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| A RESEARCH PROJECT ON CARDIOPULMONARY DISEASE |
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**CARDIOPULMONARY DISEASE**

These are range of serious disorders that affect the heart and the lungs

**CARDIOPULMONARY CONDITIONS**

They include:

1. **Cardiovascular disease**. These are groups of disorders that affects the heart and blood vessels and they include :
2. ***Coronary heart disease***. Is a disease affecting blood vessels supplying the heart muscles
3. ***Cerebrovascular disease***. Is a disease affecting blood vessels supplying the brain
4. ***Peripheral arterial diseases***. is a disease affecting blood vessels supplying the arms and the legs
5. ***Rheumatic heart disease***. This is the damage to the heart muscle and heart valves from rheumatic fever caused by streptococcal bacteria
6. ***Congenital heart disease***. This is birth defect that affects normal development and functioning of the heart caused by malformations of heart structure from birth
7. ***Deep vein thrombosis and pulmonary embolism***. This occurs when blood clots in the leg veins which can dislodge and move heart and lungs

**Signs and Symptoms of cardiovascular heart disease**

1. There is pain in the chest
2. A person’s legs becomes weak
3. There is breathlessness
4. There is fast or slow heartbeat or palpitations
5. A person feels dizzy, lightheaded or faint
6. There is fatigue
7. A person experiences Swollen limbs

**Treatment and prevention for cardiovascular heart disease**

1. One has to change his/her lifestyle in order to avoid getting the disease
2. Proper medication should be administered
3. Use of Stents
4. The affected has to undergo heart surgery
5. A device such as an ICD or pacemaker will be used to treat the disease

**Diagnosis for cardiovascular heart diseases**

1. Use of electrocardiogram
2. One has to exercise stress test
3. Use of X rays
4. One has to undergo blood tests
5. One has to undergo MRI scans
6. One has to undergo Radionuclide tests
7. Coronary angiography may also be used
8. **Chronic obstructive pulmonary disorder**. This is a lung disease that prevents airflow from the lungs. It’s mostly caused by long term exposure to irritating gases or particulate matter from cigarette smoke

**Signs and Symptoms of chronic obstructive pulmonary disorder**

1. There is Shortness of breath, especially during physical activities
2. Wheezing sound is observed on the patient
3. There is Chest tightness
4. Frequent respiratory infections are observed on the patient
5. The patient lacks energy
6. Unintended weight loss is observed on the patient
7. A chronic cough that produce mucus is also observed on the patient

**Treatment and prevention for chronic obstructive pulmonary disease**

1. Other symptoms may be treated with medicine
2. Pulmonary rehabilitation
3. Prevention and treatment of lung infections
4. Supplemental oxygen if blood oxygen levels are low
5. Quit smoking for smokers
6. Avoid tobacco smoke and other air pollutants at home and at work

**Diagnosis for COPD**

The main test is **spirometry** which can detect COPD before symptoms are recognized

1. **Blood vessels diseases such as coronary artery disease**. This affects the major blood vessels that supply the heart muscle. mostly caused by cholesterol deposits in the heart

**Symptoms of coronary artery disease**

1. Stable angina is observed on the infected
2. There is shortness of breath
3. There is chest pain
4. Weakness is observed on the patient
5. A person feels tired
6. Heart palpitations are also observed on the patient

**Treatment for coronary artery disease**

1. Proper medication can help to treat some symptoms
2. Procedures and surgeries are applied to manage the disease
3. Lifestyle change by limiting alcohol, exercise, eat heart healthy diets and do not smokealso assists in managing the disease
4. Risk factor management can help slow down progression of the disease

**Diagnosis for coronary artery disease**

Is done by coronary angiography also called cardiac catheterization

1. **Irregular heartbeats (arrhythmias).** This results when The heat beats too slowly, too quickly or irregularly

**Signs and symptoms of arrhythmia**

1. There is Chest pain
2. Whole body becomes dizzy, faints or a person experiences light-headedness
3. Heart palpitations or slow heart rate are observed
4. There is Shortness of breath

**Treatment for arrhythmias**

1. Proper medications to treat uneven heart rhythms
2. Vagal maneuvers should be administered
3. Electrical cardio version is applied
4. Implantable cardioverter defibrillator is also used

**Diagnosis for arrhythmias**

The disease is diagnosed with an electrical recording of your heart rhythm called electrocardiogram

1. **Heart problems you are born with such as congenital heart defects**. Forms when the baby’s heart develops about a month after conception. It changes the flow of blood in the heart.

**Signs and symptoms of congenital heart disease**

1. There is heart murmur
2. There is shortness of breath
3. Blue tinted skin is observed
4. There is swollen body tissue
5. Failure to develop normally

**Treatment for congenital heart disease**

1. Proper medication to lower blood pressure and control heart rate
2. Heart devices are used in some cases
3. Catheter procedures and surgery is applied also in some cases
4. Heart transplant for serious case is also done

**Diagnosis for congenital heart disease**

It may be suspected during a routine ultrasound scan of the baby in the womb.

In adults and children electrocardiogram will be done

1. **Diseases of the heart muscles (cardiomyopathy**). The cause depends on type of cardiomyopathy that is restrictive cardiomyopathy is caused by amyloid in the heart, hypertrophic cardiomyopathy is usually inherited and dilated myopathy the most common type is usually unknown and can be inherited

**Signs and symptoms for cardiomyopathy**

1. There is chest pain
2. Whole body dizziness, fatigue ,loss of appetite is observed on the patient
3. Gastrointestinal that is bloating or fluid in abdomen is observed on the patient
4. There is abnormal heart rhythm
5. There is cough, peripheral edema , shortness of breath or weight gain

**Treatment for cardiomyopathy**

1. By proper medications
2. Device therapy that is pacemaker and implantable cardioverter-defibrillator is used
3. One undergoes surgery
4. Medical procedure that is cardiac catheterization and revascularization is applied

**Diagnosis for cardiomyopathy**

A heart biopsy or myocardial biopsy is used to diagnose but electrocardiogram can be used also

1. **Heart valve diseases.** are caused by conditions such as rheumatic fever, connective tissue disorder, infections(infectious endocarditis) and some people may be born with it that is congenital heart valve disease

**Signs and symptoms of heart valvular disease**

1. There is shortness of breath
2. There is chest pain
3. There is Fatigue
4. Dizziness or fainting is observed
5. Fever is observed
6. Rapid weight loss occurs on the patient
7. Irregular heart beat occurs on the patient

**Treatment and prevention for heart valvular disease**

1. Protecting your valve from further damage
2. Taking medications
3. Having surgery
4. Seeing your heart doctor for regular visits

**Diagnosis for heart valve disease**

Is done by echocardiogram

So generally cardiovascular diseases (CVDs) and chronic obstructive pulmonary disorders (COPD) are the main tobacco related cardiopulmonary diseases

**CARDIOPULMONARY RISKS**

Cardiopulmonary risks refer to risks associated with heart and lungs and these risks include:

1. **Age**. growing older increases risks of damage and narrowed arteries and weakened or thickened heart muscles
2. **Sex**. Men are generally at greater risk of heart diseases. the risk for women increases after menopause
3. **Family history**. a family history of a heart disease increases risk of coronary artery disease especially if a parent developed at an early age (before 55 years for male relative such as young brother or father and 65 years for female relative such as young mother or sister)
4. **Smoking**. substances in tobacco smoke damage the arteries so heart attack are more common in smokers than in non-smokers
5. **Unhealthy diet**. diets high in fats salt sugar cholesterol have been linked to heart diseases
6. **High blood pressure**. uncontrolled high blood pressure causes arteries to become hard and thick interrupting blood flow to the heart and body
7. **High cholesterol**. having high cholesterol increases risk of atherosclerosis which has been linked to heart attacks and strokes
8. **Diabetes.** They increase the risk of heart disease
9. **Obesit**y. excess weight worsens other heart disease risk factors such as diabetes
10. **Lack of exercise**. sedentary lifestyle is associated with many forms of heart diseases
11. **Stress**. unrelieved stress may damage arteries and worsen other risk factors for heart diseases
12. **Poor dental health**. it’s important to brush and floss your teeth and gums often and get regular dental check-ups because unhealthy teeth and gums makes it easier for germs to enter bloodstream and travel to heart causing endocarditis

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