Genetic Damage and Mutation
Cancer results from the accumulation of genetic damage to cells across time***

Cancer cells differ from normal cells
- Their shape and appearance is different.****
- There are changes in their dependence on growth factors
- There is a multitude of biochemical differences
Cancer is a multi-step process, which explains:

- Increased incidence of cancer with age***
- Development of cancer decades after exposure to carcinogens ****
- Increased incidence of cancer among people with inherited dispositions
Knowledge to improve personal and public health

- Good choices can reduce an individual’s risk of developing cancer

- Levels of cancer prevention:
  - Individual behavior changes
  - Health care providers – counseling and screening
  - National level – government regulations to minimize public exposure to known carcinogens
  - International level – actions of developed countries affect the incidence of cancer worldwide

Attention to ethical and public policy issues
Risk factors for skin cancer

- Excessive exposure to UV (ultraviolet) radiation
- Fair complexion ***
- Occupational exposure to substances
  - Coal tar ***
  - Creosote
  - Arsenic compounds
  - Radium
Good choices can improve an individual’s chance of survival if he/she develops cancer

- Improved detection
- Improved treatment

Ethical values sometimes conflict in public policy debates about strategies for reducing the risk of cancer
Ethics is a process of rational inquiry.

Ethics requires a solid foundation of information and careful interpretation of that information.

There are often competing, well-reasoned answers to what is right and wrong, or good or bad.