Physical capacity of girls with mild and moderate idiopathic scoliosis: influence of the size, length and number of curvatures (Czaprowski et al.)

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Dear Editor,

We read with much interest the article entitled ‘Physical capacity of girls with mild and moderate idiopathic scoliosis: influence of the size, length and number of curvatures’ by Czaprowski et al. [1]. We appreciate the authors and editor for publishing this interesting article.

The exclusion of other underlying causes of scoliosis is predominantly carried out before arriving at a definitive diagnosis for AIS. The clinical examination and standard radiography are so far considered as the mainstay in facilitating the diagnosis of scoliosis. However, Kim et al. [2] described the pitfalls (5⁰ diurnal variation, difficulty in patient position for accurate frontal view, intra and inter observer variation) of Cobb angle measurement using a two-dimensional radiographic image of a 3d deformity, and moreover, El-Sayyad [3] had recently emphasized on prior objective clinical examination of a patient (leg length, pelvic and extremity symmetry, Adam forward-bending test and previous spinal surgery) to exclude the other potential causes. Czaprowski et al. [1] used standard frontal view radiograph along and bunnell inclinometer to include and exclude the research subjects. However, we feel to validate and strengthen the subject recruitment; reasonable, valid benchmark procedures like clinical examination [3],

real-time ultrasound, and AUSCAN [4] could have been carried out.

Czaprowski et al. [1] did not clearly define the length of the scoliotic curvature that was determined in their study. In their study, Czaprowski et al. [1] stated that the average number of vertebrae forming scoliosis was 9.4 which in turn do not define the length of scoliotic curvature. One may presume that the current study had determined the length of the scoliotic curve by adding the number of vertebrae caught between the upper and lower tilted vertebrae within the curve. However, with the 36 double-curve subjects presenting with large right thoracic and left curvature, the mere counting of vertebrae between the double curve was arbitrary. Czaprowski et al. [1] did not provide any clinical rationale or research evidence for grouping of subjects by below or equal and above average scoliotic length. Furthermore, scoliosis is a three-dimensional deformity. The current study’s description on length of curvature measurement was not evidence based measurement; thereby, the reliability of these measurements is questionable.

We feel that some essential information about the actual testing procedures like the type of warm up exercise, position of ergometer seat height (example knee slightly bent), handle bar height, fatigue reported by test subjects (if any) and duration of rest between during the two 5 min submaximal effort may be beneficial. Moreover, Koumbarelis [5] stated that the exercise intolerance in mild scoliosis is attributed to physical deconditioning rather than primary ventilator limitations. Possible displacement and compression of the heart due to thoracic deformity might not permit the stroke volume to increase during exercise, therefore adding a limitation to cardiovascular exercise. The authors of the present study did not state any possible rationale for the insignificant value of maximum oxygen

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intake and output during the PWC 170 in girls with mild scoliosis (up to 25°).

Conflict of interest Authors have no conflict of interest to declare.

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