

Rheumatoid Arthritis

Literature Search Strategies

Draft for Consultation

*This evidence review was developed by
the National Guideline Centre*

Disclaimer

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or service users. The recommendations in this guideline are not mandatory and the guideline does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and, where appropriate, their carer or guardian.

Local commissioners and providers have a responsibility to enable the guideline to be applied when individual health professionals and their patients or service users wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

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Appendix A: Literature search strategies

The literature searches for this review are detailed below and complied with the methodology outlined in Developing NICE guidelines: the manual 2014, updated 2017.
<https://www.nice.org.uk/guidance/pmg20/resources/developing-nice-guidelines-the-manual-pdf-72286708700869>

For more detailed information, please see the Methodology Review. [\[Add cross reference\]](#)

A.1 Rheumatoid Arthritis search strategy 1

This literature search strategy was used for the following review;

- Analgesics in rheumatoid arthritis

A.1.1 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 1: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 06 October 2017	Exclusions Randomised controlled trials Systematic review studies
Embase (Ovid)	1974 – 06 October 2017	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2017 Issue 10 of 12 CENTRAL to 2017 Issue 9 of 12 DARE, and NHSEED to 2015 Issue 2 of 4 HTA to 2016 Issue 4 of 4	None

Medline (Ovid) search terms

1.	exp Arthritis, Rheumatoid/
2.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
3.	(caplan* adj2 syndrome).ti,ab.
4.	(felty* adj2 syndrome).ti,ab.
5.	(rheumatoid adj2 factor).ti,ab.
6.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
7.	"inflammatory polyarthritis".ti,ab.
8.	or/1-7

9.	limit 8 to English language
10.	letter/
11.	editorial/
12.	news/
13.	exp historical article/
14.	Anecdotes as Topic/
15.	comment/
16.	case report/
17.	(letter or comment*).ti.
18.	or/10-17
19.	randomized controlled trial/ or random*.ti,ab.
20.	18 not 19
21.	animals/ not humans/
22.	Animals, Laboratory/
23.	exp animal experiment/
24.	exp animal model/
25.	exp Rodentia/
26.	(rat or rats or mouse or mice).ti.
27.	or/20-26
28.	9 not 27
29.	analgesics/
30.	analgesic*.ti,ab.
31.	acetaminophen/
32.	(paracetamol or acetaminophen or acetaminophen or panadol).ti,ab.
33.	exp anti inflammatory agents, non steroidal/
34.	((nsaid* or ((non-steroid* or nonsteroid*) adj (antiinflammatory or anti-inflammatory))))).ti,ab.
35.	((cox 2 or cox2 or cox ii) adj inhibitor*).ti,ab.
36.	(cyclooxygenase adj2 inhibitor*).ti,ab.
37.	(ibuprofen or brufen or calprofen or ibuderm or ibugel or ibuleve or ibuspray or nurofen).ti,ab.
38.	(naproxen or diclofenac or voltarol or rheumatac or mefenamic or ponstan or mefenaminic or indomethacin or indometacin or indocid or ketoprofen or axorid or oruvail or piroxicam or feldene or meloxicam).ti,ab.
39.	(celecoxib or celebrex or etoricoxib or arcoxia or etodolac or eccoxolac or etopan or lodine).ti,ab.
40.	fenoprofen/
41.	meptazinol/
42.	(tiaprofenic or surgam or tenoxicam or mobiflex or nabumeton* or reliflex or aceclofenac or preservex or fenoprofen or flurbiprofen or froben or sulindac or tolfenamic or clotam or pethidin* or meperidin* or meptazinol or meptid).ti,ab.
43.	exp analgesics, opioid/
44.	(opioid* or opiate*).ti,ab.
45.	(tramadol or maxitram or tilodol or tramacet or zamadol or zydol or codeine or pentazocine or fortral or morphine or morphia or oxycodone or carexil or retelbon or zomestine or methadone or fentanyl or durogesic or fentalis or mezolar or opioidur or osmanil or hydromorphone or dihydromorphinone or palladone or buprenorphine or bupeaze or butrans or gabup or hapoctasin or panitaz or sevodyne or subutex or

	transtec or temgesic or diamorphine or dihydromorphine or paramorfan or paramorphan or dihydrocodeine).ti,ab.
46.	(anadin or co-codamol or cocodamol or co-dydramol or codydramol or paracodol or solpadeine or solpadol or ultramol or veganin or zapain).ti,ab.
47.	nefopam/
48.	nefopam.ti,ab.
49.	exp antidepressive agents/
50.	(anti-depressant* or antidepressant* or antidepressive* or anti-depressive*).ti,ab.
51.	(tricyclic* or amitriptyline or butriptyline or clomipramine or desipramine or dosulepin or dothiepin or doxepin or imipramine or iprindole or lofepramine or nortriptyline or opipramol or protriptyline or trimipramine).ti,ab.
52.	exp serotonin uptake inhibitors/
53.	trazodone/
54.	(SSRI* or selective serotonin reuptake inhibitor* or serotonin uptake inhibitor*).ti,ab.
55.	(citalopram or dapoxetine or escitalopram or fluoxetine or fluvoxamine or paroxetine or sertraline or trazodone or mirtazapine).ti,ab.
56.	exp "serotonin and noradrenaline reuptake inhibitors"/
57.	(snri* or ("serotonin and noradrenaline reuptake" adj inhibitor*).ti,ab.
58.	(venlafaxine or sibutramine or duloxetine or atomoxetine or desvenlafaxine or milnacipran or levomilnacipran).ti,ab.
59.	exp gamma-aminobutyric acid/
60.	gabapentinoid*.ti,ab.
61.	(gabapentin or pregabalin).ti,ab.
62.	or/29-61
63.	28 and 62
64.	randomized controlled trial.pt.
65.	controlled clinical trial.pt.
66.	randomi#ed.ab.
67.	placebo.ab.
68.	drug therapy.fs.
69.	randomly.ab.
70.	trial.ab.
71.	groups.ab.
72.	or/64-71
73.	Clinical Trials as topic.sh.
74.	trial.ti.
75.	or/64-67,69,73-74
76.	Meta-Analysis/
77.	Meta-Analysis as Topic/
78.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
79.	((systematic* or evidence*) adj3 (review* or overview*).ti,ab.
80.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
81.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
82.	(search* adj4 literature).ab.
83.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.

84.	cochrane.jw.
85.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
86.	or/76-85
87.	63 and (75 or 86)

Embase (Ovid) search terms

1.	exp *rheumatoid arthritis/
2.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
3.	(caplan* adj2 syndrome).ti,ab.
4.	(felty* adj2 syndrome).ti,ab.
5.	(rheumatoid adj2 factor).ti,ab.
6.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
7.	"inflammatory polyarthritis".ti,ab.
8.	or/1-7
9.	limit 8 to English language
10.	letter.pt. or letter/
11.	note.pt.
12.	editorial.pt.
13.	case report/ or case study/
14.	(letter or comment*).ti.
15.	or/10-14
16.	randomized controlled trial/ or random*.ti,ab.
17.	15 not 16
18.	animal/ not human/
19.	nonhuman/
20.	exp Animal Experiment/
21.	exp Experimental Animal/
22.	animal model/
23.	exp Rodent/
24.	(rat or rats or mouse or mice).ti.
25.	or/17-24
26.	9 not 25
27.	*analgesic agent/
28.	analgesic*.ti,ab.
29.	*paracetamol/
30.	(paracetamol or acetaminophen or acetaminophen or panadol).ti,ab.
31.	exp *nonsteroid antiinflammatory agent/
32.	(nsaid* or ((non-steroid* or nonsteroid*) adj (antiinflammatory or anti-inflammatory))).ti,ab.
33.	exp *cyclooxygenase 2 inhibitor/
34.	((cox 2 or cox2 or cox ii) adj inhibitor*).ti,ab.
35.	(cyclooxygenase adj2 inhibitor*).ti,ab.
36.	(ibuprofen or brufen or calprofen or ibuderm or ibugel or ibuleve or ibuspray or nurofen).ti,ab.
37.	(naproxen or diclofenac or voltarol or rheumatac or mefenamic or ponstan or mefenaminic or indomethacin or indometacin or indocid or ketoprofen or axorid or oruvail or piroxicam or feldene or meloxicam).ti,ab.

38.	(celecoxib or celebrex or etoricoxib or arcoxia or etodolac or eccoxolac or etopan or iodine).ti,ab.
39.	*pethidine/
40.	*meptazinol/
41.	(tiaprofenic or surgam or tenoxicam or mobiflex or nabumeton* or reliflex or aceclofenac or preservex or fenoprofen or flurbiprofen or froben or sulindac or tolfenamic or clotam or pethidin* or meperidin* or meptazinol or meptid).ti,ab.
42.	*opiate/
43.	*buprenorphine/ or *cocodamol/ or *codeine/ or *diamorphine/ or *dihydrocodeine/ or exp *fentanyl derivative/ or *hydromorphone/ or *methadone/ or *morphine/ or *oxycodone/ or *oxycodone plus paracetamol/ or *paracetamol plus tramadol/ or *pentazocine/ or *tramadol/
44.	(opioid* or opiate*).ti,ab.
45.	(tramadol or maxitram or tilodol or tramacet or zamadol or zydol or codeine or pentazocine or fortral or morphine or morphia or oxycodone or carexil or retelbon or zomestine or methadone or fentanyl or durogesic or fentalis or mezolar or opioidur or osmanil or hydromorphone or dihydromorphinone or palladone or buprenorphine or bupeaze or butrans or gabup or hapoctasin or panitaz or sevodyne or subutex or transtec or temgesic or diamorphine or dihydromorphine or paramorfan or paramorphan or dihydrocodeine).ti,ab.
46.	(anadin or co-codamol or cocodamol or co-dydramol or codydramol or paracodol or solpadeine or solpadol or ultramol or veganin or zapain).ti,ab.
47.	*nefopam/
48.	nefopam.ti,ab.
49.	*antidepressant agent/ or exp *tricyclic antidepressant agent/
50.	(anti-depressant* or antidepressant* or antidepressive* or anti-depressive*).ti,ab.
51.	(tricyclic* or amitriptyline or butriptyline or clomipramine or desipramine or dosulepin or dothiepin or doxepin or imipramine or iprindole or lofepramine or nortriptyline or opipramol or protriptyline or trimipramine).ti,ab.
52.	exp *serotonin uptake inhibitor/
53.	(SSRI* or selective serotonin reuptake inhibitor* or serotonin uptake inhibitor*).ti,ab.
54.	(citalopram or dapoxetine or escitalopram or fluoxetine or fluvoxamine or paroxetine or sertraline or trazodone or mirtazapine).ti,ab.
55.	exp *serotonin noradrenalin reuptake inhibitor/
56.	(snri* or ("serotonin and noradrenaline reuptake" adj inhibitor*).ti,ab.
57.	(venlafaxine or sibutramine or duloxetine or atomoxetine or desvenlafaxine or milnacipran or levomilnacipran).ti,ab.
58.	*gabapentin/ or *pregabalin/
59.	gabapentinoid*.ti,ab.
60.	(gabapentin or pregabalin).ti,ab.
61.	or/27-60
62.	26 and 61
63.	random*.ti,ab.
64.	factorial*.ti,ab.
65.	(crossover* or cross over*).ti,ab.
66.	((doubl* or singl*) adj blind*).ti,ab.
67.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
68.	crossover procedure/
69.	single blind procedure/
70.	randomized controlled trial/

71.	double blind procedure/
72.	or/63-71
73.	systematic review/
74.	meta-analysis/
75.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
76.	((systematic or evidence) adj3 (review* or overview*)).ti,ab.
77.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
78.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
79.	(search* adj4 literature).ab.
80.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
81.	cochrane.jw.
82.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
83.	or/73-82
84.	62 and (72 or 83)

Cochrane Library (Wiley) search terms

#1.	[mh "Arthritis, Rheumatoid"]
#2.	(rheumatoid near/2 (arthritis or arthrosis)):ti,ab
#3.	(caplan* near/2 syndrome):ti,ab
#4.	(felty* near/2 syndrome):ti,ab
#5.	(rheumatoid near/2 factor):ti,ab
#6.	((inflammatory or idiopathic) near/2 arthritis):ti,ab
#7.	inflammatory polyarthritis:ti,ab
#8.	(or #1-#7)
#9.	[mh ^analgesics]
#10.	analgesic*:ti,ab
#11.	[mh ^acetaminophen]
#12.	(paracetamol or acetaminophen or acetaminophen or panadol):ti,ab
#13.	[mh "anti inflammatory agents, non steroidal"]
#14.	(nsaid* or ((non-steroid* or nonsteroid* or non next steroid*) next (antiinflammatory or anti-inflammatory or "anti inflammatory"))):ti,ab
#15.	(("cox 2" or cox2 or "cox ii") next inhibitor*):ti,ab
#16.	(cyclooxygenase near/2 inhibitor*):ti,ab
#17.	(ibuprofen or brufen or calprofen or ibuderm or ibugel or ibuleve or ibuspray or nurofen):ti,ab
#18.	(naproxen or diclofenac or voltarol or rheumatac or mefenamic or ponstan or mefenaminic or indomethacin or indometacin or indocid or ketoprofen or axorid or oruvail or piroxicam or feldene or meloxicam):ti,ab
#19.	(celecoxib or celebrex or etoricoxib or arcoxia or etodolac or eccoxolac or etopan or lodine):ti,ab
#20.	[mh "analgesics, opioid"]
#21.	(opioid* or opiate*):ti,ab
#22.	(tramadol or maxitram or tilodol or tramacet or zamadol or zydol or codeine or pentazocine or fortral or morphine or morphia or oxycodone or carexil or retelbon or zomestine or methadone or fentanyl or durogesic or fentalis or mezolar or opiodur or osmanil or hydromorphone or dihydromorphinone or palladone or buprenorphine or

	bupeaze or butrans or gabup or hapoctasin or panitaz or sevodyne or subutex or transtec or temgesic or diamorphine or dihydromorphine or paramorfan or paramorphan or dihydrocodeine):ti,ab
#23.	(anadin or co-codamol or cocodamol or co-dydramol or codydramol or paracodol or solpadeine or solpadol or ultramol or veganin or zapain):ti,ab
#24.	[mh ^nefopam]
#25.	nefopam:ti,ab
#26.	[mh "antidepressive agents"]
#27.	(anti-depressant* or antidepressant* or antidepressive* or anti-depressive*) .ti,ab
#28.	(tricyclic* or amitriptyline or butriptyline or clomipramine or desipramine or dosulepin or dothiepin or doxepin or imipramine or iprindole or lofepramine or nortriptyline or opipramol or protriptyline or trimipramine):ti,ab
#29.	[mh "serotonin uptake inhibitors"]
#30.	[mh ^trazodone]
#31.	(SSRI* or "selective serotonin reuptake" next inhibitor* or "serotonin uptake" next inhibitor*) .ti,ab.
#32.	(citalopram or dapoxetine or escitalopram or fluoxetine or fluvoxamine or paroxetine or sertraline or trazodone or mirtazapine):ti,ab
#33.	[mh ^trazodone]
#34.	[mh "serotonin and noradrenaline reuptake inhibitors"]
#35.	(snri* or ("serotonin and noradrenaline reuptake" next inhibitor*)):ti,ab
#36.	(venlafaxine or sibutramine or duloxetine or atomoxetine or desvenlafaxine or milnacipran or levomilnacipran):ti,ab
#37.	[mh "gamma-aminobutyric acid"]
#38.	gabapentinoid*:ti,ab
#39.	(gabapentin or pregabalin):ti,ab
#40.	(tiaprofenic or surgam or tenoxicam or mobiflex or nabumeton* or reliflex or aceclofenac or preservex or fenoprofen or flurbiprofen or froben or sulindac or tolfenamic or clotam or pethidin* or meperidin* or meptazinol or meptid):ti,ab
#41.	[mh ^fenoprofen]
#42.	[mh ^meptazinol]
#43.	(or #9-#42)
#44.	#8 and #43

A.1.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to rheumatoid arthritis population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics studies.

Table 2: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 06 October 2017	Exclusions Health economics studies
Embase	2014– 06 October 2017	Exclusions Health economics studies
Centre for Research and	HTA - 2001 – 06 October 2017	None

Database	Dates searched	Search filter used
Dissemination (CRD)	NHSEED - 2001 – 31 March 2015	

Medline (Ovid) search terms

1.	exp Arthritis, Rheumatoid/
2.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
3.	(caplan* adj2 syndrome).ti,ab.
4.	(felty* adj2 syndrome).ti,ab.
5.	(rheumatoid adj2 factor).ti,ab.
6.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
7.	"inflammatory polyarthritis".ti,ab.
8.	or/1-7
9.	limit 8 to English language
10.	letter/
11.	editorial/
12.	news/
13.	exp historical article/
14.	Anecdotes as Topic/
15.	comment/
16.	case report/
17.	(letter or comment*).ti.
18.	or/10-17
19.	randomized controlled trial/ or random*.ti,ab.
20.	18 not 19
21.	animals/ not humans/
22.	Animals, Laboratory/
23.	exp animal experiment/
24.	exp animal model/
25.	exp Rodentia/
26.	(rat or rats or mouse or mice).ti.
27.	or/20-26
28.	9 not 27
29.	Economics/
30.	Value of life/
31.	exp "Costs and Cost Analysis"/
32.	exp Economics, Hospital/
33.	exp Economics, Medical/
34.	Economics, Nursing/
35.	Economics, Pharmaceutical/
36.	exp "Fees and Charges"/
37.	exp Budgets/
38.	budget*.ti,ab.
39.	cost*.ti.

40.	(economic* or pharmaco?economic*).ti.
41.	(price* or pricing*).ti,ab.
42.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
43.	(financ* or fee or fees).ti,ab.
44.	(value adj2 (money or monetary)).ti,ab.
45.	or/29-44
46.	exp models, economic/
47.	*Models, Theoretical/
48.	*Models, Organizational/
49.	markov chains/
50.	monte carlo method/
51.	exp Decision Theory/
52.	(markov* or monte carlo).ti,ab.
53.	econom* model*.ti,ab.
54.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
55.	or/46-54
56.	28 and (45 or 55)

Embase (Ovid) search terms

1.	exp *rheumatoid arthritis/
2.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
3.	(caplan* adj2 syndrome).ti,ab.
4.	(felty* adj2 syndrome).ti,ab.
5.	(rheumatoid adj2 factor).ti,ab.
6.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
7.	"inflammatory polyarthritis".ti,ab.
8.	or/1-7
9.	limit 8 to English language
10.	letter.pt. or letter/
11.	note.pt.
12.	editorial.pt.
13.	case report/ or case study/
14.	(letter or comment*).ti.
15.	or/10-14
16.	randomized controlled trial/ or random*.ti,ab.
17.	15 not 16
18.	animal/ not human/
19.	nonhuman/
20.	exp Animal Experiment/
21.	exp Experimental Animal/
22.	animal model/
23.	exp Rodent/

24.	(rat or rats or mouse or mice).ti.
25.	or/17-24
26.	9 not 25
27.	statistical model/
28.	exp economic aspect/
29.	27 and 28
30.	*theoretical model/
31.	*nonbiological model/
32.	stochastic model/
33.	decision theory/
34.	decision tree/
35.	monte carlo method/
36.	(markov* or monte carlo).ti,ab.
37.	econom* model*.ti,ab.
38.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
39.	or/29-38
40.	*health economics/
41.	exp *economic evaluation/
42.	exp *health care cost/
43.	exp *fee/
44.	budget/
45.	funding/
46.	budget*.ti,ab.
47.	cost*.ti.
48.	(economic* or pharmaco?economic*).ti.
49.	(price* or pricing*).ti,ab.
50.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
51.	(financ* or fee or fees).ti,ab.
52.	(value adj2 (money or monetary)).ti,ab.
53.	or/40-52
54.	26 and (39 or 53)

NHS EED and HTA (CRD) search terms

#1.	MeSH DESCRIPTOR Arthritis, Rheumatoid EXPLODE ALL TREES
#2.	((rheumatoid adj2 (arthritis or arthrosis)))
#3.	((caplan* adj2 syndrome))
#4.	((felty* adj2 syndrome))
#5.	((rheumatoid adj2 factor))
#6.	((inflammatory or idiopathic) adj2 arthritis))
#7.	("inflammatory polyarthritis")
#8.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

A.2 Rheumatoid Arthritis search strategy 2

This literature search strategy was used for the following review;

- Disease-modifying anti-rheumatic drugs (DMARDs)

A.2.1 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 3: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 06 October 2017	Exclusions Randomised controlled trials Systematic review studies
Embase (Ovid)	1974 – 06 October 2017	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2017 Issue 10 of 12 CENTRAL to 2017 Issue 9 of 12 DARE, and NHSEED to 2015 Issue 2 of 4 HTA to 2016 Issue 4 of 4	None

Methotrexate – only searched from 2016 onwards as there is an existing Cochrane review CD10227 (Source : DOI: 10.1002/14651858.CD010227.pub2) published 29 August 2016.

Medline (Ovid) search terms

88.	exp Arthritis, Rheumatoid/
89.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
90.	(caplan* adj2 syndrome).ti,ab.
91.	(felty* adj2 syndrome).ti,ab.
92.	(rheumatoid adj2 factor).ti,ab.
93.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
94.	"inflammatory polyarthritis".ti,ab.
95.	or/1-7
96.	limit 8 to English language
97.	letter/
98.	editorial/
99.	news/
100.	exp historical article/
101.	Anecdotes as Topic/

102.	comment/
103.	case report/
104.	(letter or comment*).ti.
105.	or/10-17
106.	randomized controlled trial/ or random*.ti,ab.
107.	18 not 19
108.	animals/ not humans/
109.	Animals, Laboratory/
110.	exp Animal Experimentation/
111.	exp Models, Animal/
112.	exp Rodentia/
113.	(rat or rats or mouse or mice).ti.
114.	or/20-26
115.	9 not 27
116.	Methotrexate/
117.	(Methotrexate or amet?opterin* or mexate or Abitrexate or Met?opterin* or Antifolan or Emt?exate or Enthexate or Farmitrexate or Folex or Ledertrexate or Methoblastin* or Methohexate or Methotrate or Methylaminopterin* or Metotrexate or Mtx or Novatrex or Rheumatrex or maxtrex).ti,ab.
118.	29 or 30
119.	28 and 31
120.	Hydroxychloroquine/
121.	(hydroxychloroquin* or Plaquenil or Quinoric or hydroxychlorochin* or oxychlorochin* or oxychloroquin*).ti,ab.
122.	(Leflunomide or Arava).ti,ab.
123.	Sulfasalazine/
124.	(sulfasalazin* or Salazopyrin* or Sulazin* or asulfidin* or azulfadin* or azulfidin* or colo-pleon or pleon or pyralin* or salazosulfapyridin* or salicylazosulfapyridin* or ucine or ulcol).ti,ab.
125.	or/33-37
126.	28 and 38
127.	randomized controlled trial.pt.
128.	controlled clinical trial.pt.
129.	randomi#ed.ti,ab.
130.	placebo.ab.
131.	drug therapy.fs.
132.	randomly.ti,ab.
133.	trial.ab.
134.	groups.ab.
135.	or/40-47
136.	Clinical Trials as topic.sh.
137.	trial.ti.
138.	or/40-43,45,49-50
139.	Meta-Analysis/
140.	Meta-Analysis as Topic/
141.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
142.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.

143.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
144.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
145.	(search* adj4 literature).ab.
146.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
147.	cochrane.jw.
148.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
149.	or/52-61
150.	32 and (51 or 62)
151.	39 and (51 or 62)
152.	(2016* or 2017*).ed,dc.
153.	63 and 65
154.	64 or 66

Embase (Ovid) search terms

85.	exp *rheumatoid arthritis/
86.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
87.	(caplan* adj2 syndrome).ti,ab.
88.	(felty* adj2 syndrome).ti,ab.
89.	(rheumatoid adj2 factor).ti,ab.
90.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
91.	"inflammatory polyarthritis".ti,ab.
92.	or/1-7
93.	limit 8 to English language
94.	letter.pt. or letter/
95.	note.pt.
96.	editorial.pt.
97.	case report/ or case study/
98.	(letter or comment*).ti.
99.	or/10-14
100.	randomized controlled trial/ or random*.ti,ab.
101.	15 not 16
102.	animal/ not human/
103.	nonhuman/
104.	exp Animal Experiment/
105.	exp Experimental Animal/
106.	animal model/
107.	exp Rodent/
108.	(rat or rats or mouse or mice).ti.
109.	or/17-24
110.	9 not 25
111.	*methotrexate/
112.	(Methotrexate or amet?opterin* or mexate or Abitrexate or Met?opterin* or Antifolan or Emt?exate or Enthexate or Farnitrexate or Folex or Ledertrexate or Methoblastin* or Methohexate or Methotrate or Methylaminopterin* or Metotrexate or Mtx or Novatrex or

	Rheumatrex or maxtrex).ti,ab.
113.	27 or 28
114.	26 and 29
115.	*hydroxychloroquine/ or *hydroxychloroquine sulfate/
116.	(hydroxychloroquin* or Plaquenil or Quinoric or hydroxychlorochin* or oxychlorochin* or oxychloroquin*).ti,ab.
117.	*leflunomide/
118.	(Leflunomide or Arava).ti,ab.
119.	*salazosulfapyridine/
120.	(sulfasalazin* or Salazopyrin* or Sulazin* or asulfidin* or azulfadin* or azulfidin* or colopleon or pleon or pyralin* or salazosulfapyridin* or salicylazosulfapyridin* or ucine or ulcol).ti,ab.
121.	or/31-36
122.	26 and 37
123.	random*.ti,ab.
124.	factorial*.ti,ab.
125.	(crossover* or cross over*).ti,ab.
126.	((doubl* or singl*) adj blind*).ti,ab.
127.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
128.	crossover procedure/
129.	single blind procedure/
130.	randomized controlled trial/
131.	double blind procedure/
132.	or/39-47
133.	systematic review/
134.	meta-analysis/
135.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
136.	((systematic or evidence) adj3 (review* or overview*)).ti,ab.
137.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
138.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
139.	(search* adj4 literature).ab.
140.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
141.	cochrane.jw.
142.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
143.	or/49-58
144.	30 and (48 or 59)
145.	(2016* or 2017*).dc.
146.	60 and 61
147.	38 and (48 or 59)
148.	62 or 63

Cochrane Library (Wiley) search terms

#45.	[mh "Arthritis, Rheumatoid"]
#46.	(rheumatoid near/2 (arthritis or arthrosis)).ti,ab
#47.	(caplan* near/2 syndrome):ti,ab

#48.	(felty* near/2 syndrome):ti,ab
#49.	(rheumatoid near/2 factor):ti,ab
#50.	((inflammatory or idiopathic) near/2 arthritis):ti,ab
#51.	inflammatory polyarthritis:ti,ab
#52.	(or #1-#7)
#53.	[mh ^Methotrexate]
#54.	(Methotrexate or amet?opterin* or mexate or Abitrexate or Met?opterin* or Antifolan or Emt?exate or Enthexate or Farmitrexate or Folex or Ledertrexate or Methoblastin* or Methohexate or Methotrate or Methylaminopterin* or Metotrexate or Mtx or Novatrex or Rheumatrex or maxtrex):ti,ab
#55.	#8 and #10 Publication Year from 2016 to 2017
#56.	[mh ^Hydroxychloroquine]
#57.	(hydroxychloroquin* or Plaquenil or Quinoric or hydroxychlorochin* or oxychlorochin* or oxychloroquin*):ti,ab
#58.	(Leflunomide or Arava):ti,ab
#59.	[mh ^sulfasalazine]
#60.	(sulfasalazin* or Salazopyrin* or Sulazin* or asulfidin* or azulfadin* or azulfidin* or colopleon or pleon or pyralin* or salazosulfapyridin* or salicylazosulfapyridin* or ucine or ulcol):ti,ab
#61.	#12 or #13 or #14 or #15 or #16
#62.	#8 and #17
#63.	#11 or #18

A.2.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to rheumatoid arthritis population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics studies.

Table 4: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 06 October 2017	Exclusions Health economics studies
Embase	2014– 06 October 2017	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - 2001 – 06 October 2017 NHSEED - 2001 – 31 March 2015	None

Medline (Ovid) search terms

57.	exp Arthritis, Rheumatoid/
58.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
59.	(caplan* adj2 syndrome).ti,ab.
60.	(felty* adj2 syndrome).ti,ab.
61.	(rheumatoid adj2 factor).ti,ab.

62.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
63.	"inflammatory polyarthritis".ti,ab.
64.	or/1-7
65.	limit 8 to English language
66.	letter/
67.	editorial/
68.	news/
69.	exp historical article/
70.	Anecdotes as Topic/
71.	comment/
72.	case report/
73.	(letter or comment*).ti.
74.	or/10-17
75.	randomized controlled trial/ or random*.ti,ab.
76.	18 not 19
77.	animals/ not humans/
78.	Animals, Laboratory/
79.	exp animal experiment/
80.	exp animal model/
81.	exp Rodentia/
82.	(rat or rats or mouse or mice).ti.
83.	or/20-26
84.	9 not 27
85.	Economics/
86.	Value of life/
87.	exp "Costs and Cost Analysis"/
88.	exp Economics, Hospital/
89.	exp Economics, Medical/
90.	Economics, Nursing/
91.	Economics, Pharmaceutical/
92.	exp "Fees and Charges"/
93.	exp Budgets/
94.	budget*.ti,ab.
95.	cost*.ti.
96.	(economic* or pharmaco?economic*).ti.
97.	(price* or pricing*).ti,ab.
98.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
99.	(financ* or fee or fees).ti,ab.
100.	(value adj2 (money or monetary)).ti,ab.
101.	or/29-44
102.	exp models, economic/
103.	*Models, Theoretical/
104.	*Models, Organizational/

105.	markov chains/
106.	monte carlo method/
107.	exp Decision Theory/
108.	(markov* or monte carlo).ti,ab.
109.	econom* model*.ti,ab.
110.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
111.	or/46-54
112.	28 and (45 or 55)

Embase (Ovid) search terms

55.	exp *rheumatoid arthritis/
56.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
57.	(caplan* adj2 syndrome).ti,ab.
58.	(felty* adj2 syndrome).ti,ab.
59.	(rheumatoid adj2 factor).ti,ab.
60.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
61.	"inflammatory polyarthritis".ti,ab.
62.	or/1-7
63.	limit 8 to English language
64.	letter.pt. or letter/
65.	note.pt.
66.	editorial.pt.
67.	case report/ or case study/
68.	(letter or comment*).ti.
69.	or/10-14
70.	randomized controlled trial/ or random*.ti,ab.
71.	15 not 16
72.	animal/ not human/
73.	nonhuman/
74.	exp Animal Experiment/
75.	exp Experimental Animal/
76.	animal model/
77.	exp Rodent/
78.	(rat or rats or mouse or mice).ti.
79.	or/17-24
80.	9 not 25
81.	statistical model/
82.	exp economic aspect/
83.	27 and 28
84.	*theoretical model/
85.	*nonbiological model/
86.	stochastic model/

87.	decision theory/
88.	decision tree/
89.	monte carlo method/
90.	(markov* or monte carlo).ti,ab.
91.	econom* model*.ti,ab.
92.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
93.	or/29-38
94.	*health economics/
95.	exp *economic evaluation/
96.	exp *health care cost/
97.	exp *fee/
98.	budget/
99.	funding/
100.	budget*.ti,ab.
101.	cost*.ti.
102.	(economic* or pharmaco?economic*).ti.
103.	(price* or pricing*).ti,ab.
104.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
105.	(financ* or fee or fees).ti,ab.
106.	(value adj2 (money or monetary)).ti,ab.
107.	or/40-52
108.	26 and (39 or 53)

NHS EED and HTA (CRD) search terms

#9.	MeSH DESCRIPTOR Arthritis, Rheumatoid EXPLODE ALL TREES
#10.	((rheumatoid adj2 (arthritis or arthrosis)))
#11.	((caplan* adj2 syndrome))
#12.	((felty* adj2 syndrome))
#13.	((rheumatoid adj2 factor))
#14.	((((inflammatory or idiopathic) adj2 arthritis))
#15.	("inflammatory polyarthritis")
#16.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

A.3 Rheumatoid Arthritis search strategy 3

This literature search strategy was used for the following review;

- Frequency of monitoring in rheumatoid arthritis

A.3.1 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 5: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 06 October 2017	Exclusions Randomised controlled trials Systematic review studies
Embase (Ovid)	1974 – 06 October 2017	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2017 Issue 10 of 12 CENTRAL to 2017 Issue 9 of 12 DARE, and NHSEED to 2015 Issue 2 of 4 HTA to 2016 Issue 4 of 4	None

Medline (Ovid) search terms

155.	exp Arthritis, Rheumatoid/
156.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
157.	(caplan* adj2 syndrome).ti,ab.
158.	(felty* adj2 syndrome).ti,ab.
159.	(rheumatoid adj2 factor).ti,ab.
160.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
161.	"inflammatory polyarthritis".ti,ab.
162.	or/1-7
163.	limit 8 to English language
164.	letter/
165.	editorial/
166.	news/
167.	exp historical article/
168.	Anecdotes as Topic/
169.	comment/
170.	case report/
171.	(letter or comment*).ti.
172.	or/10-17
173.	randomized controlled trial/ or random*.ti,ab.
174.	18 not 19
175.	animals/ not humans/
176.	Animals, Laboratory/

177.	exp Animal Experimentation/
178.	exp Models, Animal/
179.	exp Rodentia/
180.	(rat or rats or mouse or mice).ti.
181.	or/20-26
182.	9 not 27
183.	((monit* or assess* or reassess* or re-assess* or review* or follow-up or followup) adj5 (month* or bimonth* or quarter* or annual* or frequen* or schedul* or interval* or regular* or intens* or routine* or timing)).ti,ab.
184.	(rapid* adj1 access*).ti,ab.
185.	(review* adj2 request*).ti,ab.
186.	or/29-31
187.	28 and 32
188.	randomized controlled trial.pt.
189.	controlled clinical trial.pt.
190.	randomi#ed.ti,ab.
191.	placebo.ab.
192.	randomly.ti,ab.
193.	Clinical Trials as topic.sh.
194.	trial.ti.
195.	or/34-40
196.	Meta-Analysis/
197.	exp Meta-Analysis as Topic/
198.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
199.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
200.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
201.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
202.	(search* adj4 literature).ab.
203.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
204.	cochrane.jw.
205.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
206.	or/42-51
207.	33 and (41 or 52)

Embase (Ovid) search terms

149.	exp *rheumatoid arthritis/
150.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
151.	(caplan* adj2 syndrome).ti,ab.
152.	(felty* adj2 syndrome).ti,ab.
153.	(rheumatoid adj2 factor).ti,ab.
154.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
155.	"inflammatory polyarthritis".ti,ab.
156.	or/1-7
157.	limit 8 to English language

158.	letter.pt. or letter/
159.	note.pt.
160.	editorial.pt.
161.	case report/ or case study/
162.	(letter or comment*).ti.
163.	or/10-14
164.	randomized controlled trial/ or random*.ti,ab.
165.	15 not 16
166.	animal/ not human/
167.	nonhuman/
168.	exp Animal Experiment/
169.	exp Experimental Animal/
170.	animal model/
171.	exp Rodent/
172.	(rat or rats or mouse or mice).ti.
173.	or/17-24
174.	9 not 25
175.	((monit* or assess* or reassess* or re-assess* or review* or follow-up or followup) adj5 (month* or bimonth* or quarter* or annual* or frequen* or schedul* or interval* or regular* or intens* or routine* or timing)).ti,ab.
176.	(rapid* adj1 access*).ti,ab.
177.	(review* adj2 request*).ti,ab.
178.	or/27-29
179.	26 and 30
180.	random*.ti,ab.
181.	factorial*.ti,ab.
182.	(crossover* or cross over*).ti,ab.
183.	((doubl* or singl*) adj blind*).ti,ab.
184.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
185.	crossover procedure/
186.	single blind procedure/
187.	randomized controlled trial/
188.	double blind procedure/
189.	or/32-40
190.	systematic review/
191.	meta-analysis/
192.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
193.	((systematic or evidence) adj3 (review* or overview*)).ti,ab.
194.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
195.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
196.	(search* adj4 literature).ab.
197.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
198.	cochrane.jw.

199.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
200.	or/42-51
201.	31 and (41 or 52)

Cochrane Library (Wiley) search terms

#64.	[mh "Arthritis, Rheumatoid"]
#65.	(rheumatoid near/2 (arthritis or arthrosis)).ti,ab
#66.	(caplan* near/2 syndrome).ti,ab
#67.	(felty* near/2 syndrome).ti,ab
#68.	(rheumatoid near/2 factor).ti,ab
#69.	((inflammatory or idiopathic) near/2 arthritis).ti,ab
#70.	inflammatory polyarthritis.ti,ab
#71.	(or #1-#7)
#72.	((monit* or assess* or reassess* or re-assess* or review* or follow-up or followup) near/5 (month* or bimonth* or quarter* or annual* or frequen* or schedul* or interval* or regular* or intens* or routine* or timing)).ti,ab
#73.	(rapid* near/1 access*).ti,ab
#74.	(review* near/2 request*).ti,ab
#75.	#9 or #10 or #11
#76.	#9 and #12

A.3.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to rheumatoid arthritis population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics studies.

Table 6: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 06 October 2017	Exclusions Health economics studies
Embase	2014– 06 October 2017	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - 2001 – 06 October 2017 NHSEED - 2001 – 31 March 2015	None

Medline (Ovid) search terms

113.	exp Arthritis, Rheumatoid/
114.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
115.	(caplan* adj2 syndrome).ti,ab.
116.	(felty* adj2 syndrome).ti,ab.
117.	(rheumatoid adj2 factor).ti,ab.
118.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
119.	"inflammatory polyarthritis".ti,ab.

120.	or/1-7
121.	limit 8 to English language
122.	letter/
123.	editorial/
124.	news/
125.	exp historical article/
126.	Anecdotes as Topic/
127.	comment/
128.	case report/
129.	(letter or comment*).ti.
130.	or/10-17
131.	randomized controlled trial/ or random*.ti,ab.
132.	18 not 19
133.	animals/ not humans/
134.	Animals, Laboratory/
135.	exp animal experiment/
136.	exp animal model/
137.	exp Rodentia/
138.	(rat or rats or mouse or mice).ti.
139.	or/20-26
140.	9 not 27
141.	Economics/
142.	Value of life/
143.	exp "Costs and Cost Analysis"/
144.	exp Economics, Hospital/
145.	exp Economics, Medical/
146.	Economics, Nursing/
147.	Economics, Pharmaceutical/
148.	exp "Fees and Charges"/
149.	exp Budgets/
150.	budget*.ti,ab.
151.	cost*.ti.
152.	(economic* or pharmaco?economic*).ti.
153.	(price* or pricing*).ti,ab.
154.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
155.	(financ* or fee or fees).ti,ab.
156.	(value adj2 (money or monetary)).ti,ab.
157.	or/29-44
158.	exp models, economic/
159.	*Models, Theoretical/
160.	*Models, Organizational/
161.	markov chains/
162.	monte carlo method/

163.	exp Decision Theory/
164.	(markov* or monte carlo).ti,ab.
165.	econom* model*.ti,ab.
166.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
167.	or/46-54
168.	28 and (45 or 55)

Embase (Ovid) search terms

109.	exp *rheumatoid arthritis/
110.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
111.	(caplan* adj2 syndrome).ti,ab.
112.	(felty* adj2 syndrome).ti,ab.
113.	(rheumatoid adj2 factor).ti,ab.
114.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
115.	"inflammatory polyarthritis".ti,ab.
116.	or/1-7
117.	limit 8 to English language
118.	letter.pt. or letter/
119.	note.pt.
120.	editorial.pt.
121.	case report/ or case study/
122.	(letter or comment*).ti.
123.	or/10-14
124.	randomized controlled trial/ or random*.ti,ab.
125.	15 not 16
126.	animal/ not human/
127.	nonhuman/
128.	exp Animal Experiment/
129.	exp Experimental Animal/
130.	animal model/
131.	exp Rodent/
132.	(rat or rats or mouse or mice).ti.
133.	or/17-24
134.	9 not 25
135.	statistical model/
136.	exp economic aspect/
137.	27 and 28
138.	*theoretical model/
139.	*nonbiological model/
140.	stochastic model/
141.	decision theory/
142.	decision tree/

143.	monte carlo method/
144.	(markov* or monte carlo).ti,ab.
145.	econom* model*.ti,ab.
146.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
147.	or/29-38
148.	*health economics/
149.	exp *economic evaluation/
150.	exp *health care cost/
151.	exp *fee/
152.	budget/
153.	funding/
154.	budget*.ti,ab.
155.	cost*.ti.
156.	(economic* or pharmaco?economic*).ti.
157.	(price* or pricing*).ti,ab.
158.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
159.	(financ* or fee or fees).ti,ab.
160.	(value adj2 (money or monetary)).ti,ab.
161.	or/40-52
162.	26 and (39 or 53)

NHS EED and HTA (CRD) search terms

#17.	MeSH DESCRIPTOR Arthritis, Rheumatoid EXPLODE ALL TREES
#18.	((rheumatoid adj2 (arthritis or arthrosis)))
#19.	((caplan* adj2 syndrome))
#20.	((felty* adj2 syndrome))
#21.	((rheumatoid adj2 factor))
#22.	((((inflammatory or idiopathic) adj2 arthritis))
#23.	("inflammatory polyarthritis")
#24.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

A.4 Rheumatoid Arthritis search strategy 4

This literature search strategy was used for the following review;

- Prognostic factors

A.4.1 Clinical search literature search strategy

Searches were constructed using the following approach:

- Population AND Prognostic/risk factor terms AND Study filter

Table 7: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 09 October 2017	Exclusions Prognostic studies
Embase (Ovid)	1974 – 09 October 2017	Exclusions Prognostic studies

Medline (Ovid) search terms

208.	exp Arthritis, Rheumatoid/
209.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
210.	(caplan* adj2 syndrome).ti,ab.
211.	(felty* adj2 syndrome).ti,ab.
212.	(rheumatoid adj2 factor).ti,ab.
213.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
214.	"inflammatory polyarthritis".ti,ab.
215.	or/1-7
216.	limit 8 to English language
217.	letter/
218.	editorial/
219.	news/
220.	exp historical article/
221.	Anecdotes as Topic/
222.	comment/
223.	case report/
224.	(letter or comment*).ti.
225.	or/10-17
226.	randomized controlled trial/ or random*.ti,ab.
227.	18 not 19
228.	animals/ not humans/
229.	Animals, Laboratory/
230.	exp Animal Experimentation/
231.	exp Models, Animal/
232.	exp Rodentia/
233.	(rat or rats or mouse or mice).ti.
234.	or/20-26
235.	9 not 27
236.	(haq or health assessment questionnaire).ti,ab.
237.	C-Reactive Protein/
238.	(crp or c-reactive protein*).ti,ab.
239.	(ccp or anti-ccp or cyclic citrullinated peptide*).ti,ab.
240.	((x-ray or xray) adj3 (erosion or damage*)).ti,ab.
241.	(bone* adj3 (erosion or erod*)).ti,ab.
242.	((radiograph* or radiolog*) adj2 (damage or progression)).ti,ab.
243.	or/29-35

244.	28 and 36
245.	predict.ti.
246.	prognosis/
247.	(validat* or rule*).ti,ab.
248.	(predict* and (outcome* or risk* or model*)).ti,ab.
249.	((history or variable* or criteria or scor* or characteristic* or finding* or factor*) and (predict* or model* or decision* or identif*)).ti,ab.
250.	decision*.ti,ab. and Logistic models/
251.	(decision* and (model* or clinical*)).ti,ab.
252.	prognos*.ti,ab.
253.	(stratification or discrimination or discriminate or c statistic or "area under the curve" or AUC or calibration or indices or algorithm or multivariable).ti,ab.
254.	ROC curve/
255.	or/38-47
256.	37 and 48

Embase (Ovid) search terms

202.	exp *rheumatoid arthritis/
203.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
204.	(caplan* adj2 syndrome).ti,ab.
205.	(felty* adj2 syndrome).ti,ab.
206.	(rheumatoid adj2 factor).ti,ab.
207.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
208.	"inflammatory polyarthritis".ti,ab.
209.	or/1-7
210.	limit 8 to English language
211.	letter.pt. or letter/
212.	note.pt.
213.	editorial.pt.
214.	case report/ or case study/
215.	(letter or comment*).ti.
216.	or/10-14
217.	randomized controlled trial/ or random*.ti,ab.
218.	15 not 16
219.	animal/ not human/
220.	nonhuman/
221.	exp Animal Experiment/
222.	exp Experimental Animal/
223.	animal model/
224.	exp Rodent/
225.	(rat or rats or mouse or mice).ti.
226.	or/17-24
227.	9 not 25
228.	*health assessment questionnaire/
229.	(haq or health assessment questionnaire).ti,ab.
230.	*C reactive protein/

231.	(crp or c-reactive protein*).ti,ab.
232.	*cyclic citrullinated peptide antibody/
233.	(ccp or anti-ccp or cyclic citrullinated peptide*).ti,ab.
234.	*bone erosion/
235.	((x-ray or xray) adj3 (erosion or damage*)).ti,ab.
236.	(bone* adj3 (erosion or erod*)).ti,ab.
237.	((radiograph* or radiolog*) adj2 (damage or progression)).ti,ab.
238.	or/27-36
239.	26 and 37
240.	predict.ti.
241.	prognosis/
242.	(validat* or rule*).ti,ab.
243.	(predict* and (outcome* or risk* or model*)).ti,ab.
244.	((history or variable* or criteria or scor* or characteristic* or finding* or factor*) and (predict* or model* or decision* or identif* or prognos*)).ti,ab.
245.	decision*.ti,ab. and Statistical model/
246.	(decision* and (model* or clinical*)).ti,ab.
247.	prognos*.ti,ab.
248.	(stratification or discrimination or discriminate or c statistic or "area under the curve" or AUC or calibration or indices or algorithm or multivariable).ti,ab.
249.	Receiver operating characteristic/
250.	or/39-48
251.	38 and 49

A.4.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to rheumatoid arthritis population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics studies.

Table 8: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 06 October 2017	Exclusions Health economics studies
Embase	2014– 06 October 2017	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - 2001 – 06 October 2017 NHSEED - 2001 – 31 March 2015	None

Medline (Ovid) search terms

169.	exp Arthritis, Rheumatoid/
170.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
171.	(caplan* adj2 syndrome).ti,ab.
172.	(felty* adj2 syndrome).ti,ab.

173.	(rheumatoid adj2 factor).ti,ab.
174.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
175.	"inflammatory polyarthritis".ti,ab.
176.	or/1-7
177.	limit 8 to English language
178.	letter/
179.	editorial/
180.	news/
181.	exp historical article/
182.	Anecdotes as Topic/
183.	comment/
184.	case report/
185.	(letter or comment*).ti.
186.	or/10-17
187.	randomized controlled trial/ or random*.ti,ab.
188.	18 not 19
189.	animals/ not humans/
190.	Animals, Laboratory/
191.	exp animal experiment/
192.	exp animal model/
193.	exp Rodentia/
194.	(rat or rats or mouse or mice).ti.
195.	or/20-26
196.	9 not 27
197.	Economics/
198.	Value of life/
199.	exp "Costs and Cost Analysis"/
200.	exp Economics, Hospital/
201.	exp Economics, Medical/
202.	Economics, Nursing/
203.	Economics, Pharmaceutical/
204.	exp "Fees and Charges"/
205.	exp Budgets/
206.	budget*.ti,ab.
207.	cost*.ti.
208.	(economic* or pharmaco?economic*).ti.
209.	(price* or pricing*).ti,ab.
210.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)),ab.
211.	(financ* or fee or fees).ti,ab.
212.	(value adj2 (money or monetary)).ti,ab.
213.	or/29-44
214.	exp models, economic/
215.	*Models, Theoretical/

216.	*Models, Organizational/
217.	markov chains/
218.	monte carlo method/
219.	exp Decision Theory/
220.	(markov* or monte carlo).ti,ab.
221.	econom* model*.ti,ab.
222.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
223.	or/46-54
224.	28 and (45 or 55)

Embase (Ovid) search terms

163.	exp *rheumatoid arthritis/
164.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
165.	(caplan* adj2 syndrome).ti,ab.
166.	(felty* adj2 syndrome).ti,ab.
167.	(rheumatoid adj2 factor).ti,ab.
168.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
169.	"inflammatory polyarthritis".ti,ab.
170.	or/1-7
171.	limit 8 to English language
172.	letter.pt. or letter/
173.	note.pt.
174.	editorial.pt.
175.	case report/ or case study/
176.	(letter or comment*).ti.
177.	or/10-14
178.	randomized controlled trial/ or random*.ti,ab.
179.	15 not 16
180.	animal/ not human/
181.	nonhuman/
182.	exp Animal Experiment/
183.	exp Experimental Animal/
184.	animal model/
185.	exp Rodent/
186.	(rat or rats or mouse or mice).ti.
187.	or/17-24
188.	9 not 25
189.	statistical model/
190.	exp economic aspect/
191.	27 and 28
192.	*theoretical model/
193.	*nonbiological model/

194.	stochastic model/
195.	decision theory/
196.	decision tree/
197.	monte carlo method/
198.	(markov* or monte carlo).ti,ab.
199.	econom* model*.ti,ab.
200.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
201.	or/29-38
202.	*health economics/
203.	exp *economic evaluation/
204.	exp *health care cost/
205.	exp *fee/
206.	budget/
207.	funding/
208.	budget*.ti,ab.
209.	cost*.ti.
210.	(economic* or pharmaco?economic*).ti.
211.	(price* or pricing*).ti,ab.
212.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
213.	(financ* or fee or fees).ti,ab.
214.	(value adj2 (money or monetary)).ti,ab.
215.	or/40-52
216.	26 and (39 or 53)

NHS EED and HTA (CRD) search terms

#25.	MeSH DESCRIPTOR Arthritis, Rheumatoid EXPLODE ALL TREES
#26.	((rheumatoid adj2 (arthritis or arthrosis)))
#27.	((caplan* adj2 syndrome))
#28.	((felty* adj2 syndrome))
#29.	((rheumatoid adj2 factor))
#30.	((((inflammatory or idiopathic) adj2 arthritis))
#31.	("inflammatory polyarthritis")
#32.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

A.5 Rheumatoid Arthritis search strategy 5

This literature search strategy was used for the following review;

- Steroids for people with rheumatoid arthritis

A.5.1 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 9: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 09 October 2017	Exclusions Randomised controlled trials Systematic review studies
Embase (Ovid)	1974 – 09 October 2017	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2017 Issue 10 of 12 CENTRAL to 2017 Issue 9 of 12 DARE, and NHSEED to 2015 Issue 2 of 4 HTA to 2016 Issue 4 of 4	None

Medline (Ovid) search terms

257.	exp Arthritis, Rheumatoid/
258.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
259.	(caplan* adj2 syndrome).ti,ab.
260.	(felty* adj2 syndrome).ti,ab.
261.	(rheumatoid adj2 factor).ti,ab.
262.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
263.	"inflammatory polyarthritis".ti,ab.
264.	or/1-7
265.	limit 8 to English language
266.	letter/
267.	editorial/
268.	news/
269.	exp historical article/
270.	Anecdotes as Topic/
271.	comment/
272.	case report/
273.	(letter or comment*).ti.
274.	or/10-17
275.	randomized controlled trial/ or random*.ti,ab.
276.	18 not 19
277.	animals/ not humans/
278.	Animals, Laboratory/

279.	exp animal experiment/
280.	exp animal model/
281.	exp Rodentia/
282.	(rat or rats or mouse or mice).ti.
283.	or/20-26
284.	9 not 27
285.	exp Glucocorticoids/
286.	(corticosteroid* or steroid* or glucocorticoid*).ti,ab.
287.	(prednisolone or deltacortril or deltastab or pevanti or methylprednisolone or medrone or depo-medrone or solu-medrone or prednisone or lodotra or triamcinolone or ad cortyl or aureocort or kenalog).ti,ab.
288.	or/29-31
289.	28 and 32
290.	randomized controlled trial.pt.
291.	controlled clinical trial.pt.
292.	randomi#ed.ti,ab.
293.	placebo.ab.
294.	drug therapy.fs.
295.	randomly.ti,ab.
296.	trial.ab.
297.	groups.ab.
298.	or/34-41
299.	Clinical Trials as topic.sh.
300.	trial.ti.
301.	or/34-37,39,43-44
302.	Meta-Analysis/
303.	Meta-Analysis as Topic/
304.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
305.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
306.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
307.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
308.	(search* adj4 literature).ab.
309.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
310.	cochrane.jw.
311.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
312.	or/46-55
313.	33 and (45 or 56)

Embase (Ovid) search terms

252.	exp *rheumatoid arthritis/
253.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
254.	(caplan* adj2 syndrome).ti,ab.
255.	(felty* adj2 syndrome).ti,ab.
256.	(rheumatoid adj2 factor).ti,ab.

257.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
258.	"inflammatory polyarthritis".ti,ab.
259.	or/1-7
260.	limit 8 to English language
261.	letter.pt. or letter/
262.	note.pt.
263.	editorial.pt.
264.	case report/ or case study/
265.	(letter or comment*).ti.
266.	or/10-14
267.	randomized controlled trial/ or random*.ti,ab.
268.	15 not 16
269.	animal/ not human/
270.	nonhuman/
271.	exp Animal Experiment/
272.	exp Experimental Animal/
273.	animal model/
274.	exp Rodent/
275.	(rat or rats or mouse or mice).ti.
276.	or/17-24
277.	9 not 25
278.	exp *glucocorticoid/ or *corticosteroid/
279.	(corticosteroid* or steroid* or glucocorticoid*).ti,ab.
280.	(prednisolone or deltacortril or deltastab or pevanti or methylprednisolone or medrone or depo-medrone or solu-medrone or prednisone or lodotra or triamcinolone or ad cortyl or aureocort or kenalog).ti,ab.
281.	or/27-29
282.	26 and 30
283.	random*.ti,ab.
284.	factorial*.ti,ab.
285.	(crossover* or cross over*).ti,ab.
286.	((doubl* or singl*) adj blind*).ti,ab.
287.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
288.	crossover procedure/
289.	single blind procedure/
290.	randomized controlled trial/
291.	double blind procedure/
292.	or/32-40
293.	systematic review/
294.	meta-analysis/
295.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
296.	((systematic or evidence) adj3 (review* or overview*)).ti,ab.
297.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
298.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.

299.	(search* adj4 literature).ab.
300.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
301.	cochrane.jw.
302.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
303.	or/42-51
304.	31 and (41 or 52)

Cochrane Library (Wiley) search terms

#77.	[mh "Arthritis, Rheumatoid"]
#78.	(rheumatoid near/2 (arthritis or arthrosis)).ti,ab
#79.	(caplan* near/2 syndrome).ti,ab
#80.	(felty* near/2 syndrome).ti,ab
#81.	(rheumatoid near/2 factor).ti,ab
#82.	((inflammatory or idiopathic) near/2 arthritis).ti,ab
#83.	inflammatory polyarthritis.ti,ab
#84.	(or #1-#7)
#85.	[mh Glucocorticoids]
#86.	(corticosteroid* or steroid* or glucocorticoid*).ti,ab
#87.	(prednisolone or deltacortril or deltastab or pevanti or methylprednisolone or medrone or depo-medrone or solu-medrone or prednisone or lodotra or triamcinolone or ad cortyl or aureocort or kenalog).ti,ab
#88.	#9 or #10 or #11
#89.	#8 and #12

A.5.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to rheumatoid arthritis population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics studies.

Table 10: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 06 October 2017	Exclusions Health economics studies
Embase	2014– 06 October 2017	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - 2001 – 06 October 2017 NHSEED - 2001 – 31 March 2015	None

Medline (Ovid) search terms

225.	exp Arthritis, Rheumatoid/
226.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
227.	(caplan* adj2 syndrome).ti,ab.

228.	(felty* adj2 syndrome).ti,ab.
229.	(rheumatoid adj2 factor).ti,ab.
230.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
231.	"inflammatory polyarthritis".ti,ab.
232.	or/1-7
233.	limit 8 to English language
234.	letter/
235.	editorial/
236.	news/
237.	exp historical article/
238.	Anecdotes as Topic/
239.	comment/
240.	case report/
241.	(letter or comment*).ti.
242.	or/10-17
243.	randomized controlled trial/ or random*.ti,ab.
244.	18 not 19
245.	animals/ not humans/
246.	Animals, Laboratory/
247.	exp animal experiment/
248.	exp animal model/
249.	exp Rodentia/
250.	(rat or rats or mouse or mice).ti.
251.	or/20-26
252.	9 not 27
253.	Economics/
254.	Value of life/
255.	exp "Costs and Cost Analysis"/
256.	exp Economics, Hospital/
257.	exp Economics, Medical/
258.	Economics, Nursing/
259.	Economics, Pharmaceutical/
260.	exp "Fees and Charges"/
261.	exp Budgets/
262.	budget*.ti,ab.
263.	cost*.ti.
264.	(economic* or pharmaco?economic*).ti.
265.	(price* or pricing*).ti,ab.
266.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
267.	(financ* or fee or fees).ti,ab.
268.	(value adj2 (money or monetary)).ti,ab.
269.	or/29-44
270.	exp models, economic/

271.	*Models, Theoretical/
272.	*Models, Organizational/
273.	markov chains/
274.	monte carlo method/
275.	exp Decision Theory/
276.	(markov* or monte carlo).ti,ab.
277.	econom* model*.ti,ab.
278.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
279.	or/46-54
280.	28 and (45 or 55)

Embase (Ovid) search terms

217.	exp *rheumatoid arthritis/
218.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
219.	(caplan* adj2 syndrome).ti,ab.
220.	(felty* adj2 syndrome).ti,ab.
221.	(rheumatoid adj2 factor).ti,ab.
222.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
223.	"inflammatory polyarthritis".ti,ab.
224.	or/1-7
225.	limit 8 to English language
226.	letter.pt. or letter/
227.	note.pt.
228.	editorial.pt.
229.	case report/ or case study/
230.	(letter or comment*).ti.
231.	or/10-14
232.	randomized controlled trial/ or random*.ti,ab.
233.	15 not 16
234.	animal/ not human/
235.	nonhuman/
236.	exp Animal Experiment/
237.	exp Experimental Animal/
238.	animal model/
239.	exp Rodent/
240.	(rat or rats or mouse or mice).ti.
241.	or/17-24
242.	9 not 25
243.	statistical model/
244.	exp economic aspect/
245.	27 and 28
246.	*theoretical model/

247.	*nonbiological model/
248.	stochastic model/
249.	decision theory/
250.	decision tree/
251.	monte carlo method/
252.	(markov* or monte carlo).ti,ab.
253.	econom* model*.ti,ab.
254.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
255.	or/29-38
256.	*health economics/
257.	exp *economic evaluation/
258.	exp *health care cost/
259.	exp *fee/
260.	budget/
261.	funding/
262.	budget*.ti,ab.
263.	cost*.ti.
264.	(economic* or pharmaco?economic*).ti.
265.	(price* or pricing*).ti,ab.
266.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
267.	(financ* or fee or fees).ti,ab.
268.	(value adj2 (money or monetary)).ti,ab.
269.	or/40-52
270.	26 and (39 or 53)

NHS EED and HTA (CRD) search terms

#33.	MeSH DESCRIPTOR Arthritis, Rheumatoid EXPLODE ALL TREES
#34.	((rheumatoid adj2 (arthritis or arthrosis)))
#35.	((caplan* adj2 syndrome))
#36.	((felty* adj2 syndrome))
#37.	((rheumatoid adj2 factor))
#38.	((((inflammatory or idiopathic) adj2 arthritis))
#39.	("inflammatory polyarthritis")
#40.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

A.6 Rheumatoid Arthritis search strategy 6

This literature search strategy was used for the following reviews;

- Treat-to-target in rheumatoid arthritis
- Target for monitoring

A.6.1 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 11: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 09 October 2017	Exclusions Randomised controlled trials Systematic review studies
Embase (Ovid)	1974 – 09 October 2017	Exclusions Randomised controlled trials Systematic review studies
The Cochrane Library (Wiley)	Cochrane Reviews to 2017 Issue 10 of 12 CENTRAL to 2017 Issue 9 of 12 DARE, and NHSEED to 2015 Issue 2 of 4 HTA to 2016 Issue 4 of 4	None

Medline (Ovid) search terms

314.	exp Arthritis, Rheumatoid/
315.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
316.	(caplan* adj2 syndrome).ti,ab.
317.	(felty* adj2 syndrome).ti,ab.
318.	(rheumatoid adj2 factor).ti,ab.
319.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
320.	"inflammatory polyarthritis".ti,ab.
321.	or/1-7
322.	limit 8 to English language
323.	letter/
324.	editorial/
325.	news/
326.	exp historical article/
327.	Anecdotes as Topic/
328.	comment/
329.	case report/
330.	(letter or comment*).ti.
331.	or/10-17
332.	randomized controlled trial/ or random*.ti,ab.
333.	18 not 19
334.	animals/ not humans/
335.	Animals, Laboratory/
336.	exp animal experiment/
337.	exp animal model/

338.	exp Rodentia/
339.	(rat or rats or mouse or mice).ti.
340.	or/20-26
341.	9 not 27
342.	(tight* adj control*).ti,ab.
343.	t2t.ti,ab.
344.	((mission or aiming or aim or aimed or aims or achiev* or sustain* or reach*) adj2 remission).ti,ab.
345.	((treat* or therap*) adj2 (target* or goal*)).ti,ab.
346.	(symptom* adj2 (reduc* or improv* or control*)).ti,ab.
347.	low disease activity.ti,ab.
348.	(abrogat* adj2 inflammat*).ti,ab.
349.	optimi*.ti,ab.
350.	or/29-36
351.	28 and 37
352.	randomized controlled trial.pt.
353.	controlled clinical trial.pt.
354.	randomi#ed.ti,ab.
355.	placebo.ab.
356.	drug therapy.fs.
357.	randomly.ti,ab.
358.	trial.ab.
359.	groups.ab.
360.	or/39-46
361.	Clinical Trials as topic.sh.
362.	trial.ti.
363.	or/39-42,44,48-49
364.	Meta-Analysis/
365.	Meta-Analysis as Topic/
366.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
367.	((systematic* or evidence*) adj3 (review* or overview*)).ti,ab.
368.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
369.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
370.	(search* adj4 literature).ab.
371.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
372.	cochrane.jw.
373.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
374.	or/51-60
375.	38 and (50 or 61)

Embase (Ovid) search terms

305.	exp *rheumatoid arthritis/
306.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
307.	(caplan* adj2 syndrome).ti,ab.

308.	(felty* adj2 syndrome).ti,ab.
309.	(rheumatoid adj2 factor).ti,ab.
310.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
311.	"inflammatory polyarthritis".ti,ab.
312.	or/1-7
313.	limit 8 to English language
314.	letter.pt. or letter/
315.	note.pt.
316.	editorial.pt.
317.	case report/ or case study/
318.	(letter or comment*).ti.
319.	or/10-14
320.	randomized controlled trial/ or random*.ti,ab.
321.	15 not 16
322.	animal/ not human/
323.	nonhuman/
324.	exp Animal Experiment/
325.	exp Experimental Animal/
326.	animal model/
327.	exp Rodent/
328.	(rat or rats or mouse or mice).ti.
329.	or/17-24
330.	9 not 25
331.	(tight* adj control*).ti,ab.
332.	t2t.ti,ab.
333.	((mission or aiming or aim or aimed or aims or achiev* or sustain* or reach*) adj2 remission).ti,ab.
334.	((treat* or therap*) adj2 (target* or goal*)).ti,ab.
335.	(symptom* adj2 (reduc* or improv* or control*)).ti,ab.
336.	low disease activity.ti,ab.
337.	(abrogat* adj2 inflammat*).ti,ab.
338.	optimi*.ti,ab.
339.	or/27-34
340.	26 and 35
341.	random*.ti,ab.
342.	factorial*.ti,ab.
343.	(crossover* or cross over*).ti,ab.
344.	((doubl* or singl*) adj blind*).ti,ab.
345.	(assign* or allocat* or volunteer* or placebo*).ti,ab.
346.	crossover procedure/
347.	single blind procedure/
348.	randomized controlled trial/
349.	double blind procedure/
350.	or/37-45
351.	systematic review/

352.	meta-analysis/
353.	(meta analy* or metanaly* or metaanaly* or meta regression).ti,ab.
354.	((systematic or evidence) adj3 (review* or overview*)).ti,ab.
355.	(reference list* or bibliograph* or hand search* or manual search* or relevant journals).ab.
356.	(search strategy or search criteria or systematic search or study selection or data extraction).ab.
357.	(search* adj4 literature).ab.
358.	(medline or pubmed or cochrane or embase or psychlit or psyclit or psychinfo or psycinfo or cinahl or science citation index or bids or cancerlit).ab.
359.	cochrane.jw.
360.	((multiple treatment* or indirect or mixed) adj2 comparison*).ti,ab.
361.	or/47-56
362.	36 and (46 or 57)

Cochrane Library (Wiley) search terms

#90.	[mh "Arthritis, Rheumatoid"]
#91.	(rheumatoid near/2 (arthritis or arthrosis)).ti,ab
#92.	(caplan* near/2 syndrome).ti,ab
#93.	(felty* near/2 syndrome).ti,ab
#94.	(rheumatoid near/2 factor).ti,ab
#95.	((inflammatory or idiopathic) near/2 arthritis).ti,ab
#96.	inflammatory polyarthritis:ti,ab
#97.	(or #1-#7)
#98.	(tight* next control*).ti,ab
#99.	t2t:ti,ab
#100.	((mission or aiming or aim or aimed or aims or achiev* or sustain* or reach*) near/2 remission):ti,ab
#101.	((treat* or therap*) near/2 (target* or goal*)):ti,ab
#102.	(symptom* near/2 (reduc* or improv* or control*)):ti,ab
#103.	low disease activity:ti,ab
#104.	(abrogat* near/2 inflammat*):ti,ab
#105.	optimi*:ti,ab
#106.	(or #9-#16)
#107.	#8 and #17

A.6.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to rheumatoid arthritis population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics studies.

Table 12: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 06 October 2017	Exclusions Health economics studies

Database	Dates searched	Search filter used
Embase	2014– 06 October 2017	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - 2001 – 06 October 2017 NHSEED - 2001 – 31 March 2015	None

Medline (Ovid) search terms

281.	exp Arthritis, Rheumatoid/
282.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
283.	(caplan* adj2 syndrome).ti,ab.
284.	(felty* adj2 syndrome).ti,ab.
285.	(rheumatoid adj2 factor).ti,ab.
286.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
287.	"inflammatory polyarthritis".ti,ab.
288.	or/1-7
289.	limit 8 to English language
290.	letter/
291.	editorial/
292.	news/
293.	exp historical article/
294.	Anecdotes as Topic/
295.	comment/
296.	case report/
297.	(letter or comment*).ti.
298.	or/10-17
299.	randomized controlled trial/ or random*.ti,ab.
300.	18 not 19
301.	animals/ not humans/
302.	Animals, Laboratory/
303.	exp animal experiment/
304.	exp animal model/
305.	exp Rodentia/
306.	(rat or rats or mouse or mice).ti.
307.	or/20-26
308.	9 not 27
309.	Economics/
310.	Value of life/
311.	exp "Costs and Cost Analysis"/
312.	exp Economics, Hospital/
313.	exp Economics, Medical/
314.	Economics, Nursing/
315.	Economics, Pharmaceutical/

316.	exp "Fees and Charges"/
317.	exp Budgets/
318.	budget*.ti,ab.
319.	cost*.ti.
320.	(economic* or pharmaco?economic*).ti.
321.	(price* or pricing*).ti,ab.
322.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
323.	(financ* or fee or fees).ti,ab.
324.	(value adj2 (money or monetary)).ti,ab.
325.	or/29-44
326.	exp models, economic/
327.	*Models, Theoretical/
328.	*Models, Organizational/
329.	markov chains/
330.	monte carlo method/
331.	exp Decision Theory/
332.	(markov* or monte carlo).ti,ab.
333.	econom* model*.ti,ab.
334.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
335.	or/46-54
336.	28 and (45 or 55)

Embase (Ovid) search terms

271.	exp *rheumatoid arthritis/
272.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
273.	(caplan* adj2 syndrome).ti,ab.
274.	(felty* adj2 syndrome).ti,ab.
275.	(rheumatoid adj2 factor).ti,ab.
276.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
277.	"inflammatory polyarthritis".ti,ab.
278.	or/1-7
279.	limit 8 to English language
280.	letter.pt. or letter/
281.	note.pt.
282.	editorial.pt.
283.	case report/ or case study/
284.	(letter or comment*).ti.
285.	or/10-14
286.	randomized controlled trial/ or random*.ti,ab.
287.	15 not 16
288.	animal/ not human/
289.	nonhuman/
290.	exp Animal Experiment/

291.	exp Experimental Animal/
292.	animal model/
293.	exp Rodent/
294.	(rat or rats or mouse or mice).ti.
295.	or/17-24
296.	9 not 25
297.	statistical model/
298.	exp economic aspect/
299.	27 and 28
300.	*theoretical model/
301.	*nonbiological model/
302.	stochastic model/
303.	decision theory/
304.	decision tree/
305.	monte carlo method/
306.	(markov* or monte carlo).ti,ab.
307.	econom* model*.ti,ab.
308.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
309.	or/29-38
310.	*health economics/
311.	exp *economic evaluation/
312.	exp *health care cost/
313.	exp *fee/
314.	budget/
315.	funding/
316.	budget*.ti,ab.
317.	cost*.ti.
318.	(economic* or pharmaco?economic*).ti.
319.	(price* or pricing*).ti,ab.
320.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
321.	(financ* or fee or fees).ti,ab.
322.	(value adj2 (money or monetary)).ti,ab.
323.	or/40-52
324.	26 and (39 or 53)

NHS EED and HTA (CRD) search terms

#41.	MeSH DESCRIPTOR Arthritis, Rheumatoid EXPLODE ALL TREES
#42.	((rheumatoid adj2 (arthritis or arthrosis)))
#43.	((caplan* adj2 syndrome))
#44.	((felty* adj2 syndrome))
#45.	((rheumatoid adj2 factor))

#46.	((inflammatory or idiopathic) adj2 arthritis)
#47.	("inflammatory polyarthritis")
#48.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

A.7 Rheumatoid Arthritis search strategy 7

This literature search strategy was used for the following review;

- Ultrasound for monitoring rheumatoid arthritis
- Ultrasound for diagnosing rheumatoid arthritis

A.7.1 Clinical search literature search strategy

Searches were constructed using a PICO framework where population (P) terms were combined with Intervention (I) and in some cases Comparison (C) terms. Outcomes (O) are rarely used in search strategies for interventions as these concepts may not be well described in title, abstract or indexes and therefore difficult to retrieve. Search filters were applied to the search where appropriate.

Table 13: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline (Ovid)	1946 – 09 October 2017	Exclusions
Embase (Ovid)	1974 – 09 October 2017	Exclusions
The Cochrane Library (Wiley)	Cochrane Reviews to 2017 Issue 10 of 12 CENTRAL to 2017 Issue 9 of 12 DARE, and NHSEED to 2015 Issue 2 of 4 HTA to 2016 Issue 4 of 4	None

Medline (Ovid) search terms

376.	exp Arthritis, Rheumatoid/
377.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
378.	(caplan* adj2 syndrome).ti,ab.
379.	(felty* adj2 syndrome).ti,ab.
380.	(rheumatoid adj2 factor).ti,ab.
381.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
382.	"inflammatory polyarthritis".ti,ab.
383.	or/1-7
384.	limit 8 to English language
385.	letter/
386.	editorial/
387.	news/
388.	exp historical article/

389.	Anecdotes as Topic/
390.	comment/
391.	case report/
392.	(letter or comment*).ti.
393.	or/10-17
394.	randomized controlled trial/ or random*.ti,ab.
395.	18 not 19
396.	animals/ not humans/
397.	Animals, Laboratory/
398.	exp Animal Experimentation/
399.	exp Models, Animal/
400.	exp Rodentia/
401.	(rat or rats or mouse or mice).ti.
402.	or/20-26
403.	9 not 27
404.	exp Ultrasonography/
405.	(ultrasound* or ultrason* or echograph* or echotomograph* or doppler).ti,ab.
406.	29 or 30
407.	28 and 31

Embase (Ovid) search terms

363.	exp *rheumatoid arthritis/
364.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
365.	(caplan* adj2 syndrome).ti,ab.
366.	(felty* adj2 syndrome).ti,ab.
367.	(rheumatoid adj2 factor).ti,ab.
368.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
369.	"inflammatory polyarthritis".ti,ab.
370.	or/1-7
371.	limit 8 to English language
372.	letter.pt. or letter/
373.	note.pt.
374.	editorial.pt.
375.	case report/ or case study/
376.	(letter or comment*).ti.
377.	or/10-14
378.	randomized controlled trial/ or random*.ti,ab.
379.	15 not 16
380.	animal/ not human/
381.	nonhuman/
382.	exp Animal Experiment/
383.	exp Experimental Animal/
384.	animal model/
385.	exp Rodent/
386.	(rat or rats or mouse or mice).ti.
387.	or/17-24

388.	9 not 25
389.	exp *echography/
390.	(ultrasound* or ultrason* or echograph* or echotomograph* or doppler).ti,ab.
391.	27 or 28
392.	26 and 29

Cochrane Library (Wiley) search terms

#108.	[mh "Arthritis, Rheumatoid"]
#109.	(rheumatoid near/2 (arthritis or arthrosis)).ti,ab
#110.	(caplan* near/2 syndrome).ti,ab
#111.	(felty* near/2 syndrome).ti,ab
#112.	(rheumatoid near/2 factor).ti,ab
#113.	((inflammatory or idiopathic) near/2 arthritis).ti,ab
#114.	inflammatory polyarthritis.ti,ab
#115.	(or #1-#7)
#116.	[mh Ultrasonography]
#117.	(ultrasound* or ultrason* or echograph* or echotomograph* or doppler).ti,ab
#118.	#9 or #10
#119.	#8 and #11

A.7.2 Health Economics literature search strategy

Health economic evidence was identified by conducting a broad search relating to rheumatoid arthritis population in NHS Economic Evaluation Database (NHS EED – this ceased to be updated after March 2015) and the Health Technology Assessment database (HTA) with no date restrictions. NHS EED and HTA databases are hosted by the Centre for Research and Dissemination (CRD). Additional searches were run on Medline and Embase for health economics studies.

Table 14: Database date parameters and filters used

Database	Dates searched	Search filter used
Medline	2014 – 06 October 2017	Exclusions Health economics studies
Embase	2014– 06 October 2017	Exclusions Health economics studies
Centre for Research and Dissemination (CRD)	HTA - 2001 – 06 October 2017 NHSEED - 2001 – 31 March 2015	None

Medline (Ovid) search terms

337.	exp Arthritis, Rheumatoid/
338.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
339.	(caplan* adj2 syndrome).ti,ab.
340.	(felty* adj2 syndrome).ti,ab.
341.	(rheumatoid adj2 factor).ti,ab.
342.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
343.	"inflammatory polyarthritis".ti,ab.

344.	or/1-7
345.	limit 8 to English language
346.	letter/
347.	editorial/
348.	news/
349.	exp historical article/
350.	Anecdotes as Topic/
351.	comment/
352.	case report/
353.	(letter or comment*).ti.
354.	or/10-17
355.	randomized controlled trial/ or random*.ti,ab.
356.	18 not 19
357.	animals/ not humans/
358.	Animals, Laboratory/
359.	exp animal experiment/
360.	exp animal model/
361.	exp Rodentia/
362.	(rat or rats or mouse or mice).ti.
363.	or/20-26
364.	9 not 27
365.	Economics/
366.	Value of life/
367.	exp "Costs and Cost Analysis"/
368.	exp Economics, Hospital/
369.	exp Economics, Medical/
370.	Economics, Nursing/
371.	Economics, Pharmaceutical/
372.	exp "Fees and Charges"/
373.	exp Budgets/
374.	budget*.ti,ab.
375.	cost*.ti.
376.	(economic* or pharmaco?economic*).ti.
377.	(price* or pricing*).ti,ab.
378.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
379.	(financ* or fee or fees).ti,ab.
380.	(value adj2 (money or monetary)).ti,ab.
381.	or/29-44
382.	exp models, economic/
383.	*Models, Theoretical/
384.	*Models, Organizational/
385.	markov chains/
386.	monte carlo method/

387.	exp Decision Theory/
388.	(markov* or monte carlo).ti,ab.
389.	econom* model*.ti,ab.
390.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
391.	or/46-54
392.	28 and (45 or 55)

Embase (Ovid) search terms

325.	exp *rheumatoid arthritis/
326.	(rheumatoid adj2 (arthritis or arthrosis)).ti,ab.
327.	(caplan* adj2 syndrome).ti,ab.
328.	(felty* adj2 syndrome).ti,ab.
329.	(rheumatoid adj2 factor).ti,ab.
330.	((inflammatory or idiopathic) adj2 arthritis).ti,ab.
331.	"inflammatory polyarthritis".ti,ab.
332.	or/1-7
333.	limit 8 to English language
334.	letter.pt. or letter/
335.	note.pt.
336.	editorial.pt.
337.	case report/ or case study/
338.	(letter or comment*).ti.
339.	or/10-14
340.	randomized controlled trial/ or random*.ti,ab.
341.	15 not 16
342.	animal/ not human/
343.	nonhuman/
344.	exp Animal Experiment/
345.	exp Experimental Animal/
346.	animal model/
347.	exp Rodent/
348.	(rat or rats or mouse or mice).ti.
349.	or/17-24
350.	9 not 25
351.	statistical model/
352.	exp economic aspect/
353.	27 and 28
354.	*theoretical model/
355.	*nonbiological model/
356.	stochastic model/
357.	decision theory/
358.	decision tree/

359.	monte carlo method/
360.	(markov* or monte carlo).ti,ab.
361.	econom* model*.ti,ab.
362.	(decision* adj2 (tree* or analy* or model*)).ti,ab.
363.	or/29-38
364.	*health economics/
365.	exp *economic evaluation/
366.	exp *health care cost/
367.	exp *fee/
368.	budget/
369.	funding/
370.	budget*.ti,ab.
371.	cost*.ti.
372.	(economic* or pharmaco?economic*).ti.
373.	(price* or pricing*).ti,ab.
374.	(cost* adj2 (effective* or utilit* or benefit* or minimi* or unit* or estimat* or variable*)).ab.
375.	(financ* or fee or fees).ti,ab.
376.	(value adj2 (money or monetary)).ti,ab.
377.	or/40-52
378.	26 and (39 or 53)

NHS EED and HTA (CRD) search terms

#49.	MeSH DESCRIPTOR Arthritis, Rheumatoid EXPLODE ALL TREES
#50.	((rheumatoid adj2 (arthritis or arthrosis)))
#51.	((caplan* adj2 syndrome))
#52.	((fely* adj2 syndrome))
#53.	((rheumatoid adj2 factor))
#54.	((((inflammatory or idiopathic) adj2 arthritis))
#55.	("inflammatory polyarthritis")
#56.	#1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7

[Guideline short title]: DRAFT FOR CONSULTATION
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Appendix B: Literature search strategies

The search strategy will be added here after rerun searches have been conducted.