

Ultra-translucent zirconia

– where function meets aesthetics

New material opens up anterior options for dentists, say Andent bosses.

By Peter Watt

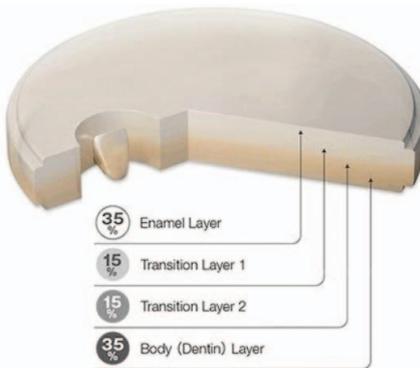
Monolithic zirconia has proven to be a wonder material in dentistry. Its mechanical properties make it an outstanding performer where biting and bruxing forces are an issue, it essentially eliminates the risk of delamination, and the reduced occlusal space requirement is very attractive, as is its biocompatibility. But few materials have universal applications, and if lab owners had a dollar for every dentist who asked for a zirconia with translucency to make it a viable option in the anterior, they would be doing very nicely, thank you.

And now we have it – ultra-translucent zirconia. Not just translucent either, but also pre-coloured in multiple layers to create embedded aesthetics with a highly accurate and natural colour gradation, from dentin through to enamel. It's an exciting development for labs like Andent in Melbourne, which can now offer a material that bridges (no pun intended) the gap between 100% monolithic zirconia and lithium disilicates like e.max. Andent call their product UTZirc 100%.

These days conventional zirconia may be classed respectfully as the lab workhorse: it's extremely durable and reliable, with a flexural strength of

1250MPa, so for functionality it is king, and it rules in the posterior. In an anterior restoration, where aesthetics are likely to trump functionality, the go-to material for Andent and many other labs is e.max (400MPa). Unfortunately, despite its outstanding aesthetics, e.max and its ilk do not always have the strength to be used for bridgework or posterior restorations.

Enter ultra-translucent zirconia, which is basically conventional zirconia's better-looking brother. UTZirc 100%, with its high aesthetics and impressive strength (600MPa), has been specifically developed for anterior and premolar crowns, inlays, onlays, and three-unit bridges up to and including the premolars.



UTZirc 100% shade layering for aesthetics

It seems everything possible has been done to make ultra-translucent zirconia easy for the dentist to add to their list of restorative options:

- ◆ Cementation is no different to that for 100% monolithic zirconia – self-adhesive or adhesive resin cements are recommended.
- ◆ Thanks to the block's shade layering, aesthetics are not affected when making adjustments – the colour remains stable.
- ◆ The blocks themselves come in 20 shades, including 4 bleach shades. The only real difference in working

with ultra-translucent zirconia compared to conventional zirconia is that the much-demanded translucency adds more significance to communicating the stump shade and adjacent tooth shades to the lab. Just as it is vital for labs to receive stump shade information for an aesthetic case using lithium disilicate, so Andent needs the same information if using UTZirc 100%, because a dark core, even a dark shade of cement, is likely to contribute to the final shade. Andent's technicians still manually apply stains and glazes to UTZirc 100% to enhance and maximise final aesthetics.

Andent Business Development Manager Brendan Morrison stresses that UTZirc 100% is not a replacement for either e.max or traditional zirconia, but is a perfectly viable alternative where aesthetics safely overrides functionality. The new material is not suitable for very dark cores, long-span bridges or for severe bruxers (hence its limitations in the posterior), and e.max is still most likely to win out in high-aesthetic cases like anterior veneers.

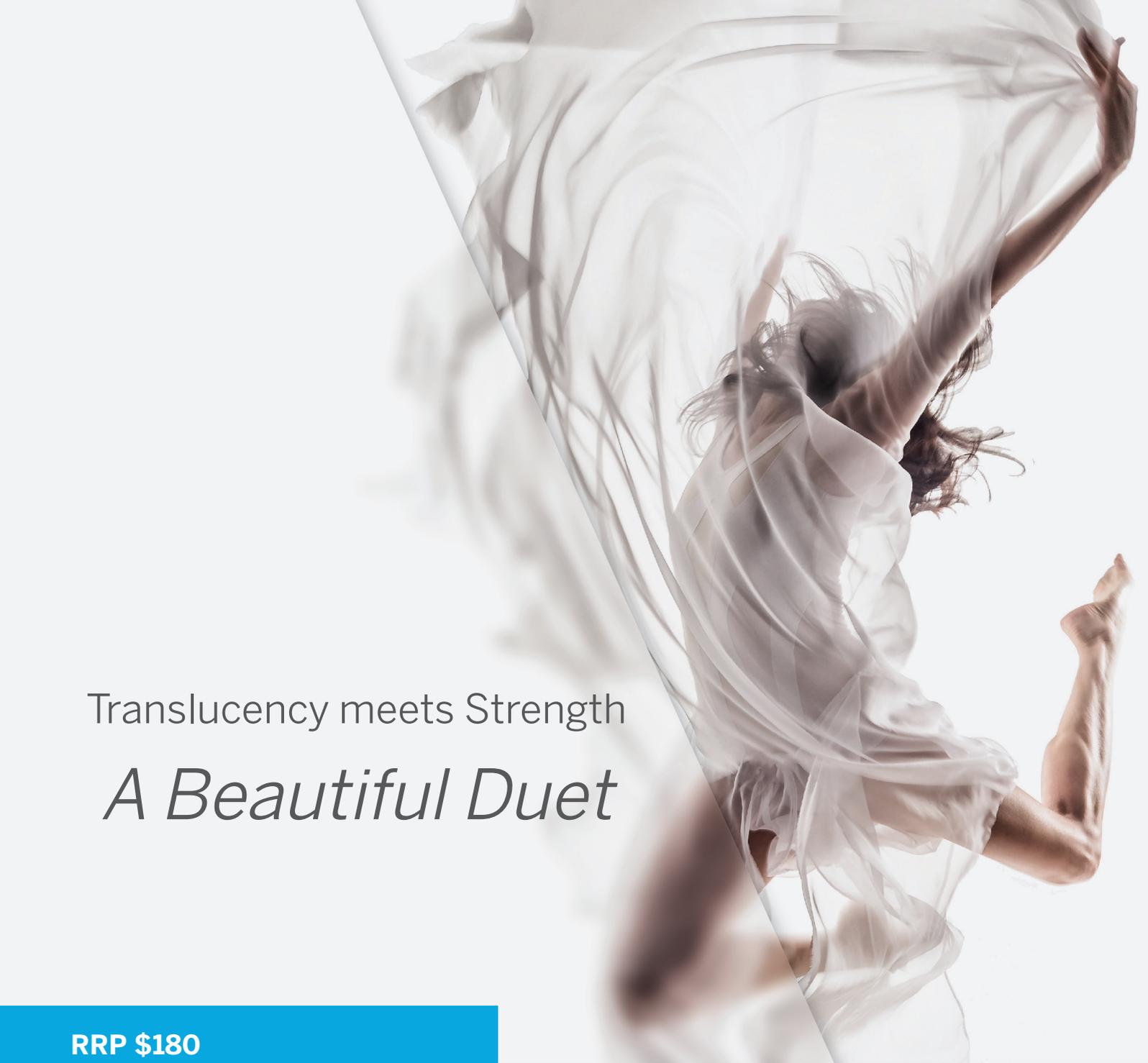
Knowing when and where to use ultra-translucent is far from the hardest thing a dentist will ever have to learn, but talking to the lab makes it even easier. Adam Novalija, Andent General Manager, says it may be obvious to a dentist that they want higher aesthetics, and they might narrow the choice down to a metal-free restoration, but then it gets more complicated. "The first part of the conversation is likely to be 'are there any dark cores?' then 'are they a bruxer?', thirdly 'are there any high aesthetic demands?' That's going to narrow down the field of choice very quickly."

Ultimately, it is a relatively straightforward decision based on aesthetics vs functionality, with UTZirc 100% offering you a new option, and Andent there to explain if necessary.◆

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