

## *A New Vision of Preventive Medicine for The New Century*

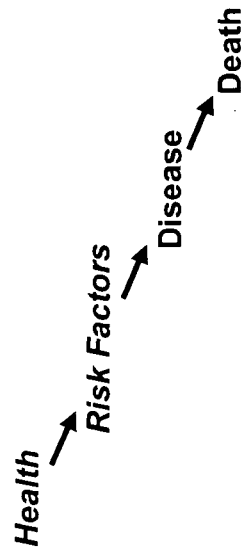
*Department of Preventive Medicine and Public Health  
Yonsei University College of Medicine*

*Il Suh MD, PhD*

## Disease Continuum

Disease can be thought of as developing along a continuum, that ranges from health, to risk factors, to disease, and finally to death.

## Disease Continuum



## Disease Continuum

- Progression along continuum can be rapid
  - Drinking and driving
- Progression can take lifetime
  - Poor diet and heart disease
  - Smoking and lung cancer

<http://www.who.int/about/press/infocenter/>  
<http://www.who.int/about/press/infocenter/>  
<http://www.who.int/about/press/infocenter/>

**About WHO**

**Definition of Health**

**Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.**

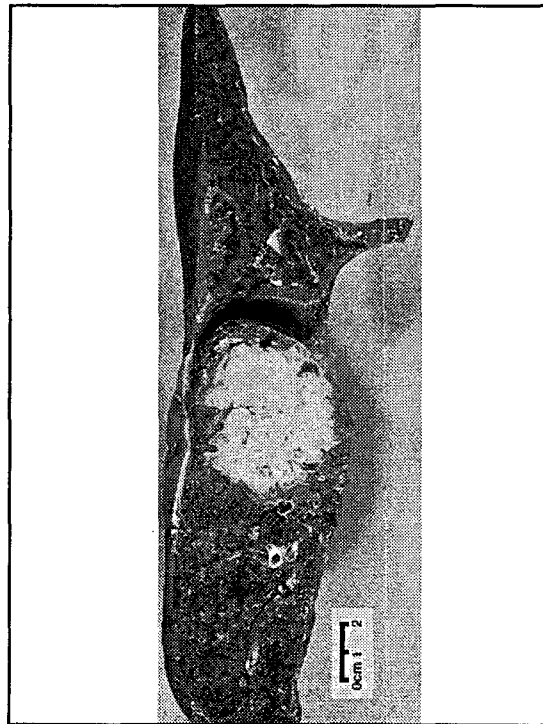
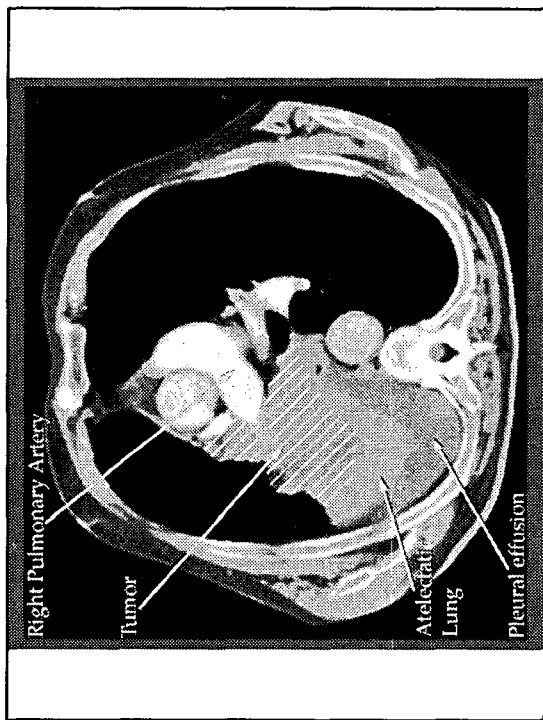
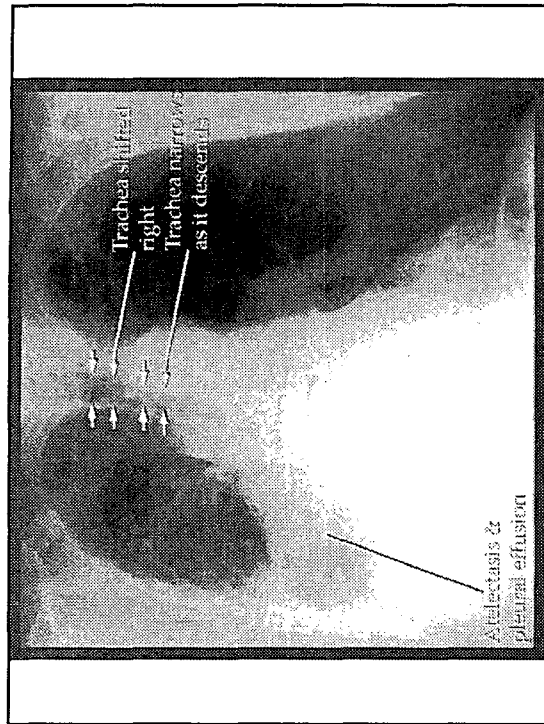
Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.

WHO/WHO

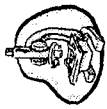
©-Mail: info@who.int  
Copyright 2000. All rights reserved.

**WHO**  
 World Health Organization  
 11, Avenue Appia, 10119 Geneva, Switzerland  
 Tel: +41 (0)22 791 2111  
 Fax: +41 (0)22 791 3111  
 Email: info@who.int  
 Website: www.who.int

**WHO**  
 World Health Organization  
 11, Avenue Appia, 10119 Geneva, Switzerland  
 Tel: +41 (0)22 791 2111  
 Fax: +41 (0)22 791 3111  
 Email: info@who.int  
 Website: www.who.int



## Three Approaches



Basic Science



Clinical Science



Population Science

## Basic Science Approach

- Learn the biomolecular mechanisms of lung cancer
- Discover why cells become cancerous
- Understand how cells communicate with one another

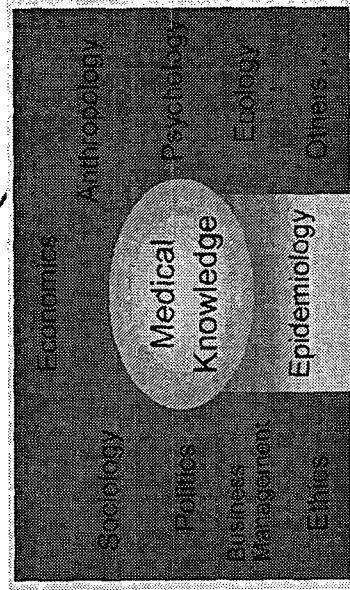
## Clinical Approach

- Surgery (thoracotomy)
- Radiation therapy
- Chemotherapy
- Pain relief
- Hospice and end-of-life care

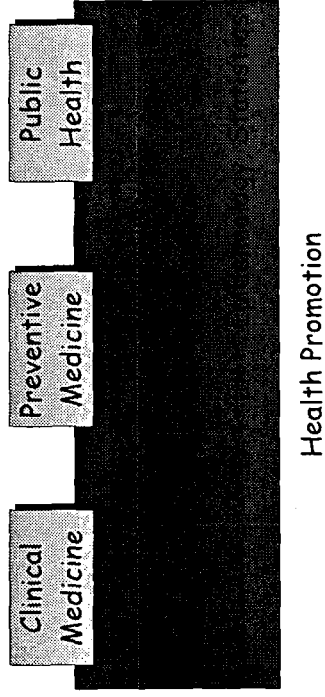
## Approaches of Preventive Medicine

- Discover the "upstream" causes of lung cancer using epidemiology
- Learn about effective prevention programs and policies
- Implement these programs and policies
- Evaluate progress in preventing cancer in communities

## Tools for Preventive Medicine



## Preventive Medicine and Public Health



## Several Considerations

	Clinical Medicine	Preventive Medicine	Public Health
Cost	↑	↓	↓
Outcome	↑	↑	↑
Efficiency	↑	↑	↑
Satisfaction	↑	↑	↑

## Scope of Preventive Medicine

- Epidemiology
- Environmental & Occupational Health
- Health Services Research
  - Health policy, Hospital management

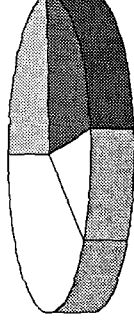
## Cause of Death in Korea

- 1920

- 1960s

1. *Infectious disease*
  2. *GI disease*
  3. *Pulmonary disease*
  4. *Neurologic disease*
1. *Pneumonia*
  2. *Tuberculosis*
  3. *Neurologic disease*
  4. *Cancer*

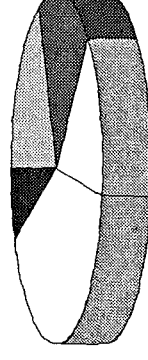
## Cause of Death in Korea, 2000



What is the leading cause of cancer death in Korea?

1. Gastric cancer
2. Lung cancer
3. Breast cancer
4. Colon cancer
5. None of the above

## Cause of Cancer Death in Korea, 2000



## Known Causes of Lung Cancer

- Do we know all of them?
- Are they the real causes?

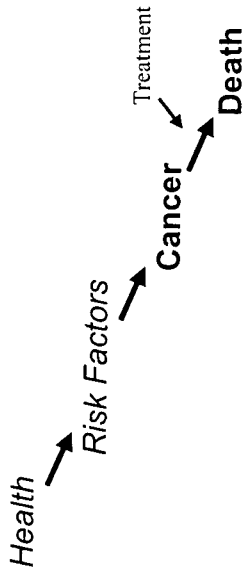
### Risk Factors

- Smoking
- Radon
- Asbestos
- Passive smoking
- Genetics

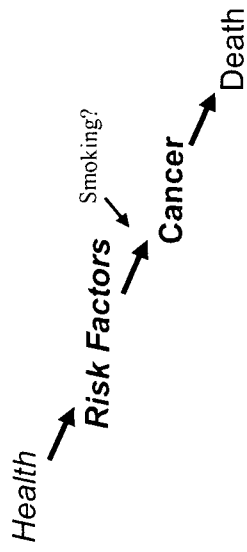


Lung Cancer

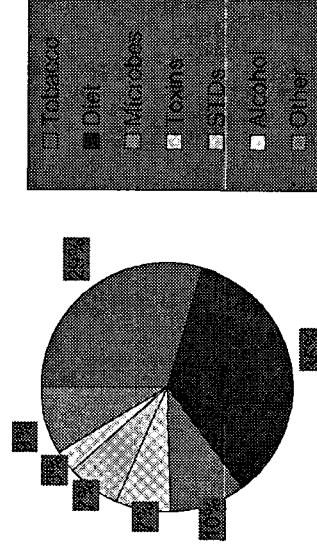
## Cancer Prevention Continuum



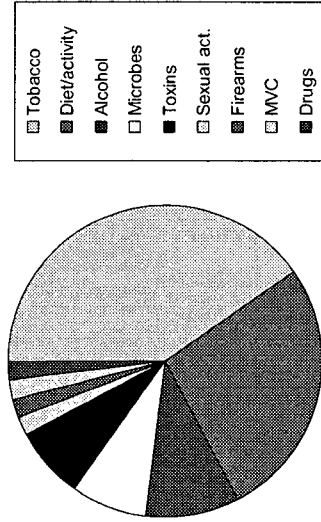
## Cancer Prevention Continuum



## Preventable Causes of Cancer



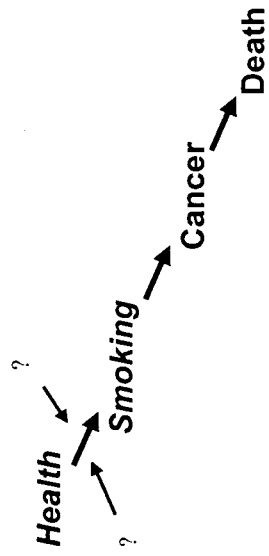
## Preventable Causes of Death



What is the leading cause of cancer death in Korea?

5. None of the above

## Cancer Prevention Continuum



But, what makes risk factors risky?

### Another View(I)

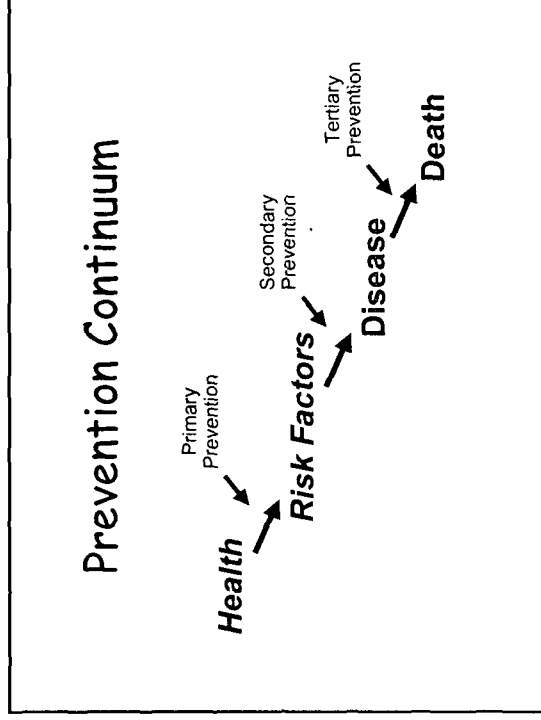
- **Environmental**
  - **Physical**  
Exposed to carcinogens(radon, asbestos, passive smoking)
  - **Social**  
Improper regulation against carcinogens  
Not enough education or campaign about health promotion  
No benefit for early diagnosis of cancer in health insurance
- **Others**
- ...

### Another View(II)

- **Personal**
  - **Genetic**
  - **Behavioral**  
Habitual smoking, no motivation to quit it
  - **Educational**  
No knowledge about risk factors of lung cancer
  - **Economic**  
Cannot pay for taking Chest X-ray or visiting a clinic
  - **Others ...**

### Prevention Continuum

- **Primary prevention**
  - Modifies, eliminates, or avoids risk factors
- **Secondary prevention**
  - Reduces risk of developing disease among people with risk factors
- **Tertiary prevention**
  - Reduces the risk of dying or disability among persons with a disease







## A New Vision for the New Century

## A New Vision for the New Century

- Our timeless mission
- Last century's progress
  - Remember Small Pox, TB and Polio?
- This century's challenges
  - How modern living can kill
- New tools & new goals
- A few things we've already begun

## Our Timeless Mission Whatever It Takes to Understand and Prevent Disease

- Assessment (*What is happening to people in families and local communities?*)
  - Who is born, who dies?
  - What is the where and why for disease?
  - What does science say about prevention?
- Policy development (*Balancing science, perception, politics, individual rights & most people's good health.*)
  - Who do we want to do what about prevention?
- Assurance (*What counts is what's counted.*)
  - Are all parties doing what's expected?

## Last Century's Progress (Remember Small Pox, TB and Polio?)

- Average lifespan in 1900 --- 45 years
- Average lifespan in 1995 --- 75 years
- Credit **Sustained** Public Health Efforts:
  - Sanitation (personal hygiene, safe drinking water, sewage & garbage control)
  - Nutrition (a safer food supply, a more balanced diet)
  - Immunization (universal access, financing, school entry requirements and monitoring)
  - Antibiotics and other medicine

## This Century's Challenges (How Modern Living Can Kill)

- Health disparities from social inequities
- Poor diet
- Not enough exercise
- Addictions to nicotine, alcohol and other drugs
- Unsafe sexual practices

**About WHO**

### Achievements and Challenges

Since its creation in 1948, the World Health Organization has contributed to major accomplishments resulting in a healthier world. For example:

In 1967, smallpox was endemic in 31 countries. In that year alone, between 10 and 15 million people were stricken with the disease; of these, some 2 million died and millions of survivors were disfigured or blinded for life. The last known case of smallpox occurred in 1977 in a 38-year-old man in Zaire. Since that time, had it not been eradicated, at least 20 million people would have died from the disease.

Yaws, a crippling and disfiguring disease afflicting some 50 million people, was one of the first to claim WHO's attention. A scientific breakthrough came in 1948 when the first antibiotic injection was developed to cure the disease. By 1965, 46 million yaws patients had been successfully treated in 49 countries.

**Navigation Menu:**  
 Mission statement  
 Health for all  
 Activities  
 Charter & structure  
 Organization  
 Regional offices  
 History of WHO

**Very busy Organization:**  
 Coordination  
 Monitoring  
 Entering  
 Promoting  
 Researching

**Administrative:**  
 Director of WHO  
 Deputy Director  
 Regional Office  
 Programme  
 HQS

## New Tools and New Goals for the 21st Century

- Honor & preserve our foundation of success
  - Do no harm to core public health functions
  - Keep the food, water & air safe
  - Strengthen and expand effective programs
- Eliminate health disparities
  - Promote healthy surroundings for every citizen
  - Promote critical health services for all
  - Diversify the health care work force to promote its cultural competence

## New Tools and New Goals for the 21<sup>st</sup> Century

- Create the conditions that promote healthy behavior - Health Promotion
  - *Make it hard to get and stay addicted to nicotine, alcohol, and other dangerous drugs*
  - *Make it easy to eat right*
  - *Make it easy to get enough exercise*
- Use genetics to improve everyone's health
  - *Assure privacy and informed consent*
  - *Assure ethical use of proven genetic tests and treatments*

## A Few Things We've Already Begun

- Epidemiology
- Environmental & Occupational Health
- Health Services Research

## Opportunities as a Researcher

- Unique disease pattern
  - *Thrombotic vs. hemorrhagic stroke*
- Prevalence of risky health behavior
  - *Smoking and drinking*
- Single ethnic background
  - *Genetic epidemiology*

## Opportunities as a Researcher

- Sustainable development and environmental health
  - *"Genetics loads the gun, but environment pulls the trigger"*
- Recognizing the importance of socioeconomic factors in health status
  - *Is the economic policy a health policy?*
- Social experiments of health policies
  - *Mandatory prescription*



*The end is another beginning.*