

Osteoporosis and Forward Bending

- Osteoporosis is a common condition where bones become fragile and weak making them easy to break
- Osteopenia - A precursor to osteoporosis

Increased Risk of Osteoporosis

- Early menopause
- Eating disorders
- Prolonged use of corticosteroids
- Heavy drinking and smoking
- Inflammatory medical conditions, hormone conditions, malabsorption conditions such as Crohn's disease, Coeliac disease, rheumatoid arthritis, chronic liver/kidney disease

The Sinaki and Mikkleson Study

- Sinaki and Mikkleson, 1984: reoccurrence of fracture in 89% of participants with a previous history of spinal fractures exposed to flexion exercises compared to (back extension only: 16%, combined: 53%, no exercise 67%)
- This is a widely quoted study and is available in full here:

<http://therapilates.com/PDF/sinaki.pdf>

More Recent Research

- A more recent (2016) study regarding yoga helping to build bones: “Twelve minute daily yoga regimen reverses osteoporotic bone loss”
- https://journals.lww.com/topicsingeriatricrehabilitation/Fulltext/2016/04000/Twelve_Minute_Daily_Yoga_Regimen_Reverses.3.aspx
- It is notable that the forward bends in the regimen are hip flexion as opposed to spinal flexion movements

- The study examines the proposition that yoga is a safe and effective means of preventing osteoporosis-related fracture
- Ten-year study of 741 Internet-recruited volunteers comparing pre-yoga BMD changes with post-yoga BMD changes
- Participants were given a 12-minute DVD of 12 yoga poses believed to stimulate increasing BMD in the lumbar vertebrae, the hip, and the femoral neck

- Conclusion:
 - the study supports the efficacy and safety of yoga as a treatment of osteopenia and osteoporosis
 - What is suggested by this study's results is that yoga can reverse bone loss that has reached the stages of osteopenia and osteoporosis

Practical Advice

- The key thing about flexion is that it needs to be controlled
- Commonly people fracture a vertebra bending quickly to pick something up where they hinge on one vertebra
- A well executed “roll down” spreads the flexion pattern through the spine and avoids hinging on one vertebra
- If hands are also walking down legs the weight of the upper body is supported.

Advice from Fracture Specialist, Osteoporosis and Falls Prevention Service, Brighton General Hospital, Nov '16:

Movements to Avoid

- bending to pick up heavy loads
- Abdominal curls in supine (on back) i.e sit ups
- Double leg extension
- Seated resisted abdominal work

Note that exercise is generally considered to be beneficial in the treatment of osteoporosis:

<http://www.laterlifetraining.co.uk/home-exercise-booklets-free-to-download/>