

# Prosthodontic treatment protocol for a geriatric dental patient

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Replacement of missing teeth has been the consistent focus of many dental practitioners for decades together. Over 9 million or one third of today's senior population are without natural teeth. Infact these may be ever an increased medical problems and economic factors encourage the extraction of diseased or fractured teeth over complex restorative procedures. With steady rising rates of total tooth lessens, replacements of missing teeth is a service that the dental profession has to provide widely and to a greater degree to the aged patients.

**Key words:** Geriatric, rehabilitation, treatment planning

The provision and success of prosthodontic treatment for older patients one commonly complicated by an array of dental as well as nondental factors, which may or may not be unique to older patients. Here various factors like oral and medical problems have to be considered during clinical management. The strategies to counter the full range of functional, occlusal, periodontal and restorative challenges likely to come across in the actual treatment course of such patients should also be discussed. Moreover, the treatment planning oral hygiene, mouth preparation and tissue management etc should be given due importance during the prosthetic rehabilitation of geriatric patients.

## SEQUALAE OF AGING

Human orofacial growth and development has been fairly well defined. Not so well understood is orofacial aging, which is obviously a component of general aging process.

There are some factors which influence aging. Regarding this, two alternative views on the nature of aging are prevalent. First, it is the result of random damage and second is the result of some programmed enhancement and controlled, degeneration of the organism.

Evidence exists that the elderly are at a special risk for developing malnutrition and that vulnerability to nutrient deficiencies increases in the age. Factors contributing to nutritional problems in the elderly are

### I. Oral

1. Changes in ability to chew food
2. Changes in taste and smell
3. Drug induced xerostomia

### II. Physical

1. Changes in ability to absorb and utilize nutrients
2. Changes in ability to metabolize nutrients
3. Changes in energy requirements and activity
4. Effects of medication on appetite and nutrient absorption and utilization

**Assessment of older adult:** The process of assessment of the older adult has been the keystone to operative practice. The dental assessment should also have a comprehensive base, but unfortunately, both students and practitioners often neglect this important phase of the diagnostic evaluation.

#### Steps involved are:

1. Identification data.
2. Information source.
3. Medical history and physical evaluation.
4. Patient questionnaire.
5. Patient interview and summary.
6. Dental history and evaluation.
7. Chief complaint.
8. Extra and intra oral examination.
9. Diagnostic aids.
10. Prosthesis.

**Challenges of prosthodontic treatment for the older patient:** In an older individual, teeth lost earlier in the life have often brought about disruption in the dental arch over times as a result of drifting, tipping and supraeruption. These inturn, pave the way for prosthodontic challenges such as hygiene difficulties, periodontal problems, nonparallel abutments, long preparations and potential food traps. So the design and execution of prosthesis must take these factors into account.

Regarding the clinical management of older

individuals, certain points should be taken into consideration.

1. The elderly have both greatest level of need of prosthodontic service and the greatest degree of complicating dental, medical and behavioral factors.
2. Age is not a contraindication to complex prosthodontic treatment. So patients with advanced age will appreciate the aesthetic and functional advantages.
3. The dental aspects of planning prosthodontic treatment for the older should focus on the integrity of individual tooth on the potential contribution of each tooth to the masticatory system. Hence we should anticipate a restorative, occlusal and functional challenges likely to arise on the course of the treatment.
4. Successful execution to prosthodontic treatment needs to include attention to altered pulpal size, changes in dentinal properties and any periodontal changes to prior history of periodontal disease.
5. Removable prosthodontics, whether with complete or partial dentures require attention to procedures that provide greater precision for occlusal, dental, mucosal and esthetic relationship that can develop over a lifetime.

The partial and completely edentulous patient may be unable to recover normal function, esthetic comfort or a speech with traditional removable prosthesis. Numerous studies have demonstrated impaired oral function for complete denture wearers. Improvement in oral function has been demonstrated after prosthetic rehabilitation with implant-supported prosthesis due to enhanced stability and retention. The increased need for implant related services among older adults results from the combined effect of multiple factors including:

1. Loss of teeth
2. Anatomic condition of edentulous ridges
3. Inadequate performance of removable prosthesis
4. Psychological needs of the patient
5. Predictable long-term results of implant supported prosthesis.
6. Increased awareness of the benefits of implants by the profession and public.

A new generation of older adults, who are more educated, health conscious and economically independent than their predecessors in bringing unique opportunities and challenges to fixed prosthodontics. The biomechanical goals of fixed prosthodontics for older adults are:

1. Enhance the physical integrity of the tooth structure.
2. Eliminate the discontinuities at dentino-enamel junction
3. Develop straight peridental emergence profile
4. Reestablish proximal contact morphology
5. Stabilize tooth positions and occlusal relationship.
6. Create aesthetic harmony between restoration and

surrounding structures

Similarly there are conditions, which contraindicate fixed Prosthodontics in older adult. They are:

1. Pulpal stenosis
2. Extensively restored tooth surfaces
3. Root exposure from gingival recession
4. Incisal attrition penetrating the enamel
5. Cervical caries/erosion/abrasion
6. Uncompensated posterior tooth loss
7. Modified salivary gland function
8. Compromised oral hygiene skill.

Removable partial dentures can be indicated for all patients because they offer aesthetic, versatile, noninvasive and reversible features. They are indicated particularly when remaining teeth are questionable. Changes to ideal RPD design can be made for prosthesis with a compromised dentition to make continued prosthetic service simpler. Required changes are:

1. RPD overlays give maximum benefit with minimum risk.
2. Design prosthesis to use all of a reduced but healthy periodontium
3. Delete rests from compromised abutments to avoid overload.
4. Design prosthesis to allow for easy addition of teeth with poor prognosis.
5. Retain questionable teeth as nonvital roots to support prosthesis and preserve alveolar bone.
6. Design transitional prosthesis when remaining teeth have a poor prognosis.

To determine the efficacy and efficiency of implant supported prosthesis in geriatric patients, the treatment outcome of elderly patients in ongoing clinical trials were assessed. Hence following preliminary observations were made:

1. Being elderly is not a contraindication to long-term implant survival.
2. Successful osseointegration can be maintained irrespective of a patients oral hygiene performance.
3. Diverse prosthesis designs appear feasible for elderly patients.

To date, our clinical studies support the conclusion that neither advance age itself or the diminished level of oral hygiene are lone contraindication to a prescription for treatment with implant supported prosthesis of various designs.

## DISCUSSION

Caring for the edentulism in older adult patient is a major challenge that the profession faces. Denture therapy for the geriatric patient will be in high demand for the decades ahead. So an older adult's medical, functional and psychological status should be considered in each phase of any prosthetic treatment. Careful dental evaluation of the patient through a well-

structured examination and care based on sound principles and concepts continues to be the standard that must be provided. Hence it is important to improve our knowledge base and develop skill to avoid complication and limited treatment success.

## CONCLUSION

Clinical adaptability is the key to prosthodontic success with the geriatric patient. No one procedure, material or technique is adequate for all elderly edentulous patients treatments success. Hence, the prosthodontist must be able to draw from a broad base of knowledge and select features from different treatment modalities that suit each patient best. Thus, modification to standard procedures within the limits of medical, functional and psychological status can make the difference between success and failure.

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Source of Support: Nil, Conflict of Interest: None declared.