

The ESP Denture Technique – A System for Success

Fabricating full dentures for the edentulous patient can be a challenging task. In fact, the lack of predictable success has caused many dentists to be reluctant to even accept denture patients. With the assistance of our friends at Ivoclar, we have perfected a new system for the successful fabrication of full dentures, the ESP (Esthetic Simplified Predictable) Denture Technique. Our new process will *dramatically* improve the results of full dentures with virtually no new chairside procedures.

The changes in our technique begin when we receive the final impressions or models, preferably taken with custom trays. At this point we produce an Ivocap injected acrylic base, with postdam and wax bite rim (Figure 1). This innovative step in the procedure is a major advantage of our new system. Injected bases are significantly more stable than wax, shellac, or light cured bases allowing for a more accurate bite registration. More importantly, the processed base is incorporated into and becomes the final tissue-bearing surface of the finished denture. This affords you the opportunity to evaluate and adjust the borders of the denture to your complete satisfaction early in the fabrication process, rather than at the insertion appointment. This technique does require that the



(Figure 1) A processed Ivocap base, with postdam, allows the fit of the denture to be approved at the biterim appointment. The silicone model allows us to verify the successful fit of the finished denture.



(Figure 2) The Alma Gauge provides precise information when duplicating an existing denture.

denture base shade to be selected prior to fabricating the biterim. If the processed base lacks the fit or retention desired, a new base should be fabricated for another try-in. Either a new impression should be taken, or for minor adjustments, a wash impression can be registered inside the base. Needless to say any adjustments or wash impressions should be taken prior to registering vertical dimension. All bite rims will be formed with *white* wax to assist the patient in visualizing tooth location. It is recommended that labial lip support, incisal edge position, midline, cuspid position, and high smile line be marked on the bite rim and indicated on the work authorization form. Any unique characterization or tooth positioning desired as well as age and gender should be noted. If the patient is over seventy years of age we will modify the waxup by raising the cervicals and flattening the interdental gingival papillas to reflect mature tissue.

When duplicating an existing denture we recommend the use of the Alma Gauge. This simple and inexpensive instrument uses the indentation of the incisive papilla, in the old denture, to communicate the exact location of the incisal edges of the anterior teeth. This location is communicated to us by simply noting the vertical and horizontal measurements of the Alma Gauge on your work authorization (Figure 2). Recording this information takes only a few seconds and enables us to precisely duplicate the tooth position of the old denture.

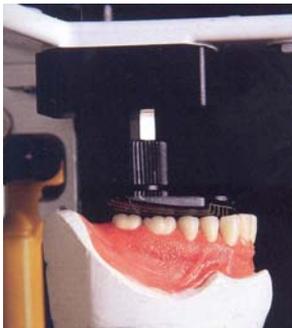
When the case is returned to the laboratory from the bite registration appointment for tooth set-up, we form a silicone model into the approved base. The model (Figure 1) is required because the original model was destroyed while devesting the processed base. The completed denture will be returned on the silicone model allowing you to verify that no changes have been made to the previously approved borders. This special model ensures a consistent fit from start to finish.

Another significant component of this system is the incorporation of the Ivoclar Stratos 200 adjustable articulator. At ROE we will fabricate all full dentures with this innovative new articulator. This instrument has two unique features: a guide for ideal articulation, with or without a facebow, and a template to improve occlusal balance and function. In the absence of a facebow, we mount the mandibular cast with a specially designed horizontal guide (Figure 3). This guide relies on the mucolabial folds and the trigonum of the retromolar pads to orient the cast within the Bonwill Triangle. The articulator also utilizes either a two or three-



(Figure 3) The horizontal mounting guide produces an ideal orientation of the master cast on the Stratos 200 without a facebow.

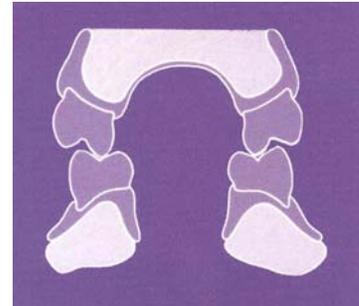
dimensional template to facilitate a consistent and accurate tooth set-up (Figure 4). For the first time, this innovative articulation system allows us to mechanically verify anteroposterior (Spee) and mediolateral (Wilson) compensating curves to insure bilateral balance. At the try-in appointment we will deliver the tooth setup on the silicone tissue model while the opposing model and articulator are held at the laboratory. In our experience most of our clients do not manipulate denture teeth on the articulator, and therefore do not need the instrument. If you wish to work with the articulated models, or prefer to mount your own casts, we suggest you purchase a Stratos 200 articulator. This unique and reasonably priced instrument will be precisely calibrated to the articulators we use in the laboratory so that, together, we are able to work with many cases at the same time. This method of calibrated articulation uses magnetic bases for quick transfer of models, allowing you to avoid ever sending your Stratos 200 out of your office.



(Figure 4) The set-up template allows a balanced setup incorporating correct curves of Spee and Wilson to be verified.

The final component of our new system is the choice of prosthetic teeth. Although any brand of denture teeth may be used, we strongly suggest Ivoclar's Ortholingual/Orthoplane posterior teeth. These posteriors are the only teeth specifically designed for lingualized occlusion. It is accepted that dentures with lingualized occlusion reduce dislodging stress by placing masticatory vertical force in the center of the mandibular ridge (Figure 5), thereby increasing the stability of the dentures, bringing greater comfort and improved mastication. Ivoclar's Vivodent PE anterior teeth compliment these posterior denture teeth beautifully. With two additional layers of

translucent “Pearl Effect” hardened resin, they are the most natural appearing denture teeth on the market. Ivoclar teeth provide the standard for a truly aesthetic and functional prosthesis. We will be using these teeth on all full denture cases, converting other tooth manufacturer’s shades and moulds to satisfy the aesthetic requirement of the patient. We have enclosed a mould chart and a shade/mould conversion guide that we use to convert other manufacturer’s tooth lines. Shade guides are also available from the laboratory.



(Figure 5) Lingualized occlusion places vertical force in the center of the mandibular ridge, thereby increasing denture stability.

Our zest to improve upon the consistency of removable prosthetics also includes partial dentures. We are now providing a duplicate model service for all partial dentures that will virtually eliminate insertion adjustments of the finished appliance. When the case comes into the laboratory we blackout undercuts and duplicate the master cast. The partial casting is constructed, set up, and finished on the duplicate model. In the past, master casts were destroyed during the acrylic processing stage. Now, with the master cast preserved, any post completion adjustments previously required in the dental office will be done in the laboratory and the finished case will be returned on the master model. This new service will eliminate any over and under extensions and assure a properly fitting partial denture.

The benefits of the ESP Denture Technique can be achieved without any new chairside procedures. However, the use of the Accu-Dent Impression System as well as a new bite registration device called the Centric Tray may further improve and simplify your results. We will be sponsoring a half-day course on the ESP Denture Technique and all recommended clinical procedures on April 11, 2003 in Independence, Ohio. Our guest speaker will be Dr. Frank Lauciello, Professor in the Restorative Department at SUNY Dental School in Buffalo, New York and Director of Removable Prosthodontics at Ivoclar North America. Contact us for a course brochure.

The ESP Denture Technique and other changes in our removable department are systematic approaches to denture construction that permit us to measure and verify many of the steps and procedures that have otherwise gone unchecked. We can now consistently and confidently predict the successful outcome of removable prosthetics prior to final insertion. If you have any questions regarding our new procedure please contact us at 216-663-2233 or 800-228-6663.