

Paving the way to predicting spine deformities

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The work of Stefan Parent and his team could pave the way to the development of an assessment tool that would enable doctors to assess whether a child's past and residual spinal growth are normal or pathological. Credit: Thinkstock

Spine deformities first occur mostly in childhood, and how fast and how severe these incapacitating conditions develop is difficult to predict.

This could soon change, thanks to the Scoliosis Research Society award-winning work of Stefan Parent and his team, which could pave the way to the development of an [assessment tool](#) that would enable doctors to assess whether a child's past and residual spinal [growth](#) are normal or pathological.

"Our data can be used to complement the current growth charts routinely used by pediatricians and help determine if the patient has a normal growth pattern" says the surgeon and researcher at the mother-child research hospital CHU Sainte-Justine and assistant professor at Université de Montréal. "Moreover, after a procedure is performed to correct a [spinal deformity](#) with or without fusion, such a tool will help clinicians validate if the spine grows normally or whether another therapeutic approach should be considered."

To reach these results, the team used 3D reconstruction of the spine and assessed normal growth using various parameters: total height, vertebrae dimension and growth, and natural curves – namely kyphosis in the upper region and lordosis in the lower region of the spine – growth. Standard values were obtained through the analysis of data collected from 98 children aged 3 to 11 years who visited the spine clinic of CHU Sainte-Justine at least twice between 2007 and 2014 and showed no symptom of [spine](#) deformity judging by their X-rays.

More information: The project bearing the title "Spinal Growth in Normal Children between 3 and 11 Years Old Using 3D Reconstruction: a Longitudinal Study" was conducted by Leonie Tremblay, Patrick Tohme, Marjolaine Roy-Beaudry, Marie Beauséjour, and Hubert Labelle, under the supervision of Stefan Parent. This achievement earned Parent and his team the 2015 Louis A. Goldstein award of the Scoliosis Research Society for best clinical poster.

Provided by University of Montreal

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