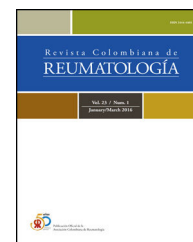




# Revista Colombiana de REUMATOLOGÍA

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## Editorial

### The efficacy of clinical pilates exercises in children and adolescents with juvenile idiopathic arthritis: a pilot study



### La eficacia de los ejercicios de pilates clínicos en niños y adolescentes con artritis idiopática juvenil: un estudio piloto

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Juvenile idiopathic arthritis (JIA) has a prevalence of 16–150/100.000 children and is the most frequent pediatric rheumatic disease, accounting for significant disability. With the advent of new pharmacological and rehabilitation therapies, the quality of life of children with JIA has improved considerably.

Allowing physical activity and exercise in children with JIA as part of the therapeutic strategy, is a concept that has evolved over the past 20 years.<sup>1</sup> Historically, these patients were prescribed bed rest, involving significant physical, social and psychological consequences.

As compared with their peers, children with JIA are physically less active (only 22% of adolescents with JIA reach the recommended daily levels of physical activity),<sup>1</sup> they get tired more easily and are less fit, sometimes experiencing loss of joint function and disability, which affects their quality of life and leads to an emotional impact.

Due to the lack of physical activity, children with JIA develop muscle atrophy that not only hinders their activities of daily life and physical performance, but also negatively impacts bone mineralization (the mechanostat theory).<sup>2,4</sup> In addition to the disease activity and the use of steroids, there is a two-fold risk of developing low mineral bone density, particularly in patients with the polyarticular subtype of JIA.

It has been said that JIA may delay the psychomotor development of children; around 45% of children with polyarticular

JIA are 2 standard deviations below the Bayley development scales, and 70% of school children got lower scores in the pediatric evaluation of disability inventory (PEDI).<sup>1</sup>

The psychological, cardiovascular and physical benefits or exercising and physical activity are well known, and children with JIA are no exception. Additionally, it has been shown to contribute to pain management.<sup>5</sup> However, the best type of exercise has not yet been defined for these patients. There are several descriptive trials about the benefits of the different types of exercise in this population, including low-impact moderate aerobics, aquatic therapy, low-impact exercise (qi gong or chi kung, Taiichi, yoga, pilates), but there are very few randomized comparative trials.

It has been shown that patients with JIA have a good tolerance to exercise.<sup>5</sup> However, in case of active joint inflammation, patients may experience pain during exercise, falls and injuries due to muscle weakness, joint instability and altered proprioception. Therefore, load-bearing and impact exertion has been discouraged.

Among the low-impact exercises that consider other individual biopsychosocial aspects is pilates, an exercise based on controlled movements that help to improve strength and musculoskeletal stretching, in addition to improving balance; furthermore, it can be practiced individually or in groups.

Doctor Bilge Basakçı Calık<sup>6</sup> and his group from the University of Pamukkale in Denizli, Turkey, carried out a pilot

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trial with 15 children with JIA, assessing the impact of pilates as a routine group exercise (n = 6), compared against another group that conducted an exercise routine at home (n = 9). The results showed that both groups experienced a significant improvement in manual dexterity and running speed, with a significant difference in favor of pilates for upper limb coordination scores in BOT-2 SF and in terms of activities of daily life in the PedsQL. Previously, Mendonça et al., conducted a study in 50 children, showing a positive quality of life impact, both at the physical and psychological level, according to HRQOL.<sup>3</sup> Therefore, due to its physical and psychosocial impact, this type of exercise could be an adequate tool to be adopted for exercise in children with JIA.

In conclusion, encouraging patients to adopt an individualized, guided and supervised physical activity and therapeutic exercise program, is highly recommended, at least 3 times per week, avoiding high-impact exercise when the joints are actively inflamed, and instead favoring low-to-moderate impact exercise for strength and flexibility, considering the child as a biopsychosocial being.

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