

## Supplementary File 1

## PICOS

## Question 1

<b>Patients</b>	Adults $\geq$ 50 years of age with a fragility fracture and/or at high risk of fracture (hip, vertebra, pelvis, distal radius, proximal humerus) taking/not taking anti-osteoporosis medicines.
<b>Intervention</b>	Any diagnostic procedure, undertaken by non-physician health professionals, used to identify modifiable risk factors for falling, such as impaired gait and balance, decreased mobility, visual impairment, sarcopenia/frailty, vertebral fracture, feet and footwear, neurological impairment, medication use, history of falls, fear of falling, home hazards, cognitive impairment, cardiovascular disease, polypharmacy, multimorbidity, nutritional status, vitamin D status, number of swollen and tender lower extremity joints, pain intensity, other environmental factors, including assistive devices.
<b>Comparison</b>	Stated procedures compared to each other, placebo or no procedure
<b>Outcome</b>	Fall status (none, one and /or recurrent)
<b>Studies</b>	Fall status (none, one and /or recurrent)

## Question 2

<b>Patients</b>	Adults $\geq$ 50 years of age with a fragility fracture taking/not taking anti-osteoporosis medicines.
<b>Intervention</b>	Interventions, for example, the prevention of complications, coordination of care, discharge planning, patient education, ADL retraining, rehabilitation, manual therapy, fall-prevention programs, hip protectors, discharge planning, home hazard modification programs, exercise therapy and promotion of physical activity, bracing, nutritional interventions and dietary interventions, provided by non-physician health professionals, such as dieticians, nurses, occupational therapists, physical therapists and others.
<b>Comparison</b>	Usual care or no intervention
<b>Outcome</b>	Number of fractures; Risk of falling; Fall status (none, one and /or recurrent); Number of adverse events; Change in bone mineral density
<b>Timeline</b>	Direct post-intervention and after follow-up
<b>Studies</b>	Reviews, Randomized Controlled Trials and Controlled Clinical Trials. In case of a lack of these studies, we will search for interventional studies (all types)

## Supplementary File 1

**Question 3**

<b>Patients</b>	Adults $\geq$ 50 years of age at high risk of fracture (hip, vertebra, pelvis, distal radius, proximal humerus) taking/not taking anti-osteoporosis medicines.
<b>Intervention</b>	Interventions, for example, patient education, calcium and vitamin D supplementation, counselling, ADL retraining, fall-prevention programs, rehabilitation, home hazard modification programs, exercise therapy and promotion of physical activity, mobility aids, orthotics, nutritional and dietary interventions provided by non-physician health professionals such as such as dieticians, nurses, occupational therapists, physical therapists and others.
<b>Comparison</b>	Usual care or no intervention
<b>Outcome</b>	Number of fractures; Risk of falling; Fall status (none, one and /or recurrent); Number of adverse events; Change in bone mineral density
<b>Timeline</b>	Direct post-intervention and after follow-up
<b>Studies</b>	Reviews, Randomized Controlled Trials and Controlled Clinical Trials and, in case of a lack of studies, we will search for interventional studies (all types)

**Question 4**

<b>Patients</b>	Adults $\geq$ 50 years of age with a fragility fracture and/or at high risk of fracture (hip, vertebra, pelvis, distal radius, proximal humerus) taking/not taking anti-osteoporosis medicines
<b>Intervention</b>	Implementation strategies
<b>Outcome</b>	% Guideline adherence; Guideline implementation; Guideline acceptance
<b>Timeline</b>	Direct post-intervention and after follow-up
<b>Studies</b>	Health policy documents, Clinical guidelines, Qualitative and quantitative studies (all types)

## Supplementary File 1

**Question 5**

<b>Patients</b>	Adults $\geq$ 50 years of age with a fragility fracture and/or at high risk of minimal trauma fracture (hip, vertebra, pelvis, distal radius, proximal humerus), prescribed anti-osteoporosis medicines
<b>Intervention</b>	Any multidisciplinary model of care involving non physician health professionals (where multidisciplinary care is defined as care provided by 2 or more different care practitioners working together as/or supported by a multidisciplinary team).
<b>Comparison</b>	Stated interventions compared to each other, mono-disciplinary care models or no intervention
<b>Outcome</b>	Survival; Disability, Limitation in daily activity; Quality of life; Fall status (none, one and /or recurrent); Number of fractures; Cost-effectiveness
<b>Timeline</b>	Direct post-intervention and after follow-up
<b>Studies</b>	Reviews, Randomized Controlled Trials and Controlled Clinical Trials and, in case of a lack of studies, we will search for interventional studies (all types)

**Question 6**

<b>Patients</b>	Adults $\geq$ 50 years of age with a fragility fracture and/or at high risk of fracture (hip, vertebra, pelvis, distal radius, proximal humerus) prescribed anti-osteoporosis medicines
<b>Intervention</b>	Any intervention delivered by non-physician health professionals to enhance adherence to medicines (for example, education, motivational interviewing, cognitive behavioural therapy, shared decision making, counselling, monitoring).
<b>Comparison</b>	Stated interventions compared to each other, no intervention or placebo
<b>Outcome</b>	Any objective quantitative measure of adherence or persistence (for example change in bone turnover markers, % change in bone mineral density)
<b>Timeline</b>	Direct post-intervention and after follow-up
<b>Studies</b>	Interventional studies and, in case of a lack of studies, we will search for qualitative studies

**Question 7**

<b>Patients</b>	Adults and children with a rheumatologic condition attending consultations in rheumatology services
-----------------	-----------------------------------------------------------------------------------------------------

## Supplementary File 1

<b>Intervention</b>	Procedures / interventions to assess/optimize/maintain bone health undertaken by non-physician health professionals
<b>Comparison</b>	No procedure or intervention or usual care
<b>Outcome</b>	Evidence of subjective or objective assessment of bone health
<b>Studies</b>	All

## Question 8

<b>Patients</b>	All patients with rheumatic disorders
<b>Intervention</b>	Bone health education
<b>Comparison</b>	Usual care or no intervention
<b>Outcome</b>	Number of fractures; Risk of falling; Number of adverse events; Bone mineral density measured by DEXA
<b>Timeline</b>	Direct post-intervention and after follow-up
<b>Studies</b>	Interventional studies (all types)

## Supplementary File 1

**MEDLINE search strategies for systematic literature review: Questions 1 to 8****Question 1**

1. Osteoporosis [MESH]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (fall\* OR falling OR faller\* OR Slip\* OR Accidental fall\*).ti,ab.
7. 5 AND 6
8. (eye test OR eyesight test OR vision test OR foot health OR foot health assessment OR foot pain OR foot pathology OR foot posture OR footwear).ti,ab.
9. (fear of falling questionnaire OR falls self efficacy scale OR falls efficacy scale international OR FES-I OR fear avoidance belief questionnaire OR falls risk assessment tool\*).ti,ab.
10. (gait abnormalit\* OR 2 minute walk test OR two minute walk test OR 6 minute walk test OR six minute walk test OR 6mwt OR walking while talking test OR figure of 8 walking test OR timed backward walking OR 10 meter walk test OR ten meter walk test OR stride length).ti,ab.
11. (berg balance test OR berg balance scale OR romberg test OR tandem stance OR one leg stance OR unipedal stance OR standing on one l leg OR Brunell balance assessment test OR balance evaluation systems test).ti,ab.
12. (Cognitive assessment OR mini mental state examination OR medication appropriateness tool OR screening tool of older persons prescriptions OR STOPP OR screening tool to alert doctors to right prescribing OR START).ti,ab.
13. (nutritional risk screening OR malnutrition universal screening tool OR mini nutritional assessment OR vitamin D deficiency screening tool OR vitamin D deficiency screening).ti,ab
14. (pain assessment scale OR pain assessment score OR Disease activity score).ti,ab.
15. (assess\* OR diagnostic assess\* OR prediction tool OR predictive factor\* OR falls risk assessment tool\* OR Home falls and accidents screening tool OR Westmead home safety assessment OR instrument OR screening).ti.
16. (assess\* OR diagnostic assess\* OR prediction tool OR predictive factor\* OR falls risk assessment tool\* OR Home falls and accidents screening tool OR Westmead home safety assessment OR instrument OR screening).ab.
17. 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16
18. 7 AND 17
19. 18 AND limits human

## Supplementary File 1

20. 19 AND limits 1967-current

**Question 2**

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Intervention OR supplement\*) adj1 (nutrition OR food OR diet\* OR vitamin\*).ti,ab.
7. (rehabilita\* OR Exercise\*) adj1 (therap\* OR physical\* OR movement\*).ti,ab.
8. Exercise[Mesh]
9. Manual Therapy[Mesh]
10. (Fall\*-prevention program\* OR fall\* prevention program\*).mp.
11. (Bracing OR orthos\* OR hip protector\* OR vibration OR mobility aid).ti,ab.
12. 12 (Intervention adj3 (education OR liaison OR psychological support OR counselling OR problem solving OR ABC approach OR behavioural intervention\* OR Activity planning OR coordination OR coordinator role)).ti,ab.
13. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiropodist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
14. 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15. 5 AND 14
16. (Meta-Analysis OR randomized controlled trial OR controlled clinical trial OR pragmatic clinical trial).pt
17. (Meta-Analysis OR randomized controlled trials OR Review Literature OR controlled clinical trials).hw.
18. (systematic adj (review or overview)).mp.
19. Cochrane.ti,ab.
20. 16 OR 17 OR 18 or 19
21. 15 AND 20
22. 21 AND limits human

## Supplementary File 1

23. 22 AND limits 2007-current

**Question 3**

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
4. 1 or 2 or 3
5. (Intervention OR supplement\*) adj1 (nutrition OR food OR diet\* OR vitamin\*).ti,ab.
6. (rehabilita\* OR Exercise\*) adj1 (therap\* OR physical\* OR movement\*).ti,ab.
7. Exercise[Mesh]
8. Manual Therapy[Mesh]
9. (Fall\*-prevention program\* OR fall\* prevention program\*).mp.
10. (Bracing OR orthos\* OR hip protector\* OR vibration OR mobility aid).ti,ab.
11. (Intervention adj3 (education OR liaison OR psychological support OR counselling OR problem solving OR ABC approach OR behavioural intervention\* OR Activity planning OR coordination OR coordinator role)).ti,ab.
12. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiropodist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
13. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12
14. 4 AND 13
15. (Meta-Analysis OR randomized controlled trial OR controlled clinical trial OR pragmatic clinical trial).pt
16. (Meta-Analysis OR randomized controlled trials OR Review Literature OR controlled clinical trials).hw.
17. (systematic adj (review or overview)).mp.
18. Cochrane.ti,ab.
19. 15 OR 16 OR 17 OR 18
20. 14 AND 19
21. 20 AND limits human
22. 21 AND limits 2007-current

## Supplementary File 1

**Question 4**

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Guideline\* OR recommend\*) adj2 (implement\* OR adhere\* OR concord\* OR non-adhere\* OR non-concord\* OR non-complian\* OR accept\* OR comply OR complian\* OR persist\*).ti,ab.
7. (health care provider\* OR patient\* OR relative\* OR care giver OR caregiver OR wife OR husband OR spouse).ti,ab.
8. 5 AND 6 AND 7
9. 8 AND Limits Human
10. 9 and limits 2007-current

**Question 5**

1. Osteoporosis [MESH]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp.
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Care OR team\*) adj2 (multidisciplinary OR interdisciplinary).ti,ab.
7. (Fracture liaison service OR FLS).ti,ab.
8. 6 OR 7
9. 5 AND 8
10. 9 AND Limits Human
11. 10 AND Limits 2007-Current



## Supplementary File 1

## Question 6

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Motivat\* OR monitor\* OR supervis\* OR educat\* OR nudge\* OR counsel\* OR health behaviour change\* OR shared decision making OR (cognitive adj1 (intervention\* OR technique\*))).ti,ab.
7. (medicat\* OR drug\* OR medicine\* OR meds) adj2 (implement\* OR adhere\* OR concord\* OR non-adhere\* OR non-concord\* OR non-complian\* OR non-accept OR non-persist\* OR accept\* OR comply OR complian\*or persist\*).ti,ab.
8. 5 AND 6 AND 7
9. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiropodist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
10. 8 AND 9
11. 10 AND limits human
12. 11 AND limits 2007-current

## Supplementary File 1

**Question 7**

1. Arthritis[Mesh]
2. (rheumatologic\* OR rheumatic OR inflammat\* ) adj1 (disorder\* OR disease\*).ti,ab.
3. (rheumatoid arthritis OR RA OR spondyloarthritis OR SpA OR Ankylosing spondylitis OR AS OR Psoriatic arthritis OR PsA OR Systemic lupus erythematosus OR SLE OR Juvenile Idiopathic arthritis OR JIA).ti,ab.
4. 1 or 2 or 3
5. (screen\* OR assess\* OR diagnose\* OR monitor\* OR educat\* OR counsel\* OR motivat\* OR supervis\* OR health behaviour change\* OR intervention\*).mp.
6. (bone OR bone health OR Osteoporos\* OR Osteopen\* OR Osteoporot\* OR bone mineral density OR bmd).mp.
7. 4 AND 5 AND 6
8. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiropodist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
9. 7 AND 8
10. 9 AND Limits Human
11. 10 and limits 2007-current

**Question 8**

1. Arthritis[Mesh]
2. (rheumatologic\* OR rheumatic OR inflammat\* ) adj1 (disorder\* OR disease\*).ti,ab.
3. (rheumatoid arthritis OR RA OR spondyloarthritis OR SpA OR Ankylosing spondylitis OR AS OR Psoriatic arthritis OR PsA OR Systemic lupus erythematosus OR SLE OR Juvenile Idiopathic arthritis OR JIA).ti,ab.
4. 1 or 2 or 3
5. (self care OR self-care OR self management OR self-management OR health educat\* OR patient educat\* OR health literacy OR consumer health information OR patient knowledge).mp.
6. (bone OR bone health OR Osteoporos\* OR Osteopen\* OR Osteoporot\* OR bone mineral density OR bmd).mp.
7. 4 AND 5 AND 6
8. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiropodist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
9. 9 AND 10
10. 9 AND Limits Human
11. 10 and limits 2007-current

## Supplementary File 1

**Embase search strategies for systematic literature review: Questions 1 to 8****Question 1**

1. osteoporosis [MESH]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (fall\* OR falling OR faller\* OR Slip\* OR Accidental fall\*).ti,ab.
7. 5 AND 6
8. (eye test OR eyesight test OR vision test OR foot health OR foot health assessment OR foot pain OR foot pathology OR foot posture OR footwear).ti,ab.
9. (fear of falling questionnaire OR falls self efficacy scale OR falls efficacy scale international OR FES-I OR fear avoidance belief questionnaire OR falls risk assessment tool\*).ti,ab.
10. (gait abnormalit\* OR 2 minute walk test OR two minute walk test OR 6 minute walk test OR six minute walk test OR 6mwt OR walking while talking test OR figure of 8 walking test OR timed backward walking OR 10 meter walk test OR ten meter walk test OR stride length).ti,ab.
11. (berg balance test OR berg balance scale OR romberg test OR tandem stance OR one leg stance OR unipedal stance OR standing on one l leg OR Brunell balance assessment test OR balance evaluation systems test).ti,ab.
12. (Cognitive assessment OR mini mental state examination OR medication appropriateness tool OR screening tool of older persons prescriptions OR STOPP OR screening tool to alert doctors to right prescribing OR START).ti,ab.
13. (nutritional risk screening OR malnutrition universal screening tool OR mini nutritional assessment OR vitamin D deficiency screening tool OR vitamin D deficiency screening).ti,ab
14. (pain assessment scale OR pain assessment score OR Disease activity score).ti,ab.
15. (assess\* OR diagnostic assess\* OR prediction tool OR predictive factor\* OR falls risk assessment tool\* OR Home falls and accidents screening tool OR Westmead home safety assessment OR instrument OR screening).ti.
16. (assess\* OR diagnostic assess\* OR prediction tool OR predictive factor\* OR falls risk assessment tool\* OR Home falls and accidents screening tool OR Westmead home safety assessment OR instrument OR screening).ab.
17. 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15 or 16
18. 7 AND 17
19. AND limits human
20. 19 AND limits 1967-current

## Supplementary File 1

**Question 2**

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Intervention OR supplement\*) adj1 (nutrition OR food OR diet\* OR vitamin\*).ti,ab.
7. (rehabilita\* OR Exercise\*) adj1 (therap\* OR physical\* OR movement\*).ti,ab.
8. Exercise[Mesh]
9. Manual Therapy[Mesh]
10. (Fall\*-prevention program\* OR fall\* prevention program\*).mp.
11. (Bracing OR orthos\* OR hip protector\* OR vibration OR mobility aid).ti,ab.
12. (Intervention adj3 (education OR liaison OR psychological support OR counselling OR problem solving OR ABC approach OR behavioural intervention\* OR Activity planning OR coordination OR coordinator role)).ti,ab.
13. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiroprapist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
14. 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15. 5 AND 14
16. (Meta-Analysis OR randomized controlled trial OR controlled clinical trial OR pragmatic clinical trial).pt
17. (Meta-Analysis OR randomized controlled trials OR Review Literature OR controlled clinical trials).hw.
18. (systematic adj (review or overview)).mp.
19. Cochrane.ti,ab.
20. OR 17 OR 18 or 19
21. 15 AND 20
22. 21 AND limits human
23. 22 AND limits 2007-current

## Supplementary File 1

**Question 3**

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
4. 1 or 2 or 3
5. (Intervention OR supplement\*) adj1 (nutrition OR food OR diet\* OR vitamin\*).ti,ab.
6. (rehabilita\* OR Exercise\*) adj1 (therap\* OR physical\* OR movement\*).ti,ab.
7. Exercise[Mesh]
8. Manual Therapy[Mesh]
9. (Fall\*-prevention program\* OR fall\* prevention program\*).mp.
10. (Bracing OR orthos\* OR hip protector\* OR vibration OR mobility aid).ti,ab.
11. (Intervention adj3 (education OR liaison OR psychological support OR counselling OR problem solving OR ABC approach OR behavioural intervention\* OR Activity planning OR coordination OR coordinator role)).ti,ab.
12. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiroprapist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
13. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12
14. 4 AND 13
15. (Meta-Analysis OR randomized controlled trial OR controlled clinical trial OR pragmatic clinical trial).pt
16. (Meta-Analysis OR randomized controlled trials OR Review Literature OR controlled clinical trials).hw.
17. (systematic adj (review or overview)).mp.
18. Cochrane.ti,ab.
19. 16 OR 17 OR 18 or 19
20. 14 AND 19
21. 20 AND limits human
22. 21 AND limits 2007-current

## Supplementary File 1

**Question 4**

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Guideline\* OR recommend\*) adj2 (implement\* OR adhere\* OR concord\* OR non-adhere\* OR non-concord\* OR non-compliant\* OR accept\* OR comply OR compliant\* OR persist\*).ti,ab.
7. (health care provider\* OR patient\* OR relative\* OR care giver OR caregiver OR wife OR husband OR spouse).ti,ab.
8. 5 AND 6 AND 7
9. 8 AND Limits Human
10. 9 and limits 2007-current

**Question 5**

1. Osteoporosis [MESH]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp.
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Care OR team\*) adj2 (multidisciplinary OR interdisciplinary).ti,ab.
7. (Fracture liaison service OR FLS).ti,ab.
8. 5 OR 6
9. 5 AND 8
10. 9 AND Limits Human
11. 10 AND Limits 2007-Current

## Supplementary File 1

**Question 6**

1. osteoporosis [Mesh]
2. (osteoporos\* OR osteopen\* OR osteoporot\* OR bone mineral density OR BMD).ti,ab.
3. (osteoporotic fracture OR rheumatology fracture OR fragility fracture OR bone fracture OR minimal trauma fracture OR MTF OR (fracture adj2 (hip OR vertebra OR pelvis OR wrist OR radius OR proximal humerus))).mp
4. (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D).mp.
5. 1 or 2 or 3 or 4
6. (Motivat\* OR monitor\* OR supervis\* OR educat\* OR nudge\* OR counsel\* OR health behaviour change\* OR shared decision making OR (cognitive adj1 (intervention\* OR technique\*))).ti,ab.
7. (medicat\* OR drug\* OR medicine\* OR meds) adj2 (implement\* OR adhere\* OR concord\* OR non-adhere\* OR non-concord\* OR non-complian\* OR non-accept OR non-persist\* OR accept\* OR comply OR complian\*or persist\*).ti,ab.
8. 5 AND 6 AND 7
9. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiropodist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
10. 8 AND 9
11. 10 AND limits human
12. 11 AND limits 2007-current

## Supplementary File 1

**Question 7**

1. Arthritis[Mesh]
2. (rheumatologic\* OR rheumatic OR inflammat\* ) adj1 (disorder\* OR disease\*).ti,ab.
3. (rheumatoid arthritis OR RA OR spondyloarthritis OR SpA OR Ankylosing spondylitis OR AS OR Psoriatic arthritis OR PsA OR Systemic lupus erythematosus OR SLE OR Juvenile Idiopathic arthritis OR JIA).ti,ab.
4. 1 or 2 or 3
5. (screen\* OR assess\* OR diagnose\* OR monitor\* OR educat\* OR counsel\* OR motivat\* OR supervis\* OR health behaviour change\* OR intervention\*).mp.
6. (bone OR bone health OR Osteoporos\* OR Osteopen\* OR Osteoporot\* OR bone mineral density OR bmd).mp.
7. 4 AND 5 AND 6
8. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiroprapist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
9. 7 AND 8
10. 9 AND Limits Human
11. 10 and limits 2007-current

**Question 8**

1. Arthritis[Mesh]
2. (rheumatologic\* OR rheumatic OR inflammat\* ) adj1 (disorder\* OR disease\*).ti,ab.
3. (rheumatoid arthritis OR RA OR spondyloarthritis OR SpA OR Ankylosing spondylitis OR AS OR Psoriatic arthritis OR PsA OR Systemic lupus erythematosus OR SLE OR Juvenile Idiopathic arthritis OR JIA).ti,ab.
4. 1 or 2 or 3
5. (self care OR self-care OR self management OR self-management OR health educat\* OR patient educat\* OR health literacy OR consumer health information OR patient knowledge).mp.
6. (bone OR bone health OR Osteoporos\* OR Osteopen\* OR Osteoporot\* OR bone mineral density OR bmd).mp.
7. 4 AND 5 AND 6
8. (Health professional OR nurs\* OR nurse specialist OR advanced practice nurs\* OR rheumatology nurs\* OR podiatrist OR chiroprapist OR physiotherapist OR physical therapist OR dietician OR dietitian OR radiographer OR sonographer OR occupational therapist OR pharmacist).ti,ab.
9. 9 AND 10
10. 9 AND Limits Human
11. 10 and limits 2007-current



## Supplementary File 1

**CINAHL search strategies for systematic literature review: Questions 1 to 8****Question 1**

1. MH osteoporosis
2. AB (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD") OR TI (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD")
3. TX ("osteoporotic fracture" OR "rheumatology fracture" OR "fragility fracture" OR "bone fracture" OR "minimal trauma fracture" OR "MTF" OR (fracture N2 (hip OR vertebra OR pelvis OR wrist OR radius OR "proximal humerus")))
4. TX (osteoporosis medicine\* OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR Strontium ranelate OR Teriparatide OR Hormone replacement therapy OR HRT OR Calcium OR Vitamin D)
5. 1 or 2 or 3 or 4
6. TI (fall\* OR falling OR faller\* OR Slip\* OR "Accidental fall\*") OR AB (fall\* OR falling OR faller\* OR Slip\* OR "Accidental fall\*")
7. 5 AND 6
8. TI ("eye test" OR "eyesight test" OR "vision test" OR "foot health" OR "foot health assessment" OR "foot pain" OR "foot pathology" OR "foot posture" OR footwear) OR AB ("eye test" OR "eyesight test" OR "vision test" OR "foot health" OR "foot health assessment" OR "foot pain" OR "foot pathology" OR "foot posture" OR footwear)
9. TI ("fear of falling questionnaire" OR "falls self efficacy scale" OR "falls efficacy scale international" OR "FES-I" OR "fear avoidance belief questionnaire" OR "FABQ" OR "falls risk assessment tool\*") OR AB ("fear of falling questionnaire" OR "falls self efficacy scale" OR "falls efficacy scale international" OR "FES-I" OR "fear avoidance belief questionnaire" OR "FABQ" OR "falls risk assessment tool\*")
10. TI ("gait abnormalit\*" OR "2 minute walk test" OR "two minute walk test" OR "6 minute walk test" OR "six minute walk test" OR "6mwt" OR "walking while talking test" OR "figure of 8 walking test" OR "timed backward walking" OR "10 meter walk test" OR "ten meter walk test" OR "stride length") OR AB ("gait abnormalit\*" OR "2 minute walk test" OR "two minute walk test" OR "6 minute walk test" OR "six minute walk test" OR "6mwt" OR "walking while talking test" OR "figure of 8 walking test" OR "timed backward walking" OR "10 meter walk test" OR "ten meter walk test" OR "stride length")
11. TI ("berg balance test" OR "berg balance scale" OR "romberg test" OR "tandem stance" OR "one leg stance" OR "unipedal stance" OR "standing on one l leg" OR "Brunell balance assessment test" OR "balance evaluation systems test") OR AB ("berg balance test" OR "berg balance scale" OR "romberg test" OR "tandem stance" OR "one leg stance" OR "unipedal stance" OR "standing on one l leg" OR "Brunell balance assessment test" OR "balance evaluation systems test")
12. TI ("Cognitive assessment" OR "mini mental state examination" OR "medication appropriateness tool" OR "screening tool of older persons prescriptions" OR "STOPP" OR "screening tool to alert doctors to right prescribing" OR "START") OR AB ("Cognitive assessment" OR "mini mental state examination" OR "medication appropriateness tool" OR "screening tool of older persons prescriptions" OR "STOPP" OR "screening tool to alert doctors to right prescribing" OR "START")

## Supplementary File 1

13. TI ("nutritional risk screening" OR "malnutrition universal screening tool" OR "mini nutritional assessment" OR "vitamin D deficiency screening tool" OR "vitamin D deficiency screening") OR AB ("nutritional risk screening" OR "malnutrition universal screening tool" OR "mini nutritional assessment" OR "vitamin D deficiency screening tool" OR "vitamin D deficiency screening")
14. TI ("pain assessment scale" OR "pain assessment score" OR "Disease activity score") OR AB ("pain assessment scale" OR "pain assessment score" OR "Disease activity score")
15. TI (assess\* OR "diagnostic assess\*" OR "prediction tool" OR "predictive factor\*" OR "falls risk assessment tool\*" OR "Home falls and accidents screening tool" OR "Westmead home safety assessment" OR instrument OR screening) OR AB (assess\* OR "diagnostic assess\*" OR "prediction tool" OR "predictive factor\*" OR "falls risk assessment tool\*" OR "Home falls and accidents screening tool" OR "Westmead home safety assessment" OR instrument OR screening)
16. 8 or 9 or 10 or 11 or 12 or 13 or 14 or 15
17. 7 AND 16
18. 17 and limits human
19. 18 and published 01.01.1967 - 31.12.2017

## Supplementary File 1

## Question2

1. MH osteoporosis
2. AB (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD") OR TI (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD")
3. TX ("osteoporotic fracture" OR "rheumatology fracture" OR "fragility fracture" OR "bone fracture" OR "minimal trauma fracture" OR "MTF" OR (fracture N2 (hip OR vertebra OR pelvis OR wrist OR radius OR "proximal humerus")))
4. TX ("osteoporosis medicine\*" OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR "Zoledronic acid" OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR "Strontium ranelate" OR Teriparatide OR "Hormone replacement therapy" OR "HRT" OR Calcium OR "Vitamin D")
5. 1 or 2 or 3 or 4
6. TI (Intervention OR supplement\*) N1 (nutrition OR food OR diet\* OR vitamin\*) OR AB (Intervention OR supplement\*) N1 (nutrition OR food OR diet\* OR vitamin\*)
7. TI (rehabilita\* OR Exercise\*) N1 (therap\* OR physical\* OR movement\*) OR AB (rehabilita\* OR Exercise\*) N1 (therap\* OR physical\* OR movement\*)
8. MH Exercise
9. MH Manual Therapy
10. TX ("Fall\* prevention program\*")
11. TI (Bracing OR orthos\* OR "hip protector\*" OR vibration OR "mobility aid") OR AB (Bracing OR orthos\* OR "hip protector\*" OR vibration OR "mobility aid")
12. TI (Intervention N3 (education OR liaison OR "psychological support" OR counselling OR "problem solving" OR "ABC approach" OR "behavioural intervention\*" OR "Activity planning" OR coordination OR "coordinator role")) OR AB (Intervention N3 (education OR liaison OR "psychological support" OR counselling OR "problem solving" OR "ABC approach" OR "behavioural intervention\*" OR "Activity planning" OR coordination OR "coordinator role"))
13. TI ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist) OR ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist)
14. 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13
15. 5 AND 14
16. PT ("Meta-Analysis" OR "randomized controlled trial" OR "controlled clinical trial" OR "pragmatic clinical trial")
17. MH ("Meta-Analysis" OR "randomized controlled trials" OR "Review Literature" OR "controlled clinical trials")
18. TX (systematic N (review or overview))
19. TI Cochrane OR AB Cochrane
20. 16 OR 17 OR 18 OR 19
21. 15 AND 20
22. 21 AND Humans
23. 22 AND 2007-2017

## Supplementary File 1

**Question 3**

1. MH osteoporosis
2. AB (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD") OR TI (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD")
3. TX ("osteoporosis medicine\*" OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR "Zoledronic acid" OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR "Strontium ranelate" OR Teriparatide OR "Hormone replacement therapy" OR "HRT" OR Calcium OR "Vitamin D")
4. 1 or 2 or 3
5. TI (Intervention OR supplement\*) N1 (nutrition OR food OR diet\* OR vitamin\*) OR AB (Intervention OR supplement\*) N1 (nutrition OR food OR diet\* OR vitamin\*)
6. TI (rehabilita\* OR Exercise\*) N1 (therap\* OR physical\* OR movement\*) OR AB (rehabilita\* OR Exercise\*) N1 (therap\* OR physical\* OR movement\*)
7. MH Exercise
8. MH Manual Therapy
9. TX ("Fall\* prevention program\*")
10. TI (Bracing OR orthos\* OR "hip protector\*" OR vibration OR "mobility aid") OR AB (Bracing OR orthos\* OR "hip protector\*" OR vibration OR "mobility aid")
11. TI (Intervention N3 (education OR liaison OR "psychological support" OR counselling OR "problem solving" OR "ABC approach" OR "behavioural intervention\*" OR "Activity planning" OR coordination OR "coordinator role")) OR AB (Intervention N3 (education OR liaison OR "psychological support" OR counselling OR "problem solving" OR "ABC approach" OR "behavioural intervention\*" OR "Activity planning" OR coordination OR "coordinator role"))
12. TI ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist) OR AB ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist)
13. 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12
14. 4 AND 13
15. PT ("Meta-Analysis" OR "randomized controlled trial" OR "controlled clinical trial" OR "pragmatic clinical trial")
16. MH ("Meta-Analysis" OR "randomized controlled trials" OR "Review Literature" OR "controlled clinical trials")
17. TX (systematic N (review or overview))
18. TI Cochrane OR AB Cochrane
19. 15 OR 16 OR 17 OR 18
20. 14 AND 19
21. 20 AND Humans
22. 21 AND 2007-2017

## Supplementary File 1

**Question 4**

1. MH osteoporosis
2. AB (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD") OR TI (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD")
3. TX ("osteoporotic fracture" OR "rheumatology fracture" OR "fragility fracture" OR "bone fracture" OR "minimal trauma fracture" OR "MTF" OR (fracture N2 (hip OR vertebra OR pelvis OR wrist OR radius OR "proximal humerus")))
4. TX ("osteoporosis medicine\*" OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR "Strontium ranelate" OR Teriparatide OR "Hormone replacement therapy" OR "HRT" OR Calcium OR "Vitamin D")
5. 1 or 2 or 3 or 4
6. TI (Guideline\* OR recommend\*) OR AB (Guideline\* OR recommend\*)
7. TI (implement\* OR adhere\* OR concord\* OR "non-adhere\*" OR "non-concord\*" OR "non-complian\*" OR accept\* OR comply OR complian\* OR persist\*) OR AB (implement\* OR adhere\* OR concord\* OR "non-adhere\*" OR "non-concord\*" OR "non-complian\*" OR accept\* OR comply OR complian\* OR persist\*)
8. 6 AND 7
9. TI ("health care provider\*" OR patient\* OR relative\* OR "care giver" OR "caregiver" OR wife OR husband OR spouse) OR AB ("health care provider\*" OR patient\* OR relative\* OR "care giver" OR "caregiver" OR wife OR husband OR spouse)
10. 5 AND 8 AND 9
11. 10 AND Limits Human
12. 9 and limits 2007-current

## Supplementary File 1

**Question 5**

1. MH osteoporosis
2. TI (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD") OR AB (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD")
3. TX ("osteoporotic fracture" OR "rheumatology fracture" OR "fragility fracture" OR "bone fracture" OR "minimal trauma fracture" OR "MTF" OR (fracture N2 (hip OR vertebra OR pelvis OR wrist OR radius OR "proximal humerus"))))
4. TX ("osteoporosis medicine\*" OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR Zoledronic acid OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR "Strontium ranelate" OR Teriparatide OR "Hormone replacement therapy" OR "HRT" OR Calcium OR "Vitamin D")
5. 1 or 2 or 3 or 4
6. TI (Care OR team\*) N2 (multidisciplinary OR interdisciplinary) OR AB (Care OR team\*) N2 (multidisciplinary OR interdisciplinary)
7. TI ("Fracture liaison service" OR "FLS") OR AB ("Fracture liaison service" OR "FLS")
8. 6 OR 7
9. 5 AND 8
10. 9 AND Limits Human
11. 10 AND limits Jan 2007-Dec 2017

## Supplementary File 1

## Question 6

1. MH osteoporosis
2. AB (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD") OR TI (osteoporos\* OR osteopen\* OR osteoporot\* OR "bone mineral density" OR "BMD")
3. TX ("osteoporotic fracture" OR "rheumatology fracture" OR "fragility fracture" OR "bone fracture" OR "minimal trauma fracture" OR "MTF" OR (fracture N2 (hip OR vertebra OR pelvis OR wrist OR radius OR "proximal humerus")))
4. TX ("osteoporosis medicine\*" OR Bisphosphonates OR Diphosphonates OR Alendronate OR Etidronate OR Ibandronate OR "Zoledronic acid" OR Denosumab OR Risedronate OR Raloxifene OR Bazedoxifene OR Calcitonin OR "Strontium ranelate" OR Teriparatide OR "Hormone replacement therapy" OR "HRT" OR Calcium OR "Vitamin D")
5. 1 or 2 or 3 or 4
6. TI (Motivat\* OR monitor\* OR supervis\* OR educat\* OR nudge\* OR counsel\* OR "health behaviour change\*" OR "shared decision making" OR (cognitive N1 (intervention\* OR technique\*))) OR AB (Motivat\* OR monitor\* OR supervis\* OR educat\* OR nudge\* OR counsel\* OR "health behaviour change\*" OR "shared decision making" OR (cognitive N1 (intervention\* OR technique\*)))
7. TI (medicat\* OR drug\* OR medicine\* OR meds) N2 (implement\* OR adhere\* OR concord\* OR "non-adhere\*" OR "non-concord\*" OR "non-complian\*" OR "non-accept" OR "non-persist\*" OR accept\* OR comply OR complian\* or persist\*) OR AB (medicat\* OR drug\* OR medicine\* OR meds) N2 (implement\* OR adhere\* OR concord\* OR "non-adhere\*" OR "non-concord\*" OR "non-complian\*" OR "non-accept" OR "non-persist\*" OR accept\* OR comply OR complian\* or persist\*)
8. 5 AND 6 AND 7
9. TI ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist) OR AB ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist)
10. 8 AND 9
11. 10 AND limits human
12. 11 AND limits 2007-current

## Supplementary File 1

**Question 7**

1. MH arthritis
2. TI (rheumatologic\* OR rheumatic OR inflammat\* ) N1 (disorder\* OR disease\*) OR AB (rheumatologic\* OR rheumatic OR inflammat\* ) N1 (disorder\* OR disease\*)
3. TI ("rheumatoid arthritis" OR "RA" OR "spondyloarthritis" OR "SpA" OR "Ankylosing spondylitis" OR "AS" OR "Psoriatic arthritis" OR "PsA" OR "Systemic lupus erythematosus" OR "SLE" OR "Juvenile Idiopathic arthritis" OR "JIA") OR AB ("rheumatoid arthritis" OR "RA" OR "spondyloarthritis" OR "SpA" OR "Ankylosing spondylitis" OR "AS" OR "Psoriatic arthritis" OR "PsA" OR "Systemic lupus erythematosus" OR "SLE" OR "Juvenile Idiopathic arthritis" OR "JIA")
4. 1 or 2 or 3
5. TX (screen\* OR assess\* OR diagnose\* OR monitor\* OR educat\* OR counsel\* OR motivat\* OR supervis\* OR "health behaviour change\*" OR intervention\*)
6. TX (bone OR "bone health" OR Osteoporos\* OR Osteopen\* OR Osteoporot\* OR "bone mineral density" OR "bmd")
7. 4 AND 5 AND 6
8. TI ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist) OR AB ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist)
9. 7 AND 8
10. 9 AND Limits Human
11. 10 and limits 2007-current



## Supplementary File 1

**Question 8**

1. MH arthritis
2. TI (rheumatologic\* OR rheumatic OR inflammat\* ) N1 (disorder\* OR disease\*) OR AB (rheumatologic\* OR rheumatic OR inflammat\* ) N1 (disorder\* OR disease\*)
3. TI ("rheumatoid arthritis" OR "RA" OR "spondyloarthritis" OR "SpA" OR "Ankylosing spondylitis" OR "AS" OR "Psoriatic arthritis" OR "PsA" OR "Systemic lupus erythematosus" OR "SLE" OR "Juvenile Idiopathic arthritis" OR "JIA") OR AB ("rheumatoid arthritis" OR "RA" OR "spondyloarthritis" OR "SpA" OR "Ankylosing spondylitis" OR "AS" OR "Psoriatic arthritis" OR "PsA" OR "Systemic lupus erythematosus" OR "SLE" OR "Juvenile Idiopathic arthritis" OR "JIA")
4. 1 or 2 or 3
5. TX ("self care" OR "self-care" OR "self management" OR "self-management" OR "health educat\*" OR "patient educat\*" OR "health literacy" OR "consumer health information" OR "patient knowledge")
6. TX (bone OR "bone health" OR Osteoporos\* OR Osteopen\* OR Osteoporot\* OR "bone mineral density" OR "bmd")
7. 4 AND 5 AND 6
8. TI ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist) OR AB ("Health professional" OR nurs\* OR "nurse specialist" OR "advanced practice nurs\*" OR "rheumatology nurs\*" OR podiatrist OR chiropodist OR physiotherapist OR "physical therapist" OR dietician OR dietitian OR radiographer OR sonographer OR "occupational therapist" OR pharmacist)
9. 7 AND 8
10. 9 AND Limits Human
11. 10 and limits 2007-current

## Supplementary File 1

**PubMed search strategies for systematic literature review: Questions 1 to 8****Question1**

1. Osteoporosis [MESH]
2. osteoporos\*[tiab] OR osteopen\*[tiab] OR osteoporot\*[tiab] OR "bone mineral density" [tiab] OR "BMD" [tiab]
3. "osteoporotic fracture"[tw] OR "fragility fracture"[tw] OR "bone fracture"[tw] OR "minimal trauma fracture"[tw] OR "MTF"[tw] OR "hip fracture"[tw] OR "fracture\* vertebra" [tw] OR "fracture\* pelvis"[tw] OR "wrist fracture"[tw] OR "radius fracture"[tw] OR "proximal humerus fracture"[tw]
4. "osteoporosis medicine\*" [tw] OR Bisphosphonates[tw] OR Diphosphonates[tw] OR Alendronate[tw] OR Etidronate[tw] OR Ibandronate[tw] OR "Zoledronic acid" [tw] OR Denosumab[tw] OR Risedronate[tw] OR Raloxifene[tw] OR Bazedoxifene[tw] OR Calcitonin[tw] OR "Strontium ranelate" [tw] OR Teriparatide[tw] OR "Hormone replacement therapy" [tw] OR "HRT" [tw] OR Calcium[tw] OR "Vitamin D" [tw]
5. #1 or #2 or #3 or #4
6. fall\*[tiab] OR falling[tiab] OR faller\*[tiab] OR Slip\*[tiab] OR Accidental fall\*[tiab]
7. #5 AND #6
8. "eye test" [tiab] OR "eyesight test" [tiab] OR "vision test" [tiab] OR "foot health" [tiab] OR "foot health assessment" [tiab] OR "foot pain" [tiab] OR "foot pathology" [tiab] OR "foot posture" [tiab] OR "footwear" [tiab]
9. "fear of falling questionnaire" [tiab] OR "falls self efficacy scale" [tiab] OR "falls efficacy scale international" [tiab] OR "FES-I" [tiab] OR "fear avoidance belief questionnaire" [tiab] OR "FABQ" [tiab] OR "falls risk assessment tool\*" [tiab]
10. "gait abnormalit\*" [tiab] OR "2 minute walk test" [tiab] OR "two minute walk test" [tiab] OR "6 minute walk test" [tiab] OR "six minute walk test" [tiab] OR "6mwt" [tiab] OR "walking while talking test" [tiab] OR "figure of 8 walking test" [tiab] OR "timed backward walking" [tiab] OR "10 meter walk test" [tiab] OR "ten meter walk test" [tiab] OR "stride length" [tiab]
11. "berg balance test" [tiab] OR "berg balance scale" [tiab] OR "romberg test" [tiab] OR "tandem stance" [tiab] OR "one leg stance" [tiab] OR "unipedal stance" [tiab] OR "standing on one l leg" [tiab] OR "Brunell balance assessment test" [tiab] OR "balance evaluation systems test" [tiab]
12. "Cognitive assessment" [tiab] OR "mini mental state examination" [tiab] OR "medication appropriateness tool" [tiab] OR "screening tool of older persons prescriptions" [tiab] OR "STOPP" [tiab] OR "screening tool to alert doctors to right prescribing" [tiab] OR "START" [tiab]
13. "nutritional risk screening" [tiab] OR "malnutrition universal screening tool" [tiab] OR "mini nutritional assessment" [tiab] OR "vitamin D deficiency screening tool" [tiab] OR "vitamin D deficiency screening" [tiab]
14. "pain assessment scale" [tiab] OR "pain assessment score" [tiab] OR "Disease activity score" [tiab]
15. assess\*[tiab] OR "diagnostic assess\*" [tiab] OR "prediction tool" [tiab] OR "predictive factor\*" [tiab] OR "falls risk assessment tool\*" [tiab] OR "Home falls and accidents screening tool" [tiab] OR "Westmead home safety assessment" [tiab] OR instrument[tiab] OR screening[tiab]
16. #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15
17. #7 AND #16
18. #17 and human filter
19. #18 and date filter 01.01.1967-31.12.2017

## Supplementary File 1

**Question 2**

1. osteoporosis [MESH terms]
2. osteoporos\*[tiab] OR osteopen\*[tiab] OR osteoporot\*[tiab] OR "bone mineral density"[tiab] OR "BMD" [tiab]
3. "osteoporotic fracture"[tw] OR "fragility fracture"[tw] OR "bone fracture"[tw] OR "minimal trauma fracture"[tw] OR "MTF"[tw] OR "hip fracture"[tw] OR "fracture\* vertebra" [tw] OR "fracture\* pelvis"[tw] OR "wrist fracture"[tw] OR "radius fracture"[tw] OR "proximal humerus fracture"[tw]
4. "osteoporosis medicine\*"[tw] OR Bisphosphonates[tw] OR Diphosphonates[tw] OR Alendronate[tw] OR Etidronate[tw] OR Ibandronate[tw] OR "Zoledronic acid"[tw] OR Denosumab[tw] OR Risedronate[tw] OR Raloxifene[tw] OR Bazedoxifene[tw] OR Calcitonin[tw] OR "Strontium ranelate"[tw] OR Teriparatide[tw] OR "Hormone replacement therapy"[tw] OR "HRT"[tw] OR Calcium[tw] OR "Vitamin D"[tw]
5. #1 or #2 or #3 or #4
6. "Nutrition\* intervention"[tiab] OR "nutrition\* supplement\*"[tiab] OR "food intervention"[tiab] OR "food supplement"[tiab] OR "diet\* intervention"[tiab] OR "diet\* supplement"[tiab] "vitamin intervention"[tiab] OR "vitamin supplement"[tiab]
7. "rehabilita\* therap\*"[tiab] OR "physical\* rehabilita\*"[tiab] OR "movement\* rehabilita\*"[tiab] OR "exercise\* therap\*"[tiab] OR "physical exercise\*"[tiab] OR "movement\* exercise\*"[tiab]
8. Exercise[MESH terms]
9. Manual Therapy[MESH terms]
10. Bracing[tiab] OR orthos\*[tiab] OR hip protector\*[tiab] OR vibration[tiab] OR mobility aid[tiab] or fall\* prevention program\*[tiab]
11. "education\* intervention"[tiab] OR "liaison intervention"[tiab] OR "psychological support Intervention" OR "counselling Intervention"[tiab] OR "problem solving Intervention"[tiab] OR "ABC approach Intervention"[tiab] OR "behavioural intervention\*"[tiab] OR "Activity planning Intervention"[tiab] OR "coordination intervention"[tiab] OR "coordinator role Intervention"[tiab])
12. "Health professional"[tiab] OR nurs\*[tiab] OR "nurse specialist"[tiab] OR "advanced nurse practitioner"[tiab] OR podiatrist[tiab] OR chiropodist[tiab] OR physiotherapist[tiab] OR "physical therapist"[tiab] OR dietician[tiab] OR dietitian[tiab] OR radiographer[tiab] OR sonographer[tiab] OR "occupational therapist"[tiab] OR pharmacist[tiab]
13. #6 or #7 or #8 or #9 or #10 or #11 or #12
14. #5 AND #13
15. Meta-Analysis[publication type] OR randomized controlled trial[publication type] OR controlled clinical trial[publication type] OR pragmatic clinical trial[publication type]
16. Meta-Analysis[MESH Major Topic]
17. randomized controlled trials[MESH Major Topic]
18. Review Literature[MESH Major Topic]
19. controlled clinical trials[MESH Major Topic]
20. #16 OR #17 OR #18 OR #19

## Supplementary File 1

21. "systematic review"[tw] OR "systematic overview"[tw]
22. Cochrane[tiab]
23. #15 or #20 or #21 OR #22
24. #14 AND #23
25. 24 AND filter human
26. 25 AND filter publication date 01/01/2007-31/12/2017

## Supplementary File 1

**Question 3**

1. osteoporosis [MESH terms]
2. osteoporos\*[tiab] OR osteopen\*[tiab] OR osteoporot\*[tiab] OR "bone mineral density"[tiab] OR "BMD" [tiab]
3. "osteoporosis medicine"[tw] OR Bisphosphonates[tw] OR Diphosphonates[tw] OR Alendronate[tw] OR Etidronate[tw] OR Ibandronate[tw] OR "Zoledronic acid"[tw] OR Denosumab[tw] OR Risedronate[tw] OR Raloxifene[tw] OR Bazedoxifene[tw] OR Calcitonin[tw] OR "Strontium ranelate"[tw] OR Teriparatide[tw] OR "Hormone replacement therapy"[tw] OR "HRT"[tw] OR Calcium[tw] OR "Vitamin D"[tw]
4. #1 or #2 or #3
5. "Nutrition\* intervention"[tiab] OR "nutrition\* supplement"[tiab] OR "food intervention"[tiab] OR "food supplement"[tiab] OR "diet\* intervention"[tiab] OR "diet\* supplement"[tiab] "vitamin intervention"[tiab] OR "vitamin supplement"[tiab]
6. "rehabilita\* therap\*[tiab] OR "physical\* rehabilita\*[tiab] OR "movement\* rehabilita\*[tiab] OR "exercise\* therap\*[tiab] OR "physical exercise\*[tiab] OR "movement\* exercise\*[tiab]
7. Exercise[MESH terms]
8. Manual Therapy[MESH terms]
9. Bracing[tiab] OR orthos\*[tiab] OR hip protector\*[tiab] OR vibration[tiab] OR mobility aid[tiab] or fall\* prevention program\*[tiab]
10. "education\* intervention"[tiab] OR "liaison intervention"[tiab] OR "psychological support Intervention" OR "counselling Intervention"[tiab] OR "problem solving Intervention"[tiab] OR "ABC approach Intervention"[tiab] OR "behavioural intervention\*[tiab] OR "Activity planning Intervention"[tiab] OR "coordination intervention"[tiab] OR "coordinator role Intervention"[tiab])
11. "Health professional"[tiab] OR nurs\*[tiab] OR "nurse specialist"[tiab] OR "advanced nurse practitioner"[tiab] OR podiatrist[tiab] OR chiropracist[tiab] OR physiotherapist[tiab] OR "physical therapist"[tiab] OR dietician[tiab] OR dietitian[tiab] OR radiographer[tiab] OR sonographer[tiab] OR "occupational therapist"[tiab] OR pharmacist[tiab]
12. #5 or #6 or #7 or #8 or #9 or #10 or #11
13. #4 AND #12
14. Meta-Analysis[publication type] OR randomized controlled trial[publication type] OR controlled clinical trial[publication type] OR pragmatic clinical trial[publication type]
15. Meta-Analysis[MESH Major Topic]
16. randomized controlled trials[MESH Major Topic]
17. Review Literature[MESH Major Topic]
18. controlled clinical trials[MESH Major Topic]
19. #15 #16 OR #17 OR #18
20. "systematic review"[tw] OR "systematic overview"[tw]
21. Cochrane[tiab]

## Supplementary File 1

22. #14 or #19 or #20 OR #21
23. #13 AND #22
24. 23 AND filter human
25. 24 AND filter publication date 01/01/2007-31/12/2017

## Supplementary File 1

**Question 4**

1. osteoporosis [MESH terms]
2. osteoporos\*[tiab] OR osteopen\*[tiab] OR osteoporot\*[tiab] OR "bone mineral density"[tiab] OR "BMD" [tiab]
3. "osteoporotic fracture"[tw] OR "fragility fracture"[tw] OR "bone fracture"[tw] OR "minimal trauma fracture"[tw] OR "MTF"[tw] OR "hip fracture"[tw] OR "fracture\* vertebra" [tw] OR "fracture\* pelvis"[tw] OR "wrist fracture"[tw] OR "radius fracture"[tw] OR "proximal humerus fracture"[tw]
4. "osteoporosis medicine\*" [tw] OR Bisphosphonates[tw] OR Diphosphonates[tw] OR Alendronate[tw] OR Etidronate[tw] OR Ibandronate[tw] OR "Zoledronic acid"[tw] OR Denosumab[tw] OR Risedronate[tw] OR Raloxifene[tw] OR Bazedoxifene[tw] OR Calcitonin[tw] OR "Strontium ranelate"[tw] OR Teriparatide[tw] OR "Hormone replacement therapy"[tw] OR "HRT"[tw] OR Calcium[tw] OR "Vitamin D"[tw]
5. #1 or #2 or #3 or #4
6. Guideline\*[tiab] OR recommend\*[tiab]
7. implement\*[tiab] OR adhere\*[tiab] OR concord\*[tiab] OR "non-adhere\*" [tiab] OR "non-concord\*" [tiab] OR "non-complian\*" [tiab] OR accept\*[tiab] OR comply[tiab] OR complian\* [tiab]
8. #6 AND #7
9. "health care provider\*" [tiab] OR patient\*[tiab] OR relative\*[tiab] OR "care giver" [tiab] OR "caregiver" [tiab] OR wife[tiab] OR husband[tiab] OR spouse[tiab]
10. #5 AND #8 AND #9
11. 10 AND Limits Human
12. 11 and limits 2007-2017

## Supplementary File 1

**Question 5**

1. Osteoporosis [MESH]
2. osteoporos\*[tiab] OR osteopen\*[tiab] OR osteoporot\*[tiab] OR "bone mineral density" [tiab] OR "BMD" [tiab]
3. "osteoporotic fracture"[tw] OR "fragility fracture"[tw] OR "bone fracture"[tw] OR "minimal trauma fracture"[tw] OR "MTF"[tw] OR "hip fracture"[tw] OR "fracture\* vertebra" [tw] OR "fracture\* pelvis"[tw] OR "wrist fracture"[tw] OR "radius fracture"[tw] OR "proximal humerus fracture"[tw]
4. "osteoporosis medicine\*" [tw] OR Bisphosphonates[tw] OR Diphosphonates[tw] OR Alendronate[tw] OR Etidronate[tw] OR Ibandronate[tw] OR "Zoledronic acid"[tw] OR Denosumab[tw] OR Risedronate[tw] OR Raloxifene[tw] OR Bazedoxifene[tw] OR Calcitonin[tw] OR "Strontium ranelate"[tw] OR Teriparatide[tw] OR "Hormone replacement therapy"[tw] OR "HRT"[tw] OR Calcium[tw] OR "Vitamin D"[tw]
5. #1 or #2 or #3 or #5
6. "multidisciplinary care"[tiab] OR "multidisciplinary team\*" [tiab] OR "multidisciplinary patient care"[tiab] OR "interdisciplinary care"[tiab] OR "interdisciplinary team" OR "fracture liaison service" [tiab]
7. #5 AND #6
8. #7 and Humans
9. #8 and 2007-2017



## Supplementary File 1

## Question 6

1. osteoporosis [MESH terms]
2. osteoporos\*[tiab] OR osteopen\*[tiab] OR osteoporot\*[tiab] OR "bone mineral density"[tiab] OR "BMD" [tiab]
3. "osteoporotic fracture"[tw] OR "fragility fracture"[tw] OR "bone fracture"[tw] OR "minimal trauma fracture"[tw] OR "MTF"[tw] OR "hip fracture"[tw] OR "fracture\* vertebra"[tw] OR "fracture\* pelvis"[tw] OR "wrist fracture"[tw] OR "radius fracture"[tw] OR "proximal humerus fracture"[tw]
4. "osteoporosis medicine\*"[tw] OR Bisphosphonates[tw] OR Diphosphonates[tw] OR Alendronate[tw] OR Etidronate[tw] OR Ibandronate[tw] OR "Zoledronic acid"[tw] OR Denosumab[tw] OR Risedronate[tw] OR Raloxifene[tw] OR Bazedoxifene[tw] OR Calcitonin[tw] OR "Strontium ranelate"[tw] OR Teriparatide[tw] OR "Hormone replacement therapy"[tw] OR "HRT"[tw] OR Calcium[tw] OR "Vitamin D"[tw]
5. #1 or #2 or #3 or #4
6. Motivat\*[tiab] OR monitor\*[tiab] OR supervis\*[tiab] OR educat\*[tiab] OR nudge\*[tiab] OR counsel\*[tiab] OR "health behaviour change\*"[tiab]] OR "shared decision making"[tiab] OR "cognitive intervention\*"[tiab] OR "cognitive technique\*"[tiab]
7. medicat\*[tiab] OR drug\*[tiab] OR medicine\*[tiab] OR meds[tiab]
8. implement\*[tiab] OR adhere\*[tiab] OR concord\*[tiab] OR "non-adhere\*"[tiab] OR "non-concord\*"[tiab] OR "non-complian\*"[tiab] OR "non-accept"[tiab] OR "non-persist\*"[tiab] OR accept\*[tiab] OR comply[tiab] OR complian\*[tiab] OR persist\*[tiab]
9. #7 AND #8
10. #5 AND #6 AND #9
11. "Health professional"[tiab] OR nurs\*[tiab] OR "nurse specialist"[tiab] OR "advanced nurse practitioner"[tiab] OR podiatrist[tiab] OR chiropodist[tiab] OR physiotherapist[tiab] OR "physical therapist"[tiab] OR dietician[tiab] OR dietitian[tiab] OR radiographer[tiab] OR sonographer[tiab] OR "occupational therapist"[tiab] OR pharmacist[tiab]
12. #10 AND #11
13. #12 AND Limits Human
14. #13 and limits 2007-2017

## Supplementary File 1

**Question 7**

1. Arthritis[MESH terms]
2. "rheumatologic\* disorder\*" [tiab] OR "rheumatologic\* disease\*" [tiab] OR "rheumatic disorder\*" [tiab] OR "rheumatic disease\*" [tiab] OR "inflammat\* disorder\*" [tiab] OR "inflammat\* disease\*" [tiab]
3. "rheumatoid arthritis" [tiab] OR "RA" [tiab] OR "spondyloarthritis" [tiab] OR "SpA" [tiab] OR "Ankylosing spondylitis" [tiab] OR "AS" [tiab] OR "Psoriatic arthritis" [tiab] OR "PsA" [tiab] OR "Systemic lupus erythematosus" [tiab] OR "SLE" [tiab] OR "Juvenile Idiopathic arthritis" [tiab] OR "JIA" [tiab]
4. #1 or #2 or #3
5. screen\* [tw] OR assess\* [tw] OR diagnose\* [tw] OR monitor\* [tw] OR educat\* [tw] OR counsel\* [tw] OR motivat\* [tw] OR supervis\* [tw] OR "health behaviour change\*" [tw] OR intervention\* [tw]
6. bone [tw] OR "bone health" [tw] OR Osteoporos\* [tw] OR Osteopen\* [tw] OR Osteoporot\* [tw] OR "bone mineral density" [tw] OR "bmd" [tw]
7. #4 AND #5 AND #6
8. "Health professional" [tiab] OR "nurs\*" [tiab] OR "nurse specialist" [tiab] OR "advanced practice nurs\*" [tiab] OR "rheumatology nurs\*" [tiab] OR "podiatrist" [tiab] OR "chiropracist" [tiab] OR "physiotherapist" [tiab] OR "physical therapist" [tiab] OR "dietician" [tiab] OR "dietitian" [tiab] OR "radiographer" [tiab] OR "sonographer" [tiab] OR "occupational therapist" [tiab] OR "pharmacist" [tiab]
9. #7 AND #8
10. #9 AND Limits Human
11. #10 and limits 2007-2017

## Supplementary File 1

**Question 8**

1. Arthritis[MESH terms]
2. "rheumatologic\* disorder\*" [tiab] OR "rheumatologic\* disease\*" [tiab] OR "rheumatic disorder\*" [tiab] OR "rheumatic disease\*" [tiab] OR "inflammat\* disorder\*" [tiab] OR "inflammat\* disease\*" [tiab]
3. "rheumatoid arthritis" [tiab] OR "RA" [tiab] OR "spondyloarthritis" [tiab] OR "SpA" [tiab] OR "Ankylosing spondylitis" [tiab] OR "AS" [tiab] OR "Psoriatic arthritis" [tiab] OR "PsA" [tiab] OR "Systemic lupus erythematosus" [tiab] OR "SLE" [tiab] OR "Juvenile Idiopathic arthritis" [tiab] OR "JIA" [tiab]
4. #1 or #2 or #3
5. "self care" [tw] OR "self-care" [tw] OR "self management" [tw] OR "self-management" [tw] OR "health educat\*" [tw] OR "patient educat\*" [tw] OR "health literacy" [tw] OR "consumer health information" [tw] OR "patient knowledge" [tw]
6. bone [tw] OR "bone health" [tw] OR Osteoporos\* [tw] OR Osteopen\* [tw] OR Osteoporot\* [tw] OR "bone mineral density" [tw] OR "bmd" [tw]
7. #4 AND #5 AND #6
8. "Health professional" [tiab] OR "nurs\*" [tiab] OR "nurse specialist" [tiab] OR "advanced practice nurs\*" [tiab] OR "rheumatology nurs\*" [tiab] OR "podiatrist" [tiab] OR "chiropracist" [tiab] OR "physiotherapist" [tiab] OR "physical therapist" [tiab] OR "dietician" [tiab] OR "dietitian" [tiab] OR "radiographer" [tiab] OR "sonographer" [tiab] OR "occupational therapist" [tiab] OR "pharmacist" [tiab]
9. #7 AND #8
10. #9 AND Limits Human
11. #10 and limits 2007-2017

## Supplementary File 1

**Table 1: Rating of available evidence (Modified from Ryan et al. 2014, p.11-12)**

Summary statement	Translation
Sufficient evidence	<ul style="list-style-type: none"> <li>• A statistically significant result from a large number of included studies/participants in a narrative synthesis or meta-analysis</li> </ul>
Some evidence	<ul style="list-style-type: none"> <li>• A more equivocal set of results from studies included in a narrative review, or a statistically significant result from meta-analysis of a small number of studies/participants and or low quality studies</li> </ul>
Insufficient evidence	<ul style="list-style-type: none"> <li>• Statistically non-significant results based on a small number of studies/participants potentially reflecting underpowering of the included studies OR</li> <li>• Statistically non-significant results from a large number of studies/participants reflecting underlying ineffectiveness on the outcome being examined and described as generally ineffective</li> </ul>
Insufficient evidence to determine	<ul style="list-style-type: none"> <li>• Where there are too few studies to be able to determine effect</li> </ul>

## Supplementary File 1

**Table 2: Characteristics of systematic reviews assessed against AMSTAR 2 criteria (Shea et al. 2017)**

Authors	PICO components	Priori protocol	Study design selection explained	Comprehensive search strategy	Duplicate selection	Duplicate extraction	Excluded studies listed	Included studies characteristics	Satisfactory ROB technique	Funding reported	Appropriate statistical methods in MA	Assessed impact of ROB on synthesis	Accounted for ROB in interpreting results	Explained heterogeneity satisfactorily	Adequately investigated publication bias	Reported conflict of interest
Avenell et al. <sup>26</sup>	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y
Diong et al. <sup>28</sup>	Y	Y	Y	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y
Lee et al. <sup>29</sup>	Y	N	N	PY	N	N	N	PY	Y	N	Y	N	Y	Y	Y	Y
Liu et al. <sup>27</sup>	Y	N	N	PY	N	N	N	PY	Y	N	Y	N	N	Y	N/A	Y
Newman et al. <sup>38</sup>	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	No MA conducted	No MA conducted	Y	Y	No MA conducted	Y
Visschedijk et al. <sup>46</sup>	Y	N	N	PY	N	N	N	PY	N	N	No MA conducted	No MA conducted	Y	Y	No MA conducted	Y
De Kam et al. <sup>53</sup>	Y	N	N	PY	N	N	N	PY	Y	N	No MA conducted	No MA conducted	N	Y	No MA conducted	Y
Luo et al. <sup>30</sup>	Y	N	N	PY	N	Y	N	PY	Y	N	Y	Y	Y	Y	N/A	Y
Wei et al. <sup>24</sup>	Y	Y	N	PY	Y	N	N	PY	Y	N	N	N	Y	N	N/A	Y
Varahra et al. <sup>31</sup>	Y	Y	N	Y	Y	N	N	Y	Y	N	Y	Y	Y	Y	N/A	Y
Porter et al. <sup>58</sup>	Y	Y	Y	PY	Y	Y	N	Y	Y	N	No MA conducted	No MA conducted	Y	Y	No MA conducted	Y
Koutsofta et al. <sup>59</sup>	Y	N	N	PY	N	N	Y	Y	Y	N	No MA conducted	No MA conducted	Y	Y	No MA conducted	Y
Morfeld et al. <sup>61</sup>	Y	N	Y	PY	Y	Y	Y	Y	Y	N	No MA conducted	No MA conducted	Y	Y	No MA conducted	Y
Grigoryan et al. <sup>32</sup>	Y	N	N	PY	Y	N	N	N	Y	N	PY	N	N	Y	Y	Y
Wu et al.(a) <sup>25</sup>	Y	N	Y	Y	Y	N	N	Y	Y	N	Y	Y	Y	Y	Y	Y
Wu et al.(b) <sup>68</sup>	Y	N	Y	Y	Y	N	N	Y	Y	N	No MA conducted	No MA conducted	Y	Y	No MA conducted	Y
Hiligsmann et al. <sup>70</sup>	Y	N	N	PY	N	Y	Y	PY	Y	N	No MA conducted	No MA conducted	Y	Y	No MA conducted	Y

Supplementary File 1

ROB, risk of bias; MA, meta-analysis; Y, Yes; N, No; PY, Partial Yes; N/A , Not applicable

Criteria not stated and or if no judgement could be made were annotated as No

## Supplementary File 1

**Table 3: Risk of bias assessment: Randomised studies**

	Sequence generation	Allocation concealment	Blinding of participants & personnel	Blinding of assessors	Incomplete outcome data	Selective reporting	Other bias
Mak et al. <sup>44</sup>	Low	Low	Low	Low	Low*	Low	Low
Myint et al. <sup>45</sup>	Unclear	Low	Unclear	Low*	Unclear	Low	Low
Kronborg et al. <sup>35</sup>	Low	Unclear	Unclear	Low	Low	Low	Low
Mikó et al. <sup>43</sup>	Low	Unclear	Unclear	Low	Low	Low	Low
De Morais Barbosa et al. <sup>37</sup>	Unclear	Unclear	Unclear	High	Unclear	Low	Low
van Ooijen et al. <sup>34</sup>	Unclear	Unclear	Unclear	Low	Unclear	Low	Unclear
Di Monaco et al. <sup>49</sup>	Low	Low	Unclear	Low	Unclear	Low	Low
Di Monaco et al. <sup>50</sup>	Unclear	Unclear	Unclear	High	High	Low	Low
Berggren et al. <sup>51</sup>	Unclear	Low	Unclear	High	Low	Low	Unclear
Shyu et al. <sup>52</sup>	Low	Unclear	Unclear	High	Low	Low	Low
Cheung et al. <sup>60</sup>	Low	Low	Low	Low	Low	Low	Low
Korpelainen et al. <sup>54</sup>	Low	Unclear	Unclear	Low	Low	Low	Low
Gianoudis et al. <sup>55</sup>	Low	Unclear	Unclear	Unclear	Low	Low	Low
Smulders et al. <sup>36</sup>	Unclear	Unclear	Unclear	Low	Low	Low	Low
Palvanen et al. <sup>57</sup>	Low	Low	Unclear	High	Low	Low	Low
Ciaschini et al. <sup>65</sup>	Low	Unclear	Unclear	High	Low	Low	Low
Kilgore et al. <sup>64</sup>	Unclear	Unclear	Unclear	Unclear	Unclear	Low	Unclear
Kennedy et al. <sup>63</sup>	Low	Low	Unclear	Low	Low	Low	Unclear
Cox et al. <sup>33</sup>	Low	Low	Unclear	Unclear	Low	Unclear	Unclear
Prestmo et al. <sup>67</sup>	Low	Unclear	Unclear	Unclear	Low	Low	Low
Kooij et al. <sup>72</sup>	Unclear	Unclear	Unclear	Low	Unclear	Low	Unclear

\*For the outcome of interest

**Table 4: Risk of bias assessment: Non randomised studies**

	Recruitment & allocation concealment	Intervention integrity	Blinding	Incomplete outcome data	Selective outcome reporting	Other bias
Kemmler et al. <sup>56</sup>	Unclear	Adequate (low)	Adequate (low)	Inadequate (high)	Adequate (low)	Unclear
Baypinar et al. <sup>66</sup>	Unclear	Unclear	Unclear	Adequate (low)	Adequate (low)	Adequate (low)
Stuurman-Bieze et al. <sup>71</sup>	Unclear	Unclear	Unclear	Adequate (low)	Adequate (low)	Unclear