Records identified through database searching published until 31 August 2018 (n = 142 after duplicates removed)

Additional records identified through other sources (n = 6)

Records after duplicates removed (n = 148)

Records screened (n = 148) → Records excluded (n = 131)

Full-text articles assessed for eligibility (n = 17) → Full-text articles excluded for the following main reasons: unsatisfactory study design (n= 2) not extractable BMD data (n= 3)

Studies included in qualitative synthesis (n = 12)

Studies included in quantitative synthesis (meta-analysis, n = 12)
  n = 10 cross-sectional or case-control studies with BMD
  n = 2 cross-sectional studies with history of osteoporotic fractures

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  n = 10 cross-sectional or case-control studies with BMD
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