**APPENDIX**

**1. Search Strategy Example**

1. exp Osteoporosis/ or osteoporosis.mp.

2. osteoporotic.mp.

3. osteoporotic fracture.mp. or exp Osteoporotic Fractures/

4. postmenopausal osteoporosis.mp. or exp Osteoporosis, Postmenopausal/

5. bone fragility.mp.

6. exp Fractures, Bone/ or fragility fracture.mp.

7. bone disease.mp. or exp Bone Diseases/

8. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7

9. bone density.mp. or exp Bone Density/

10. bone mineral density.mp.

11. dual-energy x-ray absorptiometry.mp. or exp Absorptiometry, Photon/

12. DEXA.mp.

13. calcium.mp. or exp Calcium/

14. calcium phosphate.mp. or exp Calcium Phosphates/

15. exp Calcitonin/ or calcitonin.mp.

16. osteocalcin.mp. or exp Osteocalcin/

17. hydroxyproline.mp. or exp Hydroxyproline/

18. exp Collagen/ or collagen.mp. or exp Collagen Type I/

19. parathyroid hormone.mp. or exp Parathyroid Hormone/

20. pyridinoline.mp.

21. deoxypyridinoline.mp.

22. alkaline phosphatase.mp. or exp Alkaline Phosphatase/

23. exp Procollagen/ or procollagen peptide.mp.

24. procollagen extension peptides.mp.

25. telopeptides.mp.

26. N-telopeptides.mp.

27. C-telopeptides.mp.

28. bone remodeling.mp. or exp Bone Remodeling/

29. osteoblast.mp. or exp Osteoblasts/

30. osteoclast.mp. or exp Osteoclasts/

31. 8 OR 9 OR 10 OR 11 OR 12 OR 13 OR 14 OR 15 OR 16 OR 17 OR 18 OR 19 OR 20 OR 21 OR 22 OR 23 OR 24 OR 25 OR 26 OR 27 OR 29 OR 30

32. growth hormone.mp. or exp Growth Hormone/

33. human growth hormone.mp. or exp Human Growth Hormone/

34. recombinant human growth hormone.mp.

35. 32 OR 33 OR 34

36. randomized clinical trial.mp.

37. randomised clinical trial.mp.

38. randomized control trial.mp.

39. randomised control trial.mp.

40. randomized controlled trial/

41. randomized controlled trial/

42. randomized trial.mp.

43. randomised trial.mp.

44. randomised trial.mp.

45. RCT.mp.

46. 36 OR 37 OR 38 OR 39 OR 40 OR 41 OR 42 OR 43 OR 44 OR 45

47. 8 AND 31 AND 35 AND 46

**2. Cochrane Risk of Bias Assessment**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ↓ | Low Risk of Bias | Brixen et al. (1995) | Christmas et al. (2002) | Clemmesen et al (1993) | Gonnelli et al. (1997) | Hedstrom et al. (2004) |  | Holloway et al. (1997) | Kotzmann et al. (2004) | Krantz et al. (2015) | Roemmler et al. (2012) | Saaf et al. (1999) | Viidas et al. (2003) | Yarasheski et al. (1997) |
|  | ? | Unclear | Holloway et al. (1994) |
|  | ↑ | High Risk of Bias |
|  |  |  |
| N | | | 40 | 125 | 39 | 30 | 20 | 35 | 84 | 19 | 80 | 12 | 16 | 20 | 23 |
| Sequence Generation  (Selection Bias) | | | ↓ | ↓ | ? | ? | ? | ↓ | ↓ | ? | ↓ | ? | ? | ? | ? |
| Allocation Concealment  (Selection Bias) | | | ? | ↓ | ? | ? | ? | ? | ↓ | ? | ↓ | ? | ? | ? | ? |
| Blinding of Patients and Personnel  (Performance Bias) | | | ↓ | ↓ | ↓ | ↑ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Blinding of Outcome Assessment  (Detection Bias) | | | ? | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| Incomplete Outcome Reporting  (Attrition Bias) | | | ↓ | ↓ | ↓ | ? | ↓ | ↑ | ↓ | ? | ↓ | ↓ | ↓ | ? | ↑ |
| Selective Reporting  (Reporting Bias) | | | ↓ | ↓ | ↓ | ↑ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↑ |
| Other Sources of Bias | | | ↓ | ↓ | ↑ | ↓ | ↑ | ↑ | ↑ | ↑ | ↓ | ↑ | ↓ | ↓ | ↑ |