

## **CONGESTIVE HEART FAILURE**

**Congestive Heart Failure:** Condition in which the heart muscle can not pump enough blood to the body to meet the organs demands. Heart muscle dilatation, muscle fibers hypertrophy, and increased heart rate are the clinical markers of disease progression as the heart attempts to compensate for the increased workload. Myocardial ischemia (CAD, MI) is the most frequent cause, but nearly any form of heart disease (HTN, Diabetes, Cardiomyopathy, Heart Valve Disease, etc.) ultimately may lead to heart failure. Prevention and improved CHF disease management can best be achieved with early diagnosis and treatment of symptoms. When underlying factors are not effectively managed, compensatory mechanisms eventually break down and heart failure symptoms appear.

**Symptoms of CHF:** Shortness of Breath; Dyspnea on Exertion; Orthopnea; Paroxysmal Nocturnal Dyspnea; Weight gain; Edema; Fatigue; Malaise; Cough or wheeze; Palpitations; Arrhythmias; Tachycardia; Dizziness; Angina; Nausea; Loss of Appetite.

**Tobacco Effects:** Tobacco causes endothelial injury and stimulates the inflammatory process within the cardiovascular system. The damaged endothelium is responsible for the increased vasoconstriction, which has a direct effect on the properties of platelet adhesion, systemic inflammation, and dyslipidemia. The process causes a significant increases oxygen demand and decreases oxygen supply to the myocardium. Diabetic involvement precipitates an elevation of blood glucose levels and limits the control of diabetes, therefore causing an exacerbation of the endothelial injury and inflammation within the entire vascular system.

**Cessation Advice:** Sometimes an emergency room admission immediately convinces a cardiac patient to stop using tobacco. Most CHF tobacco users have been advised to quit many times and have seriously attempted cessation with repeated failures. Most are long term users; this lifestyle change cannot be easily achieved. Health care professionals have many tools to deliver a relevant personalized cessation message to capture the patient's attention based on actual clinical findings. The next attempt can be differentiated from all others if additional resources are utilized simultaneously. Cessation aids and referrals to available resources such as Tobacco Control Initiative. Our professional team consistently delivers an evidence- based plan of action to make the big difference this time.

## **ASTHMA**

**Asthma:** A chronic disease affecting the body's ability to carry air in and out of the lungs due to chronic inflammation of the bronchial passages. This condition is not curable, but it can be effectively managed with medication and lifestyle changes to eliminate the common causes, or triggers. Asthma episodes, or attacks, are stimulated by exposure to triggers. The hypersensitivity reaction affects the inflamed inner lining of the airways causing acute bronchoconstriction, edema, and increased mucus production. The interior walls of the airway narrow and air flow through the lung tissue is compromised.

### **Common Triggers:**

**ALLERGENS:** Animal Dander, Dust Mites, Cockroaches, Pollen, Mold

**IRRITANTS:** Cigarette Smoke, Air pollution, Cold Air, Change in Weather, Strong Odors, Scented Products, Stressors

**OTHERS:** Medications, Sulfites in foods or beverages, GERD, Infections

**Symptoms of Asthma:** Audible Wheezing; Chest tightness (feels like squeezing or sitting on chest); Shortness of Breath (cannot get enough air in or out of lungs); Faster breathing; Noisy breathing; Cough which often worsens at night. Symptoms are frequently exercise induced or caused by a sudden change in emotions.

**Tobacco Effects:** Smoking and second hand smoke are preventable irritants. It is directly associated with asthma episodes, increases mucus production, increases the severity of asthma attacks, and lessens the effectiveness of a cough. The inhaled particulate matter (tar) paralyzes the protective cilia in the upper airways and penetrates further into the lungs. The inhaled carbon monoxide decreases the oxygen binding capacity by attaching itself to the hemoglobin on the red blood cell, therefore increasing the cardiopulmonary workload. It commonly causes bronchitis, pneumonia, and more extensive lung damage.

**Cessation Advice:** Asthma is a unique disease which affects patients in all age groups. A full spectrum of patients, yet a similar treatment protocol for disease management. Avoidance of environmental tobacco smoke and other triggers play a major role to prevent disease progression. Health care professionals possess dynamic tools to deliver a personalized relevant cessation message, capturing the patient's attention, based on actual clinical findings. In spite of the health care provider's best efforts to educate the patient/family about tobacco smoke exposure and the disease impact, for many, tobacco use remains a prevalent risk factor. The Tobacco Control Initiative shares your goal and would like to provide a consistent, ongoing evidence-based plan of action to help make the big difference this time.

## **CANCER**

**Cancer:** An often fatal disease affecting all age groups and any part of the body. All tissue consists of cells. Normal cells grow, divide, and die. Cancer cells continue to grow, form new abnormal cells, and travel to other body parts, replacing normal tissue. Damaged DNA in these abnormal cells causes rapid uncontrolled cellular division. Without early detection and treatment, these cells may metastasis (invade other parts of the body by way of the bloodstream or lymph vessels) and replace normal tissue. Cancer may be caused from carcinogenic exposure, genetic predisposition, or unknown etiology.

**Symptoms of Cancer:** Specific symptoms depend on the location and type of cancer. Self examinations and routine screenings aid in cancer prevention and detection. Early treatment is the key to improve the prognosis. A few common signs of cancer that should be evaluated include: a lump or thickening; a change in a wart or mole; a skin sore or persistent sore throat that does not heal; a change in bowel or bladder habits; coughing up blood; a persistent cough; trouble swallowing; constant indigestion; unusual bleeding; vaginal discharge; and chronic fatigue.

**Tobacco Effects:** More than 4000 chemical compounds have been identified in cigarette smoke; more than 60 of these are carcinogenic. Carcinogens alter the DNA in cells and interfere with normal biological processes. Studies suggest that smoking increases the free radicals within the body, causing cellular instability. The richest concentration of smoke enters the lungs. Once ingested, these toxins travel everywhere in the body that blood flows. Tobacco use is a major risk factor for all types of cancers. The particulate matter which contains high concentrations of carcinogens, called “tar”, is extracted from the smoke and smokeless tobacco. Smokers inhale tar deep into the lung tissue; tobacco-spitters collect and hold tar juices in the vascular sublingual area and absorb it into the circulation.

**Cessation Advice:** It is never too late to quit. The respiratory tracts of smokers and environmental tobacco smokers (ETS or second hand smokers) are most affected. About 87% of lung cancer deaths are attributed to smoking. The very early treatable stages of lung cancer are very hard to detect due to the lack of symptoms and the extensive surface area of the lung tissue. When later diagnosed, lung cancer is one of the most difficult to treat. Smokeless tobacco users may be interested to know that many emergency medications are administered sublingually for immediate absorption. Tobacco cessation and other healthy lifestyle changes can prevent and slow the disease progression. When the primary care provider delivers strong cessation advice and refers to the Tobacco Control Initiative (TCI) cessation service, this common goal may be easier to attain utilizing an evidence-based plan of action.

## **HIV/AIDS**

**HIV:** Human Immunodeficiency Virus: A slow progressing illness caused by a blood borne virus which attacks the immune system. The unassuming virus may lie dormant and undetected in the host for several years prior to diagnosis. This virus initially attacks and infects the CD4 and macrophage cells. The CD4 cells make up the body's immune system. The macrophages copy the HIV infected cells and spread them through the bloodstream, compromising the immune system. Once the diagnosis is obtained, ongoing diagnostic tracking of the CD4 count (immune cells) and the Viral Load Test (measures the copies of HIV in the blood) is usually done every three to six months. These tests results are inversely proportional. CD4 goal > 500; Viral Load goal < 50.

**AIDS:** Acquired Immunodeficiency Syndrome. When the disease progresses to this advanced stage there is severe immune dysfunction. The host becomes highly susceptible to opportunistic illness. The normal CD4 range is 500 – 1600 cells/mm<sup>3</sup>. AIDS diagnosis = CD4 count < 200mm<sup>3</sup>

**Symptoms of HIV:** Once infected, patients often remain asymptomatic for years. With disease progression common symptoms include headache, depression, fatigue, night sweats, memory loss, fever, swollen glands, weight loss, muscle aches, and diarrhea.

**Tobacco Effects:** This disease complex weakens the entire immune system, increasing the risk of opportunistic infections (Pneumocystis pneumonia (PCP), Tuberculosis (TB), Cryptococcal meningitis, Thrush, Cervical Cancer, and Anal Cancer). Tobacco causes damage to the blood vessels and tiny cuts in the mouth, increasing the transmission of the virus. Many HIV + patients commonly have higher lipid levels caused from the disease and side effects from the drug therapy. Hyperlipidemia and tobacco use cause atherosclerotic progression, leading to heart attack and strokes. Smoking depletes the body's natural protective antioxidant levels, which has been associated with heart disease and cancer.

**Cessation Advice:** Cigarette smoking is highly prevalent among HIV infected patients. Cessation will help to reduce the chances of opportunistic infections and improve the overall management of this disease. HIV smokers have a much faster disease progression and less effective HIV drug therapy. Cessation can clearly improve the prognosis. The health care team can help the patient by consistently assessing tobacco status during each visit and offering relevant messages, motivating advice, and cessation aids. A referral to the Tobacco Control Initiative intervention team can enhance patient success outcomes with the utilization an evidence-based plan of action.

## **DIABETES**

**Diabetes:** A metabolic disease in which the body does not produce or properly utilize insulin. Insulin normally promotes the uptake of glucose by skeletal muscle and adipose tissue for normal lipid regulation and glucose metabolism. Most Diabetics have a cluster of associated health problems such as: HTN / Hyperlipidemia / Obesity. It is frequently the cause of blindness, end stage renal disease, heart disease, stroke, and lower limb amputations. Diabetes shortens the overall life expectancy by four to seven years. There is no cure, but it manageable with medications and lifestyle changes.

**Symptoms of Diabetes:** Constant thirsts, frequent urination, fatigue, blurred vision, frequent infections, slow healing injuries, unplanned weight loss. Metabolic syndrome is a collection of associated risk factors frequently noticed before Diabetes diagnosis: abdominal obesity, high LDL cholesterol level, low HDL cholesterol level, insulin resistance, high fasting glucose levels, elevated C-reactive protein, and prothrombotic state. These same factors increase the risk for heart disease, stroke, and overall mortality.

**Tobacco Effects:** Tobacco exacerbates the endothelial injury and inflammation within a fragile cardiovascular system. The damaged endothelium and nicotine cause increased vasoconstriction, which has a direct effect on the properties of platelet adhesion, systemic inflammation, dyslipidemia. The compromised fragile micro vascular system frequently results in blindness, end stage renal disease, cardiovascular disease, and impotence. The restricted blood flow to the lower extremities causes tissue ischemia, irreversible blood vessel disease, and nerve damage, often associated with foot ulcers, leg infections, and lower limb amputations.

**Cessation Advice:** Diabetic patients with minimum risk factors can be very difficult to medically manage. Smoking exacerbates the disease process by elevating glucose to unmanageable levels and speeding the endothelial injury. A Diabetic smoker has 12 – 14 times greater likelihood of developing cardiovascular disease. He/she is three times more likely to die of cardiovascular disease than non-smoking diabetics. The risks of stroke, blindness, amputation, renal failure, neuropathy and impotence are heightened. Diabetic patients have made many lifestyle changes. Cessation is not easy. The health care team can deliver ongoing relevant messages, continuous motivation, cessation aids, and a referral to a cessation specialty program. Utilizing an evidence-based plan of action, our TCI staff is prepared to help your patient make permanent changes to prevent further irreversible damage.