

- ### Causes of Heart Failure
- Heart-related “plumbing” conditions
- Heart attack
  - Long-term high blood pressure
  - Heart valve problems

- ### Causes of Heart Failure
- Other causes:**
- Viral infection
  - Heart problems you are born with
  - Family history of heart failure
  - Long-term alcohol abuse
  - Chemotherapy

### Who Gets Heart Failure

Affects men and women equally

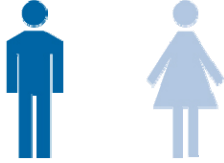
Mortality risk between men and women is similar

### Who Gets Heart Failure

Women with heart failure tend to be older than men with heart failure

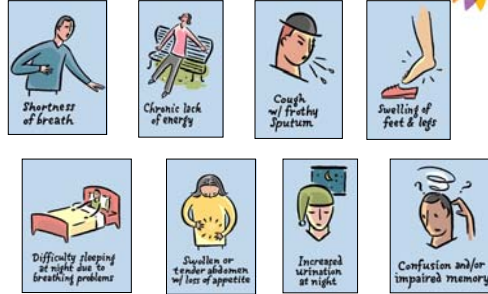
Women with heart failure more often have a history of high blood pressure

## Who Gets Heart Failure



Men with heart failure more often have a history of heart attack and/or blockages in the arteries

## Symptoms of Heart Failure



## How is Heart Failure Diagnosed



Medical history and physical examination

Tests

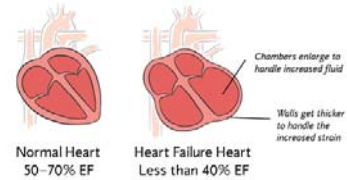
- Chest X-ray
- Blood tests
- Electrical tracing of heart (Electrocardiogram or "ECG")
- Ultrasound of heart (Echocardiogram or "Echo")
- X-ray of the inside of blood vessels (Angiogram)

## A Key Indicator for Diagnosing Heart Failure



Ejection Fraction (EF)

Ejection Fraction (EF) is the percentage of blood that is pumped out of your heart during each beat



## Four Classes of Heart Failure



## Symptoms



Class I	Class II	Class III	Class IV
No symptoms	Mild symptoms	Noticeable limitations in ability to exercise or participate in mildly strenuous activities	Unable to do any physical activity without discomfort
Can perform ordinary activities without any limitations	Occasional swelling	Somewhat limited in ability to exercise or do other strenuous activities	Symptoms at rest
	No symptoms at rest	Comfortable only at rest	

## Treating Heart Failure



There is currently no cure for Heart Failure, BUT early diagnosis and proper treatment including medical management and self care strategies can:

- Slow the progression of the disease
- Keep you out of hospital
- Save your life!

## Treatments



Class I	Class II	Class III	Class IV
<ul style="list-style-type: none"> <li>•Medications</li> <li>•Self-care</li> </ul>	<ul style="list-style-type: none"> <li>•Medications</li> <li>•Self-care</li> <li>•Heart devices (for SCA)</li> </ul>	<ul style="list-style-type: none"> <li>•Medications</li> <li>•Self-care</li> <li>•Heart devices</li> <li>•Surgery</li> </ul>	<ul style="list-style-type: none"> <li>•Medications</li> <li>•Self-care</li> <li>•Heart devices</li> <li>•Surgery</li> <li>•Rare cases: Transplant</li> </ul>

## Heart Failure Treatments: Medications

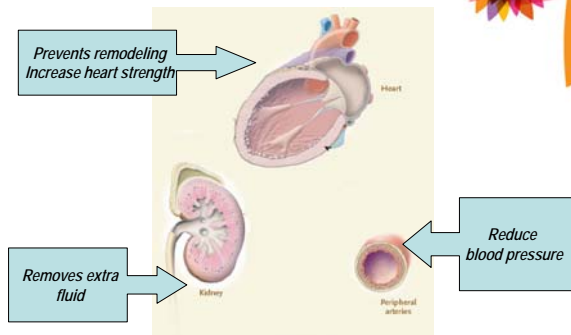


Medication is a key treatment modality in heart failure

Combination of several medications is commonly used

Medication regimens are individualized and tailored to each individual patient

## How Medications Work in Heart Failure



## Medications In Heart Failure



Angiotensin Converting Enzyme Inhibitors (ACEI)

- ramipril (Altace)
- enalapril (Vasotec)
- captopril (Capoten)
- perindopril (Coversyl)
- trandolopril (Mavik)

## Medications In Heart Failure



Angiotensin Receptor Blockers (ARBs)

- candesartan (Atacand)
- losartan (Cozaar)
- valsartan (Diovan)
- irbesartan (Avapro)
- telmisartan (Micardis)

### ACEI and ARBs

Prevents remodeling

Reduce blood pressure

Heart

Kidney

Peripheral arteries

OWN YOUR HEALTH

### Medications In Heart Failure

#### Beta Blockers

- metoprolol (Lopressor, Betabloc)
- bisoprolol (Monocor)
- carvedilol (Coreg)

Prevents remodeling  
Lowers heart rate

Lowers BP

Heart

Kidney

Peripheral arteries

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### Medications In Heart Failure

#### Diuretics

- furosemide (Lasix)
- bumetanide (Burinex)
- spironolactone (Aldactone)
- metolazone (Zaroxolyn)

Prevents remodeling  
Lowers heart rate

Removes extra fluid

Heart

Kidney

Peripheral arteries

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### Medications In Heart Failure

#### Digoxin

digoxin (Lanoxin)

Increase heart strength

Heart

Kidney

Peripheral arteries

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### Why am I on so many pills for heart failure?

1980's

2000's

digoxin  
furosemide (Lasix)

beta blocker  
ACEI / ARB  
furosemide (Lasix)  
+/- digoxin  
+/- spironolactone  
+/- hydralazine  
+NTG

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### Why am I on so many pills ?

<u>Heart Failure</u>	<u>Coronary Artery Disease</u>	<u>Diabetes</u>
beta blocker	Aspirin	Metformin
ACEI / ARB	Statins (cholesterol lowering medication)	Glyburide
furosemide (Lasix)	Other blood pressure lowering medications	Insulin
+/- digoxin	etc.	etc.
+/- spironolactone		
+/- hydralazine		
+NTG		

Many Medications!

OWN YOUR HEALTH



## Other Treatments for Heart Failure

## Surgery



Surgery may be an option for some heart failure patients depending on the cause of their disease.

Condition	Type of Surgery
•Coronary artery disease	•Coronary bypass •Angioplasty & stents
•Leaky heart valves	•Valve repair or replacement by open heart surgery or newer methods of percutaneous insertion



## Surgery Continued...

Condition	Type of Surgery
Severe Heart Failure	<p><b>Ventricular assist devices (VADs):</b> a small but powerful mechanical heart pump that takes over the pumping action of the heart</p> <p><b>Transplant:</b> must be sick enough to need one but also well enough to tolerate the procedure, guidelines on appropriateness</p>



## VAD: The Future of HF Therapy?



## Heart Devices



<p><b>Pacemaker</b></p> <ul style="list-style-type: none"> <li>• Treats a slow heart rate</li> </ul>	<p><b>Implantable Defibrillator</b></p> <ul style="list-style-type: none"> <li>• Treats a fast or slow heart rate</li> </ul>	<p><b>Heart Failure Pacemaker</b></p> <ul style="list-style-type: none"> <li>• Treats heart pumping function and slow heart rate</li> </ul>	<p><b>Combination Heart Failure Pacemaker &amp; Defibrillator</b></p> <ul style="list-style-type: none"> <li>• Combines all three treatments</li> <li>•Some devices can monitor fluid levels in your chest</li> </ul>
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## Self Care Strategies for Heart Failure

## Heart Failure Treatments: Self-care



You can take an active part in your care:

- ✓ Take all of your medications regularly as directed
- ✓ Check your weight daily
- ✓ Make healthy lifestyle changes
- ✓ Be Active
- ✓ Monitor and track your symptoms

## Take all of your medications regularly as directed



- Take medication even when feeling well
- Remember to take your pills
- Dealing with side effects
- Medicines to avoid
- Alternative or herbal therapies
- Cost



## Check your weight daily



- AM weight, same time, same scale, same place
- Report 2lbs/day for 2 days in a row OR 5lbs in a week
- Treat weight gain before you develop swelling or other symptoms
- “Dry” weight



## Fluid restriction



1.5-2.0 L fluids per day

= 1,500-2,000 ml

= 6-8 cups

= 48-64 ounces



More restrictive if having severe fluid retention

e.g. 1.0-1.5 L per day

## What is considered fluid?



Anything that is liquid at room temperature...



## What about fruit?



Only count this as fluid if you have more than 4 servings per day

1 medium fruit (e.g. apple, orange, tomato) (size of tennis ball)


= ½ cup fluid

1 cup canned or bite-sized fruit (e.g. applesauce, melons, papaya, berries, grapes)


= 1 cup fluid

Bananas and dried fruits do not have much fluid


## Tips to reduce thirst




- Eat less salt
- Avoid alcohol
- Control blood sugar level
- Snack on fresh vegetables
- Frozen grapes and berries
- Wedge of lemon
- Sugarless gum/candy
- Brush teeth



## Sodium (salt) restriction




Limit to 2,000 mg sodium per day




1 teaspoon salt = 2,300 mg sodium

Do not use salt shaker (~20%)

Limit processed and convenience foods (~80%)



## Label Reading for Sodium Levels



Nutrition Facts		Valeur nutritive	
Per 1 bowl (300 g) / Pour 1 bol (300 g)		Amount	% Daily Value
		Amount	% valeur quotidienne
Calories / Calories	440		
Fat / Lipides	19 g		29 %
Saturated / Saturés	4 g		21 %
+ Trans / Trans	0.2 g		
Cholesterol / Cholestérol	35 mg		
Sodium / Sodium	860 mg		36 %
Carbohydrate / Glucides	53 g		18 %
Fibre / Fibres	4 g		16 %
Sugars / Sucres	6 g		
Protein / Protéines	15 g		
Vitamin A / Vitamine A	45 %		
Vitamin C / Vitamine C	4 %		
Calcium / Calcium	20 %		
Iron / Fer	20 %		

Step 1: Check the portion size

Step 2: Check the 'mg' of sodium

Step 3: Check the % Daily Value

Aim for 200 mg sodium or less OR 8% Daily Value or less

## Low-sodium seasoning



- Herbs and spices:** Basil, rosemary, pepper, chili powder, curry powder, garlic, ginger, onion, lemon juice...
- Commercial low-sodium seasonings** (e.g. Mrs. Dash®)
- Homemade seasoning and marinades**

**Avoid salt substitutes** e.g. No Salt®



## Choosing low-sodium foods




Limit...



Instead, choose...



## Physical Activity



- Encouraged for all stable HF patients
- Exercise allows the body to become more efficient in its use of oxygen
- Helps people feel better, have less difficulty with activities and reduces some symptoms of SOB and fatigue
- Goal: 10-20 min most days of the week
- Walking is one of the best exercises
- Consider a Cardiac Rehabilitation program

## Tips for Physical Activity



- Start with very short walks on flat surfaces
- Gradually increase the number of minutes each week
- Walk with someone in a familiar area
- Pace yourself so that you can speak when walking
- Avoid exercising outside if hot/humid or cold/windy

**STOP** if weak, dizzy, short of breath, heart racing, nausea, vomiting, or chest pain

## Other Lifestyle Changes



- Quit smoking - Smoking can damage blood vessels and make the heart beat faster
- Reduce or eliminate alcohol - Alcohol can weaken an already damaged heart
- Influenza and Pneumococcal vaccinations
- Be an active and informed participant
- Record progress and report changes in symptoms

## Monitor and track your symptoms



## Self Care Strategies



By doing the following, you can take an active role in your health:

- ✓ Taking medications as prescribed
- ✓ Daily weights
- ✓ Fluid and Sodium restriction
- ✓ Daily Physical Activity
- ✓ Healthy lifestyle changes
- ✓ Monitoring symptoms

## Questions?

