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Chronic Obstructive Pulmonary Disease *A breathtaking condition*

Chances are you already know about the danger of smoking and the risk of lung cancer that comes with it. However, you may not be aware of other associated diseases. One of the most common is chronic obstructive pulmonary disease (COPD). This lung disease includes emphysema and chronic bronchitis.

COPD is the fourth leading cause of death in North America. It is the only one in which the number of people affected continues to rise. As many as one in five smokers will eventually develop significant COPD.

Slowly stealing your breath

COPD is progressive. At first it may be barely noticeable. It usually starts after age 50. As we age, we naturally lose elasticity in the lungs. In smokers and those with COPD, this loss is doubled or even tripled.

Symptoms of COPD appear when the airway becomes blocked. This may appear as shortness of breath, a chronic cough, or more sputum. (Sputum is material coughed up from the lungs and spit out through the mouth.) COPD may begin with simply feeling more

breathless than usual with strenuous exercise. However, without treatment, it can eventually reach the point where simply getting dressed causes shortness of breath.

Although primarily a disease of the lungs, COPD can also affect the rest of the body. Muscle weakness, fatigue, weight loss, heart disease, and depression can all be linked to it. Over half of COPD patients report that symptoms interfere with normal physical activity, household chores, family and social activities, sleep, and the ability to work.

A preventable illness

Smoking is the primary cause in at least 90 per cent of COPD cases. Very few non-smokers develop the disease. Not all smokers develop COPD, but those with a first-degree relative (parent or sibling) affected by COPD are more likely to develop it. Those chronically exposed to second hand smoke are also at risk.

Occupational exposure to chemicals, fumes, and dust (such as grain, coal, and industrial dusts) can also be a factor. This is especially true for those who smoke. Although some studies show air pollution may play a small role in causing COPD, it is much more likely to simply make symptoms worse in someone who already has it.

A rare hereditary condition, called alpha-1 antitrypsin deficiency, can also lead to COPD. Here, a protein that helps to protect lung tissue from damage is missing. However, the condition causes less than five per cent of COPD cases. It would be suspected in someone with symptoms of COPD who has never smoked or starts having symptoms between age 20 and 50.

SIDEBAR: Symptoms of COPD

- Shortness of breath that:
 - ∞ is getting worse
 - ∞ is related to exercise or other activities
 - ∞ happens every day

- ∞ gets worse with colds
- Chronic cough with sputum
- Having to walk more slowly than people of the same age or stopping to catch your breath when walking at your own pace
- Recurrent bronchitis
- Sensation of chest tightness with or without actual wheezing
- Fatigue, weight loss or depression

Diagnosing COPD

Anyone over the age of 40 with a history of smoking and any symptoms of COPD should see their family doctor. Diagnosis is made through pulmonary function **testing**. This special group of tests measures how well the lungs take in and release air, and move oxygen into the blood.

Pulmonary function tests are not usually done in the family doctor's office, as they require special equipment and technicians. They are done by breathing into the mouthpiece of a spirometer, a machine that records the amount and the rate of air breathed in and out over a period of time. Some measurements are done with normal quiet breathing while others require forced breathing in and out.

These tests can help to tell the difference between COPD, asthma, heart disease and other lung diseases like tuberculosis or cancer that mimic the symptoms of COPD.

COPD can come on very slowly. Most people adapt to the feeling of breathlessness early on, and so do not notice symptoms until damage is severe. Some studies estimate that only 25 to 50 per cent of people with symptoms of COPD have been diagnosed with it. Unless COPD is identified, opportunities for treatment and quality of life are both reduced.

Treating COPD

Lifestyle changes and medication can make a difference. People with COPD are encouraged to maintain a healthy, active lifestyle. Many centres offer pulmonary rehabilitation. This supervised exercise and education program is designed to improve exercise tolerance.

Many different types of inhaled medications can reduce or prevent symptoms and improve a person's ability to function. At late stages of the disease, it may be necessary to deal with low levels of oxygen in the blood by using oxygen all the time. Very rarely, surgery or lung transplantation is an option.

Both exercise training programs and medications have been shown to significantly control symptoms of COPD. However, they do not actually stop the progressive damage to the lungs. Quitting smoking is the only way to reduce the risk of developing COPD or slow its progression.

Worth quitting

Smoking is a powerful addiction, and quitting can be very difficult. Nicotine, the addictive part of cigarettes, is quickly absorbed into the blood from the lungs. It reaches the brain in 10 to 20 seconds, where it has many different effects. It can increase blood pressure and heart rate, and make the body's arteries narrow. In the brain, it causes the chemical dopamine to be released.

Dopamine is often called the 'pleasure chemical' of the brain, as it provides feelings of enjoyment. Its release reinforces the desire to keep smoking. Thanks to dopamine, smokers feel either stimulated or relaxed while smoking. Other street drugs, like cocaine, also release dopamine. This explains why nicotine is addictive – it is a very powerful drug.

Quitting smoking leads to withdrawal, as the body has become used to nicotine. Withdrawal symptoms start an hour or two after the last cigarette and are most intense in the first few days. Symptoms may include nervousness, poor sleep, cough, and an irritable mood. Table 1 lists possible symptoms of nicotine withdrawal and ways to deal with them.

If you want to quit smoking, talk to your family doctor. Help is available. Nicotine replacement products like patches and gums, and stop-smoking medications like Zyban™, are designed to decrease withdrawal symptoms. These products roughly double the chance of quitting.

A new product called Champix™ is now on the market. This prescribed medication works in two ways. First, it reduces the craving for nicotine by binding to receptors in the brain and reducing withdrawal symptoms. Second, it reduces the satisfaction received from smoking.

Since all of these medications have risks and side effects, talk to your doctor before starting treatment.

As difficult as it can be to quit smoking, it is the single most important thing that you can do for your health – at any age. You will benefit even if you have already developed an illness like COPD. People diagnosed with COPD who quit smoking have fewer symptoms, spend less time in hospital and are less likely to die of the condition. The rate at which lung function declines will even return to that of a non-smoker.

Your risk of death drops almost as soon as you quit smoking. This is most likely due to the blood's improved ability to deliver oxygen to tissues. Those who quit also rapidly reduce the chances of developing heart disease, cancer, and lung disease. These benefits last a lifetime. After 10 to 15 smoke-free years, your risk of dying from any smoking related illnesses drops to that of someone who has never smoked.

Chronic obstructive pulmonary disease is a serious illness affecting a great number of smokers, **and is often** undiagnosed. If you think that you may be affected, get tested. Early diagnosis and treatment are vital. Remember, quitting smoking is the most effective way to treat this disease. It is never too late to quit.

Table 1 - Dealing with nicotine withdrawal symptoms

Symptom	Why it is happening	How to help
Sore throat	Smoking affects taste and smell. As this returns to normal, you may feel like you have a sore throat.	Keep throat lozenges on hand and enjoy the fact that foods are beginning to taste normal again.
Headache	Oxygen levels in your blood are returning to normal, and may cause headaches or dizziness.	Get extra sleep and lots of fresh air. Avoid caffeinated drinks that may make headaches worse, and stay well hydrated.
Fatigue	Nicotine can act as a stimulant. Once it leaves your system, you may feel more tired for several weeks.	Get extra sleep, plenty of fresh air and exercise.
Being unable to concentrate	Your body is used to doing certain activities with the stimulation of nicotine. You may find it difficult to perform without it.	Take lots of breaks.
Nervousness	Nicotine relaxes your body, and now you are without it.	Use relaxation techniques like deep breathing or yoga. Again, lots of exercise and fresh air is key.
Poor sleep	Again, you have lost the relaxing effect of nicotine and feel other symptoms of withdrawal. You may also dream about smoking or have vivid dreams for the first few weeks of quitting.	Exercise and fresh air during the day will help with sleep. Avoid caffeine or other stimulants. Try other ways of relaxing before going to bed.
Increased appetite	It is common to gain weight after quitting smoking. You may even find you crave different types of food.	Keep lots of healthy food on hand. You may also consider starting a regular exercise program before trying to quit.

SIDEBAR – Physical benefits of quitting smoking

8 hours - Carbon monoxide levels in the blood drop, and oxygen levels return to normal

Two days - The risk of heart attack lessens and your sense of smell and taste start improving

Three days - Breathing begins to get easier

Three months - Lungs work up to 30 per cent better

Six months - Coughing and breathlessness are reduced

One year - Risk of a smoking-related heart attack is cut in half

10 years - Risk of dying of lung cancer is cut in half

15 years – risk of dying of a heart attack is the same as in someone who has never smoked

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