Immediate in-brace correction with the new Lyon brace (ARTbrace): Results of 141 consecutive patients in accordance with SRS criteria for bracing studies
Jean Claude De Mauroy 1,*, Sophie Pourret 2, Frédéric Barral 2
1 Clinique du Parc, Médecine Orthopédique, Lyon, France
2 Groupe Lecante, Lyon, France
* Corresponding author.
E-mail address: demauroy@aol.com (J.C. De Mauroy)

Objective All recent studies confirm that the outcome of a conservative orthopaedic treatment depends on the compliance and the effectiveness of bracing measured by immediate in-brace curve correction. There is a correlation between immediate in-brace correction and biomechanical effectiveness of brace treatment in adolescent idiopathic scoliosis. In a retrospective analysis of the immediate in-brace correction obtained from a consecutive series of patients treated by the major SOSORT teams, the conclusion was that an effective brace should be able to achieve 50% correction of the curve magnitude immediately after application. The aim of this study is to provide a point of comparison between different braces and study the factors determining the reduction.

Patients and methods Study design This is a prospective controlled cohort observational study based on ongoing database including 544 patients with AIS treated with ARTbrace from May 2013 to November 2015. Only primary curves were selected, lumbar curves Lenke 5 are excluded as treated with the short GTB brace. The SRS criteria group consisted of 141 patients with 177 curves. Brace checking is performed 3–4 days after brace delivery with ultra-low dose EOS system.

Results All 141 patients were reviewed at the control: no drop out. The mean age was 12.92 years (SD = 1.39, range: 10–15). One hundred and twenty-five patients are female (88.7%).

The average initial Cobb angle was 29.62° (SD = 4.6, range: 25°–40°).

The average in-brace correction (percent) was 72.5% (SD = 21.9, range: 29°–140%).

At the thoracic level (n = 98),

The average initial Cobb angle was 30.33° (SD = 4.6, range: 25°–40°).

The average in-brace Cobb angle was 10.04° (SD = 7.1, range: −12 to 29°).

The average in-brace correction (percent) was 67.6% (SD = 21.2, range: 29°–140%), significant (P = 0.000).

At the thoracolumbar and lumbar for double major level (n = 75),

The average initial Cobb angle was 28.61° (SD = 4.1, range: 20°–40°).

The average in-brace Cobb angle was 6.36° (SD = 6.5, range: −9 to 25°).

The average in-brace correction (percent) was 78.8% (SD = 21.3, range: 40°–136%), significant (P = 0.000).

Discussion/Conclusion For the BrAIST study, average in-brace correction was 33% (n = 152, range: −48 to 100%).

The in-brace correction obtained by the asymmetrical high rigid polycarbonate detorsion brace corrects at least two times more than conventional polyethylene braces.

Disclosure of interest The authors declare that they have no competing interest.

Creation of a brochure for amputees: Living with an amputation
Aurelie Vouilloz 1,*, François Luthi
Clinique Romande de Réadaptation, Appareil Locomoteur, Sion, Switzerland
* Corresponding author.
E-mail address: aurelie.vouilloz@crr-suva.ch (A. Vouilloz)

Objective A lower limb amputation is a major event for a patient with many questions arising for him and his family. Individual and environmental factors could influence patient’s quality of life and adaptation to amputation. Most of the time, brochures concern post operative care after limb amputation (surgery type, stump medical care, prosthetics . . .). Rehabilitation is often only briefly dealt with in these brochures.

Objectives of this study (1) To write a brochure specifically concerning rehabilitation for lower limb amputees. (2) To assess patients’ opinion and satisfaction concerning the relevance and quality of this brochure.

Material and methods (1) Creation of a multidisciplinary team. Creation of a brochure concerning rehabilitation. Modification after 5 amputees’ opinion (2 patients in rehabilitation and 3 after discharge).

(2) Brochure’s evaluation by lower limb amputees, living at home, with questions concerning: clarity, choice of themes selected and illustrations, reassurance, usability and utility. Open-ended and closed-ended questions.

Results (1) Illustrated brochure with 15 questions-and-answers concerning the following themes: “my preparation for active rehabilitation”, “recovering my autonomy” and “return to everyday life”. Topics are: pain management, body image, physiotherapy, prosthetics, gait rehabilitation, driving adaptations, home adaptations, professional life, leisure and sports activities, place in society, insurances, illustrations by a cartoonist.

(2) Brochure sent to a hundred patients. Compilation of results ongoing.

Discussion/Conclusion An illustrated brochure concerning rehabilitation after an amputation was written and issued in digital format and in paper. Data recording is ongoing but the first findings are positive and very encouraging. This document including patients’ questions and professionals’ answers could form basis for discussion with patients and constitute a preliminary stage to a therapeutic education program.

Disclosure of interest The authors declare that they have no competing interest.

Patient dependent knee modeling at several flexion angles: A study on soft tissues loadings
Boris Dousteysssier 1,*, Jérôme Molimard 1, Chafiaa Hamitouche 2, Woo Suck Han 1, Eric Stindel 2
1 École des Mines de Saint-Étienne, Centre Ingénierie Santé, Saint-Étienne, France
2 Laboratoire de Traitement de l’Information Médicale, Brest, France
* Corresponding author.
E-mail address: boris.dousteysssier@emse.fr (B. Dousteysssier)

Objective With cartilage physiopathology, knee stability and therefore the subsequent loadings on ligaments have a strong impact in the development of knee osteoarthritis. To understand this phenomenon, authors are proposing different knee models. Most of them are without any flexion, some have been introduced by controlling actively muscular groups. In this case, the forces used to achieve the flexion may not be physiological, and the pressure on the articulation can be questioned.