

# Heart Failure



## **Patient Information Guide**

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**Covenant**  
HEALTH<sup>®</sup>

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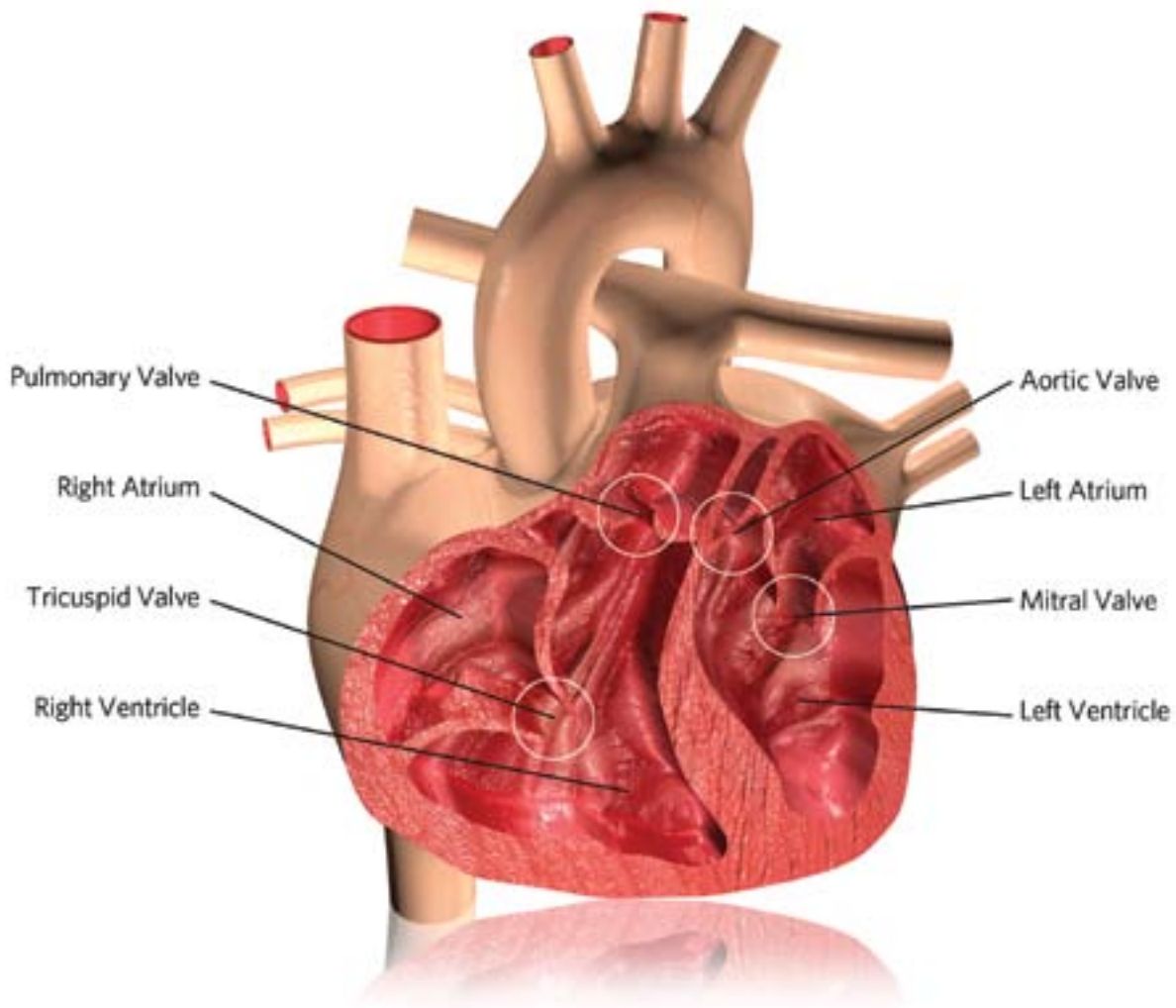
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## Heart Anatomy

The heart is a muscle that supplies the body with blood and oxygen. The muscles, tissues, and organs of the body need oxygen to function.

The heart consists of four chambers:

- The upper chambers are called atria, and the lower chambers are called ventricles.
- The right side of the heart receives blood from the body through the veins and pumps the blood to the lungs.
- The left side of the heart receives oxygenated blood back from the lungs. This oxygenated blood will pump to the rest of the body to feed organs and tissues.
- The left ventricle has to pump through the entire body, so it is stronger than the right ventricle. The left ventricle is the heart's pumping power.



## About Heart Failure

Heart failure is a chronic condition in which the heart cannot pump enough oxygenated blood to meet the needs of the body's other organs. The heart keeps pumping, but not as efficiently as a healthy heart. Usually, the loss in the heart's pumping action is a symptom of an underlying heart problem. Nearly 5.7 million Americans are living with heart failure, and 670,000 new cases are diagnosed each year.



Heart failure is a heart condition requiring medical attention and oversight, along with the patient's participation in managing symptoms and seeking appropriate care.

### What causes heart failure?

Heart failure may result from any/all of the following:

- heart valve disease - caused by past rheumatic fever or other infections
- high blood pressure (hypertension)
- infections of the heart valves and/or heart muscle (i.e., endocarditis)
- scar tissue from previous heart attacks may interfere with the heart muscle's ability to work normally
- coronary artery disease - narrowed arteries that supply blood to the heart muscle
- cardiomyopathy - disease of the heart muscle
- congenital heart disease/defects (present at birth)
- cardiac arrhythmias (irregular heartbeats)
- chronic lung disease and pulmonary embolism
- drug-induced heart failure
- excessive sodium intake
- hemorrhage and anemia
- diabetes

### How does heart failure affect the body?

Heart failure interferes with the kidney's normal function of eliminating excess sodium and waste from the body. In congestive heart failure, the body retains more fluid, often resulting in swelling of the ankles and legs. Fluid also collects in the lungs, resulting in shortness of breath.

### Types of Heart Failure

**Left-sided heart failure** - The left ventricle supplies most of the heart's pumping power, so it's larger than the other chambers and essential for normal function. In left-sided heart failure, the left side of the heart must work harder to pump the same amount of blood.

**Systolic failure** - The left ventricle loses its ability to contract normally. The heart can't pump with enough force to push enough blood into circulation.

**Diastolic failure** - The left ventricle loses its ability to relax normally (because the muscle has become stiff). The heart can't properly fill with enough blood during the resting period between each beat.

**Right-sided heart failure** - When the left ventricle fails, increased fluid pressure is, in effect, transferred back through the lungs, ultimately damaging the heart's right side. When the right side loses pumping power, blood backs up in the body's veins.

## Symptoms and Diagnosis

### What are the symptoms of heart failure?

Clinical signs of heart failure can include weakness, shortness of breath, enlarged neck veins, and an enlarged liver. Below are common symptoms of heart failure. However, each individual may experience symptoms differently. Symptoms may include:

- shortness of breath during rest, exercise, or lying flat
- weight gain
- visible swelling of the legs and ankles (because of a build-up of fluid), and, occasionally, the abdomen
- fatigue and weakness
- loss of appetite, nausea, and abdominal pain
- persistent cough - often produces mucus or blood-tinged sputum
- reduced urination

The severity of the condition and symptoms depends on how much of the heart's pumping capacity has been lost.

The symptoms of heart failure may resemble other conditions or medical problems. Always consult your physician for a diagnosis.

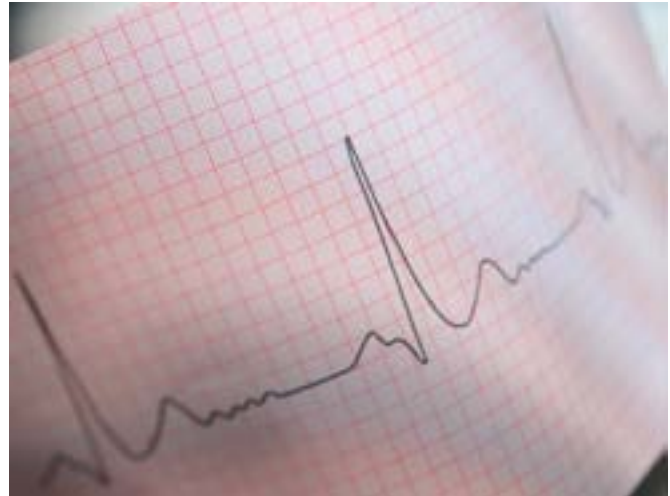
### How is Heart Failure Diagnosed?

In addition to a complete medical history and physical examination, diagnostic procedures for heart failure may include a chest x-ray, echocardiogram, electrocardiogram (ECG or EKG), or BNP testing.

New and advanced diagnostic tests and tools are constantly being introduced to further understand the complexity of disease, injury, and congenital or acquired abnormalities. The following are just a few of the diagnostic tests that have been used/are being used to further understand and identify cardiovascular disease. For more specific information, consult your cardiologist or physician.

#### ▪ Chest x-ray

A diagnostic test which uses invisible electromagnetic energy beams to produce images of internal tissues, bones, and organs onto film. The x-ray can show if the heart is larger than normal and help detect fluid in the lungs.



#### ▪ Electrocardiogram (ECG or EKG)

A test that records the electrical activity of the heart, shows abnormal rhythms (arrhythmias or dysrhythmias), and detects heart muscle damage.

#### ▪ Stress Test (usually with ECG; also called treadmill or exercise ECG)

A test that is given while a patient walks on a treadmill or pedals a stationary bike to monitor the heart during exercise. Breathing and blood pressure rates are also monitored. A stress test may be used to detect coronary artery disease, and/or to determine safe levels of exercise following a heart attack or heart surgery.

#### ▪ Echocardiogram (also known as an "echo")

A noninvasive test that uses sound waves to produce a study of the motion of the heart's chambers and valves. The echo sound waves create an image on the monitor as an ultrasound transducer is passed over the heart.

#### ▪ Transesophageal Echocardiogram (TEE)

A test in which a small transducer is passed down the esophagus to provide a clearer image of heart structures.

#### ▪ BNP testing

B-type natriuretic peptide (BNP) is a hormone released from the ventricles in response to increased wall tension (stress) that occurs with heart failure. BNP levels rise as wall stress increases. BNP levels are useful in the rapid evaluation of heart failure. The higher the BNP levels, the worse the heart failure. Lab work will be done to test BNP levels.

- **Ejection Fraction**

Ejection fraction is a measurement of the total amount of blood the left ventricle pumps out with each beat. The ejection fraction may be lower when the heart is damaged because of a heart attack or diseased heart. A normal ejection fraction is 50-70%. An assessment of the ejection fraction is performed to assist in determining heart failure.

- **Holter Monitor**

A small, portable, battery-powered ECG machine worn by a patient to record heartbeats on tape over a period of 24 to 48 hours during normal activities. At the end of the time period, the monitor is returned to the physician's office so the tape can be read and evaluated. A Holter monitor can help detect abnormal heartbeats.



- **Cardiac Catheterization** (also called Coronary Angiogram)

A test in which a small catheter (hollow tube) is guided through a vein or artery into the heart. Dye is given through the catheter, and moving x-ray pictures are made as the dye travels through the heart. This comprehensive test shows narrowings in the arteries, outside heart size, inside chamber size, pumping ability of the heart, ability of the valves to open and close, as well as measuring the pressures within the heart chambers and arteries.

- **Magnetic Resonance Angiography (MRA) of the Heart**

A specialized type of MRI procedure used to evaluate blood vessels in the heart.

## Treatment for Heart Failure

Specific treatment for heart failure will be determined by your physician based on:

- your age, overall health, and medical history
- extent of the disease
- your tolerance for specific medications, procedures, or therapies
- expectations for the course of the disease
- your opinion or preference

The cause of the heart failure will dictate the treatment protocol established. If the heart failure is caused by a valve disorder, then surgery is usually performed. If the heart failure is caused by a disease, such as anemia, then the disease is treated. And, although there is no cure for heart failure due to a damaged heart muscle, many forms of treatment have proven to be successful.



The goal of treatment is to improve a person's quality of life by making the appropriate lifestyle changes, daily symptoms monitoring and implementing drug therapy.

Treatment of heart failure may include:

- controlling risk factors
- losing weight (if overweight)
- restricting salt and fat from the diet
- stopping smoking and tobacco use
- abstaining from alcohol
- proper rest and activity
- controlling blood sugar if diabetic
- controlling blood pressure
- limiting fluids

Medications are prescribed to help the heart beat easier, improve blood flow, and remove extra fluid.

Common medications include:

- **angiotensin converting enzyme (ACE) inhibitors** - to decrease the pressure inside the blood vessels and reduce resistance against which the heart pumps
- **angiotensin receptor blockers (ARB)** - alternative medication for reducing workload on the heart if ACE inhibitors are not tolerated
- **diuretics** - reduce the amount of fluid in the body
- **vasodilators** - dilate the blood vessels and reduce workload on the heart
- **digitalis** - increase heart strength and control rhythm problems
- **inotropes** - increase the pumping action of the heart
- **antiarrhythmia medications** - keep the rhythm regular and prevent sudden cardiac death
- **beta-blockers** - reduce the heart's tendency to beat faster, and reduce workload by blocking specific receptors on the cells of the heart
- **aldosterone blockers** - block the effects of aldosterone, which causes sodium and water retention



### Common Procedures

- **Coronary Artery Bypass Graft (CABG):** Bypass surgery can improve blood flow to the heart when there is a blockage in the coronary artery.
- **Heart Transplants:** A heart transplant is a surgical procedure to remove a failing heart that can no longer meet the body's demands and replace it with a healthier (donor) heart.

## Cardiac Rehabilitation

### What is cardiac rehabilitation?

Cardiac rehabilitation is a physician-supervised program for people who have either congenital or acquired heart disease. Cardiac rehabilitation can often improve functional capacity, reduce symptoms, and create a sense of well-being for patients. A physician may prescribe cardiac rehabilitation for a patient in certain situations, including heart failure.

### What conditions may benefit from cardiac rehabilitation?

Conditions or cardiac procedures that might need cardiac rehabilitation may include:

- angina pectoris
- myocardial infarction (heart attack)
- post-open heart surgery
- post-heart transplantation
- balloon angioplasty
- stent placement
- pacemaker
- congenital heart disease
- arrhythmias
- rheumatic heart disease
- heart failure



### The cardiac rehabilitation team

Cardiac rehabilitation programs can be conducted while a person is a hospital inpatient or on an outpatient basis. Many skilled professionals are part of the cardiac rehabilitation team, including any of the following:

- cardiologist / cardiovascular surgeon
- physiatrist
- internist
- rehabilitation nurse
- dietitian and nutritionist
- physical therapist
- occupational therapist
- speech / language therapist
- psychologist / psychiatrist
- recreational therapist
- audiologist
- chaplain
- vocational therapist

### The cardiac rehabilitation program

A cardiac rehabilitation program is designed to meet the needs of the individual patient, depending upon the specific heart problem or disease, and should be supervised by a cardiac physician and a team of cardiac professionals. The program's length may range from six weeks to a year or longer and will depend on your specific needs.

The goal of cardiac rehabilitation is to help patients reverse their symptoms and maximize cardiac function. Cardiac rehabilitation includes, but is not limited to, the following activities:

- establishing a progressive exercise program to build fitness and functional capacity
- providing educational classes to help the patient change lifestyle habits as needed, such as smoking cessation or nutrition classes
- offering stress management techniques and techniques to reduce anxiety
- counseling and educating the patient about his/her specific heart condition/disease and the best management approach for that specific condition
- preparing the patient to return to work - equipping him/her to meet the physical and psychological demands of the job



## Living Well with Heart Failure

Heart failure (HF) occurs when the heart fails to pump enough blood. As mentioned previously heart failure is caused by diseases or conditions that damage or overwork the heart muscle. These can include uncontrolled coronary artery disease, high blood pressure, diseases of the heart valves, diseases of heart muscle, arrhythmias (abnormal heart beats), and diabetes.

Current treatments and healthy habits may help reduce your symptoms and prolong your life. It's important that you stick with your treatment, even when you're feeling better. You also need to maintain the following healthy habits:

### Weigh yourself every day

Weigh yourself every morning after urinating and before eating. Keep record and take it with you on all doctor visits. Even an increase of a few pounds may mean that you're retaining water and that your treatment may not be as effective as it could be. Signs and symptoms of fluid retention include increased shortness of breath; waking up in the middle of the night short of breath; increased swelling in hands, legs, and stomach; increased fatigue; and a frequent dry, hacking cough.



Call your doctor if you gain 2-3 lbs. in one day or 5 lbs. in one week. Your doctor will tell you what to do next.

### Take your medicines

You need to take your medicines on schedule and in the right amounts. Make sure you know how each one should affect your body. That way you will know if it is working properly. If you have questions, ask your doctor. It's part of your doctor's job to help you understand how to take your medicines. Let him or her know if you have any side effects. Also let your doctor know about all the medicines you take, even over-the-counter products. They may interact with your HF medicines.



### See your doctor

Visit as often as your doctor recommends so that your treatment can be updated as needed. This is especially important if your medicine has been adjusted or if your condition changes. Don't wait until your symptoms are so severe that you have to go to the hospital.

### Stop smoking

One of the best things you can do for your overall health is to kick the habit. It's not easy, but millions of people succeed every year. Tobacco tightens blood vessels and reduces the amount of oxygen in the blood. Visit the American Lung Association website at [www.lungusa.org](http://www.lungusa.org) for more information. Talk with your doctor about ways to quit smoking.

### Skip the salt

Limiting the amount of salt you eat can prevent fluid retention. This is important to control HF. Ask your doctor how much salt you can have. Don't use salt when you cook or to season your food. Try using other spices, such as garlic powder or basil, instead. After a while you'll get used to seasoning your food in new ways. You should also check the label of any prepared foods you buy. This can help you avoid high-salt foods.

**Fluid restriction**

Your doctor may advise you to limit the amount of fluids you eat and drink to help prevent fluid retention. A fluid is a food or liquid that melts at room temperature. Examples: ice cream, Jell-O™, tea, water, Popsicles™.

- Keep a tally record of how much fluid you are taking daily.
- Measure drinks by using a measuring cup.
- Look at drink containers for the amount of fluid.
- Chewing gum or sugarless hard candy can help keep mouth moist.
- Frozen grapes or lemon wedges can help prevent thirst.

Your fluids are limited to:

\_\_\_\_\_ml = \_\_\_\_\_cups = \_\_\_\_\_ounces per day.

**Don't drink alcohol**

Alcohol interferes with your heart's ability to beat strongly. If your heart failure is advanced or if alcohol use caused your heart trouble, you must give it up completely. If you have mild or moderate heart failure not caused by alcohol, you may be able to drink limited amounts of alcohol. Ask your doctor if it is safe for you to drink any alcohol. If you think you have a problem with alcohol and need help quitting, talk with your doctor. You can also contact Alcoholics Anonymous. Look in the White Pages for a chapter near you, or visit the AA website at [www.alcoholics-anonymous.org](http://www.alcoholics-anonymous.org).

**Get active**

In all but the most severe cases, low-intensity aerobic exercise helps people with HF, regardless of their age. It can make your heart work better and help your body use oxygen more efficiently. Exercise also lessens your symptoms and improves your sense of well being. Before you start exercising talk with your doctor about what level of exercise is right for you.

**Stay connected**

There are more ways you can help your treatment work better. Avoid unnecessary anxiety and

frustration, and get support from family and friends. It's also important to come to terms with your illness. This means accepting that you will need to make changes in your life in order to get better. If your feelings become overwhelming, consider seeking professional

help. Ask your doctor to suggest a therapist who is experienced with cardiac patients. Or, you may want to join a local cardiac support group. It can help to talk with people who have had experiences like yours.

Living successfully with HF takes effort and discipline. But many people do it, and so can you. Stick with your treatment and remember to practice good habits. Most of all, don't give up.

**When to call your healthcare provider or home health agency**

Alert your doctor any time you notice a change in your body or your symptoms:

- Trouble breathing, especially during activity or when lying flat in bed
- Waking up out-of-breath at night
- Weight gain increase of 2-3 pounds in one day or 5 pounds in one week
- Increased swelling of feet, ankles, legs, or abdomen
- Frequent dry, hacking cough, especially when lying down
- Extreme tiredness and fatigue
- Tightness or pain in your chest, arms, or jaw (CALL 911).



## Covenant Health Resources

Covenant Health offers a variety of programs and services for persons with heart-related health issues, including heart failure. If you have questions about whether a specific service might be beneficial to you, call the contact number listed or contact Covenant Health at 865-541-4500, or visit [www.covenanthealth.com](http://www.covenanthealth.com).

### Heart Failure Programs

Covenant Health offers a tele-management program for heart failure patients. This free service provides ongoing monitoring, education and support. We also offer a “Start Up” class and “HF Support Group” meetings.

If you are discharged with a diagnosis of heart failure, you will receive a follow-up phone call to ask how you are doing and answer any questions you may have.

Fort Sanders Regional Medical Center -  
865-541-4933

Methodist Medical Center of Oak Ridge -  
865-835-5225;  
e-mail: [mmcheartfailure@covhlth.com](mailto:mmcheartfailure@covhlth.com)

### Cardiopulmonary Rehabilitation

Cardiopulmonary rehabilitation offers a safe exercise program for people with heart or respiratory conditions. A physician referral is required.

Fort Loudoun Medical Center - 865-271-6030

Fort Sanders Regional Medical Center -  
865-541-1250

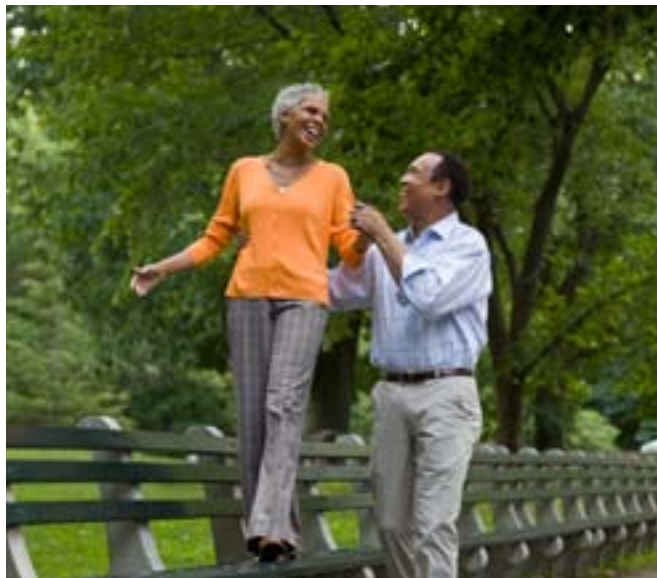
LeConte Medical Center - 865-446-8500

Methodist Medical Center - 865-835-5235

Morristown-Hamblen Healthcare System -  
423-522-4730

Parkwest Medical Center - 865-531-5560

Roane Medical Center - 865-882-4142



### Covenant Diabetes Centers

The Diabetes Centers offer clinical follow-up, education and support for patients with diabetes. A physician referral is required.

Fort Sanders West - 220 Fort Sanders West Blvd.,  
Medical Office Building 2, Suite 205, Knoxville, TN  
37922, 865-531-5580

The Wellness Place at Methodist - 160 C West  
Tennessee Ave., Oak Ridge, TN 37830,  
865-835-3790

### Covenant Sleep Centers

Your heart needs a good night's rest to stay strong. Fifty percent of heart failure patients are prone to sleep disorders, so if you have sleep issues, talk to your doctor about scheduling a sleep study. If you already use a C-pap or B-pap, doing so can help keep your heart failure from progressing. Remember to bring it with you if you come to the hospital.

Fort Sanders Sleep Disorders Center - 865-541-1375

LeConte Sleep Disorders Center - 865-446-7625

Methodist Sleep Diagnostic Center - 865-835-3810

Parkwest Sleep Disorders Center - 865-373-1974

Roane Medical Sleep Center - 865-882-0017

## **Covenant HomeCare**

Covenant HomeCare offers home care and hospice services and rehabilitation therapies to patients in the comfort of the home environment.

For new patient referrals, call 865-374-0690 or toll free: 877-584-4663

Knoxville Office – 3001 Lake Brook Blvd., Suite 101, Knoxville, TN 37909, 865-374-0600

Morristown Office: 1907 West Morris Blvd., Suite 200, Morristown, TN 37814, 423-586-6808

Oak Ridge Office – 200 New York Ave., Suite 230, Oak Ridge, TN 37830, 865-835-5065

Toll free number for all clinics: 888-719-8087

Covenant HomeCare serves these counties: Anderson, Blount, Campbell, Cocke, Grainger, Hamblen, Jefferson, Knox, Loudon, Monroe, Morgan, Roane, Scott, Sevier and Union.

## **Palliative Care Services**

The goal of palliative care is to relieve the symptoms of chronic progressive illness and to help patients and their families achieve the best possible quality of life. Palliative care helps you plan your wishes before you need hospice care or reach your final days. Doing these things while you are well ensures the understanding of all involved.

Fort Sanders Regional Medical Center – 865-541-4986

Methodist Medical Center – 865-835-4563

Parkwest Medical Center – 865-373-1460

## **Senior Services**

Covenant Senior Services collaborates with local providers and community-based agencies to establish special programs that identify and address health and social needs of the aging. The next column lists some of the services available from Covenant Senior Services.

## **Geriatric Case Management Outpatient Program**

The Geriatric Case Management Outpatient Program (GCMOP) is a post-discharge case management program to cover frail elderly who have no other care oversight. Services are provided in the senior's home after discharge to sustain or improve their quality of life. - 865-374-0465

## **Aging Resource Center Helpline (ARCH)**

Are you a caregiver for an older family member? Multiple-role demands of caregiving, work, and home responsibilities can take their toll. Trying to find balance can result in physical and mental fatigue, depression, emotional upsets, and increased job stress. The Aging Resource Center Helpline can assist you with your role as an elder caregiver, including:

- Guiding you through questions and concerns
- Suggesting alternatives to maximize your loved one's ability to remain at home
- Providing timely information to assist you across the span of caregiving, from initial caregiving tasks to end-of-life issues
- Referring you to appropriate community resources (making initial contact, helping with completing forms and applications, and follow-up) thereby saving you time, energy and money
- Providing support in planning strategies to avoid caregiving burnout and crises.

ARCH services are personal and confidential. - 865-374-HELP

## **Covenant Health Passport**

Life is a journey, and it's more enjoyable if you stay healthy, fit and active. That's what Covenant Health Passport is all about - it's a free membership program that helps people ages 50+ enjoy better health and get more out of life.

Activities include free or reduced-cost health screenings, lectures and seminars, and a website to provide the latest health information, tips on healthy lifestyles and answers to your health questions, plus physician referral tailored to your special health needs. Covenant Health Passport - 865-541-4500, toll free: 1-877-334-4500, or [www.covenantpassport.com](http://www.covenantpassport.com).

## Daily Health Tracker

### Baselines

Weight: \_\_\_\_\_ Date: \_\_\_\_\_

Blood Pressure: \_\_\_\_\_ Date: \_\_\_\_\_

Heart rate: \_\_\_\_\_ Date: \_\_\_\_\_

For the weeks of: \_\_\_\_\_

Day	Weight	Blood Pressure	Heart Rate	Notes, Concerns, or Symptom Changes
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				
Sunday				
Monday				
Tuesday				
Wednesday				
Thursday				
Friday				
Saturday				

Questions for my healthcare provider:





## Sodium Tracker

**Goal:** \_\_\_\_\_ mg. per day

(Track other information - carbohydrates, fats, liquids, etc. - in the Notes section)

	<b>What I Ate</b>	<b>Amount (a cup, 1 serving, 4 oz., etc.)</b>	<b>Sodium (in milligrams - mg)</b>	<b>Notes</b>
Breakfast				
Snack				
Lunch				
Snack				
Dinner				
Snack				

TOTAL SODIUM: \_\_\_\_\_

	<b>What I Ate</b>	<b>Amount (a cup, 1 serving, 4 oz., etc.)</b>	<b>Sodium (in milligrams - mg)</b>	<b>Notes</b>
Breakfast				
Snack				
Lunch				
Snack				
Dinner				
Snack				

TOTAL SODIUM: \_\_\_\_\_

Questions for my healthcare provider:



# Blood Glucose Log

Target BG: \_\_\_\_\_

<b>SUNDAY</b>	Date:	2a	4a	6a	8a	10a	12n	2p	4p	6p	8p	10p	12mn	
	Before													
	2hr after													
	Insulin													
	Carb													
<b>MONDAY</b>	Date:	2a	4a	6a	8a	10a	12n	2p	4p	6p	8p	10p	12mn	
	Before													
	2hr after													
	Insulin													
	Carb													
<b>TUESDAY</b>	Date:	2a	4a	6a	8a	10a	12n	2p	4p	6p	8p	10p	12mn	
	Before													
	2hr after													
	Insulin													
	Carb													
<b>WEDNESDAY</b>	Date:	2a	4a	6a	8a	10a	12n	2p	4p	6p	8p	10p	12mn	
	Before													
	2hr after													
	Insulin													
	Carb													
<b>THURSDAY</b>	Date:	2a	4a	6a	8a	10a	12n	2p	4p	6p	8p	10p	12mn	
	Before													
	2hr after													
	Insulin													
	Carb													
<b>FRIDAY</b>	Date:	2a	4a	6a	8a	10a	12n	2p	4p	6p	8p	10p	12mn	
	Before													
	2hr after													
	Insulin													
	Carb													
<b>SATURDAY</b>	Date:	2a	4a	6a	8a	10a	12n	2p	4p	6p	8p	10p	12mn	
	Before													
	2hr after													
	Insulin													
	Carb													

Questions for my healthcare provider:

## Activity Tracker

### Goals

Minutes Per Day: \_\_\_\_\_ Steps Per Day: \_\_\_\_\_

	Yes/No	Date	Healthcare Provider's Recommendation
I feel more tired than usual.			
I have swelling in my feet, hands or other parts of my body. (Example - rings or shoes are tight)			
I have more shortness of breath with activity.			
I am uncomfortable lying flat or I have trouble breathing when I am lying in bed.			
I am urinating less often than usual.			
I have gained more than 2 pounds in 1 day or more than 5 pounds in one week.			
Other symptoms:			

Who to Call
Family doctor:
Specialist:
Specialist:
Home Health:
Equipment Co.:
Emergency Contact: