39th IACDE National Conference

Reg No. 1651

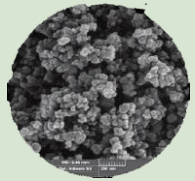
NANO-SHIELD: DEFENDING SMILES AGAINST CAVITIES

INTRODUCTION

- In recent years, nanotechnology has shown great application prospects in the development of anti-caries materials.

METAL NANOPARTICLES USED AS ANTI-CARIES AGENTS

- *Silver Nanoparticle (NAg)*
- *Nano-Zinc (NZn) and (NZnO)*
- TiO2 nanoparticles (NTiO2)
- MgO nanoparticles (NMgO)

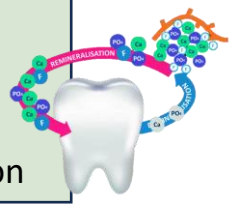


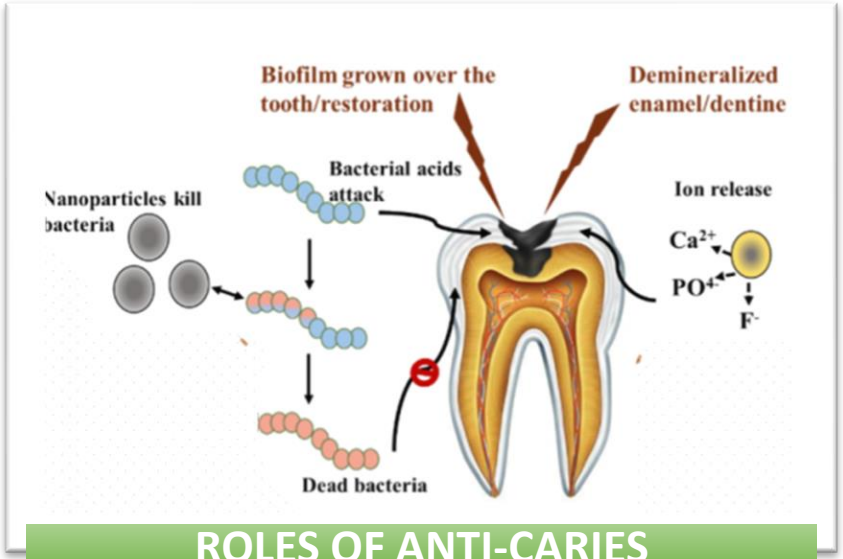
REMINERALIZING NANO ANTI-CARIES MATERIALS

- *Nano Particulate Hydroxyapatite (NHAP)*
- *Nanosized Calcium Fluoride (NCaF2)*

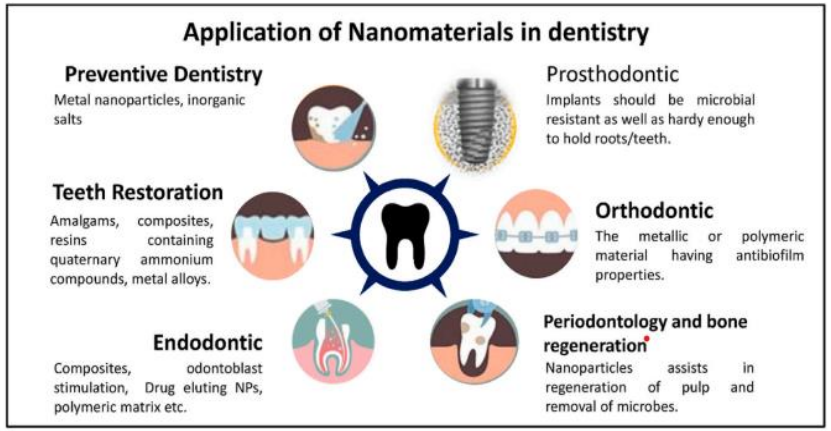
PROPERTIES OF NANOMATERIALS

1. Antibacterial activity
2. Antiviral activity
3. Antifungal activity
4. Reduce biofilm production
5. Remineralizing carious lesion





ROLES OF ANTI-CARIES NANOMATERIALS



CONCLUSION

- Various inorganic based nanoparticles (NPs) and their metal oxide NPs (e. G. Ag, Zn, hydroxyapatite and NCaF2 base NPs) have been shown to increase anti-caries capabilities in filling and other materials.

REFERENCE

- Chen H, Gu L, Liao B, Zhou X, Cheng L, Ren B. Advances of anti-caries nanomaterials. Molecules. 2020 Oct 30;25(21):5047
- Al-Hijazi AY, Hasan N, Nasr BK, Al-Khafaji HH, Al-Khafaji B, Alanssari BF, Jalil AT. Recent advances in the use of inorganic nanomaterials as anti caries agents. Heliyon. 2023 Apr 1;9(4).