

Defining Prevention

Primary, secondary and tertiary prevention

Scientists are always looking for new and better ways to prevent disease and injury — both to avert human suffering and to control the tremendous economic costs of ill health. But when researchers and health experts talk about “prevention,” what do they mean?

In general, prevention includes a wide range of activities — known as “interventions” — aimed at reducing risks or threats to health. The definition of epidemiology encompasses preventing and controlling diseases in human populations. This is usually accomplished using three levels of prevention.

Primary prevention strategies emphasize general health promotion, risk factor reduction, and other health protective measures. These strategies include health education and health promotion programs designed to foster healthier lifestyles and environmental health programs designed to improve environmental quality. Specific examples of primary prevention measures include immunization against communicable diseases; public health education about good nutrition, exercise, stress management, and individual responsibility for health.

Secondary prevention focuses on early detection and swift treatment of disease. Its purpose is to cure disease, slow its progression, or reduce its impact on individuals or communities. A common approach to secondary prevention is screening for disease, such as mammography for breast cancer detection; eye tests for glaucoma; blood tests for lead exposure; occult blood tests for colon cancer; and the Pap test for cervical cancer. In each case, screening is performed to detect disease early so prompt treatment can be initiated. Examples of other secondary prevention methods include treatment of high blood pressure to prevent complications.

Tertiary prevention is treatment of active disease. Strategies involve both therapeutic and rehabilitative measures once disease is firmly established. Tertiary prevention measures include treatment of diabetics to prevent complications and the management of chronic heart disease patients with medication, diet, exercise, and regular medical exams. Other examples include physical therapy, nursing care, speech therapy, counseling, and treating those suffering from complications of chronic diseases such as Parkinson's.

Going upstream: Imagine you're standing beside a river and see someone drowning as he floats by. You jump in and pull him ashore. A moment later, another person floats past you going downstream, and then another and another. Soon you're so exhausted; you know you won't be able to save even one more victim. So you decide to travel upstream to see what the problem is. You find that people are falling into the river because they are stepping through a hole in a bridge. Once this is fixed, people stop falling into the water. When it comes to health, prevention means “going upstream” and fixing a problem at the source instead of saving victims one by one.

UNPACKING THE CONCEPT OF PREVENTION FROM A PUBLIC HEALTH PERSPECTIVE

The public health model suggests that the natural history of any disease exists on a continuum, with health at one end and advanced disease at the other.

This model delineates three levels of the application of preventive measures that can be used to promote health and arrest the disease process at different points along the continuum.

The goal is always to maintain a healthy state and to prevent disease or injury.

It has been defined in terms of four levels (rather than three)

Levels of Prevention Model: A Public Health Approach

- Primordial prevention
- Primary prevention
- Secondary prevention
- Tertiary prevention

Primordial prevention

- *Prevention of the emergence or development of risk factors in population or countries in which they have not yet appeared.*
- ***Efforts are directed towards discouraging children from adopting harmful lifestyles.***

Primary prevention

Here the goal is to protect healthy people from developing a disease or experiencing an injury in the first place. For example:

- * education about good nutrition, the importance of regular exercise, and the dangers of tobacco, alcohol and other drugs
- * education and legislation about proper seatbelt and helmet use
- * regular exams and screening tests to monitor risk factors for illness
- * immunization against infectious disease
- * controlling potential hazards at home and in the workplace

Therefore primary prevention consists of:

- **An action taken prior to the onset of disease, which removes the possibility that the disease will ever occur.**
- It includes the concept of positive health that encourages the achievement and maintenance of an “acceptable level of health that will enable every individual to lead a socially and economically productive life.

Since successful primary prevention helps avoid the suffering, cost and burden associated with disease, it is typically considered the most cost-effective form of health care.

Secondary prevention

These interventions happen after an illness or serious risk factors have already been diagnosed. The goal is to halt or slow the progress of disease (if possible) in its earliest stages; in the case of injury, goals include limiting long-term disability and preventing re-injury. For example:

- * telling people to take daily, low-dose aspirin to prevent a first or second heart attack or stroke
- * recommending regular exams and screening tests in people with known risk factors for illness
- * providing suitably modified work for injured workers

Therefore Secondary prevention consists of:

- Action which halts the progress of a disease at its incipient stage and prevents complications.
- This is what much of clinical medicine does.
- An imperfect tool in the transmission of disease.
- More expensive and less effective than primary prevention.

Tertiary prevention

This focuses on helping people manage complicated, long-term health problems such as diabetes, heart disease, cancer and chronic musculoskeletal pain. The goals include preventing further physical deterioration and maximizing quality of life. For example:

- * cardiac or stroke rehabilitation programs
- * chronic pain management programs
- * patient support groups

Therefore Tertiary prevention consists of:

- All measures available to reduce or limit impairment and disabilities, minimize suffering caused by existing departures from good health and to promote the patient's adjustment to irremediable conditions.

What works best?

For many health problems, a combination of primary, secondary and tertiary interventions are needed to achieve a meaningful degree of prevention and protection. However, prevention experts say that the further upstream one is from a negative health outcome, the likelier it is that any intervention will be effective — think about fixing the hole in the bridge so people stop falling through and drowning downstream.

A Practical Example:

Primary Prevention

We use primary prevention methods before the person gets the disease. Primary prevention aims to prevent the disease from occurring. Therefore primary prevention reduces both the incidence and prevalence of a disease.

Encouraging people to protect themselves from the sun's ultraviolet rays is an example of primary prevention of skin cancer.

Secondary Prevention

Secondary prevention is used—

- after the disease has occurred, *but*
- before the person notices that anything is wrong.

A doctor checking for suspicious skin growths is an example of secondary prevention of skin cancer. The goal of secondary prevention is to find and treat disease early. In many cases, the disease can be cured.

The goal, therefore, is to move the individual back to a risk-free status.

Tertiary Prevention

Tertiary prevention targets the person who already has symptoms of the disease.

The goals of tertiary prevention are:

- prevent damage and pain from the disease
- slow down the disease
- prevent the disease from causing other problems
- give better care to people with the disease
- make people with the disease healthy again and able to do what they used to do

Developing better treatments for various forms of skin cancer is an example of tertiary prevention. Examples include better surgeries, new medicines, etc.

APPLYING A PUBLIC HEALTH MODEL TO SEXUAL HEALTH EDUCATION

Society has consistently promoted primordial and primary prevention models in drug awareness programs with the goal being to intervene before students begin using. Substance abuse has come to be seen as both a health problem and a barrier to educational achievement. The goal is to prevent the onset of the use of illicit substances. All around our culture the message is clear and consistent: we do not say “Don’t smoke, but if you do use low-nicotine cigarettes.”

Yet when it comes to sex, many people have difficulty with a prevention message. Teen pregnancy and Sexually Transmitted Diseases (STDs) have come to be seen as both health problems and as a barrier to educational achievement. In fact, the CDC identifies teen sex as a risk behavior.

Therefore it should not be difficult to realize that the goal should be to use the rules of primary prevention to prevent the onset of teen sexual activity.

Sexual Risk Avoidance (SRA) is the ideal model from a public health perspective. SRA uses *Primordial prevention* by helping children to develop the skills to prevent them from adopting harmful lifestyles; and *Primary prevention* removing the possibility that the risk behavior will ever occur.

Sexual Risk Reduction programs typically overlook the importance of helping the student move from a place of risk to adopting risk-free behaviors (in other words, moving from sexual activity to non-sexual-activity). But the Optimal Health Model is designed to move those engaged in risk to a place where they are no longer at risk – a status not possible, even with correct and consistent contraceptive usage.

The Optimal Health Model should be applied to all teens, regardless of their sexual experience, with the goal always to help the young person achieve optimal and risk-free health outcomes.