

## To Establish the Normal Bone Mineral Density Reference Database for the Singapore Male

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### Abstract

**Introduction:** The objective of this study was to establish the normal bone mineral density (BMD) reference curve for the Asian Singapore male. **Materials and Methods:** Three hundred and eighty-three male subjects were enrolled; comprising of 309 Chinese, 44 Malays and 30 Indians resident in Singapore. Bone mineral density was measured at the lumbar spine and left hip using a Hologic QDR 4500Elite dual-energy X-ray absorptiometry (DXA) scanner. **Results:** The mean peak BMD for the average lumbar spine and the neck of femur was 1.006 g/cm<sup>2</sup> and 0.97 g/cm<sup>2</sup>, respectively. The mean peak BMD was taken at the 20 to 24 years age group at both the hip and spine based on data distribution for the various age groups. The BMD corresponding to -2.5 standard deviations from the peak adult value was 0.719 g/cm<sup>2</sup> for the average lumbar spine and 0.655 g/cm<sup>2</sup> for the neck of femur. **Conclusion:** This Asian male BMD reference database, which is 10% and 5% lower than corresponding values from the Caucasian reference database, allows for more accurate diagnosis of osteoporosis in Asian males.

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**Key words:** Bone mineral densitometry, Dual-energy X-ray absorptiometry scanner, Hologic scanner, Male osteoporosis

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