

# Recommendations for Bone Health Management for Patients on Androgen Deprivation Therapy for Prostate Cancer

Issued: 10<sup>th</sup> November 2021

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## BACKGROUND

Androgen-deprivation therapy (ADT) in patients with prostate cancer can be achieved surgically or chemically, notably by prescribing LHRH analogs. Major bone loss occurs rapidly in both cases, due to the decrease in testosterone levels, and can increase the fracture risk.

The annual rate of bone loss in males is usually 0.5% to 1% and increases in the event of LHRH agonist therapy or surgical orchiectomy. Bone loss during LHRH therapy is significant at all measurement sites and is marked even during the first year of treatment. Bone loss after 1 year ranged from 2.1% to 4.6% at the lumbar spine and from 1.9% to 3.9% at the hip.<sup>1</sup>

The relative risk (RR) of fracture in patients given LHRH analog therapy was 1.21[95% confidence interval (95% CI): 1.14–1.29; P < 0.001] for fractures at any site, 1.45 (95% CI: 1.19–1.75; P < 0.001) for vertebral fractures, and 1.30 (95% CI: 1.10–1.53; P = 0.002) for hip fractures.<sup>1</sup>

## REFERENCES

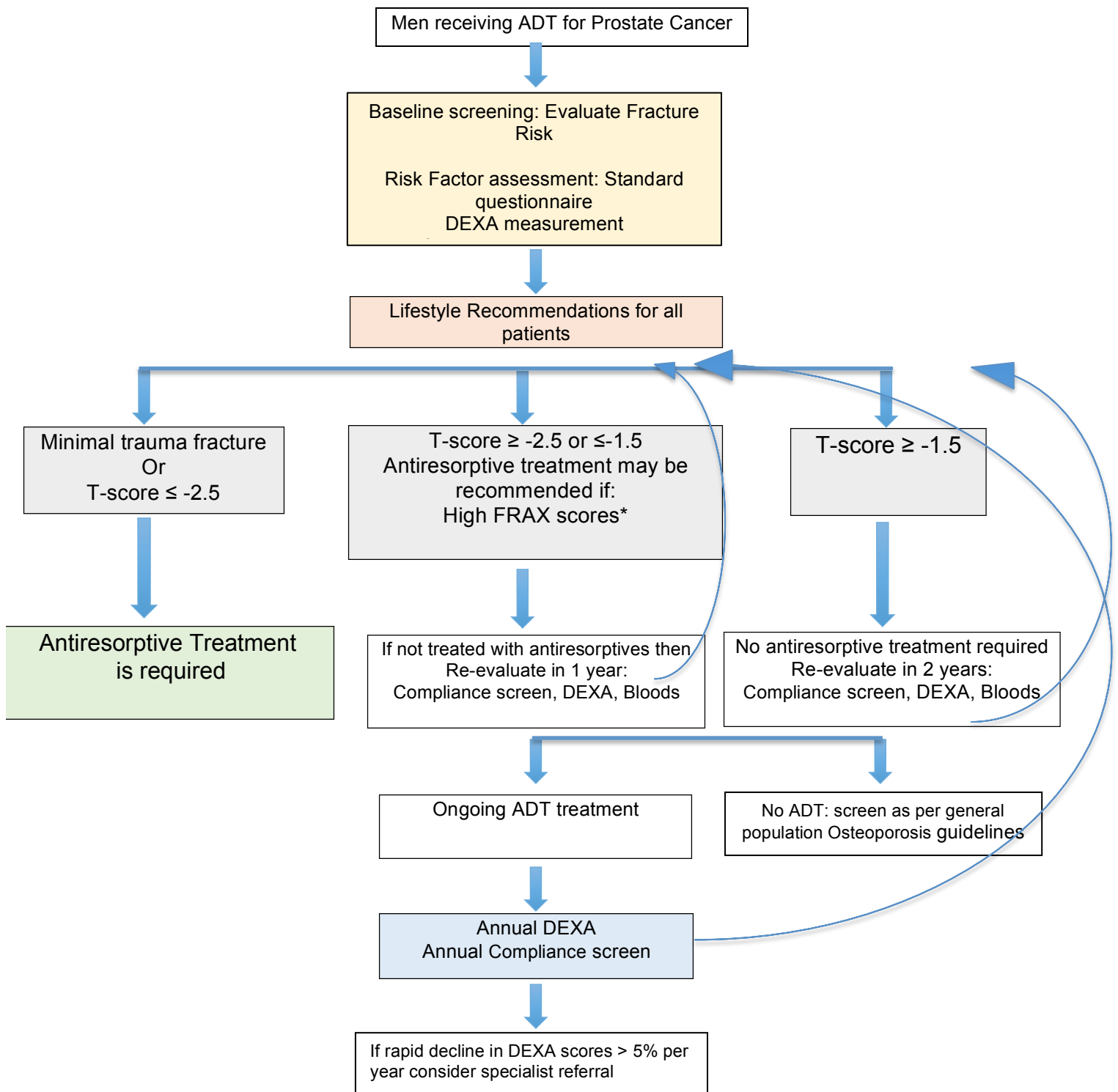
1. Briot et al. French Recommendations for osteoporosis prevention and treatment in patients with prostate cancer treated by androgen deprivation.
2. Osteoporosis prevention, diagnosis and management in postmenopausal women and men over 50 years of age, 2<sup>nd</sup> edition. RACGP and Osteoporosis Australia.

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These guidelines have been written to be used by specialists who prescribe ADT to patients with prostate cancer. They are derived from a pilot program carried out by the rheumatology department at John Hunter Hospital, an ensuing literature review and subsequent consensus amongst treating specialists.

## FLOWCHART



Please read flowchart with accompanying practice tips document

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## PRACTICE TIPS

### Baseline screening

DEXA: at JHH, Newcastle Bone Density, HIG or PRP. Perform follow up DEXA at same practice for comparable results.

Standard Bloods: Ca++, P04, 25-OH Vit D, TSH, PTH, FBC, EUC, LFT. (Could also screen other co-morbidities – Lipids and Hba1c)

Baseline questionnaire: this covers history of osteoporosis risk factors including lifestyle factors and medical history

### Lifestyle Recommendations – for ALL patients

- Calcium intake: recommended amount is 1300mg/day (4 serves per day). Start calcium supplement if dietary intake is less than this amount.
- Vitamin D: 20 minutes of low risk sun exposure per day (before 10am or after 3pm). Aim for 25-OH D levels > 50-75nmol/L. If levels are low, start Vit D supplements at 1000IU daily. For very low vitamin D levels < 30nmol/L, we recommend high dose vitamin D 50,000IU weekly for 4 weeks then monthly
- Weight-bearing and resistance exercise (that is progressive and varied) at least 3 times per week
- Smoking Cessation
- Limit alcohol to no more than 10 standard drinks/week
- If history of falls: refer to falls prevention service or local physiotherapy/exercise physiologist for falls prevention assessment and exercises.

Minimal Trauma Fracture: defined as a fall from a standing height or less.

T-scores: check for T-scores at total hip/femoral neck and lumbar spine. Choose the lowest T-score.

FRAX scores: These are fracture risk assessment tools. It estimates a patient's 10 year probability of fractures based on DEXA and clinical risk factors. It is recommend that antiresorptive treatment is commenced if 10 year probability for a major osteoporotic fracture is  $\geq 20\%$  and risk for a hip fracture is  $\geq 3\%$   
\* Specialist referral can be considered depending upon the clinical situation

### Antiresorptive treatments – must check calcium and vitamin D prior to commencement

#### Bisphosphonate

- Correct frequency for IV (Zoledronic Acid) and oral (Alendronate or Risedronate) options
- Oral administration guidelines. Prefer enteric coated (EC). Take first thing in morning on empty stomach with a glass of plain water. Remain sitting up/standing for following 30mins. Do not eat or take any other medications during half hour post administration of oral)

#### Denosumab

- Must maintain 6 monthly subcutaneous administration regime
- Prescription is via restricted PBS script

Annual compliance screen: This is a questionnaire similar to the baseline questionnaire with an emphasis on adherence with lifestyle recommendations and osteoporosis medication administration.

Annual DEXA: PBS subsidised yearly if there is ongoing hypogonadism

### Recommended Patient Education Material

- Bone Health and Prostate Cancer – Healthy Bones Australia
- How to keep bones healthy and avoid fractures – Agency for Clinical Innovation (ACI)
- Calcium for Bone Health, Vitamin D for Bone Health, Exercise for Bone health – Healthy Bones Australia