Embracing Sagittal First treatment—The Carriere Motion 3D Appliance: Revolutionising Class II and Class III corrections

By John Lannon

In talks with John Lannon, orthodontists Dr Luis Carrière and Dr John Graham discuss the “sagittal-first” philosophy and the science behind Henry Schein Orthodontics’ Carriere Motion 3D Appliance, which facilitates orthodontic treatment and shortens treatment times.

Dr Luis Carrière, who invented the Carriere SLX Self-Ligating Bracket System and the Carriere Motion 3D Appliance, lectures internationally on these products, as well as other topics. Carrière is a member of the editorial review board for the American Journal of Orthodontics and Dentofacial Orthopedics and a visiting professor at several orthodontic departments throughout the world. He maintains a private practice in Barcelona in Spain.

John Lannon: What features of the Motion 3D Appliance make it so effective?

Dr Luis Carrière: Its sleek, non-invasive design has allowed it to revolutionise Class II and Class III correction. The appliance attaches to only three teeth, so it’s comfortable and discreet, while it also allows for the use of the progressive Sagittal First philosophy to correct the anterior–posterior discrepancy at the beginning of treatment, when patients are most compliant. It delivers a gentler, more natural force for tooth movement, controlling the movement of the tooth and providing crucial corrections to the bite and tooth alignment, in preparation for treatment with fixed orthodontic appliances or clear aligners. The appliance provides shorter treatment times for mixed dentition in adolescents and adults.

How does the appliance fit into Henry Schein Orthodontics’ tenet of airway-friendly orthodontics?

The appliance, based on the action of the human hip ball and socket joint, repositions the mandible forward as a unit for those patients who need it and controls it with built-in stops for direct molar movement to the ideal position. This prevents over-rotation and unwanted tipping and can be an effective means of increasing a patient’s airway.

It’s been astounding and exciting to watch the progression of airway-friendly orthodontics in our industry. Orthodontists everywhere are realising how they’re able to provide patients with more than just beautiful smiles—they also can provide the opportunity for patients to live healthier, happier lives, which is a strong aspect of Henry Schein Orthodontics’ culture.

How does the appliance shorten treatment time?

Class II or Class III correction takes place at the beginning of the orthodontic treatment, when there are no competing forces in the mouth caused by brackets or other appliances. This is also when the patient is the most motivated and compliance is at its highest. Treating to the Class I platform is made simple and usually completed in three to four months. Each Motion 3D Appliance addresses its intended sagittal dimension to reduce the need for extractions or surgery, and also helps reposition the jaws in better relation to one another, balancing the relationship between the nose, lips and chin for facial harmony. Both are biomimetic in function and consist of a small single-part design. This offers patients considerable freedom of movement for significantly greater comfort than conventional anterior–posterior correctors.

Changing the patient experience for the better

Dr John Graham is an innovator and educator who lectures internationally to both orthodontists and the practice team on orthodontic treatment philosophies. He holds faculty appointments at the University of the Pacific’s Arthur A. Dugoni School of Dentistry and the University of Rochester’s Eastman Institute for Oral Health, both in
the US. Graham serves on the editorial board for ortho-town and is a contributing editor for the Journal of Clinical Orthodontics.

John Lannon: The Carriere Motion 3D Appliance fits into the Henry Schein Orthodontics’ tenets of airway-friendly orthodontics, shorter treatment times and the Sagittal First philosophy. Could you explain how it’s used in your practice and the results you’ve seen?

Dr John Graham: The Sagittal First philosophy using the Motion 3D Appliance is a real paradigm shift in the way orthodontists treat patients. It helps me reduce patient treatment times—sometimes by up to one year. It’s so rewarding to offer this treatment concept because I no longer receive hesitation from patients, especially adults, about moving forward with treatment. I get to explain that they won’t be making a commitment to wearing fixed appliances for two years—most likely, it will be around a year or less.

How do the appliances work with clear aligner therapy?

The orthodontist and the patient don’t have to decide between fixed appliances or aligners before the patient starts treatment; we can think about it while the anterior–posterior discrepancy is being corrected. This new treatment method allows me to treat more cases with clear aligners. The Motion 3D Appliance allows me to easily turn complex Class II patients into Class I patients; previously, a complex case would not have been suitable for aligner treatment. Also, using the appliance allows you to empower patients to be compliant. As you monitor them through the anterior–posterior correction, you can see if they’re a good fit for aligners.

How did you gain your staff’s acceptance with this shift?

For an orthodontist to succeed with any new treatment philosophy, you need to have buy-in from your staff. The great thing for me when I introduced the Sagittal First concept to my staff is that it made total sense to them that the heaviest lifting we do in ortho, which is generally the anterior–posterior correction, should take place at the beginning of treatment, rather than after the patient has already been in fixed appliances for a year or longer.

What benefits does the Motion 3D Appliance offer that haven’t been previously experienced?

I’m able to confidently tell my patients that their treatment time should take a year or less. With the Sagittal First philosophy, I am able to achieve anterior–posterior correction on average in just three months! Anterior–posterior correction used to take a year and at the end of treatment, when no patient was interested in being compliant any more. Also, because the Motion 3D Appliance is so discreet, patients don’t think of themselves in treatment even though they are. You’re able to get patients to commit to being cooperative at the beginning of treatment, when they are excited about the impact fixed appliances will make on their lives.
Corporate profile
Going straight to the source

Henry Schein Orthodontics’ mission is to provide state-of-the-art orthodontic products and innovative clinical solutions that enable its customers to offer exceptional patient care while expanding the scope and profitability of their practices. The company continues to grow as a global orthodontic solutions provider by not only providing high-quality products but also going beyond the typical supplier–client relationship, instead cultivating partnerships with its customers so they can deliver positive patient outcomes and maintain healthy, successful businesses.

The company’s wide orthodontic range includes brackets and bands, intra-oral appliances, elastomeric modules, archwires and temporary anchorage devices. Other solutions include innovative orthodontic products and progressive continuing education opportunities to help fuel the growth and success of orthodontic practices in more than 75 countries.

For more than 40 years, Henry Schein Orthodontics has manufactured most of its products in the US, including at its over 6,000 m² corporate building in north San Diego. Among its offerings is the Carriere System, which incorporates the latest advances in orthodontic technology with gentle forces that work with natural physiology to correct a bite at the beginning of treatment. By utilising the Carriere Motion 3D Appliance in the beginning stage and then transitioning to Carriere SLX Self-Ligating Brackets to complete treatment, the total time in treatment is greatly reduced when compared with conventional approaches.

“Shifting to the Carriere Motion 3D Appliance has been one of the most significant treatment advances I have implemented during the past five years,” said Dr Ron Maddox, an orthodontist based in San Dimas in California. “I’ve been able to reduce the overall treatment time and significantly reduce the time that my patients are in braces.”

Dr. Luis Carrière runs his own practice in Barcelona and lectures internationally on a regular basis.
Dr. Luis Carrière is the developer of the unique Carriere System, which consists of the Motion Class II Correction Appliance, Motion Class III Correction Appliance and SLX Bracket System.

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