



<b>Title</b>	<b>Body mass index and its association with lumbar disc herniation and sciatica: a large-scale, population-based study</b>
<b>Author(s)</b>	<b>Samartzis, D; Karppinen, JI; Luk, KDK; Cheung, KMC</b>
<b>Citation</b>	<b>The 34th Annual Meeting of the Hong Kong Orthopaedic Association (HKOA), Hong Kong, 15-16 November 2014.</b>
<b>Issued Date</b>	<b>2014</b>
<b>URL</b>	<b><a href="http://hdl.handle.net/10722/220369">http://hdl.handle.net/10722/220369</a></b>
<b>Rights</b>	<b>Creative Commons: Attribution 3.0 Hong Kong License</b>

## **BODY MASS INDEX AND ITS ASSOCIATION WITH LUMBAR DISC HERNIATION AND SCIATICA: A LARGE-SCALE, POPULATION-BASED STUDY**

*Samartzis D,<sup>1</sup> Karppinen J,<sup>2</sup> Luk KDK,<sup>1</sup> Cheung KMC<sup>1</sup>*

<sup>1</sup>Department of Orthopaedics and Traumatology, The University of Hong Kong, Hong Kong

<sup>2</sup>Institute of Clinical Medicine, University of Oulu, Oulu, Finland

**INTRODUCTION:** This large-scale study addressed the association of body mass index (BMI), especially overweight / obesity with lumbar disc herniation, its global lumbar involvement and implications with sciatica that little of which is known.

**METHODS:** A cross-sectional study of 2596 Southern Chinese (mean age, 42 years; 60% females) was conducted to assess T2-weighted magnetic resonance imaging (MRI), environmental and lifestyle factors, and clinical profiles of sciatica. Disc bulge / extrusion (DBE) and other spinal phenotypes from L1-S1 were assessed. A total DBE (TDBE) score of L1-S1 was calculated. Asian-modified BMI values and categories were obtained.

**RESULTS:** In all, 46.3% subjects had DBE, mainly at L4-S1. Mean TDBE score was 0.7. Also, 17.9% subjects reported sciatica at time of assessment. Mean BMI was 22.9 kg/m<sup>2</sup> (7.2% were underweight, 47.9% normal-weight, 36.1% overweight, and 8.9% obese). The TDBE score significantly increased with elevated BMI categories ( $p < 0.001$ ). Multivariate analyses showed that elevated BMI was significantly associated with DBE (normal weight [reference]; underweight: odds ratio [OR], 0.71; 95% confidence interval [CI], 0.49-1.03); overweight: 1.26, 1.04-1.52; and obese: 1.78, 1.30-2.44). The TDBE score (OR: 1.36; 1.15-1.60) and obesity (OR: 1.68; 1.25-2.24) were significantly related with sciatica. Worse functional and disability scores were associated with sciatica ( $p < 0.05$ ).

**CONCLUSIONS:** Based on the largest population-based study, overweight and obesity significantly increased the likelihood of having lumbar DBE, its global severity, and risk of sciatica.