



## Status of bone strength and factors associated with vertebral fracture in postmenopausal women with type 2 diabetes

SCIENCE

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Key Take-Away:

The postmenopausal women with type 2 diabetes mellitus exhibit significant associations with the declined trabecular bone score and low bone mass and the risk inclined in women who are old and with poor glycemic control. The study results affirm that bone strength together with clinical risk factors found to have the strongest association with fracture and may be useful to identify women with T2DM at risk of fracture.

### Introduction

This study aimed to estimate the state of bone mass, microarchitecture, and factors linked with vertebral fracture among postmenopausal females with type 2 diabetes mellitus (T2DM).

### Methods

A total of 285 females aged  $60.7 \pm 6.9$  years went through bone trabecular bone score (TBS) and mineral density (BMD) evaluation using T8-S1 lateral spine radiographs; laboratory evaluation; dual-energy x-ray absorptiometry; and interviews concerning clinical risk factors on the basis of the fracture risk assessment tool (FRAX).

### Results

Women with T2DM exhibited 72.6%, and 63.2% declined bone microarchitecture and low bone mass, respectively. TBS showed an association with femoral neck, total hip BMD, and lumbar spine. Further, the normal BMD, osteoporosis, and osteopenia groups exhibited considerable differences in the TBS scores. Bone-specific alkaline phosphatase, age, and vertebral fracture were remarkably different in groups with several T scores or those ranked by TBS classes. Bone-specific alkaline phosphatase was positively associated with glycated haemoglobin but inversely associated with TBS and BMD. BMD exhibited a weaker relationship with vertebral fracture than TBS, FRAX, TBS-adjusted FRAX, and TBS and BMD.

### Conclusions

About two-thirds of T2DM females showed declined TBS and low bone mass and a correlation with vertebral fracture. Along with ageing, poor glycemic control may perform a crucial function in bone remodeling, which may be due to the alterations in bone strength among T2DM females. Bone strength concurrently with clinical risk factors showed a marked connection with fracture and may be beneficial to recognise females with T2DM at risk of fracture.

**Source:** Menopause



**Link to the source:** <https://www.ncbi.nlm.nih.gov/pubmed/30130285>

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