

True-to-life denture aesthetics

Roy Davies, a private dental technician based in Berkshire, discusses the processes he employs to create finer aspects in aesthetic denture finishing

Increase in private denture aesthetics

Most technicians now employ creative manual skills to produce impressive aesthetic results for the private market-place. However, the types of materials that are used in these processes are important to the end result. The following article explains their uses and



Roy Davies has spent much of his working life in private laboratory practice, achieving the ultimate in aesthetics for removable prosthodontics.

Roy continues to pioneer these advanced techniques, using products from leading dental and laboratory manufacturer Kemdent, based in Swindon, and Myerson in north London. Regularly attending dental shows, Roy also works as a technical consultant and will be demonstrating 'True To Life' denture techniques in a number of workshops being held in various locations across the UK during 2007.

demonstrates some of the techniques that leading dental technician Roy Davies has explored for many years. In Roy's own words: 'There is now as much importance in creating life-like aesthetic prosthetics as there is in delivering perfect porcelain restorations in dentistry.'

Denture patients

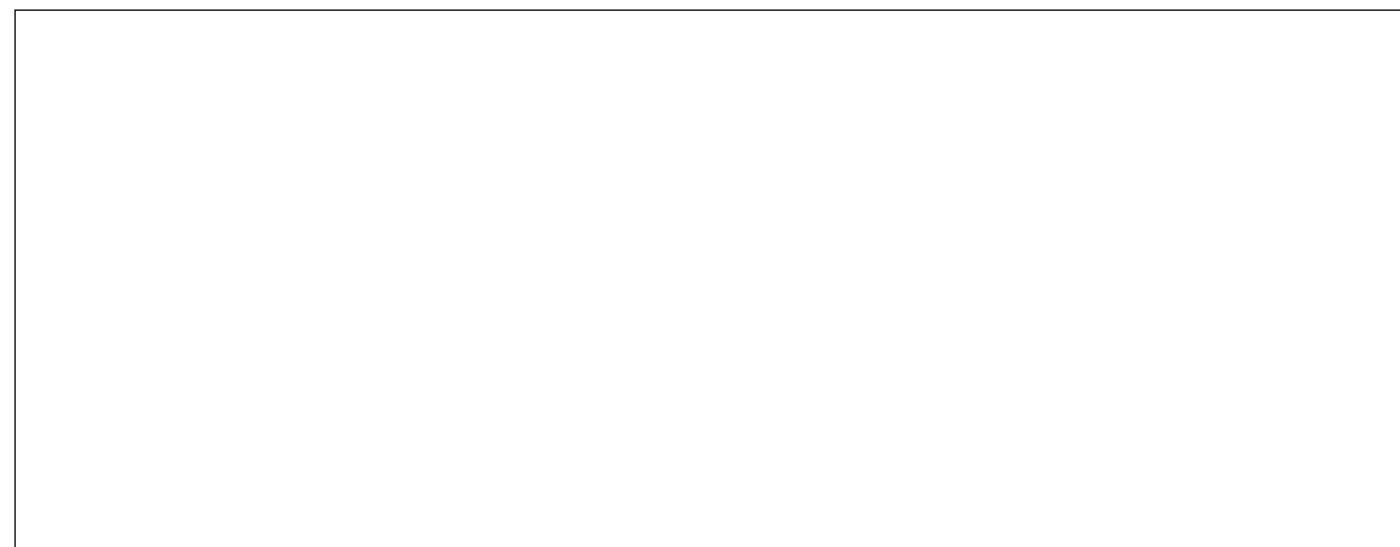
So, why is it that UK denture wearers have become second-rate patients? And, more importantly, what do I mean by this? Standard dentures are normally set up in a uniform manner, which to be fair is how we have all been taught. Gum work can be smooth and featureless, and this is why denture wearers have come to expect basic standards; but in today's private market, patients are starting to look for better results.

Traditionally, private patients are more likely to be offered an upgrade of a tooth or perhaps contouring of the gum, which can look like corrugated iron. The more fortunate patient might receive a high impact acrylic and a clear palate (sounds familiar?). Most patients I've met have

all wanted true-to-life dentures that look and feel real, and give them back the confidence to smile again. I also have stories about people who have spent thousands of pounds on implants to support their dentures, but again most hide their smiles behind their hands to cover their false teeth.

So what is the answer for a denture-wearing patient? Realism – and we're not just talking about tooth arrangement but moreover gum imitation, especially with features found in natural gingival, such as muscle attachments and root detail. It is also worth paying attention to characterising the colouring of the gum so that it simulates living tissue. By performing this process correctly, the patient can be provided with a 'true-to-life' prosthesis of which they can be proud.

Following several discussions with frustrated technicians regarding realistic gum characterisation, Kemdent asked me if I could illustrate some of the techniques that I employ to achieve great results on a consistent basis. The following processes may help in creating better aesthetic denture results.





Smooth and featureless wax-up



Characterised wax-up



Asymmetrical wax-up

Tooth selection

Choosing the correct size of teeth for the denture is very important. To ensure best results, consult with the patient, if at all possible, to find out their views. They should be able to tell you how their teeth used to look by showing images from old photograph albums. In the case of partial denture wearers, you must see the patient first to match the artificial teeth to the colour variation of their own natural teeth.

Visually you will also be able to ascertain whether the prosthesis will complement the patients' natural teeth and facial features. When choosing an

artificial tooth, look for features that you would expect to see in natural teeth; almost life-like, with good characterisation such as strong surface detail, enamel striation, composite filling, and natural translucency and fluorescence.

Successful gum characterisation and staining

To achieve really good stain effects you will need to put a great deal of effort into the wax-up by using colour stains to highlight different areas of detail.

This process is illustrated in the following pictures on this page. The first

photograph shows a traditional wax-up – smooth and featureless. The second photograph illustrates a little more detail such as muscle attachments between the centrals and the 3 and 4 regions.

To create further realistic features use some of the following processes as described:

- Root carving – vary the length to create an asymmetrical effect
- Try to form natural spacing between the teeth so that they appear more individual
- Vary the length of the gingival margin, exposing the root in places to simulate receding gingival. Finally, using a soft sponge create a textured gum effect.



Interdental spacing



Textured gum effect



Applying silicone



Creating peaks



Vertical incision

Processing the denture

Prior to processing use a silicone material to mask the detailed wax-up. This protects the case, which in turn prevents any plaster adhering to the denture and ruining all the detail that you have put in.

To achieve really good results, take a small amount of silicone, and starting from the molars on one side work around to the molars on the opposite area, spreading the material evenly over the wax-up. Work the material into the wax-up, concentrating on the detail as if you were topping. Cover all the wax-up from the sulcus right up to the incisal edge of the teeth as shown in the photographs. Keep adding material until you have built

up a layer of 2mm to 3mm thickness. You will now be ready to create peaks in the silicone to aid plaster retention in the flask.

When the silicone has fully hardened, use a scalpel to make a vertical cut at the last molar on each side.

At this point, make a horizontal cut 2mm in size from the edge of the teeth, all the way around from the posterior teeth on one side to those on the opposite.

If you do not perform this process, you will leave a feathered edge that may lift when packing. This will also allow the teeth to be securely locked in the plaster. Invest the denture to be finished in the flask by taking the plaster up the edge of the silicone. Do not bury the silicone. You can now top the case in the usual way.

Applying tinting stains

After boiling out the wax, apply plaster separator taking care not to leave any residue on the silicone. If you do you may find voids in the acrylic.

Following this process, you will now be ready to add the stain powders. This method is compatible with all denture base materials and injection moulding techniques, but it's worth purchasing a product that you know will provide consistent results. The following colour sequence is a good basic guide:
1. Start with shade A (red pink), and sprinkle interproximally between the teeth. Highlight the fraenum and muscle attachments. Apply the powder in the first instance followed by drops of



Horizontal incision



Vertical and horizontal incisions



Denture invested in flask

Technical



Applying the polymer



Applying the monomer



Shade 'A' and shade 'H' in situ

monomer with a syringe

2. Shade H (ivory) – use this over roots to simulate root highlights

3. Continue with shade E (purple pink), sprinkle around the border of the denture. This will provide some depth and colour variation to the buccal surface

4. Mask all the detail you have highlighted with the 'F' shade (pink). If you want to simulate darker skin tones, use the shade 'B' (brown) to mask the detail

5. You will also need to consider that different denture base colours will give you varied results; pack and process in the recommended way

6. When you come to de-flask the denture, peel away the silicone and you will be left with a completely clean denture, with very little trimming required. Full staining effects do not reveal themselves until final polishing is complete.



Masking with shade 'F'

The techniques demonstrated in this article for creating aesthetic denture finishing included the following products:

- Kemdent wax
- Kemdent Acron-Hi Denture Base
- Kemdent Acron-Hi Plaster Separator
- Myerson hand-crafted and characterised special teeth
- Flexistone Plus Silicone
- Kayon Denture Tinting Kit.

For further information regarding courses, contact Myerson on 020 8863 9044 or for all the latest information on Kemdent's full range of finishing products, call the company on 01793 770 256. Visit the website at www.kemdent.co.uk.



Straight out of the flask