



# Chairside

PERSPECTIVE

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## Valplast® Flexible, esthetic partial dentures

Like many other topics in dental school, removable partial dentures were taught to most of us in a rather dogmatic fashion. Design and function were stressed, as they should be, but for the most part esthetic issues were ignored. Rather conspicuous clasps, such as I-bars, were placed on maxillary cuspids without a lot of thought given towards how this would affect the patient's opinion and confidence in the prosthesis. (figs. 1&2)

Upon entering private practice, many of us learned that patients would sometimes simply refuse to wear unesthetic partials. In those early days I cut off more I-bars than I care to remember and had to replace them with a soldered clasp that would not work as well, but could not be seen from 50 feet when the patient smiled.

With the rapid advances in esthetic materials and techniques in the fixed prosthodontic arena, it is no wonder that patients requiring removable prosthesis are also expecting us to achieve esthetic results when replacing their missing teeth. (figs. 3&4) Partially or fully



Fig. 1 - Patient presented with a desire to replace her old RPD with Valplast to eliminate the metal I-bars.



Fig. 2 - The new Valplast RPD blends in more naturally with the surrounding gum tissues and remaining dentition.

### Indications

- Complete Valplast Partial Dentures without metal.
- Combination Vitallium 2000 and Valplast Partial Dentures.
- Unilateral Valplast Partial Denture with or without metal.

### Contraindications

*The many benefits of Valplast notwithstanding, there are some specific contraindications that are better served with a traditional cast metal partial denture. For example:*

- If there is less than 4mm (all valplast) or 6mm (vitallium/valplast) of interocclusal space in the posterior area.
- If you have bilateral free-end distal extensions with knife-edge ridges or lingual tori on the mandible.
- If you have bilateral free-end distal extension on the maxilla with extreme atrophy of the alveolar ridges.
- Deep overbite cases (4mm or more) where the anterior teeth can be dislodged in excursive movements.



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edentulous patients comprise nearly half of the aging population, and this group is projected to triple by the year 2010, ensuring that removable prosthodontics will continue to be part of the general dentist's restorative practice for decades to come.

I recently treated a patient who was missing her two lower first molars. She did not want to have implants placed, and neither of us liked the idea of preparing the two virgin teeth on either side of her edentulous spaces. Therefore, it was decided that a removable partial denture would best fit her needs. For illustration purposes for this article, three esthetic partial dentures were fabricated: a cast Vitallium®2000 frame with Thermoflex™ clasps (figs. 5&8), a cast frame with Valplast clasps (figs. 6&9), and a full Valplast partial (figs. 7&10). Pictures were taken with each of these partials in place to show the esthetic characteristics of each (figs. 8-10). Each partial denture is also shown from an occlusal view to show the adaptation of the major connector to the tissue (figs. 11&12). For cases where a cast frame is necessary or desirable, most dentists are unaware that Thermoflex and Valplast clasps can be used as shown in the preceding figures. For cases where cast frames are not necessary, Valplast partials are the clear esthetic winner. In a fully retracted facial view of the preceding case (fig. 13) it is apparent that a Valplast partial is impossible to beat for esthetics.

Furthermore, for first time partial wearers in particular,



Fig. 3 - A basic metal partial denture utilizes many different types of clasps such as the Akers clasp shown.



Fig. 4 - The Valplast clasp is fairly translucent, which allows the unique color of underlying tissue to show through.



Fig. 5 - Thermoflex is another option for esthetic partial clasps that can be used in place of metal clasps.



Fig. 6 - Valplast can be used in combination with Vitallium to provide better support and clasp esthetics.

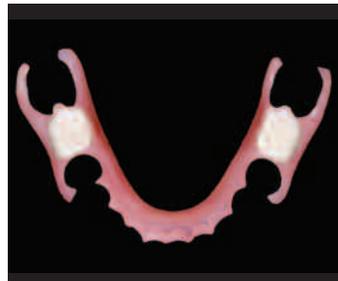


Fig. 7 - The all Valplast partial is tissue borne and flexible which allows for maximum comfort for the patient.



Fig. 8 - The Thermoflex clasp is designed and shaded to match to the color of the abutment tooth.



Fig. 9 - The combination Vitallium and Valplast clasp is shown intraorally also blending well with the surrounding dentition.



Fig. 10 - The all Valplast partial seems to disappear with the surrounding dentition, offering the best esthetics.

there is no better partial denture available in most cases than Valplast.

Since its introduction in the 1950's, Valplast has been satisfying both dentists and patients as a more esthetic, yet fully functional, alternative to traditional cast metal based removable partial dentures. Valplast is a flexible base resin ideal for partial dentures or unilateral restorations. The biocompatible nylon and thermoplastic resin of Valplast provide an ideal degree of flexibility and stability when processed and finished to the recommended thickness.

Additionally, the color, shape and design of Valplast partials blend seamlessly with the natural appearance of the gingival tissues, making the prosthesis nearly invisible. The strong, durable clasps snap securely and comfortably into place around the existing natural dentition and gingival. Since the strength of the Valplast resin does not require a metal framework, it eliminates the metallic taste that many patients complain about. It also enables the partial to be fabricated thinly enough with nonmetal clasps. This avoids the uncomfortable feeling often associated with traditional, nonesthetic metal partials.

With Valplast partials it is necessary to ensure that there is adequate occlusal clearance between the arches for tooth placement. Unlike traditional acrylic partials that achieve a chemical bond between the teeth and the denture base, Valplast relies solely on mechanical retention to retain the teeth. If there is not

enough room to place retention holes in the teeth, they can become displaced over time. A good rule of thumb is 5 millimeters or more of posterior interocclusal clearance that is between the teeth and the opposing ridge to maximize tooth retention.

**Unlike traditional metal-based partial dentures, there is little or no tooth preparation necessary to fabricate a Valplast partial.** Sometimes composite is used to create a more ideal clasp location or enamelplasia to parallel guide planes for an easier path of insertion and delivery. Our partial design technicians can provide you with designs that will clearly identify areas of preparation and provide options for use of metal.

One of the attractive aspects of Valplast partials is that they can be constructed from two good impressions or models, an accurate bite relationship, and the desired shade. A good alginate impression, like Accu-Dent® from Ivoclar-Vivadent, is the ideal material for full and partial denture cases.

The Accu-Dent system includes specially designed impression trays, and a unique delivery syringe. AccuDent alginate has been custom formulated with a two viscosity system. The tray gel has a very heavy viscosity, giving it the necessary body to reach into the sulcular areas without slumping. The syringe gel has less viscosity and therefore is capable of accurately recording the tissue surface.

Irreversible hydrocolloid is



Fig. 11 - The benefits of using the combination Vitallium and Valplast is the small lingual bar and extra occlusal support.



Fig. 12 - From an occlusal view the all Valplast partial appears to be esthetic and smooth for the patients tongue.



Fig. 13 - A fully retracted facial view of the lower Valplast partial in place shows how well the clasps blend in the gingival tissue.

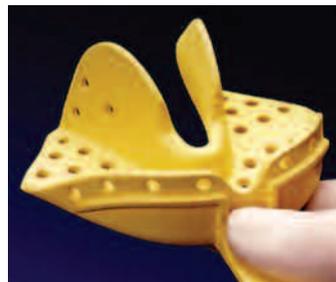


Fig. 14 - The Accudent Alginate system uses specially designed trays that comes in several sizes for accurate tray dimensions.



Fig. 15 - A special syringe and lighter bodied alginate is placed over the dentition for replication of the fine details.



Fig. 16 - The heavier bodied tray material is placed into the tray, held under water to smooth the surface and seated over the teeth.



Fig. 17 - The alginate system provides a quick and accurate impression of partially edentulous cases for the lab.

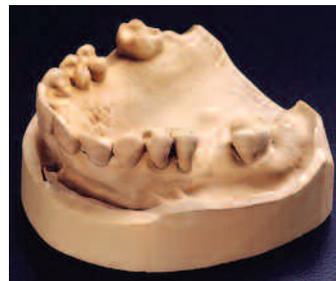


Fig. 18 - Proper liquid to powder ratios must be used to provide the lab with an accurate cast for a well fitting partial.

still the best material to take moist tissue impressions due to the hydrophilic (attracted to water) nature of this material. Polyvinyl siloxane and polyether impressions are also acceptable impressions for Valplast. As with nearly all impression techniques, the use of a custom tray is highly recommended.

With accurate master models, technicians can focus on the survey and design for ideal Valplast clasp positioning, taking advantage of natural undercuts. For distal extension cases it is imperative to have either wax bite rims that were used to verify occlusal dimension and a bite registration for the patient, or do a wax set-up try-in. Although you will need to take a tooth shade for matching the natural dentition, the Valplast material is translucent and will blend in with the surrounding gingival. Valplast is also available in a meharry shade for matching ethnic shades.

**While it is recommended to do a wax set-up and try-in during Valplast partial construction for anterior or free end saddle cases, most dentists prefer to go straight to finish on these partials.** Since the material is thermoplastic in nature, you can and should, place the Valplast partial in warm water for a couple of minutes prior to placing in the patient's mouth. This allows the material to shape itself to fit the patient's specific anatomy. As the Valplast material cools, it will harden in this new shape, something that other partial dentures cannot do. This is why post-operative sore spot adjust-

ments are reduced or they are eliminated with Valplast.

If necessary, adjustments can be made to the Valplast material in your office, and due to the nature of the material, these adjustments are better made with either stones or rubber points. Rubber points and wheels will provide you with the smoothest surface, especially if you are adjusting the peripheral edges of the restoration. Rubber points are ideal for accessing undercut areas. It is not recommended that you use carbide burs or acrylic burs on Valplast, as they will tend to melt the material rather than cut. An adjustment kit with the recommended points, wheels, and a separate concentrated cleaner specifically for Valplast is available. Denture cleaners are not recommended for Valplast.

Over 103,000 Valplast partials have been fabricated by

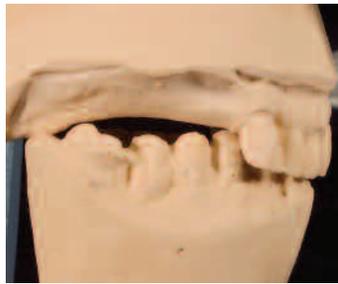


Fig. 19 - This is an example of insufficient interocclusal space, less than 4mm, where Valplast would be contraindicated.



Fig. 20 - For cases where the teeth are extremely flared out, most esthetic clasp systems like Valplast are not indicated.



Fig. 21 - Using a surveyor, the technician identifies the amount of undercut available on the teeth to be clasped. This tooth has the necessary 0.3mm undercut.



Fig. 22 - When cases have less than 0.3mm as shown, then a standard metal clasp must be used to have adequate retention.

Glidewell Laboratories in the 12 years that they have been fabricating them, and they boast a remake/return rate 20% lower than cast metal based partial dentures. There is a one year unconditional warranty against breakage with every Valplast partial fabricated in our laboratory.

My experience over the last 15 years has been that the patient "learning curve" for adaptation to a new partial denture is much quicker for a Valplast than traditional metal-based partials.

*For first time partial wearers in particular, there is no better partial denture available in most cases than Valplast. The esthetic nature of a Valplast partial, especially when viewed adjacent to a traditional metal partial, also helps in gaining the patients acceptance of the restoration, and ultimately, their satisfaction with our dentistry.*

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 Valplast is a registered trademark of the Valplast Corporation, Long Island City, NY  
 Vitallium is a registered trademark & Thermoflex a trademark of Dentsply Austenal, York, PA

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