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# Innovation in Dentistry

Innovation in Dentistry special report looks at advances in the fields of orthodontics and cosmetic dentistry and the state-of-the-art treatments currently available and it asks why more adults are now having braces fitted.





Orthodontic advances see people of all ages perfecting their smiles



Get your teeth into digital dentistry

Technological strides take pain and trauma out of dental care and aesthetics



# Orthodontic advances see people of all ages perfecting their smiles

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Smile and the world smiles with you. That smile is now more likely to be the one you always wanted, with advances in orthodontic treatment meaning it is cheaper, easier and faster to cajole your crooked grin into a gleaming Hollywood smile.

And it is not simply teenagers seeking to straighten their pearly whites. Orthodontists are seeing more people of all ages eager to perfect their smile. The British Orthodontics Society reported last year that their members had seen a 75 per cent increase in the number of adults seeking treatment.

"It is never too late to have treatment," says Dr Ronan Perry, president of the <u>Orthodontic Society</u> of Ireland (<u>orthodontist.ie</u>). "As long as your teeth and gums are healthy, there is no age limit to treatment." He recommends that children are brought for an orthodontic assessment at seven or eight years of age, as some intervention at this age can be beneficial in terms of minimising or even eliminating the need for later treatment.

The advent of clear plastic aligners has made specialist orthodontic treatment less daunting for many adults considering treatment, says the orthodontist, who works in specialist practices in Dublin and Kildare. Aligners work gradually and discreetly to move teeth, and each set of aligners is worn for a week or two before moving onto the next set.

### Aligner technology

Dr Rozelle Owens is the owner of D4Dentist on Baggot Street in Dublin, a boutique practice specialising in cosmetic dentistry. While fixed or metal braces still have a role to play, advancements in aligner technology, such as the market leader <a href="Invisalign">Invisalign</a>, means they can do much of the work of metal "train tracks", she says.

"At the moment aligner technology can do 95 per cent of what fixed braces can do. It's still relatively new and it's advancing so rapidly that what you can do now compared to a couple of years ago is huge," explains Dr Owens. A digital scanner means no impressions or moulds have to be taken of teeth and the image is sent straight to Invisalign who then provide a complete digital treatment plan.

"It's really controlled and it's really predictable. We know before we even start where we hope to end up." A complete digital workflow means the company have a huge amount of data — more than six million people worldwide have used Invisalign — they can use to analyse and improve and perfect the technology, she says, adding that a number of the company's patents have expired recently, meaning competitors may enter the market, driving the price down.

The advent of digital scanners and diagnostic tools has allowed orthodontists to make custom orthodontic braces and aligners, Dr Perry says. "Over the coming years we may even see specialist clinics begin to manufacture braces and aligners within the practice, speeding up the overall treatment journey," he forecasts.

### Teledentistry

Disrupters have already hit the market. Jeffrey Sulitzer is the chief clinical officer at SmileDirectClub, the first direct-to-consumer teledentistry platform for teeth straightening.

"Braces and orthodontics have been around for centuries, but it's only in the last 20 to 30 years that consumers have had the option to straighten their teeth through clear aligner therapy, and in the last several years to do so through the comfort of your own home under the direct supervision of a registered dentist or orthodontist via telehealth," he says.

Historically, Sulitzer points out, teeth straightening was perceived as costly, tedious and inconvenient. The goal of SmileDirectClub is to "bridge that gap", offering a more affordable option that costs up to 60 per cent less than traditional braces.

Their teledentistry platform connects customers with an affiliated network of Irish-based registered dentists or orthodontists who direct all aspects of clinical care from beginning to end. And the remote nature of the work appeals; Sulitzer says they've seen a doubling of demand for their impression kits since the pandemic began. "This is proof that consumers want to improve their smiles, even if hidden in public behind a mask, and appreciate the remote option."

# Braces

That said, traditional metal braces still have their role in those requiring more complex movement of the teeth, such as overbites and extreme crowding. These have become more aesthetically pleasing, with a version made from white ceramic-type materials. "Lingual" braces can be fitted behind the teeth, meaning they typically aren't visible, even while speaking.

But even braces may not get you all of the way there. Composite bonding, where a special coloured resin is bonded to the teeth using UV light, has grown increasingly popular and can perfect the teeth once braces are off, Dr Owens explains. "When you straighten out teeth they may have worn unevenly and this helps correct that," she says. "A lot of people want

that straight, square, even smile and not everyone's teeth are shaped that way." In many cases, this has negated the need for veneers, which involves filing or shaving down the tooth.

It's still costly – Dr Perry says treatment typically ranges between €3,000 to €6,000 depending on the nature and complexity of the case, but 20 per cent of this can be claimed back via tax refunds and many dental practices now offer finance options.

And as the technology used in orthodontics becomes more advanced, the complex tools of today need the "right hands" in order to get the best results for patients, he warns.

"Regardless of the technological transformations taking place, the biological and ethical principles that guide treatment remain the same."

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