

Introduction to Public Health

Module # 6

Drug dependence and its prevention

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OBJECTIVES OF THE LECTURE

By the end of this lecture you will be able to:

- *Conceptualize*
 - *Drug abuse, addiction etc.*
 - *Risk factors for drug abuse, addiction etc.*
 - *Preventive measures to combat this issue in Bangladesh*
- *Understand the national and international drug policies and acts that can be enacted in Bangladesh.*

Social Deviance



- Social deviance is an anti social behavior pattern of individuals who having fail to conform to acceptable social norms adopt a way of life that goes against the interests of the society and also against their own interests.

Drug and its verities



- Drug:
 - Any substance other than food
 - Changes the way the body or mind functions
- Types of drug
 - Stimulants: Speed up the brain and central nervous system.
 - Examples- caffeine (coffee, tea) nicotine (cigarettes), cocaine and diet pills
 - Depressants: Slow down the brain and central nervous system.
 - Examples are alcohol, beer, wine, vodka, gin, heroin, tranquilizers, sleeping pills
 - Hallucinogens : Alter the user's state of consciousness. (Distort auditory and visual sensations)
 - Examples are ecstasy, marijuana

Drug Abuse



- When a drug is taken for non-medical purposes, in a dosage or in a frequency that goes against the pharmacological norms, it amounts to drug abuse.

Drug abuse



- Three phases of drug abuse can be identified:
- 1) The Induction phase
- 2) The continuation phase
- 3) The addiction phase



Drug Addiction / Dependency

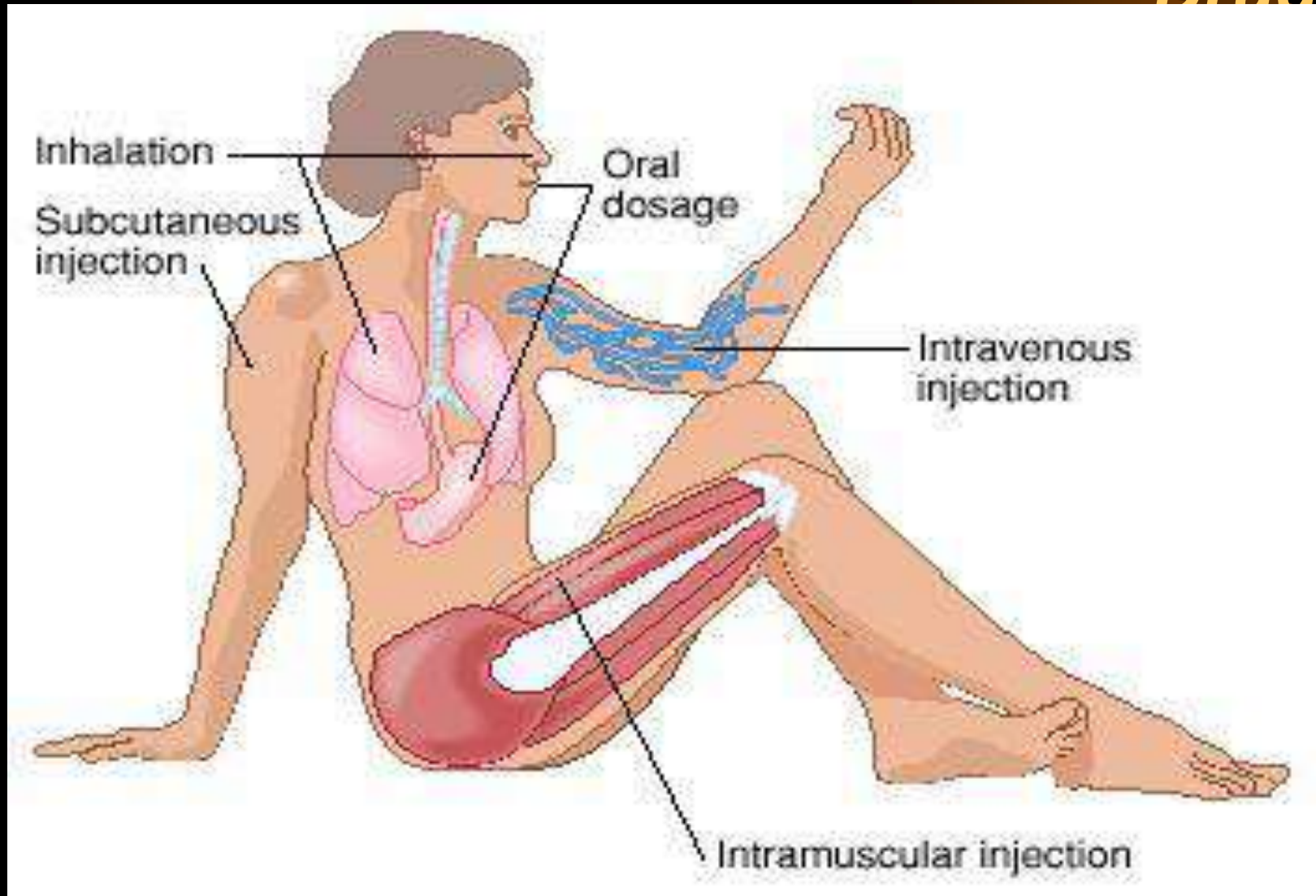
Drug Terminology

- ***Drug:*** any substance that alters the user's ability to function, including over-the-counter drugs, prescription medications, and illegal substances.
- ***Drug Misuse:*** the intentional or inappropriate use of over-the-counter or prescribed medications.
- ***Drug Abuse:*** excessive drug use that's inconsistent with accepted medical practice.
- ***Toxicity:*** the dosage level at which a drug becomes poisonous to the body, causing either temporary or permanent damage.

Substance use terminology

- **Addiction:** the habitual use of substances, such as alcohol, psychoactive drugs, and nicotine, and also to compulsive behaviors, such as overeating.
- **Physical dependence:** when a person develops tolerance to the effects of a drug and needs larger and larger doses to achieve intoxication or another desired effect.
- **Psychological dependence:** a state in which individuals crave drugs to satisfy some personality or emotional need.

Routes of Administration of Drugs



Drug abusers in bangladesh

- Drug abuse is an alarming problem in Bangladesh where there are 1.7 million drug abusers.
- The number is increasing greatly over recent years.
- Among drug abusers, intravenous drug use has the potential to turn a slow HIV epidemic into an explosive and devastating one, as was observed in Thailand and northern India.

Types of drugs in Bangladesh



- Cough syrup (phensidyl)
- Heroin
- Cannabis
- Sedative
- Pethedine
- Morphine
- Others

Factors Influencing Student Drug

1313Use



- Sexual identity
- Race/ ethnicity
- Perception of risk
- Environment
- Alcohol use

Warning Signs Of A Substance Use Disorder



- **An Abrupt Change In Attitude**
- **Mood Swings**
- **A Decline In Performance**
- **Increased Sensitivity**
- **Secrecy**
- **Physical Changes**
- **Money Problems**
- **Changes in Appearance**
- **Defiance of Restrictions**
- **Changes in Relationships**

What Causes Drug Dependence and Abuse?

- ***The Biology of Dependence***

Dopamine, glutamine, GABA, and norepinephrine.

- ***The Psychology of Vulnerability***

Difficulty controlling impulses, a lack of values that may constrain drug use, low self-esteem, feelings of powerlessness, denial, and depression or anxiety.

- ***Early Influences***

Lower socioeconomic backgrounds, family instability, a lack of realistic, rewarding alternatives and role models, and increased hopelessness.

- ***Teen Drug Use***

Early use of tobacco and alcohol is linked with a greater likelihood of marijuana use, which in turn increases the likelihood of other illegal drug use.

Know the Facts About Alcohol!

- Alcohol is a contributing factor in at least half of all murders, suicides, and car accidents.
- Heavy drinking along with drunk driving increases your chances of serious injury or death.
- Heavy drinking along with sex increases your chances of getting a sexually transmitted disease (STD) and HIV or AIDS.
- Heavy drinking is also linked with physical fighting, destroyed property, school and job problems, and trouble with law enforcement authorities.

It won't affect me...

- Drinking alcohol leads to:
 - Loss of coordination
 - Poor judgment
 - Slowed reflexes
 - Distorted vision
 - Memory lapses
 - Blackouts
 - Lowered inhibitions
 - Impaired judgment



Effects of alcohol

- **Physical Effects**

- Co-ordination is impaired, clumsiness, slower reflexes
- High blood pressure, damage to the heart
- Liver damage
- If drinking when pregnant, fetal alcohol spectrum disorder (FASD)
- Life threatening when mixed with other drugs

- **Mental and Emotional**

- Behave in ways that normally wouldn't
- Increase in aggressive and violent behaviour
- Problems with school and learning

ALCOHOL

- Goes directly from digestive system into blood
- Within minutes spreads to entire body, including brain
- Spreads evenly throughout body- except brain which gets the highest concentration because it gets more blood than any other part of body
- Intoxication (drunkenness) starts in the brain

Pathways of alcohol

1. Mouth



2. Stomach



3. Small Intestine



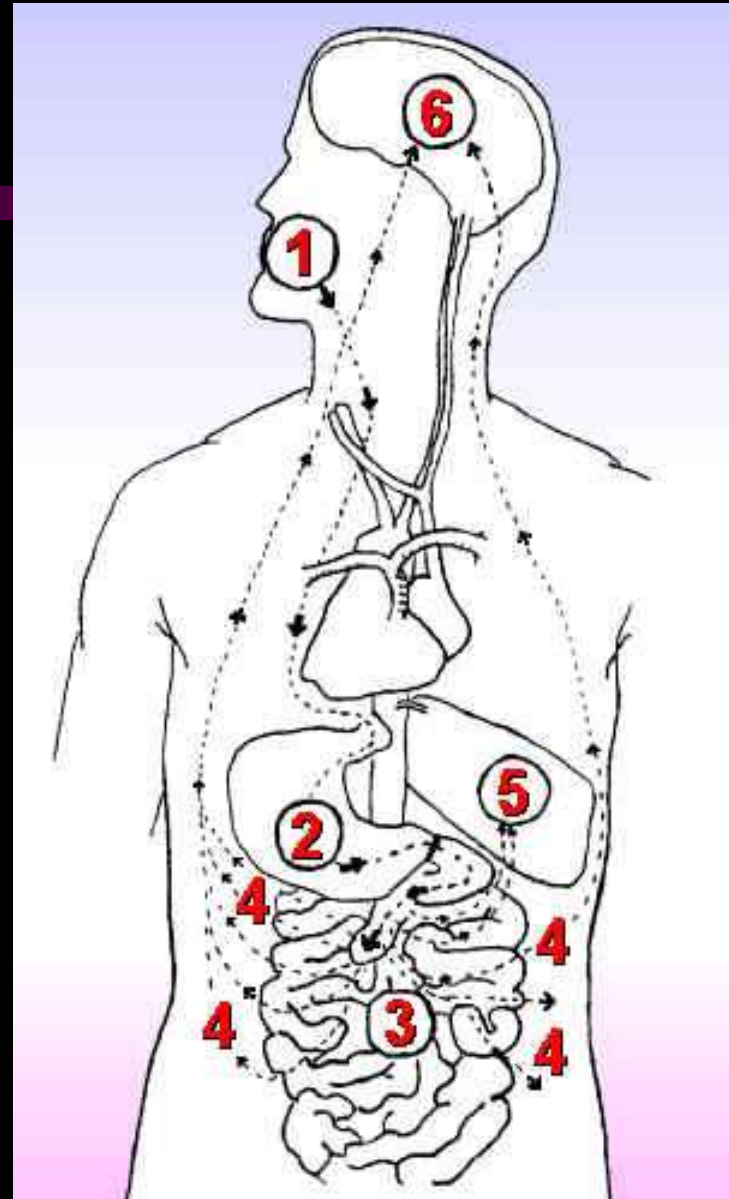
4. Bloodstream



5. Liver



6. Brain



Marijuana

- **Short Term Effects:**
 - Increase in heart rate, lead to anxiety and paranoia
 - Distorted concept of time and space
 - Decrease in concentration skills, short-term memory capacity
 - Feeling tired after the “high” wears off
 - Increase in appetite, weight gain
- **Long Term Effects:**
 - Breathing problems
 - Lung cancer
 - Damage cells and tissues in the body that fight disease
 - Lack of motivation
 - Difficulty processing new information

Heroin

- Processed from morphine – obtained from opium poppy
- “Downer” affects brain’s pleasure systems – interferes with brain’s ability to feel pain
- High chance of overdose or death
- Sharing needles and equipment cause other diseases and problems for users
- Leads to flushing of skin, dry mouth, collapsed veins, liver disease
- Additives don’t dissolve leading to clogs in blood vessels that lead to lungs, liver, kidney or brain
- Tolerance develops with regular use – user needs more heroin to achieve same intensity

Substance abuse- reasons



- Curiosity
- Boredom
- Media
- Peer-pressure
- Previous drug use
- Dependence

Drug Dependency

- Addiction: a chemical dependency to a drug combined with an overwhelming urge to use the substance.
- Drug use can quickly become drug abuse- leads to a chemical dependency to the drug.
- The problem is often perpetuated by the desire to avoid the very uncomfortable and sometimes life-threatening withdrawal symptoms that can occur when a user suddenly discontinues use.
- Over time, a chemical dependency develops and their body doesn't function correctly without the drug.

Risk factors



- Friends who use drugs
- Family management problems
 - poorly defined rules
 - inconsistent application of rules
 - lack of monitoring
 - excessive discipline
 - negative communication patterns
 - poor anger management
- Absence of healthy recreational or leisure interests

Risk factors (contd.)

- Early antisocial behavior (e.g., aggression, hyperactivity, defiance)
- Parental drug use and a positive attitude toward use
- Academic Failure (low and failing grades)
- Little commitment to school
- Favorable attitude towards drug use
- Early first use of drugs
- Prenatal exposure to alcohol

Behavioral Problems



- Suspicion/ mistrust
- Aggressiveness
- Hallucinations
- Addiction
- Impaired Judgment
- Recklessness
- Loss of Self-Control

Health problems

- Weaken the immune system, increasing susceptibility to infections.
- Cardiovascular conditions ranging from abnormal heart rate to heart attacks.
- Injected drugs can also lead to collapsed veins and infections of the blood vessels and heart valves.
- Nausea, vomiting and abdominal pain.
- The liver to have to work harder, possibly causing significant damage or liver failure.
- Attack, stroke and widespread brain damage can impact on memory, attention and decision-making, including sustained mental confusion and permanent brain damage.

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Substance abuse and society



- Spread of diseases such as HIV/AIDS and Hepatitis C through sharing needles, or having unprotected sex
- Miscarriages
- Premature birth
- Low birth weight
- Birth defects
- Developmental problems
- A baby's health problems, if caused by a drug will continue to grow as the child grows

Substance abuse and society (contd.)



- Homelessness
- CRIME
 - Drug possession
 - Drug use
 - Drug trafficking
 - Drug manufacturing
 - Theft
 - Robbery
 - Motor vehicle theft

PH approaches



- Prevention: which level of prevention should we take?
- How:
 - Anti drug campaign
 - Drug free community coalition
 - Screening, brief intervention, referral to treatment
 - Improving access to treatment and recovery

How to avoid substance abuse

- Involvement in alternative activities
- Sense of well being and self-confidence
- Positive future plans
- Healthy coping strategies to deal with stress
- Positive attitude towards learning
- Knowledge about risks associated with substance use
- Negative attitude towards substance use
- Positive relationships with family members
- Friends disapprove of drugs and use

Say Che



...

- Drinking alcohol can make you gain weight and give you bad breath as well as...

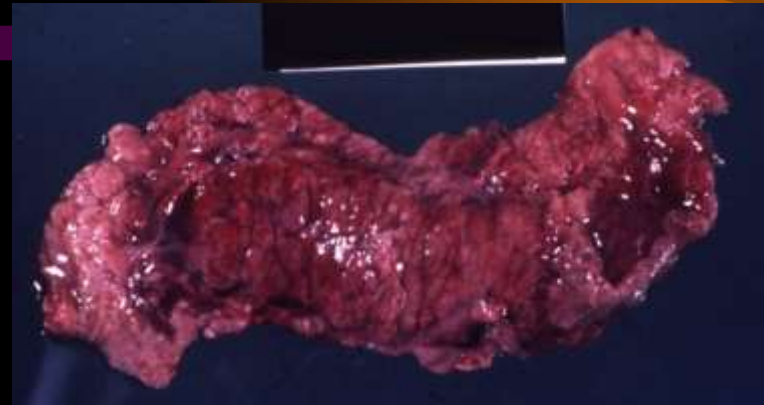
***Liver
Failure
caused***



***36 year old,
sores caused
by diabetes
and alcohol
abuse.***



Effects of Alcohol Use...



***Bleeding
Pancreas of an
Alcoholic, he's***

***How do you think now dead!
these people turned***

Signs of Alcohol Abuse

1. Problems remembering things you recently said or did
2. Getting drunk on a regular basis
3. Lying about how much alcohol you are drinking
4. Thinking that alcohol is necessary to have fun
5. Having frequent hangovers
6. Feeling run-down, depressed, or even suicidal
7. Having "blackouts"--forgetting what you did while drinking
8. Having problems at school or getting in trouble with the law

Who's drinking?

- People who begin drinking before age 15 are 4 times more likely to develop alcoholism than those who begin at age 21.
- The majority of teens don't drink alcohol. It's not as hard to refuse as you might think. Try: "No thanks," "I don't drink," "I'm not interested," or "It's not for me."

Know the Facts About Drugs

- Marijuana is the most widely used illegal drug in most of the countries.
- Cocaine, heroin and methamphetamines are illegal in all the countries and highly dangerous.

Ma



- Street names include *pot, herb, weed, boom, Mary Jane, and chronic*
- Average age of first use is 14
- The amount of tar inhaled and the level of carbon monoxide absorbed are 3-5 times greater than cigarette smokers.

Effects of Marijuana Use

- **Physical Effects of use:** Dry mouth, nausea, headache, decreased coordination, increased heart rate, reduced muscle strength, increased appetite and eating
- **Mental Effects of use:** Anxiety, paranoia, confusion, anger, hallucinations, tiredness, possible suicidal thoughts

Other effects of Marijuana

- **Reproductive Problems in Guys:** smaller testicular size, lower testosterone hormone levels, impotence, decreased sexual desire, change in sperm size, amount and strength.
- **Reproductive Problems in Girls:** Period problems, abnormal eggs, decreased sexual desire, reduced fertility in your future children
- If used during pregnancy, it can decrease the size of the baby and increase the risk of the baby developing leukemia later in life.



Inhalants

- Chemicals that are “huffed” or “sniffed” like paint thinners, gasoline, glue, butane lighters, propane tanks, aerosol sprays, nail polish remover, etc.
- **Effects of Use:** Slows down the body’s functioning, loss of body control, passing-out, permanent hearing loss, permanent muscle spasms and twitches, cancer, brain damage, bone damage, liver & kidney damage, heart failure and possible death.

Club D



- MDMA (Ecstasy), Rohypnol (date rape drug-Roofies), GHB, and Ketamine (Special K or Vitamin K) are among the drugs used in nightclubs, bars, raves, or the trance scene.
- These are man-made drugs that can cause seizures, amnesia, anxiety, tremors, sweating, coma, high body temperature that can lead to death and long term brain damage that affects the parts of the brain that involve thought, memory and pleasure.

The Risks of Ecstasy

- ***Psychological Difficulties***

Confusion, depression (neurotoxicity), sleep problems, drug cravings, severe anxiety, and paranoia.

- ***Physical Symptoms/Side Effects***

Muscle tension, involuntary teeth clenching, nausea, blurred vision, rapid eye movement, faintness, chills, sweating, and increased heart rate and blood pressure.

Hyperthermia and hepatitis.

- ***Psychological Dependence***

Hallucinogens

- *LSD, Acid, PCP, Angel Dust, Mushrooms or Shrooms* are all hallucinogens that alter the time, reality and environment around you.
- Long term effects can include flashbacks, schizophrenia and severe depression.



Methamphetamine

- *Meth, Speed or Chalk* is taken by mouth, by snorting the powder, by needle injection, and by smoking.
- **Effects of Use:** Brain damage, confusion, anxiety, paranoia, anger, stroke, high body temperature, and convulsions which can lead to death.
- Everybody doesn't think it's okay to take methamphetamine.



Ketamine (K)



- ***The Facts***
 - an anesthetic used by veterinarians.
 - blocks chemical messengers in the brain that carry sensory input thereby leading to hallucinations.
- ***Side Effects***
- At high doses, K can cause delirium, amnesia, impaired motor function, high blood pressure, depression, and potentially fatal respiratory problems.

Amphetamines & Methamphetamine

- ***The Facts***

- Amphetamines trigger the release of epinephrine (adrenaline) which stimulates the central nervous system.
- Methamphetamine is a powerful addictive stimulant.
- Meth remains in the central nervous system and the body, producing prolonged stimulant effects.

- ***How Users Feel***

- Amphetamines produce a state of hyper-alertness and energy.
- High doses make users feel wired: talkative, excited, restless, irritable, anxious, and moody.
- Meth produces long-lasting toxic effects, including psychosis, violence, seizures, and cardiovascular abnormalities.

Amphetamines & Methamphetamine



- ***Side Effects***
- Feelings of grandiosity, anxiety, tension, anger, agitation, paranoia, and impaired judgment.
- Increased heart rate and blood pressure.
- ***Long Term Side Effects***
- Malnutrition, skin disorders, ulcers, insomnia, depression, vitamin deficiencies, sexual dysfunction and impaired concentration or memory, and, in some cases, brain damage.

Cocaine & Heroin

- Both drugs can be snorted, smoked or injected by needle into a vein.
- Prolonged cocaine snorting can result in sores of the inside of the nose and can damage the cartilage enough to cause it to collapse.
- Heroin is ranked second as the most frequently mentioned drug in drug-related deaths.



Cocaine and Heroin



- *How Users Feel*
- Cocaine stimulates the central nervous system producing feelings of soaring well-being and boundless energy.
- After a brief period of euphoria, users slump into depression.

Cocaine & Heroin

- The IV drug user is at risk for transmitting or acquiring HIV infection/AIDS if needles or other injection equipment are shared.
- **Bad Effects:** Infected veins, hepatitis liver disease, pneumonia, heart infections, paranoia, depression, miscarriage, overdose and even death!



Physical Effects of Drug Use

1990



1995



Same user of Methamphetamines 5 years later



Infection from IV drug use

Tobacco and Smoking



Bangladesh & Tobacco

- Tobacco control is a complex issue in Bangladesh
 - Diverse types of tobacco products used
 - Large number of user
 - Tobacco producing country
 - Low income country with limited resource for tobacco control

Smoking Tobacco

- Cigarette
- Bidi
- Hukkah



Smokeless Tobacco

- Chewing tobacco
 - Zarda
 - Sada pata
 - Gul
- Snuff
 - Nasshi



Commercial Tobacco Contents



4000 Chemicals



40 Cancer causing agents



500 Poisons

Chemical Box:



What's in Tobacco?

- ★ Tar: black sticky substance used to pave roads
- ★ Nicotine: Insecticide
- ★ Carbon Monoxide: Car exhaust
- ★ Acetone: Finger nail polish remover
- ★ Ammonia: Toilet Cleaner
- ★ Cadmium: used batteries
- ★ Ethanol: Alcohol
- ★ Arsenic: Rat poison
- ★ Butane: Lighter Fluid

Nicotine



Poisonous



More addictive than cocaine and heroine



So powerful that farmers can't use it to kill insects



Legal addiction



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



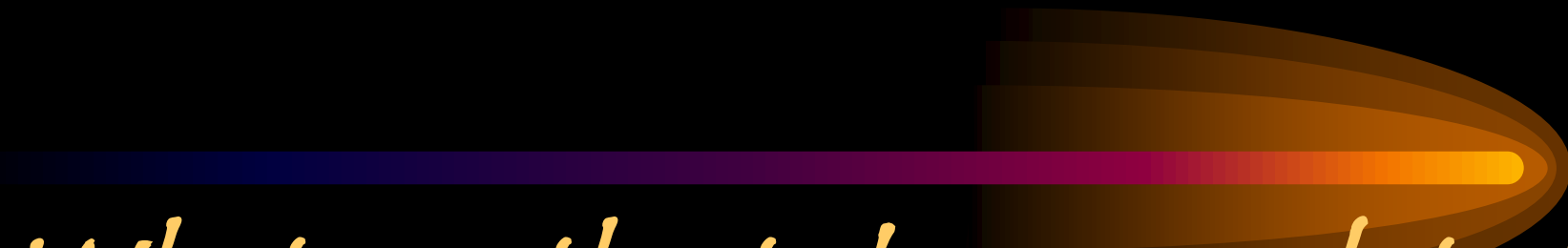
Copper



Mercury

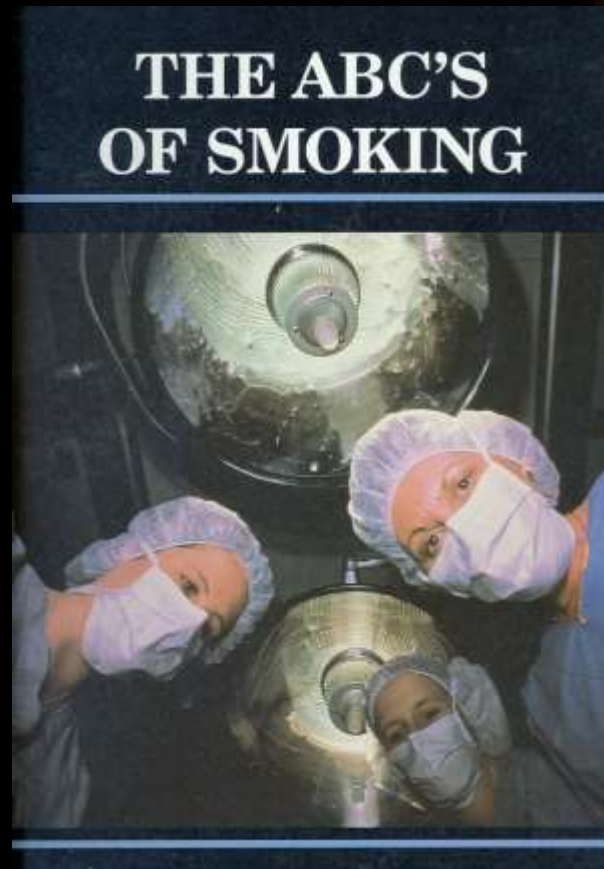


Heavy metals

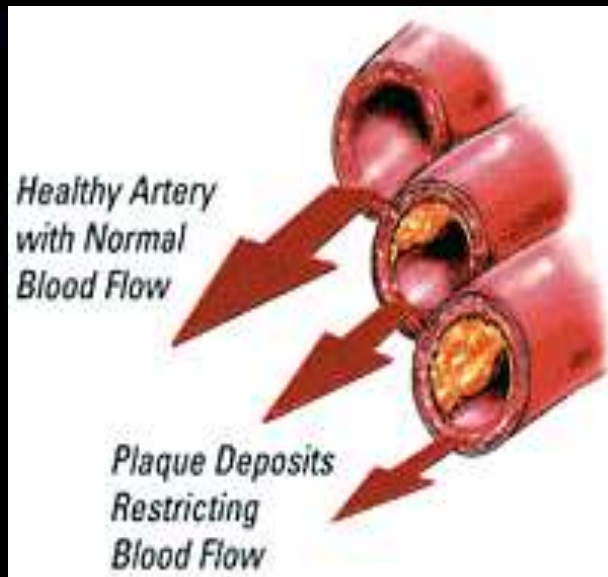


What are the tobacco-related diseases that are contributing to all these deaths?

Tobacco use: The single largest cause of preventable death.



Arteriosclerosis & Atherosclerosis:

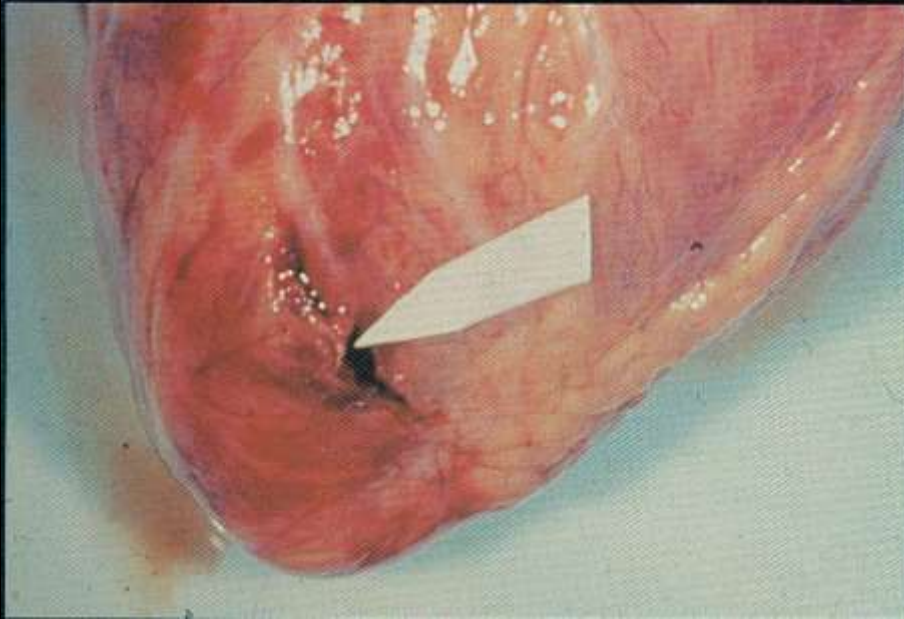


Healthy artery



Damaged artery

Heart Attack:



Torn heart wall: Result of over-worked heart muscle

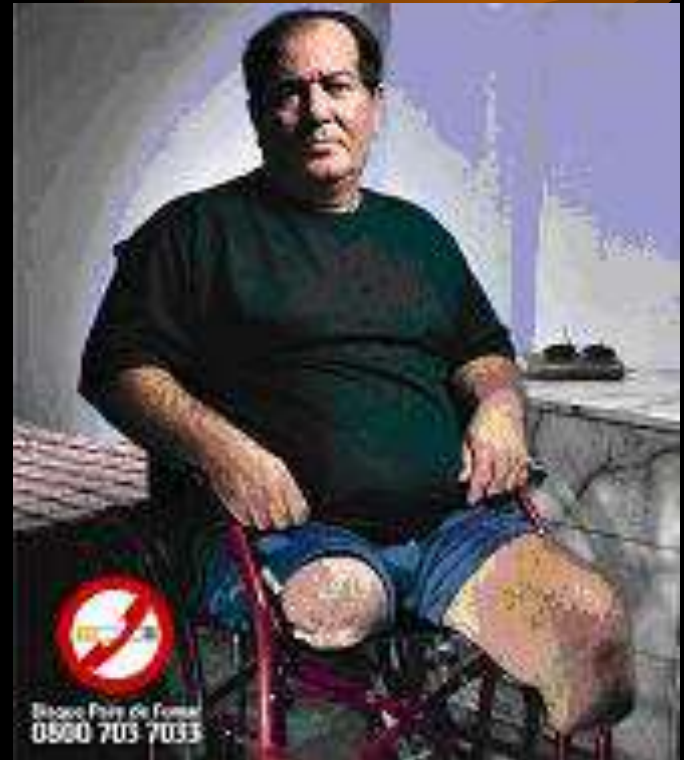
Smokers are twice as likely as Nonsmokers to have a heart attack

Quitting smoking rapidly reduces the risk of coronary heart disease

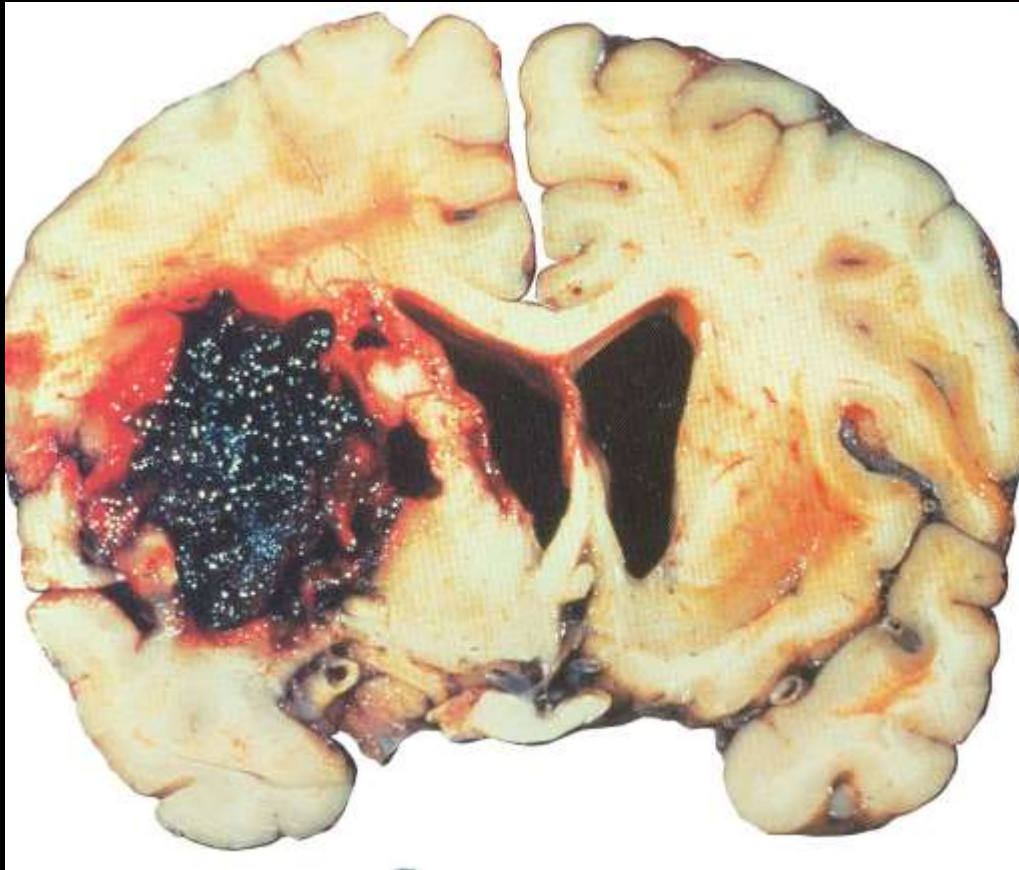
Peripheral Vascular Disease



FUMAR CAUSA
IMPOTÊNCIA SEXUAL.



Stroke:



This brain shows stroke damage, which can cause death or severe mental or physical disability

Tobacco & Diabetes



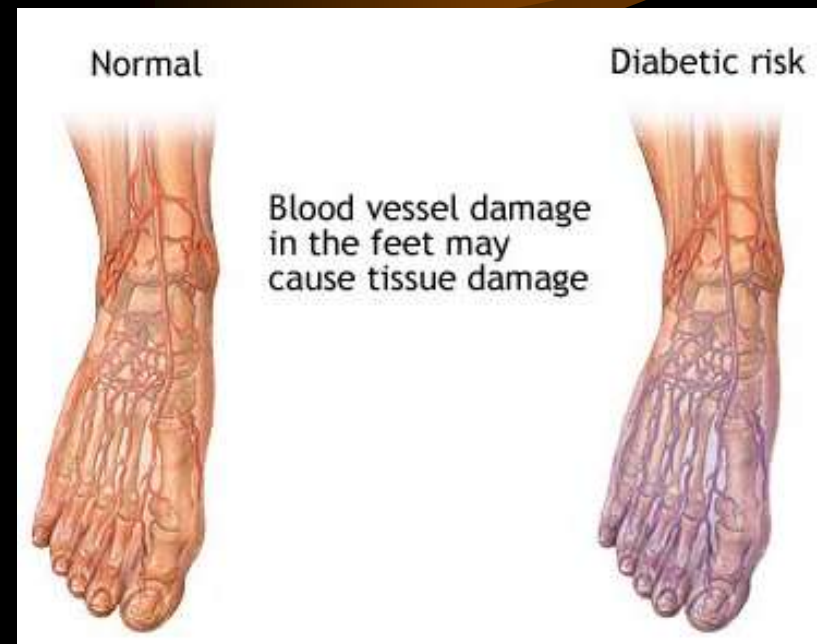
Smoking and Diabetes both reduce the amount of oxygen reaching your bodily tissues, resulting in poor circulation.



Smoking raises your blood sugar level making it harder to control your diabetes.

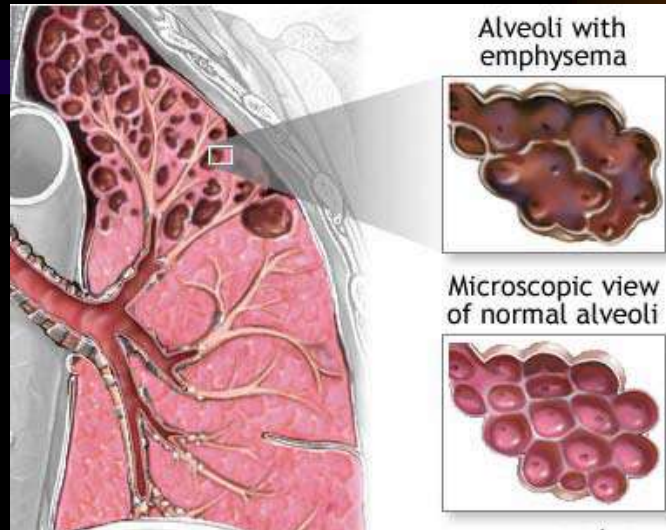


Of people with diabetes who need amputations, 95% are smokers.



Emphysema:

Healthy lung



Emphysematic lung

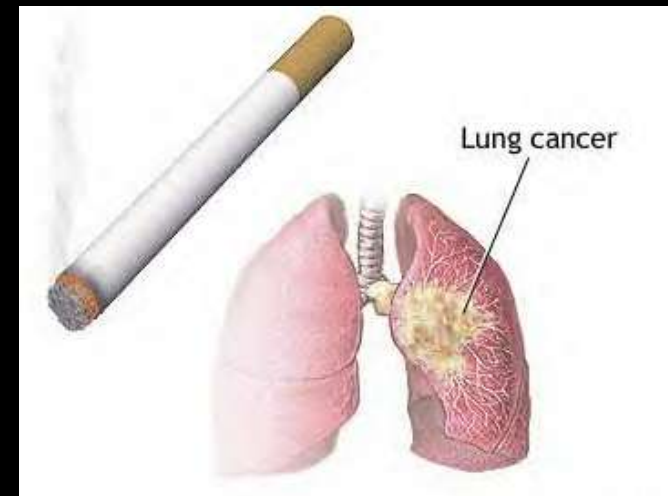


Symptoms Include

- ★ Shortness of breath
- ★ Chronic cough
- ★ Wheezing
- ★ Anxiety
- ★ Weight loss
- ★ Ankle, feet and leg swelling
- ★ fatigue

Lung Cancer:

The uncontrolled growth of abnormal cells in one or both lungs



*Lung cancer kills more people than
any other type of cancer*

Fetal Damage:

Fetal Smoking Syndrome:

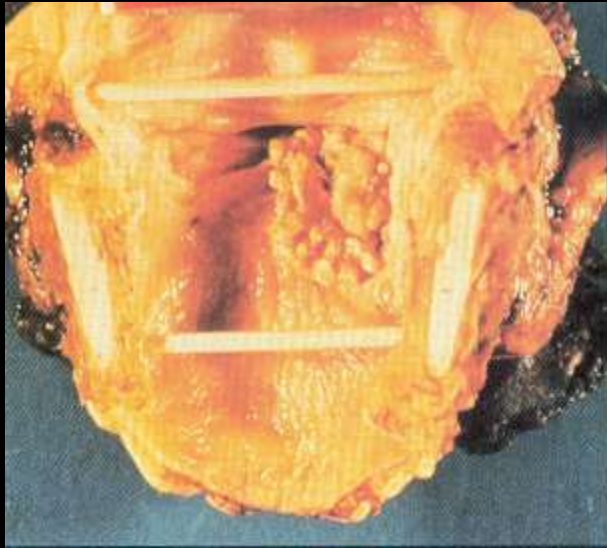
- ◊ *Birth defects*
- ◊ *Premature stillbirth*
- ◊ *Low birthweight*
- ◊ *Prone to Sudden Infant Death Syndrome*
- ◊ *Lowered immune capacity*



Laryngeal Cancer

Symptoms:

- ◊ *Persistent hoarseness*
- ◊ *Chronic sore throat*
- ◊ *Painful swallowing*
- ◊ *Pain in the ear*
- ◊ *Lump in the neck*



Over 80% of deaths from laryngeal cancer are linked to smoking

Dental Problems:



Above: Cavities

Below: Gingivitis

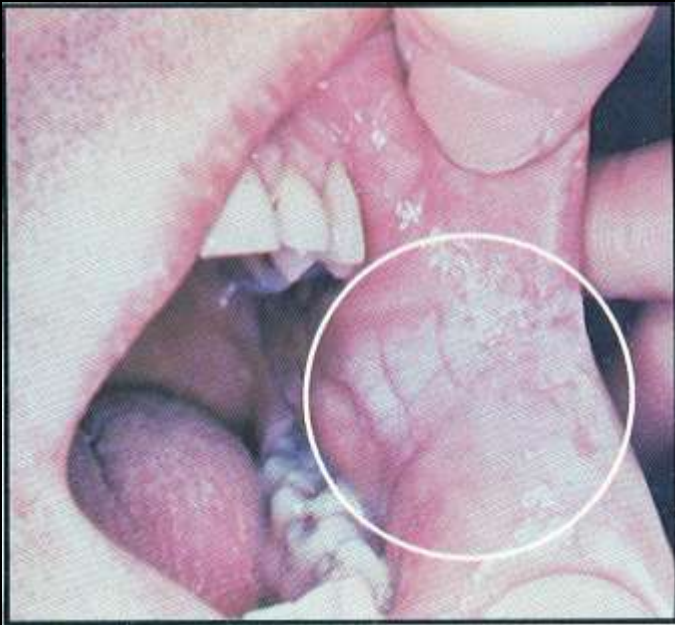


Overall poor oral health

Common Consequences:

- ◊ *Stained teeth*
- ◊ *Gum inflammation*
- ◊ *Black hairy tongue*
- ◊ *Oral cancer*
- ◊ *Delayed healing of the gums*

Consequences of chewing tobacco:



Leukoplakia



Oral cancer

Secondhand smoke:



He has his daddy's eyes
and his momma's lungs.

Secondhand Smoke Kills.

Nicotine Hard Habit to Quit

Withdrawal Symptoms

Anxiety 87% *	Irritability 80% *
Difficulty Concentrating 73% *	Restlessness 71%
Tobacco Cravings 62%	Gastrointestinal Problems 33%
Headaches 24%	Drowsiness 22%

When You Quit...



Within 20 Minutes:

- *Blood pressure drops to normal*
- *Pulse rate returns to normal*
- *Body temperature of hands and feet increases to normal*



Within 8 Hours:

- *Carbon Monoxide level in blood drops to normal*
- *Oxygen level in blood increases to normal*
- *Smoker's breath disappears*





Within 24 Hours:

- *Your chance of a heart attack decreases.*



Within 48 Hours:

-  *Nerve endings start to re-grow*
-  *Your ability to smell and taste is enhanced*

When You Quit...



Within 72 Hours:

- *Bronchial tubes relax making it easier to breathe.*
- *Lung capacity increases making it easier to do physical activities*
- *Within 2 weeks - 3 months:*
- *Circulation improves*
- *Walking becomes easier*
- *Lung function increases up to 30 %*



Within 1 - 9 months:

- *Coughing, sinus congestion, fatigue, shortness of breath decrease*
- *Energy level increases*
- *Cilia re-grow in lungs, increasing the ability to handle mucus, clean lungs, reduce infection*

When You Quit...



Within One Year:

- *Risk of coronary heart disease is half that of a smoker*



Within Two Years:

- *Heart attack risk drops to near normal*

When You Quit...



Within 10 Years:

- *Lung cancer death rate is similar to that of a person who does not smoke.*
- *The pre-cancerous cells are replaced.*



Within 15 Years:

- *Risk of coronary heart disease is the same as a person who has never smoked.*

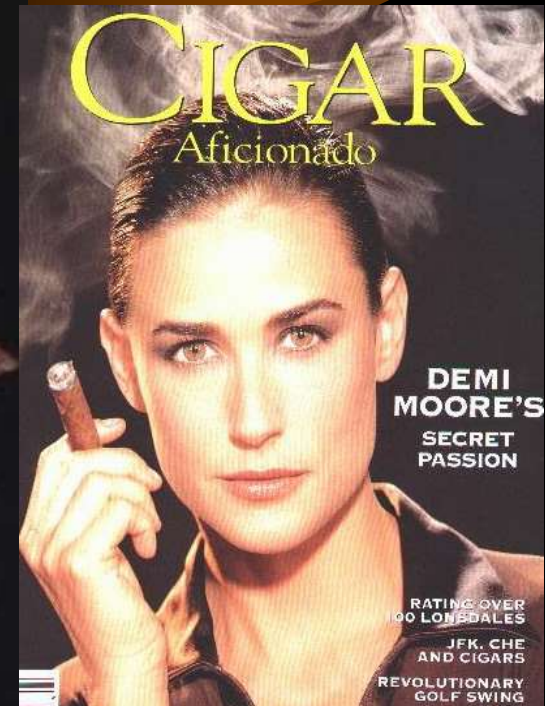
The Quit Plan:



- Treat yourself well
- Drink lots of water
- Change your routines
 - Reduce stress
 - Deep breathing
 - Regular exercise
- Do something enjoyable every day
- Increase non-smoking social support
 - Other ideas?

Advertisement:

Using beauty and fame to promote a dirty, devastating habit



Smoke-free places in Bangladesh

- Schools, day care center, hospitals are 100% smoke-free by law but universities, other public places can identify separate smoking area
- 50 taka fine to smokers in public places; no fine for manager of places
- Restaurants not included as public places but many restaurants, bus services, launch services declared as smoke-free voluntarily



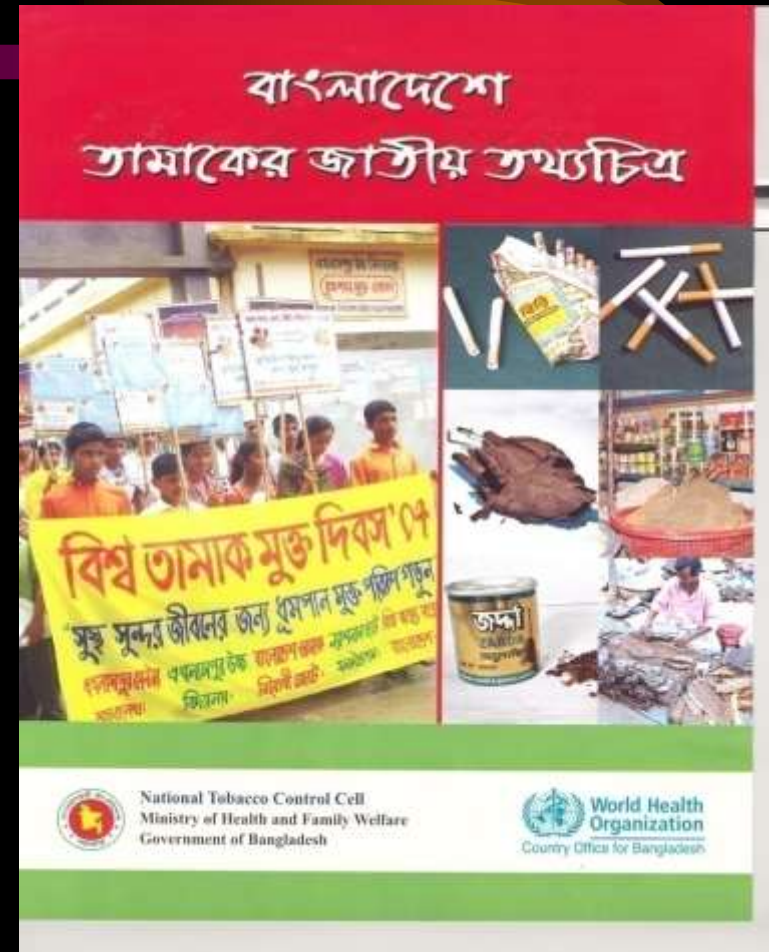
Declaration of smoking area
in a rural market place



Declaration of smoke free area
in a rural school

Warn about the dangers of Tobacco

- WNTD observed regularly throughout the country
- Billboards and no smoking signs are placed
- Good media coverage of tobacco control activities (both extensive and supportive) in newspapers, radio, sometimes TV



Pack warnings

- 30% of front and back surface
- Six rotating warnings (only one warning at a time; warnings change each six months)
- Black letters on white surface
- Specific diseases mentioned
- Huge improvement over earlier warnings—but still far from optimal



Indirect advertisement-



Point of sale



Brand stretching

Raise taxes on tobacco



- Low tax on cigarettes and bidis
- Tax were increased in the last budget on cigarettes and bidi
- Even lower tax on smokeless products

Potential key areas for change

- Law amendment
 - Including smokeless tobacco
 - Broadening definition of smoke free areas
 - Strengthening warnings
- Law enforcement
- Tax increases and better tax collection
 - Advocacy for increases
 - Smuggling control
 - Better collection of tax



FreeFoto.com

Thank You

Dr. Shaikh Abdus Salam