

8th Scientific Congress for Aligner Orthodontics *DGAO congress celebrates 25 years of aligner treatment*

How has aligner treatment evolved over the past 25 years? More than 30 internationally renowned speakers and around 650 orthodontists explored this question at the 8th Scientific Congress for Aligner Orthodontics on 22 and 23 November 2024 – either live in Cologne or on-line in their own practices. The aim of the congress, themed “25 years of aligner treatment – what’s new?” was to provide insights into future possibilities. With a broad thematic range and an overwhelmingly positive response, the congress was a resounding success. So just what is new?

First, as DGAO President Dr Ralf J. Radlanski made clear in his opening speech, it is important to dispel the misconception that aligner treatments are suitable only for the “treatment of minor malocclusions or minor crowding”. This assertion still persists in some areas but is increasingly being challenged. Experienced practitioners with sound knowledge of biomechanics and modern materials can now effectively treat nearly all malocclusions with aligners. “My prognosis is that treatment with aligners will eventually become the standard in modern orthodontic practices. And that the aligner treatment community – and therefore our scientific community – is growing rapidly”.

The role of the temporomandibular joint in aligner treatment

The congress and pre-congress, both organised as hybrid events, focused on imparting this expertise. The pre-congress began on Thursday during the set-up at the Gürzenich Congress Centre in Cologne. Although it was a logistical challenge, it was met with great success. The main topic here was the temporomandibular joint – aligner orthodontics under the special aspect of function. In their presentations, Dr Boris Sonnenberg (Stuttgart), Dr Marc Geserick (Ulm), Dr Theresa Jilek (Wolfratshausen), and Dr Simona Tecco (Milan) provided valuable insights into multidisciplinary treatment – from diagnostics to retention. Michael Zach, lawyer, gave tips and advice on the legal aspects of the function in orthodontics. The afternoon focused on practical applications with Dr Werner Schupp (Cologne) and Dr Sacchin Chhatwani (Lüdenscheid) showcasing a modern approach to orthodontics. With the help of a volunteer they demonstrated the process of a function-orientated diagnosis – from the time of entering the practice to the fitting of the aligner. It was fascinating to see how easily the two tools handled the implementation of the temporomandibular joint in the virtual treatment planning. Her presentation was entitled “Next level aligner orthodontics” – and quite rightly so.

Biomechanics and new materials

Over the two main congress days, 33 internationally renowned speakers (too many to mention here) discussed what is happening in the area of aligner treatment. Together with the DGAO board, conference president Dr Julia Haubrich attracted leading aligner experts



from all over the world to Cologne. News from science and research, innovative treatment protocols, and revolutionary materials. Are the systems comparable? How biocompatible are the plastics used in in-office aligners that complete the digital work flow in practices? And what is the study situation? What can – and will – AI change in practices? What are the possibilities and limits of digitalisation and AI? The presentations at DGAO Congress 2024 answered all these questions – and many more.

Science and practice

The close integration of scientific research with questions of modern practice made the DGAO Congress so special. Several lectures presented studies on oral-health related quality of life, the biomechanics of aligner systems, and the possibilities of vertical tooth movement using attachments. Discussions centred primarily on multidisciplinary cases, complex treatments, combined orthodontic-surgical cases, and CMD treatment protocols. Successful treatments as well as planning mistakes from which the audience benefited. The transfer of knowledge was enormous – from evidence-based basic knowledge to innovative forms of therapy.

Digitalisation and AI

Of course, digitalisation too featured prominently in the conference programme: What are the advantages and disadvantages of a digital work flow? How much more efficiently can fully digitalised practices operate? And how will this affect future practice? The issue of the shortage of skilled labour played a role here. As did a shift in dental work towards more screen time. In summary: “Although digitalisation in orthodontics does have its disadvantages, these are far outweighed by the enormous advantages for both patients and our practices”. Dr. Boris Sonnenberg’s lecture “The Next Step”, which was presented by Dr Edward H. Angle (or rather his avatar) and closed by an AI dog led by Dr Boris Sonnenberg, outlined what is still to come in terms of digitalisation and AI.

Industry exhibition at a high level

It was not only innovative in the lecture theatre of the Gürzenich Congress Centre but also outside in the exhibition rooms. Representatives of the dental industry, including well-known companies from Germany, Europe, and beyond, showcased devices and materials that are already improving daily practice routines. They also highlighted upcoming products that will further enhance efficiency in orthodontic practices. Not only the congress itself but also the supporting programme was characterised by a high level of interest and a relaxed atmosphere. Both the get-together, which was hosted by the DGAO together with its platinum partner Angel Aligner™, and the DGAO Night in the Wartesaal Köln provided ample opportunity to exchange ideas with colleagues, cultivate international contacts, or simply



enjoy a relaxed chat at the bar. In the end, participants, speakers, and exhibitors were highly satisfied. “An all-round successful congress”. Dr Radlanski’s advice to mark 13–14 November 2026 in your calendar is serious: the German Aligner Orthodontics Association will meet for the 9th time at the Gürzenich Congress Centre in Cologne. The German Aligner Orthodontics Association will meet for the 9th time at the Gürzenich Congress Centre in Cologne. Scientific Congress of the DGAO.

List of speakers and topics

Pre-congress

Dr Boris Sonnenberg

Diagnostics from head to toe

Dr Stefano Troiani/Dr Marc Geserick

Euler-angle norms for tooth rotation, torque and tip

Dr Theresa Jilek

FAS Aligner – an excellent aligner system for multidisciplinary treatments – with a special aspect for CMD patients

Dr Simona Tecco

Kinematic analysis of the mandible and clear aligner in the treatment of TMDs

Michael Zach

Legal aspects of function in orthodontics

Dr Werner Schupp/Dr Sachin Chhatwani

Next level aligner therapy – implementation of jaw tracking in virtual treatment planning

Main congress

Dr Ralf J. Radlanski

Journey from 0% aligners in 2000 to 95% treatment with aligners in 2023 (my learning curve and my mistakes)

Dr Karl-Friedrich Krey/Dr Anja Ratzmann

Ten years of in-office aligners in the digital workflow. Conclusion and outlook



Dr Bernd Lapatki/Dr Fayez Elkholy

Experimental biomechanical studies on the intrusion and extrusion of incisors using aligners

Dr Christina Erbe

Oral health-related quality of life in a randomised controlled, multi-centre study with two different aligner staging protocols

Dr Kamy Malekian

Management of complex anterior open bite malocclusions with transparent aligners

Dr Jörg Schwarze

What makes the difference? A biomechanical comparison of aligner systems

Dr Stephan Peylo

Directly printed aligners (DPA) compared with conventional in-house aligners – just hype or a real game changer?

Dr Thomas Drechsler

“This needs to be operated on!” – treatment options for the progenic dentition using aligners

Dr Julia Haubrich

Twenty years of treating deep bites with aligners – what are the findings?

Dr Anton Demling

What a digital work style has to do with an analogue lifestyle

Dr Dirk Kujat

Software-supported treatment planning using clear aligners and multi-bracket appliances at the same time – practical examples and potentials in orthodontics.

Dr Weronika Wierusz-Hajdacka

Orthodontic transformation: how can treatment be provided remotely

Dr Dietmar Zuran

How 3D monitoring is revolutionising aligner treatment. On the elimination of refinements and the avoidance of waste

Dr Gina Theodoridis

Complexity and excellence in aligner treatment: How high have we set the bar?

Dr Gabriele Gündel

“Ageing jaws” – leading symptoms and treatment concept with Spark Aligners

Dr Boris Sonnenberg

The next step – from digital to generative AI: new possibilities in orthodontics

Dr Kathrin Becker

Effectiveness of tooth movement with two different aligner staging protocols – a randomised controlled multi-centre study

Dr Michael Nemec

Patient expectations of aligner treatments taking into account oral health-related quality of life – a prospective multi-centre study

Dr Benedict Wilmes

Aligner- and mini-implant combinations: sliding or screwing?

Dr Alexander Schwärzler

Aligner therapy with skeletally anchored CAD/CAM appliances – virtual planning and transfer accuracy

Dr Andrea Bazzucchi

Building a solid foundation for interdisciplinary cases

Dr Gang Shen

A new orthopaedic approach with clear appliances to correct severe jaw discrepancies

Dr Bärbl Reistenhofer

Refinements – an inherent part of every aligner treatment or an avoidable nuisance?