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Title
Best Practice Standard of Brace in the Treatment of Scoliosis

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Summary
Different bracing concepts are used today for the treatment of scoliosis. The use of the „Chêneau light“ brace and the Gensingen brace as described as the latest CAD CAM technology leads to correction effects above average when compared to the correction effects of other braces described earlier.

Introduction
Different bracing concepts are used today for the treatment of scoliosis. The plaster cast method worldwide seems to be the most practiced technique at the moment. CAD (Computer Aided Design) systems are on the market which allow brace adjustments without plaster. The latest development however, is the use of the ScoliOlogiCTM off the shelf system enabling the orthopaedic technician to construct a light brace for scoliosis correction from a variety of pattern specific shells to be connected to an anterior and a posterior upright. This „Chêneau light“ brace, developed according to the Chêneau principle, promises a reduced impediment of quality of life in the brace. However, material reduction should not result in reduced effectiveness. Therefore the primary correction effect in the „Chêneau light“ brace has been evaluated and compared with that of other braces used today. Similar correction effects have been achieved with the Gensingen brace lately.

Methods
The correction effects of the first 81 patients (main diagnosis Adolescent Idiopathic Scoliosis (AIS) [n = 64] or Early Onset Scoliosis (EOS) [n = 15]), treated according to the principle of the „Chêneau light“ brace were evaluated after an average treatment time of 6 weeks by a full-body X-ray made in the standing position whilst wearing the brace and compared with the last X-ray before bracing. The average curvature angle of the whole group was 35.6°, the average age
was 12.9 years (SD 1.9), average Risser sign was 1.3 (SD 1.5), average Tanner rating 2.75 (SD 0.7).

**Results**
The Cobb angle in the whole group was reduced by an average of 16.4°, which corresponds to a correction effect of 51%. The differences were highly significant in the T-test (T = 17.4; p < 0.001). The best correction effects reported in literature so far are about 40% in two different studies. The correction effect was highest in lumbar and thoracolumbar curve pattern (62% ; n = 18). In thoracic scoliosis the correction effect was 36% (n = 41) and in double major curve pattern 50% (n = 22). The correction effect correlated slightly negatively with age (r = -0.24; p = 0.014), negatively with the Risser stage (-0.29; p = 0.0096) and correlated negatively with the Cobb angle measured before treatment (r = -0.43; p < 0.0001).

**Conclusion**
The use of the „Chêneau light“ brace leads to correction effects above average when compared to the correction effects of other braces described in literature. The reduction of material seems to affect the desired correction in a positive way. In curve patterns where the Chêneau light brace is not available the patients can be fitted with a new CAD / CAM brace with similar in-brace corrections, called the Gensingen brace.

**References**
2. Weiss HR, Werkmann M, Stephan C: Brace related stress in scoliosis patients - Comparison of different concepts of bracing. Scoliosis. 2007, 2:10
Moderne Korsettbehandlung bei Skoliose


Sportliche Aktivitäten sind auch im Korsett möglich.

Die neuste und verträglichste geschlossene CAD - Versorgung (gipsfrei) nach Chêneau.