Warwickshire Stop Smoking Service

Carbon Monoxide and Smoking

Carbon monoxide (CO) is a poisonous gas that you cannot see or smell. It is formed through combustion and is produced in car exhaust fumes, faulty gas boilers and from tobacco smoke.

How Carbon Monoxide Gets into the Body

- When you inhale smoke from a cigarette CO is absorbed into your blood through the lungs
- Oxygen is carried around the body by red blood cells
- CO binds with haemoglobin in the red blood cells to form Carboxyhaemoglobin (COHb), preventing red blood cells from carrying oxygen.
- CO binds with haemoglobin 200 times more readily than oxygen
- A heavy smoker may have up to 10% of their blood cells taken up by CO, depriving their body of oxygen (after being in a fire a person would be put on oxygen in hospital with 10% CO)

What CO Does to the Body

Heart – To compensate for the shortage of oxygen, the heart has to work harder (beat faster) to get enough oxygen to all parts of the body. The heart itself get less oxygen increasing the risk of heart damage.

Circulation – The COHb causes blood to thicken and the arteries to get coated with a thick fatty substance. This causes circulation problems and high blood pressure, with increased risk of a heart attack and stroke. Hands and feet can become colder as less blood circulates to the extremities.

Breathing – The reduced supply of oxygen means you can easily get out of breath when exercising as there is little extra oxygen available for the increased demand. The lack of oxygen can also cause tiredness and lack of concentration.

Pregnancy – The supply of oxygen required by the baby for healthy growth is reduced when the pregnant mother smokes.

The Good News!

CO levels return to non-smoking levels after about 24 hours of not smoking, giving the body more oxygen, more oxygen for the baby, better circulation and more energy.

How Much Do You Smoke?

COHb	Adult COppm		Adolescent or Pregnant	COHb
13% 12% 10% 	80 78 76 74 72 70 68 66 62 60 58 54 52	**Dangerously Addicted Smoker** This level is uncommon. It is found in smokers who are rarely seen not smoking! Above this level serious carbon monoxide poisoning and permanent damage may occur. Premature death or serious diseases may occur as a result of smoking.	80 78 72 68 62 58 54 50 48 44 40 37 36	13% 12% 10% 9% 7%
9% 7% 	50 48 46 44 42 40 39 38 37 36	**Heavily Addicted Smoker** These readings indicate that red blood cells are carrying a lot less oxygen than the body needs. You may have more chance of getting headaches, colds and flu; generally your health will be badly affected.	35 34 33 32 31 30 29 28 27 26	6% 5%
6% 5% 	35 34 33 32 31 30 29 28 27 26	**Addicted Smoker** These readings indicate that red blood cells are carrying a lot less oxygen than the body needs. You may have more chance of getting headaches, colds and flu; generally your health will be badly affected.	25 24 23 22 21 20 19 18 17 16	 4%
    4% 	25 24 23 22 21 20 19 18 17 16	**Frequent Smokers** These levels of CO indicate a serious addiction to nicotine. These levels are 5 times those of non-smokers.	15 14 13 12 11	3%
3% 	15 14 13 12 11	**Smoker** Smokers in this region are addicted to nicotine. Smoking can affect you ability to be successful at sports or even everyday work and leisure activities.	10 09 08 07	2% 1.5%
2% 1.5%	10 09 08 07	**Danger Zone** This is a high result for a non-smoker. However, this level could be the result of low frequency smoking. Addiction to nicotine could already have occurred or may be just about to.	06 05	 0.7%
0.7%	06 05 04 03 02 01	**Non-smoker** This is where you need to be! The best readings for non-smokers are in this range.	04 03 02 01	