R
estorative concepts of the past sanctioned the
removal of sound tooth structure, as needed, in
order to perform restorative procedures.\(^1\) When Black
proposed these principles and his classification of cav-
ity designs, dentistry focused on controlling caries,
but without scientific knowledge of the disease or sci-
entific rationale.\(^2,3\) Modern restorative concepts seek to
minimize the biologic cost of the natural tooth\(^4,5\) by
adopting a philosophy that combines prevention, remin-
eralization, and minimal intervention
for the replacement of tooth structures
and/or restorations.\(^6\) Greater under-
standing of the disease process,
improvements in caries detection and
control, developments in diagnostic
modalities, and advancements in instru-
ments and tissue-cutting concepts have
all contributed to the changes in the
restorative concept.

Modern restorative dentistry has
thus adopted a medical treatment model
that provides the clinician with adequate
information for proper assessment and
decision making in the treatment of dis-
ease. This allows clinicians to individ-
ualize and evaluate all components of
the process for a proper treatment strategy. This process
also educates and involves the patient in treatment deci-
sions, which results in cooperative strategies aimed at
optimizing oral health.

Modern Restorative Objectives
This new restorative philosophy has three principle objec-
tives for patient treatment. The first objective is to retain
maximum integrity of the natural dentition through pre-
vention.\(^7\) The second goal is to preserve hard and soft
tissue during restorative therapy; the third is to increase
the longevity of the dentition and restoration. These
objectives should be incorporated into the diagnosis
and treatment stages for any restorative therapy. The
patient should be informed of this treatment philoso-
phy and be allowed to adopt this concept before final-
ization of the treatment plan.

Prevention
Prevention begins with assessment and management
of disease processes. Key aspects of treatment now
include the identification and consideration of a patient's
risk factors for dental disease, while
applying one's understanding to prop-
erly diagnose and provide treatment.
Factors to consider for the management
of disease include the patient's age,
oral hygiene and related habits, saliva-
ary and microbiological conditions,
dietary habits, fluoride exposure,
behavioral conditions, prior dental treat-
ment, and family history.\(^7,8\) Controlling
and preventing risk-related disorders in
the oral cavity can begin with coun-
selling the patient about the etiology of
the disease and then a selection of the fol-
lowing:
• Eliminating the causes of disease
  for at-risk patients;
• Initiating preventative measures;
• Providing oral hygiene instructions and plaque
  control (Figure 1);
• Delivering fluoride treatments, calcium and
  phosphate applications, and/or desensitiz-
ing dentifrices (Figure 2);
• Management of dentin hypersensitivity with
dentin adhesives;
• Applying preventive resin restorations
  and pit and fissure glass-ionomer sealants
  (Figure 3); and
• Providing early intervention in situations where
delay would lead to additional care.
Using modern assessment and management principles for restorative therapy (ie, periodontal and/or operative procedures), one can reduce, control, and/or eliminate the disease processes. Supportive periodontal management is an ongoing modality that allows the clinician to modulate the disease process as well as to achieve stability and the conditions for long-term management. Noninvasive and minimally invasive procedures can limit the size of the preparation and thus retain areas of demineralized dentin and enamel that can heal through remineralization. These contemporary procedures include remineralization, placement of sealants (eg, resin, pit and fissure glass-ionomer sealants), and preventative resin restorations.

Furthermore, research is being directed toward restorative materials that are bioactive and capable of arresting caries, eliminating disease while regenerating hard and soft tissue.9

Preservation
Preservation involves the conservation of hard and soft tissues throughout a patient’s lifespan. The principle of preservation in restorative dentistry encompasses a myriad of disciplines and conservative approaches that are available for numerous restorative procedures. These procedures include adhesive composite restorations (ie, Class I through V) that can reinforce, strengthen, and increase retention of tooth structure, while requiring no specific geometric outline form. Noninvasive procedures include tooth-fragment reattachment, preparation-free veneers (ie, direct, indirect), bleaching, and orthodontics (ie, forced eruption for preservation of fractured teeth). Surgical procedures include socket preservation (ie, alveolar ridge and soft tissue conservation) after tooth extraction, gingival margin preservation, alveolar ridge regeneration, and a host of preservation procedures involving implant placement. Each of these procedures has a common goal, which is retaining the dentogingivalalveolar complex with reduced trauma to the pulp tissue and supporting structures.

Perpetuation
The most important of the restorative objectives is to perpetuate the longevity of the dentition and restorations and to extend the period between replacing any restoration. This is predicated on the success of the first two objectives. Discipline and oral hygiene maintenance contribute to healthy dentition and supporting periodontium that can result in longer lasting dentition and restorations. Conservative procedures in restorative treatment can also extend the lifespan of the dentition and restorations. Correcting restorative and aesthetic challenges by selecting a progressive treatment concept that begins with the most conservative restorative option and progresses to more advanced, invasive procedures as required in the future can perpetuate longevity. In addition, utilization of meticulous adhesive protocol and finishing procedures, and maintaining an optimal occlusal scheme is necessary for increasing their longevity. Other considerations include the importance of educating patients on the significance of maintaining bonded restorations and how this can influence their long-term clinical performance.
Conclusion

Integrating these restorative objectives into the assessment and decision-making phase of treatment is only part of the restorative solution. An equally important aspect requires the involvement of the patient, especially through education. This process will not only ensure success by increasing the longevity of the dentition, but will enhance the durability of the restorations, while promoting patient satisfaction. This article has described the primary objectives of contemporary restorative treatment; the following discussions will address the utilization of these principles in various disciplines of restorative dentistry.

References


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