

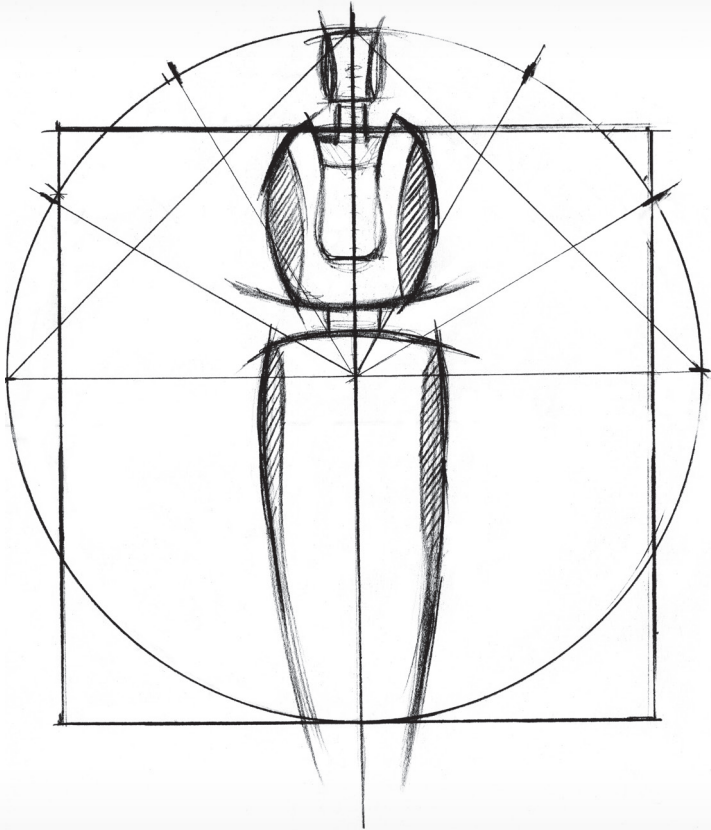
THE DENTAL  
SOLUTIONS  
COMPANY™



Treatment Centres

# Treatment in perfect balance

[dentsplysirona.com](https://dentsplysirona.com)



# Why consider ergonomics?



## Our experts in ergonomics



### **Thomas Senghaas, Dentist**

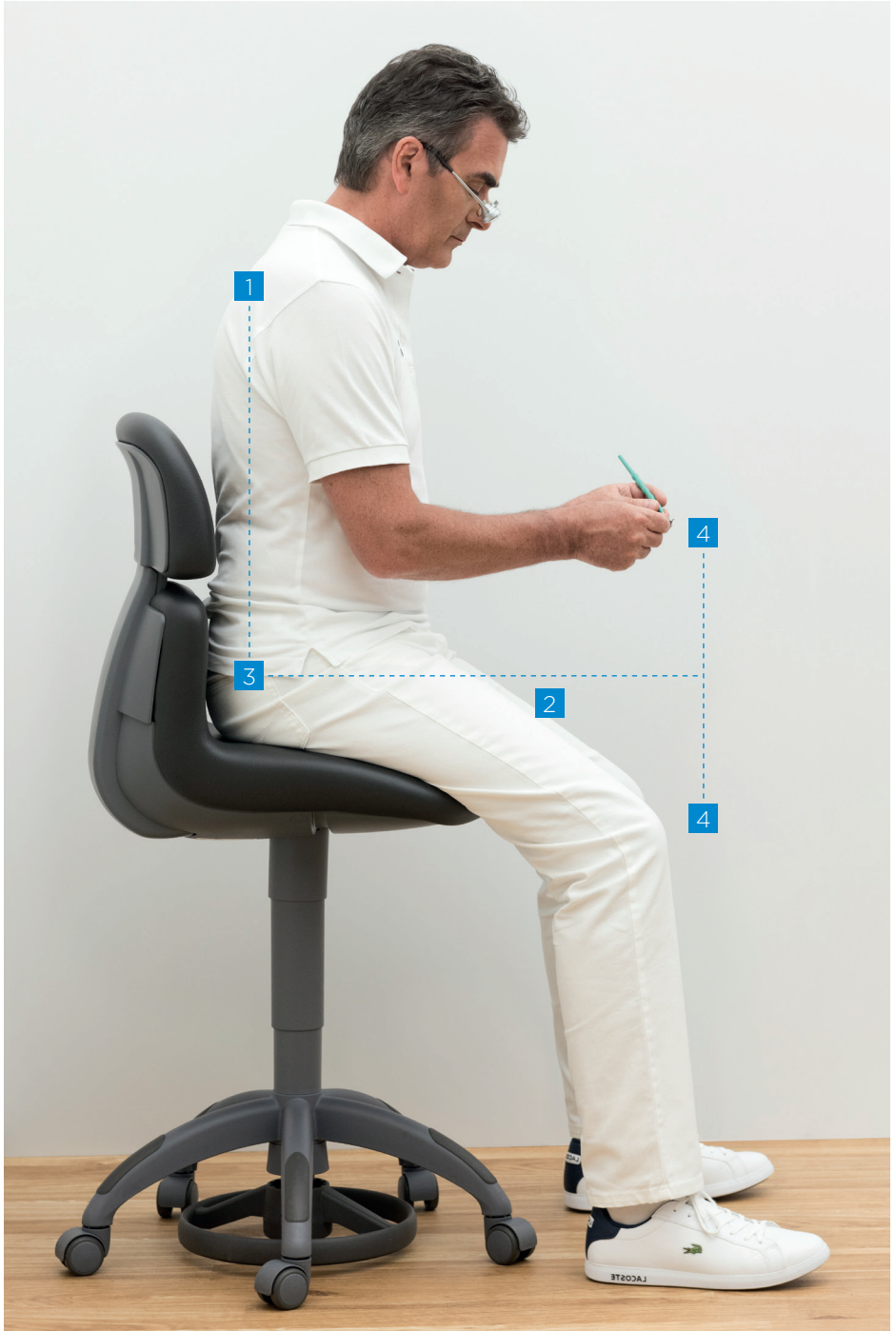
- Private practice in Hamburg Winterhude
- Specialist for endodontic treatments
- Dentsply Sirona consultant
- International Dentsply Sirona trainer
- Expert in dental ergonomics



### **Peter Fischer, Doctor of Physiotherapy (USA)**

- Physiotherapy practice in Tübingen
- Lecturer at Tübingen University
- Specialises in dental ergonomics
- Trains dental teams chairside
- Author

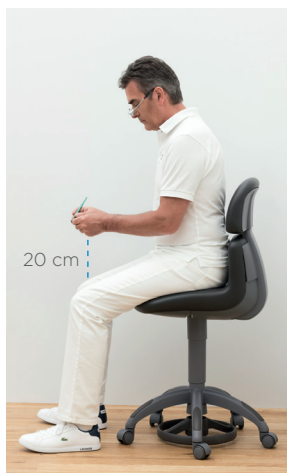






# The fundamentals of a healthy sitting position

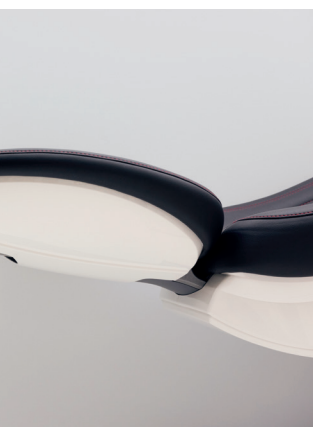
- 1 Your upper body is upright and straight
- 2 Your hips are higher than your thighs
- 3 Your back touches the backrest only when you relax
- 4 Knee-to-hand distance should be as great as possible to allow space for the patient in between



# The correct head positioning is essential: Motor-driven headrest

Tilt with anatomical movement for upper and lower  
jaw positions





# The correct head positioning is essential: Double-articulating headrest

Tilt with anatomical movement for upper and  
lower jaw positions







# Ergonomic footswitch activation

## 1 Light foot

Whole foot on the control -  
less force for a light foot with less pressure applied

## 2 Heavy foot

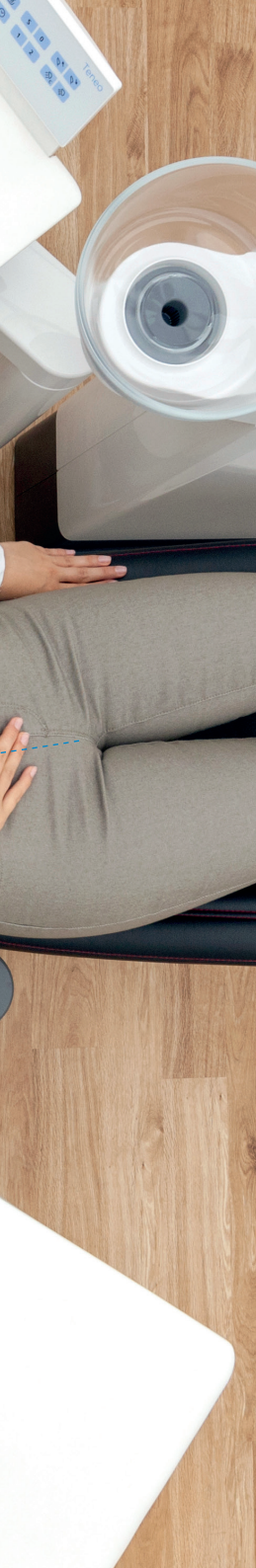
Only front of foot on the control -  
more counteraction for a heavy foot with more pressure applied











## Upper jaw, quadrant I – Dental team positioning

### Interlaced legs for best team access



#### Do's

- Dentist and assistant have a direct and symmetric access without twisting their spine
- Combination of flat backrest and high working position result in sufficient space for interlaced legs

→ Ergonomic 4-handed treatment



#### Don'ts

- Reversed sitting position without interlaced legs

→ Twisted spine for dentist and/or assistant

Dentist at 10 – 11 and assistant at 15 with interlaced legs, usually the right leg of the assistant is in between dentist's legs.







## Upper jaw, quadrant II – Dental team positioning

Interlaced legs inverted –  
for occipital access



### Do's

- Dentist and assistant have a direct and symmetric access without twisting their spine
- Optional mirror: Maximised distance from the field of work to prevent contamination. Distance is compensated for by loupes.



### Don'ts

- Reversed sitting position without interlaced legs
- Twisted spine, especially for assistant

Direct sight to the upper left quadrant with loupes. Dentist at 11 – 12 and assistant at 15 – 16 with interlaced legs, usually the left leg of the assistant is in between dentist's legs.



## Lower jaw, quadrant III – Dental team positioning

Rotated patient's head dominates  
team position for best access



### Do's

- Left arm of the assistant is across the patient as the working field is significantly higher than the patient's chest
- Left leg of the assistant is in between the dentist's legs



### Don'ts

- Reversed sitting position of the dentist twists the spine and disables ergonomic instrument use

Direct sight to the lower left quadrant with loupes. Dentist at 9 and assistant at 15. In this therapy setup the assistant is seated tightly next to the patient to compensate the patients rotated head.





## Lower jaw, quadrant IV – Dental team positioning

Situative assistant position  
according to retraction requirement



### Do's

- Assistant adapts sitting position for optimal therapy support
- Dentist retracts occasionally depending on the addressed tooth face

→ Left arm is released



### Don'ts

- Backrest should be completely horizontal in order to get the dental team close to the patient. Otherwise there is a risk of leaning over the patient.

Direct sight to the lower right quadrant with loupes. Dentist at 9 and assistant at 15. Assistant can move up to 13 for retraction and warding the right cheek.



# Ergonomic positioning for children



## **Advantages**

- Habitual practitioner and team working positions
- Head inclination can still be adjusted by the motorised headrest
- Normal reaching distances are maintained
- Child does not feel boxed in between the dental team



### Disadvantages

- Operating point at the wide part of backrest → poor team access
- Head inclination cannot be adjusted
- Reaching distances of up to 25 cm longer
- Child feels boxed in between the leaned over dental team
- Child's head cannot be secured

# The 10 golden rules of ergonomics

1. Sit as high as possible
2. Sit load-free in symmetrical balance
3. Always keep moving, with as many load changes as possible
4. Work only with ergonomically selected loops
5. Horizontal positioning of the patient, especially for LJ treatment



6. The patient's head is positioned exactly where it is needed
7. The orientation of the patient's head is crucial
8. Upper jaw treatment with indirect sight and a wide mirror pitch
9. Ergonomics can only be implemented as a team
10. In practice, ergonomics work only with ergonomic equipment





## Procedural Solution

Preventive  
Restorative  
Orthodontics  
Endodontics  
Implants  
Prosthetics

## Enabling Technology

CAD/CAM  
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