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# Preventive Endodontics.

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**Abstract**:Preventive endodontics is a set of dental measures aimed at preserving the healthy condition of the dental pulp and preventing the development of inflammation and necrosis. In modern dentistry, the primary goal is not only to treat diseases but also to prevent them. Therefore, preventive endodontics occupies an important place as one of the major branches of therapeutic dentistry.Dental caries, trauma, improper tooth preparation, and chemical irritation can damage pulp tissue. Timely preventive measures help preserve the vitality of the pulp for a long period.

The Purpose of Preventive Endodontics

The main objectives of preventive endodontics are:preserving the vitality of the dental pulp;
preventing complications of dental caries;
reducing the risk of pulpitis and periodontitis;
decreasing the need for invasive endodontic treatment;
maintaining the functional and esthetic condition of the tooth.

Factors Leading to Pulp Diseases

1. Dental Caries

Deep caries allows bacteria and their toxins to penetrate the pulp through dentin, which may lead to the development of pulpitis.

2. Mechanical Trauma

Tooth fractures, improper cavity preparation, or excessive pressure may damage the pulp tissue.

3. Thermal Effects

High temperatures generated during tooth preparation without adequate cooling may result in pulp necrosis.

4. Chemical Factors

Improper use of certain dental materials may cause pulp irritation.

5. Orthodontic and Occlusal Load

Excessive pressure may impair blood circulation within the pulp tissue.

Main Methods of Preventive Endodontics

1. Caries Prevention

Caries prevention is one of the most important components of preventive endodontics.
Preventive measures include:
maintaining proper oral hygiene;
using fluoride-containing products;
fissure sealing;
regular dental check-ups;
proper nutrition.

2. Indirect Pulp Capping
In deep carious lesions, a portion of the affected dentin is intentionally left to avoid pulp exposure, and protective materials are applied.
Materials used include:
calcium hydroxide;
glass ionomer cement;
MTA (Mineral Trioxide Aggregate).
This method stimulates the formation of reparative dentin.
3. Direct Pulp Capping
When the pulp is accidentally exposed, a biocompatible material is placed directly over it.
Indications:
small pulp exposure;
young patients;
absence of infection signs.
Advantages:
preserves pulp vitality;
allows continued root development;
helps maintain the tooth for a long time.
4. Vital Pulpotomy
This procedure involves removing the coronal pulp while preserving the radicular pulp.
It is mainly used in pediatric dentistry.
5. Atraumatic Tooth Preparation
During tooth preparation, the following are important:
water cooling;
minimally invasive techniques;
use of gentle instruments.
These measures help prevent overheating of the pulp.
The Importance of Modern Biomaterials
In recent years, biocompatible materials have been widely used in preventive endodontics.
Important materials include:
MTA;
Biodentine;
bioceramic cements.
Their advantages are:
excellent sealing ability;
antibacterial properties;
stimulation of dentin regeneration;
high biocompatibility with pulp tissue.
Preventive Endodontics in Children
Since the pulp in children has a rich blood supply, conservative treatment methods are more effective.
The following are especially important in children:
early treatment of primary teeth;
fissure sealing;
prevention of dental trauma;
regular preventive dental examinations.

Advantages of Preventive Endodontics
preserves the natural tooth;
reduces the need for complex endodontic treatment;
economically beneficial;
less invasive for the patient;
maintains tooth function for a long time.

Conclusion:

Preventive endodontics is one of the important fields of dentistry, and its primary task is to preserve the health of the pulp tissue. Early treatment of caries, the use of modern biomaterials, and minimally invasive techniques make it possible to maintain pulp vitality for an extended period. A preventive approach not only prevents diseases but also helps preserve the functional condition of teeth for many years.

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