

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

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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/m² (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.