39th IACDE National Conference

HEALING SMILES,CONSERVING TEETH:THE MAGIC OF SMART MATERIALS

INTRODUCTION- Smart materials in conservative dentistry has opened new avenues for enhancing the longevity, performance, and functionality of dental restorations.

CHEMICAL COMPOSITION

SMART GIC
- CONVENTIONAL GIC+CAESIN PHOSPHOPEPTIDE-AMORPHOUS CALCIUM PHOSPHATE

SMART COMPOSITE
- CONVENTIONAL COMPOSITE +NANOPARTICLES

SELF HEALING COMPOSITE
- HEALING AGENT +MICROCAOSULE SHELL+CHEMICAL CATALYST+POLYMER MATRIX+FIBER REINFORCEMENY

FLURIODE REALEASING PIT &FISSURE SEALEANT
- NO BISPHENOAL A,NO BIS-GMA,NO BIS-DMA +FLUORIDE

ARISTON PH CONTROL
- DIMETHACRYLATES+FILLRS(YF3,BA-AL,FLUORO SILICATES. +CPP-ACP

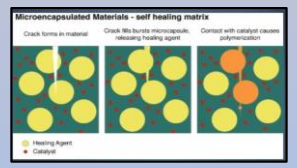
MATERIALS




PASSIVE MATERIALS
- GIC
- COMPOSITE
- RESIN MODIFIED GIC
- COMPOMER

ACTIVE MATERIALS
- SMART GIC
- SMART COMPOSITE
- SELF HEALING COMPOSITE
- FLUORIDE RELEASING PIT &FISSURE SEALEANT
- ARISTON PH CONTROL





APPLICATIONS

SMART GIC	• Reminerization of incipient caries.
SMART COMPOSITE	• These are modified to cured bulk thikness upto 4mm.
SELF HEALING COMPOSITE	• self-repair mechanism exhibit superior performance compared with macroscopic repair approaches.
Fluoride releasing pit& fissure sealeant	• Moisture tolerant and seals against microleakage.
Ariston pH control	• Indicated for for posterior restoration &providing active caries protection.

CONCLUSION-Smart materials provide more functional, adaptive, and durable solutions, leading to improved patient outcomes and preventive care, by making improvements to many products.

REFERENCE-Maloo LM, Patel A, Toshniwal SH, Bagde AD. Smart materials leading to restorative dentistry: an overview. Cureus. 2022 Oct;14(10).