HSO Clinical Advisory Board, from left: Drs. Luis Carrière, John Graham, David Paquette and Jep Paschal




Minimum Touch Orthodontics

Henry Schein Orthodontics appliances expand the number of virtual visits and minimize physical touchpoints for greatly improved safety and efficiency

Easing back into practice during the pandemic has impelled orthodontists to create systems and revamp protocols to limit COVID-19 exposure. Termed **"minimum touch orthodontics"** (MTO), these initiatives include greater and more sustained use of technologies and hyperefficient appliances and the remote monitoring to which they lend themselves.

"Parents love the idea of virtual appointments. Anything that keeps them from having to pull their kid out of school, or skip work, anything that'll get them away from that, they're all for," says Henry Schein Orthodontics clinical advisory board member Dr. Jep Paschal. "Personally, I think we're just scratching the surface of what MTO can offer. Not only is the culture of the patient changing, we're also reimagining our practices to change treatment modalities, changing the culture of our team. And we're changing physical aspects of our offices."

Originally thought to be useful only while dealing with the virus, many if not most protocols that clinicians have initiated to minimize in-person treatment touchpoints will continue to satisfy the busy lifestyle demands of patients even after the crisis recedes. With MTO, orthodontists can cater to patients who favor convenience and might otherwise have opted for direct-to-consumer solutions.

According to advisory board member Dr. David Paquette, however, "There are still those patients who want the traditional approach, so we ask everyone, 'What kind of experience do you want? Do you want the in-person experience or would you prefer to mix it with a virtual experience?' Giving patients the experiences they want refines and enhances their individual journeys."

Fig. 1: Carriere Motion 3D appliances

"MTO goes beyond remote monitoring," explains board member Dr. Luis Carrière. "Achieving decreased treatment times and effecting fewer and shorter appointments are essential to MTO—goals we in the profession have long been working toward. Now we can combine sophisticated digital technology, including teledentistry, with advanced appliances in an end-to-end treatment system to foster simple, quick and consistent treatment protocols and extended time between in-person treatment appointments."

Henry Schein Orthodontics (HSO) designed and launched its Minimum Touch Orthodontics initiative for integrating third-party digital tools with its innovative product offerings. These products lend themselves to minimum touch and remote monitoring to help create healthy environments and improve finishes.

The cornerstones of MTO

Sagittal First and **Carriere Motion 3D** (Fig. 1) appliances are key to MTO and set everything up for it. "In our practices, Motion 3D is applicable for upwards of 80% of patients," Carrière points out. "It's a simple, straightforward approach to A/P correction [Class II and Class III] and a boon to same-day starts."

For most patients in Motion 3D, the first three to six months of treatment require only simple elastic wear and occlusal checks easily handled via teledentistry, with in-office visits being required only once or twice during that time. Unlike active appliances, Motion 3D cannot overcorrect.

Grin offers an effective and affordable remote monitoring solution for Motion 3D. Patients retract teeth with Grin Scope for smartphone self-scans and videos that capture the intraoral area from multiple angles. Clinicians assess the case and make observations through the company's online portal, as if the patient were in the practice chair. Doctors and staff are still in touch with the patient, reinforcing the important role of doctors in patient treatment.

Paquette explains his same-day starts: "We do a dental scan and CBCT, then for most, bond the Motion 3D Appliance, a 10- to 20-minute procedure. We usually make the opposite arch retainer immediately with our 3D printer; otherwise, we leave it for patients to pick up at a station set up outside the front door for elastics resupplies. There's a mailbox for leaving sealed retainers and other such appliances so patients don't have to come inside. These are all things we devised for the pandemic that we'll keep in place going forward."

With Motion 3D, there are no emergency appointments, unlike with a Herbst appliance where a debond is a must-see visit. If Motion 3D debonds, the patient simply removes it. "We just tell patients to stop wearing their elastics, then schedule for rebond, which is a 10-minute appointment—not a 40-minute Herbst rebond," Paquette explains.

Herbst treatment is approximately 12 months; Motion 3D, four to six months, cutting the time in half. Paquette continues, "Since with Motion 3D patients wear an aligner in the opposite arch, they know whether they can tolerate the device, which helps them decide between aligners and fixed appliances to finish treatment."

With Class I achieved, Motion 3D is followed by either HSO's clear aligner, **Reveal Plus**; the clear aligner of your choice; or the **Carriere SLX 3D** self-ligating appliance system (Fig. 2). In

Fig. 2: Carriere SLX 3D brackets

Henry Schein Orthodontics practices, the aligner versus fixed appliance choice runs about 50/50.

Reveal Plus is a cost-effective aligner alternative made with strong, superior material guaranteed not to discolor, cloud or yellow. It is ideal for virtual monitoring, which assists doctors in guiding patients when to move to the next tray. As Paquette mentions, "Unless an aligner doesn't seat, which rarely happens, there's no need for an office visit."

Managing teledentistry

Teledentistry does come with challenges. "For years we've urged clinical assistants to get patients in and out of chairs as expediently as possible," Paquette explains. "Now we need to make sure every touchpoint is executed with maximum care. When we're in direct contact with a patient, we need to ensure the patient understands why we did what we did. We have to ferret out what their expectations are so we can manage those expectations. We've never had to do this so conscientiously before, because we had so many more touchpoints throughout treatment."

Fixed treatment with a reliable appliance

If fixed appliances are the choice, the doctors in this article served as clinical advisors for the development and testing of—and wholeheartedly endorse—the SLX 3D self-ligating bracket system and the **Carriere M-Series** wires (Fig. 3).

This bracket and wire system is a proven clinical solution that fosters a predictable workflow and wire sequence. "In our practices, we find that the three M-Series wires manage 75-80% of cases," notes Carrière. "Our treatment times average 12 to 14 months, including A/P correction (Fig. 4). One reason is we don't have many wire changes in this three-wire system. The bracket tolerances are precise and the M-Series wires were designed specifically to fit into this bracket, so it's easier to finish."

There are additional wires for expansion, severe rotations and other specialized needs. Dr. John Graham especially favors the 0.020-inch square wire.

"You can leave it in for a very long time and it just works everything out," Graham says. "Because it's not rectangular, you don't have to wait as long to use it. For many patients, I then go immediately into the final adjustable wire. I'm a minimalist. If I can get my systems down to the essentials—and with the Carriere System, I have—I've simplified my practice life. With the M-Series wires there's minimal inventory, no guesswork, and great results. MTO is nothing without high-quality finishes."

Paschal touts pad fit for intuitive bracket placement as a primary aspect of an effective bracket. "SLX 3D brackets go on intuitively. The pads easily conform to the shapes of the teeth. It's elegant and beautifully rounded, so exceedingly comfortable for patients, and the shield-like door covers the entire slot, which means more activation points for the wire. Since the bracket widths are based on the average width of each tooth, I can use a bigger wire to finish in the lower with greater bracket expression. Teeth unravel quicker because there's more interbracket distance, even in the beginning. And the reasonable effective cost means my accountant no longer wags a finger at me."

Remote monitoring with artificial intelligence (AI)

Graham has been employing **Dental Monitoring** (DM) in his practice for more than two years. Doctors can choose the photo-only option or the DM Scan Box and DM Cheek Retractor option.

"When I first heard about Dental Monitoring, I thought it was gimmicky, figuring, 'Well, we can take pictures on an iPhone,' but that isn't even close to what DM does," he says. "The AI-powered software delivers a sophisticated evaluation of positional changes of teeth, wires, the expression of wires, and even broken brackets. It can tell if a bracket has debonded before the patient knows."

For these options, doctors pay a little more per patient, but the AI is unique. "After bonding the brackets," Graham continues, "we take a scan of the patient,

Fig. 3: Carriere M-Series wires

then upload it to DM. The scan is then used going forward to compare the patient's updated self-scans with the position of the teeth at the beginning. I can set the DM system to alert me if hygiene is declining or gingival margins are receding, and it will do so much faster than I can discern it myself. The DM software also tracks the velocity of tooth movement, and at what rate and whether a wire is still active.

"Eventually, we'll be appointing patients only when we receive a message that the wire is inactive. Think what this will mean for fixed appliance treatment! DM can already do it; I'm just now figuring out how to integrate it into our virtual workflow."

MTO beyond this time

It was the COVID-19 pandemic that prompted patients and orthodontists to be more open to remote monitoring and minimum touch orthodontics. Now, it seems, MTO is a natural evolution in patient care. Many aspects of protocols and systems we've instituted for this crisis will likely continue to be warranted as the pandemic recedes.

Carrière summarizes, "I think we'll come through this crisis with the means for further customizing each patient's experience with a creative formula for safe in-office and remote appointments while delivering the highest quality care. Great opportunities are often disguised as the most frustrating of obstacles." ■

Fig. 4: Conventional treatment versus minimum-touch orthodontics