

SUPPLEMENTARY APPENDIX 2: PICO Questions

2022 American College of Rheumatology Guideline for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis

MEN AND POST-MENOPAUSAL WOMEN OVER 40 TREATMENT QUESTIONS

A. LOW RISK

BASELINE RISK ASSESSMENT BY FRAX < 10% for Major OP fracture and ≤ 1% for hip fracture

1.1.a. Vit D+Ca vs Placebo

In men and post-menopausal women ≥ age 40 who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium nor vitamin D?

1.2.a Lifestyle vs CA/D

In men and post-menopausal women ≥ age 40 who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

1.3.a Lifestyle+CA/D vs Ca/Vit D

In men and post-menopausal women ≥ age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications calcium, and vitamin D, versus treatment with calcium and vitamin D?

1.4.a Oral bis vs CA/Vit D

In men and post-menopausal women ≥ age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.5.a IV bis vs Ca/Vit D

In men and post-menopausal women ≥ age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.6.a SERM vs Ca/Vit D (should we change to selective estrogen receptor modulators?)

In post-menopausal women ≥ age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.7.a Teriparatide vs Ca/Vit D

In men and post-menopausal women ≥ age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.8.a Abaloparatide vs Ca/Vit D

In men and post-menopausal women ≥ age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.9.a Anti-RANKL therapy vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.10.a Anti-sclerostin therapy vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.11.a IV bisphosphonates vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D, versus treatment with oral bisphosphonate, calcium, and vitamin D?

1.12.a SERM vs Oral bis

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, vitamin D, versus treatment with oral bisphosphonate calcium, vitamin D?

1.13.a Teriparatide vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, and vitamin D?

1.14.a Abaloparatide vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, and vitamin D?

1.15.a Anti-RANKL therapy vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.16.a Anti-sclerostin therapy vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.17.a SERM vs IV bis

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, vitamin D, versus treatment with IV bisphosphonate, calcium, and vitamin D?

1.18.a Teriparatide vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D.

1.19.a Abaloparatide vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.20.a Anti-RANKL therapy vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with IV bisphosphonate, calcium, and vitamin D?

1.21.a Anti-sclerostin therapy vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.22.a Teriparatide vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.23.a Abaloparatide vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.24.a Anti-RANKL therapy vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with raloxifene calcium, and vitamin D?

1.25.a Anti-sclerostin therapy vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.26.a Anti-RANKL therapy vs Teriparatide

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with teriparatide, calcium, and vitamin D?

1.27.a Anti-RANKL therapy vs Abaloparatide

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with abaloparatide, calcium, and vitamin D?

1.28.a Anti-RANKL therapy vs Anti-sclerostin therapy

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with romosozumab, calcium, and vitamin D?

B. MODERATE RISK

RISK ASSESSMENT BY FRAX \geq 10 and $<$ 20% for Major OP fracture and $>$ 1 and $<$ 3% for hip fracture

1.1.b Vit D+Ca vs Placebo

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

1.2.b Lifestyle vs Ca/D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

1.3.b Lifestyle+Ca/D vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium, vitamin D, and lifestyle modifications versus treatment with calcium and vitamin D?

1.4.b Oral bis vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.5.b IV bis vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.6.b SERM vs Ca/Vit D

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.7.b Teriparatide vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.8.b Abaloparatide vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.9.b Anti-RANKL therapy vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.10.b Anti-sclerostin therapy vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.11.b IV bis vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D, versus treatment with oral bisphosphonate, calcium, and vitamin D?

1.12.b SERM vs Oral bis

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D (women)?

1.13.b Teriparatide vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.14.b Abaloparatide vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, and vitamin D?

1.15.b Anti-RANKL therapy vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.16.b Anti-sclerostin therapy vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.17.b SERM vs IV bis

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, vitamin D, versus treatment with IV bisphosphonate, calcium, and vitamin D?

1.18.b Teriparatide vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.19.b Abaloparatide vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with IV bisphosphonate, calcium, and vitamin D?

1.20.b Anti-RANKL therapy vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with IV bisphosphonate, calcium, and vitamin D?

1.21.b Anti-sclerostin therapy vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.22.b Teriparatide vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.23.b Abaloparatide vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.24.b Anti-RANKL therapy vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.25.b Anti-sclerostin therapy vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.26.b Anti-RANKL therapy vs Teriparatide

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with teriparatide, calcium, and vitamin D?

1.27.b Anti-RANKL therapy vs Abaloparatide

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with abaloparatide, calcium, and vitamin D?

1.28.b Anti-RANKL therapy vs Anti-sclerostin therapy

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with romosozumab, calcium, and vitamin D?

C. HIGH RISK

- **PAST FRAGILITY FRACTURE**
- **BMD T SCORE < -2.5 AT HIP OR SPINE**
- **RISK ASSESSMENT BY FRAX \geq 20% for Major OP fracture, \geq 3% for hip fracture**

1.1.c Vit D+Ca vs Placebo

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

1.2.c Lifestyle vs CA/D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

1.3.c Lifestyle+CA/D vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium, vitamin D, and lifestyle modifications versus treatment with calcium and vitamin D?

1.4.c Oral bis vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.5.c IV bis vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.6.c SERM vs Ca/Vit D

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.7.c Teriparatide vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.8.c Abaloparatide vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.9.c Anti-RANKL therapy vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.10.c Anti-sclerostin therapy vs Ca/Vit D

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with calcium, and vitamin D?

1.11.c IV bis vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D, versus treatment with oral bisphosphonate, calcium, and vitamin D?

1.12.c SERM vs Oral bis

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D (women)?

1.13.c Teriparatide vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.14.c Abaloparatide vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.15.c Anti-RANKL therapy vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.16.c Anti-sclerostin therapy vs Oral bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, vitamin D, versus treatment with oral bisphosphonate, calcium, vitamin D?

1.17.c SERM vs IV bis

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, vitamin D, versus treatment with IV bisphosphonate, calcium, vitamin D (women)?

1.18.c Teriparatide vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.19.c Abaloparatide vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.20.c Anti-RANKL therapy vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.21.c Anti-sclerostin therapy vs IV bis

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with IV bisphosphonate calcium, and vitamin D?

1.22.c Teriparatide vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.23.c Abaloparatide vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.24.c Anti-RANKL therapy vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.25.c Anti-sclerostin therapy vs SERM

In post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D, versus treatment with raloxifene, calcium, and vitamin D?

1.26.c Anti-RANKL therapy vs Teriparatide who are

In men and post-menopausal women \geq age 40 and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with teriparatide, calcium, and vitamin D?

1.27.c Anti-RANKL therapy vs Abaloparatide

In men and post-menopausal women \geq age 40 and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with abaloparatide, calcium, and vitamin D?

1.28.c Anti-RANKL therapy vs Anti-sclerostin therapy

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D, versus treatment with romosozumab, calcium, and vitamin D?

1.29 What are the benefits or harms of using oral bisphosphonate plus denosumab?

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate plus denosumab, calcium, and vitamin D, versus treatment with one agent alone, calcium, and vitamin D?

1.30 What are the benefits or harms of using IV bisphosphonate plus anti-RANKL therapy?

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate plus denosumab, calcium, and vitamin D, versus treatment with one agent alone, calcium, and vitamin D?

1.31 What are the benefits or harms of using PTH analog plus anti-RANKL therapy?

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with PTH analog plus denosumab, calcium, and vitamin D, versus treatment with one agent alone, calcium, and vitamin D?

1.32 What are the benefits or harms of using oral bisphosphonate plus PTH analog?

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate plus PTH analog, calcium, and vitamin D, versus treatment with one agent alone, calcium, and vitamin D?

1.33 What are the benefits or harms of using IV bisphosphonate plus PTH analog?

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate plus PTH analog, calcium, and vitamin D, versus treatment with one agent alone, calcium, and vitamin D?

1.34 What are the benefits or harms of using oral bisphosphonate plus anti-sclerostin therapy?

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate plus romosozumab, calcium, and vitamin D, versus treatment with one agent alone, calcium, and vitamin D?

1.35 What are the benefits or harms of using IV bisphosphonate plus anti-sclerostin therapy?

In men and post-menopausal women \geq age 40 and who are continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate plus romosozumab, calcium, and vitamin D, versus treatment with one agent alone, calcium, and vitamin D?

MEN AND WOMEN (NOT OF CHILDBEARING POTENTIAL) UNDER 40 WITH ANY PAST FRAGILITY FRACTURE TREATMENT QUESTIONS

2.1 Vit D+Ca vs Placebo

In adults $<$ age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

2.2 Lifestyle vs Ca/Vit D

In adults $<$ age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

2.3 Lifestyle+Ca/D vs Ca/Vit D

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications, calcium, and vitamin D versus treatment with calcium and vitamin D?

2.4 Oral bis vs Ca/Vit D

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

2.5 IV bis vs Ca/Vit D

In adults < age 40 with any past fragility fracture at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

2.6 Teriparatide vs Ca/Vit D

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

2.7 Abaloparatide vs Ca/Vit D

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

2.8 Anti-RANKL therapy vs Ca/Vit D

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

2.9 Anti-sclerostin therapy vs Ca/Vit D

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

2.10 IV bis vs Oral bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium, and vitamin D?

2.11 Teriparatide vs Oral bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium, and vitamin D?

2.12 Abaloparatide vs Oral bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium, and vitamin D?

2.13 Anti-RANKL therapy vs Oral bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium, and vitamin D?

2.14 Anti-sclerostin therapy vs Oral bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium, and vitamin D?

2.15 Teriparatide vs IV bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide calcium, and vitamin D versus treatment with IV bisphosphonate, calcium, and vitamin D?

2.16 Abaloparatide vs IV bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium, and vitamin D?

2.17 Anti-RANKL therapy vs IV bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium, and vitamin D?

2.18 Anti-sclerostin therapy vs IV bis

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with II bisphosphonate, calcium, and vitamin D?

2.19 Anti-RANKL therapy vs Teriparatide

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with teriparatide, calcium, and vitamin D?

2.20 Anti-RANKL therapy vs Abaloparatide

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with abaloparatide, calcium, and vitamin D?

2.21 Anti-RANKL therapy vs. Anti-sclerostin therapy

In adults < age 40 with any past fragility fracture and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with romosozumab, calcium, and vitamin D?

MEN AND WOMEN (NOT OF CHILDBEARING POTENTIAL) UNDER 40 WITH BMD Z SCORE < -3 AT HIP OR SPINE BUT NO PAST FRAGILITY FRACTURE TREATMENT QUESTIONS

3.1 Vit D+Ca vs Placebo

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

3.2 Lifestyle vs Ca/Vit D

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

3.3 Lifestyle+CA/D vs Ca/Vit D

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications, calcium, and vitamin D versus treatment with calcium and vitamin D?

3.4 Oral bis vs Ca/Vit D

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

3.5 IV bis vs Ca/Vit D

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

3.6 Teriparatide vs Ca/Vit D

In adults < age 40, with closed growth plates, without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

3.7 Anti-RANKL therapy vs Ca/Vit D

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

3.8 IV bis vs Oral bis

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

3.9 Teriparatide vs Oral bis

In adults < age 40, with closed growth plates, without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms

of treatment with teriparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

3.10 Abaloparatide vs oral bis

In adults < age 40, with closed growth plates, without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

3.11 Anti-RANKL therapy vs Oral bis

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

3.12 anti-sclerostin vs oral bis

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

3.13 Teriparatide vs IV bis

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

3.14 Abaloparatide vs IV bis

In adults < age 40, with closed growth plates, without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

3.15 Den vs IV bis

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

3.16 Anti-RANKL vs Teriparatide

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with teriparatide, calcium and vitamin D?

3.17 Anti-sclerostin vs IV bis

In adults < age 40 without past fragility fracture but with BMD Z score < -3 at hip or spine, and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

MEN AND WOMEN (NOT OF CHILDBEARING POTENTIAL) UNDER 40 WITH NEITHER BMD Z SCORE < -3 AT HIP OR SPINE NOR ANY PAST FRAGILITY FRACTURE TREATMENT QUESTIONS

4.1.a Vit D+Ca vs Placebo

In adults < age 40 without past fragility fracture and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

4.2.a Lifestyle vs Ca/Vit D

In adults < age 40 without past fragility fracture and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

4.3.a Lifestyle+CA/D vs Ca/Vit D

In adults < age 40 without past fragility fracture and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications, calcium, and vitamin D versus treatment with calcium and vitamin D?

4.4.a Oral bis vs Ca/Vit D

In adults < age 40 without past fragility fracture and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

4.5.a IV bis vs CA/Vit D

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

4.6.a Teriparatide vs Ca/Vit D

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

4.7.a Anti-RANKL therapy vs Ca/Vit D

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

4.8.a IV bis vs Oral bis

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

4.9.a Teriparatide vs Oral bis

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

4.10.a Anti-RANKL therapy vs Oral bis

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

4.11.a Teriparatide vs IV bis

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

4.12.a Anti-RANKL therapy vs IV bis

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

4.13.a Anti-RANKL therapy vs Teriparatide

In adults < age 40 without past fragility fracture or and without BMD Z score < -3 at hip or spine and continuing/beginning chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with teriparatide calcium, and vitamin D?

MEN AND WOMEN (NOT OF CHILDBEARING POTENTIAL) UNDER 40 WITH NEITHER BMD Z SCORE < -3 AT HIP OR SPINE NOR ANY PAST FRAGILITY FRACTURE BUT WITH RAPID DECLINE IN BONE MASS

4.1.b Oral bis vs Ca/Vit D

In adults ≤ age 40 with neither prior fracture nor BMD Z score < -3 at hip or spine but with a significant decline in spine and/or hip BMD OF 10% while taking glucocorticoid therapy, what are the benefits and harms of oral bisphosphonates, calcium and vitamin D versus calcium and vitamin D alone?

4.2.b IV bis vs CA/Vit D

In adults ≤ age 40 with neither prior fracture nor BMD Z score < -3 at hip or spine but with a rapid decline in spine and/or hip BMD OF 10% while taking glucocorticoid therapy, what are the benefits and harms of IV bisphosphonates, calcium and vitamin D versus calcium and vitamin D alone?

4.3.b IV bis vs Oral bis

In adults ≤ age 40 with neither prior fracture nor BMD Z score < -3 at hip or spine but with a rapid decline in spine and/or hip BMD OF 10% while taking glucocorticoid therapy, what are the benefits and harms of IV bisphosphonate, calcium and vitamin D versus oral bisphosphonate, calcium and vitamin D?

4.4.b Teriparatide vs Ca/Vit D

In adults ≤ age 40 with neither prior fracture nor BMD Z score < -3 at hip or spine but with a rapid decline in spine and/or hip BMD OF 10% while taking glucocorticoid therapy, what are the benefits and harms of teriparatide, calcium and vitamin D versus calcium and vitamin D alone?

4.5.b Anti-RANKL therapy vs Ca/Vit D

In adults ≤ age 40 with neither prior fracture nor BMD Z score < -3 at hip or spine but with a rapid decline in spine and/or hip BMD OF 10% while taking glucocorticoid therapy, what are the benefits and harms of denosumab, calcium and vitamin D versus calcium and vitamin D alone?

ADULTS WITH ORGAN TRANSPLANT TREATMENT QUESTIONS

5.1 Vit D+Ca vs Placebo

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

5.2 Lifestyle vs Ca/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

5.3 lifestyle+CA/D vs Ca/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with lifestyle modifications, calcium, and vitamin D versus treatment with calcium and vitamin D?

5.4 Oral bis vs CA/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

5.5 IV bis vs CA/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

5.6 Teriparatide vs Ca/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

5.7 Abaloparatide vs Ca/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

5.8 Anti-RANKL therapy vs Ca/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

5.9 Anti-sclerostin therapy vs Ca/Vit D

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab calcium, and vitamin D versus treatment with calcium and vitamin D?

5.10 Active Vit D plus Ca vs Ca/Vit D

For adults with organ transplants (and $GFR \geq 30$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with active forms of vitamin D versus treatment with calcium and vitamin D?

5.11 IV bis vs Oral bis

For adults with organ transplants (and $GFR \geq 30$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

5.12 Teriparatide vs Oral bis

For adults with organ transplants (and $GFR \geq 30$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

5.13 Abaloparatide vs oral Bis

For adults with organ transplants (and $GFR \geq 30$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

5.14 Anti-RANKL therapy vs Oral bis

For adults with organ transplants (and $GFR \geq 30$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

5.15 SERM vs Oral bis

For post-menopausal women with organ transplants (and $GFR \geq 30$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D versus treatment with oral bisphosphonate calcium, and vitamin D?

5.16 Anti-sclerostin therapy vs oral BIS

For adults with organ transplants (and $GFR \geq 30$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

5.17 Teriparatide vs IV bis

For adults with organ transplants (and $GFR \geq 35$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

5.18 Anti-RANKL therapy vs IV bis

For adults with organ transplants (and $GFR \geq 35$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

5.19 SERM vs IV bisphosphonate

For post-menopausal women with organ transplants (and $GFR \geq 35$ and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D versus treatment with IV bisphosphonate calcium, and vitamin D?

5.20 Abaloparatide vs IV BIS

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

5.21 Anti-sclerostin therapy vs oral BIS

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

5.22 Oral bisphosphonates vs Activated Vit D/Ca

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with oral bisphosphonates, calcium, and vitamin D versus treatment with activated vitamin D, calcium, and vitamin D?

5.23 IV bisphosphonates vs Activated Vit D/Ca

For adults with organ transplants (and GFR \geq 35 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with IV bisphosphonates, calcium, and vitamin D versus treatment with activated vitamin D, calcium, and vitamin D?

5.24 PTH analogs vs Activated Vit D/Ca

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with teriparatide/abaloparatide, calcium, and vitamin D versus treatment with activated vitamin D, calcium, and vitamin D?

5.25 Anti-RANKL therapy vs Activated Vit D/Ca

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with activated vitamin D, calcium, and vitamin D?

5.26 Anti-RANKL vs PTH analogs

For adults with organ transplants (and GFR \geq 30 and no evidence of metabolic bone disease) continuing chronic oral glucocorticoid treatment, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with teriparatide or abaloparatide, calcium and vitamin D?

MEN AND POST-MENOPAUSAL WOMEN \geq 40 YEARS WITH BOTH HIGH CURRENT GC DOSE AND HIGH CUMULATIVE GC DOSE TREATMENT QUESTIONS

6.1.a Vit D+Ca vs Placebo

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

6.2.a Lifestyle vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

6.3.a Lifestyle+CA/D vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with lifestyle modifications, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.4.a Oral bis vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.5.a IV bis vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.6.a SERM vs CA/Vit D

For post-menopausal women receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.7.a Teriparatide vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.8.a Abaloparatide vs CA/VIT D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.9.a Anti-sclerostin therapy vs CA/VIT D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.10.a Anti-RANKL therapy vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.11.a IV bis vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.12.a SERM vs Oral bisphosphonates

For post-menopausal women receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium, and vitamin D?

6.13.a Teriparatide vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.14.a Anti-RANKL therapy vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.15.a Abaloparatide vs oral BIS

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin?

6.16.a Anti-sclerostin therapy vs oral BIS

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin?

6.17.a SERM vs IV bis

For post-menopausal women receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with raloxifene, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium, and vitamin D?

6.18.a Teriparatide vs IV bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

6.19.a Anti-RANKL therapy vs IV bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

6.20.a Abaloparatide vs IV BIS

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and Vitamin D?

6.21.a Anti-sclerostin therapy vs IV BIS

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

6.22.a Teriparatide vs SERM

For post-menopausal women receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with raloxifene, calcium, and vitamin D?

6.23.a Anti-RANKL therapy vs SERM

For post-menopausal women receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with raloxifene, calcium, and vitamin D?

6.24.a Anti-RANKL vs Teriparatide

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with teriparatide, calcium, and vitamin D?

MEN AND WOMEN (NOT OF CHILDBEARING POTENTIAL) UNDER 40 WITH BOTH HIGH CURRENT GC DOSE AND HIGH CUMULATIVE GC DOSE TREATMENT QUESTIONS

6.1.b Vit D+CA vs Placebo

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

6.2.b Lifestyle vs CA/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with lifestyle modifications versus treatment with calcium and vitamin D?

6.3.b Lifestyle+CA/D vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with lifestyle modifications, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.4.b Oral bis vs CA/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.5.b IV bis vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose ≥ 30 mg daily for ≥ 30 days) and cumulative dose ≥ 5 gm over one year, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.6.b Teriparatide vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.7.b Anti-RANKL therapy vs Ca/Vit D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.8.b Abaloparatide vs Ca/VIT D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.9.b Anti-sclerostin therapy vs Ca/VIT D

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with calcium and vitamin D?

6.10.b IV bis vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.11.b Teriparatide vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.12.b Anti-RANKL therapy vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.13.b Abaloparatide vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.14.b Anti-sclerostin therapy vs Oral bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with oral bisphosphonate, calcium and vitamin D?

6.15.b Teriparatide vs IV bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with teriparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

6.16.b Anti-RANKL therapy vs IV bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

6.17.b Anti-RANKL therapy vs Teriparatide

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with denosumab, calcium, and vitamin D versus treatment with teriparatide, calcium and vitamin D?

6.18.b Abaloparatide vs IV bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with abaloparatide, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

6.19.b Anti-sclerostin therapy vs IV bis

For adults receiving one or more courses of high dose glucocorticoid therapy (mean dose \geq 30 mg daily for \geq 30 days) and cumulative dose \geq 5 gm over one year, what are the benefits and harms of treatment with romosozumab, calcium, and vitamin D versus treatment with IV bisphosphonate, calcium and vitamin D?

CHILDREN

A. RECEIVING GLUCOCORTICOIDS FOR GREATER THAN 3 MONTHS

7.1.a Vit D+Ca vs Placebo

In children ages 4-17 treated with glucocorticoids for greater than 3 months, what are the benefits and harms of treatment with calcium and vitamin D versus treatment with no calcium or vitamin D?

7.2.a Exercise +Ca/Vit D vs no exercise vit D/CA

In children ages 4-17 treated with glucocorticoids for greater than 3 months, what are the benefits and harms of treatment with exercise plus calcium and vitamin D versus treatment with calcium or vitamin D?

7.3.a Exercise +CA/Vit D vs exercise

In children ages 4-17 treated with glucocorticoids for greater than 3 months, what are the benefits and harms of treatment with exercise plus calcium and vitamin D versus treatment with exercise alone?

7.4.a Exercise vs Ca/VIT D

In children ages 4-17 treated with glucocorticoids for greater than 3 months, what are the benefits and harms of treatment with exercise versus treatment with calcium or vitamin D?

7.5.a Oral bis vs Ca/Vit D

In children, ages 4-17 treated with glucocorticoids for greater than 3 months what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

B. RECEIVING HIGH DOSE GC with a symptomatic compression fracture

7.1.b Oral bis vs Ca/Vit D

In children ages 4-17 treated with high dose GCs who have had a symptomatic compression fracture, what are the benefits and harms of treatment with oral bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

7.2.b IV bis vs Ca/Vit D

In children ages 4-17 treated with high dose GCs who have had a symptomatic compression fracture, what are the benefits and harms of treatment with IV bisphosphonate, calcium, and vitamin D versus treatment with calcium and vitamin D?

INITIAL FRACTURE RISK ASSESSMENT VERSUS NO FRACTURE RISK ASSESSMENT

Over age 40

8.1

In adults \geq age 40 who are *initiating* oral glucocorticoid therapy expected to last \geq 90 days and who never have had an assessment of fracture risk or been treated with osteoporosis medication, what are the benefits and harms of patient fracture risk assessment (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) (including timing) versus no fracture risk assessment?

8.2

In adults \geq age 40 *continuing* chronic glucocorticoid therapy and who never have had an assessment of fracture risk or been treated with osteoporosis medication, what are the benefits and harms of patient fracture risk assessment (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) (including timing) versus no fracture risk assessment?

Adults under age 40

8.3

In adults $<$ age 40 who are *initiating* oral glucocorticoid therapy expected to last \geq 90 days, but who never have had an assessment of fracture risk or been treated with osteoporosis medication, what are the benefits and harms of patient fracture risk assessment (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) (including timing) versus no fracture risk assessment?

8.4

In adults $<$ age 40 *continuing* chronic glucocorticoid therapy and who never have had an assessment of fracture risk or been treated with osteoporosis medication, what are the benefits and harms of patient fracture risk assessment (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) (including timing) versus no fracture risk assessment?

FRACTURE RISK REASSESSMENT QUESTIONS (YES-NO AND EARLY-LATER)

Untreated/Low risk – either not recommended or recommended but not treated/ low or high dose GC

9.1

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose $<$ 7.5 mg daily, assessed low fracture risk) who were not recommended to start or otherwise didn't start osteoporosis medication (except calcium and vitamin D), what are the benefits and harms of reassessment of patient fracture risk 1-2 years after initial no treatment decision (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) versus no reassessment of patient fracture risk?

9.2

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose \geq 7.5 mg daily, assessed low fracture risk) who were not recommended to start or otherwise didn't start osteoporosis medication (except calcium and vitamin D), what are the benefits and harms of reassessment of patient fracture risk 1-2 years after initial no treatment decision (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) versus no reassessment of patient fracture risk?

Untreated/Moderate risk – either not recommended or recommended but not treated/low dose or high dose

9.3

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose $<$ 7.5 mg daily, assessed medium fracture risk) who were not recommended to start or otherwise didn't start osteoporosis medication (except calcium and vitamin D), what are the benefits and harms of reassessment of patient fracture risk 1-2 years after the initial no treatment decision (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) versus no reassessment of patient fracture risk?

9.4

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose \geq 7.5 mg daily, assessed medium fracture risk) who were not recommended to start or otherwise didn't start osteoporosis medication (except calcium and vitamin D), what are the benefits and harms of reassessment of patient fracture risk 1-2 years after initial no treatment decision (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) versus no reassessment of patient fracture risk?

Adults currently taking GIOP Treatment, looking at reassessment to decide whether to continue current treatment, stop treatment or change treatment

(REASSESSMENT/NO REASSESSMENT, HIGH AND LOW DOSE)

9.5

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose $<$ 7.5 mg daily, medium or high fracture risk assessment), continuing osteoporosis medication for \geq 1 year but $<$ 3-5 years), what are the benefits and harms of any reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) at least 1 year after starting osteoporosis medication versus no reassessment of patient fracture risk?

9.6

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose \geq 7.5 mg daily, medium or high fracture risk assessment), continuing osteoporosis medication for \geq 1 year but $<$ 3-5 years, what are the benefits and harms of any reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) at least 1 year after starting osteoporosis medication versus no reassessment of patient fracture risk?

FRACTURE RISK REASSESSMENT QUESTIONS AFTER COMPLETING A FULL COURSE OF OP MEDICATION

(YES/NO, EARLY/LATE, HIGH AND LOW DOSE)

YES/NO

9.7

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose $<$ 7.5 mg daily, assessed as medium or high fracture risk), and who have completed a full course of osteoporosis medication (e.g., 3-5 years of oral bisphosphonate), what are the benefits and harms of reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) (e.g., 2 years after the osteoporosis medication was stopped) versus no reassessment of patient fracture risk?

9.8

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose \geq 7.5 mg daily, assessed as medium or high fracture risk), and who have completed a full course of osteoporosis medication (e.g., 3-5 years of oral bisphosphonate), what are the benefits and harms of reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays, symptomatic fracture history) (e.g., 2 years after the osteoporosis medication was stopped) versus no reassessment of patient fracture risk?

Timing EARLY/LATE

9.9

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose $<$ 7.5 mg daily, assessed as medium or high fracture risk), and who have completed a full course of osteoporosis medication (e.g., 3-5 years of oral bisphosphonate), what are the benefits and harms of early reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays symptomatic fracture history) (e.g., 1-2 years after the osteoporosis medication was stopped) versus later reassessment of patient fracture risk (e.g., \geq 3 years after the osteoporosis medication was stopped)?

9.10

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose $<$ 7.5 mg daily, assessed as medium or high fracture risk), and who have completed a full course of non-bisphosphonate osteoporosis medication (e.g., denosumab, PTH analog, romosozumab), what are the benefits and harms of early reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays symptomatic fracture history) (e.g., 6 months after the osteoporosis medication was stopped) versus later reassessment of patient fracture risk (e.g., \geq 1 years after the osteoporosis medication was stopped)?

9.11

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose \geq 7.5 mg daily, assessed as medium or high fracture risk), and who have completed a full course of bisphosphonate osteoporosis medication, what are the benefits and harms of early reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays symptomatic fracture history) (e.g., 1-2 years after the osteoporosis medication was stopped) versus later reassessment of patient fracture risk (e.g., \geq 3 years after the osteoporosis medication was stopped)?

9.12

In adults \geq age 40 continuing chronic oral glucocorticoid treatment (mean current prednisone dose \geq 7.5 mg daily, assessed as medium or high fracture risk), and who have completed a full course of non-bisphosphonate osteoporosis medication (e.g., denosumab, PTH analog, or romosozumab) what are the benefits and harms of early reassessment of patient fracture risk (e.g., FRAX, BMD, VFA, spine x-rays symptomatic fracture history) (e.g., 3-6 months after the osteoporosis medication was stopped) versus later reassessment of patient fracture risk (e.g., \geq 1 years after the osteoporosis medication was stopped)?

BISPHOSPHONATE TREATMENT FAILURE TREATMENT QUESTIONS

10.1 CONTINUE VS SWITCH to IV BIS

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in BMD or sustained a new fracture after 18 months of an oral bisphosphonate, what are the benefits and harms of switching to an IV bisphosphonate (though continuing calcium and vitamin D) compared to continuing the current oral bisphosphonate?

10.2 CONTINUE vs SWITCH to Teriparatide

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density after 2 years of an oral bisphosphonate or sustained a new fracture after 18 months of an oral bisphosphonate, what are the benefits and harms of switching to teriparatide (though continuing calcium and vitamin D) compared to continuing the current oral bisphosphonate?

10.3 CONTINUE vs SWITCH to Anti-RANKL therapy

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density after 2 years of an oral bisphosphonate or sustained a new fracture after 18 months of an oral bisphosphonate, what are the benefits and harms of switching to denosumab (though continuing calcium and vitamin D) compared to continuing the current an oral bisphosphonate?

10.4 CONTINUE vs SWITCH to Abaloparatide

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density or sustained a new fracture after 12 months of an oral bisphosphonate, what are the benefits and harms of switching to Abaloparatide (though continuing calcium and vitamin D) compared to continuing the current an oral bisphosphonate?

10.5 CONTINUE vs SWITCH to Anti-sclerostin therapy

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density after 2 years of an oral bisphosphonate or sustained a new fracture after 12 months of an oral bisphosphonate, what are the benefits and harms of switching to Romosozumab (though continuing calcium and vitamin D) compared to continuing the current an oral bisphosphonate?

10.6 IV Bisphosphonate vs Teriparatide

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density or sustained a new fracture after 12 months of an oral bisphosphonate, what are the benefits and harms of switching to IV bisphosphonate (though continuing calcium and vitamin D) compared switch to teriparatide?

10.7 IV Bisphosphonate vs Anti-RANKL therapy

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density after 2 years of an oral bisphosphonate or sustained a new fracture after 18 months of an oral bisphosphonate, what are the benefits and harms of switching to IV bisphosphonate (though continuing calcium and vitamin D) over switching to denosumab?

10.8 Teriparatide vs Anti-RANKL therapy

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density or sustained a new fracture after 12 months of an oral bisphosphonate, what are the benefits and harms of switching to teriparatide, calcium and vitamin D compared to switching to denosumab, calcium and vitamin D?

10.9 Teriparatide plus Anti-RANKL therapy

For adults \geq age 40 continuing chronic oral glucocorticoid treatment and who either have had a significant decline in bone density or sustained a new fracture after 12 months of an oral bisphosphonate, what are the benefits and harms of switching to teriparatide plus denosumab, calcium and vitamin D compared to switching to either teriparatide or denosumab, calcium and vitamin D?

DISCONTINUING GLUCOCORTICOID THERAPY QUESTIONS

11.1

For adults \geq 40 taking osteoporosis medication in addition to calcium and vitamin D, and discontinuing oral glucocorticoid therapy with a low risk FRAX, no new fragility fracture, and BMD T score \geq -2.5, what are the benefits and harms of stopping current osteoporosis medication (though continuing calcium and vitamin D) compared to continuing current osteoporosis medication?

TREATMENT IF HIGH/MODERATE RISK AFTER COMPLETING FULL COURSE ORAL BISPHOSPHONATE QUESTIONS

HIGH RISK

12.1

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral bisphosphonate (e.g., 3-5 years of treatment), and are considered high fracture risk (high risk FRAX, BMD T-score \leq -2.5, or history of fragility fracture) while on therapy, what are the benefits and harms of continuing oral bisphosphonate treatment versus stopping osteoporosis medication (though continuing calcium and vitamin D)?

12.2

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral bisphosphonate (e.g., 3-5 years of treatment), and are considered high fracture risk (high risk FRAX, BMD T-score \leq -2.5, or history of fragility fracture while on therapy), what are the benefits and harms of continuing oral bisphosphonate treatment versus switching to an IV bisphosphonate (though continuing calcium and vitamin D)?

12.3

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral bisphosphonate (e.g., 3-5 years of treatment), and are considered high fracture risk (high risk FRAX, BMD T-score $<$ -2.5, or history of fragility fracture while on therapy), what are the benefits and harms of continuing oral bisphosphonate treatment versus switching to an osteoporosis medication in another class (though continuing calcium and vitamin D)?

MODERATE RISK

12.4

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral bisphosphonate (e.g., 3-5 years of treatment), and are considered to have moderate fracture risk (moderate risk FRAX, BMD T-score \geq -2.5, and no history of fragility fracture), what are the benefits and harms of continuing oral bisphosphonate treatment versus stopping osteoporosis medication (though continuing calcium and vitamin D)?

12.5

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral bisphosphonate (e.g., 3-5 years of treatment), and are considered moderate fracture risk (moderate risk FRAX, BMD T-score \leq -2.5, or history of fragility fracture), what are the benefits and harms of continuing oral bisphosphonate treatment versus switching to an IV bisphosphonate (though continuing calcium and vitamin D)?

12.6

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral bisphosphonate (e.g., 3-5 years of treatment), and are considered to have moderate fracture risk (moderate risk FRAX, BMD T-score \geq -2.5, and no history of fragility fracture), what are the benefits and harms of continuing oral bisphosphonate treatment versus switching to an osteoporosis medication in a different drug class (though continuing calcium and vitamin D)?

13. SEQUENTIAL THERAPY TREATMENT QUESTIONS

LOW RISK

13.1

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral denosumab and are considered to have LOW fracture risk (low risk FRAX, BMD T-score \geq -2.1, and no history of fragility fracture), what are the benefits and harms of stopping denosumab treatment without adding a bisphosphonate versus stopping denosumab?

13.2

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral teriparatide (1-2 years and are considered to have LOW fracture risk (moderate risk FRAX, BMD T-score \geq -2.1, and no history of fragility fracture), what are the benefits and harms of stopping teriparatide treatment without starting a bisphosphonate/ denosumab / or romosozumab versus stopping teriparatide and starting a bisphosphonate/denosumab / or romosozumab to stabilize bone gains?

MODERATE RISK

13.3

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral denosumab and are considered to have moderate fracture risk (moderate risk FRAX, BMD T-score \geq -2.5, and no history of fragility fracture), what are the benefits and harms of starting a bisphosphonate/ PTH analog/romosozumab when denosumab is discontinued versus not starting anti-osteoporosis medication when denosumab is discontinued while continuing calcium and vitamin D)?

13.4

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of teriparatide /abaloparatide (1-2 years and are considered to have moderate fracture risk (moderate risk FRAX, BMD T-score \geq -2.5, and no history of fragility fracture), what are the benefits and harms of starting a bisphosphonate/ denosumab /anti-sclerostin therapy when PTH analog is discontinued versus not starting anti-osteoporosis medication when PTH analog is discontinued while continuing calcium and vitamin D)?

HIGH RISK

13.5

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of denosumab, and are considered to have HIGH fracture risk (high risk FRAX, BMD T-score \leq -2.5, and history of fragility fracture), what are the benefits and harms of starting a bisphosphonate/anti-sclerostin therapy/PTH analog treatment when denosumab is discontinued versus not starting an anti-osteoporosis medication when denosumab is discontinued while continuing calcium and vitamin D)?

13.6

For adults continuing chronic oral glucocorticoid treatment who have completed a full course of oral teriparatide (1-2years) and are considered to have high fracture risk (High FRAX, BMD T-score \leq -2.5, and no history of fragility fracture), what are the benefits and harms of starting bisphosphonate/denosumab/ or romosozumab after stopping teriparatide versus not starting an anti-osteoporosis medication when denosumab is discontinued (though continuing calcium and vitamin D)?