



**STRENGTHENING HEART
MUSCLES**

INTRODUCTION

There is a hope for patients with weak or failing heart. In many patients efficiency of the heart can be improved by modifying lifestyle like healthy eating habits, doing yoga and exercise. Regular meditation and certain devices can help in strengthening the heart muscles. In this Help Book we have tried to suggest some lifestyle changes and ways to strengthen your heart muscle.

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LIVING SUCCESSFULLY WITH HEART FAILURE

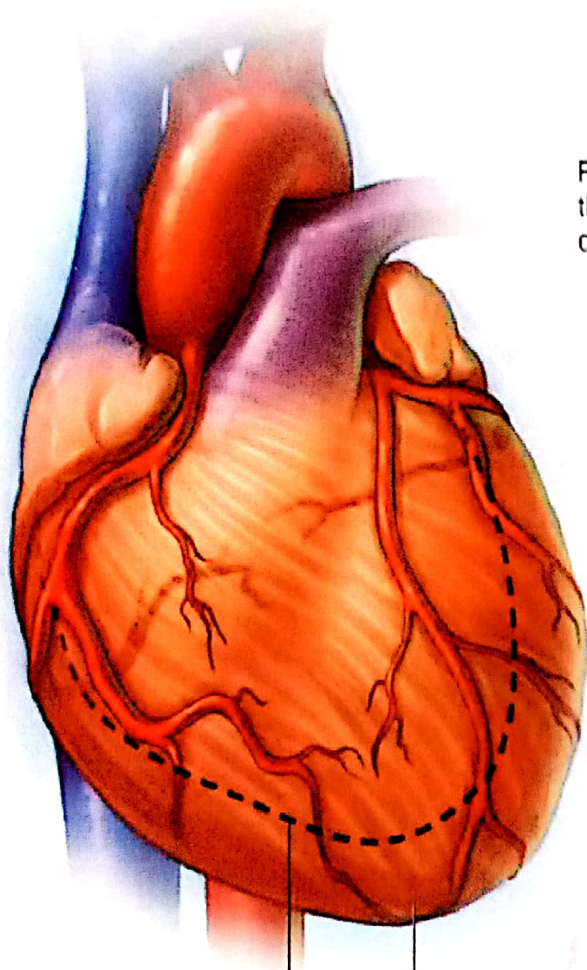
Many people with heart failure or weak heart muscle can lead normal and active lives. The reason is that they take care of themselves by improving their lifestyle and putting into practice some newer medical guidelines and embracing advance technologies & yoga.

In the following pages we will be discussing

1. Nature of the disease (warning signals)
2. Lifestyle modifications
3. Do's and Don'ts
4. Newer advancements
5. Yoga

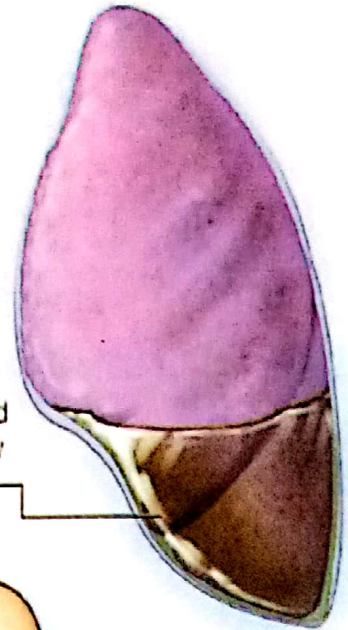
Heart failure

When the heart is unable to pump enough blood to meet the body's needs, blood can back up and cause fluid to build up in your lungs and legs.



Normal heart size

Enlarged heart



Fluids build up around the lung makes it very difficult to breathe.



Swollen, cyanotic feet

CONGESTIVE HEART FAILURE (CHF, HEART FAILURE)

WHAT IS CONGESTIVE HEART FAILURE...?

Congestive Heart Failure (CHF) does not mean that your heart is "failing".

Heart failure means that your heart is not pumping blood as well as it should.



As your heart's pumping action weakens, blood backs up into the vessels around the lungs causing leakage of fluid in the lungs. Fluid starts to build in your body and you may have symptoms of weakness, short of breathness and swelling of legs and feet. This is why heart failure is sometimes called "Congestive Heart Failure." Heart Failure is a serious illness that can affect how long you will live!

Your body has the ability to make up for heart failure for some time.

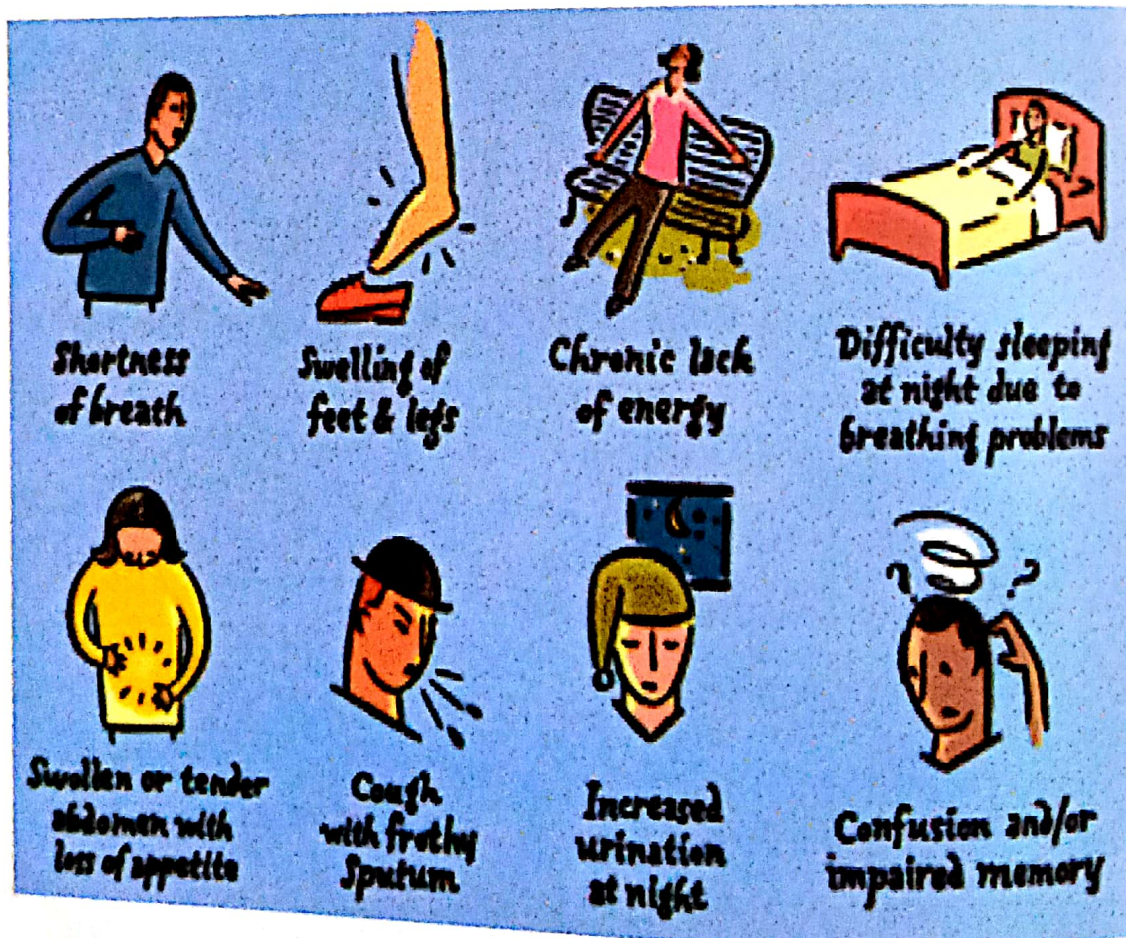
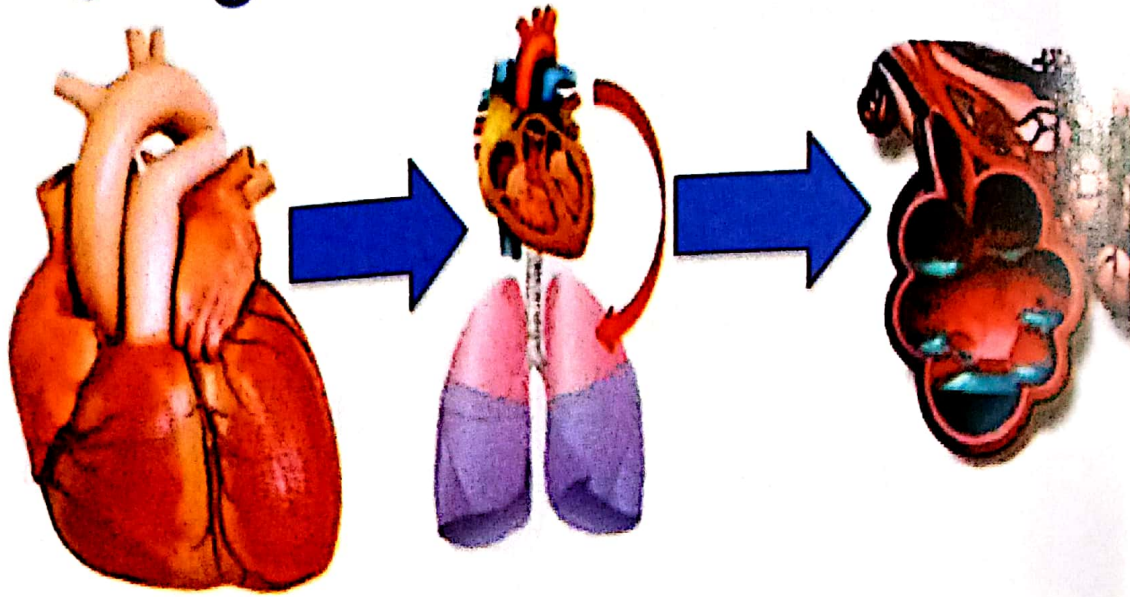
SYMPTOMS - WHEN HEART FAILURE IS SUSPECTED

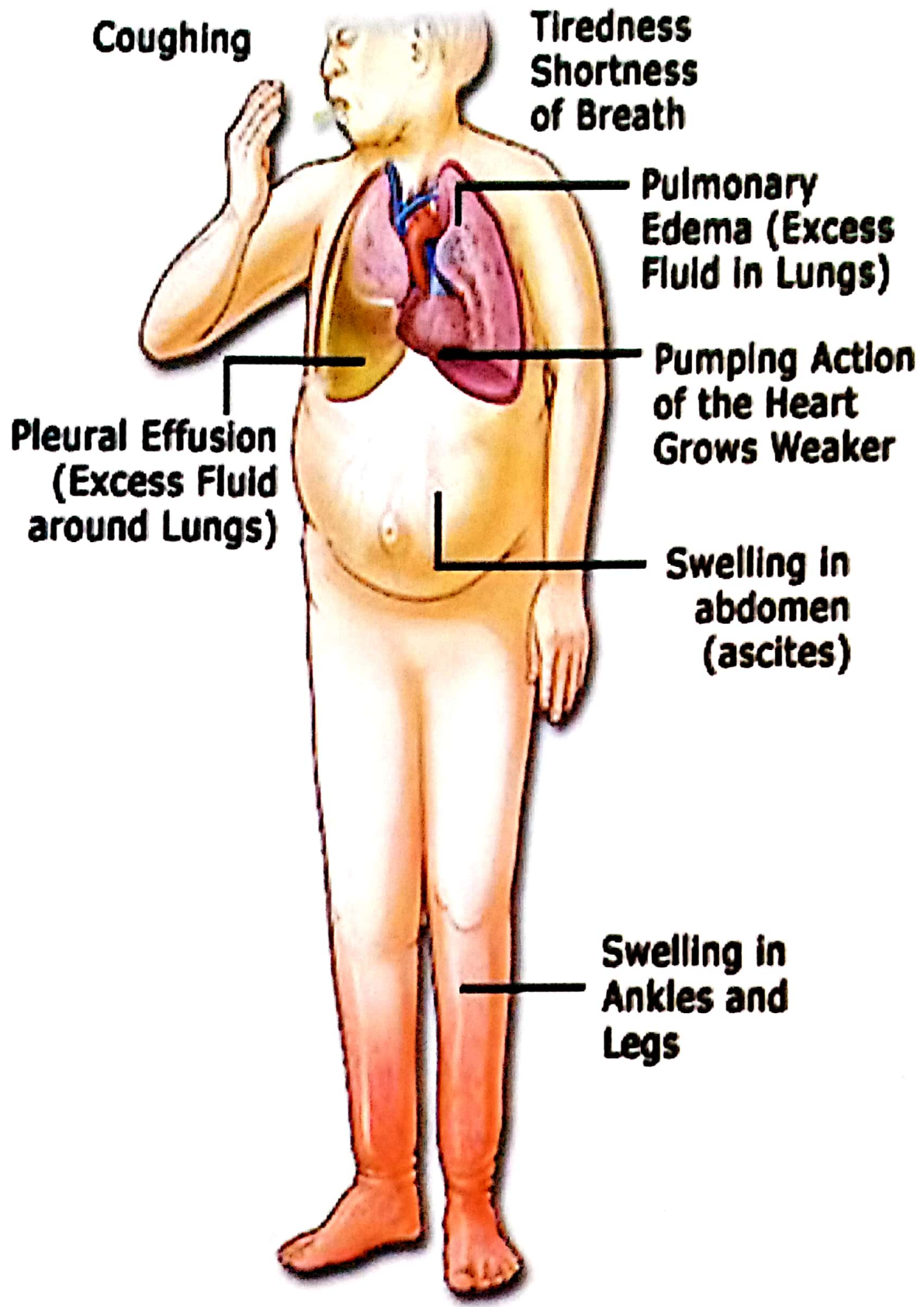
1. Breathlessness on exertion
2. Swelling on the feet
3. Breathlessness and bouts of cough during night hours and getting better on sitting.
(Feeling of air hunger)
4. Easily getting fatigued with minimal activity
5. History of valve problems

CONDITIONS CAUSING HEART FAILURE

1. Major Heart attack and repeated heart attacks
2. Uncontrolled high blood pressure
3. Diseases of the heart muscles (cardiomyopathies)
4. Problems of the valves of the heart (leaking valves etc)
5. Alcohol consumption
6. Viral disease
7. Diabetes, Kidney failure
8. Drugs used in cancer
9. Obesity
10. Drug addiction
11. In certain cases of pregnancy (rare)
12. Unknown cause

Congestive Heart Failure





WHAT IS EJECTION FRACTION ?

EF (Ejection fraction) is the percentage of blood that pumps out of the heart during each beat. It's also a measurement used to see how well heart is functioning. A low EF is not always associated with symptoms.

Your EF is an important health-related number. This number is very important for patients with weak heart muscles.

A low EF number can occur if your heart muscle has been damaged as a result of:

- Heart attack
- Long-term, uncontrolled blood pressure
- Heart valve problems
- Diseases of heart muscles like dilated cardiomyopathy

- **WHAT DOES YOUR EF NUMBER MEAN?**

50-75% Heart's pumping ability is **Normal**

36-49% Heart's pumping ability is **Below Normal**

35% and Below Heart's pumping ability is **Low**

WHAT SHOULD YOU DO?

- If your EF has been measured, ask for your EF number.
- If you have a low EF number (35% and below) ask your doctor if you should see a heart failure or heart rhythm specialist.

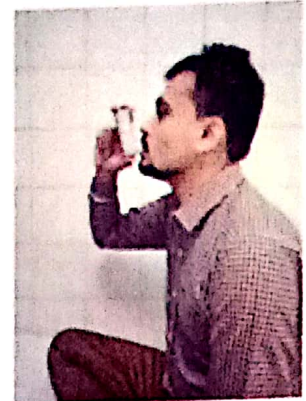
FACTORS WHICH WORSENS HEART FAILURE



High or uncontrolled Blood Pressure



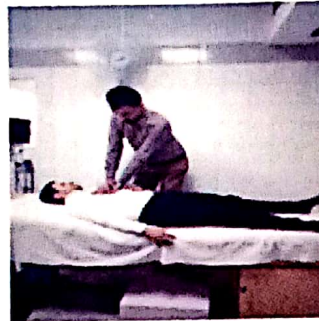
Irregular Heart Beat



Lung Disease



Eating too much Salt



Heart Attack!
Coronary Artery Disease,
Heart Valve Problems,
Birth Defects



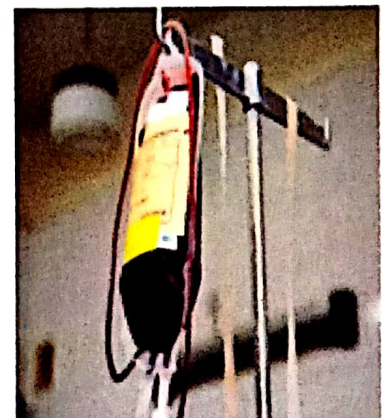
Diabetes



Drinking too much Alcohol or drug abuse



Infection



Anemia

BLOOD PRESSURE

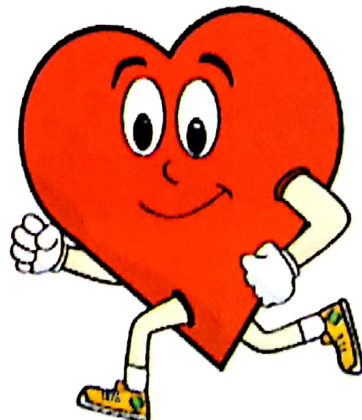


Many people with heart failure also have other medical conditions like high blood pressure (hypertension).

High blood pressure makes the heart work harder, so high blood pressure can make people with heart failure feel worse. Even uncontrolled hypertension can cause heart failure itself.

If you have high blood pressure and are taking medicines to keep it normal, be sure to take your medicines as instructed by your care provider.

American Heart Association defines High Blood Pressure in an adult as 130/80.



FLUID CONTROL

Your doctor may place you on Fluid Restrictions. This chart will help you to keep up with your fluid intake.

FLUID MEASUREMENTS

4 cups= 960 ml

2 cups= 480 ml

1 cup = 240 ml

ITEMS THAT COUNT AS FLUIDS

Water

Alcohol

Coffee

Fruit drink

Ice cream

Lassi

Milk

Cream

Tea

Soft drinks

Non-dairy creamer

Fruit juice

Vegetable juice

HINTS FOR FLUID CONTROL

1. Eat allowed fruits and vegetables ice cold between meals.
2. Try lemon wedges, sour hard candies, or chewing gum to stimulate saliva and moisten a dry mouth.
3. Rinse your mouth with mouth wash.
4. Chew on ice cubes.
5. Use small cups and glasses for beverages.
6. Remember that 2 cups of retained fluid is equal to 1 lb of fluid weight gain.
7. Drink in sips instead of gulps.

HOW TO MONITOR YOUR DAY TO DAY PROGRESS AND WARNING SIGNALS



WEIGH YOURSELF EVERY DAY

1. To monitor your weight, you should weigh yourself every morning, on the same scale, wearing the same amount of clothing.

Remember that scales weigh differently.

2. Weigh yourself first thing in the morning and after you've gone to the bathroom.
3. Write down your weight every day.
4. Keep checking the accuracy of your weighing machine.

The best way to watch for fluid build up is to weigh yourself daily. You may gain fluid without noticing swelling.

DAILY WEIGHTS

Weigh yourself first thing every morning, after you have gone to the bathroom, on the same scale, wearing the same amount of clothing. Record your weight.

	Date	Weight	Feet Swollen	Short of Breath	More Tired	Persistent Cough
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						

	Date	Weight	Feet Swollen	Short of Breath	More Tired	Persistent Cough
Sunday						
Monday						
Tuesday						
Wednesday						
Thursday						
Friday						
Saturday						

FOLLOW A LOW SODIUM DIET

- Salt (sodium) can make your body hold on to too much water and make your heart work harder.
- A moderate 2 gram (2000 mg) per day diet restriction is essential
- One teaspoon of table salt contains about 2300 mg of sodium!
- High amounts of sodium are found in many canned, pickled, convenience, packaged, processed and - fast foods.
- Remember, salt is an acquired taste and it can be unlearned.
- Be patient and learn to enjoy new flavors in foods.
- In Kidney failure patients should avoid high potassium diet
- Normal sodium diet should be taken in humid conditions.

Salt Substitutes:

Before using salt substitutes (NuSalt or No Salt), you should consult with your primary doctor.

You should discuss use of potassium chloride (or KCl) as a salt substitute with your primary healthcare provider before using it. This compound may act as a strong drug for some people. On the other hand, herb seasonings can be enjoyed by almost everyone.

CHOOSE THESE FOODS

Fruits and Vegetables



All fresh, frozen or canned
fruit Juice

Fresh or plain frozen vegetables
Dried beans and peas made
without salt

Whole Wheat & Unpolished Rice



Bread, rolls, bagels
Cereals (hot and cold- check label)

Pasta (cooked without salt)
Unsalted crackers, unsalted
popcorn

Dairy



Milk (Non-fat or 1% fat), Non fat milk powder, Yogurt (Non-fat or low fat)
Condiments



Fresh or dried herbs and spices, Salt-free seasoning mixes
Vinegar, Pepper sauce, lemon or lime juice

Meat, Chicken, Turkey, Fish and Eggs



All fresh or frozen meat, poultry, fish, & shellfish ,Eggs
Low-sodium canned tuna

FOODS TO AVOID

Fried Meat, Chicken, Turkey



Anchovies, sardines
Canadian bacon
Chilli, canned or frozen
Corned beef
Ham
Hot dogs, hot links
Jerky



Lunch meats such as bologna, ham
pepperoni, pastrami
Pork & beans, ranch-style beans
Prepared meats such as canned or frozen
in sauce, cured, smoked or Kosher, Spam,
potted meat
Salt-pork, salt-jowls, Sausage,
Vienna sausage

Vegetables



Canned beans
Canned vegetables
Frozen vegetables with sauce



Pickled vegetables with sauce such
as olives, pickles, peppers, beets,
sauerkraut Tomato or V-8 juice

Breads and Starches



Biscuits (check label) Salted
crackers and pretzels
Flavoured rice, noodle or
potato mixes



Salted popcorn
Corn, potato, tortilla and snack chips
Pancake and waffle mixes



Other Foods



Chinese foods, Fast foods
and pizza Frozen entrees/
dinners, Hot pockets and potpies
Soup (canned or dried)



Ramen noodles, Gatorade and other sports
drinks, Pork rinds/skins, Processed cheese
such as American, Velveeta, cottage, pimento



NUTRITION MANAGEMENT OF CHF

Patient with long standing CHF are often under weight and complain of early satiety and poor appetite. The weight loss may in fact be greater than what is apparent because of fluid retention. So it is required-

1. Calories:- 1.2×1.5 gm/kg per day
2. Protein:- 1.2×1.5 gm/kg per day
 - o Soya products
 - o Peanut Butter
 - o Milk and milk products(Curd, Cheese)
 - o Nuts(Almonds, cashew nuts)
 - o Cereals(Wheat, rice, jowar, bajra)
 - o Pulses(Chana, Moong, Udad, Peas, Beans)
 - o Fish, Meat, Eggs
3. Vitamins/ minerals:- multivitamin every day
4. Supplements:- magnesium, calcium, iron, zinc
 - o Appetite and intake may be diminished not only because of illness but also because of treatment.
 - o A low calorie diet for patients who are overweight.
 - o Increase potassium intake for patients who are taking thiazide(potassium wasting), diuretics.

AVOID ALCOHOL

You should not drink alcohol at all. It damages heart cells and can further weaken your already-weak heart muscles.

Alcohol is not for people with heart failure. This includes beer or wine as well as hard liquor.

It is very important that you honestly discuss how much you have been drinking with your doctor or your clinic nurse. They can help you with tips and services to stop drinking.



STOP SMOKING

The most important thing for you to do is to stop smoking or using any other tobacco.

Using tobacco can make heart failure worse, increase chances of heart attack and stroke. It can worsen the lung condition and many useful medicines for heart disease may not be tolerated.

Quitting is hard, but it is a part of staying alive!



HEART FAILURE MEDICINES



The main types of heart failure medications are:

1. ACE (angiotensin-converting enzyme) inhibitors lower blood pressure and decrease strain on the heart. This makes it easier for the heart to pump
2. Beta Blockers help lower blood pressure and slow your heart rate & improving your EF.
3. Digoxin helps your heart pump with more strength. This helps your heart pump blood to the rest of your body.
4. Isorbide dinitrate/hydralazine helps lower blood pressure and decreases how hard the heart has to pump.
5. Diuretics (water pills) help rid your body of excess water. This can help rid your body of edema (swelling). Having less fluid to pump means your heart doesn't have to work as hard. Some diuretics make your body lose a mineral called potassium. Your doctor will tell you if you need to take supplements or eat more foods high in potassium.

6. Some new drugs such as ARNI is a new drug class and therefore new to heart failure treatment. After ingestion, the medication induces two main effects. The first effect is similar to the effect of ACEs and ARBs. The other effect strengthens a hormonal system regulated by the heart muscle itself, which releases BNP. BNP or Brain Natriuretic Peptide has multiple effects such as vasodilatation of blood vessels, natriuresis, which means increased salt elimination by the kidney as well as an increased diuresis.

7. Ivabradine:- It is used in combination with beta blockers in people with heart failure with LVEF lower than 35 percent inadequately controlled by beta blockers alone and whose heart rate exceeds 70 beats per minute. In people not sufficiently managed with beta blockers for their heart failure adding ivabradine decreases the risk of hospitalization for heart failure

If you are taking all of your medicines and feel worse be sure to tell your doctor

YOUR MEDICATION



The medicines your doctor has prescribed for you cannot make your CHF go away, but they can make you much more comfortable and help you manage your CHF. Here are some important tips about your medications:

- Take all your medications as directed by your doctor
- Keep medicine in original containers and store as directed.
- Take the right amount of medications at the same time each day. A pill organizer or a written schedule may help you to remember when to take your medicine.
- Try to learn what each medicine does and what it looks like. Remember some medicines may change shape or colour. Clarify any changes with your pharmacist.
- Make sure you have enough of all your medicines. Do not run out or try to make a month's supply last longer.

- Carry a list of your medicines in your wallet or purse. Use the Universal Medication Form.
- Tell your doctor and pharmacist about all medicines you take – over-the-counter medicines, home remedies, herbals, vitamins, and prescribed medications.
- Take your medicine bottles with you to all doctor appointments and to the hospital.
- Do not skip or increase the doses of your medicine unless ordered by your doctor.
- If you miss a dose, do not take it with the next dose.
- If you cannot take your medicines for any reason, call your doctor immediately.
- Clarify any questions about your medicines with your doctor, nurse, or pharmacist.
- Do not take any over-the-counter medicines, herbals, or home remedies without asking your doctor or pharmacist. They may interfere with your prescribed medicine.
- Get your medicine from only one pharmacy.

MEDICATION TO AVOID

- There are certain medicines which can worsen heart failure pill for pain except acetaminophen. Such as Paracetamol, Dolo or Crocin.

Medications to avoid :

GENERIC

Ibuprofen	Nimesulide
Naproxen	Piroxicam
Diclofenac	Nasal Drops

- Do not take any herbal medications without the approval of your doctor or pharmacist.
- Do not take any aspirin in addition to what is prescribed by your doctor.
- In high grade fever, vomiting or diarrhea stop heart failure medicines and immediately consult your consultant.

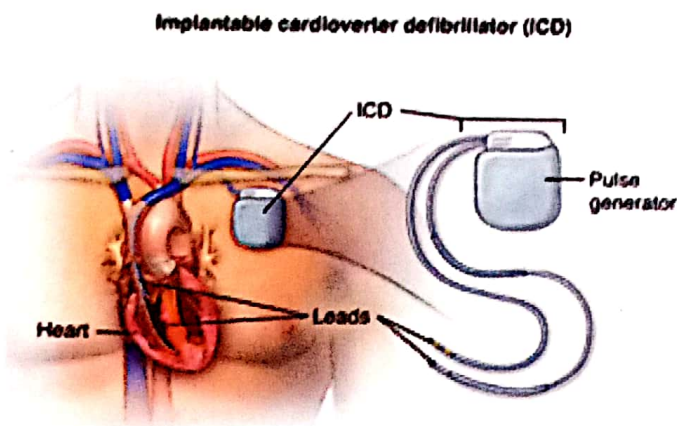
NSAIDs **Stroke &**
Cause **Heart Disease**



NEW IN HEART FAILURE

1. Do not lose hope, be optimistic WE ARE HERE.
2. There are some new drugs which can improve your heart function.
3. New devices like pacemakers are there to improve heart function, such as

ICD

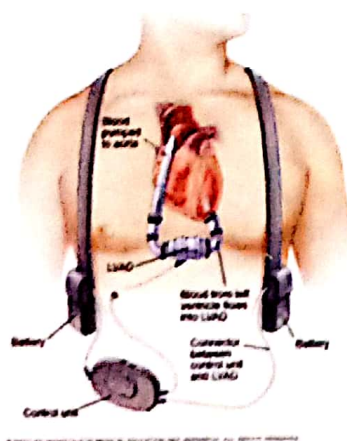


CRT-D



4. Other things are possible like :-

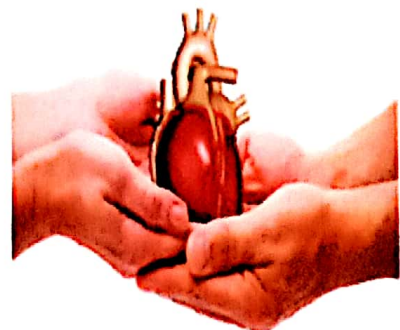
Left ventricular assist device



Artificial heart pump



Heart transplant



GET REGULAR EXERCISE

We used to believe that people with heart failure should rest, rest, rest. Research shows that you can exercise safely. We know that regular exercise is essential. Exercise reduces the chances of recurrent admissions and increases the capacity to work. It increases happy hormones to fight the disease. Don't get affected by the disease because prolong bed rest carries baggage of multiple problems. Remember to talk to your primary healthcare provider before starting an exercise program.

Benefits of exercise:

- Increases physical endurance (increase walking capacity)
- Sleep better, breathe better
- Reduces weight
- Increase confidence
- Improves heart pumping
- Improves lung capacity
- Fight stress
- Joy & Happiness

ACTIVITY LEVELS AND GUIDELINES

Plan activities around two to three set (20-30 minute).

Do not overload or over work your heart.

If you experience one of the following symptoms during activities

- Any change in your breathing (shortness of breath)
- Chest Discomfort
- Pain
- Dizziness
- Fast Heart Beat (flutter, skips, palpitations)
- Extreme Weakness or Tiredness

STOP AND REST:

If after rest, symptoms do not go away, call your doctor or go to the emergency room.

- Avoid activities in extreme hot or cold outdoor temperatures or when you do not feel well.
- Avoid tasks that require heavy lifting.
- Check with your doctor before starting an exercise program.
- Exercise regularly following your doctor's guidelines. Short walks are a good way to begin your exercise program.

HOW TO CHECK YOUR PULSE

1. Sit down and relax for five minutes before taking a resting pulse.
2. Gently place your second, third and fourth fingers over the radial artery (**located on the inside of your wrist just below the base of your thumb**) to feel a pulsation in your wrist. Never use your thumb to feel a pulse.
3. Count your pulse for 15 seconds and multiply by 4, or you may count your pulse for 60 seconds to get your heart rate. You may record this in your Exercise Log Book.
4. If your pulse is above your maximum allowed heart rate (target zone), exercise a little easier, to slow down pulse. If your pulse is within the maximum allowed heart rate, you are doing fine.
5. Once you are exercising within your maximum allowed heart rate, you should check your pulse at least once each week during the 1st three months and periodically thereafter.



The best thing any person exercising can do is monitor their pulse. Your pulse is a great source of information, often warning you when your body needs to take things easy.

- Ask your doctor about a Cardiac Rehabilitation Program.
- Activities you may enjoy are bicycling, fishing, walking, gardening, swimming, aerobics, and many more.

**Don't exercise beyond your Recommendations.
Remember, "More is not always better".**

YOGA & HEART FAILURE

Yoga has shown very positive effect on various heart conditions. In heart failure, Pranayam and complete relaxation techniques will help control the heart rate, reduce burden on the heart as well as reduce production of dangerous chemicals from the brain. Yoga also releases happy hormones.

EXERCISE TIPS

Do's:

- Wear comfortable clothes and soft sole shoes with laces or sneakers.
- Start slowly. Gradually build up to 30 minutes of activity, 3-5 days per week. If you are unable to exercise for 30 minutes straight, try three 10-minute sessions.

Exercise at the same time of day so it becomes a regular part of your lifestyle.

- Exercise with a friend.

Don'ts:

- Don't get discouraged if you have to stop due to problems. Once your doctor has given you permission to continue exercise, gradually start again and work up to your old pace.
- Don't do exercises that require holding your breath, bearing down or sudden bursts of energy.
- Don't exercise right after meals or extreme temperatures.
- ***Don't exert too much. Don't test yourself in the beginning, Regularity and slowly building up the stamina is the mantra in Heart Failure.***

WARM UPS & COOL DOWNS

Warm-ups : 5-10 minutes

Warm-up is exercising at a slower rate. Warm-ups will warm the muscles and increase the blood flow. Doing exercises at a slower rate is very important in helping to prevent injury. Walk slowly for 5 minutes before beginning to jog, ride a bike, sprint walk, or use a treadmill, etc.

Cool-down: 5 minutes

After exercising, it is important to reduce heart rate and blood pressure slowly by exercising at a slower rate. Exercise slowly for about 5 minutes to help assist blood flow back to the heart and stretch the muscles you used during your workout.

EXAMPLE OF EXERCISE

DEEP BREATHING



Warm Up: Deep Breathing

Directions: Sitting with arms to side. Take slow deep breath.

Number of times to perform exercise:

Repeat: Take 10 deep breaths

SHOULDER SHRUGS



Directions: Sitting, move shoulders up toward ear lobes.

Hold 5 seconds and return to starting position;
relax for 3 seconds.

Number of times to perform exercise

Starting number – 5; increase per week – 5;

Maximum number - 30

ARM CIRCLES



Do Not Perform This Exercise For The 1st 6 weeks Following Chest Surgery Because It May Place A Strain On Your Incision!

Directions: Standing or sitting, circle arms, Reverse directions.

Number of times to perform exercise:

Starting number – 5; increase per week- 5;

Maximum number – 30

RAISING BENT ARMS



Directions: Sitting with hands in lap,

Raise arms to head and return to lap.

Repeat – do not extend arms behind head.

Number of times to perform exercise:

Starting number – 5; increase by 5 per week

Maximum number – 30

KNEE BENDS



Directions: Raise your knee toward your Chest and then lower it to the floor. Do not hold leg up.

Number of times to perform exercise:

Starting number – 3; increase by 3 knee bends per Week;
maximum number – 18

LEG LIFTS



Directions: Straighten your knee and then return the foot to the floor.

Number of times to perform exercise:

Starting number - 3; increase by 3 leg lifts per week;
maximum number - 18

IMAGINARY ROPE CLIMB



Do Not Perform This Exercise For The 1st 6 weeks Following Chest Surgery Because It May Place A Strain On Your Incision!

Directions: Place hand over hand as if you are climbing a rope

Number of times to perform

Exercise: Starting number – 5; increase per week – 5;
maximum number – 30

COOL DOWN: WALKING



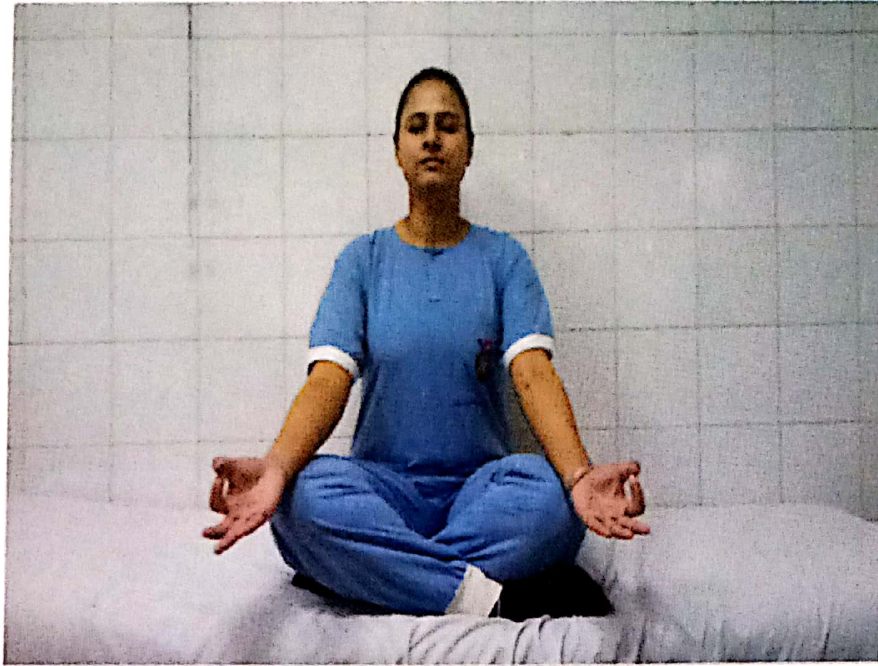
Directions: Walk at slower pace, while swinging arms until your heart rate reaches what it was before you began walking.

ANULOM VILOM PRANAYAMA – ALTERNATE NOSTRIL BREATHING



1. Sit in a steady asana. *Padmasana* is most suited for the practice. *Siddhasana* and *Vajrasana* may also be used.
2. Close the right nostril with your thumb and draw in air from the left nostril. Do this as slowly as you can, till your lungs are full.
3. Now release the thumb and close the left nostril with your ring finger. Then breathe out slowly through the right nostril.
4. Next take the air in from the right nostril and then release it through the left nostril (after closing the right nostril with the thumb).
5. This is one round of *Anulom Vilom* Pranayama.
6. Start with 5 rounds and increase it up to 20 rounds in one sitting.
7. Also, the duration of inhalation can start from 2 seconds and go up to 20 seconds or even beyond.

OM CHANTING



1. Sit in any comfortable pose with your spine erect.
2. Close your eyes and relax your body.
3. Inhale slowly and deeply through your nose.
4. While exhaling chant "M" loudly and prolonged with lips closed.
5. A deep, long and continuous sound should vibrate all over the body. Do not push your breath beyond the comfort point.

SAVASANA



1. Lie in the supine position. Keep your spine and neck straight, without any stiffness. Close your eyes.
2. Focus your complete attention on each part of your body one by one. Allow that particular part to relax and feel it getting relaxed.

WHEN SHOULD I CONSULT MY CONSULTANT?

You may be ok with the medication prescribed by your doctor but sometime a patient needs to consult his/her doctor before the appointment.



1. Weight gain of 0.75 -1 kilogram in 1 day or 2 kilograms in 5 days.
2. Shortness of breath that is worse or shortness of breath at rest and your walk distance is reduced.
3. Swelling in legs, feet, hands, or abdomen.
4. Feeling tired all the time, which keeps you away from your normal activities.
5. Bloating or full feeling in your stomach, loss of appetite, nausea.
6. Dry or wet hacking cough.
7. Harder to breathe while lying down or unable to rest. You may notice you need to prop up on more pillows for comfort.
8. Getting dizziness or blackouts on standing from sitting posture.

WHEN TO CALL 108 -SYMPTOMS



1. Chest discomfort or pain that lasts more than 15 minutes and is not any better after resting or taking nitro-glycerine!
2. Unable to catch your breath!
3. Fainting or passing out!
4. Fast or irregular heartbeat!
5. Coughing up pink or white foamy sputum!
6. Feeling dizzy or lightheaded or losing consciousness

THINGS I CAN DO TO HELP ME LIVE WITH CONGESTIVE HEART FAILURE

- **Weigh Daily!**
- **Monitor My Blood Pressure!**
- **Exercise!**
- **Eat a heart healthy diet!**
- **Watch my fluid intake as ordered!**
- **Watch My Cholesterol!**
- **Avoid Tobacco Smoke and Alcohol!**
- **Know Signs & Symptoms To Report!**
- **Never mis my medications!!!!**
- **Avoid NSAID'S**
- **Vaccination against Influenza and Pneumococcal**



Pneumococcal Vaccine
Better Prevention By Vaccinating For High Risk People

FAMILY RESPONSIBILITIES



Your family is a part of your health care team. Family members should monitor patient's condition. They should know when to report new symptoms, or a change in symptoms, to your doctor.

Your family should also be aware of the importance of exercise, medication compliance, and dietary restrictions.

A supporting family is the best healer.

IMPORTANT TIP'S

Don't put water in the mouth when patient is drowsy, out of breath or unconscious as it can go into the lungs.

Remember the emergency number of your doctor/hospital.

