

BioMimicry-Nature's Blueprint for Smart Healing

"Bio-mimetic dentistry is the art and science of repairing damaged teeth with restorations that imitate the living tissues"

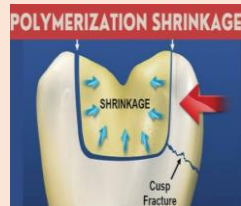
SHORTCOMINGS OF TRADITIONAL DENTISTRY



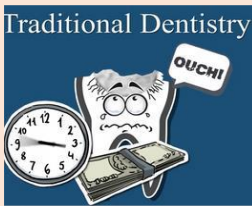
Traditional techniques rely on mechanical retention requiring extensive tooth preparation



Reduced bond strength causes micro gaps leading to tooth sensitivity and pain called post-operative sensitivity

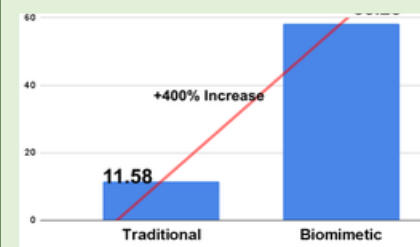


Polymerization shrinkage increases the stress on tooth and reduces Bond strength

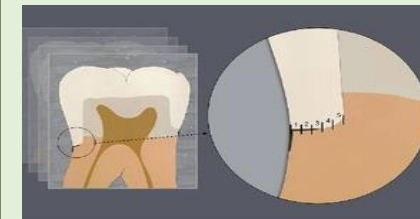


The life span of restorative material is comparatively low

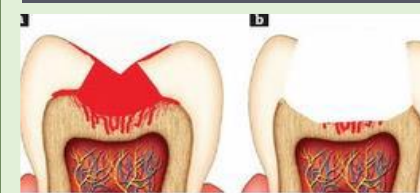
PARADIGMS OF BIOMIMETIC DENTISTRY



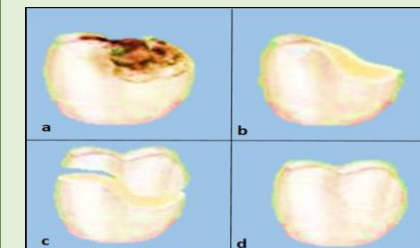
Maximum Bond Strength due to reduced polymerization stress (upto 400%)



Long term Marginal Seal due to strong Bonding



Preserves Pulp Vitality and prevents unnecessary root canals



Ultra conservative tooth preparation to preserve natural tooth strength

Stress Reducing & Bond Maximizing Protocols:



Carious tooth Exposure of decayed tooth Caries removed and surface air abraded Immediate dentin sealing a & resin coating applied



Multiple layers of composite used to reduce polymerization shrinkage Each cusp is rebuilt to increase strength Polymerization technique to reduce stress Natural looking final restoration



In large cavities, a fibre mesh is placed on the cavity floor to minimize stress



Removing dentin cracks complet



Use of gold standard three bond system two step self etch like – OptiBond and ClearFil SE Bond and SE Protect

WHAT IS THE SCIENCE BEHIND BIOMIMETIC DENTISTRY

"BIO" means life & "MIMESIS" means to imitate

This approach strives to preserve intact tooth structure and restore the function and biomechanics of natural teeth.



MATERIALS USED-
DENTAL COMPOSITE
GLASS INOMER CEMENT
DENTAL CERAMICS
BIODENTINE

Biomimetic approach unites an understanding and appreciation of the biomechanics of natural teeth with principles and techniques which maximize adhesion.