



Figure 1 Front surface edge modified slab-off



Figure 2 Front surface edge modified slab-off

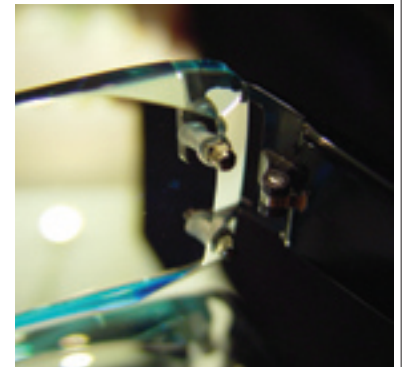


Figure 3 Back surface edge modified slab-off



Figure 4 Back surface edge modified slab-off



Figure 5 Back surface edge modified slab-off



Figure 6 Rhinestone edge

# Fitting the high myope and the Oriental nose

**Santos Tseng, Huai-Te Hsieh and Feng-Tzu Liang** offer advice for dispensing to patients of Far Eastern ethnicity. Module C8289, one general CET point, suitable for optometrists and DOs

**T**aiwanese dispensing optometrists have the daily task of fitting spectacle frames to a highly myopic patient base. This produces challenges such as minimising lens edge thicknesses, reducing heavy lens weights, and modifying sunglasses to permit optical correction. Other challenges include trying to fit plastic frames to the flat Oriental nose, as well as help patients select frames when their myopia prevents them from seeing themselves clearly in the mirror.

This article discusses techniques used by Taiwanese optometrists to circumvent some of the difficulties. The methods described here can easily be applied by practitioners in non-Asian countries when serving their myopic or Oriental patients.

The prevalence of high myopia in

Taiwan has been noted, and given this phenomenon, Taiwanese dispensing optometrists have adopted techniques designed to improve the wearability and cosmesis of spectacles worn by their epidemically myopic patient base. Oriental Taiwanese are also noted for having small nose projections – or ‘flat noses’ – and techniques have also been devised to fit this particular characteristic.

## Modified edge slab-off

One common concern of high myopes who wear spectacles is the edge thickness of their lenses. Although high index lenses will result in a reduction of edge thickness, very high myopes who select frames with large horizontal lens widths may still find the remaining edge thickness unsatisfactorily wide. One technique to reduce lens thickness without altering

the index of the lens, is to use a modified slab-off technique, but to apply it to the lens edge, rather than the lens base. The technique may be used on both front and back lens surfaces.

Figures 1 and 2 show a lens with a modified slab-off applied to the front surface edge. The edge in this case was not polished, but is noticeably thinner after the slab-off procedure was performed. Rhinestones were applied as a final cosmetic touch. Figure 3 shows a lens that has had slab-off applied to the back surface edge, as well as the upper and lower back surface corners. Figure 4 shows the significant thinning the procedure was able to achieve. Figure 5 shows a side profile of the lens, demonstrating the results of the procedure. In addition to the cosmetic benefits of having a thinner edge thickness, the modified edge slab-off technique will result in a



reduction of lens weight, thus increasing wearability.

### Rhinestone edges

Another method used in Taiwan to increase patient satisfaction with their lens edge thicknesses, is to mask the lens edge widths by the embedding of rhinestones. Figures 6 and 7 show multiple rhinestones embedded in a wide frame with high-minus lenses. Figure 8 shows a similar but more economic design using only four rhinestones. In both examples, the rhinestones help to camouflage edge thickness by their natural ornamentation.



Figure 7 Rhinestone edge



Figure 8 Rhinestone edge

### Modified Rx inserts

Some frame manufacturers (such as Adidas, and Bollé) sell Rx inserts for their sport sunglasses. The prescription lenses are typically mounted into a plastic support and clip into the nose bridge (Figure 9). Designer sunglasses, however, generally do not come with this option, forcing high myope patients to either wear contact lenses with their sunglasses, or not wear designer sunglasses at all.

In Taiwan, a technique has been developed to allow patients with high prescriptions to wear drill-mount sunglasses that are not manufactured with an Rx insert. Figure 10 shows a front-view of a pair of wrap-around drill-mount designer sunglasses which are modified to be worn by a high myope. The patient's prescription lenses are simply inserted behind the plano sunglass lenses using the same screw/drill-mount method used to mount the existing sunglass lens (Figure 11). This piggybacking method will allow both lenses to be worn at the same time (Figure 12). Patients wearing this or similar lens combinations, however, should be informed of possible issues regarding weight and field of view.



Figure 9a Adidas sport insert



Figure 9b Adidas sport insert



Figure 9c Adidas sport insert



Figure 10 Rx lenses mounted in sunglasses



Figure 11 Rx lenses mounted in designer sunglasses



Figure 12 Rx lenses mounted in designer sunglasses

### Additional nose pieces

The Oriental nose with its flat projection often proves a challenging fit for those who try to market plastic frames. Some manufacturers have attempted to deal with this problem by producing 'Asian fit' frames which have enlarged nose bridge projections. Despite this modification, many frames still do not properly fit the Oriental face. The mounting of accessory nose pieces provides a possible solution.

Figure 13 shows accessory nose pieces mounted on top of extended nose piece projections of an 'Asian fit' frame. Figure 14 shows the frame being comfortably worn by an Asian female with a relatively flat nose. The addition of the nose pieces

allows the frame and lenses to be worn at the correct height.

Another method of modifying a plastic frame to fit the Oriental face, is to make it analogous to a metal frame by adding a plastic or metal nose pad arm assembly. Figure 15 shows an 'Asian fit' frame with the addition of two nose pad arms. Such arm assemblies are typically characteristic of metal frames, but if selected and colour-matched properly, the addition of plastic arms will allow plastic frames to be worn at the correct heights. In this case, the natural saddle

bridge of the plastic frame will not contact the patient's face.

### Digital capture

High myopes trying on and selecting new frames will inevitably encounter the problem of being unable to view themselves clearly in the mirror. They need to remove their optical correction to put on a new pair of glasses, but in doing so, they lose their corrected acuity. This means patients must be accompanied by a friend or family member when they select frames, otherwise they risk



Figure 13 Additional nose pieces mounted on an Asian-fit frame



Figure 14 A modified frame being comfortably worn



Figure 15 Nose pad arm/assembly added to an Asian-fit frame



Figure 16 A high myope assesses the fit of a frame by viewing herself on a display

making a poor choice based mainly on a hunch.

One method of overcoming this problem is to capture digital images of the patient wearing their preferred frames which they can then view on a display monitor while wearing their full correction (Figure 16). However, the patient must be advised that the lenses they will eventually receive will be thicker than those in the sample frame, and that this difference will have a cosmetic discrepancy.

### Conclusion

Taiwanese dispensing optometrists have adopted several methods that allow them to modify spectacle frames so that they may better fit their highly myopic patients. These techniques can also be applied by UK practitioners when dispensing patients who are either Oriental, or who have highly myopic prescriptions. The sum of these techniques is to improve both the cosmetics and wearability of spectacle frames in these unique patients. ●

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## MULTIPLE-CHOICE QUESTIONS - take part at [opticianonline.net](http://opticianonline.net)

- 1** How may a slab-off technique reduce apparent lens thickness?

  - A By removal of back surface lens base in cases of anisometropia
  - B By reducing apparent edge thickness
  - C By reducing vertical prismatic disparity
  - D By reducing lens thickness across its entire surface
- 2** What potential disadvantage may result from 'piggybacking' spectacle lenses?

  - A Lenses appear too thick
  - B Limited range of error correctable
  - C Not possible in commercially available appliances
  - D Reduced field of view
- 3** In what way does an 'Asian-fit' frame differ from standard European frames?

  - A The eye size is smaller
  - B The bridge is wider than average
  - C Length to bend is less
  - D They include enlarged nose projections
- 4** Where the 'Asian-fit' frame is inadequate, what further modification may be useful?

  - A Reducing arm length
  - B Mounting accessory nose pieces
  - C Reducing bridge width
  - D Increasing dyhedral angle
- 5** What metal frame feature may be added to a plastic frame for improved Asian facial fit?

  - A Plastic or metal nose pad arm
  - B Sprung hinge
  - C Polished bevel edge
  - D Supra style frame
- 6** What potential error must be borne in mind when using digital capture systems for frame selection?

  - A They never represent the actual patient's face
  - B The frame colouration is not accurate
  - C Lens thickness may be under-represented
  - D Perspective is lost

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