



[Home](#) → [Health Topics](#) → Heart Failure

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Heart Failure

Also called: Cardiac failure, CHF, Congestive heart failure, Left-sided heart failure, Right-sided heart failure

What is heart failure?

Heart failure means that your heart can't pump enough oxygen-rich blood to meet your body's needs. Heart failure doesn't mean that your heart has stopped or is about to stop beating. But without enough blood flow, your organs may not work well, which can cause serious problems.

Heart failure can affect one or both sides of your heart:

- **With right-sided heart failure**, your heart is too weak to pump enough blood to your lungs to get oxygen.
- **With left-sided heart failure**, your heart can't pump enough oxygen-rich blood out to your body. This happens when the left side of your heart becomes either:
 - Too weak to pump enough blood.
 - Too thick or stiff to relax and fill with enough blood.

Left-sided heart failure is more common than right-sided heart failure.

What causes heart failure?

Heart failure can start suddenly after a medical condition or injury damages your heart muscle. But in most cases, heart failure develops slowly from long-term medical conditions.

Conditions that can cause heart failure include:

- Arrhythmia [<https://medlineplus.gov/arrhythmia.html>] (a problem with the rate or rhythm of your heartbeat)
- Cardiomyopathy [<https://medlineplus.gov/cardiomyopathy.html>]
- Congenital heart defects [<https://medlineplus.gov/congenitalheartdefects.html>] or other types of heart diseases that you are born with
- Coronary artery disease [<https://medlineplus.gov/coronaryarterydisease.html>]
- Endocarditis [<https://medlineplus.gov/endocarditis.html>]
- Heart attack [<https://medlineplus.gov/heartattack.html>]
- Heart valve diseases [<https://medlineplus.gov/heartvalvediseases.html>]
- High blood pressure [<https://medlineplus.gov/highbloodpressure.html>]
- A blood clot in your lung [<https://medlineplus.gov/pulmonaryembolism.html>]
- Diabetes [<https://medlineplus.gov/diabetes.html>]
- Certain severe lung diseases [<https://medlineplus.gov/lungdiseases.html>] , such as COPD [<https://medlineplus.gov/copd.html>] (chronic obstructive pulmonary disease)
- Obesity [<https://medlineplus.gov/obesity.html>]

Over time, left-sided heart failure can lead to right-sided heart failure.

Who is more likely to develop heart failure?

Heart failure can happen at any age. It happens to both men and women, but men often develop it at a younger age than women. Your chance of developing heart failure increases if:

- **You're 65 years old or older.** Aging can weaken and stiffen your heart muscle.
- **Your family health history** [<https://medlineplus.gov/familyhistory.html>] includes relatives who have or have had heart failure.
- **You have** changes in your genes [<https://medlineplus.gov/geneticdisorders.html>] that affect your heart tissue.
- **You have habits that can harm your heart**, including:
 - Smoking [<https://medlineplus.gov/smoking.html>]
 - Eating foods high in fat [<https://medlineplus.gov/dietaryfats.html>] , cholesterol [<https://medlineplus.gov/cholesterol.html>] , and sodium [<https://medlineplus.gov/sodium.html>] (salt)
 - Having an inactive lifestyle [<https://medlineplus.gov/healthrisksofaninactivelifestyle.html>]
 - Alcohol use disorder (AUD) [<https://medlineplus.gov/alcoholusedisorderaud.html>]
 - Illegal drug use [<https://medlineplus.gov/druguseandaddiction.html>]
- **You have other medical conditions that can affect your heart**, including:
 - Any heart or blood vessel conditions, including high blood pressure
 - Serious lung diseases
 - Infection, such as HIV [<https://medlineplus.gov/hiv.html>] or COVID-19 [<https://medlineplus.gov/covid19coronavirusdisease2019.html>]
 - Obesity
 - Diabetes
 - Sleep apnea [<https://medlineplus.gov/sleepapnea.html>]
 - Chronic kidney disease [<https://medlineplus.gov/chronickidneydisease.html>]
 - Anemia [<https://medlineplus.gov/anemia.html>]
 - Thyroid disease [<https://medlineplus.gov/thyroiddiseases.html>]
 - Iron overload disease [<https://medlineplus.gov/hemochromatosis.html>]
 - Cancer treatments that can harm your heart, such as radiation [<https://medlineplus.gov/radiationtherapy.html>] and chemotherapy [<https://medlineplus.gov/cancerchemotherapy.html>]
- **You are African American.** African Americans are more likely to develop heart failure and have more serious cases at younger ages than people of other races. Factors such as stigma, discrimination, income, education, and geographic region can also affect their risk of heart failure.

What are the symptoms of heart failure?

The symptoms of heart failure depend on which side of your heart is affected and how serious your condition has become. Most symptoms are caused by reduced blood flow to your organs and fluid buildup in your body.

Fluid buildup happens because the flow of blood through your heart is too slow. As a result, blood backs up in the vessels that return the blood to your heart. Fluid may leak from the blood vessels and collect in the tissues of your body, causing swelling (edema [<https://medlineplus.gov/edema.html>]) and other problems.

Symptoms of heart failure may include:

- Feeling short of breath [<https://medlineplus.gov/breathingproblems.html>] (like you can't get enough air) when you do things like climbing stairs. This may be one of the first symptoms you notice.
- Fatigue [<https://medlineplus.gov/fatigue.html>] or weakness even after rest.
- Coughing [<https://medlineplus.gov/cough.html>] .
- Swelling and weight gain from fluid in your ankles, lower legs, or abdomen (belly).
- Difficulty sleeping when lying flat.
- Nausea [<https://medlineplus.gov/nauseaandvomiting.html>] and loss of appetite.
- Swelling in the veins of your neck.
- Needing to urinate (pee) often [<https://medlineplus.gov/urineandurination.html>] .

At first you may have no symptoms or mild symptoms. As the disease gets worse, your symptoms will usually bother you more.

What other problems does heart failure cause?

Fluid buildup and reduced blood flow to your organs can lead to serious problems, including:

- **Breathing problems** from fluid in and around your lungs (also called congestive heart failure)
- Kidney [<https://medlineplus.gov/kidneydiseases.html>] **or liver damage**, including cirrhosis [<https://medlineplus.gov/cirrhosis.html>]
- Malnutrition [<https://medlineplus.gov/malnutrition.html>] if fluid buildup makes eating uncomfortable or if your stomach doesn't get enough blood flow to digest food properly
- **Other heart conditions**, such as irregular heartbeat and sudden cardiac arrest [<https://medlineplus.gov/suddencardiacarrest.html>]
- Pulmonary hypertension [<https://medlineplus.gov/pulmonaryhypertension.html>]

How is heart failure diagnosed?

To find out if you have heart failure, your health care provider will

- **Ask about your medical history**, including your symptoms
- **Ask about your family health history**, including relatives who have had heart failure
- **Do a physical exam**
- **Likely run heart tests** [<https://medlineplus.gov/hearthealthtests.html>] **and blood tests** [<https://medlineplus.gov/lab-tests/what-you-need-to-know-about-blood-testing/>] , including a brain natriuretic peptide (BNP) test [<https://medlineplus.gov/lab-tests/natriuretic-peptide-tests-bnp-nt-probnp/>]

In some cases, your provider may refer you to a cardiologist (a doctor who specializes in heart diseases) for tests, diagnosis, and care.

What are the treatments for heart failure?

Your treatment will depend on the type of heart failure you have and how serious it is. There's no cure for heart failure. But treatment can help you live longer with fewer symptoms.

Even with treatment, heart failure usually gets worse over time, so you'll likely need treatment for the rest of your life.

Most treatment plans include:

- Taking medicine
- Eating less sodium and drinking less liquid to control fluid buildup
- Making other changes, such as quitting smoking [<https://medlineplus.gov/quittingsmoking.html>] , managing stress [<https://medlineplus.gov/stress.html>] , and getting as much physical activity as your provider recommends
- Treating any conditions that may make heart failure worse

You may need heart surgery [<https://medlineplus.gov/heartsurgery.html>] if:

- You have a congenital heart defect or damage to your heart that can be fixed.
- The left side of your heart is getting weaker and putting a device in your chest could help. Devices include:
 - **An implantable cardioverter defibrillator.**
 - **A biventricular pacemaker** (cardiac resynchronization therapy).
 - **A mechanical heart pump** (a ventricular assist device (VAD) or a total artificial heart).
- Your heart doctor recommends a heart transplant [<https://medlineplus.gov/hearttransplantation.html>] because your heart failure is life-threatening and nothing else is helping.

As part of your treatment, you'll need to pay close attention to your symptoms, because heart failure can worsen suddenly. Your provider may suggest a cardiac rehabilitation program [<https://medlineplus.gov/cardiocrehabilitation.html>] to help you

learn how to manage your condition.


Can heart failure be prevented?

You may be able to prevent or delay heart failure if you:


- Work with your provider to manage any health conditions that increase your risk of developing heart failure
- Make healthy changes in your eating, exercise, and other daily habits to help prevent heart disease
[<https://medlineplus.gov/howtopreventheartdisease.html>]

NIH: National Heart, Lung, and Blood Institute




Start Here

- Heart Failure [<https://www.mayoclinic.org/diseases-conditions/heart-failure/symptoms-causes/syc-20373142?p=1>]
(Mayo Foundation for Medical Education and Research)
- What Is Heart Failure? [<https://www.nhlbi.nih.gov/health/heart-failure>]  (National Heart, Lung, and Blood Institute)


Symptoms

- Heart Failure Signs and Symptoms [<https://www.heart.org/en/health-topics/heart-failure/warning-signs-of-heart-failure>]
 (American Heart Association)


Diagnosis and Tests


- Chloride Blood Test [<https://medlineplus.gov/lab-tests/chloride-blood-test/>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-cloruro-en-sangre/>]
- Classes and Stages of Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/what-is-heart-failure/classes-of-heart-failure>] (American Heart Association)
- Diagnosing Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/diagnosing-heart-failure>]
(American Heart Association)
- Heart Health Tests: MedlinePlus Health Topic [<https://medlineplus.gov/hearthealthtests.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/hearthealthtests.html>]
- Natriuretic Peptide Tests (BNP, NT-proBNP) [<https://medlineplus.gov/lab-tests/natriuretic-peptide-tests-bnp-nt-probnp/>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pruebas-de-laboratorio/pruebas-de-peptidos-natriureticos-bnp-nt-probnp/>]

Prevention and Risk Factors

- How to Prevent Heart Disease: MedlinePlus Health Topic [<https://medlineplus.gov/howtopreventheartdisease.html>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/howtopreventheartdisease.html>]
- Risks for Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/causes-and-risks-for-heart-failure>]
(American Heart Association)

Treatments and Therapies

- Cardiac Resynchronization Therapy (CRT) [<https://www.heart.org/en/health-topics/heart-failure/treatment-options-for-heart-failure/cardiac-resynchronization-therapy-crt>] (American Heart Association)
- Digoxin: A Medicine for Heart Problems [<https://familydoctor.org/digoxin-a-medicine-for-heart-problems/?adfree=true>]
(American Academy of Family Physicians)
Also in Spanish [<https://es.familydoctor.org/digoxina-un-medicamento-para-problemas-del-corazon/?adfree=true>]
- Diuretics [<https://www.mayoclinic.org/diseases-conditions/high-blood-pressure/in-depth/diuretics/ART-20048129?p=1>]
(Mayo Foundation for Medical Education and Research)
- Hawthorn [<https://www.nccih.nih.gov/health/hawthorn>]  (National Center for Complementary and Integrative Health)

- Heart Treatments [<https://www.nhlbi.nih.gov/health/heart-treatments-procedures>]  (National Heart, Lung, and Blood Institute)
Also in Spanish [<https://www.nhlbi.nih.gov/es/salud/tratamientos-cardiacos-procedimientos>]
- Medications Used to Treat Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/treatment-options-for-heart-failure/medications-used-to-treat-heart-failure>] (American Heart Association)
- Pacemakers and Implantable Defibrillators: MedlinePlus Health Topic [<https://medlineplus.gov/pacemakersandimplantabledefibrillators.html>]  (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/pacemakersandimplantabledefibrillators.html>]
- Recognizing Advanced Heart Failure and Knowing Your Options [<https://www.heart.org/en/health-topics/heart-failure/living-with-heart-failure-and-managing-advanced-hf/recognizing-advanced-heart-failure-and-knowing-your-options>] (American Heart Association)
- Ventricular Assist Devices (VADS) [<https://www.texasheart.org/heart-health/heart-information-center/topics/ventricular-assist-devices/>] (Texas Heart Institute)
Also in Spanish [<https://www.texasheart.org/heart-health/heart-information-center/topics/dispositivos-de-asistencia-ventricular/>]
- What Is a Total Artificial Heart? [<https://www.nhlbi.nih.gov/health/total-artificial-heart>]  (National Heart, Lung, and Blood Institute)
Also in Spanish [<https://www.nhlbi.nih.gov/es/salud/corazon-artificial-total>]

Living With

- How Can I Live with Heart Failure? [<https://www.heart.org/-/media/files/health-topics/answers-by-heart/how-can-i-live-with-heart-failure.pdf>] **Easy-to-Read** (American Heart Association) - PDF
Also in Spanish [https://www.heart.org/-/media/files/health-topics/answers-by-heart/answers-by-heart-spanish/how-can-live-heartfailure_span.pdf]
- Lifestyle Changes for Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/treatment-options-for-heart-failure/lifestyle-changes-for-heart-failure>] (American Heart Association)

Related Issues

- Cardiac Asthma: What Causes It? [<https://www.mayoclinic.org/diseases-conditions/heart-failure/expert-answers/cardiac-asthma/FAQ-20058447?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/heart-failure/expert-answers/cardiac-asthma/faq-20058447?p=1>]
- Diastolic Dysfunction [<https://www.texasheart.org/heart-health/heart-information-center/topics/diastolic-dysfunction/>] (Texas Heart Institute)
Also in Spanish [<https://www.texasheart.org/heart-health/heart-information-center/topics/disfuncion-diastolica/>]
- Heart Failure Questions to Ask Your Doctor [<https://www.heart.org/en/health-topics/heart-failure/heart-failure-tools-resources/heart-failure-questions-to-ask-your-doctor>] (American Heart Association)
- Making Shared Decisions about Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/living-with-heart-failure-and-managing-advanced-hf/overcoming-barriers-to-shared-decision-making>] (American Heart Association)
- Planning for Advanced Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/living-with-heart-failure-and-managing-advanced-hf/planning-ahead-advanced-heart-failure>] (American Heart Association)
- Pulmonary Edema [<https://www.mayoclinic.org/diseases-conditions/pulmonary-edema/symptoms-causes/syc-20377009?p=1>] (Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es/diseases-conditions/pulmonary-edema/symptoms-causes/syc-20377009?p=1>]



Specifics

- Advanced Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/living-with-heart-failure-and-managing-advanced-hf/advanced-heart-failure>] (American Heart Association)
- Types of Heart Failure [<https://www.heart.org/en/health-topics/heart-failure/what-is-heart-failure/types-of-heart-failure>] (American Heart Association)

Statistics and Research

- About Heart Failure in the United States [<https://www.cdc.gov/heart-disease/about/heart-failure.html>] (Centers for Disease Control and Prevention)

Clinical Trials


- ClinicalTrials.gov: Cardiac Output, Low [<https://clinicaltrials.gov/search?cond=%22Cardiac+Output,+Low%22&aggFilters=status:not%20rec>]  (National Institutes of Health)
- ClinicalTrials.gov: Heart Failure [<https://clinicaltrials.gov/search?cond=%22Heart+Failure%22&aggFilters=status:not%20rec>]  (National Institutes of Health)

Journal Articles


References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Early Cardiac Rehabilitation for Critically Ill Patients With Acute Decompensated Heart... [<https://www.ncbi.nlm.nih.gov/pubmed/40736732>]
- Article: Use of extracorporeal membrane oxygenation in adult trauma patients with refractory... [<https://www.ncbi.nlm.nih.gov/pubmed/40731025>]
- Article: Impact of SGLT2 inhibitors on myocardial fibrosis in diabetic HFpEF: a... [<https://www.ncbi.nlm.nih.gov/pubmed/40624547>]
- Heart Failure -- see more articles [<https://pubmed.ncbi.nlm.nih.gov/?term=%22Cardiac+Output%2C+Low%22%5Bmajor%3Anoexp%5D+OR+%22Heart+Failure%22%5Bmajor%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+AND+%28patient+education+handout%5Bpt%5D+OR+guideline%5Bpt%5D+OR+clinical+trial%5Bpt%5D%29++NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+>]

Reference Desk

- Heart Anatomy [<https://www.texasheart.org/heart-health/heart-information-center/topics/heart-anatomy/>] (Texas Heart Institute)
Also in Spanish [<https://www.texasheart.org/heart-health/heart-information-center/topics/anatomia-del-corazon/>]
- Heart Information Center [<https://www.texasheart.org/heart-health/heart-information-center/>] (Texas Heart Institute)
Also in Spanish [<https://www.texasheart.org/heart-health/heart-information-center/topics/glosario-de-terminologia-cardiovascular/>]
- How the Heart Works [<https://www.nhlbi.nih.gov/health/heart>]  (National Heart, Lung, and Blood Institute)
Also in Spanish [<https://www.nhlbi.nih.gov/es/salud/corazon>]

Find an Expert

- American Heart Association [<https://www.heart.org/en/>]
- Find a Specialist [<https://upbeat.org/find-a-specialist>] (Heart Rhythm Society)
- National Heart, Lung, and Blood Institute [<https://www.nhlbi.nih.gov/>] 

Children

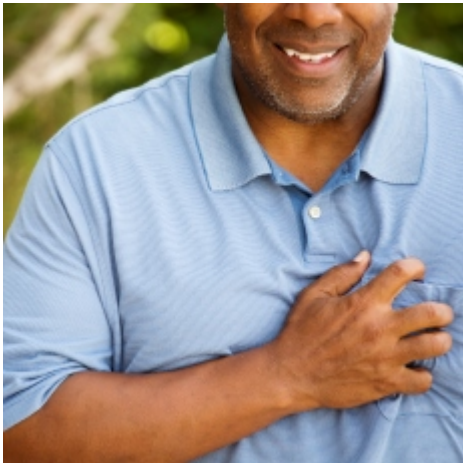
- Congestive Heart Failure (For Parents) [<https://kidshealth.org/en/parents/congestive-heart-failure.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/congestive-heart-failure.html>]
- Heart Failure in Children and Adolescents [<https://www.heart.org/en/health-topics/heart-failure/what-is-heart-failure/heart-failure-in-children-and-adolescents>] (American Heart Association)
- Ventricular Assist Device (For Parents) [<https://kidshealth.org/en/parents/vad.html>] (Nemours Foundation)
Also in Spanish [<https://kidshealth.org/es/parents/vad.html>]

Older Adults

- Heart Failure [<https://www.healthinaging.org/a-z-topic/heart-failure>] (AGS Health in Aging Foundation)

Patient Handouts

- Brain natriuretic peptide test [<https://medlineplus.gov/ency/article/007509.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007509.htm>]
- Heart failure [<https://medlineplus.gov/ency/article/000158.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000158.htm>]
- Heart failure - discharge [<https://medlineplus.gov/ency/patientinstructions/000114.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000114.htm>]
- Heart failure - fluids and diuretics [<https://medlineplus.gov/ency/patientinstructions/000112.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000112.htm>]
- Heart failure - home monitoring [<https://medlineplus.gov/ency/patientinstructions/000113.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000113.htm>]
- Heart failure - medicines [<https://medlineplus.gov/ency/patientinstructions/000364.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000364.htm>]
- Heart failure in children [<https://medlineplus.gov/ency/article/007698.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/007698.htm>]
- Heart failure in children - home care [<https://medlineplus.gov/ency/patientinstructions/000940.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000940.htm>]
- Pleural effusion [<https://medlineplus.gov/ency/article/000086.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000086.htm>]
- Pulmonary edema [<https://medlineplus.gov/ency/article/000140.htm>] (Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/article/000140.htm>]



MEDICAL ENCYCLOPEDIA

- Abdominal tap [<https://medlineplus.gov/ency/article/003896.htm>]
- Brain natriuretic peptide test [<https://medlineplus.gov/ency/article/007509.htm>]
- Chest x-ray [<https://medlineplus.gov/ency/article/003804.htm>]
- Cor pulmonale [<https://medlineplus.gov/ency/article/000129.htm>]
- Digitalis toxicity [<https://medlineplus.gov/ency/article/000165.htm>]
- Gamma-glutamyl transpeptidase (GGT) blood test [<https://medlineplus.gov/ency/article/003458.htm>]
- Heart failure [<https://medlineplus.gov/ency/article/000158.htm>]

Heart failure - discharge [<https://medlineplus.gov/ency/patientinstructions/000114.htm>]

Heart failure - fluids and diuretics [<https://medlineplus.gov/ency/patientinstructions/000112.htm>]

Heart failure - home monitoring [<https://medlineplus.gov/ency/patientinstructions/000113.htm>]

Heart failure - medicines [<https://medlineplus.gov/ency/patientinstructions/000364.htm>]

Heart failure - palliative care [<https://medlineplus.gov/ency/patientinstructions/000365.htm>]

Heart failure - surgeries and devices [<https://medlineplus.gov/ency/patientinstructions/000363.htm>]

Heart failure - tests [<https://medlineplus.gov/ency/patientinstructions/000366.htm>]

Heart failure - what to ask your doctor [<https://medlineplus.gov/ency/patientinstructions/000224.htm>]

Heart failure in children [<https://medlineplus.gov/ency/article/007698.htm>]

Heart failure in children - home care [<https://medlineplus.gov/ency/patientinstructions/000940.htm>]

Heart PET scan [<https://medlineplus.gov/ency/article/007343.htm>]

Hypertensive heart disease [<https://medlineplus.gov/ency/article/000163.htm>]

Oxygen safety [<https://medlineplus.gov/ency/patientinstructions/000049.htm>]

Pleural effusion [<https://medlineplus.gov/ency/article/000086.htm>]

Pleural fluid analysis [<https://medlineplus.gov/ency/article/003624.htm>]

Pulmonary edema [<https://medlineplus.gov/ency/article/000140.htm>]

Using oxygen at home [<https://medlineplus.gov/ency/patientinstructions/000048.htm>]

Using oxygen at home - what to ask your doctor [<https://medlineplus.gov/ency/patientinstructions/000251.htm>]

Ventricular assist device [<https://medlineplus.gov/ency/article/007268.htm>]

Related Health Topics

Cardiac Rehabilitation [<https://medlineplus.gov/cardiacrehabilitation.html>]

Heart Transplantation [<https://medlineplus.gov/hearttransplantation.html>]

Pacemakers and Implantable Defibrillators [<https://medlineplus.gov/pacemakersandimplantabledefibrillators.html>]

National Institutes of Health

The primary NIH organization for research on *Heart Failure* is the National Heart, Lung, and Blood Institute [<http://www.nhlbi.nih.gov/>]

Other Languages

Find health information in languages other than English [<https://medlineplus.gov/languages/heartfailure.html>] on *Heart Failure*

NIH MedlinePlus Magazine

Getting an Accurate Read on Pulse Oximeters [<https://magazine.medlineplus.gov/article/getting-an-accurate-read-on-pulse-oximeters>]

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