What You Need To Know About Heart Disease - Dr. Davidicus Wong

How does the heart work?

The heart is a four-chamber pump. Each side has a smaller ATRIUM and a larger VENTRICLE.
The RIGHT ATRIUM receives blood from the rest of the body through the venous system and pumps blood to the RIGHT VENTRICLE which pumps blood to the circulation of the LUNGS (where blood is loaded with oxygen).
The LEFT ATRIUM receives oxygen-rich blood from the LUNGS and pumps it into the LEFT VENTRICLE which pumps blood through the arterial system to the rest of the body.
These four chambers of the heart pump blood in an orderly fashion because of its built in pacemaker, and the electrical signal is conducted through the heart muscle

4 Major Types of Heart Disease

1. *Coronary Artery Disease*
2. *Valvular Heart Disease*
3. *Arrythmias*
4. *Heart Failure*

1. CORONARY ARTERY DISEASE

The coronary arteries are the blood vessels that deliver oxygen-rich blood to the heart muscle.
When a coronary artery is **completely blocked**, *the area of heart muscle downstream is starved of blood – and dies. The result:* ***a heart attack****.*
When a coronary artery is **partially blocked**, *the area of heart muscle downstream receives less blood than it needs. The result:* ***ischemia*** *(decreased blood flow) and* ***angina*** *(chest pain).*

The Symptoms of Angina (myocardial ischemia or decreased blood flow to heart muscle)

Chest (throat or arm) pain or pressure
worsened by anxiety or physical activity
(Both increase heart rate)

Atherosclerosis (narrowing of arteries) can affect any part of the body

- *Cerebral ischemia (strokes, TIAs)*
- *Retinal artery occlusion (blindness)*
- *Peripheral vascular disease (claudication – leg pain with walking, amputations)*
- *Kidney failure*
- *Erectile dysfunction*

Other Symptoms of Atherosclerosis

- *Calf pain with walking (claudication)*
- *Abdominal pain with exertion or eating (mesenteric ischemia)*
- *Both are examples of the pain of ischemia (lack of blood flow)*

The Classic Symptoms of an MI (myocardial infarction or heart attack)

Chest (throat, arm) pain or pressure
- often, but not always, a squeezing pain
Nausea (stomach upset)
Sweating
Difficulty breathing

Silent Ischemia or Heart Attacks

Some people may have a heart attack or ischemia that is "silent" or "atypical"
This is more common (1) in women and (2) with diabetes

Heart Attack Symptoms in Men

- *Chest pain or discomfort*
- *Rapid or irregular heart beat*
- *Feeling dizzy, faint or lightheaded*
- *Cold sweat*
- *Stomach discomfort*
- *Shortness of breath*

Heart Attack Symptoms in Women

- *Chest pressure*
- *Extreme fatigue for several days*
- *Anxiety and disturbed sleep*
- *Back, arm, neck or jaw pain*
- *Nausea, stomach upset*
- *Shortness of breath*

If you suspect a heart attack, don't delay: Call 911

Risk Factors for Atherosclerosis

1. ***High Blood Pressure*** *- over 140/90*

Adults should be screened annually. Treated with diet, exercise, medication; limiting sodium and alcohol

2. ***Diabetes*** *- screened with Hb a1c;*
   People with established diabetes are considered at high risk (over 20% risk for a heart attack over 10 years).
3. ***High Cholesterol*** *- treated with diet, exercise and medications*
4. ***Family History*** *- 1st degree relatives with angina or heart attacks under age 65*
5. ***Smoking*** *Quitnow.ca*

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Tests for Coronary Artery Disease

- *EKG (ECG, electrocardiogram)*
- *Exercise Treadmill Test (ETT or stress test) – about 70% sensitive in detecting ischemia*
- *MIBI (nuclear stress test) – over 90% sensitive*
- *CT angiogram (CT scan with dye injected into arteries)*
- *Angiogram (X-rays with dye injected into the arteries; the gold standard)*

The Treatment of Coronary Artery Disease

- *Angioplasty (stents)*
- *Coronary Artery Bypass Graft*
- *Medications*
- *Strict risk factor management (BP, diabetes, cholesterol, smoking)*

Look into the Healthy Heart cardiac rehab programs in our community.

2. VALVULAR HEART DISEASE

The heart has four valves that allow one-way flow between atria and ventricles and through the aortic and pulmonary arteries.

*These valves may be narrowed (**stenosis**) or leaky (**regurgitation**).*

The symptoms include chest pain, fatigue and shortness of breath with activity.

*The doctor may hear **murmurs** with the stethoscope. The diagnosis is confirmed with an **echocardiogram** (a specialized ultrasound to assess the flow of blood through the valves).*

***Treatment** includes monitoring with periodic echocardiograms and surgery if required.*

*Some patients with certain types of valvular disease require **prophylactic antibiotics** before certain dental or surgical procedures (e.g. amoxicillin before dental work) to prevent bacteria infecting the abnormal valve.*

3. ARRYTHMIAS

Arrythmias are abnormalities in the rhythm of the heart beat or contractions.

Tachycardia – too fast
Bradycardia – too slow
Premature Beats – beats too early
Pauses – delayed beats

Ventricular Fibrillation

requires electrical defibrillation

Atrial Fibrillation

an irregularly irregular beat (no pattern) that increases the risk for strokes (blood thinners usually recommended)

***Anticoagulation** with blood thinners much stronger than aspirin (warfarin, Coumadin, Xarelto) reduces the risk for ischemic strokes from blood clots but increases the risk for hemorrhagic strokes and gastrointestinal bleeding.*

The recommendation of anticoagulation is based on individualized risk factor analysis weighing the relative risks and benefits
but all patients should be advised of the signs of bleeding and what to do.

Other Treatments for Arrythmias

Arrythmias may also be treated with rate-controlling medications, pacemakers and implanted automatic defibrillators.

The Symptoms of Arrythmias

include chest pain, shortness of breath, palpitations or fainting spells. However, many patients have no symptoms at all.

Tests for Arrythmias

- *EKG/ECG (electrocardiogram)*
- *Holter Monitor*
- *An Event Monitor*
- *ETT (exercise treadmill test)*
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4. HEART FAILURE

A decline in the pumping ability of the heart

The Causes of Heart Failure

The most common causes:

- *high blood pressure*
- *coronary atherosclerosis (narrowing of the blood vessels that supply the heart itself)*

Other causes:

- *irregular heart rhythms*
- *smoking*
- *obesity*
- *thyroid disease*

Less common causes:

- *viral infections*
- *medication side effects*
- *metabolic conditions (e.g. hemochromatosis or iron overload)*
- *excessive alcohol*

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The Symptoms of Heart Failure

- *Fatigue*
- *Shortness of breath on exertion*
- *Shortness of breath when lying flat*
- *Waking up at night short of breath*
- *Weight gain from fluid retention*
- *Edema (swelling of the feet and legs)*

The Treatment of Heart Failure

- *Controlling the causes (high blood pressure, atherosclerosis, diabetes)*
- *Low salt diet*
- *Avoiding excessive alcohol*
- *Quitting smoking*
- *Medications (e.g. beta blockers, ACE inhibitors, diuretics)*
- *Treating reversible causes (thyroid disease, anemia, arrythmias)*

Self-Care is the key to reducing risks and maintaining quality of life

- *Know how to self monitor (BP, daily weight)*
- *Understand your medications*
- *Have regular planned CDM (chronic disease management) visits with your family doctor*
- *Healthy daily habits (healthy eating and healthy physical activity)*
- *Participate in Healthy Heart programs*

The Four Foundations of Self-Care

1. **What you eat** (What you put into your body).
2. **What you do** (physical activity and rest).
3. **How you feel** (emotional wellbeing).
4. **How you connect** (healthy relationships).

Please check the Empowering Patients section of our Burnaby Division of Family Practice website for more information you need to maintain your best health.

PATIENT-DOCTOR COMMUNICATION
Know Your Medical History

- *Allergies*
- *Family History*
- *Hospitalizations, Major Illnesses, Operations, Procedures & Investigations*
- *Chronic Medical Conditions*
- *Medications*

The key information you need to know about any test, drug or other treatment

1. *Indication (**What is it for?**)*
2. *What are the **common risks** (or side effects)?*
3. *What are the **major risks** (or side effects)?*
4. *What are the **alternatives**?*
5. *"What would you recommend to your mother or child?"*

The Key Details of Every Drug

- *Indication (**What is it for?**)*
- *Potential **Interactions** (with food or other drugs)*
- ***Brand** name & **generic name***
- ***Dose** (e.g. mg) and **frequency** (e.g. twice daily)*

Three questions to ask doctors (if you're not sure we got it right)

1. *"What else could it be, doctor?"*
2. *"What's the worse thing it could be?"*
3. *"What would you recommend to your mother or child?"*

Your Positive Potential

I believe that we each have a unique potential in life, and it is our duty to realize that potential and help others achieve theirs.
With knowledge, engagement and support, we can manage chronic health conditions and live well.
For more on achieving your positive potential for health, davidicuswong.wordpress.com