

Specialist article

High treatment comfort for your orthodontic practice

Good ergonomics: Treatment unit EMCIA ORTHO

Creating a feel-good working environment is essential for safe and stress-free orthodontic procedures. And it is becoming even more important because orthodontic patients come from all age groups today: adults and adolescents as well as, more and more frequently, elderly persons. In connection with the latter group, shorter spans of attention and limited mobility play a part. There are myriad individual orthodontic solutions, all of which strive to ensure that the therapy is efficient as well as comfortable – this is important for dentists, assistants and patients. One decisive factor is the treatment unit: not only should it fit to the interior design of the dental practice, it should also offer optimal functionality – ideally, it should be compact, user-oriented and pleasant for the patient.

Many special models of treatment units have been designed for the specific requirements of an orthodontic practice. The overall goal is to support clinicians in their effort to carry out orthodontic procedures successfully. One objective in this respect is achieving an efficient and at the same time comfortable and low-stress working style. Since the treatment unit is a dominating feature of the room, it is of special interest – and not only for the patients. Naturally, it can cater to design fans, but it must definitely fulfill the demands of clinical functionality to a high degree as well. Ideally, it should do this for a whole (working) life. One aspect is often underestimated, at least until it can no longer be ignored because of pain: we mean the neck and back pain that many practitioners suffer from in the course of their professional career. Around 90% of all dentists have experienced work-related neck and/or back pain at some point. Nearly 70% state that the symptoms occur within one week, 50% say it actually occurs after just four hours of working. In contrast, posture that doesn't cause pain has a positive effect on physical

wellbeing and indirectly also affects the quality of the treatment: it goes without saying that if you feel good, you can work at an optimal level in your practice every day.

Ergonomic work posture – short period of learning, long-term benefits

The neck and back pain mentioned above usually can be traced back to incorrect posture. It seems plausible that dentists are exposed to this problem more than any other group of physicians: they usually sit to the side of the patient and in order to gain an ideal view of the inside of the mouth, they have to twist their upper body. Whereas most patients leave the treatment chair after a relatively short period of time, “the dentist has to bear up the entire working day, his whole working life,” explains Professor Dr. Jerome Rotgans, President der European Society of Dental Ergonomics (ESDE). Rotgans recommends that one should pay as much attention as possible to one’s posture not only in but also outside the practice as much as possible so as to avoid reverting to unhealthy posture. In addition, he advises that dentists should take breaks, change between sitting and standing and walk as much as possible (e.g. meet patients in the waiting room).

By now most dentists have heard of an ergonomic-functional treatment concept developed by the American dentist Dr. Daryl R. Beach in the 1950s, which has been practiced successfully since then. It ensures an essentially pain-free working style by encouraging the practitioner to avoid physical strain and work with balanced posture. Dr. Beach propounds a working posture that supports our natural physiological posture and movements. Thus, the concept primarily is based on natural and stable posture, with only the lower arms working actively. In other words, the practitioner should sit upright, relaxed and balanced, and reduce physical strain to a minimum. In this way, the typical back pains experienced by dentists can be prevented effectively.

Consistent implementation with the help of special treatment units

About 50 years ago, the proven ergonomic concept developed by Dr. Beach also substantially influenced the development of new generations of treatment units: accordingly, the Japanese manufacturer Morita developed a dental chair that helps the practitioner take on a healthy physiological working posture. In 1964, this chair revolutionized dental work: Morita’s Spaceline was the first dental chair in the world

that allowed dentists to sit while treating patients in a supine position. The unit was a real counter-design to the models customary 50 years ago. The customary European treatment units prior to 1963 were large and plump, whereas Spaceline introduced design and innovation to dental practices. As recommended by Dr. Beach, the dentist now sat behind the patient in a so-called 12-o'clock position, which promotes precision because the instruments located in the back rest as well as the dentist's and assistant's elements are within easy reach at any time – without needing to twist the spine or readjust your position. In addition, all operating elements, e.g. for the handpieces and controlling the treatment unit, were mounted in a foot pedal. And the form of the half-round headrest was optimized to hold the patient's head in a comfortable centered position. Furthermore, the workplace promotes natural posture and takes into consideration the intuitive motions of the practitioner as well as the distances covered by the practice team. Accordingly, the focal point of the Spaceline concept was everyone involved in the dental treatment and this still is evident in the current versions of Spaceline EMCIA **(Figure 1)**.

Creating freedom – for young and old

Orthodontists can benefit from the treatment units of the Spaceline EMCIA product line, too: a special orthodontic model is available for the special requirements of an orthodontic practice. The unit is designed to support precise treatments and natural posture as well as save space. EMCIA ORTHO'S special features, i.e. fully swivelling additional tray, instruments integrated in the backrest and the foldaway foot section, optimize workflow and ensure more freedom of movement for the practice team. Amongst other things, children, whose locomotor system is not fully developed yet, and older patients with limited mobility, benefit from the integrated instruments: they can leave the dental chair more easily since there are no hanging instrument tubes. In view of the compact design several treatment units can be installed in one room or single units can be set up in small spaces so as to provide privacy to patients. This aspect is gaining importance because more and more older patients are deciding to undergo orthodontic treatment. Accordingly, the space-saving design gives you freedom to design the treatment room as needed, for example, installing several treatment units in one room or setting up small practice rooms **(Figure 2)**. Another benefit for small patients or patients with limited mobility is the automatic foldaway foot section, which allows patients to get on and off the chair without any obstruction. Moreover, the option of sitting upright ensures

efficient functional diagnostics (e.g. craniomandibular dysfunction). In this position, the jaw is in its natural position for an impression. Additional comfort for patients is ensured by the slow-speed mode (particularly when working with the microscope) and special upholstery that adapts to the shape of the body so as to minimize tension or fatigue during long treatment sessions.

Optimum workflow support

The treatment concept of Spaceline EMCIA is enhanced by ergonomically designed instruments (e.g. scaler, extraction forceps, oral mirror, all made by Morita) (**Figure 3**). Moreover, Morita also offers efficient and gentle solutions for diagnostics, the starting point of every orthodontic procedure: the combination system Veraviewepocs 3D R100, for example, features a unique triangular field of view, which is based on the natural form of the dental arch, and scans only the areas that are relevant for clinical purposes (the „R“ in „R100“ stands for Reuleaux Triangle). Two new fields of view (diameter: Ø R100 × 40 mm and Ø 80 × 40 mm) were added to the device for IDS. Since the height can be adjusted to individual needs, it is easier to make scans of the maxilla and mandible. The result: even more accurate positioning and reduced dosage – this is of particular importance for children and adolescents.

Prepared for a long and comfortable working life

When deciding about state-of-the-art equipment for dental practices, orthodontists have to take into consideration current social trends, such as population ageing, and ask themselves: Which treatment units can master a higher number of adult patients, for example? Here again, the more than 50 years of consistency of the Spaceline product line comes to fruition. Despite all further developments, the series has always remained true to its principle of focusing on the persons involved. It goes without saying that the wish for a highly efficient and, at the same time, comfortable treatment is timeless. Nonetheless, a (dentist's) working life will come to a well-deserved end – hopefully without any symptoms. To this end, it may prove helpful to know that Morita offers workshops to teach ergonomic working posture (Note: 14 continuing education points). Experts will explain how to treat your patients from the 12-o'clock position while observing natural and physiological posture. In addition to achieving a strain-free and physiological working style in line with Dr. Daryl Beach, anyone wishing to further optimize their treatment outcomes

can speak with knowledgeable experts about the treatment unit EMCIA ORTHO – for a long, untroubled working life.

Figures



Fig. 1: Easy access to all instruments (Spaceline EMCIA, Morita)

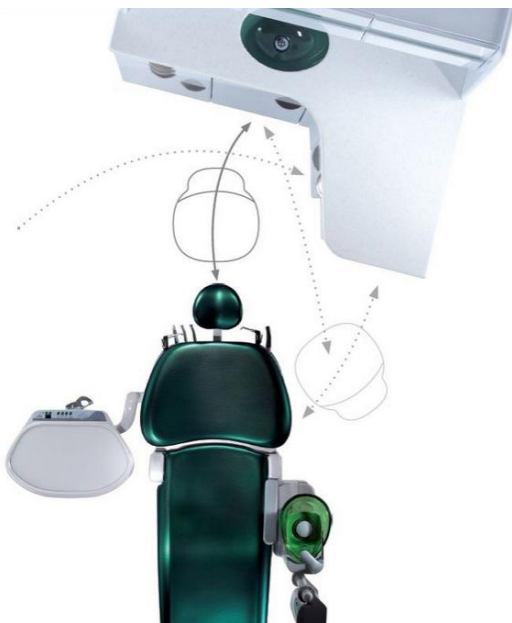


Fig. 2: Maximum comfort and minimum space requirements (Spaceline EMCIA, Morita)



Fig. 3: Ergonomic instrument design for balanced working posture (oral mirror MXS, Morita)