

Lecture- 1

Preventive dentistry

What is preventive dentistry?

Preventive dentistry has its roots from the Latin terms ‘*praevenire*,’ which means ‘to anticipate’ and ‘*dens*,’ which is the word for tooth. Dentists and their team members strive every working day to ‘anticipate’ what could happen to their patients’ teeth and supporting structures.

This definition assumes that the thing being prevented is anticipated, but it does not mean that the extent, severity, or extent of the thing is always known. Prevention in health care means action to stop ill health before it begins.

In dealing with disease, “*prevention is better than a cure.*”

Is preventive dentistry still needed?

As decay rates decline, dentists turn their interest to previously underutilized therapies such as cosmetic dentistry, orthodontics, third molar extractions, implant dentistry, and so on that need improved preventive care

On the other hand people are keeping most of their teeth into old age and living longer, which means that preventing root caries, periodontal disease, and oral cancer will be even more important than before. The frail elderly is the fastest growing segment of the population, and they will need even more preventive care because of their increased risk for disease.

Dental disorders are an enormous burden to society, especially when considers the connection between poor oral health and systemic illness

Levels of prevention

The four levels of preventive care—primordial, primary, secondary, and tertiary care—are detailed below:

Primordial prevention

It is the prevention of emergence or development of risk factors (beginning with change in social and environmental conditions) in countries or population group in which they have not yet appeared. Individual and mass education is main intervention method in primordial prevention.

Primary Prevention (Prepathogenesis)

It is defined as ‘action taken prior to the onset of the disease, which removes the possibility that a disease will even occur’. It is carried out on healthy populations. Information and / or public health measure for the whole population may be sufficient to maintain a disease free environment, this is the goal of primary prevention. Through primary prevention it is possible to ‘anticipate’ disease and prevent it altogether.

Primary preventive services are those that prevent the initiation of disease .It may be accomplished by measures designed to promote general health and well-being or by specific protective measures:

a. Health promotion: It is process of enabling people to increase control over and to improve health. This can be achieved by

- 1) Health education; instruction on proper plaque removal, daily tooth brushing and flossing
- 2) Environment modification such as safe water, control of insects
- 3) Nutritional interventions: improvement of nutrition in vulnerable group.
- 4) Lifestyle and behavioral changes; which favor health

b. Specific protection: These are activities designed to protect against disease agents by decreasing the susceptibility of the host or by establishing barrier against agents in the environment. Methods include immunization, use of specific nutrition, avoidance of allergens, protection from carcinogens, the use of fluoridated toothpaste and application of pit and fissure sealants.

Secondary prevention (Pathogenesis: Initial Stage of Pathogenesis): It can be defined as ‘actions which halts the progress of a disease at its incipient stage and prevents complications’. The focus of secondary prevention is early disease detection, making it possible to prevent the worsening of the disease and the emergence of symptoms, or to minimize complications and limit disabilities before the disease becomes severe. Secondary prevention (‘caution’) suggests that the disease has started but can be reversed, and good health can still be achieved through intervening early, when the disease is just starting, and

returning the subject to good health. For example Secondary prevention includes the detection of disease in asymptomatic patients with screening or diagnostic testing and preventing the spread of communicable diseases. Other examples include when incipient enamel lesions (white spot enamel lesions) can be arrested and reversed using appropriate 'preventive' measures and are reversed before cavities form, other examples gingivitis can be reversed before periodontitis sets in, it was well established that frequent oral hygiene reinforcement by dental professionals can prevent caries, gingivitis, and periodontal disease. Secondary prevention of oral cancer could include identification of dysplastic tissue and its removal as well as stopping the irritation that leads to the dysplasia. When dysplasia is found and excised before cancer develops, thus returning to good health and controlling dental disease is possible. To prevent oral cancer, alternatives to biopsies used for early detection and surgical removal are only now being explored. These include various molecular based diagnostic markers.

Tertiary Prevention (Pathogenesis: Late Stage of Pathogenesis)

Actions taken when the disease process has advanced beyond its early stages i.e. intervention in late pathogenesis phase. It can be defined as 'all measures available to reduce or limit impairments and disabilities, minimizing suffering caused by existing departures from good health and to promote the patients adjustment to irremediable conditions'. The goal of tertiary prevention is to reduce the negative impact of an already-established disease by restoring function and reducing disease-related complications (prevent further complications or death). Tertiary prevention also aims to improve the quality of life for people with disease.

Tool for tertiary prevention include rehabilitation

Rehabilitation: It is defined as "the combined and coordinated use of medical, social, educational, psychological and vocational measures for training and retraining the individual to the highest possible level of functional ability."

Examples of rehabilitation: Special schools for blind pupils, provision of aids for crippled, reconstructive surgery and modification of life for cardiac patients.

In dentistry, tertiary prevention measures include replacement of missing teeth with bridges, implants, or dentures.

Caries prevention: how far it had come in one century!

If one considers that the terminal stage of caries is the loss of a tooth, then early intervention is obviously desirable. When the disease has progressed significantly and more drastic measures are required (such as root canal therapy), one is still ‘preventing’ tooth loss. This was the goal in the early days of dentistry more than a century ago when Dr. G.V. Black proposed the “Extension for Prevention” concept during the restoration of teeth

It has taken over a century for dentistry to advance from the pioneering “extension for prevention” concepts proposed by Dr. G.V. Black. By removing a significant proportion of tooth structure so that only the easily cleansed tooth surfaces remained, there was a reduction in the need for further operative treatment. As dental decay rates began to fall worldwide in industrialized countries after Second World War, a new concept of operative dentistry began to take hold. It is called Minimal Intervention Dentistry (MID), as the term suggests, refers to a principle of treatment in dentistry in which early intervention minimizes tooth destruction because the disease is diagnosed prior to cavitation, and steps are taken to remineralize the enamel and arrest the decay. However, more than that assessing caries risk can be done in several ways using many different approaches include :

A thorough analysis of patient history (social, medical, and dental), followed by a careful extra- and intraoral examination will provide the necessary background for assessing caries risk in order to determine the most appropriate preventive therapy. Changing dietary patterns, controlling the cariogenicity of the oral microflora, and providing a healthy environment for remineralization are primary goals of MID.