Supplementary Materials

Low-Dose Atropine and Other Interventions for Pediatric Myopia: A Systematic Review and Bayesian Network Meta-Analysis of Efficacy and Post-Treatment Outcomes

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Table S1. Search strategy Embase® 1974 to 2024 June 24

#		Searches	Results
1		exp myopia/	32316

Table S2. Search strategy Ovid MEDLINE(R) ALL 1946 to June 21, 2024 (conducted on 24 June 2024)

#	Searches	Results
1	exp Myopia/	22185
2	myop*.ti,ab.	63995
3	((short or near) adj3 sight*).ti,ab.	517
4	nearsighted*.ti,ab.	175
5	(myopia or near-sightedness or nearsightedness or short-sightedness or shortsightedness or refraction error or degenerative myopia or myopy).ti,ab.	21208
6	or/1-5	69641
7	exp Pediatrics/ or exp Adolescent/ or exp Child/	3470582
8	(adolescen* or babies or baby or boy* or boyhood or girlhood or child* or girl* or infant* or juvenil* or kid* or minor or neonat* or neo-nat* or newborn* or new-born* or paediatric* or pediatric* or perinat* or preschool* or pre-school* or puber* or pubescen* or school child* or schoolchild* or schoolage or schoolboy* or schoolgirl* or young or teen* or toddler* or underage* or under-age* or youth*).tw.	4142501
9	or/7-8	5853274
10	6 and 9	21649
11	exp Mydriatics/	108217
12	(mydriat* or cycloplegic*).ti,ab.	4668
13	("7-methylxanthine" or "552-62-5").ti,ab.	173
14	exp cholinergic antagonists/	87243
15	(cholinergic adj2 (antagonist* or block* or inhibitor*)).ti,ab.	3326
16	cholinolytic*.ti,ab.	600
17	(acetylcholine* adj2 (antagonist* or block* or inhibitor*)).ti,ab.	8419
18	(anticholinergic* or anti-cholinergic*).ti,ab.	14173
19	(muscarinic* adj2 (antagonist* or block* or inhibitor*)).ti,ab.	7790
20	(antimuscarinic* or anti-muscarinic*).ti,ab.	3407
21	exp Parasympatholytics/	45533
22	(parasympathetic* adj2 (antagonist* or block* or inhibitor*)).ti,ab.	417
23	(parasympathicolytic* or parasympaticolytic* or Parasympatholytic*).ti,ab.	391
24	(pharmaceutical* or pharmacologic*).ti,ab.	542126
25	exp Atropine/	26756
26	(Atropine or atrinal or atro-polygyl or atrop or atropen or atropin or atropina or atropini sulfas or atropinol or atropisol or atropt or atroptol or atrospan or atrosulf-1 or bar bropin or bellpino-artin or cendo tropine or dextro levo hyosciamine or ichtho bellol or isopto or isoptoAtropine or ocu-tropine or sal-tropine or skiatropine or tropine dextro levo tropate or DE127 or DE-127 or DE 127 or SYD101 or SYD-101 or SYD 101 or ximex or 51-55-8 or 55-48-1 or EIKANCE or Ryjusea or Ryjunea or NVK002 or "NVK 002" or NVK-002 or Stulln Atropine or OT-101 or OT 101 or OT101 or MicroPineTM or Xing Qi).tw.	30165
27	(berefrine or POPD or 105567-83-7).ti,ab.	137
28	exp Cyclopentolate/	534
29	(Cyclopentolate or "ak-pentolate" or akpentolate or "bell pentolate" or ciclolux or cyclogyl or cyclomydri or cyclopentol or cyclopentolat or cylate or cyplegin or diopentolate or midriodavi or mydrilate or "ocu-pentolate" or ocucyclo or "oftan-syklo" or pentolair or "refractyl ofeno" or skiacol or zyklolat or "512-15-2" or "5870-29-1").ti,ab.	613
30	exp Epinephrine/	57745
31	(Epinephrine or Adrenaline or adrenalin or Epitrate or Lyophrin or Epifrin or adnephrin or adnephrine or adrenaclick or "adrenal hydrochloride" or adrenalina or adrenamine or adrenapax or adrenazin or adrenine or adrin or adrine or advaradin or balmadren or biorenine or bosmin or chelafrin or dylephrin or epiglaufrin or	59795

#	Searches	Results
	epimephrine or epinefrina or epinephran or epinephrin or epirenamine or epirenan or exadrin or glaucon or glaucosan or glaufrin or "glin epin" or glycirenan or haemostatin or hemisine or hemostasin or hemostatin or hypernephrin or "isopto epinal" or levoadrenalin or levoadrenaline or levoepinephrine or levorenin or levorenine or methylaminoethanolcatechol or methylarterenol or mucidrina or myosthenine or "n methylnoradrenalin" or nephridine or nieraline or paranephrin or posumin or renaglandin or renaglandulin or renaleptine or renalina or renaline or renoform or renostypticin or renostyptin or scurenaline or simplene or soladren or sphygmogenin or styptirenal or supracapsulin or supranephrane or supranephrin or supranol or suprarenaline or suprarenin or suprarenine or suprel or surenine or surrenine or "sus-phrine sulfite-free" or susphrine or "sympathin I" or takamina or tonogen or vasoconstrictine or vasodrine or vasotonin or weradren or "51-43-4" or "55-31-2" or "6912-68-1").ti,ab.	
32	exp Ethylmorphine/	205
33	(Ethylmorphine or Ethomorphine or Trachyl or codethyline or diolan or dionine or "ethyl morphine" or ethylmorfine or ethylmorphin or "morphine ethyl ether" or "125-30-4" or "76-58-4").ti,ab.	805
34	(Eucatropine or euphthalmine or 100-91-4 or 536-93-6).ti,ab.	4
35	(Homatropine or homatro or homatrocil or homatropaire or homatropin or homatropina or isoptoHomatropine or "I Homatrine" or "mandelyl tropeine" or mandelyltropeine or "mydryn eye" or "omatropina lux" or "tropine mandelate" or "51-56-9" or "87-00-3").ti,ab.	277
36	exp Hyoscyamine/	83
37	(Hyoscyamine or anaspaz or cystospaz or cytospaz or daturine or donnamar or duboisine or egacen or hyoscamine or hyosciamine or hyoscyanin or hyosyne or "ib-stat" or levbid or leversusin or "leversusinex sr" or neosol or nulev or spasdel or "symax sl" or "symax sr" or "tropine l tropate" or "101-31-5" or "306-03-6").ti,ab.	586
38	(Ibopamine or "N-methyldopamine diisobutyrate" or "SB 7505" or "SB7505" or Escandine or Inopamil or "diisobutyric n methyldopamine ester" or scandine or "skf 100168" or "skf 100168 a" or "66195-31-1" or "75011-65-3").ti,ab.	339
39	(Methylatropine or "8-methylatropinium nitrate" or "31610-87-4").ti,ab.	418
40	exp Naphazoline/	397
41	(Naphazoline or "Afazol Grin" or "AK Con" or AKCon or Albalon or albasol or "All Clear" or allersol or antan or benil or cefasan or "Clear Eyes" or coldan or "Colirio Alfa" or "comfort eye drops" or dazolin or "degest 2" or derinox or Idril or imidin or minha or Miraclar or mirafrin or Nafazair or nafazoline or naftazolina or "naphacel ofteno" or naphasal or naphazolin or Naphcon or "naphozoline hydrochloride" or naphtears or naphthazoline or naphthizine or naphthyzin or nastizol or "nazil ofteno" or niazol or "ocu-zoline" or opcon or Optazine or Privin or privina or Privine or privine or Proculin or rhinantin or rhinazin or rhinoperd or rimidol or sanorin or sanotin or Siozwo or strictylon or "Tele Stulln" or TeleStulln or Vasoclear or Vasocon or "Vasoconstrictor Pensa" or VasoNit or vistalbalon or vistobalon or "5144-52-5" or "550-99-2" or "835-31-4").ti,ab.	788
42	(Oxedrine or Synephrine or Sympaethamin or Synephrin or aetaphen or pentedrine or vasoton or "94-07-5").ti,ab.	489
43	exp Synephrine/	403
44	exp Oxyphenonium/	181
45	(Oxyphenonium or Methacin or Oxyphenon or Atrenyl or Spastrex or antrenyl or "ba 5473" or ba5473 or "c 5473" or c5473 or helkamon or metacin or metacinum or oxyphenium or "oxyphenomium bromide" or spasmofen or spasmophen or "14214-84-7" or "50-10-2").ti,ab.	197
46	exp Phenylephrine/	14069
47	(Phenylephrine or adrianol or "af-taf" or "ak-dilate" or "albalon relief" or alconefrin or almefrin or altafrin or biomidrin or biomydrin or derizene or "despec-sf" or "disneumon pernasal" or drosin or "efrin-10" or efrisel or fenylephrine or idrianol or isonefrine or isophrin or isophrine or "isopto frin" or isoptofrin or lexatol or "m synephrine" or mesaton or "meta sympathol" or "meta synephrine" or Metaoxedrin or metaoxedrine or Metasympatol or metasynephrine or Mezaton or "murucoll 2"	23902

#	Searches	Results
	or mydfrin or "n 105 to" or "nefrin-ofteno" or "Neo Synephrine" or neofrin or neooxedrine or neophryn or neosynephrin or Neosynephrine or "neosynephrin-pos" or neosynesin or neosynesine or "ocu-phrin" or "oftan-metaoksedrin" or optistin or phenoptic or phenylefrine or phenylephedrine or prefrin or "pupiletto forte" or rectasol or "rhinall 10" or "slv 325" or slv325 or sucraphen or vazculep or visadron or vistafrin or vistosan or "532-38-7" or "59-42-7" or "61-76-7").ti,ab.	
48	(Pholedrine or "4 hydroxy n methylamphetamine" or "4 hydroxymethamphetamine" or adyston or "para hydroxymethamphetamine" or "p-hydroxymethamphetamine" or paredrinol or "Pholedrin liquidum" or "Pholedrin-longo-Isis" or pulsotyl or venosan or veritol or "370-14-9").ti,ab.	181
49	exp hydroxyamphetamine/	204
50	(p-Hydroxyamphetamine or "1 para hydroxyphenyl 2 propylamine" or "alpha methyl para tyramine" or "alpha methyl tyramine" or "dl 1 p hydroxyphenyl 2 propylamine" or "dl 1 para hydroxyphenyl 2 propylamine" or "dl p hydroxy alpha methylphenethylamine" or "dl para hydroxy alpha methylphenethylamine" or "h 66 37" or "para hydroxy alpha methylphenethylamine" or Hydroxyamfetamine or Hydroxyamphetamin or Hydroxyamphetamine or Hydroxyphenylisopropylamine or Methyltyramine or Norpholedrin or norpholedrine or oxamphetamine or Oxyamphetamine or paradrine or parahydroxyamphetamine or Paredrine or paredrinea or paredrinex or pedrolone or pulsoton or "103-86-6" or "1518-86-1" or "306-21-8").ti,ab.	327
51	exp Racepinephrine/	151
52	(Racepinephrine or asthmanefrin or Micronefrin or micronefrine or Micronephrine or mikronephrin or racadrenalin or "Racepinefrine Hydrochloride" or racinephrine or Vaponefrin or vaponefrine or vaponephrin or "329-65-7").ti,ab.	11
53	exp Scopolamine Hydrobromide/	7644
54	(Scopolamine or "Boro Scopol" or BoroScopol or Hyoscine or Kwells or "levo hyoscinehydrobromide" or Scoburen or Scopace or scopos or "Travacalm HO" or Vorigeno or "114-49-8" or atrochin or atroquin or atroscine or hyosceine or hysco or "kimite-patch" or "l epoxytropine tropate" or "n methylhyoscine" or oscine or scopalamine or "scopine tropate" or scopoderm or scopolamin or transcop or "transderm scop" or "transderm v" or "tropic acid ester with scopine" or "138-12-5" or "51-34-3" or "55-16-3").ti,ab.	9796
55	exp Tropicamide/	683
56	(Tropicamide or "alcon-mydril" or bistropamide or "cendo mydriatyl" or "Colircusi Tropicamida" or midriaticum or mydiacyl or mydral or mydramide or mydriacyl or Mydriafair or Mydriaticum or "mydrin m" or "mydrin p" or Mydrum or "n ethyl 2 phenyl n pyrid 4 ylmethylhydracrylamide" or "n ethyl n 4 picolyltropamide" or "n ethyl n gamma picolyltropamide" or "n ethyl n pyrid 4 ylmethyltropamide" or "Ocu-Tropic" or OcuTropic or opticyl or sandol or sintropic or "tropamid forte" or "tropic acid n ethyl n gamma picolyl amide" or Tropicacyl or tropicamid or "tropico eye" or tropicol or tropikamid or tropimil or visumidriatic or "1508-75-4").ti,ab.	982
57	exp Tyramine/	7354
58	(Tyramine or "4 hydroxyphenethylamine" or lyramine or mydrial or "para hydroxyphenethylamine" or paratyramine or systogene or tiramine or tocosine or tyramin or tyrosamine or uteramine or "51-67-2" or "60-19-5").ti,ab.	6325
59	(Vibrocil or 8059-14-1).ti,ab.	6
60	exp Yohimbine/	21206
61	(Yohimbine or actibine or aphrodine or aphrodyne or Corynanthine or "corynine hydrochloride" or "dayto-himbin" or "methyl yohimbine 16alpha carboxylate" or "methylyohimbane 16alpha carboxylate" or Pluriviron or quebrachin or "quebrachine hydrochloride" or Rauhimbine or Rauwolscine or urobine or yobin or yobinol or yocan or yocaral or Yocon or yocon or yohimbe or "yohimbic acid methyl ester" or yohimbin or Yohimex or yohimex or yohimibin or yovital or "146-48-5" or "65-19-0").ti,ab.	8912
62	exp Timolol/	3918
63	(timolol* or "apo timol" or "apo timop" or apotimol or apotimolol or apotimop or betimol or Blocadren or "chibro timoptol" or istalol or "l 714465" or l714465 or "MK	4890

#	Searches	Results
	950" or MK950 or moducren or nyolol or ofal or ofan or optimol or timolo or Timoptic or Timoptol or Timacar or titol or "26839-75-8").ti,ab.	
64	exp Pirenzepine/	3761
65	(pirenzepin* or abrinac or azuzepin or bisvanil or "cl 2" or cl2 or gastricur or gastrocepin or gastrozepin or gastrozepina or gastrozepine or leblon or "ls 519" or "ls 519c12" or ls519 or ls519c12 or maghen or tabe or zinc00538196 or Pyrenzepine or "L S 519" or Ulgescum or "Piren basan" or Gastrotsepin or Ulcoprotect or "28797-61-7" or "29868-97-1").ti,ab.	15148
66	((((Concentric or gradient) adj3 lens$) or (dual adj2 focus$) or (extend$ adj2 depth adj3 focus) or (extend$ adj2 depth adj4 field$) or (extend$ adj2 range adj3 focus) or (extend$ adj2 range adj4 field$) or (extend$ adj2 DOF) or EDOF) and ((undercorrect$ or slow$ or progress$ or control$ or retard$ or funct$) adj5 (myopia or myopic or myopes))).tw.	68
67	((bifocal or multifocal) adj4 (myopia or myopic) adj4 (slow$ or progress$ or control$)).tw.	48
68	prismatic bifocal$.tw.	3
69	(near adj1 prism adj4 bifocal$).tw.	1
70	base in prism.tw.	53
71	(executive adj2 bifocal$).tw.	6
72	(progressive adj1 addition adj3 lens$).tw.	218
73	(positive adj1 lens$ adj3 addition).tw.	3
74	PA PALs.tw.	1
75	(peripheral adj2 defocus adj4 lens$).tw.	40
76	Defocus Incorporated Multiple Segments.tw.	39
77	(MyoVision or MyopiLux or Myosmart).tw.	8
78	(MiSight or Biofinity Multifocal or Proclear Multifocal or vision lenses or eyeglasses or glasses).tw.	17044
79	orthokeratology.mp.	984
80	(orthokeratology or Ortho K).tw.	977
81	hydrophobic acrylic.mp.	530
82	progressive addition lens$.mp.	197
83	silicone intraocular lens$.mp.	277
84	(progressive addition lens$ or PALs).mp.	1755
85	(single vision lens$ or SVLS).mp.	164
86	multifocal contact lens.mp.	102
87	aspherical lenslets.mp.	26
88	single-vision spectacle lenses.mp.	35
89	(posterior chamber phakic intraocular lens or Visian phakic implantable collamer lens).mp.	229
90	(phakic adj2 lens$).mp.	1549
91	EDOF.mp.	340
92	Dual-focus soft contact lens.mp.	6
93	exp soft contact lens/	5245
94	(Repeated low-level red-light therapy or RLRL).mp.	38
95	or/11-94	840640
96	Randomized Controlled Trial/	615833
97	Randomized Controlled Trials as Topic/	171136
98	Clinical Trial/	540086
99	Random Allocation/	107335
100	Single Blind Method/	33627
101	Double Blind Method/	179105
102	Placebo.mp.	257488
103	randomized controlled trial.pt.	615833
104	(clinical adj trial$).tw.	515871
105	(randomi?ed controlled trial$ or rct).tw.	284558
106	(random$ adj2 allocat$).tw.	46695

#	Searches	Results
107	((singl$ or doubl$ or treb$ or tripl$ or quadruple$) adj (blind$3 or dumm$3 or mask$3)).tw.	206192
108	(non-randomi#ed adj5 (trial$ or study or studies or design)).ti,ab.	18081
109	exp case control study/	1515210
110	longitudinal study/	172908
111	retrospective study/	1210840
112	prospective study/	690714
113	cross-sectional study/	506192
114	cohort analysis/	343097
115	case control.ti,ab.	163024
116	(cohort adj (study or studies or analys$)).ti,ab.	366312
117	((follow up or observational or uncontrolled or epidemiologic$) adj (study or studies)).ti,ab.	336310
118	((longitudinal or retrospective or prospective or cross sectional) adj (study or studies or review or analys$ or cohort$)).ti,ab.	1266366
119	or/96-118	4933847
120	10 and 95 and 119	1730
121	animal/ or animal experiment/ or animal model/ or animal tissue/ or nonhuman/	7457900
122	animal cell/ or cancer cell culture/ or human cell/ or human tissue/ or nonhuman/ or biological model/ or exp cell culture/	425135
123	("animal cell" or "animal experiment" or "animal model" or "cancer cell culture" or "human cell" or "human tissue" or "in vitro study" or "nonhuman" or "biological model" or "cell culture").mp.	341940
124	(comment or letter or case reports or editorial or erratum or note or short survey).pt.	4437425
125	(case report$ or case stud$ or case histor$ or guideline or clinical protocol).ti.	437474
126	exp book/ or exp theoretical study/ or exp Books/ or exp Models, Theoretical/	2007193
127	or/121-126	13111416
128	120 not 127	1650
129	limit 128 to english language	1575

Table S3. Search strategy EBM Reviews - Cochrane Central Register of Controlled Trials to 21 June 2024 (searches conducted on 24 June 2024)

#	Searches	Results
1	exp Myopia/	1694
2	myop*.ti,ab.	4680
3	((short or near) adj3 sight*).ti,ab.	74
4	nearsighted*.ti,ab.	55
5	(myopia or near-sightedness or nearsightedness or short-sightedness or shortsightedness or refraction error or degenerative myopia or myopy).ti,ab.	2897
6	or/1-5	5074
7	exp Pediatrics/ or exp Adolescent/ or exp Child/	179162
8	(adolescen* or babies or baby or boy* or boyhood or girlhood or child* or girl* or infant* or juvenil* or kid* or minor or neonat* or neo-nat* or newborn* or new-born* or paediatric* or pediatric* or perinat* or preschool* or pre-school* or puber* or pubescen* or school child* or schoolchild* or schoolage or schoolboy* or schoolgirl* or young or teen* or toddler* or underage* or under-age* or youth*).tw.	341312
9	or/7-8	436743
10	6 and 9	1813
11	exp Mydriatics/	7670
12	(mydriat* or cycloplegic*).ti,ab.	1083
13	("7-methylxanthine" or "552-62-5").ti,ab.	14
14	exp cholinergic antagonists/	8911
15	(cholinergic adj2 (antagonist* or block* or inhibitor*)).ti,ab.	206
16	cholinolytic*.ti,ab.	15
17	(acetylcholine* adj2 (antagonist* or block* or inhibitor*)).ti,ab.	712
18	(anticholinergic* or anti-cholinergic*).ti,ab.	3430

#	Searches	Results
19	(muscarinic* adj2 (antagonist* or block* or inhibitor*)).ti,ab.	1197
20	(antimuscarinic* or anti-muscarinic*).ti,ab.	846
21	exp Parasympatholytics/	4003
22	(parasympathetic* adj2 (antagonist* or block* or inhibitor*)).ti,ab.	38
23	(parasympathicolytic* or parasympaticolytic* or Parasympatholytic*).ti,ab.	76
24	(pharmaceutical* or pharmacologic*).ti,ab.	71536
25	exp Atropine/	1369
26	(Atropine or atrinal or atro-polygyl or atrop or atropen or atropin or atropina or atropini sulfas or atropinol or atropisol or atropt or atroptol or atrospan or atrosulf-1 or bar bropin or bellpino-artin or cendo tropine or dextro levo hyosciamine or ichtho bellol or isopto or isoptoAtropine or ocu-tropine or sal-tropine or skiatropine or tropine dextro levo tropate or DE127 or DE-127 or DE 127 or SYD101 or SYD-101 or SYD 101 or ximex or 51-55-8 or 55-48-1 or EIKANCE or Ryjusea or Ryjunea or NVK002 or "NVK 002" or NVK-002 or Stulln Atropine or OT-101 or OT 101 or OT101 or MicroPineTM or Xing Qi).tw.	3391
27	(berefrine or POPD or 105567-83-7).ti,ab.	6
28	exp Cyclopentolate/	103
29	(Cyclopentolate or "ak-pentolate" or akpentolate or "bell pentolate" or ciclolux or cyclogyl or cyclomydri or cyclopentol or cyclopentolat or cylate or cyplegin or diopentolate or midriodavi or mydrilate or "ocu-pentolate" or ocucyclo or "oftan-syklo" or pentolair or "refractyl ofeno" or skiacol or zyklolat or "512-15-2" or "5870-29-1").ti,ab.	213
30	exp Epinephrine/	4405
31	(Epinephrine or Adrenaline or adrenalin or Epitrate or Lyophrin or Epifrin or adnephrin or adnephrine or adrenaclick or "adrenal hydrochloride" or adrenalina or adrenamine or adrenapax or adrenazin or adrenine or adrin or adrine or advaradin or balmadren or biorenine or bosmin or chelafrin or dylephrin or epiglaufrin or epimephrine or epinefrina or epinephran or epinephrin or epirenamine or epirenan or exadrin or glaucon or glaucosan or glaufrin or "glin epin" or glycirenan or haemostatin or hemisine or hemostasin or hemostatin or hypernephrin or "isopto epinal" or levoadrenalin or levoadrenaline or levoepinephrine or levorenin or levorenine or methylaminoethanolcatechol or methylarterenol or mucidrina or myosthenine or "n methylnoradrenalin" or nephridine or nieraline or paranephrin or posumin or renaglandin or renaglandulin or renaleptine or renalina or renaline or renoform or renostypticin or renostyptin or scurenaline or simplene or soladren or sphygmogenin or styptirenal or supracapsulin or supranephrane or supranephrin or supranol or suprarenaline or suprarenin or suprarenine or suprel or surenine or surrenine or "sus-phrine sulfite-free" or susphrine or "sympathin I" or takamina or tonogen or vasoconstrictine or vasodrine or vasotonin or weradren or "51-43-4" or "55-31-2" or "6912-68-1").ti,ab.	10935
32	exp Ethylmorphine/	4
33	(Ethylmorphine or Ethomorphine or Trachyl or codethyline or diolan or dionine or "ethyl morphine" or ethylmorfine or ethylmorphin or "morphine ethyl ether" or "125-30-4" or "76-58-4").ti,ab.	4
34	(Eucatropine or euphthalmine or 100-91-4 or 536-93-6).ti,ab.	0
35	(Homatropine or homatro or homatrocil or homatropaire or homatropin or homatropina or isoptoHomatropine or "I Homatrine" or "mandelyl tropeine" or mandelyltropeine or "mydryn eye" or "omatropina lux" or "tropine mandelate" or "51-56-9" or "87-00-3").ti,ab.	41
36	exp Hyoscyamine/	3
37	(Hyoscyamine or anaspaz or cystospaz or cytospaz or daturine or donnamar or duboisine or egacen or hyoscamine or hyosciamine or hyoscyanin or hyosyne or "ib-stat" or levbid or leversusin or "leversusinex sr" or neosol or nulev or spasdel or "symax sl" or "symax sr" or "tropine l tropate" or "101-31-5" or "306-03-6").ti,ab.	47
38	(Ibopamine or "N-methyldopamine diisobutyrate" or "SB 7505" or "SB7505" or Escandine or Inopamil or "diisobutyric n methyldopamine ester" or scandine or "skf 100168" or "skf 100168 a" or "66195-31-1" or "75011-65-3").ti,ab.	146
39	(Methylatropine or "8-methylatropinium nitrate" or "31610-87-4").ti,ab.	7

#	Searches	Results
40	exp Naphazoline/	38
41	(Naphazoline or "Afazol Grin" or "AK Con" or AKCon or Albalon or albasol or "All Clear" or allersol or antan or benil or cefasan or "Clear Eyes" or coldan or "Colirio Alfa" or "comfort eye drops" or dazolin or "degest 2" or derinox or Idril or imidin or minha or Miraclar or mirafrin or Nafazair or nafazoline or naftazolina or "naphacel ofteno" or naphasal or naphazolin or Naphcon or "naphozoline hydrochloride" or naphtears or naphthazoline or naphthizine or naphthyzin or nastizol or "nazil ofteno" or niazol or "ocu-zoline" or opcon or Optazine or Privin or privina or Privine or privine or Proculin or rhinantin or rhinazin or rhinoperd or rimidol or sanorin or sanotin or Siozwo or strictylon or "Tele Stulln" or TeleStulln or Vasoclear or Vasocon or "Vasoconstrictor Pensa" or VasoNit or vistalbalon or vistobalon or "5144-52-5" or "550-99-2" or "835-31-4").ti,ab.	85
42	(Oxedrine or Synephrine or Sympaethamin or Synephrin or aetaphen or pentedrine or vasoton or "94-07-5").ti,ab.	43
43	exp Synephrine/	29
44	exp Oxyphenonium/	9
45	(Oxyphenonium or Methacin or Oxyphenon or Atrenyl or Spastrex or antrenyl or "ba 5473" or ba5473 or "c 5473" or c5473 or helkamon or metacin or metacinum or oxyphenium or "oxyphenomium bromide" or spasmofen or spasmophen or "14214-84-7" or "50-10-2").ti,ab.	19
46	exp Phenylephrine/	1067
47	(Phenylephrine or adrianol or "af-taf" or "ak-dilate" or "albalon relief" or alconefrin or almefrin or altafrin or biomidrin or biomydrin or derizene or "despec-sf" or "disneumon pernasal" or drosin or "efrin-10" or efrisel or fenylephrine or idrianol or isonefrine or isophrin or isophrine or "isopto frin" or isoptofrin or lexatol or "m synephrine" or mesaton or "meta sympathol" or "meta synephrine" or Metaoxedrin or metaoxedrine or Metasympatol or metasynephrine or Mezaton or "murucoll 2" or mydfrin or "n 105 to" or "nefrin-ofteno" or "Neo Synephrine" or neofrin or neooxedrine or neophryn or neosynephrin or Neosynephrine or "neosynephrin-pos" or neosynesin or neosynesine or "ocu-phrin" or "oftan-metaoksedrin" or optistin or phenoptic or phenylefrine or phenylephedrine or prefrin or "pupiletto forte" or rectasol or "rhinall 10" or "slv 325" or slv325 or sucraphen or vazculep or visadron or vistafrin or vistosan or "532-38-7" or "59-42-7" or "61-76-7").ti,ab.	2981
48	(Pholedrine or "4 hydroxy n methylamphetamine" or "4 hydroxymethamphetamine" or adyston or "para hydroxymethamphetamine" or "p-hydroxymethamphetamine" or paredrinol or "Pholedrin liquidum" or "Pholedrin-longo-Isis" or pulsotyl or venosan or veritol or "370-14-9").ti,ab.	5
49	exp p-Hydroxyamphetamine/	12
50	(p-Hydroxyamphetamine or "1 para hydroxyphenyl 2 propylamine" or "alpha methyl para tyramine" or "alpha methyl tyramine" or "dl 1 p hydroxyphenyl 2 propylamine" or "dl 1 para hydroxyphenyl 2 propylamine" or "dl p hydroxy alpha methylphenethylamine" or "dl para hydroxy alpha methylphenethylamine" or "h 66 37" or "para hydroxy alpha methylphenethylamine" or Hydroxyamfetamine or Hydroxyamphetamin or Hydroxyamphetamine or Hydroxyphenylisopropylamine or Methyltyramine or Norpholedrin or norpholedrine or oxamphetamine or Oxyamphetamine or paradrine or parahydroxyamphetamine or Paredrine or paredrinea or paredrinex or pedrolone or pulsoton or "103-86-6" or "1518-86-1" or "306-21-8").ti,ab.	21
51	exp Racepinephrine/	445
52	(Racepinephrine or asthmanefrin or Micronefrin or micronefrine or Micronephrine or mikronephrin or racadrenalin or "Racepinefrine Hydrochloride" or racinephrine or Vaponefrin or vaponefrine or vaponephrin or "329-65-7").ti,ab.	5
53	exp Scopolamine/	659
54	(Scopolamine or "Boro Scopol" or BoroScopol or Hyoscine or Kwells or "levo hyoscinehydrobromide" or Scoburen or Scopace or scopos or "Travacalm HO" or Vorigeno or "114-49-8" or atrochin or atroquin or atroscine or hyosceine or hysco or "kimite-patch" or "l epoxytropine tropate" or "n methylhyoscine" or oscine or scopalamine or "scopine tropate" or scopoderm or scopolamin or transcop or	1272

#	Searches	Results
	"transderm scop" or "transderm v" or "tropic acid ester with scopine" or "138-12-5" or "51-34-3" or "55-16-3").ti,ab.	
55	exp Tropicamide/	166
56	(Tropicamide or "alcon-mydril" or bistropamide or "cendo mydriatyl" or "Colircusi Tropicamida" or midriaticum or mydiacyl or mydral or mydramide or mydriacyl or Mydriafair or Mydriaticum or "mydrin m" or "mydrin p" or Mydrum or "n ethyl 2 phenyl n pyrid 4 ylmethylhydracrylamide" or "n ethyl n 4 picolyltropamide" or "n ethyl n gamma picolyltropamide" or "n ethyl n pyrid 4 ylmethyltropamide" or "Ocu-Tropic" or OcuTropic or opticyl or sandol or sintropic or "tropamid forte" or "tropic acid n ethyl n gamma picolyl amide" or Tropicacyl or tropicamid or "tropico eye" or tropicol or tropikamid or tropimil or visumidriatic or "1508-75-4").ti,ab.	408
57	exp Tyramine/	184
58	(Tyramine or "4 hydroxyphenethylamine" or lyramine or mydrial or "para hydroxyphenethylamine" or paratyramine or systogene or tiramine or tocosine or tyramin or tyrosamine or uteramine or "51-67-2" or "60-19-5").ti,ab.	213
59	(Vibrocil or 8059-14-1).ti,ab.	3
60	exp Yohimbine/	453
61	(Yohimbine or actibine or aphrodine or aphrodyne or Corynanthine or "corynine hydrochloride" or "dayto-himbin" or "methyl yohimbine 16alpha carboxylate" or "methylyohimbane 16alpha carboxylate" or Pluriviron or quebrachin or "quebrachine hydrochloride" or Rauhimbine or Rauwolscine or urobine or yobin or yobinol or yocan or yocaral or Yocon or yocon or yohimbe or "yohimbic acid methyl ester" or yohimbin or Yohimex or yohimex or yohimibin or yovital or "146-48-5" or "65-19-0").ti,ab.	343
62	exp Timolol/	1377
63	(timolol* or "apo timol" or "apo timop" or apotimol or apotimolol or apotimop or betimol or Blocadren or "chibro timoptol" or istalol or "l 714465" or l714465 or "MK 950" or MK950 or moducren or nyolol or ofal or ofan or optimol or timolo or Timoptic or Timoptol or Timacar or titol or "26839-75-8").ti,ab.	2358
64	exp Pirenzepine/	514
65	(pirenzepin* or abrinac or azuzepin or bisvanil or "cl 2" or cl2 or gastricur or gastrocepin or gastrozepin or gastrozepina or gastrozepine or leblon or "ls 519" or "ls 519c12" or ls519 or ls519c12 or maghen or tabe or zinc00538196 or Pyrenzepine or "L S 519" or Ulgescum or "Piren basan" or Gastrotsepin or Ulcoprotect or "28797-61-7" or "29868-97-1").ti,ab.	562
66	(((((Concentric or gradient) adj3 lens$) or (dual adj2 focus$) or (extend$ adj2 depth adj3 focus) or (extend$ adj2 depth adj4 field$) or (extend$ adj2 range adj3 focus) or (extend$ adj2 range adj4 field$) or (extend$ adj2 DOF) or EDOF) and ((undercorrect$ or slow$ or progress$ or control$ or retard$ or funct$) adj5 (myopia or myopic or myopes))).tw.	62
67	((bifocal or multifocal) adj4 (myopia or myopic) adj4 (slow$ or progress$ or control$)).tw.	34
68	prismatic bifocal$.tw.	4
69	(near adj1 prism adj4 bifocal$).tw.	1
70	base in prism.tw.	30
71	(executive adj2 bifocal$).tw.	2
72	(progressive adj1 addition adj3 lens$).tw.	128
73	(positive adj1 lens$ adj3 addition).tw.	1
74	PA PALs.tw.	1
75	(peripheral adj2 defocus adj4 lens$).tw.	20
76	Defocus Incorporated Multiple Segments.tw.	26
77	(MyoVision or MyopiLux or Myosmart).tw.	6
78	(MiSight or Biofinity Multifocal or Proclear Multifocal or vision lenses or eyeglasses or glasses).tw.	2100
79	orthokeratology.mp.	293
80	(orthokeratology or Ortho K).tw.	293
81	hydrophobic acrylic.mp.	163
82	progressive addition lens$.mp.	120

#	Searches	Results
83	silicone intraocular lens$.mp.	79
84	(progressive addition lens$ or PALs).mp.	298
85	(single vision lens$ or SVLS).mp.	138
86	multifocal contact lens.mp.	114
87	aspherical lenslets.mp.	23
88	single-vision spectacle lenses.mp.	26
89	(posterior chamber phakic intraocular lens or Visian phakic implantable collamer lens).mp.	27
90	(phakic adj2 lens$).mp.	105
91	EDOF.mp.	99
92	Dual-focus soft contact lens.mp.	4
93	exp Contact Lenses, Hydrophilic/	569
94	(Repeated low-level red-light therapy or RLRL).mp.	29
95	or/11-94	107945
96	10 and 95	1062
97	(comment or letter or case reports or editorial or erratum or note or short survey).pt.	29717
98	(case report$ or case stud$ or case histor$ or guideline or clinical protocol).ti.	2304
99	exp Books/ or exp Models, Theoretical/ or exp Books/ or exp Models, Theoretical/	31512
100	or/97-99	63243
101	96 not 100	1049
102	limit 101 to english language	1005

Supplementary Methods 1: SLR method details

A systematic literature review (SLR) was conducted to identify and assess RCTs on treatments for pediatric myopia control. The full inclusion and exclusion criteria based on the population, intervention, comparator, outcome and study design (PICOS) criteria[1] are presented in Table S4. The SLR followed the general recommendations of the Cochrane Handbook for Systematic Reviews of Interventions,[2] the general principles of the Centre for Reviews and Dissemination for undertaking reviews in healthcare[3] and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines.[4]

OVID SP® was used to search Embase®, MEDLINE® and the Cochrane Central Register of Controlled Trials (CENTRAL®). Database searches were initially run on June 24, 2024, and updated on September 13, 2024. The search strategies used on the Ovid platform are presented for each database in Table S1, Table S2, and Table S3. In addition:

- Conference proceedings were searched to identify the latest and potentially ongoing relevant trials for which full-text publications might not have been available at the time the database search was conducted. The following congress websites were searched between January 2020 and September 2024: International Myopia Institute Conference; European Paediatric Ophthalmological Society; Royal College of Ophthalmology; American Association for Pediatric Ophthalmology and Strabismus; American Academy of Ophthalmology; International Society for Pharmacoeconomics and Outcomes Research (ISPOR); Asia Optometric Congress; and World Ophthalmology Congress.
- The following registry websites were searched for both completed and ongoing studies: ClinicalTrials.gov (clinicaltrials.gov); The European Union's Clinical Trials Register; http://www.clinicaltrialsregister.eu/; and International Clinical Trials Registry Platform (ICTRP; who.int/ictrp).

All identified records were screened by two independent reviewers, with disagreements resolved by a third reviewer. Data extraction was conducted using a piloted template by one reviewer and fully checked by a second reviewer. Extracted variables included, among others, characteristics of study design, population, evaluated interventions, and outcomes. The risk of bias was evaluated using the Cochrane Collaboration tool RoB 2 for the outcomes change from baseline (CFB) in spherical equivalent refraction (SER) and CFB in axial length (AL).[5]

Table S4. Eligibility criteria for the systematic review of clinical efficacy and safety in paediatric myopia

Category	Inclusion criteria	Exclusion criteria
Population	• Children <18 years of age with progressive myopia • Participants with spherical equivalent more negative than -0.5 D at baseline (indicating more severe myopic status at baseline)	• Children <18 years of age without progressive pediatric myopia • Patients with progressive myopia who are ≥18 years of age • Participants with spherical equivalent higher than -0.5 D at baseline (indicating very mild myopic status at baseline)
Interventions/ Comparators	• **Spectacles:** undercorrected single vision spectacles (UCSVL), multifocal spectacles (MFSL), peripheral plus spectacles (PPSL) • **Lenses for myopia control:** orthokeratology (ORTHOK), rigid gas permeable (RGP), bifocal/multi-focal (MFSCL), progressive addition, positive spherical aberration soft contact lenses (PSASCL) • **Antimuscarinic agents:** atropine or atropine sulphate (brand names EIKANCE, Ryjusea, Ryjunea, NVK002, Stulln Atropine, OT-101, MicroPineTM, Xing Qi etc), Pirenzepine, Cyclopentolate, Tropicamide, Scopolamine	• Laser refractive surgery, such as laser in situ keratomileusis (LASIK) or photorefractive keratectomy (PRK) (not routinely performed in children) • **Other pharmacological ophthalmology agents, including**: epinephrine, ethylmorphine, eucatropine, berefrine, hyoscyamine, ibopamine, naphazoline, synephrine, oxyphenonium, phenylephrine, pholedrine, hydroxyamphetamine, racepinephrine, tyramine,

Category	Inclusion criteria	Exclusion criteria
	• **Adenosine antagonists** (7-methylxanthine, caffeine) • **Repeated low-level red-light therapy (RLRL)** • **Combinations** of the above interventions, and combinations that include one of the above interventions with any of the excluded interventions (i.e., excluded interventions can be included if studied in combination with a relevant intervention)	vibrocil, yohimbine, timolol • **Interventions not used for control of myopia progression** ○ Placebo ○ Single vision soft contact lenses (SVERSUSCLs) ○ Single vision lenses (SVLs) (spectacles) • Studies looking at fully corrected spectacles/lenses alone • Life-style modifications • Chinese traditional medicines are excluded alone or in combination with any other treatment
Outcomes	• Change in cycloplegic objective spherical equivalent (SER) at 1 yr, 2yrs, 3 yrs (i.e. annual measurements only) • Change in refractive error at 1 yr, 2yrs, 3 yrs (i.e. annual measurements only) • Change in axial length at 1 yr, 2yrs, 3 yrs (i.e. annual measurements only) • Annual progression rate • % with annual progression rate ≤0.50 D/year and ≤0.25 D/year • % with increase of myopia of >0.50 D • Time to progression of myopia >0.75 D • Treatment withdrawals or discontinuation • Prevalence of any adverse event	Studies not providing data on the specific outcomes of interest
Study design	• Randomised controlled trials (RCTs) • Comparative observational studies (RCT extensions, open-label phase with long-term follow-up) • Non-comparative observational designs	Case studies, editorials, notes, comments, dose-finding studies, dose-comparison studies, pilot studies, pharmacokinetic studies, pharmacodynamic studies, maximum tolerated dose studies
Language	English	Non–English-language studies
Countries	No restrictions	Not applicable
Time limits	No limits	• Conference abstracts published before 2022

AE, adverse event; *D*, diopter; *DOTSL*, diffusion optics technology spectacle lenses; *HDA*, high dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *LASIK*, laser in situ keratomileusis; *LARISL*, lenslet-array-integrated spectacle lenses; *LDA*, low dose atropine; *MDA*, moderate dose atropine; *ORTHOK*, orthokeratology lenses; *PPSL*, peripheral plus spectacle lenses; *PRK*, photorefractive keratectomy; *PSASCL*, positive spherical aberration soft contact lenses; *RCT*, randomised controlled trial; *RGP*, rigid gas permeable lenses; *RLRL*, repeated low-level red light; *SER*, spherical equivalent refraction; *SVL*, single vision spectacle lenses; *SVERSUSCL*, single vision soft contact lenses.

Supplementary Methods 2: Evidence synthesis and statistical analysis methods details

Standard NMA model parameter settings included four Hamiltonian Monte Carlo (HMC) chains with different starting values alongside many iterations (a burn-in of at least 2000 iterations and a further sample of at least 6000 iterations). Model convergence was assessed based on the Rhat statistic, inspection of divergent transitions, inspection of chain history, mixture and autocorrelation.

In the dose-specific network, several parametric dose-effect relationships were explored (linear, quadratic, exponential, log-linear, natural cubic spline and the maximum effect Emax model).[6] The general functional form of the dose-response relationship is incorporated into the NMA framework such that the RE effect estimate for an arm k relative to arm 1 in study is modelled in conjunction to the agent index t and dose X, as:

$$\delta_{i,k} \sim N\left(f\left(X_{ik,}t_{ik}\right) - f\left(X_{i1,}t_{i1}\right), \sigma^2\right)$$

If the Emax model of dose-response relationship is assumed then $f\left(X_{ik,}t_{ik}\right) = \frac{Emax_{t_{ik}}X_{i,k}}{ED50_{t_{ik}} + X_{i,k}}$, where Emax represents the maximum efficacy that a treatment can achieve as the dose increases while ED50 denotes the dose at which 50% of this maximum efficacy is attained. Weakly informative priors were used on the Emax and ED50 parameters and between-study variance to assist model convergence. We also explored a non-parametric monotonic dose-response relationship for atropine formulations which assumes that higher doses have equal or greater effects than lower doses without a specific functional form by assigning an indicator function γ, given by:

$\gamma = \prod_{l=1}^{m-1} I(d_{l+1} - d_l)$, where $I(x) = 1, x \geq 0$ and $I(x) = 0$, otherwise.

This formulation imposes an ordering constraint on treatment effects across increasing doses, with the direction of ordering determined by the outcome type.[7]

All dose-response models were fit using four Markov Chain Monte Carlo (MCMC) chains with different starting values alongside a further large number of iterations (a burn-in of at least 10,000 iterations and a further sample of at least 50,000 iterations) with a thinning interval of 5 to reduce autocorrelation. Model convergence was assessed based on the R-hat statistic and visual inspection of diagnostic plots, including running mean and autocorrelation plots.

The standard NMA and NMR were run in Stan[8] using the *multinma* package.[9] Dose-response parametric models were implemented in JAGS[10] using the *MBNMAdose* package[11] and the non-parametric model in OpenBUGS[12] using the *R2OpenBUGS* package.[13]

Table S5. Complete list of randomised controlled trials (RCTs) included in the systematic review

No.	First author name and year	Trial name (if available)	NCT number (Trial registration number)	Linked records
1	Adler 2006[14]	NR	NR	NA
2	Agarwal 2023[15]	NR	NR	NA
3	Aller 2016[16]	CONTROL	NCT00214487	NA
4	Anstice 2011[17]	DIMENZ	ACTRN12605000633684	NA
5	Bao 2021[18]	NR	ChiCTR1800017683	Bao 2022[19], Li 2023[20]
6	Bartlett 2003[21]	NR	NR	NA
7	Berntsen 2012[22]	STAMP	NCT00335049	Bernsten 2013[23], Bernsten 2010[24]
8	Chamberlain 2019[25]	NR	NCT01729208	Chamberlain 2022[26], Chamberlain 2023[27], Woods 2021[28]
9	Chan 2022[29]	NR	NCT03374306	NA
10	Charm 2013[30]	HM-PRO	NCT00977236	Charm 2013[31]
11	Chen_2023_a[32]	NR	ChiCTR2100045250	NA

No.	First author name and year	Trial name (if available)	NCT number (Trial registration number)	Linked records
12	Chen 2024_a[33]	NR	NCT05340699	NA
13	Chen 2022[34]	NR	ChiCRT2100045834	NA
14	Chen 2023[35]	NR	NR	NA
15	Chen 2024_b[36]	NR	ChiCTR2200061048	NA
16	Cheng 2010[37]	NR	NCT00787579	Cheng 2014[38]
17	Cheng 2016[39]	NR	NCT01829191 (treatment phase) and NCT01829230 (withdrawal phase)	NA
18	Chia 2012[40]	ATOM2	NCT00371124	Chia 2014[41], Chia 2016[42]
19	Chia 2023[43]	APPLE	NCT03329638	NA
20	Cho 2012[44]	ROMIO	NCT00962208	Cheung 2016[45]
21	Choi 2023 [46]	MESOK	NCT03919396	NA
22	Chua 2006[47]	ATOM	NR	Kumaran 2015[48]
23	Chung 2002[49]	NR	NR	NA
24	Correction of Myopia Evaluation Trial 2 Study Group for the Pediatric Eye Disease Investigator Group 2011[50]	COMET2	NCT00320593	NA
25	Cui 2021[51]	NR	ChiCTR-IPD-16008844	Fu 2021[52] , Fu 2020[53] , Wang 2022[54]
26	Edwards 2002[55]	NR	NR	NA
27	Fang 2022[56]	NR	ChiCTR2100048452	NA
28	Fujikado 2014[57]	NR	JPRN-UMIN000007989	NA
29	Fulk 2002[58]	NR	NR	NA
30	Garcia-Del Valle 2021[59]	NR	NR	NA
31	Guo 2021[60]	VOLTZ	NCT03191942	Guo 2023[61], Guo 2023[62]
32	Gwiazda 2003[63]	COMET	NCT00000113	Gwiazda 2004[64], Marsh-Tootle 2009[65]
33	Han 2017[66]	NR	NR	NA
34	Hansen 2023[67]	APP	NCT03911271	Hansen 2024[68]
35	Hao 2021[69]	NR	NR	NA
36	Hasebe 2014[70]	NR	ACTRN12608000566336	NA
37	Hasebe 2008[71]	NR	ISRCTN28611140	NA
38	Hieda 2021[72]	ATOM-J	UMIN000018041	Hieda 2023[73]
39	Jakobsen 2022[74]	CONTROL	NCT03246464	Jakobsen 2023[75]
40	Jensen 1991[76]	NR	NR	NA
41	Jiang 2022[77]	NR	NCT04073238	Wang 2023[78], Xiong 2022[79], Xiong 2023[80]
42	Kanda 2018[81]	NR	UMIN000005054	NA
43	Katz 2003[82]	NR	NR	NA
44	Kinoshita 2018[83]	NR	UMIN000014362	Kinoshita 2020[84]
45	Koomson 2016[85]	NR	NR	NA
46	Lam 2014[86]	DISC	NCT00919334	NA
47	Lam 2020[87]	NR	NCT02206217	Lam 2022[88], Lam 2023[89]
48	Lau 2023[90]	NR	NCT02643342	NA

No.	First author name and year	Trial name (if available)	NCT number (Trial registration number)	Linked records
49	Lee 2022[91]	WA-ATOM	ACTRN12617000598381	Lee 2024[92], Lee 2022[93], Lee 2024[94]
50	Lee 2024[95]	SPACE	NCT05733884	NA
51	Li 2023[96]	NR	NR	NA
52	Li 2023[97]	NR	NR	NA
53	Lin 2023[98]	NR	NR	NA
54	Liu 2023[99]	NR	ChiCTR2000040990	NA
55	Liu 2023_b[100]	NR	ChiCTR2100053711	NA
56	Liu 2023[101]	NR	NCT03413085	NA
57	Liu 2024[102]	NR	ChiCTR2200062028	NA
58	Loertscher 2021[103]	NR	ACTRN12611000499987	NA
59	Loughman 2023[104]	MOSAIC	ISRCTN: 36732601, EudraCT database 2016-003340-37	Biba 2023[105], Nkansah 2023[106]
60	Lyu 2019[107]	NR	NR	NA
61	Medghalchi 2023[108]	NR	IRCT20100414003714N3	NA
62	Moriche-Carretero 2021[109]	NR	NR	NA
63	Moriche-Carretero 2024[110]	NR	NR	NA
64	Peng 2023[111]	NR	NR	NA
65	Raffa 2021[112]	NR	NR	NA
66	Rappon 2023[113]	CYPRESS	NCT03623074, NCT04947735	Rappon 2022[114]
67	Repka 2023[115]	NR	NCT03334253	NA
68	Ruan 2022[116]	NR	NR	NA
69	Ruiz-Pomeda 2018[117]	MASS	NCT01917110	Prieto-Garrido 2022[118], Ruiz-Pomeda 2021[119], Ruiz-Pomeda 2018[120], Ruiz-Pomeda 2019[121]
70	Sanchez-Tena 2024[122]	NR	NCT05250206	NA
71	Sankaridurg 2019[123]	NR	NR	NA
72	Sankaridurg 2010[124]	NR	ChiCTR-TRC-00000029	NA
73	Sankaridurg 2013[125]	NR	ChiCTR-TRC-00000232	NA
74	Saxena 2021[126]	I-ATOM	CTRI/2016/11/007450	NA
75	Sen 2022[127]	NR	NR	NA
76	Sharma 2022[128]	NR	NR	NA
77	Shen 2022[129]	NR	NCT04238897	NA
78	Shih 1999[130]	NR	NR	NA
79	Shih 2002[131]	MIT Study	NR	NA
80	Shimmyo 2005[132]	NR	NR	NA
81	Siatkowski 2004[133]	PIR-205	NA	Siatkowski 2008[134]
82	Su 2024[135]	NR	ChiCTR2200057210	NA
83	Tan 2005[136]	NR	NR	NA
84	Tan 2020[137]	AOK	NCT02955927	Tan 2023[138]
85	Tang 2023[139]	NR	NR	NA
86	Tang 2024[140]	NR	NR	NA
87	Tran 2022[141]	NR	NR	NA
88	Trier 2008[142]	NR	NCT00263471	NA
89	Walline 2004[143]	CLAMP Study	NR	NA

No.	First author name and year	Trial name (if available)	NCT number (Trial registration number)	Linked records
90	Walline 2020[144]	BLINK Study	NCT02255474	Berntsen 2023[145], Mutti 2022[146]
91	Wang 2017[147]	NR	NR	NA
92	Wang 2024[148]	AMIXT	ChiCTR2000039827	NA
93	Wei 2020[149]	NR	ChiCTR-IOR-17013898	Wei 2022[150], Liang 2023[151]
94	Xia 2023[152]	NR	NR	NA
95	Xiong 2024[153]	NR	NCT04722874	NA
96	Xu 2022[154]	NR	ChiCTR1800015541	NA
97	Xu 2024[155]	NR	NCT05184621	NA
98	Yam 2019[156]	LAMP Study	CUHK_CCT00383	Yam 2020[157], Yam 2022[158], Li 2020[159], Zhang 2024[160], Bullimore 2023[161]
99	Yang 2009[162]	NR	NR	NA
100	Yang 2021[163]	NR	NR	NA
101	Yen 1989[164]	NR	NR	NA
102	Yi 2015[165]	NR	NR	NA
103	Yu 2022[166]	NR	ChiCTR2000033904	Li 2024[167]
104	Yuval 2024[168]	NR	NCT05477329	NA
105	Zadnik 2023[169]	CHAMP Study	NCT03350620	NA
106	Zhang 2024[170]	NR	LYUS023452	NA
107	Zhang 2023[171]	NR	ChiCTR 1800017535	NA
108	Zhao 2021[172]	NR	NR	NA
109	Zhao 2021[173]	NR	NR	NA
110	Zhou 2023[174]	NR	ChiCTR2100043619	NA
111	Zhu 2020[175]	NR	NR	NA
112	Zhu 2023_a[176]	NR	NR	NA
113	Zhu 2023_b[177]	NR	NR	NA
114	NA[178]	NR	NCT00762970	NA
115	NA[179]	NR	NCT03465748	NA
116	NA[180]	STAR	NCT03918915	NA
117	NA[182]	ORANGE	012702LT	NA

NA, not applicable; *NR*, not reported; *SLR*, systematic literature review

Table S6. Overview of treatment comparisons evaluated in the trials included in the network meta-analysis.

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
LDA (<0.1%) versus Control							
1	Chia 2023[43]	0.0025% atropine, 0.005% atropine, 0.01% atropine	LDA	Placebo	CONT	12	AL, SE, Rebound on SE & AL
2	Cui 2021[51]	0.01% atropine, 0.02% atropine	LDA	Single vision spectacle lenses	CONT	12, 24	AL, SE
3	Loughman 2023[104]	0.01% atropine	LDA	Placebo	CONT	12, 24	AL, SE
4	Hansen 2023[67]	0.01% atropine	LDA	Vehicle eyedrops	CONT	12, 24	AL, SE
5	Hieda 2021[72]	0.01% atropine	LDA	Placebo	CONT	12, 24	AL, SE, Rebound on SE & AL
6	Lee 2022[91]	0.01% atropine	LDA	Placebo	CONT	12, 24	AL, SE, Rebound on SE & AL
7	Moriche-Carretero 2021[109]	0.01% atropine	LDA	Untreated controls	CONT	24	AL, SE
8	Moriche-Carretero 2024[110]	0.01% atropine	LDA	Untreated controls	CONT	12, 24, 60	AL, SE
9	Repka 2023[115]	0.01% atropine	LDA	Placebo	CONT	12, 24, 30	AL, SE
10	Saxena 2021[126]	0.01% atropine	LDA	Placebo	CONT	12	AL, SE
11	Sen 2022[127]	0.01% atropine	LDA	Placebo	CONT	24	AL, SE
12	Sharma 2022[128]	0.01% atropine	LDA	0.3% hydroxy-propyl methylcellulose	CONT	12	AL, SE
13	Wei 2020[149]	0.01% atropine	LDA	Placebo	CONT	12	AL, SE
14	Xia 2023[152]	0.01% atropine	LDA	Single vision spectacle lenses	CONT	12	AL, SE
15	Yam 2019[156]	0.01% atropine	LDA	0.9% sodium chloride	CONT	12	AL, SE
16	Zadnik 2023[169]	0.02% atropine	LDA	Placebo	CONT	12, 24, 36	AL, SE
17	Zhang 2024[170]	0.05% atropine	LDA	Placebo	CONT	12, 24	AL, SE
18	Zhao_2020[172]	0.01% atropine	LDA	Single vision spectacle lenses	CONT	12	AL, SE
19	Zhu 2023_a[176]	0.05% atropine	LDA	0.3% sodium hyaluronate	CONT	12, 36	AL, SE, Rebound on SE & AL

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
20	STAR[181]	0.01% atropine, 0.03% atropine	LDA	Placebo	CONT	12, 24, 36	AL, SE
21	ORANGE[182]	0.01% atropine, 0.025% atropine	LDA	Placebo	CONT	12, 24, 36	AL, SE, Rebound on SE & AL
LDA (<0.1%) versus ORTHOK							
22	Hao 2021[69]	0.01% atropine	LDA	ORTHOK lenses	ORTHOK	12	AL
23	Zhao 2021[173]	0.01% atropine	LDA	ORTHOK lenses	ORTHOK	12	AL, SE
24	Zhao_2020[172]	0.01% atropine	LDA	ORTHOK lenses	ORTHOK	12	AL, SE
LDA (<0.1%) versus LDA + ORTHOK							
25	Hao 2021[69]	0.01% atropine	LDA	0.01% atropine + ORTHOK lenses	LDA+ORTHOK	12	AL
26	Zhao 2020[172]	0.01% atropine	LDA	0.01% atropine + ORTHOK lenses	LDA+ORTHOK	12	AL, SE
LDA (<0.1%) versus MDA (≥0.1%, <0.5%)							
27	Chia_2012[40]	0.01% atropine	LDA	0.1% atropine	MDA	12, 24	AL, SE, Rebound on SE & AL
LDA (<0.1%) versus HDA (≥0.5%)							
28	Chia_2012[40]	0.01% atropine	LDA	0.5% atropine	HDA	12, 24	AL, SE, Rebound on SE & AL
LDA (<0.1%) versus RLRL							
29	Chen 2022[34]	0.01% atropine eye drops	LDA	650 ± 10 nm, illuminance level of 1600 lux	RLRL	12	SE
MDA (≥0.1%, <0.5%) versus HDA (≥0.5%)							
30	Chia 2012[40]	0.1% atropine	MDA	0.5% atropine	HDA	12, 24, 36	AL, SE, Rebound on SE & AL
HDA (≥0.5%) versus Control							
31	Chua 2006[47]	1% atropine	HDA	0.5% hydroxypropyl methylcellulose, 0.001%	CONT	12, 24, 36	AL, SE, Rebound on SE & AL

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
				benzalkonium chloride			
32	Yi 2015[165]	1% atropine	HDA	Eyedrops with hypromellose 2910, dextran 70, and glycerol	CONT	12	AL, SE
33	Zhu 2020[175]	1% atropine	HDA	Saline eyedrops	CONT	12, 24, 36, 48	AL, SE
34	Shimmyo 2005[132]	1% atropine	HDA	Artificial tears	CONT	12, 24	AL, SE
ARA versus Control							
35	Trier 2008[142]	7-methylxanthine tablets 400 mg	ARA	Placebo	CONT	12	AL, SE
PIR versus Control							
36	Siatkowski 2004[133]	2% PIR ophthalmic gel	PIR	Placebo ophthalmic gel	CONT	12, 24	AL, SE
37	Tan 2005[136]	2% PIR gel twice daily or once daily	PIR	Placebo (vehicle; placebo/placebo)	CONT	12	AL, SE
DOTSL versus Control							
38	Rappon 2023[114]	Diffusion optics technology spectacle lenses with 0.365mm and with 0.240mm spacing	DOTSL	Single vision spectacle lenses	CONT	12	AL, SE
LARISL versus Control							
39	Su 2024[135]	Lenslets of +3.00 D and -3.00 D additional power	LARISL	Single vision spectacle lenses	CONT	12	AL, SE
MFSL versus Control							
40	Cheng 2010[37]	Bifocal lenses with +1.50 D addition, Prismatic bifocal lenses with +1.50 D addition and a 3-prism diopter base in prism in the near segment	MFSL	Single vision spectacle lenses	CONT	12, 24, 36	AL, SE
41	Edwards 2002[55]	Progressive addition lenses multicoated with +2.00 D addition	MFSL	Single vision spectacle lenses	CONT	12, 24	AL, SE

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
42	Gwiazda 2003[63]	Progressive addition lenses with +2.00 D addition	MFSL	Single vision spectacle lenses	CONT	12, 24, 36	AL, SE
43	Yang 2009[162]	Progressive addition lenses with +1.50 D addition	MFSL	Single vision spectacle lenses	CONT	24	AL, SE
PPSL versus Control							
44	Bao 2021[18]	Defocus spectacles with highly aspherical lenslets and with slightly aspherical lenslets	PPSL	Single vision spectacle lenses	CONT	12, 24	AL, SE
45	Chen 2024_a[33]	Defocus distributed multipoint lens	PPSL	Single vision spectacle lenses	CONT	12	AL, SE
46	Hasebe 2014[70]	Positively aspherized progressive addition lenses with +1.00 and +1.50 near addition	PPSL	Single vision spectacle lenses	CONT	24	AL, SE
47	Kanda 2018[81]	Positively aspherized progressive addition lenses	PPSL	Single vision spectacle lenses	CONT	12, 24	AL, SE
48	Lam 2020[87]	Defocus incorporated Multiple Segments spectacle lenses	PPSL	Single vision spectacle lenses	CONT	12, 24	AL, SE
49	Liu 2023_b[100]	Peripheral plus/defocus correcting spectacles	PPSL	Single vision spectacle lenses	CONT	12	AL, SE
50	Sanchez-Tena 2024[122]	Peripheral plus spectacle lenses with myopic defocus	PPSL	Single vision spectacle lenses	CONT	12	AL, SE
51	Sankaridurg 2010[124]	PPSL with +1.00 D and with +2.00 D peripheral power symmetrical and with +1.90 D peripheral power asymmetrical	PPSL	Single vision spectacle lenses	CONT	12	AL, SE
52	Yuval 2024[168]	Peripheral plus/defocus correcting spectacles	PPSL	Single vision spectacle lenses	CONT	12	AL, SE

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
LDA + ORTHOK versus ORTHOK							
53	Hao 2021[69]	0.01% atropine + ORTHOK lenses	LDA+ ORTHOK	ORTHOK lenses	ORTHOK	12	AL
54	Kinoshita 2018[83]	0.01% atropine + rigid gas permeable ORTHOK lenses	LDA+ ORTHOK	Rigid gas-permeable ORTHOK lenses	ORTHOK	12, 24	AL
55	Ruan 2022[116]	0.01% atropine + ORTHOK lenses	LDA+ ORTHOK	ORTHOK lenses	ORTHOK	12	AL
56	Tan 2020[137]	0.01% atropine + ORTHOK lenses	LDA+ ORTHOK	ORTHOK lenses	ORTHOK	12, 24	AL, SE
57	Xu 2022[154]	0.01% atropine + ORTHOK lenses	LDA+ ORTHOK	ORTHOK lenses	ORTHOK	12, 24	AL
58	Yu 2022[166]	0.01% atropine + ORTHOK lenses	LDA+ ORTHOK	Placebo eyedrops + ORTHOK lenses	ORTHOK	12	AL
59	Zhao 2020[172]	0.01% atropine + ORTHOK lenses	LDA+ ORTHOK	ORTHOK lenses	ORTHOK	12	AL, SE
LDA + ORTHOK versus Control							
60	Xu 2022[154]	0.01% atropine + ORTHOK lenses	LDA+ORTHOK	SVL + Placebo drops	CONT	12, 24	AL
61	Zhao 2020[172]	0.01% atropine + ORTHOK lenses	LDA+ORTHOK	Single vision spectacle lenses	CONT	12	AL, SE
MFSCL versus Control							
62	Aller 2016[16]	Bifocal soft contact lenses	MFSCL	Single vision soft contact lenses	CONT	12	AL, SE
63	Anstice 2011[17]	Dual focus contact lens with 2.00 D	MFSCL	Single vision soft contact lenses	CONT	10	AL, SE
64	Chamberlain 2019[25]	Dual focus soft contact lens	MFSCL	Single vision soft contact lenses	CONT	12, 24, 36	AL, SE
65	Fang 2022[56]	Multifocal soft contact lenses	MFSCL	Single vision spectacles	CONT	12	AL, SE
66	Garcia-Del Valle 2021[59]	Progressive addition soft contact lenses with +2.00 D addition	MFSCL	Single vision soft contact lenses	CONT	12	AL, SE
67	Lam 2014[86]	Dual-focus incorporated soft contact lenses (+2.50 D addition)	MFSCL	Single vision soft contact lenses	CONT	12, 24	AL, SE

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
68	Li 2023[97]	Dual-focus incorporated soft contact lenses (+2.50 D addition)	MFSCL	Single vision soft contact lenses	CONT	12	AL
69	Liu 2023_c[101]	Progressive addition lenses (+ 3.00 to + 5.50 D)	MFSCL	Single vision soft contact lenses	CONT	12	AL, SE
70	Peng 2023[111]	DISC multifocal contact lenses with +3.00 D defocus	MFSCL	Single vision soft contact lenses	CONT	12	AL, SE
71	Raffa 2021[112]	Multistage +1.50D addition, Proclear + 3.00D addition	MFSCL	Single vision soft contact lenses	CONT	12	AL, SE
72	Ruiz-Pomeda 2018[117]	Dual focus soft contact lens	MFSCL	Single vision spectacles	CONT	24, 36	AL, SE, Rebound on SE & AL
73	Sankaridurg 2019[123]	Dual focus soft contact lens of +2.50 D and +1.50 D, EDOF up to +1.75 and +2.50	MFSCL	Single vision soft contact lenses	CONT	12, 24	AL, SE
74	Shen 2022[129]	Extended depth of focus lenses	MFSCL	Single vision soft contact lenses	CONT	12	AL, SE
75	Walline 2020[144]	Bifocal soft contact lenses with +2.50 D and +1.50 D	MFSCL	Single vision soft contact lenses	CONT	12, 24	AL, SE
76	NCT00762970[178]	Investigational soft contact lens with aspheric optical design	MFSCL	Spectacle lenses	CONT	12, 18, 24	AL, SE
MFSCL versus ORTHOK							
77	Fang 2022[56]	Multifocal soft contact lenses	MFSCL	ORTHOK lenses	ORTHOK	12	AL, SE
78	Li 2023[97]	Dual-focus incorporated soft contact (DISC) lenses (+2.50 D addition)	MFSCL	ORTHOK with Back Optic Zone Diameter 5mm and 6.2mm	ORTHOK	12	AL
ORTHOK versus Control							
79	Charm 2013[30]	Partial reduction ORTHOK lenses	ORTHOK	Single vision spectacle lenses	CONT	12, 18, 24	AL

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
80	Cho 2012[44]	ORTHOK lenses	ORTHOK	Single vision spectacle lenses	CONT	12, 18, 24	AL
81	Choi 2023[46]	ORTHOK lenses	ORTHOK	Single vision spectacle lenses	CONT	12, 24	AL
82	Fang 2022[56]	ORTHOK lenses	ORTHOK	Single vision spectacle lenses	CONT	12	AL, SE
83	Jakobsen 2022[74]	ORTHOK lenses	ORTHOK	Single vision spectacle lenses	CONT	12, 18	AL
84	Li 2023[97]	ORTHOK with Back Optic Zone Diameter 5mm and 6.2mm	ORTHOK	Single vision soft contact lenses	CONT	12	AL
85	Lyu 2019[107]	ORTHOK lenses with target myopia reduction -6.00D and -4.00D	ORTHOK	Single vision spectacle lenses	CONT	12	AL, SE
86	Xu 2022[154]	ORTHOK lenses	ORTHOK	SVL + Placebo drops	CONT	12, 24	AL
87	Zhao 2020[172]	ORTHOK lenses	ORTHOK	Single vision spectacle lenses	CONT	12	AL
88	Zhu 2023_b[177]	ORTHOK lenses	ORTHOK	Single vision spectacle lenses	CONT	12	AL
PSASCL versus Control							
89	Cheng 2016[39]	Positive Spherical abberation soft contact lenses (0.175 µm)	PSASCL	Single vision soft contact lenses	CONT	12	AL, SE
RGP versus Control							
90	Katz 2003[82]	Rigid gas permeable contact lenses	RGP	Single vision spectacle lenses	CONT	12, 24	AL, SE
91	Walline 2004[143]	Rigid gas permeable contact lenses	RGP	Single vision soft contact lenses	CONT	12, 24, 36	AL, SE
UCSVL versus Control							
92	Adler 2006[14]	Undercorrected/blurred by +0.50 D spectacles	UCSVL	Single vision spectacle lenses	CONT	12	SE
93	Koomson 2016[85]	Undercorrected/blurred by +0.50 D spectacles	UCSVL	Single vision spectacle lenses	CONT	12, 24	AL, SE

No	First author name and year	Intervention(s)	Intervention node	Comparator	Comparator node	Follow-up (months)	Reported outcomes
94	Chung 2002[49]	Undercorrected single vision spectacles (+0.75 D)	UCSVL	Fully corrected SVL	CONT	12, 24	AL, SE
RLRL versus Control							
95	Chen_2023_a[32]	635 nm, 0.35±0.02 mW	RLRL	Single vision spectacle lenses	CONT	12	AL, SE
96	Jiang 2022[77]	650 ± 10 nm, illuminance level of approximately 1600 lux + SVLs	RLRL	Single vision spectacle lenses	CONT	12	AL, SE, Rebound on SE & AL
97	Liu 2024[102]	650 ± 10nm at an illuminance level of approximately 1600 lux	RLRL	Control	CONT	12	AL, SE
98	Xu 2024[155]	650 nm and a luminance of 1600 lx + single vision spectacles	RLRL	Single vision spectacle lenses	CONT	12	AL, SE
99	Zhou 2023[174]	650 nm ± 10 nm, and illumination of approximately 400 lux	RLRL	SVL with full correction	CONT	12	AL, SE
RLRL + ORTHOK versus ORTHOK							
100	Xiong 2024[153]	650 ± 10 nm + ORTHOK lenses	RLRL+ORTHOK	ORTHOK lenses	ORTHOK	12	AL

AL, axial length; *ARA*, adenosine receptor antagonists; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *ORTHOK*, orthokeratology; *PBM*, photobiomodulation therapy; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SE*, spherical equivalent; *SVL*, single vision spectacle lenses; *UCSVL*, undercorrected single vision spectacle lenses.

Table S7. Assessment of the risk of bias in the RCTs considered for the NMA using the revised Cochrane RoB2 tool

First author name and year	D1	D2	D3	D4	D5	Overall
Adler 2006[14]	+	!	!	-	!	-
Anstice 2011[17]	!	!	+	+	!	!
Agarwal 2023[15]	!	-	-	+	!	-
Chua 2006[47]	+	+	+	+	!	!
Chia 2012[40]	!	+	+	+	!	!
Bao 2021[18]	!	+	+	+	!	!
Walline 2020[144]	+	+	+	+	+	+
Chamberlain 2019[25]	!	+	+	+	+	!
Charm 2013[30]	!	-	!	+	!	-
Chen 2022[34]	+	+	+	+	!	!
Cheng 2010[37]	-	-	-	-	!	-
Cheng 2016[39]	!	+	+	+	!	!
Chia 2023[43]	!	+	+	+	!	!
Choi 2023[46]	!	+	+	+	!	!
Chung 2002[49]	+	!	-	-	!	-
Walline 2004[143]	!	!	+	+	!	!
Gwiazda 2003[63]	+	+	+	+	!	!
COMET2 2011[50]	!	+	+	+	!	!
Aller 2016[16]	+	!	+	+	!	!
Cui 2021[51]	!	+	+	+	!	!
Lam 2014[86]	!	+	!	+	!	!
Edwards 2002[55]	!	!	+	+	!	!
Fang 2022[56]	!	+	+	+	!	!
Fulk 2002[58]	+	+	!	+	!	!
Garcia-Del Valle 2021[59]	!	+	!	+	!	!
Guo 2021[60]	-	+	+	+	+	-
Hansen 2023[67]	+	+	+	+	!	!
Hasebe 2014[70]	+	+	-	+	!	-
Hieda 2021[72]	+	+	+	+	!	!
Jensen 1991[76]	!	+	+	+	!	!
Jiang 2022[77]	+	!	-	+	+	-
Katz 2003[82]	!	+	-	+	!	-
Kinoshita 2020[84]	+	+	+	+	!	!
Koomson 2016[85]	+	+	+	+	!	!
Lam 2020[87]	!	+	+	+	!	!
Yam 2019[156]	!	+	+	+	!	!

+ Low risk
! Some concerns
- High risk

D1 Randomisation process
D2 Deviations from intended interventions
D3 Missing outcome data
D4 Measurement of the outcome
D5 Selection of the reported result

First author name and year	D1	D2	D3	D4	D5	Overall
Lau 2023[90]	!	+	+	+	!	!
Lee 2022[91]	+	+	+	+	+	+
Lin 2023[98]	!	!	-	+	!	-
Liu 2023_a[99]	+	+	+	+	!	!
Liu 2023_b[100]	!	+	+	+	!	!
Liu 2023_c[101]	+	+	+	+	!	!
Loughman 2023[104]	+	+	+	+	+	+
Lyu 2019[107]	!	-	+	+	!	-
Moriche-Carretero 2021[109]	!	!	+	+	!	!
Peng 2023[111]	!	+	!	+	!	!
Siatkowski 2004[133]	!	+	-	+	!	-
Raffa 2021[112]	!	+	-	+	!	-
Repka 2023[115]	+	+	+	+	+	+
Cho 2012[44]	-	!	-	+	!	-
Ruiz-Pomeda 2018[117]	+	+	+	+	!	!
Sankaridurg 2010[124]	+	+	+	+	!	!
Sankaridurg 2019[123]	!	+	!	+	!	!
Sen 2022[127]	!	+	+	-	!	-
Sharma 2022[128]	!	!	+	+	!	!
Berntsen 2012[22]	+	+	+	+	!	!
Tan 2005[136]	+	+	-	+	!	-
Tan 2020[137]	!	!	!	+	+	!
Tang 2023[139]	+	+	+	+	!	!
Trier 2008[142]	+	+	+	+	!	!
Wei 2020[149]	!	+	!	+	+	!
Xia 2023[152]	!	!	!	+	!	-
Xu 2022[154]	+	+	+	+	!	!
Yang 2009[162]	!	+	+	+	!	!
Yi 2015[165]	!	+	+	+	!	!
Yu 2022[166]	+	!	+	+	!	!
Yuval 2024[168]	!	!	+	+	!	!
Zadnik 2023[169]	+	+	+	+	+	+
Zhang 2023[171]	+	+	+	+	!	!
Zhang 2024[170]	+	+	+	+	!	!
Zhao 2020[172]	!	!	!	!	!	-
Zhou 2023[174]	+	-	!	+	!	-
Zhu 2020[175]	+	!	-	+	!	-

+	Low risk
!	Some concerns
-	High risk
D1	Randomisation process
D2	Deviations from intended interventions
D3	Missing outcome data
D4	Measurement of the outcome
D5	Selection of the reported result

First author name and year	D1	D2	D3	D4	D5	Overall
Zhu 2023_b[177]	!	+	+	+	!	!
Zhu 2023_a[176]	!	!	+	+	!	!
Xu 2024[155]	+	!	+	+	!	!
Wang 2024[148]	+	+	+	+	!	!
Rappon 2023[183]	+	+	+	+	!	!
Lee 2024[95]	+	!	+	+	!	!
Chen 2024_a[33]	+	+	-	+	!	-
Kanda 2018[81]	+	+	+	+	!	!
NCT00762970[178]	!	-	!	+	!	-
Liu 2024[102]	+	!	+	+	!	!
Sanchez-Tena 2024[122]	!	+	!	+	!	!
Jakobsen 2022[74]	+	+	!	+	+	!
Fujikado 2014[57]	+	+	+	+	+	+
Li 2023[96]	+	+	+	+	!	!
Yen 1989[164]	!	!	+	+	!	!
Tran 2022[141]	!	-	-	-	!	-
Shen 2022[129]	+	+	+	+	!	!
Moriche-Carretero 2024[110]	-	!	-	+	!	-
Hao 2021[69]	!	+	!	+	!	!
Tang 2024[140]	+	+	-	+	+	-
Loertscher 2021[103]	-	!	+	+	+	-
Li 2023[97]	+	!	-	-	+	-
Yang 2021[163]	-	!	-	-	+	-
Wang 2017[147]	+	+	!	+	!	!
Su 2024[135]	+	+	+	+	!	!
Zhao 2021[173]	!	-	!	+	!	-
Shimmyo 2005[132]	-	-	+	+	!	-
Ruan 2022[116]	-	!	-	+	!	-
Saxena 2021[126]	+	!	+	+	!	!
Xiong 2024[153]	+	!	+	+	+	!
Chen_2023_a[32]	!	+	+	+	!	!
Chen 2024_b[36]	+	+	+	+	!	!
STAR[181]	+	+	+	+	+	+
ORANGE[182]	+	+	+	+	+	+

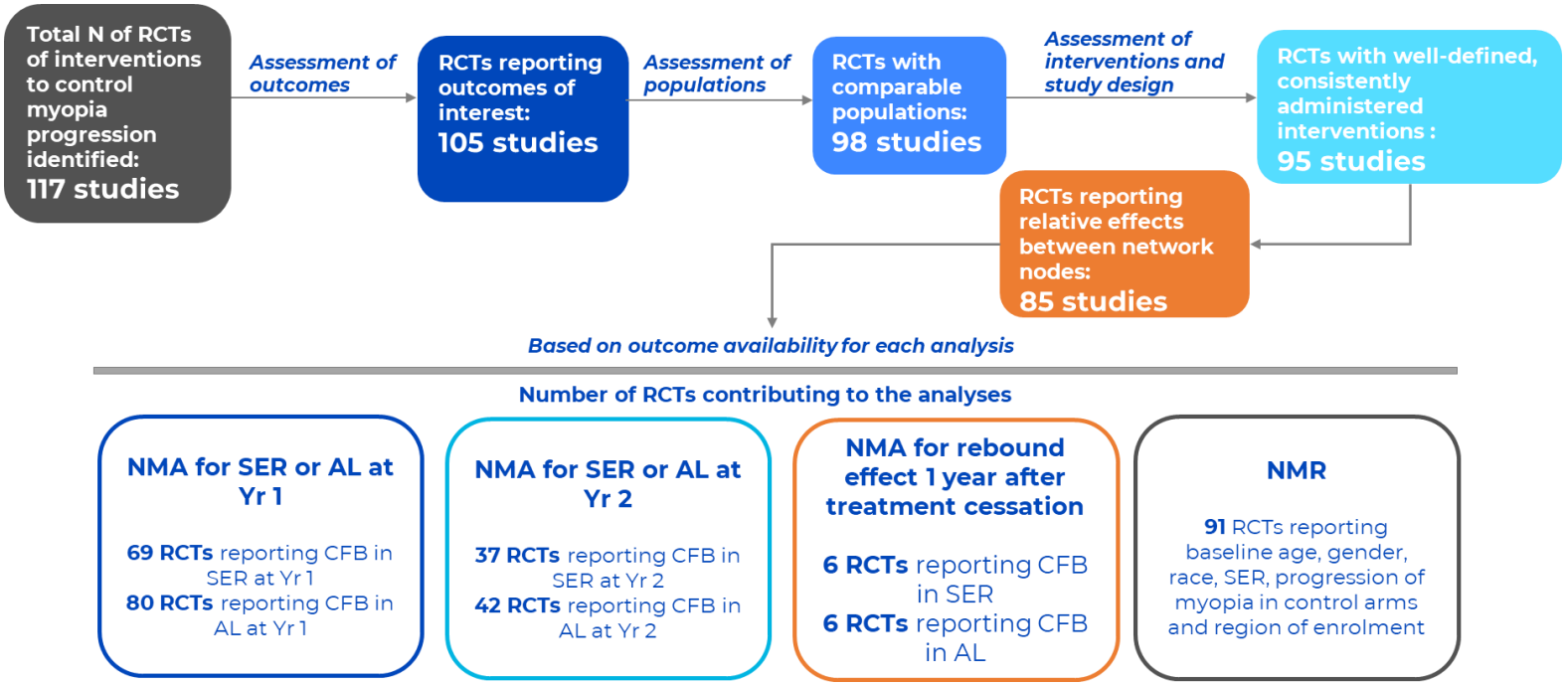
+ Low risk
! Some concerns
- High risk

D1 Randomisation process
D2 Deviations from intended interventions
D3 Missing outcome data
D4 Measurement of the outcome
D5 Selection of the reported result

Note: The quality of RCTs was determined using the Cochrane Collaboration tool for risk of bias 2 (RoB2)[5] for the outcomes CFB in SER and CFB in AL. The Cochrane RoB2 tool (version 22 August 2019) covers five domains of bias, as described in Chapter 8 of the Cochrane Handbook for Systematic Reviews

of Interventions.[2] For the 109 studies identified in the SLR that reported either or both outcomes of interest, we assessed the effect of assignment to intervention (i.e., the intention-to-treat effect).

Fig. S1. Decision tree summarizing the NMA feasibility assessment process and findings. Ten RCTs comparing different designs of ORTHOK lenses and one RCT comparing different designs of MFSCLs did not provide relative effects between any of the network nodes because their interventions were classified within the same node, resulting in 85 RCTs that informed the NMA.



AL, axial length; *CFB*, change from baseline; *N*, number; *NMA*, network meta-analysis; *NMR*, network meta-regression, *RCT*, randomized clinical trial; *SER*, spherical equivalent refraction; *Yr*, year.

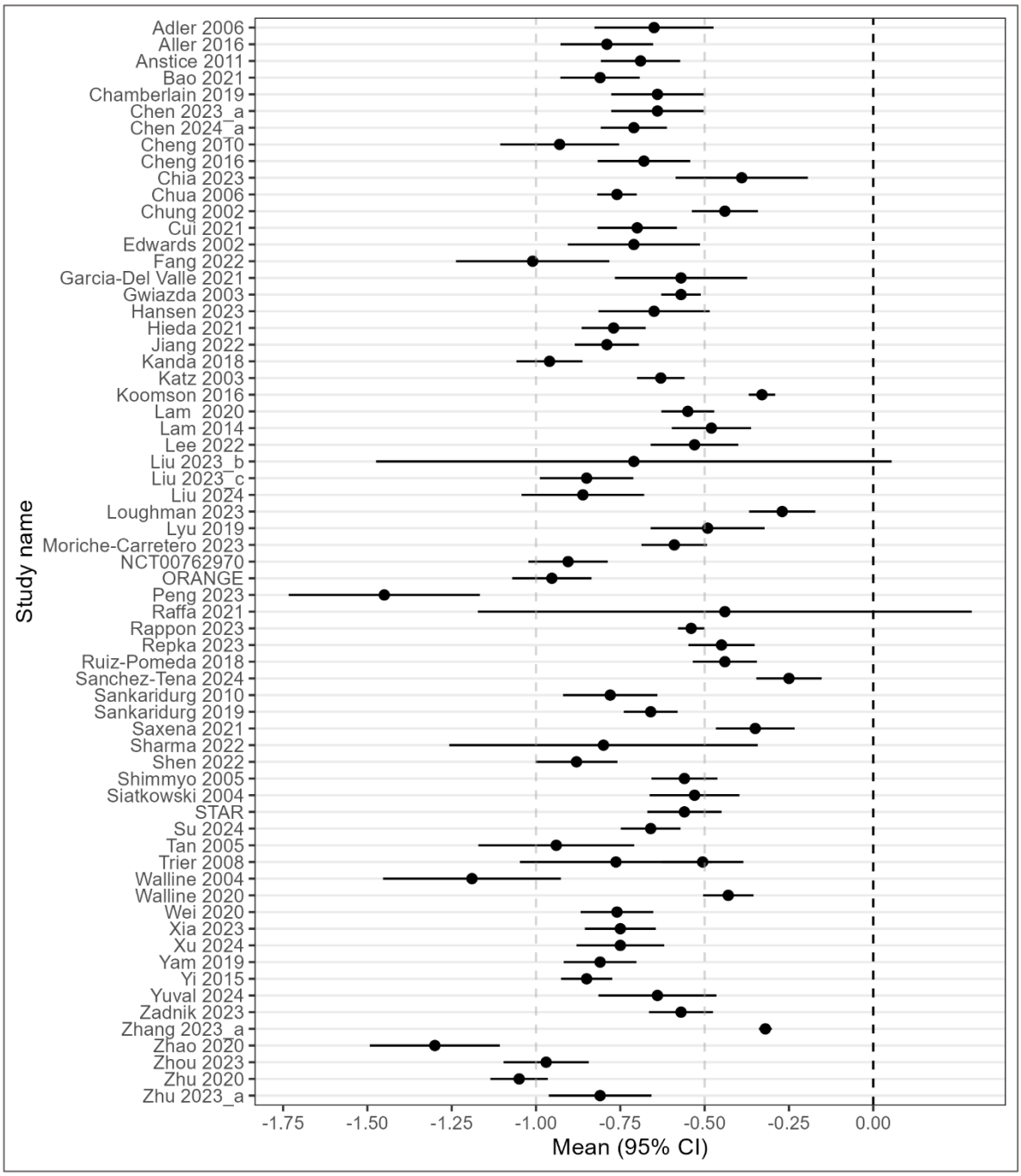
Table S8. RCTs excluded from the NMA due to missing outcome data or violation of the transitivity assumption.

No.	First author name and year	Trial name	NCT number (Trial registration number)	Linked records	Reason for exclusion
RCTs excluded due to lack of outcome reporting or unreliable outcome measures					
1	Medghalchi 2023[108]	NR	IRCT20100414003714N3	NA	Participants discontinued treatment 6 months after randomization, hence 1-year outcomes were not reported
2	Bartlett 2003[21]	NR	NR	NA	Did not report CFB in SER and AL
3	Hasebe 2008[71]	NR	ISRCTN28611140	NA	Did not report CFB in SER and AL
4	Shih 2002[131]	MIT Study	NR	NA	Did not report CFB in SER and AL
5	Sankaridurg 2013[125]	NR	ChiCTR-TRC-00000232	NA	Did not report CFB in SER and AL
6	Chan 2022[29]	NR	NCT03374306	NA	Did not report CFB in SER and AL
7	Chen 2023[35]	NR	NR	NA	Did not report CFB in SER and AL
8	Han 2017[66]	NR	NR	NA	Did not report CFB in SER and AL
9	NA[179]	NR	NCT03465748	NA	Did not report CFB in SER and AL
10	Tran 2022[141]	NR	NR	NA	Lacking arm sample size information
11	Wang 2017[147]	NR	NR	NA	Inconsistencies in reporting of outcome suggested error(s) in data collection, analysis or reporting
12	Agarwal 2023[15]	NR	NR	NA	Inconsistencies in reporting of outcome suggested error(s) in data collection, analysis or reporting
RCTs likely to violate transitivity assumption due to substantial differences in intervention					
13	Shih 1999[130]	NR	NR	NA	Concurrent use of other active myopia-control interventions without enforcement or monitoring adherence
14	Yen 1989[164]	NR	NR	NA	Concurrent use of other active myopia-control interventions without enforcement or monitoring adherence
15	Fujikado 2014[57]	NR	JPRN-UMIN000007989	NA	Evaluation of a progressive MFSCL design distinct from other multifocal lenses in the evidence base
RCTs likely to violate transitivity assumption due to substantial differences in enrolled population					
16	Wang 2024[148]	AMIXT	ChiCTR2000039827	NA	Inclusion of patients with exotropia
17	Berntsen 2012[22]	STAMP	NCT00335049	Bernsten 2013[23], Bernsten 2010[24]	Inclusion of patients with esophoria and high accommodative lag

No.	First author name and year	Trial name	NCT number (Trial registration number)	Linked records	Reason for exclusion
18	Correction of Myopia Evaluation Trial 2 Study Group for the Pediatric Eye Disease Investigator Group 2011[50]	COMET2	NCT00320593	NA	Specifically enrolled children with esophoria and high accommodative lag
19	Fulk 2002[58]	NR	NR	NA	Specifically enrolled children with esophoria
20	Jensen 1991[76]	NR	NR	NA	Majority of enrolled children had near phorias
21	Lin 2023[98]	NR	NR	NA	Specifically enrolled children with anisometropia >1.0 D
22	Zhang 2023[171]	NR	ChiCTR 1800017535	NA	Specifically enrolled children with anisometropia >1.0 D

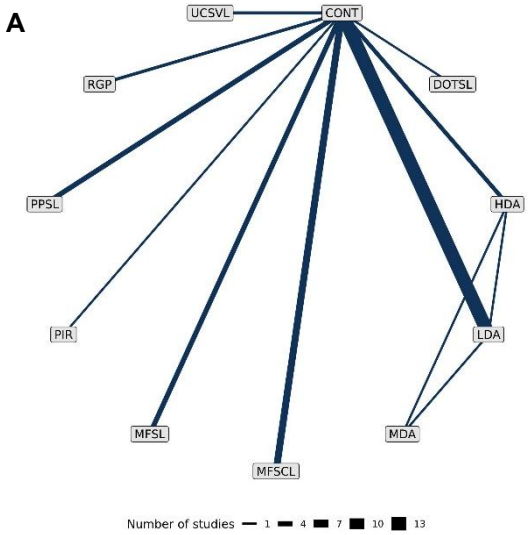
AL, axial length; *CFB*, change from baseline; *MFSCL*, multifocal soft contact lenses; *NA*, not applicable; *NR*, not reported; *SER*, spherical equivalent refraction; *SLR*, systematic literature review.

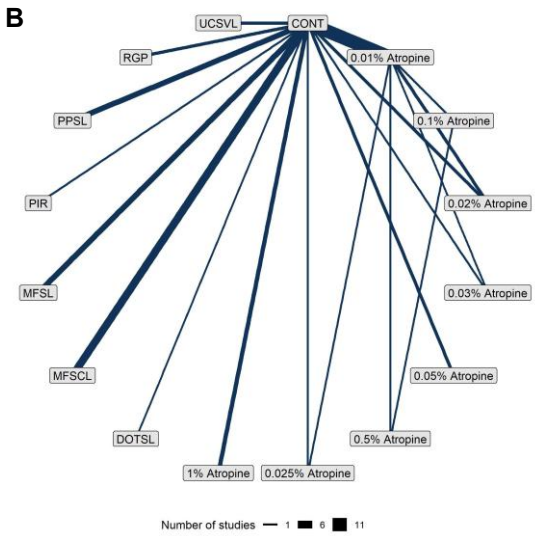
Fig. S2. Mean (95% CI) CFB in SER 12 months after randomization in the control arm as reported in 65 RCTs identified in the SLR. The solid vertical line at 0 indicates the line of no change. Approximately 73% of the RCTs had an estimate within the range -1.00 to -0.5, indicated by the grey dotted lines



CI, confidence interval; *CFB*, change from baseline; *RCT*, randomized controlled trial; *SER*, spherical equivalent refraction.

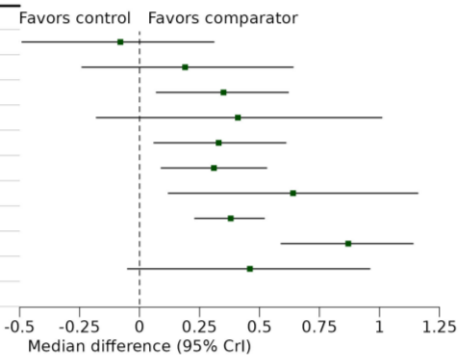
Fig. S3. Evidence networks and relative effects of active interventions versus control (random effects models) for CFB in SER (D) at year 2. (A), (C) Standard NMA; (B), (D) Non-parametric dose-response NMA.





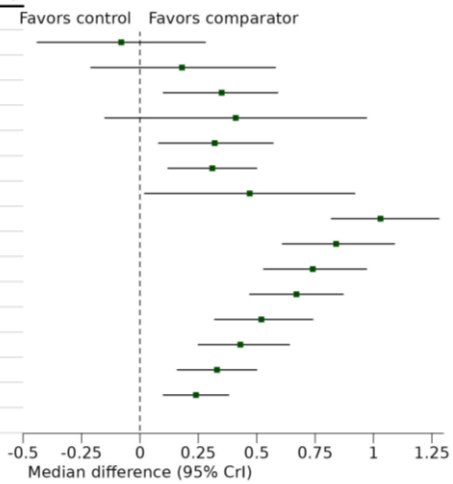
C

Treatment	Median difference (95% CrI)
UCSVL	-0.08 (-0.49, 0.31)
RGP	0.19 (-0.24, 0.64)
PPSL	0.35 (0.07, 0.62)
PIR	0.41 (-0.18, 1.01)
MFSL	0.33 (0.06, 0.61)
MFSCL	0.31 (0.09, 0.53)
MDA	0.64 (0.12, 1.16)
LDA	0.38 (0.23, 0.52)
HDA	0.87 (0.59, 1.14)
DOTSL	0.46 (-0.05, 0.96)
Control	Reference level



D

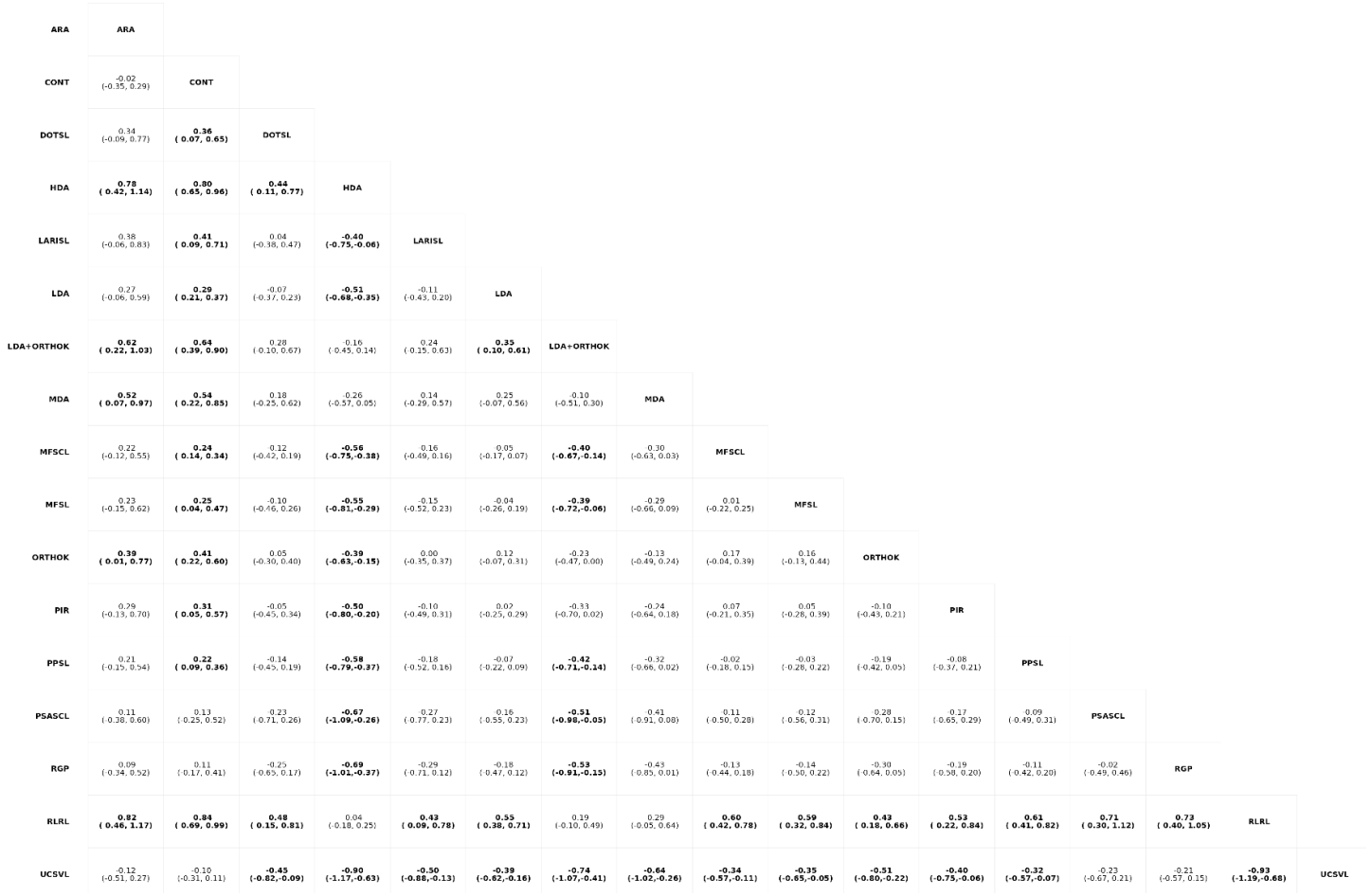
Treatment	Median difference (95% CrI)
UCSVL	-0.08 (-0.44, 0.28)
RGP	0.18 (-0.21, 0.58)
PPSL	0.35 (0.1, 0.59)
PIR	0.41 (-0.15, 0.97)
MFSL	0.32 (0.08, 0.57)
MFSCL	0.31 (0.12, 0.5)
DOTSL	0.47 (0.02, 0.92)
1% Atropine	1.03 (0.82, 1.28)
0.5% Atropine	0.84 (0.61, 1.09)
0.1% Atropine	0.74 (0.53, 0.97)
0.05% Atropine	0.67 (0.47, 0.87)
0.03% Atropine	0.52 (0.32, 0.74)
0.025% Atropine	0.43 (0.25, 0.64)
0.02% Atropine	0.33 (0.16, 0.5)
0.01% Atropine	0.24 (0.1, 0.38)
Control	Reference level



CFB, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *NMA*, network meta-analysis; *PIR*, pirenzepine; *PPSL*, peripheral plus

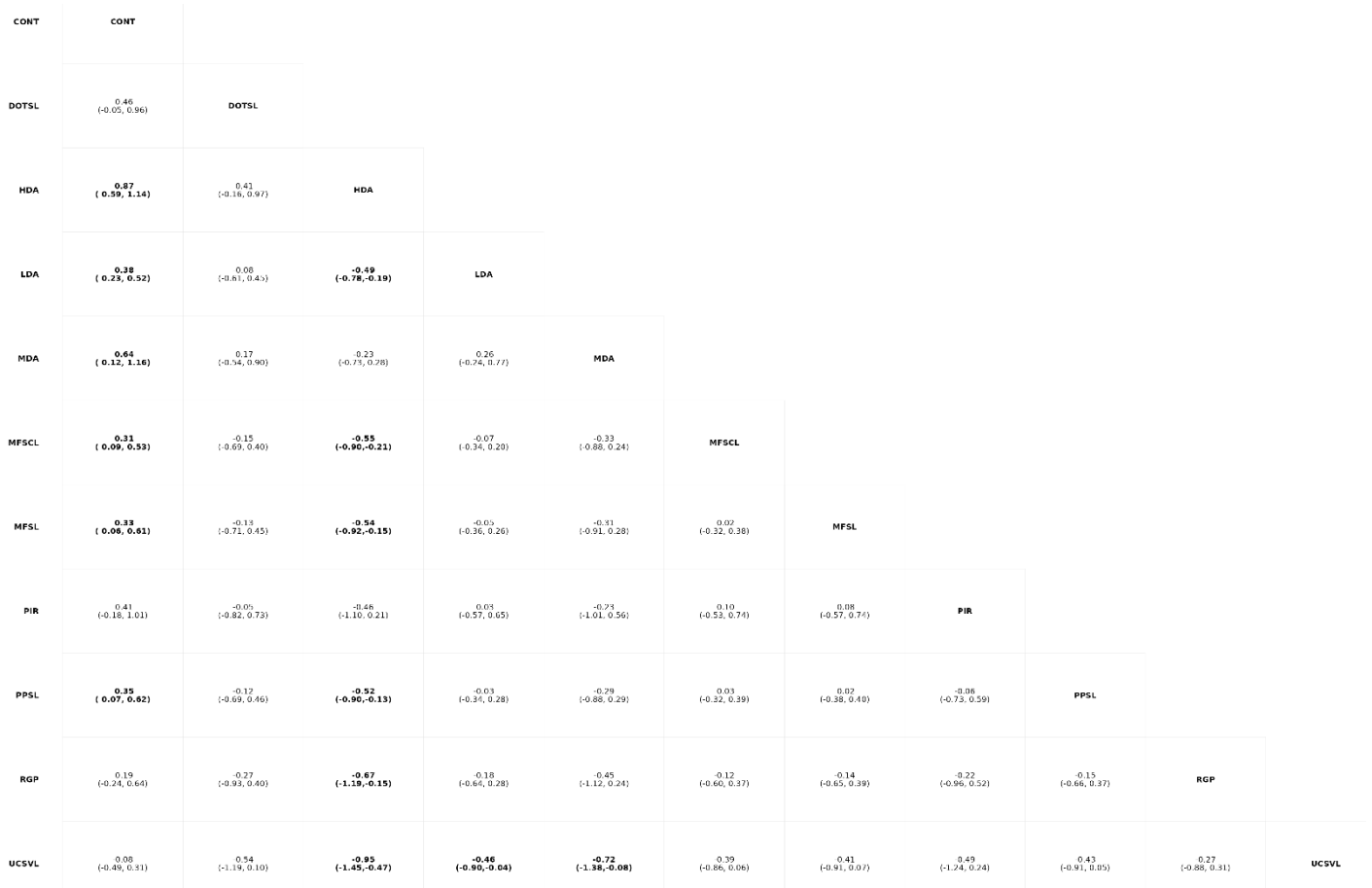
spectacle lenses; *RGP*, rigid gas-permeable contact lenses; *SER*, spherical equivalent refraction; *UCSVL*, under-corrected single vision spectacles.

Fig. S4. League table with CFB in SER at year 1 standard NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. The direction of the relative effect is read horizontally: Treatment on the left versus treatment on top



ARA, adenosine receptor antagonists; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *ORTHOK*, orthokeratology; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction, *UCSVL*, undercorrected single vision spectacle lenses.

Fig. S5. League table with CFB in SER at year 2 standard NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.



CONT, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction; *UCSVL*, undercorrected single vision spectacle lenses

Table S9. Model fit statistics: DIC and residual deviance values for fixed- and random-effects models of the standard NMA. The random-effects NMA showed considerably lower DIC values (ΔDIC > 3) and posterior mean residual deviance compared to the fixed-effects model, indicating better goodness of fit.

Outcome	Relative effect model	Data points (i.e. study arms)	DIC	Effective number of parameters (pD)	Mean of the residual deviance (ResDev)
CFB in SER at year 1	NMA [FE model]	173	593.92	88.22	505.70
	NMA [RE model]	173	329.84	151.86	177.98
CFB in SER at year 2	NMA [FE model]	88	457.31	47.01	410.30
	NMA [RE model]	88	170.21	82.03	88.18
CFB in AL at year 1	NMA [FE model]	216	741.36	106.99	634.37
	NMA [RE model]	216	406.28	184.27	222.01
CFB in AL at year 2	NMA [FE model]	108	451.40	56.83	394.57
	NMA [RE model]	108	208.23	98.70	109.54
Rebound effect in SER	NMA [FE model]	18	47.37	13.01	34.35
	NMA [RE model]	18	36.04	17.54	18.50
Rebound effect in AL	NMA [FE model]	18	31.85	12.99	18.86
	NMA [RE model]	18	32.92	15.28	17.64

AL, axial length; CFB, change from baseline; *DIC*, deviance information criterion; *FE*, fixed effects; *NMA*, network meta-analysis; *RE*, random effects; *ResDev*, residual deviance; *SER*, spherical equivalent refraction;

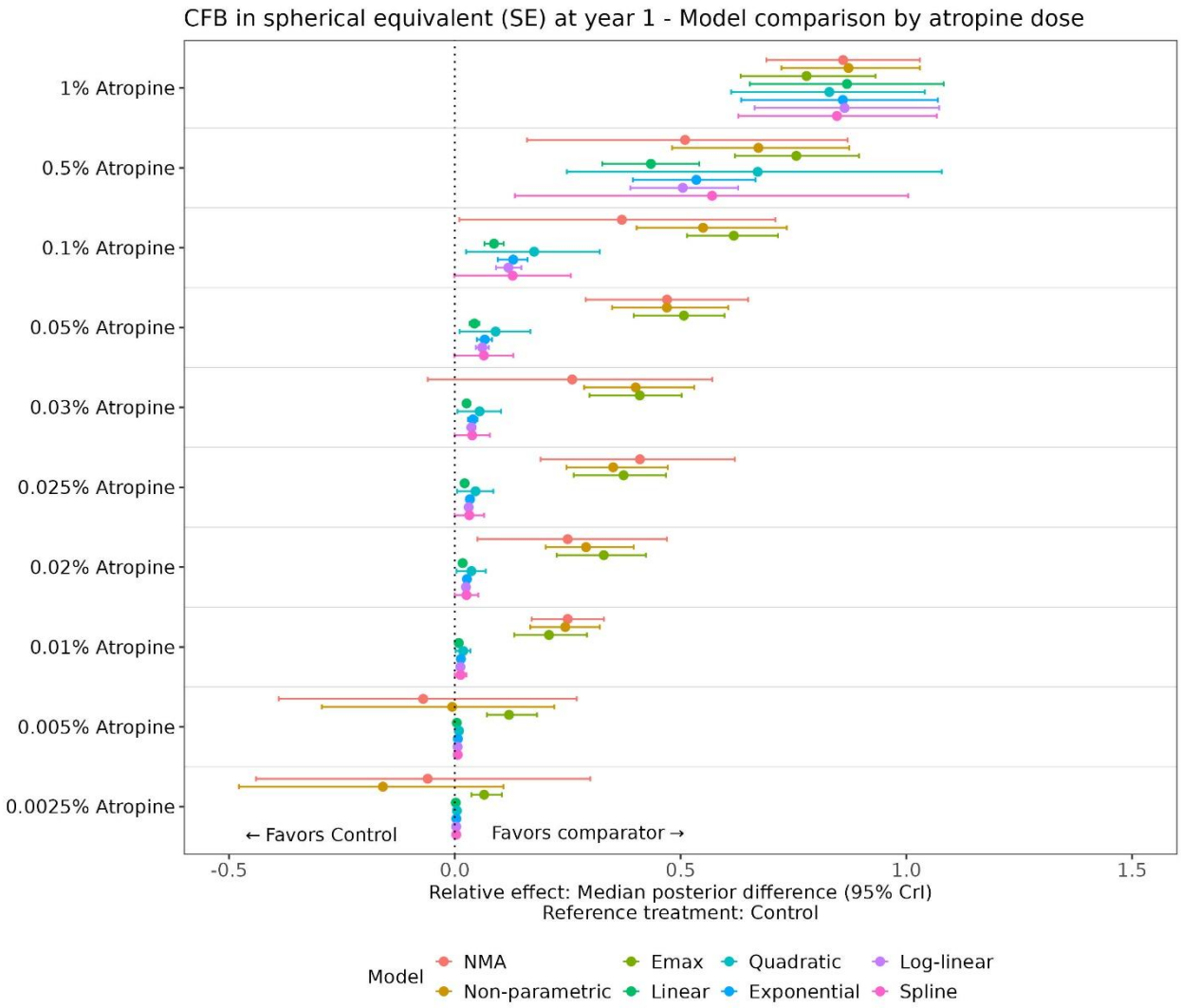
Table S10. Standard NMA: Posterior rank mean (SD) and SUCRA values for CFB in SER (D) and AL (mm) at year 2 and change in SER (D) 1 year post treatment cessation. Results are based on random-effects models.

Treatment (in alphabetical order)	CFB in SER at year 2		CFB in AL at year 2		Change in SER 1 year post treatment cessation (rebound effect)	
	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)	Posterior rank mean (SD)	Posterior rank mean (SD)	SUCRA values
CONT	10 (0.72)	0.1	11.53 (0.84)	0.12	1.9 (0.69)	0.82
DOTSL	4.64 (2.56)	0.64	6.11 (2.65)	0.57	NA	NA
HDA	1.37 (0.62)	0.96	2.35 (1.07)	0.89	5.69 (0.62)	0.06
LDA	5.38 (1.48)	0.56	7.29 (1.34)	0.48	2.79 (0.78)	0.64
LDA + ORTHOK	NA	NA	1.75 (1.01)	0.94	NA	NA

Treatment (in alphabetical order)	CFB in SER at year 2		CFB in AL at year 2		Change in SER 1 year post treatment cessation (rebound effect)	
	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)	Posterior rank mean (SD)	Posterior rank mean (SD)	SUCRA values
MDA	3.09 (2.03)	0.79	3.25 (1.94)	0.81	4.73 (0.89)	0.25
MFSCL	6.39 (1.74)	0.46	7.16 (1.62)	0.49	1.77 (1.16)	0.85
MFSL	6.08 (1.98)	0.49	8.79 (1.85)	0.35	NA	NA
ORTHOK	NA	NA	4.26 (1.42)	0.73	NA	NA
PIR	5.32 (2.97)	0.57	8.06 (3.22)	0.41	NA	NA
PPSL	5.85 (1.98)	0.51	7.13 (1.85)	0.49	NA	NA
RGP	7.69 (2.36)	0.33	11.76 (1.6)	0.1	NA	NA
RLRL	NA	NA	NA	NA	4.12 (1.07)	0.38
UCSVL	10.19 (1.32)	0.08	11.56 (1.45)	0.12	NA	NA

AL, axial length; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *DOTSL*, diffusion optics technology spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *mm*, millimeters; *NA*, not applicable; *NMA*, network meta-analysis; *ORTHOK*, orthokeratology lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SD*, standard deviation; *SER*, spherical equivalent refraction; *SUCRA*, surface under the cumulative ranking curve; *UCSVL*, under-corrected single vision spectacles.

Fig. S6. Forest plot of relative effect estimates for different LDA strengths from the seven exploratory dose-response models compared to the standard NMA in the global network of evidence (random-effects models).



CFB, change from baseline; *LDA*, low dose atropine; *NMA*, network meta-analysis; *SE*, spherical equivalent.

Table S11. Model fit statistics (DIC values) for the dose-response NMA model exploration of the CFB in SER (D) at year 1

Model	NMA	Non-parametric	Emax	Linear	Quadratic	Exponential	Log-linear	Spline
Fixed effects	-111.2	-114.8	-39.33	255.13	204.78	215.76	219.64	227.56
Random effects	-325	-325.7	-327.69	-322.24	-321.49	-320.86	-319.65	-321.01

CFB, change from baseline; *NMA*, network meta-analysis; *SER*, spherical equivalent refraction.

Table S12. Relative effects [median (95% CrI)] of CFB in SER (D) at years 1 and 2 for non-parametric dose-response NMA versus standard NMA. Results are based on random-effects models with control as the reference treatment

Treatment Comparison	Year 1		Year 2	
	Non-parametric dose-response NMA	Standard NMA	Non-parametric dose-response NMA	Standard NMA
ARA versus Control	0.07 (-0.20, 0.34)	0.07 (-0.20, 0.33)	NA	NA
0.0025% Atropine versus Control	-0.16 (-0.48, 0.11)	-0.06 (-0.44, 0.30)	NA	NA
0.005% Atropine versus Control	-0.01 (-0.29, 0.22)	-0.07 (-0.39, 0.27)	NA	NA
0.01% Atropine versus Control	0.24 (0.17, 0.32)	0.25 (0.17, 0.33)	0.24 (0.10, 0.38)	0.24 (0.09, 0.39)
0.02% Atropine versus Control	0.29 (0.20, 0.40)	0.25 (0.05, 0.47)	0.33 (0.16, 0.50)	0.27 (-0.03, 0.58)
0.025% Atropine versus Control	0.35 (0.25, 0.47)	0.41 (0.19, 0.62)	0.43 (0.25, 0.64)	0.59 (0.16, 1.02)
0.03% Atropine versus Control	0.40 (0.29, 0.53)	0.26 (-0.06, 0.57)	0.52 (0.32, 0.74)	0.25 (-0.18, 0.69)
0.05% Atropine versus Control	0.47 (0.35, 0.61)	0.47 (0.29, 0.65)	0.67 (0.47, 0.87)	0.88 (0.54, 1.24)
0.1% Atropine versus Control	0.55 (0.40, 0.74)	0.37 (0.01, 0.71)	0.74 (0.53, 0.97)	0.34 (-0.16, 0.85)
0.5% Atropine versus Control	0.67 (0.48, 0.87)	0.51 (0.16, 0.87)	0.84 (0.61, 1.09)	0.42 (-0.07, 0.95)
1% Atropine versus Control	0.87 (0.72, 1.03)	0.86 (0.69, 1.03)	1.03 (0.82, 1.28)	0.97 (0.69, 1.24)
DOTSL versus Control	0.36 (0.09, 0.63)	0.36 (0.08, 0.64)	0.47 (0.02, 0.92)	0.47 (0.00, 0.92)
LARISL versus Control	0.41 (0.12, 0.70)	0.41 (0.11, 0.70)	NA	NA
LDA + ORTHOK versus Control	0.61 (0.37, 0.85)	0.62 (0.38, 0.87)	NA	NA
MFSCL versus Control	0.24 (0.14, 0.33)	0.24 (0.15, 0.33)	0.31 (0.12, 0.50)	0.31 (0.12, 0.50)
MFSL versus Control	0.25 (0.05, 0.45)	0.26 (0.05, 0.45)	0.32 (0.08, 0.57)	0.32 (0.08, 0.57)
ORTHOK versus Control	0.38 (0.20, 0.56)	0.39 (0.20, 0.57)	NA	NA

Treatment Comparison	Year 1		Year 2	
	Non-parametric dose-response NMA	Standard NMA	Non-parametric dose-response NMA	Standard NMA
PIR versus Control	0.31 (0.06, 0.56)	0.31 (0.06, 0.56)	0.41 (-0.15, 0.97)	0.42 (-0.16, 0.95)
PPSL versus Control	0.22 (0.10, 0.35)	0.22 (0.10, 0.35)	0.35 (0.10, 0.59)	0.35 (0.11, 0.59)
PSASCL versus Control	0.13 (-0.23, 0.48)	0.13 (-0.23, 0.49)	NA	NA
RGP versus Control	0.11 (-0.16, 0.39)	0.11 (-0.17, 0.40)	0.18 (-0.21, 0.58)	0.18 (-0.20, 0.57)
RLRL versus Control	0.83 (0.69, 0.97)	0.83 (0.69, 0.98)	NA	NA
UCSVL versus Control	-0.10 (-0.30, 0.10)	-0.09 (-0.30, 0.10)	-0.08 (-0.44, 0.28)	-0.07 (-0.44, 0.28)

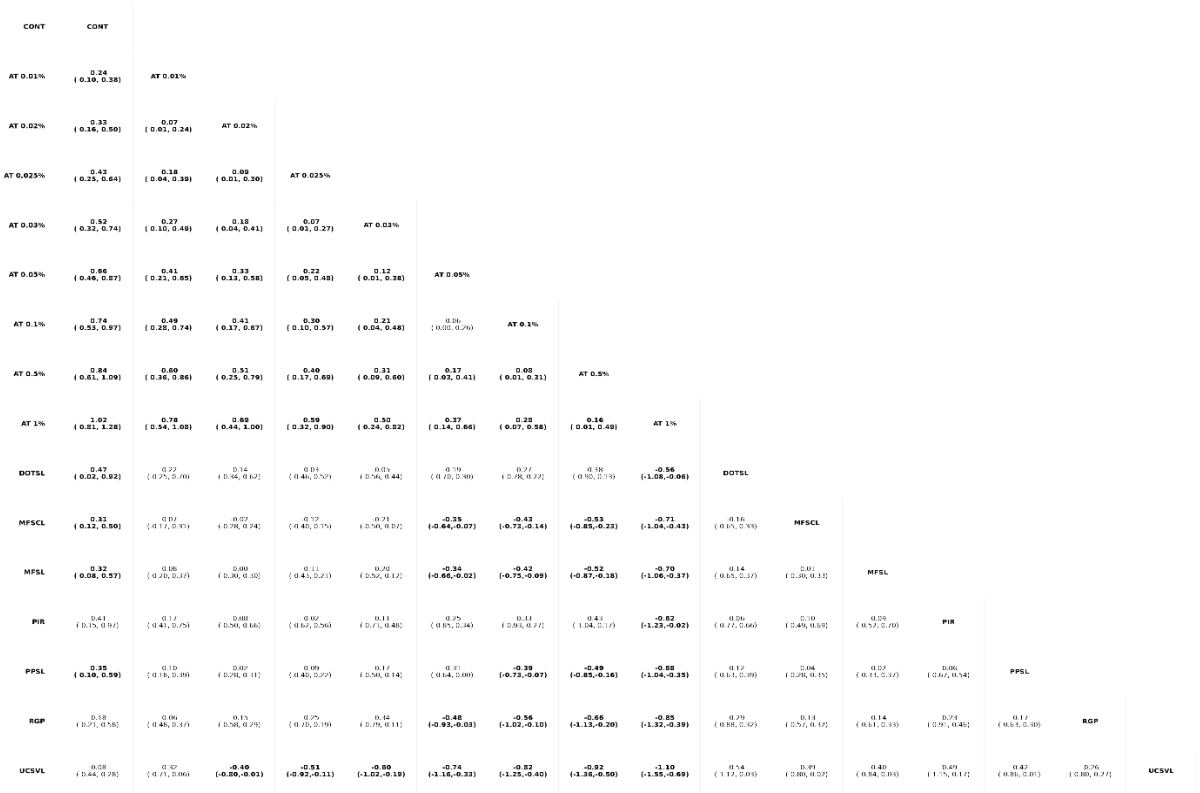
ARA, adenosine receptor antagonists; *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *LDA*, low-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *NA*, not applicable; *NMA*, network meta-analysis; *ORTHOK*, orthokeratology; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction; *UCSVL*, undercorrected single vision spectacle lenses.

Fig. S7. League table with CFB in SER at year 1 dose-response NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.

ARA, adenosine receptor antagonists; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *LDA*, low-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *ORTHOK*, orthokeratology; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical

aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction; *UCSVL*, undercorrected single vision spectacle lenses

Fig. S8. League table with CFB in SER at year 2 dose-response NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top



AT, atropine; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *MFSL*, multifocal spectacle lenses; *MFSCL*, multifocal soft contact lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *RGP*, rigid gas-permeable contact lenses; *SER*, spherical equivalent refraction; *UCSVL*, under-corrected single vision spectacles.

Table S13. Model fit statistics: DIC values for fixed- and random-effects models with non-parametric dose-response NMA. The random-effects NMA showed considerably lower DIC values (ΔDIC > 3) compared to the fixed-effects model, indicating that the random-effects model demonstrated better goodness of fit.

Outcome	Relative effect model	DIC
CFB in SER at year 1	NMA [FE model]	-114.8
	NMA [RE model]	-325.7
CFB in SER at year 2	NMA [FE model]	42.13
	NMA [RE model]	-140.5
CFB in AL at year 1	NMA [FE model]	-443
	NMA [RE model]	-689.4
CFB in AL at year 2	NMA [FE model]	-128.7
	NMA [RE model]	-310.5
Rebound effect in SER	NMA [FE model]	-18.96
	NMA [RE model]	-35.08
Rebound effect in AL	NMA [FE model]	-62.73
	NMA [RE model]	-64.80

AL, axial length; CFB, change from baseline; *DIC*, deviance information criterion; *FE*, fixed effects; *NMA*, network meta-analysis; *RE*, random effects; *SER*, spherical equivalent refraction.

Table S14. Non-parametric dose-response NMA: Posterior rank mean (SD) and SUCRA values for CFB in SER (D) and AL (mm) at year 2 and change in SER (D) 12 months post-treatment cessation. Results are based on random-effects models.

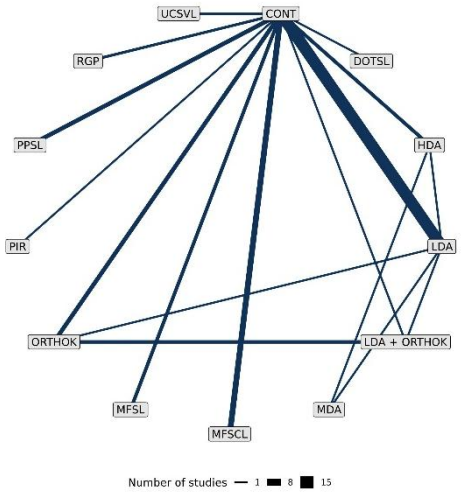
Treatment (in alphabetical order)	CFB in SER at year 2		CFB in AL at year 2		Change in SER 1 year post treatment cessation (rebound effect)	
	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)
0.01% Atropine	12.17 (1.35)	0.26	13.5 (1.25)	0.26	2.12 (0.90)	0.86
0.02% Atropine	10.1 (1.54)	0.39	11.56 (1.42)	0.38	NA	NA
0.025% Atropine	7.88 (1.41)	0.54	9.56 (1.43)	0.5	3.61 (0.89)	0.67
0.03% Atropine	6.16 (1.13)	0.66	7.78 (1.32)	0.6	NA	NA
0.05% Atropine	4.49 (0.7)	0.77	5.81 (1.07)	0.72	4.97 (0.80)	0.5
0.1% Atropine	3.3 (0.55)	0.85	4.25 (0.92)	0.81	6.43 (0.67)	0.32
0.5% Atropine	2.16 (0.4)	0.92	2.82 (0.77)	0.89	7.72 (0.50)	0.16

Treatment (in alphabetical order)	CFB in SER at year 2		CFB in AL at year 2		Change in SER 1 year post treatment cessation (rebound effect)	
	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)
1% Atropine	1.04 (0.19)	1	1.37 (0.56)	0.98	8.92 (0.29)	0.01
CONT	15.05 (0.69)	0.06	16.53 (0.82)	0.09	2.77 (1.29)	0.78
DOTSL	7.58 (3.62)	0.56	8.99 (3.97)	0.53	NA	NA
LDA + ORTHOK	NA	NA	2.59 (1.67)	0.91	NA	NA
MFSCL	10.39 (2.23)	0.37	10.8 (2.32)	0.42	2.67 (2.15)	0.79
MFSL	10.07 (2.58)	0.4	13.09 (2.52)	0.29	NA	NA
ORTHOK	NA	NA	6.57 (2.37)	0.67	NA	NA
PIR	8.54 (4.18)	0.5	11.86 (4.59)	0.36	NA	NA
PPSL	9.6 (2.57)	0.43	10.7 (2.67)	0.43	NA	NA
RGP	12.28 (2.99)	0.25	16.7 (1.87)	0.08	NA	NA
RLRL	NA	NA	NA	NA	5.8 (2.15)	0.40
UCSVL	15.22 (1.35)	0.05	16.48 (1.68)	0.09	NA	NA

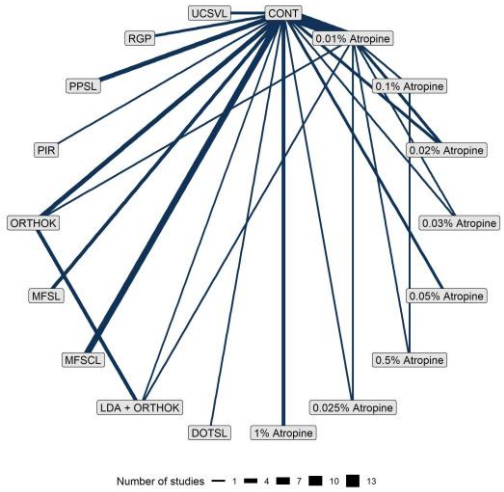
AL, axial length;; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *DOTSL*, diffusion optics technology spectacle lenses; *LDA*, low-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *mm*, millimeters; *NMA*, network meta-analysis; *ORTHOK*, orthokeratology lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SD*, standard deviation; *SER*, spherical equivalent refraction; *SUCRA*, surface under the cumulative ranking curve; *UCSVL*, under-corrected single vision spectacles

Fig. S9. Evidence networks and relative effects of active interventions versus control (random-effects models) for CFB in AL (mm) at year 2. (A), (C) Standard NMA; (B), (D) Non-parametric dose-response NMA.

A

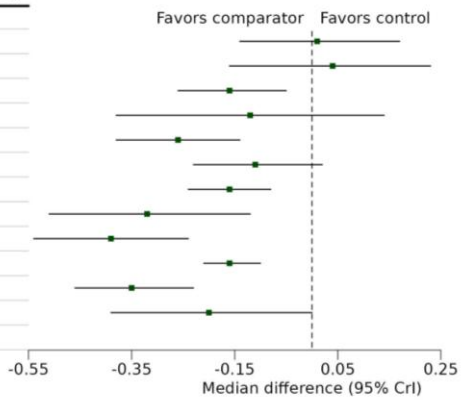


B



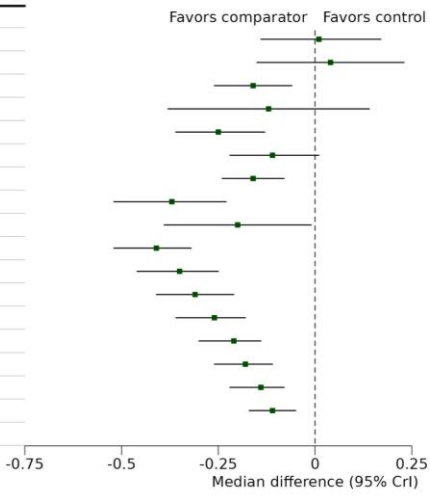
C

Treatment	Median difference (95% CrI)
UCSVL	0.01 (-0.14, 0.17)
RGP	0.04 (-0.16, 0.23)
PPSL	-0.16 (-0.26,-0.05)
PIR	-0.12 (-0.38, 0.14)
ORTHOK	-0.26 (-0.38,-0.14)
MFSL	-0.11 (-0.23, 0.02)
MFSCL	-0.16 (-0.24,-0.08)
MDA	-0.32 (-0.51,-0.12)
LDA + ORTHOK	-0.39 (-0.54,-0.24)
LDA	-0.16 (-0.21,-0.10)
HDA	-0.35 (-0.46,-0.23)
DOTSL	-0.20 (-0.39, 0.00)
Control	Reference level



D

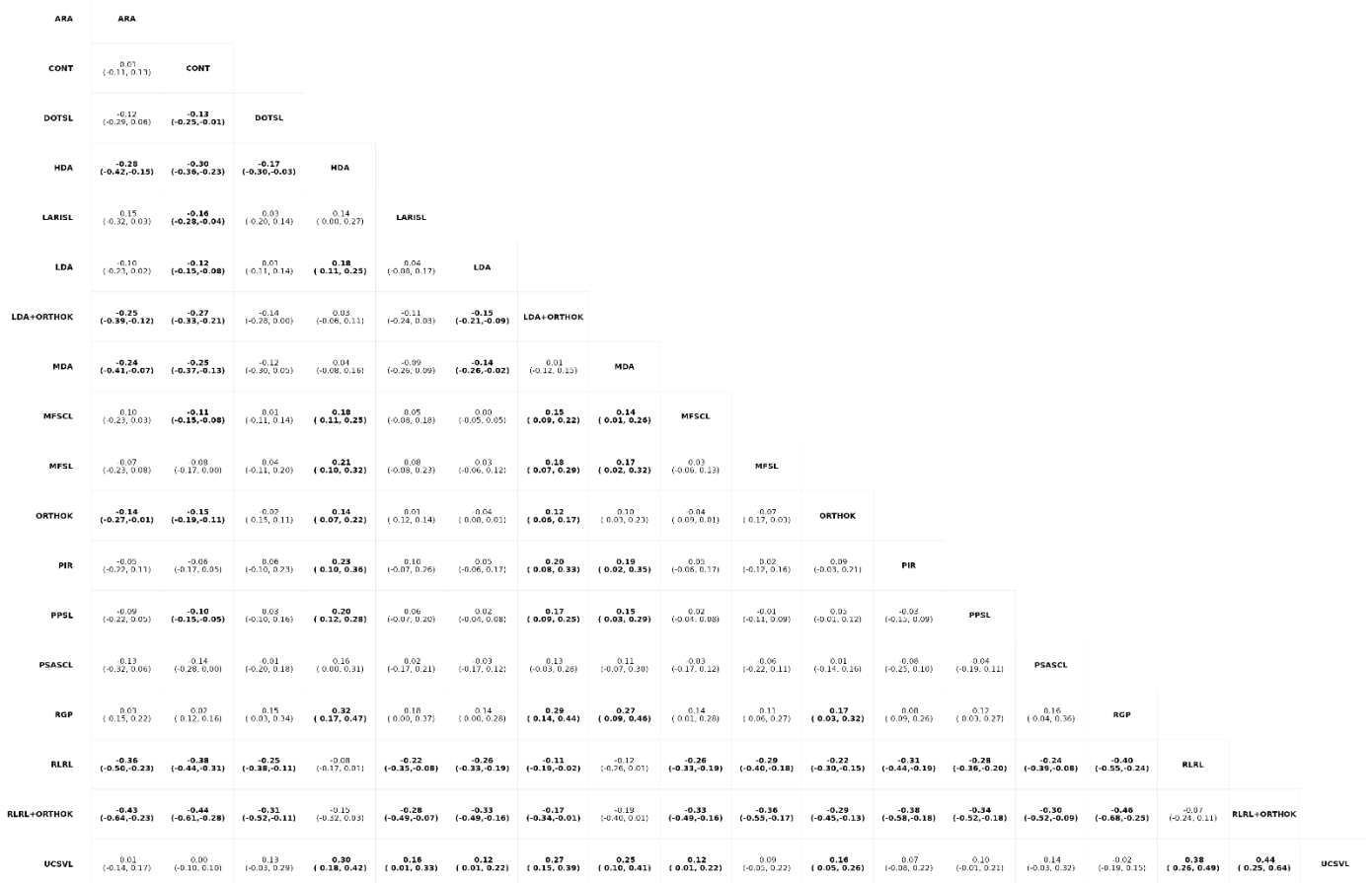
Treatment	Median difference (95% CrI)
UCSVL	0.01 (-0.14, 0.17)
RGP	0.04 (-0.15, 0.23)
PPSL	-0.16 (-0.26, -0.06)
PIR	-0.12 (-0.38, 0.14)
ORTHOK	-0.25 (-0.36, -0.13)
MFSL	-0.11 (-0.22, 0.01)
MFSCL	-0.16 (-0.24, -0.08)
LDA + ORTHOK	-0.37 (-0.52, -0.23)
DOTSL	-0.2 (-0.39, -0.01)
1% Atropine	-0.41 (-0.52, -0.32)
0.5% Atropine	-0.35 (-0.46, -0.25)
0.1% Atropine	-0.31 (-0.41, -0.21)
0.05% Atropine	-0.26 (-0.36, -0.18)
0.03% Atropine	-0.21 (-0.3, -0.14)
0.025% Atropine	-0.18 (-0.26, -0.11)
0.02% Atropine	-0.14 (-0.22, -0.08)
0.01% Atropine	-0.11 (-0.17, -0.05)
Control	Reference level



AL, axial length; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *mm*, millimeters; *NMA*, network meta-analysis;

ORTHOK, orthokeratology lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *RGP*, rigid gas-permeable contact lenses; *UCSVL*, under-corrected single vision spectacles.

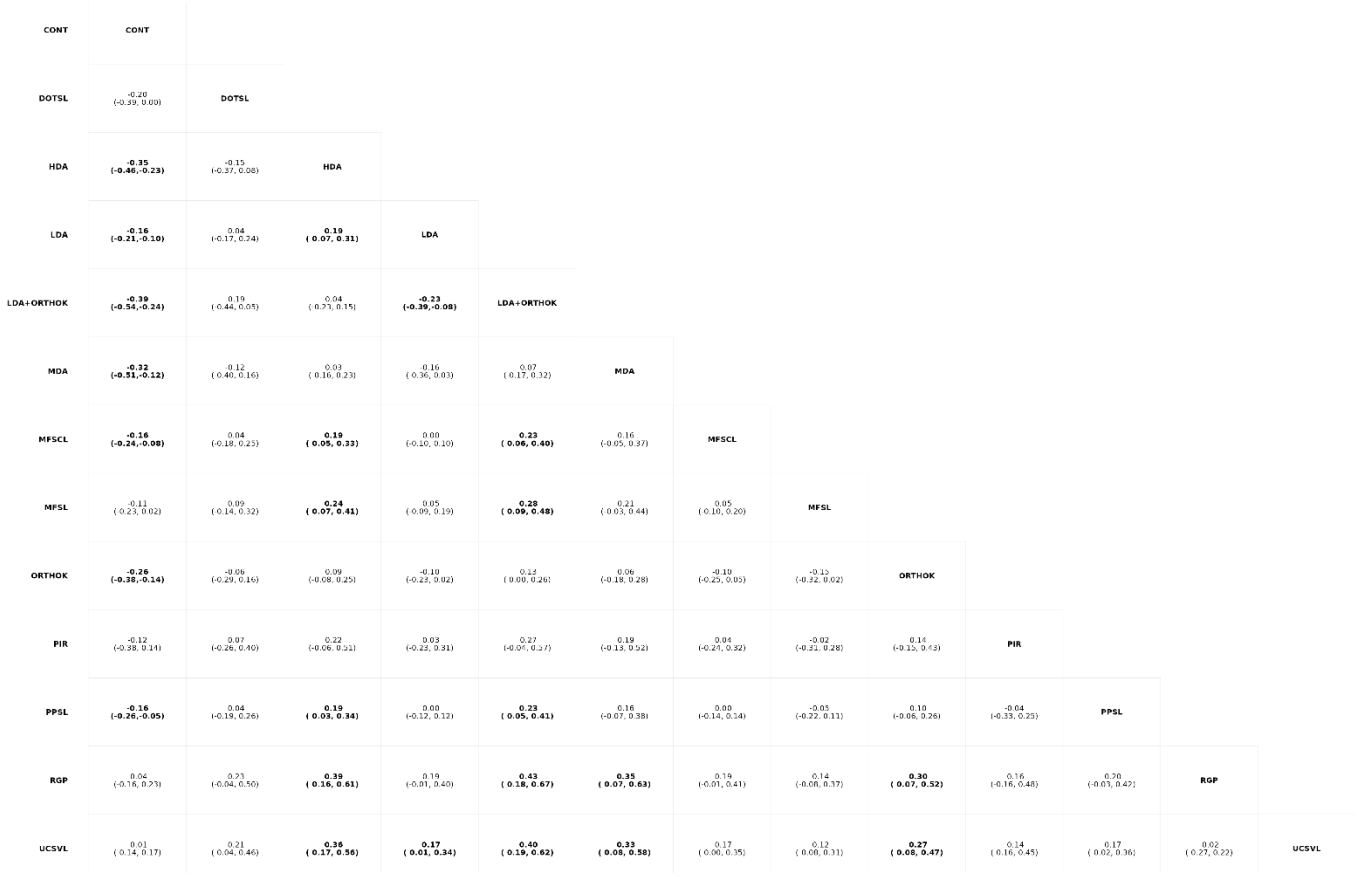
Fig. S10. League table with CFB in AL at year 1 standard NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.



AL, axial length; *ARA*, adenosine receptor antagonists; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *ORTHOK*, orthokeratology; *PIR*,

pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *UCSVL*, undercorrected single vision spectacle lenses.

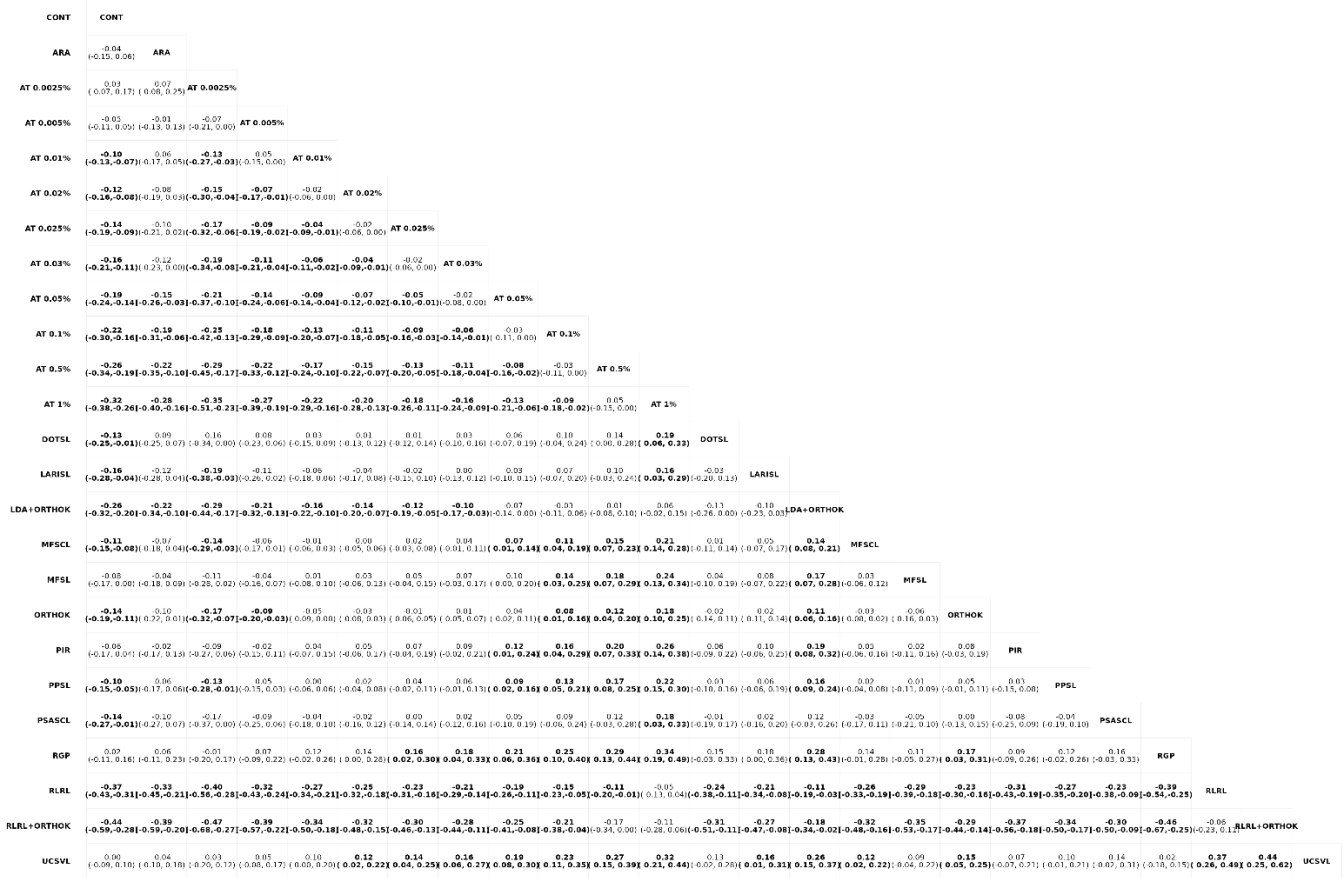
Fig. S11. League table with CFB in AL at year 2 standard NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.



AL, axial length; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *ORTHOK*, orthokeratology; *PIR*, pirenzepine; *PPSL*, peripheral plus

spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *UCSVL*, undercorrected single vision spectacle lenses.

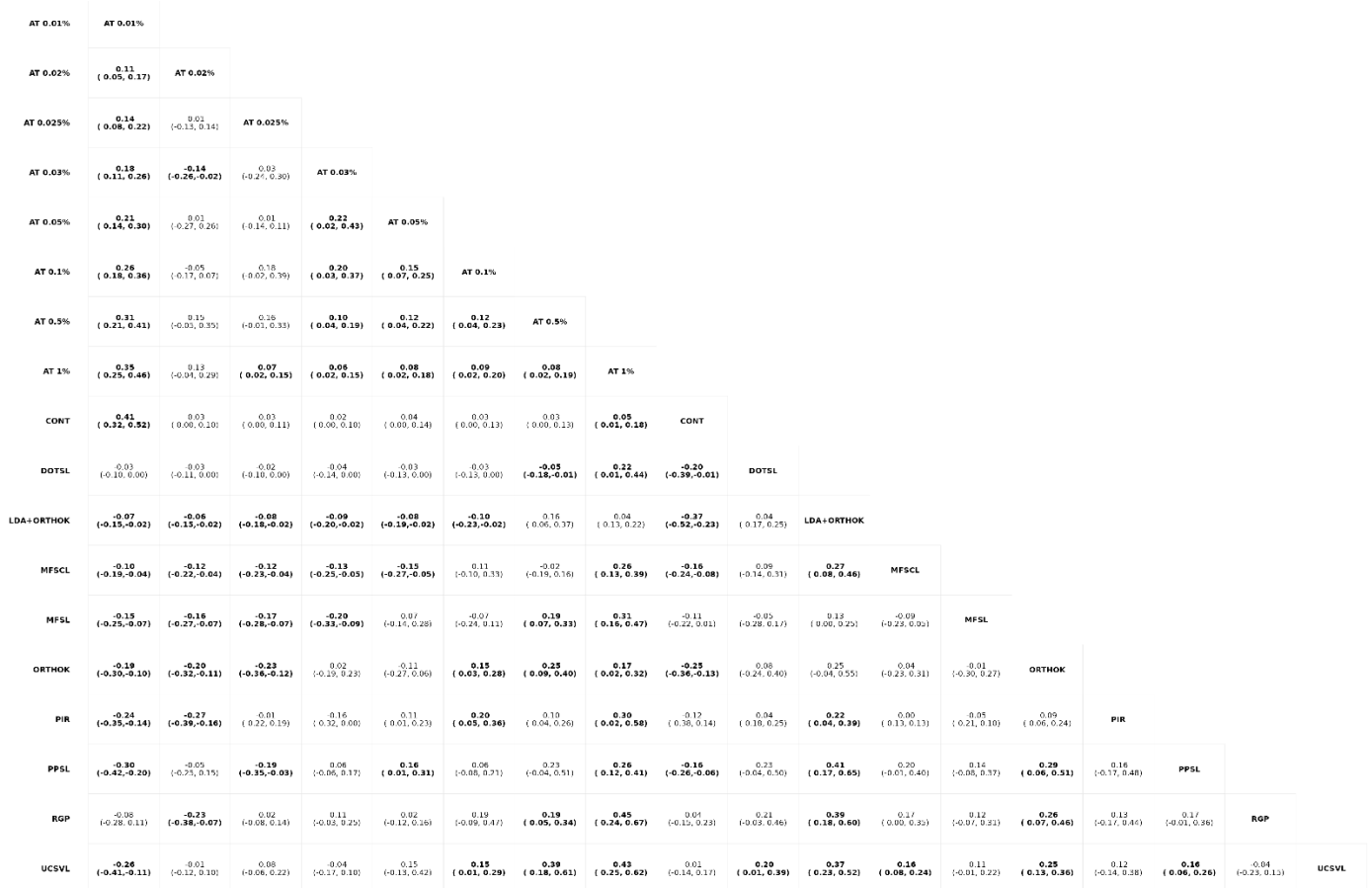
Fig. S12. League table with CFB in AL at year 1 dose-response NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.



AL, axial length; *ARA*, adenosine receptor antagonists; *AT*, atropine; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses;

LDA, low-dose atropine; *MFSL*, multifocal spectacle lenses; *MFSCL*, multifocal soft contact lenses; *ORTHOK*, orthokeratology lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *UCSVL*, under-corrected single vision spectacles.

Fig. S13. League table with CFB in AL at year 2 dose-response NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.



AL, axial length; *AT*, atropine; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LDA*, low-dose atropine; *MFSL*, multifocal spectacle lenses; *MFSCL*, multifocal soft contact lenses; *ORTHOK*, orthokeratology lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *RGP*, rigid gas-permeable contact lenses; *UCSVL*, under-corrected single vision spectacles.

Table S15. Relative effects [median (95% CrI)] of CFB in AL (mm) at years 1 and 2 for non-parametric dose-response NMA versus standard NMA. Results are based on random-effects models with control as the reference treatment.

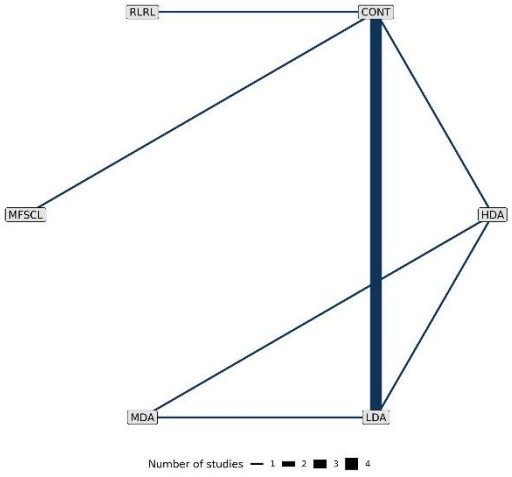
Treatment comparison	Year 1		Year 2	
	Non-parametric dose-response NMA	Standard NMA	Non-parametric dose-response NMA	Standard NMA
ARA versus Control	-0.04 (-0.15, 0.06)	-0.04 (-0.15, 0.07)	NA	NA
0.0025% Atropine versus Control	0.03 (-0.07, 0.17)	-0.04 (-0.23, 0.15)	NA	NA
0.005% Atropine versus Control	-0.05 (-0.11, 0.05)	-0.08 (-0.22, 0.06)	NA	NA
0.01% Atropine versus Control	-0.10 (-0.13, -0.07)	-0.10 (-0.14, -0.07)	-0.12 (-0.19, -0.06)	-0.11 (-0.17, -0.05)
0.02% Atropine versus Control	-0.12 (-0.16, -0.08)	-0.13 (-0.21, -0.04)	-0.15 (-0.29, -0.01)	-0.14 (-0.22, -0.08)
0.025% Atropine versus Control	-0.14 (-0.19, -0.09)	-0.14 (-0.25, -0.03)	-0.24 (-0.44, -0.05)	-0.18 (-0.26, -0.11)
0.03% Atropine versus Control	-0.16 (-0.21, -0.11)	-0.09 (-0.22, 0.04)	-0.07 (-0.27, 0.12)	-0.21 (-0.30, -0.14)
0.05% Atropine versus Control	-0.19 (-0.24, -0.14)	-0.18 (-0.25, -0.10)	-0.31 (-0.47, -0.15)	-0.26 (-0.36, -0.18)
0.1% Atropine versus Control	-0.22 (-0.30, -0.16)	-0.21 (-0.35, -0.07)	-0.25 (-0.49, -0.01)	-0.31 (-0.41, -0.21)
0.5% Atropine versus Control	-0.26 (-0.34, -0.19)	-0.23 (-0.37, -0.09)	-0.26 (-0.49, -0.03)	-0.35 (-0.46, -0.25)
1% Atropine versus Control	-0.32 (-0.38, -0.26)	-0.31 (-0.38, -0.24)	-0.37 (-0.50, -0.23)	-0.41 (-0.52, -0.32)
DOTSL versus Control	-0.13 (-0.25, -0.01)	-0.13 (-0.25, 0.00)	-0.20 (-0.40, 0.00)	-0.20 (-0.39, -0.01)
LARISL versus Control	-0.16 (-0.28, -0.04)	-0.16 (-0.28, -0.04)	NA	NA
LDA + ORTHOK versus Control	-0.26 (-0.32, -0.20)	-0.26 (-0.32, -0.20)	-0.38 (-0.54, -0.23)	-0.37 (-0.52, -0.23)
MFSCL versus Control	-0.11 (-0.15, -0.08)	-0.11 (-0.15, -0.08)	-0.16 (-0.24, -0.08)	-0.16 (-0.24, -0.08)
MFSL versus Control	-0.08 (-0.17, 0.00)	-0.08 (-0.17, 0.01)	-0.11 (-0.23, 0.02)	-0.11 (-0.22, 0.01)
ORTHOK versus Control	-0.15 (-0.19, -0.11)	-0.15 (-0.19, -0.10)	-0.25 (-0.37, -0.14)	-0.25 (-0.36, -0.13)
PIR versus Control	-0.06 (-0.17, 0.04)	-0.06 (-0.17, 0.04)	-0.12 (-0.39, 0.15)	-0.12 (-0.38, 0.14)
PPSL versus Control	-0.10 (-0.15, -0.05)	-0.10 (-0.15, -0.05)	-0.16 (-0.26, -0.05)	-0.16 (-0.26, -0.06)
PSASCL versus Control	-0.14 (-0.27, -0.01)	-0.14 (-0.28, 0.00)	NA	NA
RGP versus Control	0.02 (-0.11, 0.16)	0.02 (-0.12, 0.16)	0.04 (-0.16, 0.23)	0.04 (-0.15, 0.23)
RLRL versus Control	-0.37 (-0.43, -0.31)	-0.37 (-0.43, -0.31)	NA	NA
UCSVL versus Control	-0.44 (-0.59, -0.28)	-0.43 (-0.60, -0.27)	NA	NA
ARA versus Control	0.00 (-0.09, 0.10)	0.00 (-0.09, 0.10)	0.01 (-0.15, 0.18)	0.01 (-0.14, 0.17)

AL, axial length; *ARA*, adenosine receptor antagonists; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *LDA*, low-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *mm*, millimeters; *NA*, not applicable; *NMA*, network meta-analysis;

ORTHOK, orthokeratology lenses; *PIR*, pirenzepine; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *UCSVL*, under-corrected single vision spectacles.

Fig. S14. Evidence networks and relative effects of active interventions versus control (random-effects models) for change in SER (D) 1 year after treatment cessation. (A), (C) Standard NMA; (B), (D) Non-parametric dose-response NMA

A



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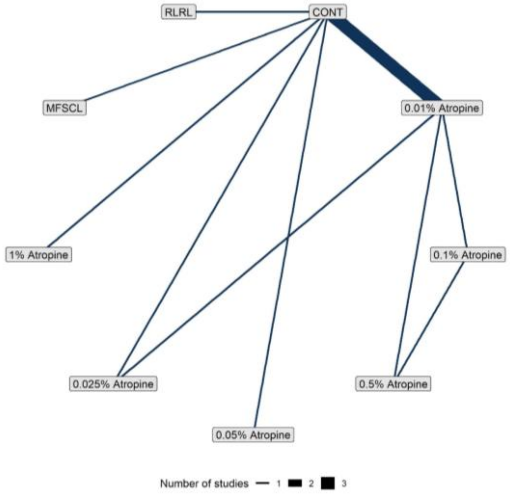
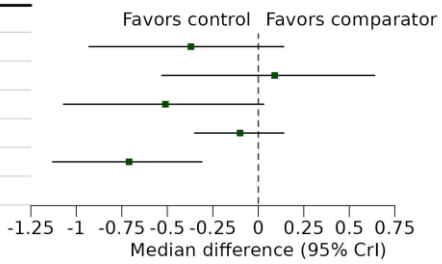


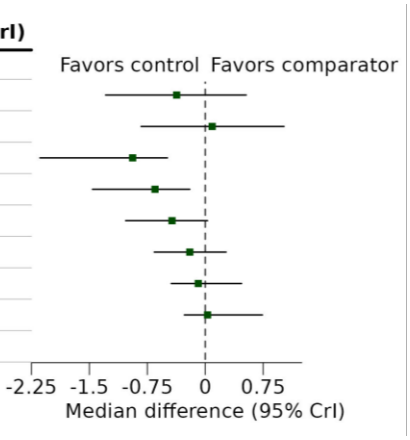
C

Treatment	Median difference (95% CrI)
RLRL	-0.37 (-0.93, 0.14)
MFSCL	0.09 (-0.53, 0.64)
MDA	-0.51 (-1.07, 0.03)
LDA	-0.10 (-0.35, 0.14)
HDA	-0.71 (-1.13,-0.31)
Control	Reference level



D

Treatment	Median difference (95% CrI)
RLRL	-0.37 (-1.29, 0.53)
MFSCL	0.09 (-0.83, 1.02)
1% Atropine	-0.94 (-2.14, -0.49)
0.5% Atropine	-0.65 (-1.46, -0.2)
0.1% Atropine	-0.43 (-1.03, 0.03)
0.05% Atropine	-0.2 (-0.66, 0.27)
0.025% Atropine	-0.09 (-0.44, 0.47)
0.01% Atropine	0.03 (-0.27, 0.74)
Control	Reference level



CONT, control (placebo, single vision spectacles or single vision soft contact lenses); *MFSCL*, multifocal soft contact lenses; mm, millimeters; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction.

Fig. S15. League table with rebound effect on SER standard NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.

CONT	**CONT**					
HDA	**-0.71 (-1.13,-0.31)**	**HDA**				
LDA	-0.10 (-0.35, 0.14)	**0.61 (0.22, 1.01)**	**LDA**			
MDA	-0.51 (-1.07, 0.03)	0.20 (-0.32, 0.70)	-0.41 (-0.92, 0.09)	**MDA**		
MFSCL	0.09 (-0.53, 0.64)	**0.81 (0.08, 1.47)**	0.19 (-0.45, 0.78)	0.60 (-0.22, 1.36)	**MFSCL**	
RLRL	-0.37 (-0.93, 0.14)	0.34 (-0.33, 1.00)	-0.27 (-0.87, 0.31)	0.14 (-0.62, 0.88)	-0.46 (-1.23, 0.35)	**RLRL**

CONT, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *HDA*, high dose atropine; *LDA*, low-dose atropine; *MDA*, moderate dose atropine; *MFSCL*, multifocal soft contact lenses; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction.

Fig. S16. League table with rebound effect on AL standard NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.

CONT	**CONT**					
HDA	**0.20 (0.09, 0.28)**	**HDA**				
LDA	0.06 (-0.01, 0.11)	**-0.14 (-0.23,-0.05)**	**LDA**			
MDA	**0.19 (0.06, 0.29)**	-0.01 (-0.11, 0.10)	**0.13 (0.02, 0.24)**	**MDA**		
MFSCL	0.01 (-0.11, 0.13)	**-0.19 (-0.33,-0.02)**	-0.04 (-0.17, 0.10)	-0.18 (-0.34, 0.00)	**MFSCL**	
RLRL	**0.14 (0.02, 0.26)**	-0.06 (-0.20, 0.10)	0.08 (-0.04, 0.21)	-0.05 (-0.21, 0.12)	0.13 (-0.05, 0.30)	**RLRL**

AL, axial length; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *FE*, fixed effects; *HDA*, high dose atropine; *LDA*, low-dose atropine; *MDA*, moderate dose atropine; *MFSCL*, multifocal soft contact lenses; *RLRL*, repeated low-intensity red light therapy.

Fig. S17. League table with rebound effect on SER dose-response NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top

CONT	**CONT**								
AT 0.01%	0.03 (-0.27, 0.74)	**AT 0.01%**							
AT 0.025%	-0.09 (-0.44, 0.47)	**-0.10 (-0.52,-0.01)**	**AT 0.025%**						
AT 0.05%	-0.20 (-0.66, 0.27)	**-0.22 (-0.87,-0.04)**	-0.09 (-0.54, 0.00)	**AT 0.05%**					
AT 0.1%	-0.43 (-1.03, 0.03)	**-0.46 (-1.38,-0.16)**	**-0.33 (-1.07,-0.06)**	**-0.20 (-0.76,-0.01)**	**AT 0.1%**				
AT 0.5%	**-0.65 (-1.46,-0.20)**	**-0.67 (-1.89,-0.32)**	**-0.55 (-1.58,-0.20)**	**-0.44 (-1.26,-0.11)**	**-0.19 (-0.80,-0.01)**	**AT 0.5%**			
AT 1%	**-0.94 (-2.14,-0.49)**	**-0.96 (-2.68,-0.53)**	**-0.84 (-2.35,-0.41)**	**-0.73 (-2.02,-0.30)**	**-0.49 (-1.60,-0.11)**	**-0.26 (-1.15,-0.01)**	**AT 1%**		
MFSCL	0.09 (-0.83, 1.02)	0.06 (-1.19, 0.91)	0.18 (-0.95, 1.11)	0.29 (-0.74, 1.33)	0.52 (-0.46, 1.67)	0.74 (-0.18, 2.07)	**1.03 (0.18, 2.70)**	**MFSCL**	
RLRL	-0.37 (-1.29, 0.53)	-0.40 (-1.65, 0.42)	-0.28 (-1.42, 0.62)	-0.17 (-1.20, 0.84)	0.06 (-0.92, 1.19)	0.27 (-0.63, 1.58)	0.56 (-0.27, 2.23)	-0.46 (-1.78, 0.83)	**RLRL**

AT, atropine; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *HDA*, high dose atropine; *LDA*, low-

dose atropine; *MDA*, moderate dose atropine; *MFSCL*, multifocal soft contact lenses; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction.

Fig. S18. League table with rebound effect on AL dose-response NMA results for all treatment comparisons (random-effects model). Values are mean difference (95% CrI). Bold indicates statistically significant results where the 95% CrI does not span 0. Figure is read horizontally: Treatment on the left versus treatment on top.

CONT	**CONT**								
AT 0.01%	0.02 (-0.11, 0.08)	**AT 0.01%**							
AT 0.025%	0.06 (-0.06, 0.14)	0.03 (0.00, 0.13)	**AT 0.025%**						
AT 0.05%	0.09 (-0.01, 0.20)	**0.07 (0.01, 0.21)**	0.03 (0.00, 0.14)	**AT 0.05%**					
AT 0.1%	**0.15 (0.05, 0.29)**	**0.13 (0.05, 0.31)**	**0.09 (0.02, 0.25)**	0.05 (0.00, 0.17)	**AT 0.1%**				
AT 0.5%	**0.19 (0.09, 0.37)**	**0.16 (0.09, 0.42)**	**0.13 (0.05, 0.35)**	**0.10 (0.02, 0.27)**	0.03 (0.00, 0.16)	**AT 0.5%**			
AT 1%	**0.24 (0.14, 0.55)**	**0.21 (0.12, 0.59)**	**0.18 (0.08, 0.50)**	**0.15 (0.05, 0.42)**	**0.09 (0.02, 0.33)**	0.04 (0.00, 0.24)	**AT 1%**		
MFSCL	0.01 (-0.19, 0.21)	-0.02 (-0.19, 0.25)	-0.05 (-0.25, 0.19)	-0.08 (-0.31, 0.14)	-0.14 (-0.39, 0.07)	-0.18 (-0.47, 0.02)	**-0.23 (-0.61,-0.05)**	**MFSCL**	
RLRL	0.14 (-0.06, 0.34)	0.11 (-0.06, 0.38)	0.08 (-0.12, 0.32)	0.05 (-0.18, 0.27)	-0.01 (-0.26, 0.20)	-0.05 (-0.34, 0.15)	-0.10 (-0.47, 0.08)	0.13 (-0.15, 0.41)	**RLRL**

AL, axial length; *AT*, atropine; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *HDA*, high dose atropine; *LDA*, low-dose atropine; *MDA*, moderate dose atropine; *MFSCL*, multifocal soft contact lenses; *RLRL*, repeated low-intensity red light therapy

Table S16. Relative effects [median (95% CrI)] of change in SER (D) and AL (mm) 12 months after treatment cessation for non-parametric dose-response NMA versus standard NMA.

Treatment Comparison	Rebound effect based on SER		Rebound effect based on AL	
	Non-parametric dose-response NMA	Standard NMA	Non-parametric dose-response NMA	Standard NMA
0.01% Atropine versus Control	0.03 (−0.27, 0.74)	-0.15 (-0.46, 0.12)	0.02 (−0.11, 0.08)	0.06 (−0.10, 0.20)
0.025% Atropine versus Control	−0.09 (−0.44, 0.47)	-0.33 (-0.82, 0.12)	0.06 (−0.06, 0.14)	0.09 (−0.17, 0.31)
0.05% Atropine versus Control	−0.20 (−0.66, 0.27)	0.22 (-0.25, 0.71)	0.09 (−0.01, 0.20)	0.03 (−0.24, 0.30)
0.1% Atropine versus Control	−0.43 (−1.03, 0.03)	-0.55 (-1.11, -0.01)	0.15 (0.05, 0.29)	0.20 (−0.13, 0.48)
0.5% Atropine versus Control	−0.65 (−1.46, −0.20)	-0.75 (-1.32, -0.19)	0.19 (0.09, 0.37)	0.22 (−0.11, 0.51)
1% Atropine versus Control	−0.94 (−2.14, −0.49)	-0.74 (-1.20, -0.21)	0.24 (0.14, 0.55)	0.15 (−0.13, 0.41)
MFSCL versus Control	0.09 (−0.83, 1.02)	0.09 (-0.44, 0.61)	0.01 (−0.19, 0.21)	0.01 (−0.26, 0.27)
RLRL versus Control	−0.37 (−1.29, 0.53)	-0.37 (-0.87, 0.12)	0.14 (−0.06, 0.34)	0.14 (−0.12, 0.42)

AL, axial length; *CrI*, credible interval; *MFSCL*, multifocal soft contact lenses; *NMA*, network meta-analysis; *RLRL*, repeated low-intensity red light therapy; *SER*, spherical equivalent refraction

Table S17. Model fit statistics: Consistency NMA models and unrelated mean effects model for CFB in SER at year 1 in the standard NMA. The random-effects NMA and UME models showed comparable DIC values (ΔDIC < 3) and similar posterior mean residual deviance, with the latter representing the difference between observed and predicted data, indicating no evidence of inconsistency.

Relative effect model	Data points (i.e. study arms)	DIC	Effective number of parameters (pD)	Mean of the residual deviance (ResDev)
NMA [FE model]	173	593.92	88.22	505.70
NMA [RE model]	173	329.84	151.86	177.98
UME [RE model]	173	330.78	153.01	177.77

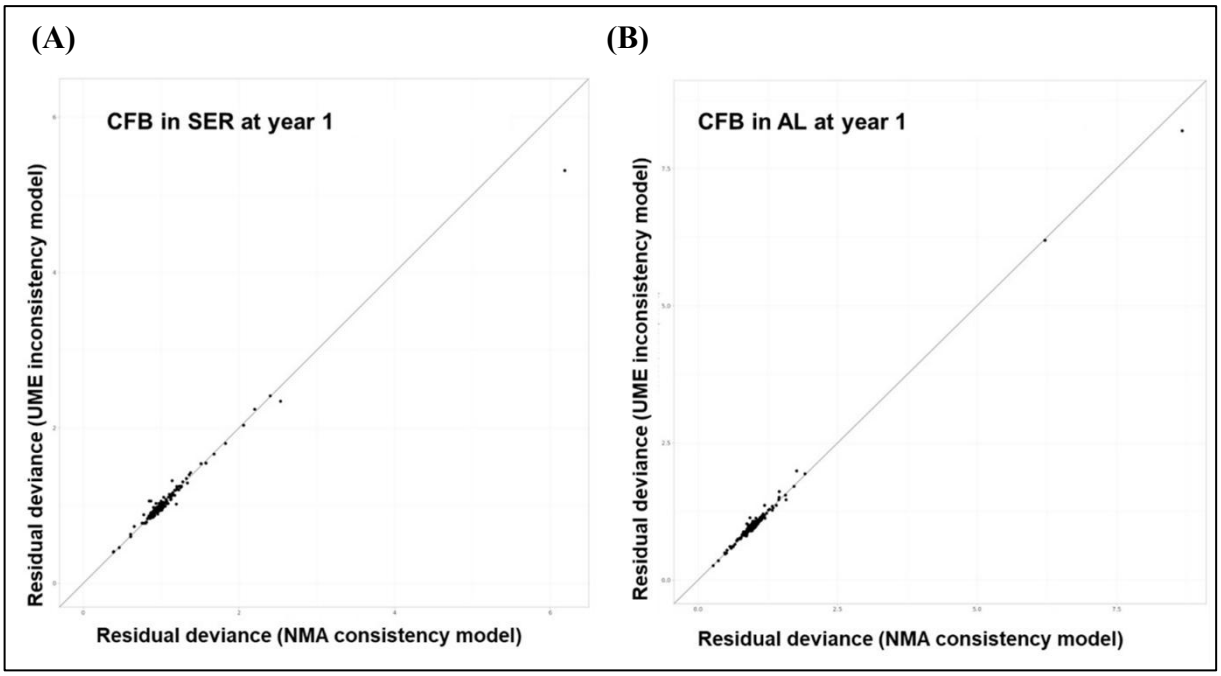
CFB, change from baseline; *DIC*, deviance information criterion; *FE*, fixed effects; *NMA*, network meta-analysis; *RE*, random effects; *ResDev*, residual deviance; *SER*, spherical equivalent refraction; *UME*, unrelated mean effects.

Table S18. Model fit statistics: Consistency NMA models and unrelated mean effects model for CFB in AL at year 1 in the standard NMA. The random-effects NMA and UME models showed comparable DIC values (ΔDIC < 3) and similar posterior mean residual deviance, with the latter representing the difference between observed and predicted data, indicating no evidence of inconsistency

Relative effect model	Data points (i.e. study arms)	DIC	Effective number of parameters (pD)	Mean of the residual deviance (ResDev)
NMA [FE model]	216	741.36	106.99	634.37
NMA [RE model]	216	406.28	184.27	222.01
UME [RE model]	216	408.45	186.11	222.34

AL, axial length; *CFB*, change from baseline; *DIC*, deviance information criterion; *FE*, fixed effects; *NMA*, network meta-analysis; *RE*, random effects; *ResDev*, residual deviance; *UME*, unrelated mean effects

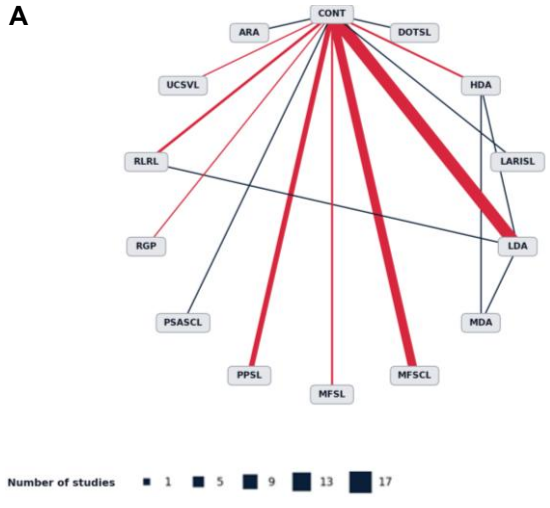
Fig. S19. Posterior mean deviance contributions for the consistency model (horizontal axis) and the unrelated mean effects model (vertical axis) along with the line of equality. (A) Network of evidence for CFB in SER at year 1, (B) Network of evidence for CFB in AL at year 1. Majority of points lie on the line of equality, suggesting no evidence of inconsistency.



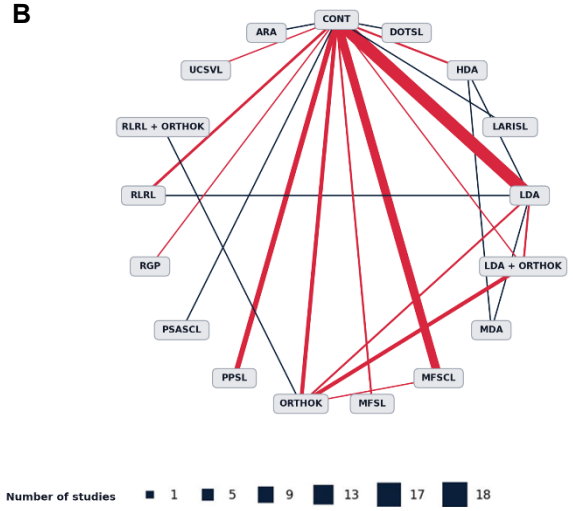
AL, axial length; *NMA*, network meta-analysis; *SER*, spherical equivalent refraction; *UME*, unrelated mean effects.

Fig. S20. Sensitivity analyses excluding studies at high risk of bias: evidence networks and relative effects of active interventions versus control (random-effects models) for CFB in SER (A, C) and CFB in AL (B, D) at year 1. Comparisons shown in red are those affected by the exclusion of studies at high risk of bias compared with the base case analysis.

A

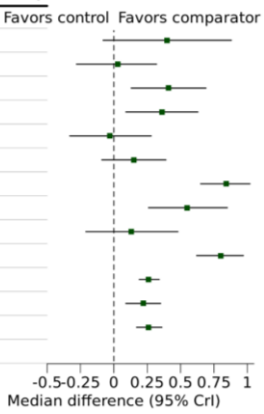


B



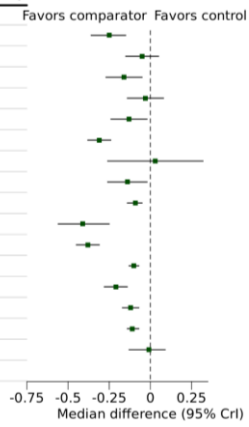
C

Treatment	Median difference (95% CrI)
RGP	0.40 (-0.08, 0.88)
ARA	0.03 (-0.28, 0.32)
LARISL	0.41 (0.13, 0.69)
DOTSL	0.36 (0.09, 0.63)
UCSVL	-0.03 (-0.33, 0.28)
MFSL	0.15 (-0.09, 0.39)
HDA	0.84 (0.65, 1.02)
MDA	0.55 (0.26, 0.85)
PSASCL	0.13 (-0.21, 0.48)
RLRL	0.80 (0.62, 0.97)
LDA	0.26 (0.19, 0.34)
PPSL	0.22 (0.09, 0.35)
MFSCL	0.26 (0.17, 0.36)
Control	Reference level



D

Treatment	Median difference (95% CrI)
MDA	-0.25 (-0.36,-0.15)
MFSL	-0.05 (-0.15, 0.05)
LARISL	-0.16 (-0.27,-0.05)
UCSVL	-0.03 (-0.14, 0.08)
DOTSL	-0.13 (-0.24,-0.02)
HDA	-0.31 (-0.38,-0.24)
RGP	0.03 (-0.26, 0.32)
PSASCL	-0.14 (-0.26,-0.02)
PPSL	-0.09 (-0.14,-0.05)
RLRL + ORTHOK	-0.41 (-0.56,-0.25)
RLRL	-0.38 (-0.45,-0.31)
LDA	-0.10 (-0.13,-0.07)
LDA + ORTHOK	-0.21 (-0.28,-0.14)
ORTHOK	-0.12 (-0.17,-0.07)
MFSCL	-0.11 (-0.14,-0.07)
ARA	-0.01 (-0.13, 0.09)
Control	Reference level



ARA, adenosine receptor antagonists; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *DOTSL*, diffusion optics technology spectacle lenses; *LARISL*, lenslet array integrated spectacle lenses; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *mm*, millimeters; *ORTHOK*, orthokeratology lenses; *PPSL*, peripheral plus spectacle

lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; SER, spherical equivalent refraction; *UCSVL*, under-corrected single vision spectacles.

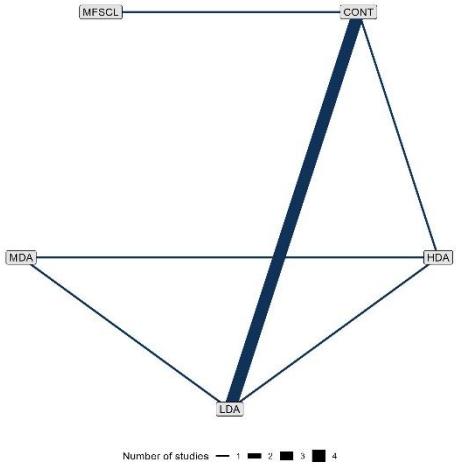
Table S19. Sensitivity analyses excluding studies at high risk of bias: posterior rank mean (SD) and SUCRA values for CFB in SER (D) and AL (mm) at year 1. Results are based on random-effects models.

Treatment (in alphabetical order)	CFB in SER at year 1		CFB in AL at year 1	
	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)	SUCRA values
ARA	11.83 (2.09)	0.17	14.59 (2.11)	0.15
CONT	12.59 (0.90)	0.11	15.54 (0.93)	0.04
DOTSL	5.98 (2.19)	0.62	8.92 (2.90)	0.57
HDA	1.45 (0.60)	0.97	3.04 (0.66)	0.88
LARISL	5.32 (2.04)	0.67	7.34 (2.48)	0.66
LDA	7.62 (1.38)	0.49	10.42 (1.56)	0.51
LDA + ORTHOK	NA	NA	5.28 (1.01)	0.74
MDA	3.76 (1.41)	0.79	4.34 (1.26)	0.81
MFSCL	7.58 (1.56)	0.49	9.85 (1.73)	0.41
MFSL	9.89 (2.29)	0.32	13.22 (2.43)	0.22
ORTHOK	NA	NA	9.28 (1.94)	0.40
PPSL	8.68 (1.71)	0.41	11.14 (1.91)	0.32
PSASCL	10.06 (2.85)	0.30	8.43 (3.05)	0.58
RGP	5.95 (3.25)	0.62	14.31 (3.91)	0.15
RLRL	1.79 (0.69)	0.94	1.72 (0.61)	0.97
RLRL + ORTHOK	NA	NA	1.55 (0.88)	0.97
UCSVL	12.5 (1.86)	0.12	14.00 (2.35)	0.13

AL, axial length; *ARA*, adenosine receptor antagonists; *CFB*, change from baseline; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *DOTSL*, diffusion optics technology spectacle lenses; *HDA*, high-dose atropine; *LARISL*, lenslet array integrated spectacle lenses; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *MFSL*, multifocal spectacle lenses; *mm*, millimeters; *NA*, not applicable; *NMA*, network meta-analysis; *ORTHOK*, orthokeratology lenses; *PPSL*, peripheral plus spectacle lenses; *PSASCL*, positive spherical aberration soft contact lenses; *RGP*, rigid gas-permeable contact lenses; *RLRL*, repeated low-intensity red light therapy; *SD*, standard deviation; *SER*, spherical equivalent refraction; *SUCRA*, surface under the cumulative ranking curve; *UCSVL*, under-corrected single vision spectacles.

Fig. S21. Sensitivity analyses excluding studies at high risk of bias: evidence network and relative effects of active interventions versus control (random-effects models) for change in SER (A, C) and AL (A, B) 12 months post-treatment cessation. Comparisons shown in red are those affected by the exclusion of studies at high risk of bias compared with the base case analysis.

A



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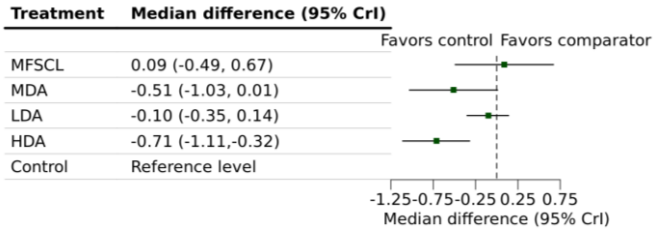

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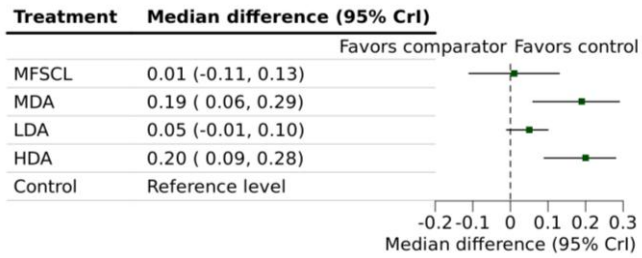


AL, axial length; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *CrI*, credible interval; *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *mm*, millimeters; SER, spherical equivalent refraction

Table S20. Sensitivity analyses excluding studies at high risk of bias: posterior rank mean (SD) and SUCRA values for change in SER (D) and AL (mm) 12 months post-treatment cessation. Results are based on random-effects models.

Treatment (in alphabetical order)	Change in SER		Change in AL	
	Posterior rank mean (SD)	SUCRA values	Posterior rank mean (SD)	SUCRA values
CONT	1.84 (0.64)	0.79	1.47 (0.55)	0.88
HDA	4.82 (0.43)	0.04	4.58 (0.55)	0.11
LDA	2.66 (0.66)	0.59	2.77 (0.5)	0.56
MDA	4.03 (0.61)	0.24	4.35 (0.59)	0.16
MFSCL	1.65 (0.97)	0.84	1.84 (0.87)	0.79

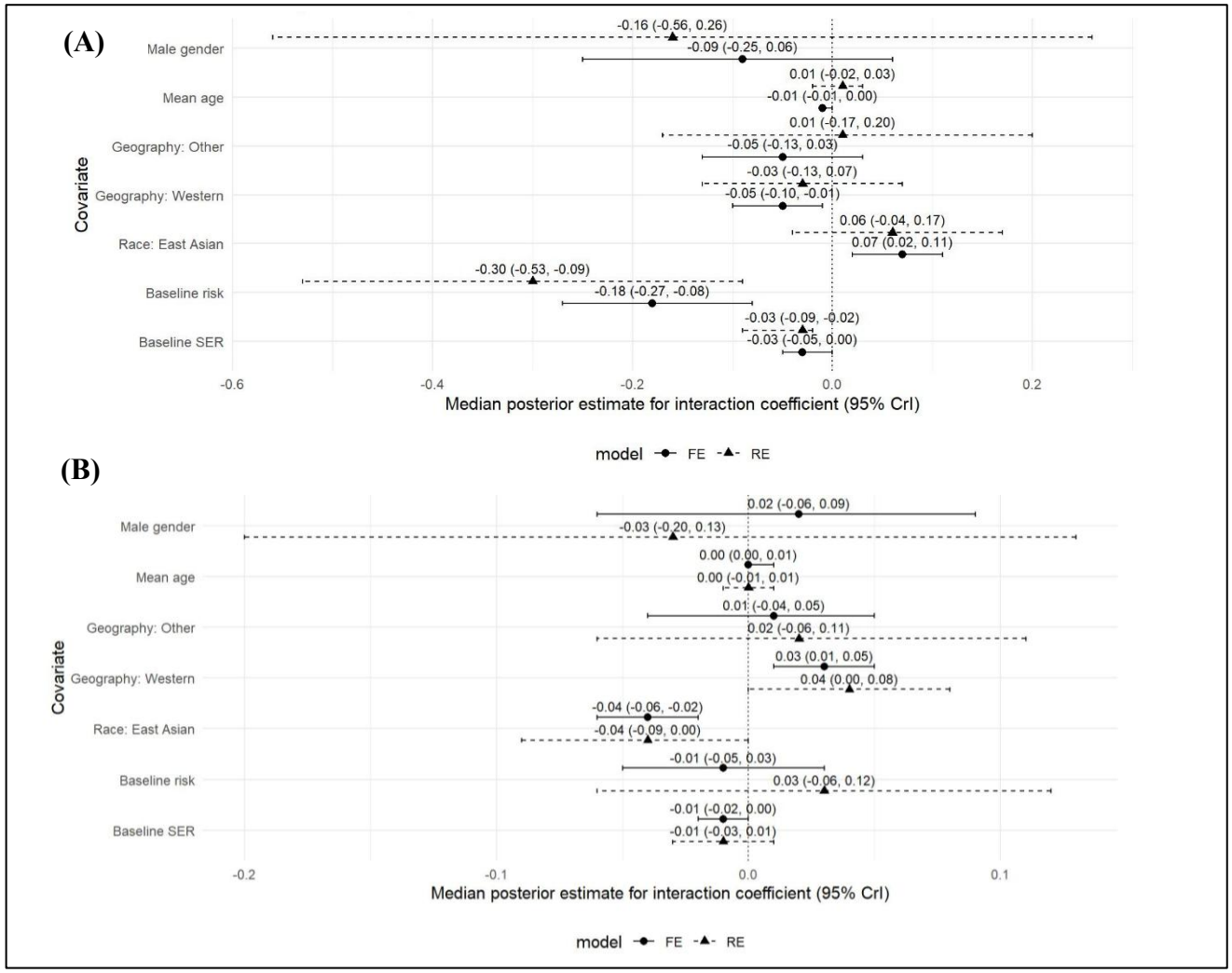
AL, axial length; *CONT*, control (placebo, single vision spectacles or single vision soft contact lenses); *HDA*, high-dose atropine; *LDA*, low-dose atropine; *MDA*, moderate-dose atropine; *MFSCL*, multifocal soft contact lenses; *mm*, millimeters; *SD*, standard deviation; *SER*, spherical equivalent refraction; *SUCRA*, surface under the cumulative ranking curve

Table S21. Model fit statistics for univariate NMR models for CFB in SER and AL.

Covariate	Outcome	DIC			
		Unadjusted FE	Adjusted FE	Unadjusted RE	Adjusted RE
Mean age	CFB in SER	644	643	349	349
	CFB in AL	794	795	423	423
Male gender	CFB in SER	613	614	331	330
	CFB in AL	726	728	388	388
Geography	CFB in SER	644	641	349	349
	CFB in AL	794	786	423	424
Race	CFB in SER	603	597	335	335
	CFB in AL	747	734	402	400
Baseline SER	CFB in SER	581	579	320	319
	CFB in AL	675	672	377	378
Baseline risk	CFB in SER	484	473	285	282
	CFB in AL	410	411	273	274

AL, axial length; *CFB*, change from baseline; *DIC*, deviance information criterion; *FE*, fixed-effects; *NMR*, network meta-regression; *RE*, random-effects; *SER*, spherical equivalent refraction.

Fig. S22. Beta posterior means and 95% CrI for the interaction estimate of selected covariates for (A) CFB in SER (D) at year 1 and for (B) CFB in AL (mm) at year 1: fixed- and random-effect models.



AL, axial length; *CrI*, credible interval; *mm,* millimeters; *SER,* spherical equivalent refraction.

Table S22. PRISMA checklist

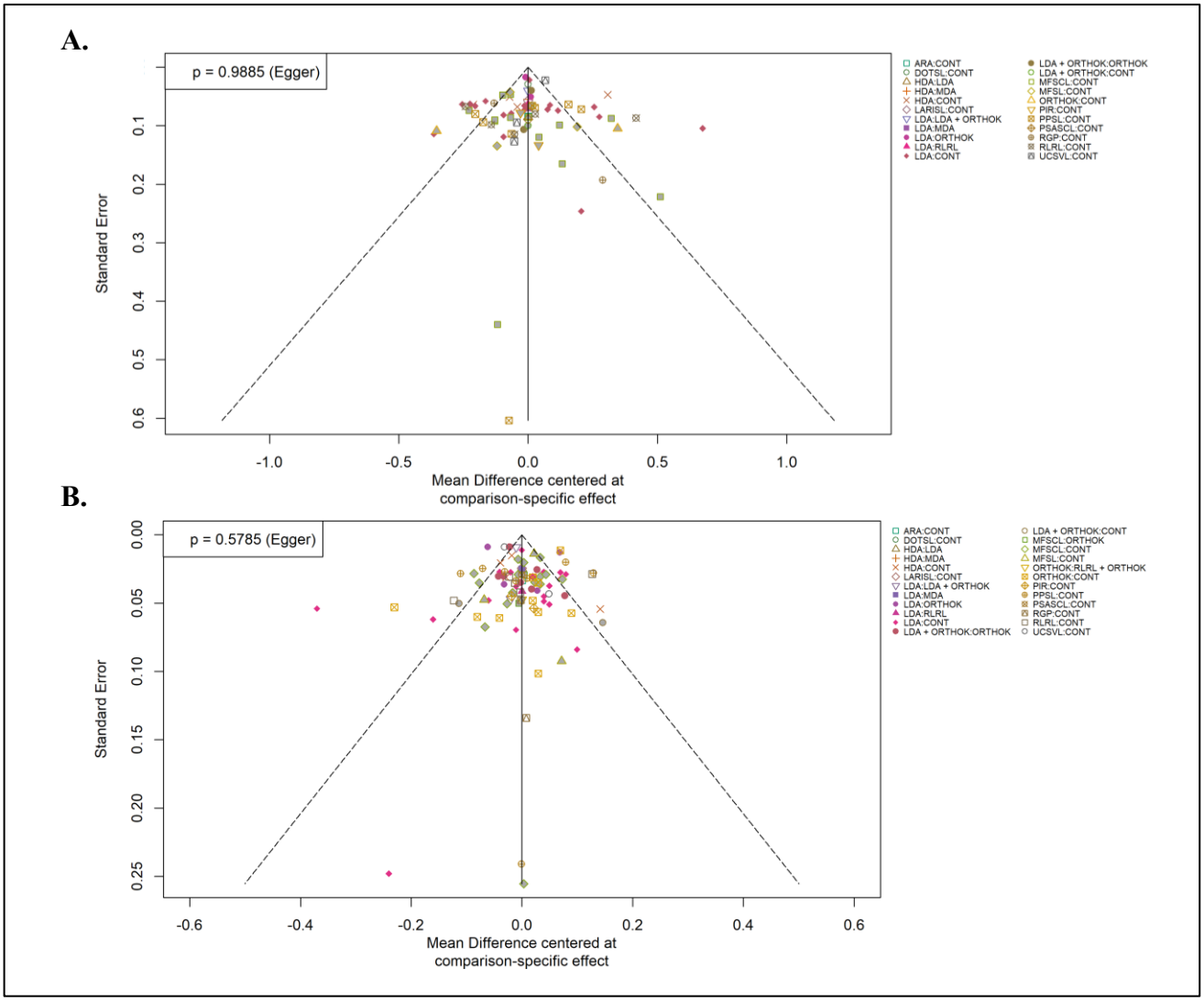
To Section and topic	Item no.	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	Page 1
ABSTRACT			
Abstract	2	See the PRISMA 2020 Abstracts checklist.	Pages 2
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	Pages 3 – 4
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	Page 4
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	Pages 4 – 5, Table S4
Information sources	6	Specify all databases, registers, websites, organizations, reference lists, and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Page 4
Search strategy	7	Present the full search strategies for all databases, registers, and websites, including any filters and limits used.	Tables S1 – S3
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	Pages 4 – 5, Supplementary methods 1
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	Pages 4 – 5, Supplementary methods 1
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (eg, for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	Pages 4 – 5, Table S4
	10b	List and define all other variables for which data were sought (eg, participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	Pages 4 – 6, Supplementary methods 1-2
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	Page 5, Supplementary methods 1

To Section and topic	Item no.	Checklist item	Location where item is reported
Effect measures	12	Specify for each outcome the effect measure(s) (eg, risk ratio, mean difference) used in the synthesis or presentation of results.	Pages 5 – 6
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (eg, tabulating the study intervention characteristics and comparing against the planned groups for each synthesis [item no. 5]).	Pages 5 – 6, Table S6
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	Pages 5 – 6, Supplementary methods 2
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	Pages 6 – 7
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	Pages 5 – 6, Supplementary methods 2
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g., subgroup analysis, meta-regression).	Page 6
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	Page 5
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	Page 7
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	Page 7
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Page 8, Figure 1
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Pages 8-9, Figure S1, Table S8
Study characteristics	17	Cite each included study and present its characteristics.	Tables S5 – S6
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	Table S7
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (eg, confidence/credible interval), ideally using structured tables or plots.	Available upon request
	20a	For each synthesis, briefly summarize the characteristics and risk of bias among contributing studies.	Pages 8 – 15

To Section and topic	Item no.	Checklist item	Location where item is reported
Results of syntheses	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (eg, confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	Pages 8 – 15, Tables 1 – 2 and S9-S21, Figures 2 – 4 and S2 – S22
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	Pages 16, Table S21, Figure S22
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	Pages 14 – 15, Tables S19 – S20 Figures S20 – S21
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	Page 15 Figure S23
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	Page 15 Tables S23 – S26
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	Pages 16 – 18
	23b	Discuss any limitations of the evidence included in the review.	Pages 18 –19
	23c	Discuss any limitations of the review processes used.	Pages 18 –19
	23d	Discuss implications of the results for practice, policy, and future research.	Pages 19 – 20
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	Page 8
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	Page 8
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	NA
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	Page 20
Competing interests	26	Declare any competing interests of review authors.	Pages 20 – 21
Availability of data, code, and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	Page 21

NA, Not applicable

Fig. S23. Comparison-adjusted funnel plots for CFB in SER (D) at year 1 (A) and CFB in AL (mm) at year 1 (B). The horizontal axis presents the standardized mean difference between study-specific effect minus the meta-analytic summary effect for that treatment contrast. The vertical axis represents the study specific standard error. The dashed lines indicate the triangular region within which 95% of studies are expected to lie in the absence of publication bias and heterogeneity.



AL, axial length; *D,* diopters; *mm,* millimeters; *SER,* spherical equivalent refraction.

Table S23. Confidence in network meta-analysis results for CFB in SER at Year 1.

Comparison	No of studies	Within-study bias	Reporting bias#	Indirectness	Imprecision	Heterogeneity	Incoherence[$]	Confidence rating	Reason for downgrading
Mixed evidence									
CONT versus HDA	**4**							Moderate	Incoherence
CONT versus LDA	**19**							Moderate	Heterogeneity
CONT versus LDA+ORTHOK	**1**							Very low¶	Within-study bias, incoherence
CONT versus MFSCL	**14**							Low	Heterogeneity, incoherence
CONT versus MFSL	**3**							Low	Heterogeneity, incoherence
CONT versus ORTHOK	**2**							Very low¶	Within-study bias, incoherence
CONT versus RLRL	**5**							Moderate	Within-study bias
HDA versus LDA	**1**							Low	Within-study bias, incoherence
HDA versus MDA	**1**							Low	Imprecision, within study bias
LDA versus LDA+ORTHOK	**1**							Very low¶	Within-study bias, indirectness
LDA versus MDA	**1**							Low	
LDA versus ORTHOK	**2**							Very low¶	Within-study bias
LDA versus RLRL	**1**							Moderate	
LDA+ORTHOK versus ORTHOK	**2**							Very low¶	Within-study bias, indirectness
Indirect evidence									
CONT versus MDA	NA							Low	Within-study bias
HDA versus LDA+ORTHOK	NA							Very low¶	Within-study bias, imprecision
HDA versus MFSCL	NA							Low	Within-study bias
HDA versus MFSL	NA							Low	Within-study bias
HDA versus ORTHOK	NA							Very low¶	Within-study bias
HDA versus RLRL	NA							Very low	Heterogeneity
LDA versus MFSCL	NA							Very low	Heterogeneity
LDA versus MFSL	NA							Low	Imprecision, heterogeneity

Comparison	No of studies	Within-study bias	Reporting bias#	Indirectness	Imprecision	Heterogeneity	Incoherence$	Confidence rating	Reason for downgrading
LDA+ORTHOK versus MDA	NA							Very low¶	Within-study bias, imprecision
LDA+ORTHOK versus MFSCL	NA							Very low¶	Within-study bias, heterogeneity
LDA+ORTHOK versus MFSL	NA							Very low¶	Within-study bias, heterogeneity
LDA+ORTHOK versus RLRL	NA							Very low¶	Within-study bias, imprecision
MDA versus MFSCL	NA							Low	Imprecision, within-study bias
MDA versus MFSL	NA							Low	Imprecision, within-study bias
MDA versus ORTHOK	NA							Very low¶	Imprecision, heterogeneity
MDA versus RLRL	NA							Low	Imprecision, within-study bias
MFSCL versus MFSL	NA							Very low	Heterogeneity
MFSCL versus ORTHOK	NA							Very low¶	Within-study bias, incoherence
MFSCL versus RLRL	NA							Low	Within-study bias, incoherence
MFSL versus ORTHOK	NA							Very low¶	Within-study bias, incoherence
MFSL versus RLRL	NA							Low	Within-study bias, incoherence
ORTHOK versus RLRL	NA							Very low¶	Within-study bias, incoherence

#Reporting bias was rated as low concern based on results of Egger's regression while within-study selective outcome reporting was captured at the trial level. **$**For treatment contrasts informed exclusively by indirect evidence, incoherence was rated as 'some concerns' by default, because the design-by-treatment interaction test deployed by the CINeMA framework is unreliable in networks with related interventions grouped into shared nodes. **¶**Indicates that an estimate of relative effect on SER of any comparator versus ORTHOK has very low confidence due to transient corneal reshaping by ORTHOK lenses causing bias in the measurement of SER.

Table S24. Confidence in network meta-analysis results for CFB in AL at Year 1.

Comparison	No of studies	Within-study bias	Reporting bias#	Indirectness	Imprecision	Heterogeneity	Incoherence¶	Confidence rating	Reason for downgrading
Mixed evidence									
CONT versus HDA	**4**							High*	
CONT versus LDA	**20**							High	
CONT versus LDA+ORTHOK	**2**							High	
CONT versus MFSCL	**15**							Moderate	Heterogeneity
CONT versus MFSL	**3**							Low	Imprecision, incoherence
CONT versus ORTHOK	**10**							Moderate	Incoherence
CONT versus RLRL	**5**							Moderate	Within study bias
HDA versus LDA	**1**							Moderate**	Within-study bias**
HDA versus MDA	**1**							Low	Imprecision, heterogeneity
LDA versus LDA+ORTHOK	**3**							Moderate	Incoherence
LDA versus MDA	**1**							Moderate	Heterogeneity
LDA versus ORTHOK	**4**							Low	Heterogeneity, incoherence
LDA versus RLRL	**1**							Moderate**	Within-study bias**
LDA+ORTHOK versus ORTHOK	**7**							Moderate	Heterogeneity
MFSCL versus ORTHOK	**2**							Moderate	Heterogeneity
ORTHOK versus RLRL+ORTHOK	**1**							Moderate	Heterogeneity
Indirect evidence									
CONT versus MDA	NA							Low	Incoherence
CONT versus RLRL+ORTHOK	NA							Low	Incoherence
HDA versus LDA+ORTHOK	NA							Very low	Imprecision, heterogeneity, incoherence
HDA versus MFSCL	NA							Low	Incoherence
HDA versus MFSL	NA							Low	Incoherence
HDA versus ORTHOK	NA							Low	Incoherence
HDA versus RLRL	NA							Low	Imprecision, incoherence
HDA versus RLRL+ORTHOK	NA							Low	Imprecision, incoherence

Comparison	No of studies	Within-study bias	Reporting bias#	Indirectness	Imprecision	Heterogeneity	Incoherence¶	Confidence rating	Reason for downgrading
LDA versus MFSCL	NA							Very low	Heterogeneity, incoherence
LDA versus MFSL	NA							Very low	Imprecision, heterogeneity
LDA versus RLRL+ORTHOK	NA							Low	Incoherence
LDA+ORTHOK versus MDA	NA							Very low	Imprecision, incoherence
LDA+ORTHOK versus MFSCL	NA							Low	Incoherence
LDA+ORTHOK versus MFSL	NA							Low	Incoherence
LDA+ORTHOK versus RLRL	NA							Very low	Heterogeneity, incoherence
LDA+ORTHOK versus RLRL+ORTHOK	NA							Very low	Heterogeneity, incoherence
MDA versus MFSCL	NA							Very low	Heterogeneity, incoherence
MDA versus MFSL	NA							Very low	Heterogeneity, incoherence
MDA versus ORTHOK	NA							Very low	Imprecision, incoherence
MDA versus RLRL	NA							Very low	Heterogeneity, incoherence
MDA versus RLRL+ORTHOK	NA							Very low	Heterogeneity, incoherence
MFSCL versus MFSL	NA							Very low	Imprecision, heterogeneity
MFSCL versus RLRL	NA							Low	Incoherence
MFSCL versus RLRL+ORTHOK	NA							Low	Incoherence
MFSL versus ORTHOK	NA							Very low	Imprecision, incoherence
MFSL versus RLRL	NA							Low	Incoherence
MFSL versus RLRL+ORTHOK	NA							Low	Incoherence
ORTHOK versus RLRL	NA							Low	Incoherence

Comparison	No of studies	Within-study bias	Reporting bias#	Indirectness	Imprecision	Heterogeneity	Incoherence¶	Confidence rating	Reason for downgrading
RLRL versus RLRL+ORTHOK	NA							Very low	Imprecision, heterogeneity

#Reporting bias was rated as low concern based on results of Egger's regression while within-study selective outcome reporting was captured at the trial level. **$**For treatment contrasts informed exclusively by indirect evidence, incoherence was rated as 'some concerns' by default, because the design-by-treatment interaction test deployed by the CINeMA framework is unreliable in networks with related interventions grouped into shared nodes. *****Although there is some concern about within-study bias, the confidence in results of the NMA for this treatment contrast was judged to be high because the other five domains of CINeMA have not raised any concerns, and the concerns related to within-study bias were due to historical limitation of trial protocol registration rather than empirical evidence of selective outcome reporting. **: Although five domains of CINeMA have not raised any concerns except some concern about within-study bias, there was only one study with that specific direct comparison, leading to the judgement of moderate confidence in the effect estimate

Table S25. Confidence in network meta-analysis results for rebound in SER 12 months after treatment cessation.

Comparison	No of studies	Within-study bias	Reporting bias#	Indirectness	Imprecision	Heterogeneity	Incoherence$	Confidence rating	Reason for downgrading
Mixed evidence									
CONT versus HDA	**1**							Moderate*	Within-study bias
CONT versus LDA	**4**							Very low	Heterogeneity
CONT versus MFSCL	**1**							Very low	Imprecision
CONT versus RLRL	**1**							Very low¥	Within-study bias heterogeneity
HDA versus LDA	**1**							Moderate**	Within-study bias
HDA versus MDA	**1**							Very low	Imprecision, heterogeneity
LDA versus MDA	**1**							Low	Heterogeneity
Indirect Evidence									
CONT versus MDA	NA							Low	Heterogeneity
HDA versus MFSCL	NA							Moderate	Incoherence
HDA versus RLRL	NA							Very low	Imprecision, heterogeneity
LDA versus MFSCL	NA							Very low	Imprecision, heterogeneity
LDA versus RLRL	NA							Very low	Imprecision, heterogeneity
MDA versus MFSCL	NA							Low	Heterogeneity
MDA versus RLRL	NA							Very low	Imprecision
MFSCL versus RLRL	NA							Low	Imprecision, heterogeneity

#Reporting bias was rated as low concern based on results of Egger's regression while within-study selective outcome reporting was captured at the trial level. **$**For treatment contrasts informed exclusively by indirect evidence, incoherence was rated as 'some concerns' by default, because the design-by-treatment interaction test deployed by the CINeMA framework is unreliable in networks with related interventions grouped into shared

nodes. *Although the CONT versus HDA rebound on SER is informed by one trial (Chua 2006, ATOM), this is one of the most methodologically robust trials in the evidence base with some concerns RoB2 rating driven by absence of protocol registration, resulting in moderate confidence rating.¥ All contrasts of rebound effect involving RLRL rest on a single high risk of bias trial, Jiang 2022, and are therefore downgraded to the CINeMA confidence rating for the RLRL rebound contrasts to “very low”. **Although five domains of CINeMA have not raised any concerns except some concern about within-study bias, there was only one study with that specific direct comparison, leading to the judgement of moderate confidence in the effect estimate.

Table S26. Confidence in network meta-analysis results for rebound in AL 12 months after treatment cessation.

Comparison	No of studies	Within-study bias	Reporting bias#	Indirectness	Imprecision	Heterogeneity	Incoherence$	Confidence rating	Reason for downgrading
Mixed evidence									
CONT versus HDA	**1**							Moderate*	Within-study bias
CONT versus LDA	**4**							Moderate	Heterogeneity
CONT versus MFSCL	**1**							Very low	Heterogeneity, within-study bias
CONT versus RLRL	**1**							Very low¥	Within-study bias
HDA versus LDA	**1**							Moderate	Within-study bias
HDA versus MDA	**1**							Low	Within-study bias, heterogeneity
LDA versus MDA	**1**							Moderate**	Within-study bias
Indirect Evidence									
CONT versus MDA	NA							Moderate	Incoherence
HDA versus MFSCL	NA							Moderate	Incoherence
HDA versus RLRL	NA							Very low	Imprecision, heterogeneity
LDA versus MFSCL	NA							Low	Imprecision
LDA versus RLRL	NA							Very low¥	Imprecision, within-study bias
MDA versus MFSCL	NA							Moderate	Incoherence
MDA versus RLRL	NA							Very low	Imprecision, heterogeneity
MFSCL versus RLRL	NA							Moderate	Heterogeneity

#Reporting bias was rated as low concern based on results of Egger's regression while within-study selective outcome reporting was captured at the trial level. **$**For treatment contrasts informed exclusively by indirect evidence, incoherence was rated as 'some concerns' by default, because the design-by-treatment interaction test deployed by the CINeMA framework is unreliable in networks with related interventions grouped into shared nodes. *Although the CONT versus HDA rebound on AL is informed by one trial (Chua 2006, ATOM), this is one of the most methodologically robust trials in the evidence base with some concerns RoB2 rating driven by

absence of protocol registration, resulting in moderate confidence rating ¥All contrasts of rebound effect involving RLRL rest on a single high risk of bias trial, Jiang 2022, and are therefore downgraded to the CINeMA confidence rating for the RLRL rebound contrasts to “very low”. **Although five domains of CINeMA have not raised any concerns except some concern about within-study bias, there was only one study with that specific direct comparison, leading to the judgement of moderate confidence in the effect estimate.

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