**CO68-008-e**

**Raising awareness of the use of orthotic devices in juvenile rheumatoid arthritis**

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**Keywords:** Rheumatoid arthritis; Orthotic devices; Rehabilitation

**Background.** The juvenile rheumatoid arthritis (JRA) is the most common chronic rheumatologic disease in the childhood. Almost all children with JRA can keep an active lifestyle but the ones with polyarticular involvement may have problems during disease flares.

**Methods.** We present a case of a 16-year-old female with polyarticular onset juvenile idiopathic arthritis with incapacitating chronic pain that has become independent in her daily living with the help of orthotic devices. We pretend to describe (using video and photography) the several orthotic devices that were chosen accordingly to her health, disability and functioning.

**Discussion.** Physical medicine and rehabilitation (PMR) is generally centred in treatments outside the inflammatory period of the disease relying mainly in stretching and passive or active mobilization. Other medical specialties commonly forget to refer to PMR during ongoing joint inflammation in order to provide orthotic devices to reduce articular load and these patients simply begin physical therapy after chronic weakness and contractures. PMR is paramount to present preventive measures reducing the articular load during ongoing joint inflammation, allowing for improved quality of life in the long-term and a more active lifestyle.

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**CO75-002-e**

**Prospective results of immediate correction of scoliosis in ARTbrace**

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**Keywords:** Scoliosis; Prospective study; Immediate results; In-brace correction

**Background.** The ARTbrace is an asymmetric rigid (polycarbonate) torsion brace with two lateral shells and front opening.

**Results.** The immediate in-brace correction of the Cobb angle is the fundamental parameter of success of non-surgical orthopaedic treatment of scoliosis. The results of a prospective series of the first 75 patients were studied using EOS X-ray and compared with results obtained by other braces.

Radiologically, in the frontal plane, the immediate reduction in-brace is on average (0.69).

**Conclusion.** All 3D radiological and clinical parameters improved significantly and ARTbrace seems to be the most corrective brace.

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**CO75-003-e**

**French validation of Brace Questionnaire**

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**Keywords:** Quality of life; Scoliosis; Adolescent; Brace

**Background.** Quality of Life (QoL) scales have to be introduced in the treatment evaluation of our patients with adolescent idiopathic scoliosis. Vasiliadis create the Brace Questionnaire (BrQ), the one, which is specific for brace, treated adolescents. This tool was developed and validated in Greek.

**Methods.** The BrQ of a sample Likert Scale, divided in 8 domains. The questionnaire was developed in order that the child could fill in it alone and is adapted for 9 to 18-years-old. The lowest scale is 20 and the best 100. The highest scales show a better QoL. The process of cultural adaptation of the questionnaire was in accordance with the guidelines of the International Quality of Life Assessment (IQOLA) Project.

**Results.** Statistical analysis. Firstly, descriptive statistics will be used to calculate mean scores and standard deviations for a given question and a domain. The second level will be comparative concerning reliability and validity.

**Further reading**


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**CO75-004-e**

**Mechanical characterization of lumbar belts by measuring stress and interface pressure**

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**Keywords:** Lumbar belt; Interface pressure

**Background.** Stress and strain in the lumbar area can be measured by strain gages or other transducers applied directly to the skin. As an alternative to these invasive methods, digital image analysis of skin deformation may be used.

**Methods.** We present a method for measuring 2D pressure and strain distributions using digital image analysis. The pressure and strain fields are calculated in real-time from a sequence of digital pictures of the test objects. We present results for two types of lumbar belts.

**Conclusion.** Our method may be suitable for use with other applications and devices that can be measured using this method.