

TOBACCO:
Historical background, Plant
Introduction & toxicological
overview

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- Tobacco was used by ancient people for both healing and blessings.
- Used as a smudge... to ward off pests when the people went out to hunt and gather
- Given as a gift when welcoming guests to the community and as an offering to those requested to pray or share their wisdom.



In Ayurveda, tobacco is used as Ayurvedic medicine in Scorpion bite and as an antidote in poisoning by Strychnine



The Plant

- *Nicotiana tabacum* and *Nicotiana rustica* are the commercially cultivated plants for their tobacco.
- Indian tobacco refers to *Lobelia inflata*.
- Belongs to the Solanaceae family (nightshade group of plants)
- Tobacco is the most widely produced non-food crop in the world.

The Plant

- Originally a native of America but now grown all over India
- Contains two active principles – Nicotine and Nicotianine
- *Duboisia Hopwoodii* (Solanaceae) growing in Australia contains Piturine, a volatile alkaloid acting exactly like Nicotine

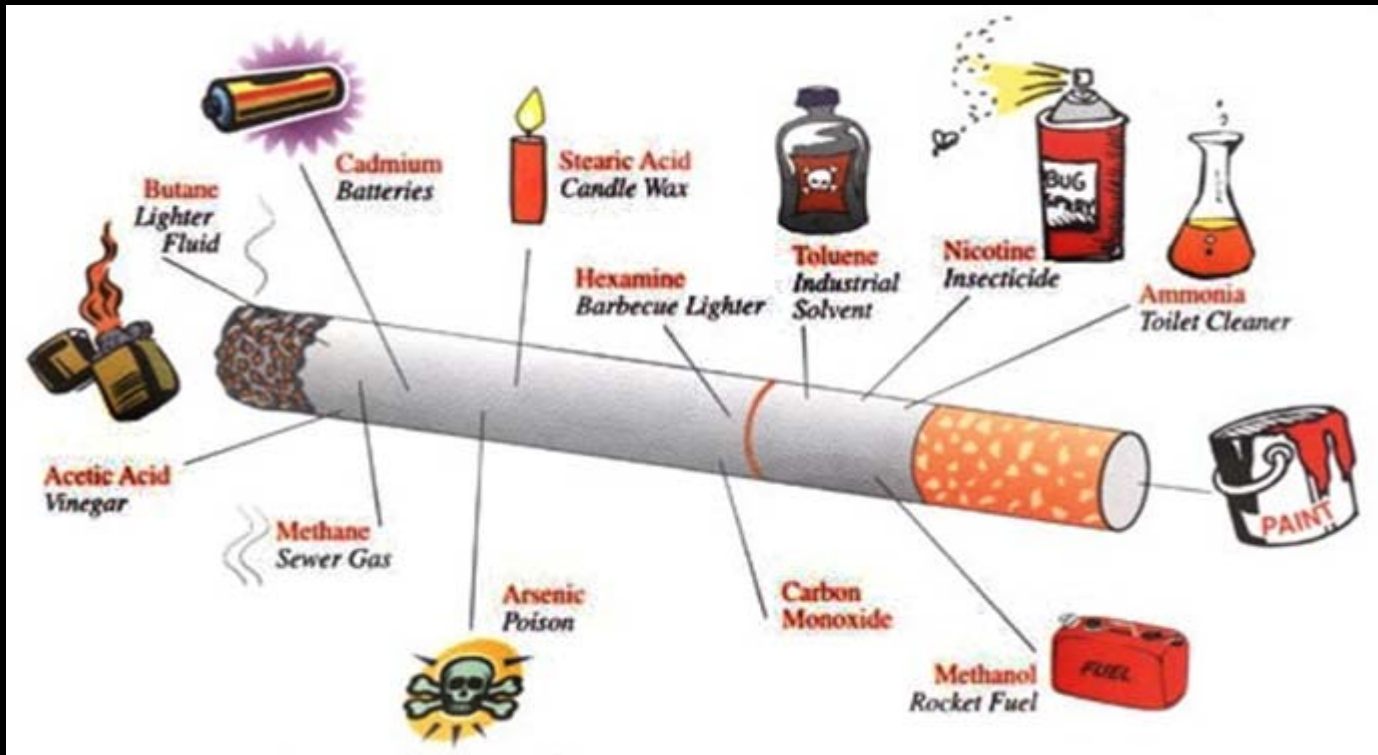




Tobacco can be consumed in the forms of smoking, chewing, dipping or sniffing.



Many people use smokeless tobacco products, such as snuff and chewing tobacco in the form of Gutkha, Khaini, Mawa, Pan masala etc.



Cigarette smoking is the most popular method of using tobacco which contains more than 4000 toxic chemicals & 60 carcinogens.

Nicotine

- Very toxic and exists in all parts of the tobacco plant, especially in the leaves.
- Colourless, volatile, hygroscopic, oily, natural liquid alkaloid, turning brown and resinous on exposure to air
- Has a burning acrid taste and a penetrating disagreeable odour.

Nicotine

- More addictive than cocaine and heroine
- First stimulates and then represses the vagal and autonomic ganglia and the cerebral and spinal centres.
- Use results in emotional dependence
 - Mood leveler
 - Users rely on it to control emotional responses to everyday life

Carbon Monoxide

- The compound in car exhaust that causes death
- Causes shortness of breath
- Reduces the amount of oxygen blood can carry

Tar

- Sticky Residue that stains the fingers and teeth.
- Contains benzopyrene, one of the deadliest cancer causing agents known.



Chemicals

- Acetone: fingernail polish remover
- Ammonia: floor/toilet cleaner
- Cadmium: batteries
- Arsenic: rat poison
- Methane: cow manure fumes
- Formaldehyde: preserver of dead bodies

Metals

- Aluminum
- Magnesium
- Zinc
- Silicon
- Titanium
- Silver
- Lead
- Copper
- Mercury
- Heavy metals

Effects of Nicotine

Respiratory System

- Increases mucus production
- Decreases muscle action in the lungs' airways
- Causes breathing to become more shallow



Nervous System

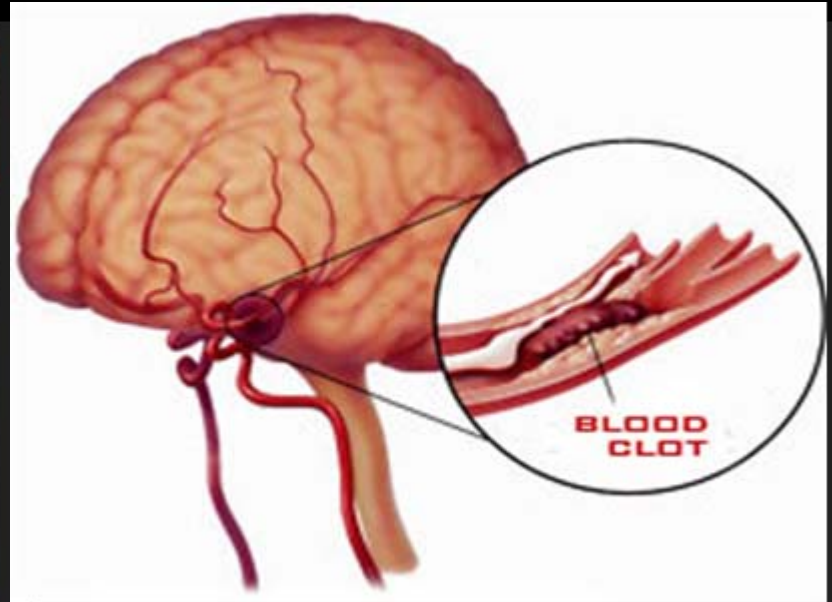
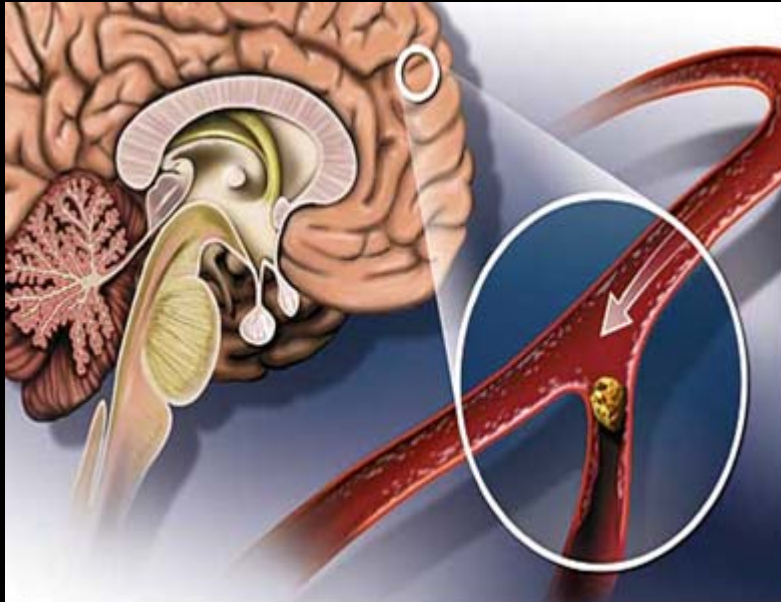
- Increases activity level
- Mimics neurotransmitters
- Decreases some reflex actions
- Activates the brain's "reward pathway"

Cardiovascular System

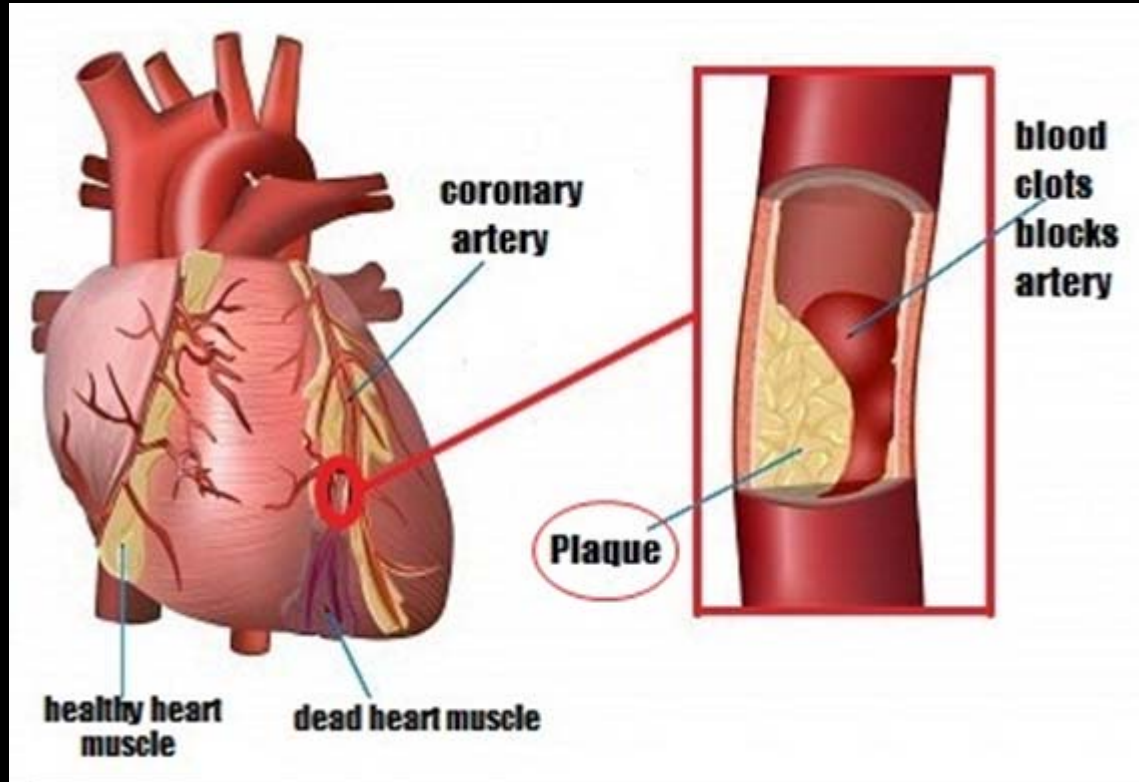
- Increases heart rate and the force of contractions
- Increases blood pressure
- Reduces blood flow to skin
- Increases risk of blood clotting

Digestive System

- Increases saliva production
- Decreases the amount of insulin released from the pancreas
- Increases bowel activity



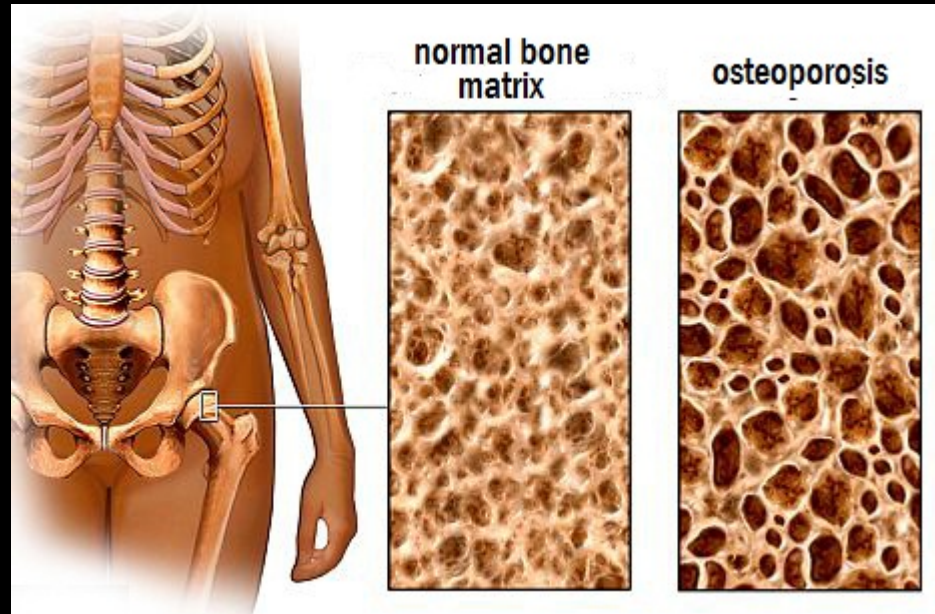
Smoking decreases the blood supply to the brain, constricts the blood vessels and causes 'atherosclerosis'.



Nicotine causes the blood to clot & development of plaque which leads to Risk of heart attack.



Poor blood circulation damages the blood vessel leading to 'Gangrene' and poor wound healing.



Tobacco smokers suffer more fractures due to higher rate of Osteoporosis .

Effects of Smokeless Tobacco

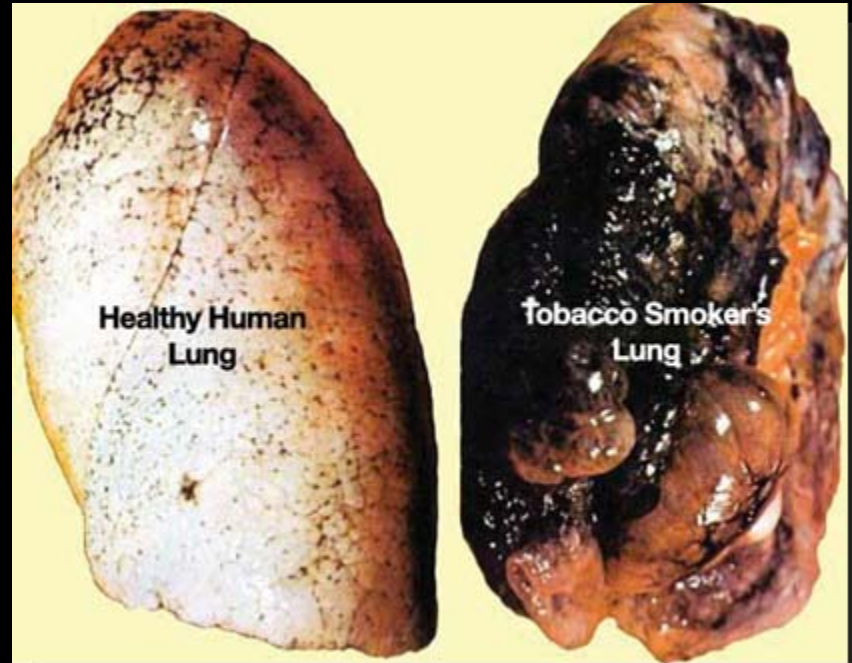
- Tooth Abrasion
- Gum Disease
- Gum Recession
- Heart Disease and Stroke
- Cancer in the mouth, pharynx (voice box), esophagus and pancreas.

Effects of Smokeless Tobacco

- Increased heart rate
- Increased blood pressure
- Bad breath
- Reduced sense of smell

Tobacco & Cancer

- Lung cancer is the number one cause of cancer death among Indian women
- Women's death rates due to lung cancer have risen 600% since 1950
- About 90% of all lung cancer deaths are attributable to smoking
- Chewing tobacco and snuff contain 28 different carcinogens



Smokers are ten times as likely to get lung cancer and emphysema as non-smokers.

Tobacco & Cancer

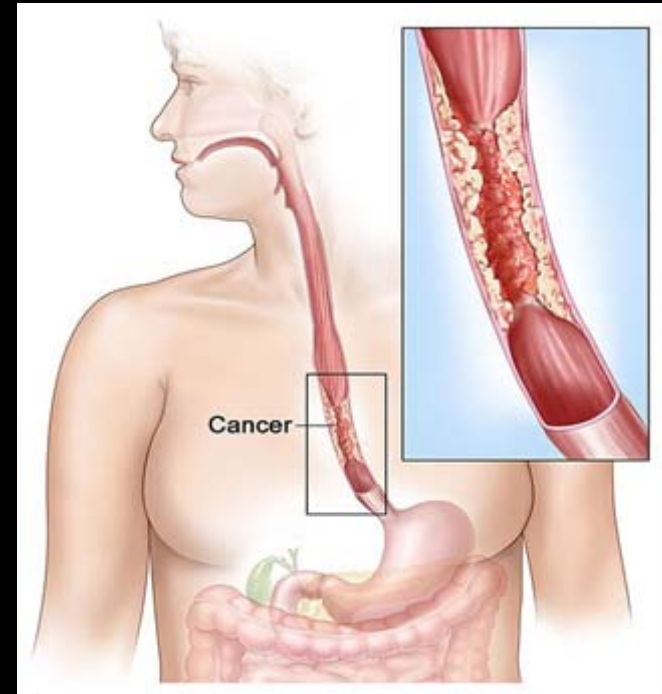
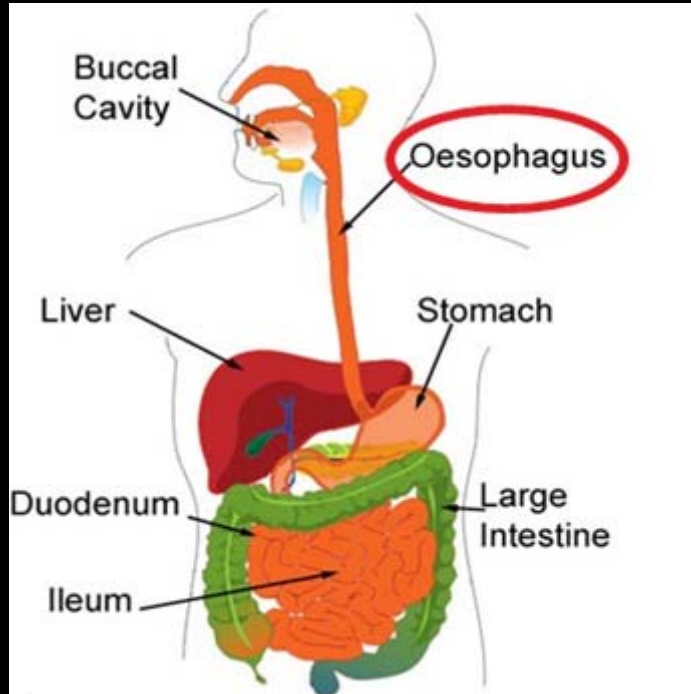
- Smoking is a major cause of cancers of the oropharynx (base of the tongue) and bladder among women.
- Women who smoke have increased risks for cancers of the pancreas and kidney.
- Larynx and esophagus cancer rates are also elevated.



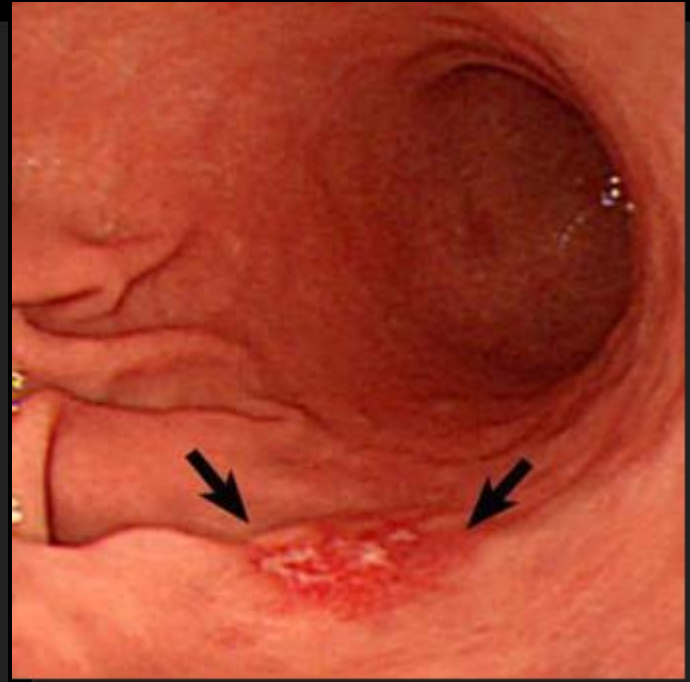
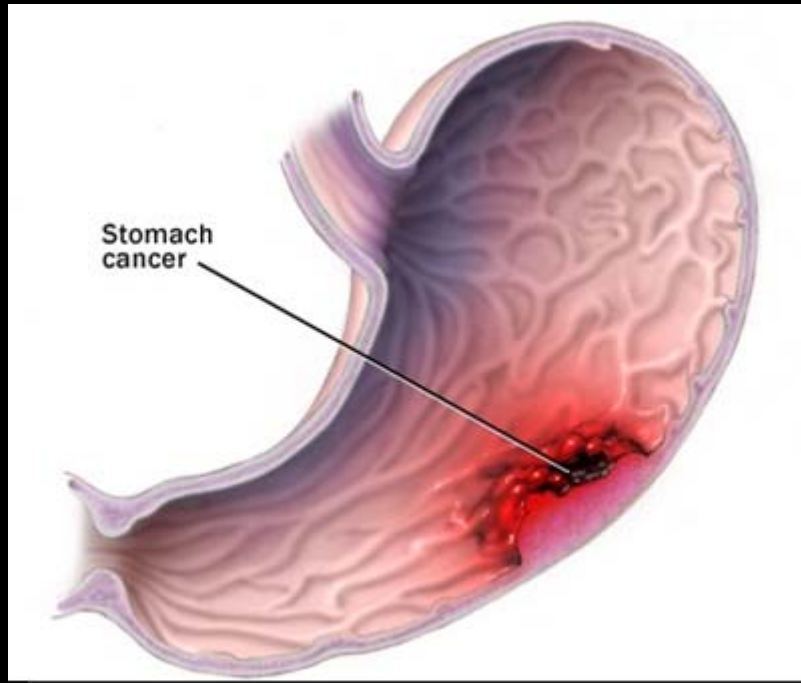
Smoking & chewing tobacco are the main cause of cancers of the tongue, salivary gland, mouth, pharynx and for brown teeth.

Tobacco & Cancer

- Research shows that smokers infected with human papillomavirus have greater risk of developing invasive cervical cancer than nonsmokers with the virus.
- Indian women have cervical cancer rates 3.5 times the national average. Tobacco is one of the behavioral factors considered to elevate the risk of cervical cancer.



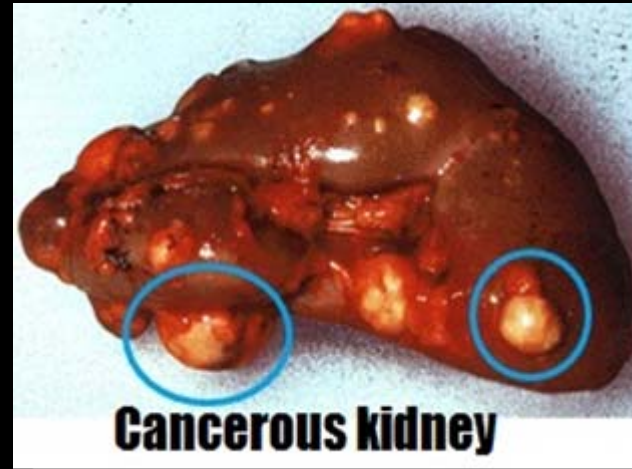
Smoking causes Esophageal cancer



Tobacco smoking or chewing accelerate the process of Stomach cancer.



Healthy kidney

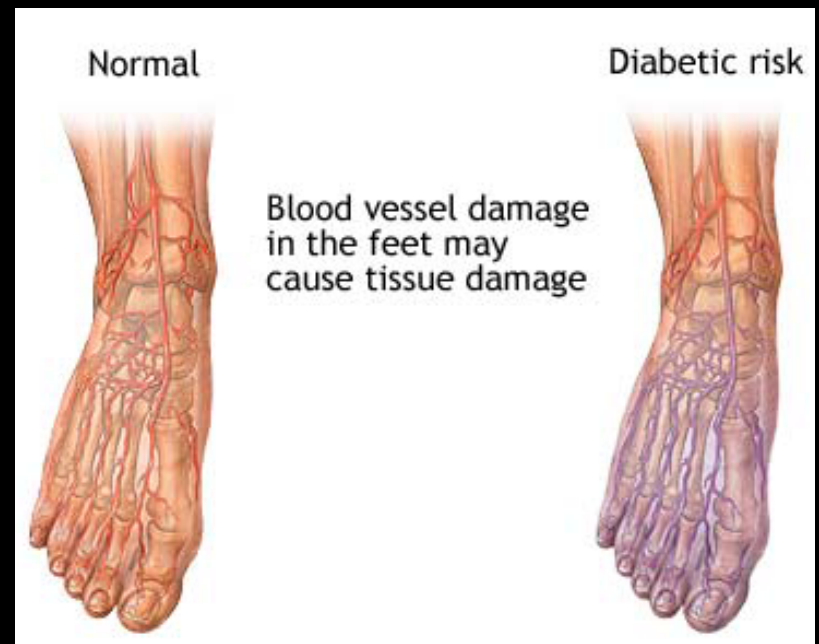


Cancerous kidney

Kidney cancer is more common and aggressive among tobacco users.

Tobacco & Diabetes

- Smoking and Diabetes both reduce the amount of oxygen reaching the body tissues, resulting in poor circulation.
- Smoking raises blood sugar level making it harder to control diabetes.
- Of people with diabetes who need amputations, 95% are smokers.



Tobacco & Diabetes

- Nicotine is a vessel constrictor, reducing the body's blood flow. Smoking increases cholesterol levels and hardens arteries.
- Diabetes increases cholesterol levels and the levels of some other fats in your blood.
- The combined cardiovascular risks of smoking and diabetes is as high as 14 times those of either smoking or diabetes alone.

Tobacco & Diabetes

- Together, diabetes and tobacco use make it twice as likely that you will develop heart and blood vessel disease.
- People with diabetes who smoke are 3 times more likely to die of cardiovascular disease than are other people with diabetes.
- Deaths from heart disease in women with diabetes have increased 23% over the past 30 years compared to a 27% decrease in women without diabetes.

Secondhand Smoke

- Smoke breathed out by a smoker and smoke from the burning end of cigarettes, cigars, pipes
- Composed of nearly 4,000 different chemicals and over 150 toxins including carbon monoxide

Children & Secondhand Smoke

- 38% of children aged 2 months to 5 years are exposed to SHS in the home.
- Up to 2,000,000 ear infections each year
- Nearly 530,000 doctor visits for asthma
- Up to 436,000 episodes of bronchitis in children under five
- Up to 190,000 cases of pneumonia in children under five

Children & Secondhand Smoke

- Coughing and wheezing
- Asthma
- Sore throats and colds
- Eye irritation
- Hoarseness

Pregnancy & Secondhand Smoke

- Pregnant women exposed to ETS 6 hours a day pass carcinogens to the blood of unborn
- ETS for 2 hours a day causes 2 times risk of low birth weight
- Miscarriage
- Prematurity
- Low birth weight
- Sudden Infant Death Syndrome (SIDS)

- “Giving up smoking is the easiest thing in the world. I know because I've done it thousands of times.”

- Mark Twain

Nicotine

Hard Habit to Quit

- On a milligram for milligram basis, is 10 times more potent than heroin as an addictive substance
- Smoking is an over-learned behavior
- Pack/day smoker estimates
 - 6 doses (puffs)/cigarette
 - 20 cigarettes per day
 - = 43,800 doses per year!
- Few behaviors occur more often. . .
 - Breathing

THANK YOU!