.ssa.gov>

Substance Abuse and Mental Health Services Administration  
U.S. Department of Health and Human Services  
<http://www.samhsa.hhs.gov>

## Links to Other Resources

### Private Resources

AARP (American Association of Retired Persons)

<http://aarp.org>

ADAPT

<http://www.adapt.org>

Alliance Project (Special Education)

<http://www.alliance.org>

Alliance for Technology Access

<http://www.atacess.org>

American Academy of Pediatrics

<http://www.aap.org>

American Academy of Physical Medicine and Rehabilitation

<http://www.aaprm.org>

American Alliance for Health, Physical Education, Recreation, and Dance

<http://www.aahperd.org>

American Association for Geriatric Psychiatry

<http://aagpgpa.org>

American Association for Homecare

<http://aahomecare.org>

American Association of Mental Retardation

<http://www.aamr.org>

American Association of Occupational Therapy

<http://aota.org>

American Association of People with Disabilities

<http://www.aapd.com>

## Links to Other Resources

American Association on Health and Disability

<http://www.aahd.us>

American Council of the Blind

<http://www.acb.org>

American College of Sports Medicine

<http://www.acsm.org>

American Foundation for the Blind

<http://www.afb.org>

American Health Care Association

<http://www.ahca.org>

American Indian Rehabilitation Research and Training Center

<http://www.nau.edu/ihd/airrtc>

American Physical Therapy Association

<http://www.apta.org>

American Society on Aging

<http://www.asaging.org>

American Speech-Language-Hearing Association

<http://www.asha.org>

American Therapeutic Recreation Association

<http://www.atra-tr.org>

ANCOR

<http://www.ancor.org>

Arc of the United States

<http://www.thearc.org>

Asian Community Mental Health Services

<http://www.igc.apc.org/acmhs>

## Links to Other Resources

Association of Maternal and Child Health Programs

<http://www.amchp.org>

Association of University Centers on Disability

<http://www.aucd.org>

Breast Health Access for Women with Disabilities

<http://www.bhawd.org>

Center for Medicare Advocacy

<http://www.medicareadvocacy.org>

Center for Research on Women with Disabilities

<http://www.bcm.edu>

Center for Universal Design

<http://www.design.ncsu.edu/cud>

Child Welfare League of America

<http://www.cwla.org>

Christopher and Dana Reeve Paralysis Resource Center

<http://www.paralysis.org>

Council for Exceptional Children

<http://www.cec.sped.org>

Disabled American Veterans

<http://www.dav.org>

Diabetes Research and Wellness Foundation

<http://www.diabeteswellness.net>

Disability Service Providers of America

<http://www.dspofamerica.org>

Disabled Sports USA

<http://www.dsusa.org>

## Links to Other Resources

Disabled Women's Alliance

<http://www.disabilityhistory.org>

Easter Seals

<http://www.easterseals.com>

Educational Resources Information Center on Disabilities and Gifted Education

[Hppt://www.eriec.org](http://www.eriec.org)

Epilepsy Foundation

<http://www.epilepsyfoundation.org>

Exceptional Parent

<http://www.eparent.com>

Family Voices

<http://www.familyvoices.org>

Federation of Families for Children's Mental Health

<http://www.ffcmh.org>

Georgetown University Center for Child and Human Development

<http://www.gucchd.georgetown.edu>

Goodwill Industries International

<http://www.goodwill.org>

Howard University Research and Training Center for Access to Rehabilitation and Economic Opportunity

<http://www.law.howard.edu/hurtc/hurtc.html>

International Center for Bioethics, Culture and Disability

<http://www.bioethicsanddisability.org>

Kids Enjoy Exercise Now (K.E.E.N.)

<http://www.keenusa.org>



## Links to Other Resources

March of Dimes

<http://www.marchofdimes.com>

National Adult Day Services Association

<http://www.nadsa.org>

National Alliance for Accessible Golf

<http://www.accessgolf.org>

National Alliance for Hispanic Health Centers for Providers

<http://www.hispanichealth.org>

National Alliance for Mentally Ill

<http://www.nami.org>

National Asian Pacific Center on Aging

<http://www.napca.org>

National Association of Alcohol, Drugs and Disability

<http://www.naadd.org>

National Association of Protection and Advocacy Systems

<http://www.nasdse.org>

National Association of State Alcohol and Drug Abuse Directors

<http://www.nasdad.org>

National Association of State Directors of Special Education

<http://www.nasdse.org>

National Association of State Medicaid Directors

<http://www.nasmd.org>

National Association of State Mental Health Program Directors

<http://www.nasmhpd.org>

National Association of State Units on Aging

<http://www.nasua.org>

## Links to Other Resources

National Catholic Partnership on Disability

<http://www.ncpd.org>

National Center for Disability Services

<http://www.business-disability.com>

National Center on Physical Activity and Disability

<http://www.ncpad.org>

National Clearinghouse on Managed Care and Long-term Support and Services  
and Services for People with Developmental Disabilities and Their Families

<http://www.mcare.net>

National Council on the Aging

<http://www.ncoa.org>

National Information Center for Children and Youth with Disabilities

<http://www.nichcy.org>

National Industries for Severely Handicapped

<http://www.nish.org>

National Limb Loss Information Center

<http://www.amputee-coalition.org>

National Mental Health Association

<http://www.nmha.org>

National Organization on Disability

<http://www.nod.org>

National Rehabilitation Association

<http://www.nationalrehab.org>

National Rehabilitation Information Center (NARIC)

<http://www.naric.com>

National Resource Center on AD/HD: A program of CHADD

<http://help4adhd.org>

## Links to Other Resources

National Spinal Cord Injury Association

<http://www.spinalcord.org>

Native American Training and Research Center

<http://www.ahsc.arizona.edu/nartc>

Paralyzed Veterans of America

<http://www.pva.org>

Parent Advocacy Coalition for Educational Rights (PACER)

<http://www.pacer.org>

Programs and Services Center of Minority Research in Special Education  
(COMRISE)

<http://curry.ed.school.virginia.edu/go/comrise>

Rehabilitation Engineering and Assistive Technology Society of North America

<http://www.resna.org>

Special Olympics

<http://www.specialolympics.org>

Spina Bifida Association of America (SBAA)

<http://www.sbaa.org>

United Cerebral Palsy Association

<http://www.ucp.org>

United Spinal Association

<http://www.unitedspinal.org>

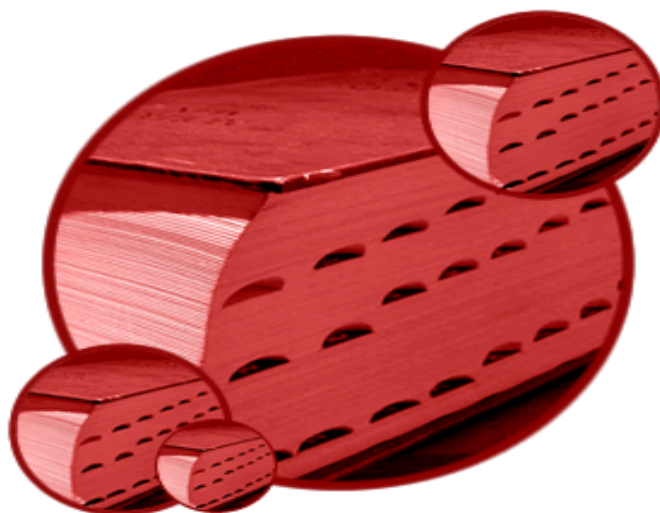
Veterans of Foreign War

<http://www.vfwdc.org>



# Chapter

9



## Glossary and Index

**“Knowledge is of two kinds. We know a subject  
ourselves, or we know where we can find  
information on it.”  
-Samuel Johnson**

### A

**Angiotensin Converting Enzyme (ACE) inhibitors** – Medications that prevent the formation of the chemical angiotensin II, which narrows **blood vessels** and increases **blood pressure**. The medications therefore are used to lower blood pressure, treat heart failure, and prevent kidney damage in people with high blood pressure or diabetes.

**Acetaminophen** – A crystalline compound used to relieve pain and reduce fever.

**Acidic** – Being or containing an acid; a solution with an excess of hydrogen atoms; a solution that tastes sour.

**Adaptations** – A change to a device or mechanism so that it is suitable to a new or special application.

**Allopurinol** – Medication used to lower **uric acid** levels in the blood, to prevent **gout** attacks and uric acid **kidney stones**.

**Alpine skiing** – Sport in which skiers slide down snow-covered hills with long, thin skis attached to their feet.

**Amputation** – Removal of a body extremity by trauma or surgery.

**Analgesics** – Medications used to relieve pain. Also known as **pain relievers**.

**Antibodies** – Proteins in blood and body fluids that the immune system uses to identify and neutralize foreign objects in the body.

**Anti-inflammatory drugs** - A type of drug commonly prescribed for the treatment of inflammation of arthritis and other body tissues, such as in tendinitis and bursitis. Examples of NSAIDs include aspirin, indomethacin (Indocin), ibuprofen (Motrin), naproxen (Naprosyn), piroxicam (Feldene), and nabumetone (Relafen). Abbreviated NSAID.

**ARBs** – Medications that block the chemical angiotensin II from narrowing blood vessels and increasing **blood pressure**. Used to dilate blood vessels and reduce blood pressure in people with **high blood pressure**, heart failure, and **diabetes**.

## Glossary and Index

**Archery** – A sport in which a bow is used to shoot arrows at a target.

**Arteries** – Muscular **blood vessels** that carry blood away from the heart. Except for the pulmonary arteries (which connect to the lungs), and umbilical arteries (which connect to a fetus), all arteries carry oxygen-rich blood.

**Arthritis** – A group of conditions in which damage is caused to the **joints** of the body. It includes **gout**, **rheumatoid arthritis**, and **osteoarthritis**.

**Athletics** – Sports, exercises, and games that require physical skill and stamina.

**Atrophy** – The loss of bulk in a muscle, nerve, or organ from less than normal usage or from previous damage.

**Autoimmune disorder** – A condition in which the body's immune system recognizes its own cells as foreign and attacks the body's own cells.

## B

**Bacteria** – One-celled organisms. The majority are considered harmless or beneficial to humans, but pathogenic bacteria can cause infections and diseases. Antibiotics are used to kill bacteria that cause **infections**.

**Bad carbohydrates** – See **simple carbohydrates**.

**Balance** – A state of bodily equilibrium with equal distribution of weight.

**Ball-drop ramps** – Special ramps used for disabled bowlers that allow the bowler to place the bowling ball at the top of the ramp and push it down the lane towards the pins.

**Barbiturates** – Medications that act as sedatives, anesthetics, and anticonvulsants by depressing the **central nervous system**. They can be highly addictive.

**Beta-blockers** – Medications that counteract the stimulatory effects of adrenaline, thereby decreasing blood pressure. They are prescribed for **high blood pressure** and can improve survival after a **heart attack**.

## Glossary and Index

**Bile acid sequestrants** – Medications that lower **LDL cholesterol**. They do so by binding to intestinal **bile acids** and causing them to be excreted in the stool, causing the liver to use cholesterol in the blood to produce more bile acids. They are prescribed for **high cholesterol**, usually along with a **statin** or niacin.

**Bile acids** – Steroid acids found in the bile produced by the liver, used to eliminate **cholesterol**, drive the flow of bile, and break down lipids and fat soluble vitamins.

**Biochemical processes** – Chemical processes occurring in living organisms, including the breakdown and buildup of materials in the body.

**Biological response modifiers** – Substances that stimulate the body's response to **infection** and **disease**. They are naturally produced in small amounts in the body, and are often prescribed in large doses for treating **cancer** and **rheumatoid arthritis**.

**Bi-ski** – Special ski used by disabled skiers, consisting of a molded shell seat mounted over two skis for balance. It can be used independently or tethered to an instructor.

**Bisphosphonate** – Drugs used to strengthen bone by inhibiting bone removal by **osteoclasts**. It is prescribed to treat **osteoporosis**, and bone pain from other diseases.

**Blood glucose levels** – The amount of **glucose**, or sugar, in the blood. Measured after fasting, and used to diagnose **diabetes**. Normal levels are less than 99 mg/dL.

**Blood pressure** – The force exerted by circulating blood on the walls of **blood vessels** in the body. The blood pressure of the **arteries** is usually measured, and is a measurement of the **systolic** and **diastolic** pressures, expressed as two numbers. A normal blood pressure is less than 120/80 mm Hg.

**Blood vessels** – Vessels that transport blood throughout the body. The main types are **arteries** and **veins**.

**Boccia** – A Paralympic sport for athletes with disabilities. Similar to bocce, players try to toss leather balls as close as possible to a white target ball. The balls



## Glossary and Index

**Body fat assessment** – A measurement of the percent of a person's mass that consists of body fat.

**Body Mass Index (BMI)** – A measurement used to classify whether an individual is overweight, obese, underweight, or normal weight. It is calculated by dividing the individual's body weight by the square of his/her height. A normal BMI is considered 18.5 to 24.9.

**Bone density and muscle loss** – A significant decline in bone and muscle density, generally caused by inactivity due to a disability, accident, or amputation.

**Bone fragility** – A state in which bones are more fragile and are at greater risk for **fracture**, due to loss of bone density.

**Bone mineral density measurement (BMD)** – A test that measures an individual's bone density to determine risk of **fracture** and **osteoporosis**. The bone density is compared to the average bone density for a young adult reference population. Normal BMD is considered to be no lower than one standard deviation below the mean.

**Bone scans** – A technique to image bones using tools such as magnetic resonance and x-rays. Bone scans display a picture of the bones so that abnormalities can be detected.

## C

**Calcium** – An abundant element that is important for a healthy diet. The body uses it in bone and tooth formation, growth, and maintenance. It is found in foods such as dairy products, seaweeds, nuts, seeds, molasses, beans, oranges, broccoli, sardines, and fortified products. A calcium deficiency can contribute to **osteoporosis**.

**Calcium channel blockers** – Drugs that block the entry of calcium into muscle cells of the heart and arteries, thereby widening the arteries and decreasing blood pressure. They are used to treat **high blood pressure**, angina, and abnormal heart rhythms, and may also be used after a **heart attack**.

## Glossary and Index

**Cancer** - **Disease** characterized by a population of cells that grow and divide without respect to normal limits, invade and destroy adjacent tissues, and may spread to distant anatomic sites through a process called metastasis.

**Candida albicans** - Diploid asexual fungus (a form of yeast), and a causal agent of opportunistic oral and genital infections in humans.

**Capillaries** - The smallest of a body's blood vessels, which connect arterioles and venules, and are important for the interchange of oxygen, carbon dioxide, and other substances between blood and tissue cells.

**Cardiovascular disease** - **Disease** affecting the heart or blood vessels.

**Cartilage** - Type of dense connective tissue. It is composed of collagen fibers and/or elastin fibers, and cells called chondrocytes, all of which are embedded in a firm gel-like ground substance called the matrix. Cartilage is found in many places in the body including the joints, the rib cage, the ear, the nose, the bronchial tubes and the intervertebral discs.

**Casts and splints** - A protective shell of plaster and bandage molded to protect a broken or fractured limb as it heals.

**Cell membrane** - Surrounds the cytoplasm of a cell and physically separates the intracellular components from the extracellular environment, thereby serving a function similar to that of skin.

**Central nervous system** - Nerve tissue within the brain and spinal cord.

**Cholecystokinin** - Causes the release of digestive enzymes and bile from the pancreas and gallbladder, respectively. It also acts as a hunger suppressant. Recent evidence has suggested that it also plays a major role in inducing drug tolerance to opioids like morphine and heroin, and is partly implicated in experiences of pain hypersensitivity during opioid withdrawal.

**Cholesterol** - Is required to build and maintain cell membranes.

## Glossary and Index

**Cholesterol absorption inhibitors** - Cholesterol Absorption Inhibitors are a new class of medications that block absorption of cholesterol in the small intestine. This medication tends to localize itself where cholesterol is normally taken up and prevents it from doing so. This class of medications reduces LDL cholesterol and triglycerides, and also mildly increases HDL cholesterol. They appear well tolerated and there is growing evidence that they can be used safely in conjunction with statins

**Cognitive disabilities** - life-long disabilities attributable to mental and/or physical or combination of mental and physical impairments, manifested prior to age twenty-two. It is also known as Developmental Disabilities.

**Complex carbohydrates** – Carbohydrates that take longer to digest and usually contain high amounts of fiber, vitamins, and minerals. Also called **good carbohydrates**. Examples: vegetables (beets, broccoli, cabbage, carrots, cauliflower, corn, lettuce, peppers, potatoes), whole grains (bread, pasta, cereal, flour), nuts, seeds, and legumes (lentils, peas, and beans).

**Congenital defect of aorta** – A defect of the aorta that is present at birth.

**Connective tissues** – A material made up of fibers forming a framework and support structure for body tissues and organs. Connective tissue surrounds many organs. **Cartilage** and bone are specialized forms of connective tissue. All connective tissue is derived from mesoderm, the middle germ cell layer in the embryo.

**Continuous passive motion machines (CPM)** – A machine used to help rehabilitate a limb (an arm or leg).

**Contractures** – Chronic loss of joint motion, caused by structural changes in non-bony tissue, such as muscles, ligaments, and tendons.

**Coordination** – The ability to move one's body.

## Glossary and Index

**Coronary heart disease** – The end result of the accumulation of athermanous plaques within the walls of the arteries that supply the myocardium (the muscle of the heart) with oxygen and nutrients. While the symptoms and signs of coronary heart disease are noted in the advanced state of disease, most individuals with coronary heart disease show no evidence of disease for decades as the **disease** progresses before the first onset of symptoms, often a "sudden" **heart attack**, finally arise. After decades of progression, some of these athermanous plaques may rupture and (along with the activation of the blood clotting system) start limiting blood flow to the heart muscle. The **disease** is the most common cause of sudden death, and is also the most common reason for death of men and women over 20 years of age.

**Corticosteroids** - Class of steroid **hormones** that are produced in the adrenal cortex. Corticosteroids are involved in a wide range of physiologic systems such as stress response, immune response and regulation of inflammation, **carbohydrate** metabolism, **protein** catabolism, blood electrolyte levels, and behavior.

**COX-2 inhibitors** – A class of **non-steroidal anti-inflammatory drugs (NSAIDs)** that reduces inflammation by blocking an enzyme called the COX-2 enzyme. The COX-2 enzyme encourages the production of chemicals that cause pain and swelling of arthritis, so inhibiting the enzyme reduces arthritic pain and swelling.

**Cushing's syndrome** - An endocrine disorder caused by high levels of cortisol in the blood from a variety of causes, including primary pituitary adenoma, primary adrenal hyperplasia or neoplasia, ectopic ACTH production (e.g., from a small cell lung cancer), and iatrogenic (steroid use).

**Cyclosporine** - An immunosuppressant drug widely used post-allergenic organ transplant to reduce the activity of the patient's immune system and so the risk of organ rejection.

**Cytomegalovirus** - Infections are frequently associated with salivary glands, though they may be found throughout the body. CMV infection can also be life threatening for patients who are immunocompromised (e.g. patients with HIV, organ transplant recipients, or neonates).

## Glossary and Index

### D

**Deaf** - A physical condition characterized by lack of sensitivity to sound. The condition could be partial hearing or complete hearing loss.

**Diabetes** – Lifelong condition where the sugar level in the blood is too high.

**Diabetes mellitus** - High blood sugar (**glucose**) levels, which result from defects in **insulin** secretion, or action, or both.

**Diabetes type I** - Usually due to autoimmune destruction of the pancreatic beta cells which produce **insulin**.

**Diabetes type II** - Characterized by tissue-wide **insulin** resistance and varies widely.

**Diastolic pressure** – The **blood pressure** exerted when the heart relaxes. It is the second number expressed in a blood pressure measurement (for example, in a blood pressure of 120/80, the diastolic pressure is 80). Measured in millimeters of mercury (mm Hg).

**Disease** - An abnormal condition of an organism that impairs bodily functions. In human beings, "disease" is often used more broadly to refer to any condition that causes discomfort, dysfunction, distress, social problems, and/or death to the person afflicted, or similar problems for those in contact with the person. In this broader sense, it sometimes includes injuries, disabilities, disorders, syndromes, infections, isolated symptoms, deviant behaviors, and atypical variations of structure and function, while in other contexts and for other purposes these may be considered distinguishable categories.

**Diuretics** - Any drug that elevates the rate of bodily urine excretion.

### E

**Electrical stimulation – the use** of electrical pulses (applied using electrodes attached to the surface of the body) to trigger muscle contraction.

## Glossary and Index

**Encephalitis** - An acute inflammation of the brain, commonly caused by a viral infection.

**Endocrine disorder** – **Disease** of the Endocrine, hormonal system. Most are life long **diseases** like diabetes or obesity.

**Ephedrine** - Commonly used as a stimulant, appetite suppressant, concentration aid, decongestant and to treat hypotension associated with regional anesthesia.

**Epstein-Barr virus** - Is a virus of the herpes family, and is one of the most common viruses in humans. Most people become infected with EBV, which is often asymptomatic but commonly causes infectious mononucleosis ("glandular fever").

**Equestrian** – A horseback rider.

**Excess glucose** – The end result in an excess glucose level in the blood system or urine system is **diabetes**.

**Excessive insulin level** - If one eats a diet that contains too many high GI **carbohydrates** (carbs that are rapidly converted into blood glucose) one forces their body to respond by releasing equally large amounts of **insulin** into their bloodstream to cope with the **glucose**. Over time this excessively high level of **insulin** can cause the "insulin-receptors" in their cells to become less sensitive to **insulin**.

**Exercise** - Performance of some activity to develop or maintain physical fitness and overall health. Frequent and regular physical exercise is an important component in the prevention of some of the **diseases** of affluence such as **heart disease, cardiovascular disease, Type 2 diabetes** and **obesity**.

**Eye** - organs of vision that detect light.

## F

**Familial hypercholesterolemia** - Rare genetic disorder characterized by very high LDL **cholesterol** and early **cardiovascular disease** running in families.

## Glossary and Index

**Fat** - Consist of a wide group of compounds that are generally soluble in organic solvents and largely insoluble in water. Chemically, fats are generally trimesters of glycerol and fatty acids. Fats may be either solid or liquid at normal room temperature, depending on their structure and composition.

**Fencing** - The art of armed combat involving cutting, stabbing, or bludgeoning weapons directly manipulated by hand, rather than shot or thrown.

**Fiber** – The indigestible portion of plant foods that absorb water in the digestive system and make defecation easier. Main benefits of ingesting fiber include improved gastrointestinal health, improved glucose tolerance and insulin response, reduced risk of hypertension and coronary heart disease, reduced risk of cancer, increased feeling of fullness (leading to weight management). Examples of high fiber foods: legumes, oats, rye, barley, some fruits (prunes, plums, berries), some vegetables (broccoli, carrots), root vegetables (potatoes, sweet potatoes, onions), psyllium seed husk, whole grain foods, bran, nuts, and seeds.

**Fibric acids** – Work by reducing the production of triglycerides and increasing HDL cholesterol (the good cholesterol). By increasing HDL levels, they also reduce LDL levels (the bad cholesterol).

**Flexibility** – Body's range of motion.

**Fracture** - Separation of a body into two, or more, pieces under the action of stress.

**Fungal infection** – The cause of athlete's foot and yeast infection. Fungi live in air, in soil, on plants and in water. Some live in the human body. Only about half of all types of fungi are harmful.

## G

**Gall bladder disease** – Is a common condition that affects mainly women, although men can suffer too. The symptoms vary widely from discomfort to severe pain which mainly begins after food. In severe cases the patient can suffer from jaundice, nausea and fever. The most common reason for gallbladder disease is gallstones.

## Glossary and Index

**Gastrointestinal disorder** – Disease having to do with any organ involved in the digestive system.

**Genetics** - The science of heredity and variation in living organisms.

**Glucagon** - An important hormone involved in **carbohydrate** metabolism. Produced by the pancreas, it is released when the **glucose** level in the blood is low (hypoglycemia), causing the liver to convert stored glycogen into **glucose** and release it into the bloodstream. The action of glucagon is thus opposite to that of **insulin**, which instructs the body's cells to take in **glucose** from the blood in times of satiation.

**Glucocorticoids** - Class of steroid hormones characterized by an ability to bind with the cortical receptor and trigger similar effects.

**Glucose** - Sugar

**Goalball** - Popular game for paraplegics or people with any kind of disability that involves a “goalball,” blacked out water goggles, and two teams of 3.

**Gonadal hormones** – The male testicles and the female ovaries.

**Goniometer** – An instrument that measures angles.

**Good carbohydrates** – See **complex carbohydrates**.

**Gout** - **Disease** due to a congenital disorder of uric acid metabolism. In this condition, monosodium urate or uric acid crystals are deposited on the articular cartilage of **joints**, **tendons** and surrounding tissues due to elevated concentrations of uric acid in the blood stream. This provokes an inflammatory reaction of these tissues. These deposits often increase in size and burst through the skin to form sinuses discharging a chalky white material.

## H

**Handball** - Team sport where two teams of seven players each (six players and a goalkeeper) pass and bounce a ball trying to throw it in the goal of the opposing team.



## Glossary and Index

**Hearing impaired** – Condition where some of all hearing is lost.

**Heart attack - Disease** state that occurs when the blood supply to a part of the heart is interrupted. The resulting ischemia or oxygen shortage causes damage and potential death of heart tissue. It is a medical emergency, and the leading cause of death for both men and women all over the world.

**Hematologic disorder** – Blood disorder.

**Hemoglobin disorders** - An inherited abnormality affects the hemoglobin inside red blood cells. Hemoglobin disorders include sickle cell anemia other less common forms of hemoglobinopathy (an inherited illness in which hemoglobin has an abnormal structure), and the thalassemias (inherited illnesses that affect a red blood cell's ability to produce hemoglobin.)

**High blood pressure - Blood pressure** is a measure of how hard the blood pushes against the walls of your **arteries** and **veins** as it moves through your body. It's normal for **blood pressure** to go up and down throughout the day. When **blood pressure** is high, it starts to damage the **blood vessels**, heart, and kidneys. This can lead to **heart attack**, **stroke**, and other problems.

**High cholesterol** - A type of **fat** called a lipid. The body uses it for many things, such as making new cells. Your liver makes most of the **cholesterol** your body needs. You also get **cholesterol** from the foods you eat. Your body needs some cholesterol. But if you have too much, it starts to build up in your **arteries**.

**High-pressure tires (hand cycling)** – Just like all tires, hand cycling tires should be checked regularly to see if the air pressure is good.

**Hormones** - Is a chemical messenger from one cell (or group of cells) to another.

**Hyaluronic acid** - A non-sulfated glycosaminoglycan distributed widely throughout connective, epithelial, and neural tissues.

**Hydration systems** - an apparatus intended to promote its user's drinking enough liquid to support the physical effort involved in the activity.

**Hyperglycemia** - Or high blood sugar is a condition in which an excessive amount of **glucose** circulates in the blood plasma.

## Glossary and Index

**Hypertension** – See **High Blood Pressure**.

**Hypothyroid - Disease** state caused by insufficient production of thyroid hormone by the thyroid gland.

I

**Ice sledge hockey** - Sport that was designed to allow participants who have a physical disability to play the game of ice hockey

**Immobilization** - To fix the position of (a joint or fractured limb), as with a splint or cast.

**Immune system deficiency** – Disorder of the Immune system.

**Impaired glucose tolerance** - Pre-diabetic state of dysglycemia, that is associated with **insulin** resistance and increased risk of cardiovascular pathology.

**Infection** – Occurs when a foreign species grows on a host, such as a human, and use the host's resources to multiply, causing harm to the host. Infections can be caused by bacteria, parasites, fungi, viruses, prions, and viroids, all of which can cause disease.

**Inflammatory diseases** - a disease characterized by inflammation.

**Influenza** – Commonly known as flu.

**Inherited disorders** – A disorder that was passed on from parents to their children.

**Insulin** - Used medically to treat some forms of **diabetes mellitus**. Patients with **type 1 diabetes** mellitus depend on external insulin (most commonly injected subcutaneously) for their survival because of the absence of the hormone. Patients with **type 2 diabetes** mellitus have insulin resistance, relatively low insulin production, or both; some **type 2 diabetics** eventually require insulin when other medications become insufficient in controlling blood glucose levels.

**Insulin resistance** – A condition in which the body's cells do not respond to insulin, and therefore do not uptake **glucose** from the blood.  
This occurs in type 2 **diabetes**.

## Glossary and Index

**Insulin secretion** – The production of **insulin** by beta cells of the pancreas.

**Intestinal infection** – An **infection** in the **intestines** generally caused by a **bacterium**, **fungus**, or **virus**.

**Intestines** – The lower part of the digestive system. The small intestine digests and absorbs nutrients, and the large intestine absorbs water and eliminates waste.

**Islet cells** – **Hormone**-producing cells in the **pancreas**. The beta cells that produce **insulin** are islet cells.

## J

**Joint** – A movable or fixed place where two bones or other skeletal elements meet.

**Judo** – A Japanese sport and method of defending oneself or fighting without the use of weapons, using principles of balance and leverage used in jujitsu.

## K

**Karate** – A Japanese art of self-defense using sharp kicks and blows aimed at pressure-sensitive points on an opponent's body.

**Kidneys** – A pair of bean-shaped organs in the back of the abdominal cavity that produces and excretes urine, regulates fluids, and produces **hormones**.

**Kidney abnormality** – A condition in which the **kidney** does not function properly.

**Kidney damage** – Damage caused by certain conditions, such as **high blood pressure**, that inhibits the proper function of the **kidneys** and prevents them from removing wastes efficiently.

**Kidney stones** – Deposits of minerals in the **kidneys** that form an abnormal stone, or aggregation, and can cause extreme pain and bleeding if they obstruct urine passage. People with **gout** or other disorders that cause a high **uric acid** level in the blood may suffer from uric acid kidney stones.

### L

**Low-Density Lipoprotein (LDL)** – A type of particle called a lipoprotein, which transports **cholesterol** and **triglycerides** from the liver to the **arteries**. If the LDL cholesterol remains in the arteries, plaques form and cause the arteries to harden, leading to **heart attack**, **stroke**, and vascular disease.

**Leptin** – A **hormone** that is believed to suppress appetite and increase metabolism, thereby inducing weight loss. It is sometimes prescribed to treat **obesity**.

**Leukemia** – **Cancer** of the bone marrow that regulates white blood cell production, causing significant overproduction of white blood cells. It is usually accompanied by anemia, impaired blood clotting, and enlargement of the lymph nodes, **liver**, and spleen.

**Ligaments** – Sheets or bands of tough tissue that connect bones or **cartilage** at **joints** or in support of an organ.

**Liver** – A large organ in the abdominal cavity that secretes bile and functions in metabolism of **protein**, **carbohydrate**, and **fat**. It has many other functions, such as synthesizing factors for blood clotting, synthesizing **Vitamin A**, detoxifying poisonous substances, and destroying old red blood cells.

**Low bone mass** – A condition caused by the breakdown of bone, often leading to **osteoporosis**.

**Low-dose aspirin** – Therapy in which a small dose of aspirin (75-100mg) is taken per day, to prevent heart attacks and strokes and reduce bleeding complications.

**Lymphoma** – **Cancer** in which malignant tumors form in lymph nodes and other lymphatic tissue, leading to often painless enlargement of one or more lymph nodes.

### M

**Magnesium** – An element essential for cells of all known living organisms. It is readily available in the food that we eat.

## Glossary and Index

**Massage therapy** – Technique of rubbing, kneading, and patting the body to stimulate circulation, relax the muscles, and relieve tension and knots.

**Measles** – An acute infectious disease, occurring mostly in children, in which small red spots erupt on the skin, fever develops, and the membranes in the nose and throat become inflamed.

**Melanocortins** – Hormones that may decrease appetite and are sometimes used in the treatment of **obesity**.

**Microarchitectural deterioration of bone tissue** – Microscopic harm and destruction of bone tissue, that occurs commonly and is counteracted by **osteoblasts** and **osteoclasts**.

**Microtrauma** – A very slight injury or lesion.

**Mono-ski** – Special ski used by disabled skiers, consisting of a molded shell seat mounted over a single ski. It is best for individuals with good upper body strength and trunk balance.

**Multiple sclerosis** – A chronic, degenerative, **autoimmune disorder** of the **central nervous system**, in which the **immune system** destroys the myelin that insulates nerve fibers in the brain and/or spinal cord. The disease usually appears in young adulthood and causes neural impairments, such as muscular weakness, speech and visual disturbances, loss of coordination, and bladder dysfunction.

**Mumps** – An acute, contagious disease, mainly affecting children, in which swelling occurs in the salivary glands, especially the parotid glands, and sometimes the **pancreas**, ovaries, or testes.

**Muscle imbalance** – A condition caused by asymmetrical use of **muscle** pairs (such as biceps and triceps), and left and right side muscles. It is important to use and strengthen muscles evenly to avoid muscle imbalance, which can cause pain.

**Muscles** – Body tissue composed of sheets or bundles of cells that contract to produce movement or increase tension. The three types of muscles are skeletal muscle, smooth muscle, and cardiac muscle.

## Glossary and Index

**Muscular Dystrophy** - s a broad term that describes a genetic (inherited) disorder of the muscles. MD causes the muscles in the body to become very weak. The muscles break down and are replaced with fatty deposits over time. The most common form of MD is called Duchenne muscular dystrophy (DMD).

## N

**Nerve** – Bundle of fibers that convey impulses such as sensation and motion between the brain or spinal cord and other parts of the body.

**Neuropeptide-Y** – A chemical found in the brain and nervous system that is associated with the regulation of energy balance, memory and learning, and epilepsy. It is sometimes used to regulate appetite and treat **obesity**.

**Niacin** – A component of the **Vitamin B complex** found in meat, wheat germ, dairy products, and yeast, that is essential for the normal function of the nervous sytem and the gastrointestinal tract. Also known as **nicotinic acid**.

**Nicotinic acid** – See **niacin**.

**Non-steroidal anti-inflammatory drugs** – Medications to reduce inflammation caused by arthritis and other inflammatory conditions such as tendonitis and bursitis. Examples: aspirin, ibuprofen, naproxen.

**Nordic skiing** – All types of skiing in which the heel of the boot is not fixed to the ski, including events such as cross-country skiing, ski jumping, biathlon, and telemark skiing.

**Normal insulin level** – The amount of **insulin** that is produced in a healthy (non-diabetic) person's body in response to **glucose** in the blood.

**Nutritional disorder** – Sometimes called an eating disorder, it is a compulsion to eat in a way which disturbs physical, mental, and psychological health. The three most common eating disorders are Anorexia nervosa, in which a person has an extreme fear of weight gain and may starve him or herself, Bulimia nervosa, in which a person engages in binge eating followed by intentional purging, and Binge eating, which involves compulsive overeating.

## Glossary and Index

### O

**Obesity** – A condition involving highly increased body weight caused by an excessive accumulation of fat. Sometimes defined as having a **BMI** of 30 or greater.

**Orienteering** – A running sport in which a person must navigate with a map and compass through diverse terrain to find a series of “control points”.

**Orlistat** – A drug designed to treat **obesity** by preventing the absorption of **fats** from the diet, which also reduces caloric intake.

**Osteoarthritis** – A form of **arthritis**, occurring mainly in older people, that is characterized by chronic breakdown of the **cartilage** in **joints**.

**Osteoblasts** – Cells from which bone develops; bone-forming cells.

**Osteoclasts** – Cells that function in the breakdown and **resorption** of bone tissue.

**Osteoporosis** – A **disease** in which the bones become increasingly brittle, fragile, and subject to **fracture**, due to a loss of **calcium** and other mineral components.

### P

**Pain relievers** – See **analgesics**.

**Pancreas** – A gland behind the stomach that secretes digestive fluid into the **intestine** and also secretes **hormones** such as **insulin**.

**Paraplegia** – Paralysis of both lower limbs due to spinal **disease** or injury.

**Peripheral nervous system** – The section of the nervous system lying outside the brain and spinal cord.

**Plasma glucose levels** – See **blood glucose levels**.

## Glossary and Index

**Polio** – An acute viral **disease** in which the nerve cells of the brain stem and spinal cord become inflamed, which can cause paralysis.

**Potassium** – An element and essential mineral in human nutrition. It is the major positively charged ion inside animal cells and is important in maintaining fluid and electrolyte balance.

**Pressure sores** – Lesions (abnormal tissues) caused by unrelieved pressure to a part of the body, especially in areas of bone and **cartilage**.

**Probenecid** – A medication used to prevent **gout** attacks by helping the kidneys to eliminate **uric acid**.

**Progenitor cells** – Immature or undifferentiated cells that are mostly used to replace lost cells in the body.

**Prolonged bed rest** – A bed rest for an extended period of time that often causes **bone density loss, muscle atrophy**, and other results of inactivity.

**Prosthesis** – A device that substitutes for a missing or defective part of the body, such as an artificial leg.

**Prosthetic socket** – A socket on the **prosthesis** that attaches to the stump of an amputee to create a better fit between the artificial limb and the stump.

**Protein** – Large organic compounds composed of amino acids. Humans cannot synthesize all 20 amino acids on their own, so they must intake protein through food in order to receive the essential amino acids, which are used for a variety of body functions.

**Proton pump inhibitors** – A group of medications that prevent the release of acid in the stomach and **intestines**.

**Push tools** – Tools used for disabled bowlers to push the bowling ball down the lane.



## Glossary and Index

### Q

**Quadriplegia** – Paralysis of all four limbs or of the entire body below the neck. Also called tetraplegia.

### R

**Resorption** – The destruction or dissolution of a tissue, such as the breakdown of bone due to the action of **osteoclasts**.

**Rheumatoid arthritis** – A chronic, inflammatory **autoimmune disease** that causes the immune system to attack its own joint cells.

**Rheumatologic disorders** – Disorders characterized by inflammation and/or pain in **muscles**, **joints**, or fibrous **tissue**.

**Rubella** – Mildly contagious viral disease characterized by fever, mild upper respiratory congestion, and a red rash lasting a few days. It may cause serious damage to a fetus if contracted by a pregnant woman.

**Rugby** – A form of football played with an oval ball, with teams of 15 players each, and the object of the game being to either run the ball across the opponent's goal line or kick it through the upper portion of the goal posts.

### S

**Saturated fat** – A type of animal or vegetable fat that is generally solid at room temperature and increases **cholesterol** levels in the bloodstream. Most often found in butter, meat, egg yolks, and coconut or palm oil.

**Secondary health conditions** – Physical or medical conditions that develop throughout a person's lifetime, and to which people with disabilities may be more susceptible. Some examples are **high blood pressure** and **diabetes**.

## Glossary and Index

**Shooting** – A Paralympic sport in which competitors use pistols or rifles to fire a series of shots at a stationary target. There are wheelchair and standing competitions.

**Sibutramine** – A medication often used for the treatment of **obesity**. It is a centrally acting stimulant that increases satiety, or the feeling of being full, thus regulating appetite.

**Simple carbohydrates** – Carbohydrates that are digested quickly, and often contain refined sugars and few essential **vitamins** and minerals. Also known as **bad carbohydrates**. Examples: candy, soda, doughnuts, sweetened cereal, cakes, fruits, fruit juice, white sugar, brown sugar, corn syrup, maple syrup, molasses, sugars (such as sucrose, **glucose**, fructose, and dextrose), milk, and yogurt.

**Skin irritation and breakdown** – Topical damage or irritation to the skin that is often caused by equipment to treat disabilities, such as a prosthesis or a cast.

**Sleep apnea** – A sleep disorder characterized by pauses in breathing during sleep.

**Somatic cells** – Any cells of the body with the exception of reproductive cells (gametes).

**Sound emitters** – Devices that emit sound so that a blind person may determine the location of an object, such as a basketball or tennis ball.

**Spina bifida** – A condition in which the bottom portion of the neural tube does not completely close, leading to the protrusion of the spinal cord.

**Statins** - A type of drug that inhibits cholesterol production in the liver.

**Stroke** - The clinical designation for a rapidly developing loss of brain function due to an interruption in the blood supply to all or part of the brain.

**Sulfinpyrazone** - A uricosuric medication used to treat **gout**.

**Systolic pressure** – The **blood pressure** exerted when the heart contracts. It is the first number expressed in a blood pressure measurement (for example, in a blood pressure of 120/80, the systolic pressure is 120). Measured in millimeters of mercury (mm Hg).

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### T

**Table tennis** – Also known as ping-pong. Each player has a paddle and hits a ping-pong ball back and forth like tennis.

**Taekwondo** - Is a martial art and combat sports originating in Korea.

**Tendons** - Tough band of fibrous connective tissue that connects muscle to bone and is built to withstand tension.

**Therapeutic** - The attempted remediation of a health problem, usually following a diagnosis.

**Thiazide diuretics** - A family of drugs that remove water from the body. They are referred to as potassium-depleting because they cause the body to lose potassium as well as water. Potassium-depleting diuretics also cause the body to lose magnesium. Thiazide diuretics are used to lower blood pressure in people with high blood pressure. Diuretics are also used to reduce water accumulation caused by other diseases.

**Thrush** – A fungal infection caused by the fungus **Candida albicans**.

**Tissue** – A collection of interconnected cells that perform a similar function within an organism. The four major types of tissues are epithelium, connective tissue, muscle tissue, and nervous tissue.

**Trabecular bones** - type of bone mainly found in the spine; has a honeycomb-like structure

**Trauma** – Can be physical or psychological. It can be a body altering injury. It can also be the way a person act after a very stressful or life threatening situation.

**Triglycerides** - Glyceride in which the glycerol is esterified with three fatty acids.

**Tumor of adrenal gland** - Tumors of the adrenal glands arise from the cortex or the medulla part of the adrenal gland. Adrenal tumors commonly present because symptoms from excess secretion of hormones by the tumor.

### U

**Uric acid** - Organic compound of carbon, nitrogen, oxygen and hydrogen.

### V

**Veins** – Blood travels through veins to get to different parts of the body.

**Vertebra collapse** - breakdown of a vertebra resulting in a decreased height of its body. The collapse may occur to a variable extent and in more severe cases it may be associated with an increased width of the body with possible bulging of the posterior wall towards the spinal canal and consequent spinal cord or nerve root compression.

**Vertebral column** - The Vertebral Column (Spinal Column) supports the head and encloses the spinal cord. The spinal column is comprised of 33 bones, these bones are referred to individually as vertebrae.

**Viral infection** - Colonization of a host organism by a foreign species.

**Visually impaired** - Is vision loss that constitutes a significant limitation of visual capability resulting from disease, trauma, or a congenital or degenerative condition that cannot be corrected by conventional means, including refractive correction, medication, or surgery.

**Vitamin A** – Essential human nutrient that helps vision and bone growth.

**Vitamin B complex** – Plays an important role in cell metabolism.

**Vitamin C** – Used for range of essential metabolic reactions.

**Vitamin D** – Plays an important role in the maintenance of the organ system.

## Glossary and Index

**Vitamin E** - Vitamin E is an antioxidant that protects body tissue from damage caused by unstable substances called free radicals. Free radicals can harm cells, tissues, and organs. They are believed to lay a role in certain conditions associated with aging. Vitamin E is also important in the formation of red blood cells and helps the body to use vitamin K.

**Vitamin K** - A substance that promotes the clotting of blood.

**Vitamins** - Organic compound required in tiny amounts for essential metabolic reactions in a living organism.

## W

**Waist circumference** – Length around the waist.

**Water polo** - Team water sport combining some elements of swimming and handball. A team consists of six field players and one goalkeeper. The objective of the game resembles that of football (soccer): to score as many goals as possible, each goal being worth one point.

**Wheelchair curling** - An adaptation of curling for athletes with a disability.

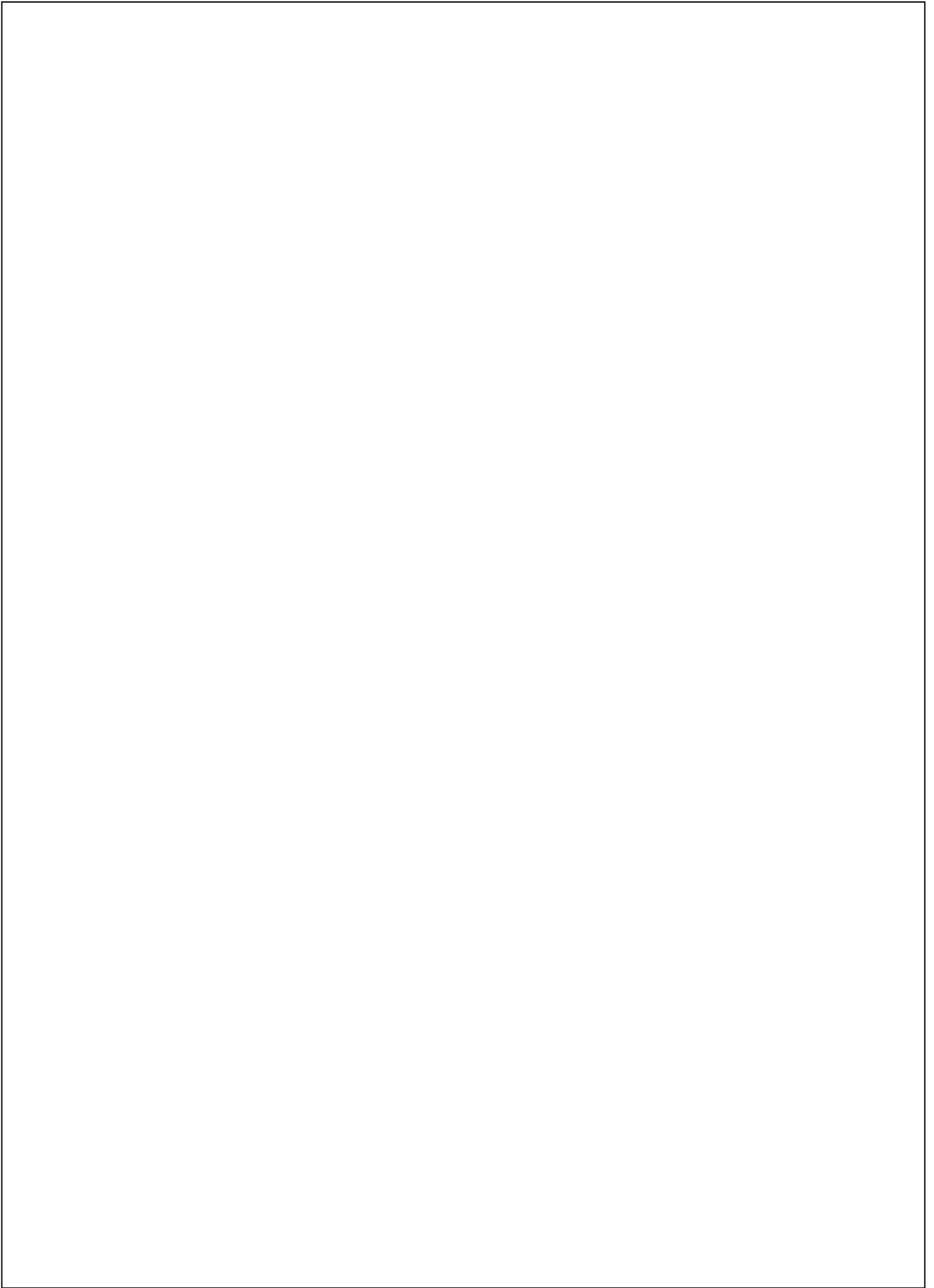
**Wide-range gearing systems** – A system in which the step between the two chain rings is considerably greater than that found in most other systems.

## X

**X-rays** - A form of electromagnetic radiation with a wavelength in the range of 10 to 0.01 nanometers, corresponding to frequencies in the range 30 to 30 000 PHz (1 PHz =  $10^{15}$  Hertz). X-rays are primarily used for diagnostic radiography and crystallography. X-rays are a form of ionizing radiation and as such can be dangerous.

## Y

**Yoga** - Ancient spiritual practice originating in India.





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**Central CT Health District  
505 Silas Deane Highway  
Wethersfield, CT 06109**

**Phone: 860-721-2822**

**[www.ccthd.org](http://www.ccthd.org)**