



What Is the Best Treatment for an Edentulous Patient?

Gordon's Clinical Observations: Over 30 years ago, Branemark introduced the titanium implant osseointegration concept, and soon a screw-retained fixed prosthesis type was developed. It used 6 implants anterior to the mental foramen and 6 implants anterior to the maxillary sinus. This expensive system worked well and continued to grow in use. Eventually, the current "all-on-four" technique evolved with its own challenges, including the major one—removal of a significant amount of bone to facilitate placement of the implants and the prosthesis. A recently introduced conservative attachment, LOCATOR FIXED, is rapidly gaining popularity. *CR has evaluated this new concept and compared it with the other alternatives for edentulous patients.*

Treatment of edentulous patients is often noted by general dentists to be the most disagreeable and difficult procedure routinely needed in their practice. Is there a best treatment for these unfortunate patients?

CR has made a comparison of the following treatment alternatives for edentulous patients for your use and for education of your patients:

- No implants, conventional removable denture
- 2 implants and overdenture
- 4 or more implants and overdenture
- 4 or more implants and various fixed prostheses including **LOCATOR FIXED**



Which is best for this soon-to-be edentulous patient? Implants and fixed prosthesis, or implants and removable prosthesis? There is NO ONE ANSWER—KEEP READING!

Advantages of Implant-Supported Prostheses

Fixed:

- Do not require removal daily
- Can feel similar to natural teeth
- Do not move during eating
- Provides psychological UP for patient

Removable:

- Esthetics is usually superior to fixed
- Oral hygiene is much easier than fixed
- Repair is not complicated
- Cost is significantly less than fixed
- Implants can be maintained easier
- Does not usually require removal of bone
- Does not move if 4 or more implants

Need for Treatment of Edentulism

- Estimates of edentulism in the USA vary widely.
- The American College of Prosthodontists estimates about 36 million adults in the USA (about 14% of adults) are edentulous, equating to over 200 per general practice.
- There appears to have been a slight decrease in edentulism over the last 5 decades according to the National Health and Nutrition Examination Survey. However, edentulism is anticipated to increase due to the aging population, perio, and caries.
- Edentulism is found more in lower income groups and older people.
- Estimates are 90% of edentulous patients have dentures.

Advantages of LOCATOR FIXED

- Almost all general dentists and prosthodontists know and use LOCATOR attachments which provide a rigid but removable overdenture. Could LOCATOR attachments be used for fixed prostheses? YES, Zest Dental Solutions now offers LOCATOR FIXED as a conservative alternative for the "all-on-4" procedure.
- **LOCATOR FIXED does not require significant bone removal. This is a major advantage!**
- **The technique is similar to the standard LOCATOR technique.**
- The same LOCATOR abutment is used, only the housing and insert are different.
- The patient can select fixed or removable initially or go with removable first and change to fixed by modifying the denture base and using a different housing over the standard LOCATOR abutment.
- Fixed requires a new housing and insert combination that is different from standard LOCATOR removable, and the prosthesis can only be removed by a dental professional using a special instrument.
- Far lower cost for the patient than the all-on-4 fixed procedure.
- Far less trauma and healing than the all-on-4 fixed procedure.



Figure 1

- LOCATOR FIXED uses a unique housing.
- PEEK is used for the retentive insert inside the housing. This retentive feature makes the prosthesis removable only by a dental professional.
- LOCATOR FIXED uses the same abutments as conventional LOCATOR, allowing a change from fixed to removable if desired using the existing LOCATOR abutments.

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What Is the Best Treatment for an Edentulous Patient? *(Continued from page 1)*

Comparison of Treatments for Edentulous Patients

- The following table compares the most common treatment alternatives for edentulous patients.
- Fees are ADA averages for 2020 (last fee estimates available). They represent minimal fees and could be higher if more treatment is necessary.
- Implants: small diameter (1.8 mm to 2.9 mm diameter) and conventional (3 mm or greater)

CR COMPARISON OF TREATMENT ALTERNATIVES FOR EDENTULISM

	Implants	Cost (ADA) (for one arch)	Retention	Esthetics Potential	Repair	Hygiene Potential	Longevity (CR data Oct 2021)	Patient Satisfaction	Comments
Conventional Denture (Figure 2)	0	\$1800	Max: Good–Fair Mand: Fair–Poor	Excellent–Good	Not complex; low cost	Excellent	~13 years	Max: Good Mand: Fair–Poor	Often patient dissatisfaction
Implant-Supported Removable (Figure 3)	4 small diameter in anterior	Implants: \$4000 Dentures: \$1800 Total: \$5800	Excellent–Good	Excellent–Good	Not complex; moderate cost	Excellent	Unknown	Excellent	Major patient satisfaction improvement
Implant-Supported Removable (Figure 4)	2 or more conventional diameter	Implants: \$4000+ Abutments: \$1800 Dentures: \$1800 Total: \$7600	2 implants: Good More than 2 implants: Excellent	Excellent–Good	Not complex; moderate cost	Excellent	Unknown	Excellent–Good	Major patient satisfaction improvement
Implant-Supported Removable using Conventional LOCATOR (Figure 4)	4 or more conventional diameter: 2 in anterior, 2 in posterior	Implants: \$8000 Abutments: \$3600 Dentures: \$1800 Total: \$13,400	Excellent	Excellent	Not complex; moderate cost	Excellent	Unknown	Excellent	Most commonly used
Implant-Supported Fixed and/or Removable using LOCATOR FIXED (Figures 1 and 5)	4 or more conventional diameter: 2 in anterior, 2 in posterior	\$13,700	Excellent	Removable: Excellent Fixed: Good	Not complex; moderate cost	Removable: Excellent Fixed: Fair–Poor	Unknown	Removable: Excellent Fixed: Good	Can be fixed or removable; teeth can be resin or ceramic
Implant-Supported All-on-X (Figures 6–8)	4 or more conventional diameter	\$20,000	Excellent	Good	Complex, high cost	Fair–Poor	Unknown	Good	Requires significant bone removal

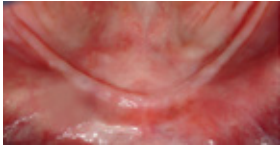


Figure 2: Patient edentulous for over 20 years. Lack of implants makes restoration of the mandible nearly impossible. ADA recommends primary treatment plan should be at least 2 implants in the canine areas



Figure 3: Four small diameter implants creates a MAJOR IMPROVEMENT in this patient's life. It is the least expensive and least traumatic plan involving implants.



Figure 4: If bone is questionable, spherical abutments are suggested. However, 2 to 4 conventional diameter implants and LOCATOR abutments in the anterior and/or posterior area provide moderate expense and a happy patient.



Fig. 5: Example of typical implant placement for either fixed or removable prosthesis (LOCATOR FIXED).



Figure 6: If the prosthesis is convex on all of the apical portion (left), the unhealthy situation shown (center) is minimized, but a common complaint is still difficulty cleaning under the fixed prosthesis. To allow adequate cleaning, the flanges of the prostheses must be eliminated (right), but this encourages unavoidable collection of food.



Figure 7: Facial muscle collapse (left) often occurs with fixed prostheses, while facial contour can easily be restored with removable prostheses (right).

Informed Consent: Educating patients about the various types of treatments for edentulism is **mandatory** and a legal requirement. CR Clinicians have reported situations in which patients who could have had natural teeth restored and retained have had them removed because they were not offered the alternatives described in this article. Decisions on this subject should definitely be made only after patients have had in-depth discussions with the dentist and staff about the advantages and disadvantages of each type of treatment as related to their specific biologic and psychologic needs.

CR CONCLUSIONS:

- ADA suggests placement of at least 2 implants in the respective canine areas for support of a prosthesis for edentulous patient.
- CR suggests at least either 2 conventional diameter implants (3 mm diameter or larger) or, if inadequate bone quantity, 4 small diameter implants (1.8 to 2.9 mm diameter) spaced equally from canine-to-canine areas.
- The all-on-X concept has had considerable criticism because of significant bone removal to facilitate implant placement, chronic problems with oral hygiene, pain and healing, difficult repairs, inferior esthetics, and high cost. However, it can serve well for some clinical situations (Figure 8).
- LOCATOR FIXED is a much more conservative and less expensive option than the all-on-X procedure, but still requires excellent hygiene.
- LOCATOR FIXED allows the option to change from a fixed to a removable prosthesis or vice-versa supported by the same LOCATOR abutments.
- CR usually favors a removable overdenture over implants rather than a fixed prosthesis.



Figure 8: If the patient's facial characteristics are optimal, fixed prostheses supported by implants can be both esthetic and functional as shown (Prosthodontist: Gordon, Prosthesis: Ric Schwarting CDT).

What is CR?

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What is CR?

WHY CR?

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Research funds come from subscriptions to the Gordon J. Christensen Clinicians Report®. Revenue from CR's "Dentistry Update™" courses support payroll for non-clinical staff. All Clinical Evaluators volunteer their time and expertise. CR is a non-profit, educational research institute. It is not owned in whole or in part by any individual, family, or group of investors. This system, free of outside funding, was designed to keep CR's research objective and candid.

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2. Controlled clinical tests where new products are used and compared under rigorously controlled conditions, and patients are paid for their time as study participants.
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Clinical Success is the Final Test



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This team is testing resin curing lights to determine their ability to cure a variety of resin-based composites.

Every month several new projects are completed.

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