|  |  |
| --- | --- |
| **Number** | **Title** |
| eFigure 1 | Summary of Downs and Black’s risk of bias assessment  |
| Supplement 1 | PRISMA checklist |
| Supplement 2 | Search Strategies |
| eTable 1 | Summary of adherence assessed using the proportion of days covered (PDC) – dichotomous outcomes |
| eTable 2 | Summary of adherence assessed using the proportion of days covered (PDC) – continuous outcomes |
| eTable 3 | Summary of adherence assessed using the medication possession ratio (MPR) – dichotomous outcomes |
| eTable 4 | Summary of adherence assessed using the medication possession ratio (MPR) – continuous outcomes |
| eTable 5 | Summary of persistence with lipid lowering therapy – dichotomous outcomes |
| eTable 6 | Summary of persistence with lipid lowering therapy – continuous outcomes |
| eTable 7 | List of citation for studies included in tables |
| eTable 8 | Studies excluded from the systematic review – not a relevant population |
| eTable 9 | Studies excluded from the systematic review - not relevant lipid therapy |
| eTable 10 | Studies excluded from the systematic review - no relevant outcome |
| eTable 11 | Studies excluded from the systematic review - no relevant data |
| eTable 12 | Unobtainable studies – not available online or at the British Library |

**eFigure 1**: S**ummary of Downs and Black’s risk of bias assessment (n=84)**

Questions for Down’s and Black risk of bias assessment:

1. Does the study specifically identify the measurement of treatment adherence persistence as an aim?
2. Are the main outcomes (with respect to treatment adherence) to be measured clearly described in the introduction or methods section?
3. Are the characteristics of the patients included in the study clearly?
4. Are the interventions of interest clearly described?
5. Are the findings of the study with respect to treatment adherence persistence clearly described?
6. Do the authors give a statement regarding the potential for adverse events to lead to treatment discontinuation?
7. Have all patients included in the study at baseline been followed-up?
8. If patients have been lost to follow-up, have these been considered in the final analysis for adherence/ persistence assessment?
9. Were the subjects asked to participate in the study representative of clinical practice?
10. Were the staff, places, and facilities where the patients were received lipid lowering treatment representative of clinical practice?
11. Were the method(s) used to measure treatment adherence/ persistence used accurate (valid and reliable)?
12. Were the participants in the different lipid lowering therapy arms (where relevant) recruited from the same population?
13. Were the participants in the different lipid lowering therapy arms (where relevant) recruited over the same period of time

**Supplement 1:** PRISMA checklist

|  |  |  |  |
| --- | --- | --- | --- |
| **Section/topic**  | **#** | **Checklist item**  | **Reported on page #**  |
| **TITLE**  |  |
| Title  | 1 | Identify the report as a systematic review, meta-analysis, or both.  | 1 |
| **ABSTRACT**  |  |
| Structured summary  | 2 | Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.  | 5 |
| **INTRODUCTION**  |  |
| Rationale  | 3 | Describe the rationale for the review in the context of what is already known.  | 6 |
| Objectives  | 4 | Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).  | 6 |
| **METHODS**  |  |
| Protocol and registration  | 5 | Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.  | No |
| Eligibility criteria  | 6 | Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.  | 6 |
| Information sources  | 7 | Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.  | 6-7 |
| Search  | 8 | Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.  | Supplement 2 |
| Study selection  | 9 | State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).  | 8 |
| Data collection process  | 10 | Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.  | 8 |
| Data items  | 11 | List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.  | 8 |
| Risk of bias in individual studies  | 12 | Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.  | 8 |
| Summary measures  | 13 | State the principal summary measures (e.g., risk ratio, difference in means).  | 8 |
| Synthesis of results  | 14 | Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.  | 8 |
| Risk of bias across studies  | 15 | Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).  | 8 |
| Additional analyses  | 16 | Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.  | 8 |
| **RESULTS**  |  |
| Study selection  | 17 | Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.  | 8 |
| Study characteristics  | 18 | For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.  | 8 |
| Risk of bias within studies  | 19 | Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).  | 9 |
| Results of individual studies  | 20 | For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.  | 9-11 |
| Synthesis of results  | 21 | Present results of each meta-analysis done, including confidence intervals and measures of consistency.  | NA |
| Risk of bias across studies  | 22 | Present results of any assessment of risk of bias across studies (see Item 15).  | 9 |
| Additional analysis  | 23 | Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).  | NA |
| **DISCUSSION**  |  |
| Summary of evidence  | 24 | Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).  | 12-13 |
| Limitations  | 25 | Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).  | 14 |
| Conclusions  | 26 | Provide a general interpretation of the results in the context of other evidence, and implications for future research.  | 14 |
| **FUNDING**  |  |
| Funding  | 27 | Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.  | 4 |

**Supplement 2: Search Strategies**

**Embase (Ovid): 2005 to 2016/2/3**

**Searched: 4.2.16**

1 exp hyperlipidemia/ (122618)

2 (hypercholesterol?emi$ or hypercholesterin?emi$ or cholester?emi$ or cholesterin?emi$ or hyperlipid?emi$ or hyperlipoprotein?emia$ or lip?emia$ or lipid?emi$ or hyperlip?emi$ or hefh or hofh or fh or hypertriglycerid?emia$ or mckusick 14575 or triglycerid?emia$ or (triglyceride adj1 storage adj1 disease$)).ti,ab,ot,hw. (153823)

3 ((cholesterol$ or lipid$ or LDL) adj3 (elevat$ or ascend$ or increas$ or high or rais$)).ti,ab,ot,hw. (144575)

4 or/1-3 (268096)

5 dyslipidemia/ or (dyslipidemia$ or dyslipaemia$ or dyslipemia$ or dyslipidaemia$).ti,ab,ot,hw. (54692)

6 4 or 5 (303017)

7 exp hydroxymethylglutaryl coenzyme A reductase inhibitor/ (108474)

8 (statin$ or hydroxymethylglutaryl coenzyme A reductase inhibit$ or HMG CoA reductase inhibit$ or HMGCoA reductase inhibit$).ti,ab,ot,hw. (87160)

9 (atorvastatin or Lipitor or torvast or atorlip or atovarol or ci 981 or ci981 or glustar or lipibec or lowlipen or sortis or storvas or tahor or ym 548 or ym548 or zarator or 134523-00-5 or 134523-03-8).ti,ab,ot,hw,rn,tn. (28775)

10 (Bervastatin or ls 2904 or ls2904 or 132017-01-7).ti,ab,ot,hw,rn,tn. (6)

11 (crilvastatin or pmd 387 or pmd387 or 120551-59-9).ti,ab,ot,hw,rn,tn. (7)

12 (dalvastatin or rg 12561 or 132100-55-1 or 135910-20-2).ti,ab,ot,hw,rn,tn. (14)

13 (fluindostatin or Canef or cranoc or fluindostatin sodium or fluvastatin or fluvastatin sodium or fractal lp or lescol or lescol or leucol or lochol or locol or sri 62320 or sri62320 or vastin or xu 62320 or xu62320 or 93957-54-1).ti,ab,ot,hw,rn,tn. (8101)

14 (glenvastatin or hr 780 or hr780).ti,ab,ot,hw,rn,tn. (34)

15 (mevinolin or altocor or altoprev or artein or belvas or Birotin or cholestra or cysin or ellanco or elstatin or l 654969 or lipdip or lipivas or lofacol or lomar or lostatin or lovacel or lovacol or lovalip or lovalord or lovastan or lovastatin or lovasterol or lovastin or lovatadin or lowachol or lozutin or medostatin or mevacor or meverstin or mevinacor or "mk 0803" or mk 803 or mk0803 or mk803 or monacolin K or monakolin k or msd 803 or neolipid or nergadan or ovasta or rodatin rovacor or taucor or 75330-75-5).ti,ab,ot,hw,rn,tn. (14417)

16 (mevinolinic acid or mevinolinate or 75225-51-3).ti,ab,ot,hw,rn,tn. (38)

17 (Monacolin or 76343-78-7 or 79394-47-1).ti,ab,ot,hw,rn,tn. (224)

18 (pitavastatin or alipza or itavastatin or livalo or livazo or nivastatin or nk 104 or nk104 or nks 104 or nks104 or pitava or ribar or vezepra or 147526-32-7).ti,ab,ot,hw,rn,tn. (2119)

19 (Pravastatin or astin or bristacol or cholespar or cs 514 or cs514 or elisor or epatostantin or eptastatin or eptastatin sodium or eptastatine or kenstatin or lipemol or lipidal or liplat or lipostat or liprevil or mevalotin or novales or prareduct or prascolend or prastan or prava or pravachol or pravacol or pravaselect or pravasin or pravasine or pravator or pravyl or sanaprav or selektine or selipran or sq 31000 or sq31000 or stanidine or vasopran or vasten or xipral or 81093-37-0 or 81131-70-6).ti,ab,ot,hw,rn,tn. (17796)

20 (Simvastatin or Avastinee or cholestat or clinfar or colastatina or colestricon or covastin or denan or epistatin or esvat or ethical or eucor or ifistatin or kavelor or klonastin or kolestevan or l 644128 or l644128 or lipecor or lipex or lipinorm or liponorm or lipovas or lodales or medipo or mersivas or mk 733 or mk733 or nor-vastina or normofat or orovas or rechol or simbado or simcard or simchol or simovil or simtin or simvacor or simvahex or simvalord or simvastar or simvata or simvatin or simvor or simvotin or sinvacor or simvastatin or sinvinolin or sivastin or starzoco or synvinolin or torio or valemia or vasilip or vasotenal or vazim or vidastat or zimmex or Zocor or zocor forte or zocord or zovast or 79902-63-9).ti,ab,ot,hw,rn,tn. (107730)

21 (Rosuvastatin or crestor or rosuvas or s 4522 or s4522 or zd 4522 or zd4522 or 147098-18 or 147098-20-2).ti,ab,ot,hw,rn,tn. (10563)

22 tenivastatin.ti,ab,ot,hw,rn,tn. (0)

23 or/7-22 (199630)

24 evolocumab/ (287)

25 (evolocumab or repatha or 1256937-27-5 or AMG-145 or amg145).af. (380)

26 alirocumab/ or (Alirocumab or praluent or regn 727 or regn727 or sar 236553 or sar236553 or 1245916-14-6).af. (362)

27 bococizumab/ or (bococizumab or "pf 04950615" or pf04950615 or rn 316 or rn 316 or 1407495-02-6).af. (97)

28 proprotein convertase subtilisin kexin type 9 protein/ or (((PCSK9 or PCSK 9) adj2 inhibit$) or (anti-PCSK-9 or anti-PCSK9)).ti,ab,ot,hw. (474)

29 or/24-28 (815)

30 nicotinic acid/ (18335)

31 acipimox/ or (acipimox or acipemox or olbetam or albermox or 51037-30-0).ti,ab,ot,hw,rn,tn. (771)

32 (vitamin B3 or vitamin PP or 54-86-4 or 59-67-6 or acido nicotinico or acidum nicotinicum or akotin or apelagrin or apo-nicotinic acid or beta pyridine carboxylic acid or bionic or davitamon pp or direktan or direktane or efacin or efasin or endur acin or enduracin or naotin or natinate or niac or niacin$ or niacor or Niaspan or nicacid or nicangin or nico or nicobid or nicocap or nicocidin or nicocrisina or nicodan or nicodane or nicolar or niconacid or niconacide or nicoseptin wirkstoff or nicosode or nicospan or nicosyl or nicotabs or nicotamin or nicotine or nicotin$ acid or nicotinat or nicotinate or nicotinese or nicotinipca or nicotyl or nicovasen or nicyl or nikacid or nipellan or novoniacin or nyacine or nyclin or pellagramin or pellagramine or pellagrin$ or pelonin or pelonine or pepevit or peviton or pp factor or "pyridine 3 carbonic acid" or pyridine beta carboxylic acid or "s 115" or slo niacin or sodium nicotinate or vasotherm or vitaplex n or wampocap or wampopap).ti,ab,ot,hw,rn,tn. (83588)

33 or/30-32 (84054)

34 colestyramine/ or bile acid sequestrant/ or colestipol/ or colesevelam/ (12040)

35 (((bile adj2 acid) or anion exchange) adj2 (sequestrant$ or resin$)).ti,ab,hw,ot. (3940)

36 (chol-less or choles or cholesthexal or cholestyramin$ or cholybar or cholytar or colestepril or colestiramina or colestran or colestrol or colestyramin or cuemid or lipocol-merz or lismol or locholest or prevalite or quantalan or questran or resincoles$ or vasosan or 11041-12-6 or 58391-37-0).ti,ab,ot,hw,rn,tn. (10779)

37 (colestipol or cholestabyl or cholestipol or colestid or lestid or u 26597a or "u 26797 a" or 25085-17-0 or 37296-80-3 or 50925-79-6).ti,ab,ot,hw,rn,tn. (2818)

38 (Colesevelam or cholestagel or gt 31 104 or gt 31 104hb or gt 31-104 or gt 31-104hb or gt31 104 or gt31 104hb or gt31-104 or gt31-104hb or welchol or 182815-43-6 or 182815-44-7).ti,ab,ot,hw,rn,tn. (1119)

39 or/34-38 (15217)

40 exp Fibric acid derivative/ (26426)

41 (fibrate$ or fibric acid$ or arhalofenate or atromid or beclobrate or beclobrinic acid or bezafibrate or biclofibrate or binifibrate or choline fenofibrate or ciprofibrate or clinofibrate or clofibrate or clofibrate aluminium or clofibric acid or clofibride or dulofibrate or eniclobrate or etofibrate or etofylline clofibrate or fenirofibrat or fenofibric acid or halofenate or lifibrate or methylclofenapate or nicofibrate or picafibrate or pirifibrate or ponfibrate or ronifibrate or salafibrate or serfibrate or simfibrate or sitofibrate or tazasubrate or tiadenol diclofibrate or timofibrate or tocofibrate or urefibrate or xantifibrate or gemfibrozil).ti,ab,ot,hw,rn,tn. (26916)

42 (Bezafibrate$ or befizal or benzafibrate or benzofibrate or bezafibrate retard or bezalip or bezatol or bezifal or bezofibrate or bf 759 or bf759 or bm 15075 or bm15075 or cedur or lo 44 or lo44 or norlip or 41859-67-0).ti,ab,ot,tn,rn. (4805)

43 (Ciprofibrate$ or lipanor or modalim or win 35833 or 52214-84-3).ti,ab,ot,rn,tn. (1312)

44 (Fenofibrate$ or Antara or apo-feno-micro or aterolis or bisterol$ or climage or controlip or durafenat or evothyl or fegenor or felosma or fenobrate or fenofanton or fenogal or fenoglide or fenox or fibrafen or "grs 001" or hyperchol or katalip or lexemin or lipanthyl or lipantil or lipantyl or liparison or lipidax or lipidil or lipilo or lipirex or lipoclar or lipofen or lipolin or liposit or lipsin or livesan ge or lofibra or nopid 200 or normalip or nubrex or procetofen or procetofenate or procetofene or proketofen or qualipantyl or rapidil or redose 200 or rorit or secalip or sigurtil or trichol or tricor or triglide or trolip or zerlubron or zumafib or 49562-28-9).ti,ab,ot,hw,rn,tn. (9266)

45 (gemfibrozil or ausgem or bolutol or brozil or chlorestrol or cholespid or ci 719 or ci719 or clearol or decrelip or detrichol or elmogan or fetinor or fibralip or fibrocit or gedum or gemfi$ or gemizol or gemlipidor gemnpid or gemzil or genfibrozil or gevilon$ or gozid or grifogemzilo or hidil or hipolixan or ipolipid or jezil or lanaterom or lifibron or lipazil or lipidys or lipigem or lipira or lipison or lipistorol or lipizyl or lipofor or lipolo or lipostorol or lipozid or lipozil or lipur or lopid$ or low-lip or lowin or manobrozil or mariston or mersikol or normolipor panazil or polyxit or progemzal or recozil or reducelor regulip or synbrozilor triglizil or uragem or zilop or 25812-30-0).ti,ab,ot,hw,rn,tn. (8300)

46 or/40-45 (31985)

47 lomitapide/ or (lomitapide or lojuxta or Juxtapid or 182431-12-5 or 202833-31-6 or 202914-84-9 or 210823-48-6 or aegr 733 or aegr733 or bms 201038$).af. (358)

48 ezetimibe/ or ezetimibe plus rosuvastatin/ or ezetimibe plus simvastatin/ (7316)

49 (ezetimibe or zetia or ezetrol or ezedoc or ezetib or sch 58235 or sch58235 or 163222-33-1).af. (7636)

50 anacetrapib/ or (anacetrapib or "mk 0859" or mk 859 or mk0859 or mk859 or 875446-37-0).af. (552)

51 mipomersen/ or (mipomersen or isis 301012 or isis301012 or kynamro or 629167-92-6).af. (505)

52 torcetrapib/ or (torcetrapib or CP 529414 or CP 529 414 or CP529414 or 262352-17-0).ti,ab,ot,hw,rn,tn. (1339)

53 dalcetrapib/ or (dalcetrapib or jtt 705 or jtt705 or ro 4607381 or ro4607381 or 211513-37-0).ti,ab,ot,hw,rn,tn. (719)

54 evacetrapib/ or (evacetrapib or ly 2484595 or ly2484595 or 1186486-62-3).ti,ab,ot,hw,rn,tn. (187)

55 apheresis/ or apheresis.ti,ab,hw,ot. (13467)

56 or/47-55 (22497)

57 23 or 29 or 33 or 39 or 46 or 56 (318463)

58 6 and 57 (54425)

59 exp Patient Attitude/ (288684)

60 patient dropouts/ (439)

61 ((patient$ or participa$ or therap$ or treatment$ or intervention$ or medicat$ or drug or drugs or medicine$ or regime$) adj5 (complian$ or comply$ or complies or noncomplian$ or non-complian$ or noncomply$ or non-comply$ or adher$ or non-adher$ or nonadher$ or concordanc$ or non-concordanc$ or nonconcordanc$ or discontinu$ or drop$ out$ or dropout$ or refus$ or withdraw$ or ceas$ or terminat$ or halt$ or durat$ or persist$ or stop$ or suspend$ or suspension$ or break off or cooperat$ or co-operat$ or noncooperat$)).ti,ab,ot,hw. (761497)

62 or/59-61 (908425)

63 58 and 62 (7958)

64 exp animal/ or exp animal-experiment/ or nonhuman/ (22498176)

65 (rat or rats or mouse or mice or murine or rodent or rodents or hamster or hamsters or pig or pigs or porcine or rabbit or rabbits or animal or animals or dogs or dog or cats or cow or bovine or sheep or ovine or monkey or monkeys).ti,ab,ot,hw. (6107776)

66 or/64-65 (22726557)

67 exp human/ or exp human-experiment/ (16690039)

68 66 not (66 and 67) (6037477)

69 (letter or editorial or note).pt. (2048388)

70 63 not (68 or 69) (7219)

**71 limit 70 to yr="2005 -Current" (5942)**

**Medline (Ovid): 2005 to 2016/January/Week 3**

**Searched: 3.2.16**

1 exp hyperlipidemias/ (58791)

2 (hypercholesterol?emi$ or hypercholesterin?emi$ or cholester?emi$ or cholesterin?emi$ or hyperlipid?emi$ or hyperlipoprotein?emia$ or lip?emia$ or lipid?emi$ or hyperlip?emi$ or hefh or hofh or fh or hypertriglycerid?emia$ or mckusick 14575 or triglycerid?emia$ or (triglyceride adj1 storage adj1 disease$)).ti,ab,ot,hw. (88036)

3 ((cholesterol$ or lipid$ or LDL) adj3 (elevat$ or ascend$ or increas$ or high or rais$)).ti,ab,ot,hw. (71432)

4 or/1-3 (144431)

5 Dyslipidemias/ or (dyslipidemia$ or dyslipaemia$ or dyslipemia$ or dyslipidaemia$).ti,ab,ot,hw. (21783)

6 4 or 5 (158038)

7 exp Hydroxymethylglutaryl-CoA Reductase Inhibitors/ (31384)

8 (statin$ or hydroxymethylglutaryl coenzyme A reductase inhibit$ or HMG CoA reductase inhibit$ or HMGCoA reductase inhibit$).ti,ab,ot,hw. (29059)

9 (atorvastatin or Lipitor or torvast or atorlip or atovarol or ci 981 or ci981 or glustar or lipibec or lowlipen or sortis or storvas or tahor or ym 548 or ym548 or zarator or 134523-00-5 or 134523-03-8).ti,ab,ot,hw,rn. (6546)

10 (Bervastatin or ls 2904 or ls2904 or 132017-01-7).ti,ab,ot,hw,rn. (0)

11 (crilvastatin or pmd 387 or pmd387 or 120551-59-9).ti,ab,ot,hw,rn. (5)

12 (dalvastatin or rg 12561 or 132100-55-1 or 135910-20-2).ti,ab,ot,hw,rn. (4)

13 (fluindostatin or Canef or cranoc or fluindostatin sodium or fluvastatin or fluvastatin sodium or fractal lp or lescol or leucol or lochol or locol or sri 62320 or sri62320 or vastin or xu 62320 or xu62320 or 93957-54-1).ti,ab,ot,hw,rn. (1703)

14 (glenvastatin or hr 780 or hr780).ti,ab,ot,hw,rn. (12)

15 (mevinolin or altocor or altoprev or artein or belvas or Birotin or cholestra or cysin or ellanco or elstatin or l 654969 or lipdip or lipivas or lofacol or lomar or lostatin or lovacel or lovacol or lovalip or lovalord or lovastan or lovastatin or lovasterol or lovastin or lovatadin or lowachol or lozutin or medostatin or mevacor or meverstin or mevinacor or "mk 0803" or mk 803 or mk0803 or mk803 or monacolin K or monakolin k or msd 803 or neolipid or nergadan or ovasta or rodatin rovacor or taucor or 75330-75-5).ti,ab,ot,hw,rn. (5307)

16 (mevinolinic acid or mevinolinate or 75225-51-3).ti,ab,ot,hw,rn. (21)

17 (Monacolin or 76343-78-7 or 79394-47-1).ti,ab,ot,hw,rn. (129)

18 (pitavastatin or alipza or itavastatin or livalo or livazo or nivastatin or nk 104 or nk104 or nks 104 or nks104 or pitava or ribar or vezepra or 147526-32-7).ti,ab,ot,hw,rn. (592)

19 (Pravastatin or astin or bristacol or cholespar or cs 514 or cs514 or elisor or epatostantin or eptastatin or eptastatin sodium or eptastatine or kenstatin or lipemol or lipidal or liplat or lipostat or liprevil or mevalotin or novales or prareduct or prascolend or prastan or prava or pravachol or pravacol or pravaselect or pravasin or pravasine or pravator or pravyl or sanaprav or selektine or selipran or sq 31000 or sq31000 or stanidine or vasopran or vasten or xipral or 81093-37-0 or 81131-70-6).ti,ab,ot,hw,rn. (4267)

20 (Simvastatin or Avastinee or cholestat or clinfar or colastatina or colestricon or covastin or denan or epistatin or esvat or ethical or eucor or ifistatin or kavelor or klonastin or kolestevan or l 644128 or l644128 or lipecor or lipex or lipinorm or liponorm or lipovas or lodales or medipo or mersivas or mk 733 or mk733 or nor-vastina or normofat or orovas or rechol or simbado or simcard or simchol or simovil or simtin or simvacor or simvahex or simvalord or simvastar or simvata or simvatin or simvor or simvotin or sinvacor or simvastatin or sinvinolin or sivastin or starzoco or synvinolin or torio or valemia or vasilip or vasotenal or vazim or vidastat or zimmex or Zocor or zocor forte or zocord or zovast or 79902-63-9).ti,ab,ot,hw,rn. (63168)

21 (Rosuvastatin or crestor or rosuvas or s 4522 or s4522 or zd 4522 or zd4522 or 147098-18 or 147098-20-2).ti,ab,ot,hw,rn. (2259)

22 tenivastatin.ti,ab,ot,hw,rn. (0)

23 or/7-22 (99293)

24 (evolocumab or repatha or 1256937-27-5 or AMG-145 or amg145).af. (78)

25 (Alirocumab or praluent or regn 727 or regn727 or sar 236553 or sar236553 or 1245916-14-6).af. (69)

26 (bococizumab or "pf 04950615" or pf04950615 or rn 316 or rn316 or 1407495-02-6).af. (7)

27 (((PCSK-9 or PCSK9 or PCSK 9) adj2 inhibit$) or (anti-PCSK-9 or anti PCSK-9)).ti,ab,ot,hw. (179)

28 or/24-27 (244)

29 nicotinic acids/ or niacin/ (16313)

30 (acipimox or acipemox or olbetam or albermox or 51037-30-0).ti,ab,ot,hw,rn. (297)

31 (vitamin B3 or vitamin PP or 54-86-4 or 59-67-6 or acido nicotinico or acidum nicotinicum or akotin or apelagrin or apo-nicotinic acid or beta pyridine carboxylic acid or bionic or davitamon pp or direktan or direktane or efacin or efasin or endur acin or enduracin or naotin or natinate or niac or niacin$ or niacor or Niaspan or nicacid or nicangin or nico or nicobid or nicocap or nicocidin or nicocrisina or nicodan or nicodane or nicolar or niconacid or niconacide or nicoseptin wirkstoff or nicosode or nicospan or nicosyl or nicotabs or nicotamin or nicotine or nicotin$ acid or nicotinat or nicotinate or nicotinese or nicotinipca or nicotyl or nicovasen or nicyl or nikacid or nipellan or novoniacin or nyacine or nyclin or pellagramin or pellagramine or pellagrin$ or pelonin or pelonine or pepevit or peviton or pp factor or "pyridine 3 carbonic acid" or pyridine beta carboxylic acid or "s 115" or slo niacin or sodium nicotinate or vasotherm or vitaplex n or wampocap or wampopap).ti,ab,ot,hw,rn. (59241)

32 or/29-31 (63398)

33 Cholestyramine Resin/ (2564)

34 (((bile adj2 acid) or anion exchange) adj2 (sequestrant$ or resin$)).ti,ab,hw,ot. (2714)

35 (chol-less or choles or cholesthexal or cholestyramin$ or cholybar or cholytar or colestepril or colestiramina or colestran or colestrol or colestyramin or cuemid or lipocol-merz or lismol or locholest or prevalite or quantalan or questran or resincoles$ or vasosan or 11041-12-6 or 58391-37-0).ti,ab,ot,hw,rn. (3316)

36 (colestipol or cholestabyl or cholestipol or colestid or lestid or u 26597a or "u 26797 a" or 25085-17-0 or 37296-80-3 or 50925-79-6).ti,ab,ot,hw,rn. (518)

37 (Colesevelam or cholestagel or gt 31 104 or gt 31 104hb or gt 31-104 or gt 31-104hb or gt31 104 or gt31 104hb or gt31-104 or gt31-104hb or welchol or 182815-43-6 or 182815-44-7).ti,ab,ot,hw,rn. (227)

38 or/33-37 (6051)

39 fibric acids/ or bezafibrate/ or fenofibrate/ or gemfibrozil/ (4731)

40 (fibrate$ or fibric acid$ or arhalofenate or atromid or beclobrate or beclobrinic acid or bezafibrate or biclofibrate or binifibrate or choline fenofibrate or ciprofibrate or clinofibrate or clofibrate or clofibrate aluminium or clofibric acid or clofibride or dulofibrate or eniclobrate or etofibrate or etofylline clofibrate or fenirofibrat or fenofibric acid or halofenate or lifibrate or methylclofenapate or nicofibrate or picafibrate or pirifibrate or ponfibrate or ronifibrate or salafibrate or serfibrate or simfibrate or sitofibrate or tazasubrate or tiadenol diclofibrate or timofibrate or tocofibrate or urefibrate or xantifibrate or gemfibrozil).ti,ab,ot,hw,rn. (10522)

41 (Bezafibrate$ or befizal or benzafibrate or benzofibrate or bezafibrate retard or bezalip or bezatol or bezifal or bezofibrate or bf 759 or bf759 or bm 15075 or bm15075 or cedur or lo 44 or lo44 or norlip or 41859-67-0).ti,ab,ot,hw,rn. (1511)

42 (Ciprofibrate$ or lipanor or modalim or win 35833 or 52214-84-3).ti,ab,ot,hw,rn. (524)

43 (Fenofibrate$ or Antara or apo-feno-micro or aterolis or bisterol$ or climage or controlip or durafenat or evothyl or fegenor or felosma or fenobrate or fenofanton or fenogal or fenoglide or fenox or fibrafen or "grs 001" or hyperchol or katalip or lexemin or lipanthyl or lipantil or lipantyl or liparison or lipidax or lipidil or lipilo or lipirex or lipoclar or lipofen or lipolin or liposit or lipsin or livesan ge or lofibra or nopid 200 or normalip or nubrex or procetofen or procetofenate or procetofene or proketofen or qualipantyl or rapidil or redose 200 or rorit or secalip or sigurtil or trichol or tricor or triglide or trolip or zerlubron or zumafib or 49562-28-9).ti,ab,ot,hw,rn. (2816)

44 (gemfibrozil or ausgem or bolutol or brozil or chlorestrol or cholespid or ci 719 or ci719 or clearol or decrelip or detrichol or elmogan or fetinor or fibralip or fibrocit or gedum or gemfi$ or gemizol or gemlipidor gemnpid or gemzil or genfibrozil or gevilon$ or gozid or grifogemzilo or hidil or hipolixan or ipolipid or jezil or lanaterom or lifibron or lipazil or lipidys or lipigem or lipira or lipison or lipistorol or lipizyl or lipofor or lipolo or lipostorol or lipozid or lipozil or lipur or lopid$ or low-lip or lowin or manobrozil or mariston or mersikol or normolipor panazil or polyxit or progemzal or recozil or reducelor regulip or synbrozilor triglizil or uragem or zilop or 25812-30-0).ti,ab,ot,hw,rn,tn. (1936)

45 or/39-44 (12442)

46 (lomitapide or lojuxta or Juxtapid or 182431-12-5 or 202833-31-6 or 202914-84-9 or 210823-48-6 or aegr 733 or aegr733 or bms 201038$).af. (70)

47 (ezetimibe or zetia or ezetrol or ezedoc or ezetib or sch 58235 or sch58235 or 163222-33-1).af. (1959)

48 (anacetrapib or "mk 0859" or mk 859 or mk0859 or mk859 or 875446-37-0).af. (136)

49 (mipomersen or isis 301012 or isis301012 or kynamro or 629167-92-6).af. (131)

50 (torcetrapib or CP 529414 or CP 529 414 or CP529414 or 262352-17-0).af. (320)

51 (dalcetrapib or jtt 705 or jtt705 or ro 4607381 or ro4607381 or 211513-37-0).af. (173)

52 (evacetrapib or ly 2484595 or ly2484595 or 1186486-62-3).af. (39)

53 exp Blood Component Removal/ or apheresis.ti,ab,hw,ot. (18860)

54 or/46-53 (21343)

55 23 or 28 or 32 or 38 or 45 or 54 (194723)

56 6 and 55 (21864)

57 exp Patient Compliance/ (58733)

58 Treatment Refusal/ (10886)

59 ((patient$ or participa$ or therap$ or treatment$ or intervention$ or medicat$ or drug or drugs or medicine$ or regime$) adj5 (complian$ or comply$ or complies or noncomplian$ or non-complian$ or noncomply$ or non-comply$ or adher$ or non-adher$ or nonadher$ or concordanc$ or non-concordanc$ or nonconcordanc$ or discontinu$ or drop$ out$ or dropout$ or refus$ or withdraw$ or ceas$ or terminat$ or halt$ or durat$ or persist$ or stop$ or suspend$ or suspension$ or break off or cooperat$ or co-operat$ or noncooperat$)).ti,ab,ot,hw. (333764)

60 or/57-59 (333765)

61 56 and 60 (1613)

62 exp animals/ not (exp animals/ and humans/) (4175116)

63 (letter or editorial or historical article).pt. (1547448)

64 61 not (62 or 63) (1577)

**65 limit 64 to yr="2005 -Current" (881)**

**MEDLINE In-Process Citations (Ovid): 2005-2016/2/2**

**MEDLINE Daily Update (Ovid): 2005-2016/2/2**

**Searched: 3.2.16**

1 exp hyperlipidemias/ (64)

2 (hypercholesterol?emi$ or hypercholesterin?emi$ or cholester?emi$ or cholesterin?emi$ or hyperlipid?emi$ or hyperlipoprotein?emia$ or lip?emia$ or lipid?emi$ or hyperlip?emi$ or hefh or hofh or fh or hypertriglycerid?emia$ or mckusick 14575 or triglycerid?emia$ or (triglyceride adj1 storage adj1 disease$)).ti,ab,ot,hw. (4939)

3 ((cholesterol$ or lipid$ or LDL) adj3 (elevat$ or ascend$ or increas$ or high or rais$)).ti,ab,ot,hw. (6107)

4 or/1-3 (10158)

5 Dyslipidemias/ or (dyslipidemia$ or dyslipaemia$ or dyslipemia$ or dyslipidaemia$).ti,ab,ot,hw. (2981)

6 4 or 5 (12302)

7 exp Hydroxymethylglutaryl-CoA Reductase Inhibitors/ (78)

8 (statin$ or hydroxymethylglutaryl coenzyme A reductase inhibit$ or HMG CoA reductase inhibit$ or HMGCoA reductase inhibit$).ti,ab,ot,hw. (3421)

9 (atorvastatin or Lipitor or torvast or atorlip or atovarol or ci 981 or ci981 or glustar or lipibec or lowlipen or sortis or storvas or tahor or ym 548 or ym548 or zarator or 134523-00-5 or 134523-03-8).ti,ab,ot,hw,rn. (705)

10 (Bervastatin or ls 2904 or ls2904 or 132017-01-7).ti,ab,ot,hw,rn. (0)

11 (crilvastatin or pmd 387 or pmd387 or 120551-59-9).ti,ab,ot,hw,rn. (0)

12 (dalvastatin or rg 12561 or 132100-55-1 or 135910-20-2).ti,ab,ot,hw,rn. (0)

13 (fluindostatin or Canef or cranoc or fluindostatin sodium or fluvastatin or fluvastatin sodium or fractal lp or lescol or leucol or lochol or locol or sri 62320 or sri62320 or vastin or xu 62320 or xu62320 or 93957-54-1).ti,ab,ot,hw,rn. (84)

14 (glenvastatin or hr 780 or hr780).ti,ab,ot,hw,rn. (1)

15 (mevinolin or altocor or altoprev or artein or belvas or Birotin or cholestra or cysin or ellanco or elstatin or l 654969 or lipdip or lipivas or lofacol or lomar or lostatin or lovacel or lovacol or lovalip or lovalord or lovastan or lovastatin or lovasterol or lovastin or lovatadin or lowachol or lozutin or medostatin or mevacor or meverstin or mevinacor or "mk 0803" or mk 803 or mk0803 or mk803 or monacolin K or monakolin k or msd 803 or neolipid or nergadan or ovasta or rodatin rovacor or taucor or 75330-75-5).ti,ab,ot,hw,rn. (198)

16 (mevinolinic acid or mevinolinate or 75225-51-3).ti,ab,ot,hw,rn. (0)

17 (Monacolin or 76343-78-7 or 79394-47-1).ti,ab,ot,hw,rn. (16)

18 (pitavastatin or alipza or itavastatin or livalo or livazo or nivastatin or nk 104 or nk104 or nks 104 or nks104 or pitava or ribar or vezepra or 147526-32-7).ti,ab,ot,hw,rn. (77)

19 (Pravastatin or astin or bristacol or cholespar or cs 514 or cs514 or elisor or epatostantin or eptastatin or eptastatin sodium or eptastatine or kenstatin or lipemol or lipidal or liplat or lipostat or liprevil or mevalotin or novales or prareduct or prascolend or prastan or prava or pravachol or pravacol or pravaselect or pravasin or pravasine or pravator or pravyl or sanaprav or selektine or selipran or sq 31000 or sq31000 or stanidine or vasopran or vasten or xipral or 81093-37-0 or 81131-70-6).ti,ab,ot,hw,rn. (178)

20 (Simvastatin or Avastinee or cholestat or clinfar or colastatina or colestricon or covastin or denan or epistatin or esvat or ethical or eucor or ifistatin or kavelor or klonastin or kolestevan or l 644128 or l644128 or lipecor or lipex or lipinorm or liponorm or lipovas or lodales or medipo or mersivas or mk 733 or mk733 or nor-vastina or normofat or orovas or rechol or simbado or simcard or simchol or simovil or simtin or simvacor or simvahex or simvalord or simvastar or simvata or simvatin or simvor or simvotin or sinvacor or simvastatin or sinvinolin or sivastin or starzoco or synvinolin or torio or valemia or vasilip or vasotenal or vazim or vidastat or zimmex or Zocor or zocor forte or zocord or zovast or 79902-63-9).ti,ab,ot,hw,rn. (6111)

21 (Rosuvastatin or crestor or rosuvas or s 4522 or s4522 or zd 4522 or zd4522 or 147098-18 or 147098-20-2).ti,ab,ot,hw,rn. (304)

22 tenivastatin.ti,ab,ot,hw,rn. (0)

23 or/7-22 (9898)

24 (evolocumab or repatha or 1256937-27-5 or AMG-145 or amg145).af. (33)

25 (Alirocumab or praluent or regn 727 or regn727 or sar 236553 or sar236553 or 1245916-14-6).af. (38)

26 (bococizumab or "pf 04950615" or pf04950615 or rn 316 or rn316 or 1407495-02-6).af. (7)

27 (((PCSK-9 or PCSK9 or PCSK 9) adj2 inhibit$) or (anti-PCSK-9 or anti PCSK-9)).ti,ab,ot,hw. (68)

28 or/24-27 (102)

29 nicotinic acids/ or niacin/ (3)

30 (acipimox or acipemox or olbetam or albermox or 51037-30-0).ti,ab,ot,hw,rn. (3)

31 (vitamin B3 or vitamin PP or 54-86-4 or 59-67-6 or acido nicotinico or acidum nicotinicum or akotin or apelagrin or apo-nicotinic acid or beta pyridine carboxylic acid or bionic or davitamon pp or direktan or direktane or efacin or efasin or endur acin or enduracin or naotin or natinate or niac or niacin$ or niacor or Niaspan or nicacid or nicangin or nico or nicobid or nicocap or nicocidin or nicocrisina or nicodan or nicodane or nicolar or niconacid or niconacide or nicoseptin wirkstoff or nicosode or nicospan or nicosyl or nicotabs or nicotamin or nicotine or nicotin$ acid or nicotinat or nicotinate or nicotinese or nicotinipca or nicotyl or nicovasen or nicyl or nikacid or nipellan or novoniacin or nyacine or nyclin or pellagramin or pellagramine or pellagrin$ or pelonin or pelonine or pepevit or peviton or pp factor or "pyridine 3 carbonic acid" or pyridine beta carboxylic acid or "s 115" or slo niacin or sodium nicotinate or vasotherm or vitaplex n or wampocap or wampopap).ti,ab,ot,hw,rn. (3092)

32 or/29-31 (3094)

33 Cholestyramine Resin/ (1)

34 (((bile adj2 acid) or anion exchange) adj2 (sequestrant$ or resin$)).ti,ab,hw,ot. (274)

35 (chol-less or choles or cholesthexal or cholestyramin$ or cholybar or cholytar or colestepril or colestiramina or colestran or colestrol or colestyramin or cuemid or lipocol-merz or lismol or locholest or prevalite or quantalan or questran or resincoles$ or vasosan or 11041-12-6 or 58391-37-0).ti,ab,ot,hw,rn. (61)

36 (colestipol or cholestabyl or cholestipol or colestid or lestid or u 26597a or "u 26797 a" or 25085-17-0 or 37296-80-3 or 50925-79-6).ti,ab,ot,hw,rn. (8)

37 (Colesevelam or cholestagel or gt 31 104 or gt 31 104hb or gt 31-104 or gt 31-104hb or gt31 104 or gt31 104hb or gt31-104 or gt31-104hb or welchol or 182815-43-6 or 182815-44-7).ti,ab,ot,hw,rn. (26)

38 or/33-37 (338)

39 fibric acids/ or bezafibrate/ or fenofibrate/ or gemfibrozil/ (3)

40 (fibrate$ or fibric acid$ or arhalofenate or atromid or beclobrate or beclobrinic acid or bezafibrate or biclofibrate or binifibrate or choline fenofibrate or ciprofibrate or clinofibrate or clofibrate or clofibrate aluminium or clofibric acid or clofibride or dulofibrate or eniclobrate or etofibrate or etofylline clofibrate or fenirofibrat or fenofibric acid or halofenate or lifibrate or methylclofenapate or nicofibrate or picafibrate or pirifibrate or ponfibrate or ronifibrate or salafibrate or serfibrate or simfibrate or sitofibrate or tazasubrate or tiadenol diclofibrate or timofibrate or tocofibrate or urefibrate or xantifibrate or gemfibrozil).ti,ab,ot,hw,rn. (403)

41 (Bezafibrate$ or befizal or benzafibrate or benzofibrate or bezafibrate retard or bezalip or bezatol or bezifal or bezofibrate or bf 759 or bf759 or bm 15075 or bm15075 or cedur or lo 44 or lo44 or norlip or 41859-67-0).ti,ab,ot,hw,rn. (75)

42 (Ciprofibrate$ or lipanor or modalim or win 35833 or 52214-84-3).ti,ab,ot,hw,rn. (14)

43 (Fenofibrate$ or Antara or apo-feno-micro or aterolis or bisterol$ or climage or controlip or durafenat or evothyl or fegenor or felosma or fenobrate or fenofanton or fenogal or fenoglide or fenox or fibrafen or "grs 001" or hyperchol or katalip or lexemin or lipanthyl or lipantil or lipantyl or liparison or lipidax or lipidil or lipilo or lipirex or lipoclar or lipofen or lipolin or liposit or lipsin or livesan ge or lofibra or nopid 200 or normalip or nubrex or procetofen or procetofenate or procetofene or proketofen or qualipantyl or rapidil or redose 200 or rorit or secalip or sigurtil or trichol or tricor or triglide or trolip or zerlubron or zumafib or 49562-28-9).ti,ab,ot,hw,rn. (256)

44 (gemfibrozil or ausgem or bolutol or brozil or chlorestrol or cholespid or ci 719 or ci719 or clearol or decrelip or detrichol or elmogan or fetinor or fibralip or fibrocit or gedum or gemfi$ or gemizol or gemlipidor gemnpid or gemzil or genfibrozil or gevilon$ or gozid or grifogemzilo or hidil or hipolixan or ipolipid or jezil or lanaterom or lifibron or lipazil or lipidys or lipigem or lipira or lipison or lipistorol or lipizyl or lipofor or lipolo or lipostorol or lipozid or lipozil or lipur or lopid$ or low-lip or lowin or manobrozil or mariston or mersikol or normolipor panazil or polyxit or progemzal or recozil or reducelor regulip or synbrozilor triglizil or uragem or zilop or 25812-30-0).ti,ab,ot,hw,rn,tn. (100)

45 or/39-44 (616)

46 (lomitapide or lojuxta or Juxtapid or 182431-12-5 or 202833-31-6 or 202914-84-9 or 210823-48-6 or aegr 733 or aegr733 or bms 201038$).af. (27)

47 (ezetimibe or zetia or ezetrol or ezedoc or ezetib or sch 58235 or sch58235 or 163222-33-1).af. (300)

48 (anacetrapib or "mk 0859" or mk 859 or mk0859 or mk859 or 875446-37-0).af. (10)

49 (mipomersen or isis 301012 or isis301012 or kynamro or 629167-92-6).af. (28)

50 (torcetrapib or CP 529414 or CP 529 414 or CP529414 or 262352-17-0).af. (16)

51 (dalcetrapib or jtt 705 or jtt705 or ro 4607381 or ro4607381 or 211513-37-0).af. (14)

52 (evacetrapib or ly 2484595 or ly2484595 or 1186486-62-3).af. (11)

53 exp Blood Component Removal/ or apheresis.ti,ab,hw,ot. (347)

54 or/46-53 (693)

55 23 or 28 or 32 or 38 or 45 or 54 (14033)

56 6 and 55 (1439)

57 exp Patient Compliance/ (129)

58 Treatment Refusal/ (9)

59 ((patient$ or participa$ or therap$ or treatment$ or intervention$ or medicat$ or drug or drugs or medicine$ or regime$) adj5 (complian$ or comply$ or complies or noncomplian$ or non-complian$ or noncomply$ or non-comply$ or adher$ or non-adher$ or nonadher$ or concordanc$ or non-concordanc$ or nonconcordanc$ or discontinu$ or drop$ out$ or dropout$ or refus$ or withdraw$ or ceas$ or terminat$ or halt$ or durat$ or persist$ or stop$ or suspend$ or suspension$ or break off or cooperat$ or co-operat$ or noncooperat$)).ti,ab,ot,hw. (28939)

60 or/57-59 (28940)

61 56 and 60 (134)

62 exp animals/ not (exp animals/ and humans/) (3870)

63 (letter or editorial or historical article).pt. (56219)

64 61 not (62 or 63) (134)

**65 limit 64 to yr="2005 -Current" (126)**

**Cochrane Database of Systematic Reviews (CDSR) (Wiley): Issue 2, February 2016**

**Cochrane Central Register of Controlled Trials (CENTRAL) (Wiley): Issue 1, January 2016**

**Database of Abstracts of Reviews of Effects (DARE) (Wiley). Issue 2 of 4: April 2015**

**Health Technology Assessment Database (HTA) (Wiley). Issue 2 of 4: April 2015**

**Searched: 4.2.16**

#1 MeSH descriptor: [Hyperlipidemias] explode all trees 4869

#2 (hypercholesterol?emi\* or hypercholesterin?emi\* or cholester?emi\* or cholesterin?emi\* or hyperlipid?emi\* or hyperlipoprotein?emia\* or lip?emia\* or lipid?emi\* or hyperlip?emi\* or hefh or hofh or fh or hypertriglycerid?emia\* or "mckusick 14575" or triglycerid?emia\* or (triglyceride near/1 storage near/1 disease\*)):ti,ab,kw 1818

#3 ((cholesterol\* or lipid\* or LDL) near/3 (elevat\* or ascend\* or increas\* or high or rais\*)):ti,ab,kw 10050

#4 #1 or #2 or #3 13949

#5 MeSH descriptor: [Dyslipidemias] this term only 512

#6 (dyslipidemia\* or dyslipaemia\* or dyslipemia\* or dyslipidaemia\*):ti,ab,kw 2315

#7 #4 or #5 or #6 15207

#8 MeSH descriptor: [Hydroxymethylglutaryl-CoA Reductase Inhibitors] explode all trees 3149

#9 (statin\* or "hydroxymethylglutaryl coenzyme A reductase" next inhibit\* or "HMG CoA reductase" next inhibit\* or "HMGCoA reductase" next inhibit\*):ti,ab,kw 6090

#10 (atorvastatin or Lipitor or torvast or atorlip or atovarol or "ci 981" or ci981 or glustar or lipibec or lowlipen or sortis or storvas or tahor or "ym 548" or ym548 or zarator or 134523-00-5 or 134523-03-8):ti,ab,kw 3207

#11 (Bervastatin or "ls 2904" or ls2904 or 132017-01-7):ti,ab,kw 0

#12 (crilvastatin or "pmd 387" or pmd387 or 120551-59-9):ti,ab,kw 0

#13 (dalvastatin or "rg 12561" or 132100-55-1 or 135910-20-2):ti,ab,kw 0

#14 (fluindostatin or Canef or cranoc or "fluindostatin sodium" or fluvastatin or "fluvastatin sodium" or "fractal lp" or lescol or leucol or lochol or locol or "sri 62320" or sri62320 or vastin or "xu 62320" or xu62320 or 93957-54-1):ti,ab,kw 597

#15 (glenvastatin or "hr 780" or hr780):ti,ab,kw 0

#16 (mevinolin or altocor or altoprev or artein or belvas or Birotin or cholestra or cysin or ellanco or elstatin or "l 654969" or lipdip or lipivas or lofacol or lomar or lostatin or lovacel or lovacol or lovalip or lovalord or lovastan or lovastatin or lovasterol or lovastin or lovatadin or lowachol or lozutin or medostatin or mevacor or meverstin or mevinacor or "mk 0803" or "mk 803" or mk0803 or mk803 or "monacolin K" or "monakolin k" or "msd 803" or neolipid or nergadan or ovasta or rodatin rovacor or taucor or 75330-75-5):ti,ab,kw 858

#17 ("mevinolinic acid" or mevinolinate or 75225-51-3):ti,ab,kw 1

#18 (Monacolin or 76343-78-7 or 79394-47-1):ti,ab,kw 7

#19 (pitavastatin or alipza or itavastatin or livalo or livazo or nivastatin or "nk 104" or nk104 or nks 104 or nks104 or pitava or ribar or vezepra or 147526-32-7):ti,ab,kw 197

#20 (Pravastatin or astin or bristacol or cholespar or "cs 514" or cs514 or elisor or epatostantin or eptastatin or "eptastatin sodium" or eptastatine or kenstatin or lipemol or lipidal or liplat or lipostat or liprevil or mevalotin or novales or prareduct or prascolend or prastan or prava or pravachol or pravacol or pravaselect or pravasin or pravasine or pravator or pravyl or sanaprav or selektine or selipran or "sq 31000" or sq31000 or stanidine or vasopran or vasten or xipral or 81093-37-0 or 81131-70-6):ti,ab,kw 1553

#21 (Simvastatin or Avastinee or cholestat or clinfar or colastatina or colestricon or covastin or denan or epistatin or esvat or ethical or eucor or ifistatin or kavelor or klonastin or kolestevan or "l 644128" or l644128 or lipecor or lipex or lipinorm or liponorm or lipovas or lodales or medipo or mersivas or "mk 733" or mk733 or nor-vastina or normofat or orovas or rechol or simbado or simcard or simchol or simovil or simtin or simvacor or simvahex or simvalord or simvastar or simvata or simvatin or simvor or simvotin or sinvacor or simvastatin or sinvinolin or sivastin or starzoco or synvinolin or torio or valemia or vasilip or vasotenal or vazim or vidastat or zimmex or Zocor or "zocor forte" or zocord or zovast or 79902-63-9):ti,ab,kw 4639

#22 (Rosuvastatin or crestor or rosuvas or s 4522 or s4522 or zd 4522 or zd4522 or 147098-18 or 147098-20-2):ti,ab,kw 1188

#23 tenivastatin:ti,ab,kw 0

#24 #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19 or #20 or #21 or #22 or #23 12751

#25 (evolocumab or repatha or 1256937-27-5 or AMG-145 or amg145) 59

#26 (Alirocumab or praluent or "regn 727" or regn727 or "sar 236553" or sar236553 or 1245916-14-6) 48

#27 (bococizumab or "pf 04950615" or pf04950615 or "rn 316" or rn316 or 1407495-02-6) 9

#28 (((PCSK-9 or PCSK9 or "PCSK 9") near/2 inhibit\*) or (anti-PCSK-9 or "anti PCSK-9")):ti,ab,kw 36

#29 #25 or #26 or #27 or #28 122

#30 MeSH descriptor: [Niacin] this term only 338

#31 (acipimox or acipemox or olbetam or albermox or 51037-30-0):ti,ab,kw 134

#32 ("vitamin B3" or "vitamin PP" or 54-86-4 or 59-67-6 or "acido nicotinico" or "acidum nicotinicum" or akotin or apelagrin or "apo-nicotinic acid" or "beta pyridine carboxylic acid" or bionic or "davitamon pp" or direktan or direktane or efacin or efasin or endur acin or enduracin or naotin or natinate or niac or niacin\* or niacor or Niaspan or nicacid or nicangin or nico or nicobid or nicocap or nicocidin or nicocrisina or nicodan or nicodane or nicolar or niconacid or niconacide or "nicoseptin wirkstoff" or nicosode or nicospan or nicosyl or nicotabs or nicotamin or nicotine or nicotin\* next acid or nicotinat or nicotinate or nicotinese or nicotinipca or nicotyl or nicovasen or nicyl or nikacid or nipellan or novoniacin or nyacine or nyclin or pellagramin or pellagramine or pellagrin\* or pelonin or pelonine or pepevit or peviton or "pp factor" or "pyridine 3 carbonic acid" or "pyridine beta carboxylic acid" or "s 115" or "slo niacin" or "sodium nicotinate" or vasotherm or "vitaplex n" or wampocap or wampopap):ti,ab,kw 5221

#33 #30 or #31 or #32 5315

#34 MeSH descriptor: [Cholestyramine Resin] this term only 261

#35 (((bile near/2 acid) or "anion exchange") near/2 (sequestrant\* or resin\*)):ti,ab,kw 146

#36 (chol-less or choles or cholesthexal or cholestyramin\* or cholybar or cholytar or colestepril or colestiramina or colestran or colestrol or colestyramin or cuemid or lipocol-merz or lismol or locholest or prevalite or quantalan or questran or resincoles\* or vasosan or 11041-12-6 or 58391-37-0):ti,ab,kw 416

#37 (colestipol or cholestabyl or cholestipol or colestid or lestid or "u 26597a" or "u 26797 a" or 25085-17-0 or 37296-80-3 or 50925-79-6):ti,ab,kw 156

#38 (Colesevelam or cholestagel or "gt 31 104" or "gt 31 104hb" or "gt 31-104" or "gt 31-104hb" or "gt31 104" or "gt31 104hb" or gt31-104 or gt31-104hb or welchol or 182815-43-6 or 182815-44-7):ti,ab,kw 98

#39 #34 or #35 or #36 or #37 or #38 681

#40 MeSH descriptor: [Fibric Acids] this term only 38

#41 MeSH descriptor: [Bezafibrate] this term only 207

#42 MeSH descriptor: [Fenofibrate] this term only 384

#43 MeSH descriptor: [Gemfibrozil] this term only 304

#44 #40 or #41 or #42 or #43 881

#45 (fibrate\* or fibric next acid\* or arhalofenate or atromid or beclobrate or "beclobrinic acid" or bezafibrate or biclofibrate or binifibrate or "choline fenofibrate" or ciprofibrate or clinofibrate or clofibrate or "clofibrate aluminium" or "clofibric acid" or clofibride or dulofibrate or eniclobrate or etofibrate or "etofylline clofibrate" or fenirofibrat or "fenofibric acid" or halofenate or lifibrate or methylclofenapate or nicofibrate or picafibrate or pirifibrate or ponfibrate or ronifibrate or salafibrate or serfibrate or simfibrate or sitofibrate or tazasubrate or "tiadenol diclofibrate" or timofibrate or tocofibrate or urefibrate or xantifibrate or gemfibrozil):ti,ab,kw 1471

#46 (Bezafibrate\* or befizal or benzafibrate or benzofibrate or "bezafibrate retard" or bezalip or bezatol or bezifal or bezofibrate or "bf 759" or bf759 or "bm 15075" or bm15075 or cedur or "lo 44" or lo44 or norlip or 41859-67-0):ti,ab,kw 373

#47 (Ciprofibrate\* or lipanor or modalim or "win 35833" or 52214-84-3):ti,ab,kw 36

#48 (Fenofibrate\* or Antara or apo-feno-micro or aterolis or bisterol\* or climage or controlip or durafenat or evothyl or fegenor or felosma or fenobrate or fenofanton or fenogal or fenoglide or fenox or fibrafen or "grs 001" or hyperchol or katalip or lexemin or lipanthyl or lipantil or lipantyl or liparison or lipidax or lipidil or lipilo or lipirex or lipoclar or lipofen or lipolin or liposit or lipsin or "livesan ge" or lofibra or "nopid 200" or normalip or nubrex or procetofen or procetofenate or procetofene or proketofen or qualipantyl or rapidil or "redose 200" or rorit or secalip or sigurtil or trichol or tricor or triglide or trolip or zerlubron or zumafib or 49562-28-9):ti,ab,kw 673

#49 (gemfibrozil or ausgem or bolutol or brozil or chlorestrol or cholespid or "ci 719" or ci719 or clearol or decrelip or detrichol or elmogan or fetinor or fibralip or fibrocit or gedum or gemfi\* or gemizol or "gemlipidor gemnpid" or gemzil or genfibrozil or gevilon\* or gozid or grifogemzilo or hidil or hipolixan or ipolipid or jezil or lanaterom or lifibron or lipazil or lipidys or lipigem or lipira or lipison or lipistorol or lipizyl or lipofor or lipolo or lipostorol or lipozid or lipozil or lipur or lopid\* or low-lip or lowin or manobrozil or mariston or mersikol or "normolipor panazil" or polyxit or progemzal or recozil or "reducelor regulip" or "synbrozilor triglizil" or uragem or zilop or 25812-30-0):ti,ab,kw 488

#50 #44 or #45 or #46 or #47 or #48 or #49 1933

#51 (lomitapide or lojuxta or Juxtapid or 182431-12-5 or 202833-31-6 or 202914-84-9 or 210823-48-6 or "aegr 733" or aegr733 or bms next 201038\*) 9

#52 (ezetimibe or zetia or ezetrol or ezedoc or ezetib or "sch 58235" or sch58235 or 163222-33-1) 753

#53 (anacetrapib or "mk 0859" or "mk 859" or mk0859 or mk859 or 875446-37-0) 33

#54 (mipomersen or "isis 301012" or isis301012 or kynamro or 629167-92-6) 31

#55 (torcetrapib or "CP 529414" or "CP 529 414" or CP529414 or 262352-17-0) 56

#56 (dalcetrapib or "jtt 705" or jtt705 or "ro 4607381" or ro4607381 or 211513-37-0) 39

#57 (evacetrapib or "ly 2484595" or ly2484595 or 1186486-62-3) 11

#58 MeSH descriptor: [Blood Component Removal] explode all trees 753

#59 apheresis:ti,ab,kw (347) 3

#60 #51 or #52 or #53 or #54 or #55 or #56 or #57 or #58 or #59 1653

#61 #24 or #29 or #33 or #39 or #50 or #60 20206

#62 #7 and #61 5085

#63 MeSH descriptor: [Patient Compliance] explode all trees 9999

#64 MeSH descriptor: [Treatment Refusal] this term only 269

#65 ((patient\* or participa\* or therap\* or treatment\* or intervention\* or medicat\* or drug or drugs or medicine\* or regime\*) near/5 (complian\* or comply\* or complies or noncomplian\* or non-complian\* or noncomply\* or non-comply\* or adher\* or non-adher\* or nonadher\* or concordanc\* or non-concordanc\* or nonconcordanc\* or discontinu\* or drop\* next out\* or dropout\* or refus\* or withdraw\* or ceas\* or terminat\* or halt\* or durat\* or persist\* or stop\* or suspend\* or suspension\* or "break off" or cooperat\* or co-operat\* or noncooperat\*)):ti,ab,kw 82042

#66 #63 or #64 or #65 82042

#67 #62 and #66 Publication Year from 2005 to 2016 593

**CDSR = 16**

**DARE = 1**

**CENTRAL = 573**

**NHS EED = 3**

**HTA = 0**

**National Library of Medicine (NLM) PubMed (Internet): up to 4 Feb 2016**

**Searched: 4.2.16**

**#8,"Search #6 and #7" 372**

#7,"Search pubstatusaheadofprint OR publisher[sb]" 483868

#6,"Search #4 and #5" 20711

#5,"Search ((patient\*[tiab] OR participa\*[tiab] OR therap\*[tiab] OR treatment\*[tiab] OR intervention\*[tiab] OR medicat\*[tiab] OR drug[tiab] OR drugs[tiab] OR medicine\*[tiab] OR regime\*[tiab]) AND (complian\*[tiab] OR comply\*[tiab] OR complies[tiab] OR noncomplian\*[tiab] OR non-complian\*[tiab] OR noncomply\*[tiab] OR non-comply\*[tiab] OR adher\*[tiab] OR non-adher\*[tiab] OR nonadher\*[tiab] OR concordanc\*[tiab] OR non-concordanc\*[tiab] OR nonconcordanc\*[tiab] OR discontinu\*[tiab] OR ""drop out""[tiab] OR ""drop outs""[tiab] OR dropout\*[tiab] OR refus\*[tiab] OR withdraw\*[tiab] OR ceas\*[tiab] OR terminat\*[tiab] OR halt\*[tiab] OR durat\*[tiab] OR persist\*[tiab] OR stop\*[tiab] OR suspend\*[tiab] OR suspension\*[tiab] OR ""break off""[tiab] OR cooperat\*[tiab] OR co-operat\*[tiab] OR noncooperat\*[tiab]))" 994942

#4,"Search #1 or #2 or #3" 330949

#3,"Search ((cholesterol\*[tiab] OR lipid\*[tiab] OR LDL[tiab]) AND (elevat\*[tiab] OR ascend\*[tiab] OR increase\*[tiab] OR high[tiab] OR rais\*[tiab]))" 283937

#2,"Search (dyslipidemia\*[tiab] OR dyslipaemia\*[tiab] OR dyslipemia\*[tiab] OR dyslipidaemia\*[tiab])" 23104

#1,"Search ((hypercholesterolemia\*[tiab] OR hypercholesterolaemia\*[tiab] OR hypercholesterinemia\*[tiab] OR hypercholesterinaemia\*[tiab] OR cholesteremia\*[tiab] OR cholesteraemia\*[tiab] OR cholesterinemia\*[tiab] OR cholesterinaemia\*[tiab] OR hyperlipidemia[tiab] OR hyperlipidaemia[tiab] OR hyperlipoproteinemia[tiab] OR hyperlipoproteinaemia[tiab] OR lipaemia\*[tiab] OR lipemia\*[tiab] OR lipidemia\*[tiab] OR lipidaemia\*[tiab] OR hyperlipemia\*[tiab] OR hyperlipaemia\*[tiab] OR hefh[tiab] OR hofh[tiab] OR hypertriglyceridemia\*[tiab] OR hypertriglyceridaemia\*[tiab] OR ""mckusick 14575""[tiab] OR triglyceridemia\*[tiab] OR triglyceridaemia\*[tiab] OR ""triglyceride storage disease""[tiab] OR ""triglyceride storage diseases""[tiab]))" 58824

|  |
| --- |
| **European Atherosclerosis Society Congress (2013-2015)*** **81st EAS Congress 2013:** [**http://www.sessionplan.com/eas2013/**](http://www.sessionplan.com/eas2013/)
* **82nd EAS Congress 2014:** [**http://www.sciencedirect.com/science/journal/00219150/235**](http://www.sciencedirect.com/science/journal/00219150/235)
* **83rd EAS Congress 2015:** [**http://www.sciencedirect.com/science/journal/00219150/241/1**](http://www.sciencedirect.com/science/journal/00219150/241/1)

**Searched 10.2.16** |
| **Search terms** | **Results 2013** | **Results 2014** | **Results 2015** |
| ComplianceCompliantNoncompl%Non-compl%Adher%Nonadher%Non-adher% | 22 | 0 | 0 |
| (hyperlipidemia\* or hyperlipidaemia\* or hypercholesterolemia\* or hypercholesterolaemia\* or cholesteremia\* or cholesteraemia\* or cholesterinemia\* or cholesterinaemia\* or lipemia\* or lipaemia\* or lipidemia\* or lipidaemia\* or hyperlipemia\*) AND (complia\* or noncompl\* or non-compl\* or adher\* or nonadher\* or non-adher\*) | 0 | 3 | 3 |
| (hyperlipaemia\* or hypertriglyceridemia\* or hypertriglyceridaemia\* or hyperlipoproteinaemia\* or hyperlipoproteinemia\* or hefh or hofh or hypertriglyceridaemia\* or hypertriglyceridemia\* or mckusick or Cholesterol\* or lipid\* or LDL or dyslipidemia\* or dyslipaemia\* or dyslipemia\* or dyslipidaemia\*) AND (complia\* or noncompl\* or non-compl\* or adher\* or nonadher\* or non-adher\*) | 0 | 36 | 16 |
| **Total** | **80** |

**European Society of Cardiology Congress**

* **2013 – 2014:** [**http://spo.escardio.org/abstract-book/search.aspx**](http://spo.escardio.org/abstract-book/search.aspx)
* **2015:** [**http://congress365.escardio.org/Search-Results#.VryA8FJiyUk**](http://congress365.escardio.org/Search-Results#.VryA8FJiyUk)

**Searched: 11.2.16**

|  |  |  |  |
| --- | --- | --- | --- |
| **Search term**  | **2013 (presentation title field only)** | **2014 (presentation title field only)** | **2015****(presentation and session title field only)** |
| compliance | 6 | 8 | 4 |
| compliant | 1 | 2 | 0 |
| adherence | 12 | 15 | 38 |
| adherent | 4 | 0 | 1 |
| **Total** | **91** |

**American College of Cardiology Annual Scientific Session (2013-15)**

* **2013 Annual Scientific Session:** [**http://www.sciencedirect.com/science/journal/07351097/61/10/supp/S**](http://www.sciencedirect.com/science/journal/07351097/61/10/supp/S)
* **2014 Annual Scientific Session:** [**http://www.sciencedirect.com/science/journal/07351097/63/12/supp/S**](http://www.sciencedirect.com/science/journal/07351097/63/12/supp/S)
* **2015 Annual Scientific Session:** [**http://www.sciencedirect.com/science/journal/07351097/65/10/supp/S**](http://www.sciencedirect.com/science/journal/07351097/65/10/supp/S)

**Searched 11.2.16**

|  |  |  |  |
| --- | --- | --- | --- |
| **Search terms** | **2013** | **2014** | **2015** |
| (hyperlipidemia\* or hyperlipidaemia\* or hypercholesterolemia\* or hypercholesterolaemia\* or cholesteremia\* or cholesteraemia\* or cholesterinemia\* or cholesterinaemia\* or lipemia\* or lipaemia\* or lipidemia\* or lipidaemia\* or hyperlipemia\*) AND (complia\* or noncompl\* or non-compl\* or adher\* or nonadher\* or non-adher\*) | 6 | 14 | 7 |
| (hyperlipaemia\* or hypertriglyceridemia\* or hypertriglyceridaemia\* or hyperlipoproteinaemia\* or hyperlipoproteinemia\* or hefh or hofh or hypertriglyceridaemia\* or hypertriglyceridemia\* or mckusick or Cholesterol\* or lipid\* or LDL or dyslipidemia\* or dyslipaemia\* or dyslipemia\* or dyslipidaemia\*) AND (complia\* or noncompl\* or non-compl\* or adher\* or nonadher\* or non-adher\*) | 17 | 31 | 25 |
| **Total** | **100** |

**American Heart Association Annual Scientific Sessions (2013-15):**

[**http://circ.ahajournals.org/search**](http://circ.ahajournals.org/search)

**Searched 11.2.16**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **2013** | **2014** | **2015** |
| **Title**hyperlipidemia\* hyperlipidaemia\* hypercholesterolemia\* hypercholesterolaemia\* cholesteremia\* cholesteraemia\* cholesterinemia\* cholesterinaemia\* lipemia\* lipaemia\* lipidemia\* lipidaemia\* hyperlipemia\* (words: any)**Abstract | Title** complia\* noncompl\* non-compl\* adher\* nonadher\* non-adher\* | 0 | 1 | 0 |
| **Title**hyperlipaemia\* hypertriglyceridemia\* hypertriglyceridaemia\* hyperlipoproteinaemia\* hyperlipoproteinemia\* hefh hofh hypertriglyceridaemia\* hypertriglyceridemia\* mckusick Cholesterol\* lipid\* LDL dyslipidemia\* dyslipaemia\* dyslipemia\* dyslipidaemia\* (words: any)**Abstract | Title** complia\* noncompl\* non-compl\* adher\* nonadher\* non-adher\* (words: any) | 1 | 0 | 1 |
| **Total** | **3** |

**eTable 1: Summary of adherence assessed using the proportion of days covered (PDC) – dichotomous outcomes (n=16)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study ID**  | **Country** | **CVD history** | **Follow-up** | **PDC ≥ 80% (% and n)** |
| **Primary prevention in the general population (i.e. population not selected on basis of previous events of CVD risk)** |
| **Degli-Esposti 2012** | Italy | NR | 3mths | 41.1% (n=19,232) |
| **Donnelly 2008** | Scotland | MI (6.5%); stroke (3.2%) | 5yrs | 41.0% (n=2,021) |
| **Kern 2014** | USA | No history | 6mths | *Low CV risk population:* 29.2% (n=566,781) |
| **Lachaine 2006** | USA | CV disease (24.1%) | 2yrs | 59.8% (n=14,076) |
| **Latry 2011** | France | No history | 15mths | 67.0% (n=3,560) |
| **Leslie 2014** | USA | NR | NR | 65.0% (n=1,777) |
| **McGinnis 2007** | USA | NR | 12mths | 52.5% (n=1,413) |
| **Wiegand 2012** | USA | MI (0.8%); stroke (1.5%) | 2yrs | 82.7% (n=30,561) |
| **Primary prevention in high risk populations (i.e. population selected on basis of increased CVD risk)** |
| **Kern 2014** | USA | 2+ CV risk factors; no CVD history | 6mths | *Moderate/moderately high risk CV risk population:*34.9% (n=242,357) |
| **Korhonen 2016** | USA | Diabetic; 50-60% moderate to severe hypertension; ≈30% CAD | Mean 4.3yrs  | *All statin doses:**Cases:* 50.3% (n=2,013)*Controls:* 52.1% (n=15,886)*Low intensity statin:**Cases:* 28.0% (n=1,703)*Controls:* 28.8% (n=6,799)*Moderate intensity statin:**Cases:* 18.0% (n=1,703)*Controls:* 21.2% (n=6,799) |
| **Latry 2011** | France | At least two CV risk factors (e.g. age, DM, CV disease) | 15mths | *Population with two CV risk factors:* 43.3% (n=7,765)*Population with ≥ 3 CV risk factors:* 43.3% (n=7,765) |
| **Nichol 2009** | USA | Hypertensive; no CVD in last 6mths | Up to 6yrs | *1yr follow-up:* 20.8% (n=5,943)*2yrs follow-up:* 25.2% (n=5,943)*3yrs follow-up:* 24.4% (n=4,369)*4yrs follow-up:* 25.4% (n=3,301)*5yrs follow-up:* 27.6% (n=2,378)*6yrs follow-up:* 25.9% (n=1,477) |
| **Ruokoniemi 2011** | Finland | Diabetic; no CVD history | ≥12.6yrs | *Cases:* 50.3% (n=2,013) *Controls:* 52.1% (n=15,886) |
| **Secondary prevention (i.e. in patients with known previous CVD events)** |
| **Virani 2014** | USA | CVD history (100%) | 2yrs | *High intensity statin:* 74.2% (n=229,435) *Moderate intensity statin:* 76.3% (n=399,563) |
| **Ruokoniemi 2011** | Finland | CVD history (100%) | ≥12.2yrs | *Cases:* 54.0% (n=1,500)*Controls:* 56.4% (n=4,204) |
| **Kern 2014** | USA | CVD history (100%) – ACS or established CV disease | 6mths | *High CV risk population:* 36.2% (n= 42,003) *Very high CV risk population:* 51.7% (n=8,076) |
| **Ho 2006** | USA | IHD history (100%) | 1yr | 81.9% (n=2,833) |
| **Ho 2008** | USA | IHD (100%); MI (43%); CABG (48%); PCI (49%) | Median 4.1 yrs | 74.0% (n=13,596) |
| **Rasmussen 2007** | Canada | CVD history (100%) | 1yr | 80.5% (n=17,823) |
| **Mixed population selecting both primary prevention and secondary prevention populations** |
| **Kern 2014** | USA | Mixed 1o & 2o prevention | 6mths | *Total population:*  33.2% (n=729,226) |

**Note:** Where studies have specified data according to a specific statin regimen these data have been recorded per statin regimen; where a specific regimen is not reported this information was not specified in the study

**eTable 2: Summary of adherence assessed using the proportion of days covered (PDC) – continuous outcomes (n=15)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study ID** | **Country** | **CVD history** | **Follow-up** | **Mean/median PDC or % PDC** |
| **Primary prevention in the general population (i.e. population not selected on basis of previous events of CVD risk)** |
| **Campione 2005** | USA | IHD (47.5%) | 24mths | *Simvastatin (mean 25.3 [SD 17.8] mg/dL):* Mean 83.9 (SD 27.2) % |
| **Chang 2010** | USA | NR | 3-36mths | *Simvastatiin/ezetimibe/niacin**Single pill regimen:* Mean 0.76 (SD NR) at 3mths follow-up; fell to mean 0.5 (SD NR) by 36mths; (n=38,847)*Multi pill regimen:* Mean 0.70 (SD NR) at 3mths follow-up; fell to mean 0.41 (SD NR) by 36mths; (n=3,613) |
| **Chodick 2008** | Israel | No history | Median 2.9yrs | Mean 44.6 (IQR 9.0 to 77.7) % (n=136,052) |
| **Conti 2010** | USA | NR | 1yr and 2yrs | *Atorvastatin 1yr follow-up:* Mean 88.0 (SD NR) %*Atorvastatin 2yrs follow-up:* Mean 87.0 (SD NR) % |
| **Couto 2014** | USA | NR | 12mths | Mean PDC per geographical area in US varied between 0.74 (SD NR) and 0.84 (SD NR) (n=NR) |
| **Donnelly 2008** | Scotland | MI (6.5%); other CHD (4.5%); stroke (3.2%) | 6mths to 13yrs | *Statin (5 to 80mg simvastatin equivalent dose* *6mths follow-up:* Mean 61.0 (SD NR) % (n=5,689)*1yr follow-up:* Mean 87.0 (SD NR) % (n=6,462)*13yrs follow-up:* Mean 65.0 (SD NR) % (n=156) |
| **Kern 2014** | USA | No history | 6mths | *Low CV risk population:* Mean 0.55 (SD 0.29); Median 0.51 (range NR) (n=566,781) |
| **Latry 2011** | France | No history | 15mths | Mean 56.0 (SD NR) % (n=3,560) |
| **Patrick 2011** | USA | No history | 90 days | Mean 64.0 (SD NR) % (n=29,675) |
| **Pittman 2012** | USA | CAD (11.2%) | 360 days | Mean 78.0 (SD NR) % (n= 126,903) |
| **Yeaw 2009** | USA | NR | 12mths | Mean 0.61 (SD 0.33); Median 0.67 (range NR) (n=94,700) |
| **Primary prevention in high risk populations (i.e. population selected on basis of increased CVD risk)** |
| **Kern 2014** | USA | 2+ CV risk factors; no CVD history | 6mths | *Moderate/moderately high risk CV risk population:*Mean 0.59 (SD 0.3); Median 0.63 (range NR) (n=242,357) |
| **Latry 2011** | France | ≥ 2 CV risk factors  | 15mths | *2 CV risk factors\*:* Mean 64.4 (SD NR) (n=7,765)*≥ 3 CV risk factors\*:* Mean 72.2 (SD NR)(n=7,765) |
| **Ruokoniemi 2011** | Finland | 100% diabetic; no CVD | ≥12.6yrs | *Cases:* Mean 68.2 (SD 31.8) % (n=2,013)*Controls:* Mean 69.8 (SD 11.0) % (n=15,886) |
| **Secondary prevention (i.e. in patients with known previous CVD events)** |
| **Chodick 2008** | Israel | CVD history (100%) | Median 4.1yrs | Mean 58.5 (IQR 23.6 to 90.7) % (n=96,866) |
| **Kern 2014** | USA | CVD history (100%) – ACS or est. CV disease | 6mths | *High risk patients:* Mean 0.59 (SD 0.3); Median 0.63 (n=42,003)*V. high risk patients:* Mean 0.69 (SD 0.3); Median 0.81 (n=8,076) |
| **Rasmussen 2007** | Canada | CVD history (100%) | 1yr | Mean 85.7 (SD 20.5) % (n=17,823) |
| **Ruokoniemi 2011** | Finland | CVD history (100%) | ≥12.2yrs | *Cases:* Mean 71.2 (SD 30.9) % (n=1,500)*Controls:* Mean 72.5 (SD 18.2) % (n=4,204) |
| **Sanfelix-Gimeno 2013** | Spain | CVD history (100%) | 270 days | Mean 67.9 (SD NR) % (n=6,499) |
| **Virani 2014** | USA | CVD history (100%) | 2yrs | *High intensity statin:* Mean 0.86 (SD 0.18) (n= 229,435)*Moderate intensity statin:* Mean 0.87 (SD 0.18) (n= 399,563) (p<0.0001) |
| **Mixed population selecting both primary prevention and secondary prevention populations** |
| **Kern 2014** | USA | Mixed 1o & 2o prevention | 6mths | Mean 0.57 (SD 0.5); Median 0.59 (range NR) (n=729,226) |

**\*** age, DM, CV disease, 1o primary; 2o secondary**;** % percentage; ACS acute coronary syndrome; CAD coronary artery disease; CHD coronary heart disease; CVD cardiovascular disease; est. established; IHD ischemic heart disease; MHS major heart surgery; MI myocardial infarction; n total number of patients; NR not reported; PDC proportion of days covered; popn population; SD standard deviation; USA United States of America; yr year

**eTable 3: Summary of adherence assessed using the medication possession ratio (MPR) – dichotomous outcomes (n=21)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study ID**  | **Country** | **CVD history** | **Follow-up** | **MPR ≥ 80% (% and n)** |
| **Primary prevention in the general population (i.e. population not selected on basis of previous events of CVD risk)** |
| **Arcoraci 2014** | Italy | NR | 18mths | 60.6% (n=729) |
| **Balu 2009** | USA | MI (3.0%); CHD (18.1%) | 1yr | *Fixed-dose niacin extended-release and lovastatin*: 34.2% (n=6,638)*Multi-pill niacin extended-release and simvastatin:* 29.6% (n=1,687) *Multi-pill niacin extended-release and lovastatin*: 25.9% (n=663) |
| **Burton 2010** | USA | IHD (15.3%) | 1yr | 68.0% (n=150) |
| **Christian 2013** | USA | MI (1.6%) | 1yr | *Niacin+ statin combo pill:* 69.0% (n=9,384)*Niacin+ statin multi pill:* 75.0% (n=2,896) |
| **Cunico 2014** | Brazil | NR | ≤19.7mths | *8.3mths follow-up:* 92.6% (n=417)*19.7mths follow-up:* 82.6% (n=417) |
| **Ferrajolo 2014** | Italy | CV events (30.7%) | 6-48 mths | *6mths:* 43.1% (n=12,235)*12mths:* 36.6% (n=11,081)*18mths:* 33.5% (n=10,232)*24mths:* 31.5% (n=9,352)*30mths:* 30.0% (n=8,554)*36mths:* 28.6% (n=7,527)*42mths:* 28.1% (n=6,644)*48mths:* 26.1% (n=5,749) |
| **Gibson 2006 (2)** | USA | Chronic IHD (1.9%); AMI (1.9%) | 18mths | *New users: 2*8.0% (n=24,113)*Continuing users:*59.1% (n=93,253) |
| **Kazerooni 2013** | USA | MI (2.8%); angina (2.4%) | 1yr | 49.8% (n=5365) |
| **Mann 2013** | USA | CHD (22.0%) | Mean 994days | 18.3% (n=782) |
| **Pittman 2011** | USA | IHD (13.4%) | 18mths | 67.6% (n=381,422  |
| **Pittman 2012** | USA | NR | 360 days | 62.40% (n=126,903)  |
| **Thiebaud 2005** | USA | NR | 1yr | *Not switched statin:* 37.6% (n=35,618)*Switched statin:* 34.9% (n=3,248) |
| **Vodonos 2015** | Israel | IHD (33.0%) | 12mths | *Low intensity statin;*57.2% (n=173)*Moderate intensity statin:* 46.5% (n=923)*High intensity statin:*37.9% (n=87) |
| **Watanabe 2013** | USA | MI (2.9%); angina (2.2%) | 1yr | *1-5 starting medications:* 39.4% (n=1,867) *6-10 starting medications:* 48.0% (n=2,023) *11-15 starting medications:* 54.9% (n=722) *16-20 starting medications:*59.6% (n=218) *>20 starting medications:* 66.1% (n=56)  |
| **Wisniowska 2011** | Poland | NR | ≤180 days | 27.2% (n=42,799)  |
| **Wong 2011 (1)** | China | NR | NR | 91.9% (n=4870) |
| **Wu 2011** | USA | CVD history (34.9%) | 1yr | 25.6% (n=5,479) |
| **Primary prevention in high risk populations (i.e. population selected on basis of increased CVD risk)** |
| **Robertson 2008** | USA | Diabetes (100%) | 18mths | *All patients:* 56.9% (n=3,058)*Switched dose or LLT:* 47.8% (n=1,288)*Didn’t switch dose or LLT:* 63.5% (n=1,770) |
| **Wu 2011** | USA | Diabetes (100%) | 1yr | 36.7% (n=1,705)  |
| **Secondary prevention (i.e. in patients with known previous CVD events)** |
| **Ferrajolo 2014** | Italy | CVD history (100%) | 48mths | 71.0% (n=NR) |
| **Nwokeji 2011** | USA | Primary CV event (100%) | 6-18mths | *6mths follow-up:* 80.0% (n=21,053)*12mths follow-up:* 71.0% (n=21,053)*18mths follow-up:* 69.0% (n=21,053) |
| **Summaria 2013** | Italy | CVD history (100%) | 2yrs | 59.7% (n=288) |
| **Mixed population selecting both primary prevention and secondary prevention populations** |
| **Valdez 2005** | USA | 1o (75%) & 2o (25%) popn | NR | *Simvastatin or atorvastatin:* 76.9% (n=NR) |

1o primary; 2o secondary**;** % percentage; AMI acute myocardial infarction; CAD coronary artery disease; CHD coronary heart disease; combo combination; CV cardiovascular; CVD cardiovascular disease; IHD ischemic heart disease; LLT lipid lowering therapy; MI myocardial infarction; mth month; n total number of patients; NR not reported; PDC proportion of days covered; popn population; SD standard deviation; USA United States of America; yr year

**eTable 4: Summary of adherence assessed using the medication possession ratio (MPR) – continuous outcomes (n=20)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study ID** | **Country** | **CVD history** | **Follow-up** | **Mean/median MPR or % MPR** |
| **Primary prevention in the general population (i.e. population not selected on basis of previous events of CVD risk)** |
| **Svensson 2015** | Denmark | NR | 3yrs | *Statin-non switchers:* Mean 0.93 (IQR 0.78 to 1) (n=14,2807) *Statin-switchers pre-switch:* Mean 0.90 (IQR 0.75 to 1) (n=18,839) *Statin-switchers post-switch:* Mean 0.93 (IQR 0.70 to 1) (n=18,839) |
| **Vodonos 2015** | Israel | IHD (33.0%) | 12mths | *Low intensity statin*: Mean 77.0 (SD 21.0) % (n=173)*Moderate intensity statin:* Mean 73.0% (SD 22.0) % (n=923)*High intensity statin:* Mean 69.0% (SD 21.0) % (n=87) |
| **Kazerooni 2013** | USA | MI (2.8%); angina (2.4%) | 1yr | *Adherent patients (MPR≥80%):* Mean 0.95 (SD NR) (n=5365)*Non-* *adherent patients (MPR*< 0.8)*:* Mean 0.51 (SD NR) (n=5365) |
| **Balu 2009** | USA | MI (3.0%); CHD (18.1%) | yr | *Fixed-dose niacin extended-release and lovastatin*:Mean 0.54 (SD 0.35) (n=6,638) *Multi-pill niacin extended-release and simvastatin:*Mean 0.50 (SD 0.35) (n=1,687) *Multi-pill niacin extended-release and lovastatin*:Mean 0.47 (SD 0.34) (n=663) |
| **Husser 2005** | USA | NR | 12mths | *All statins:* Mean 0.59 (SD NR) (n=140) *Atorvastatin:* Mean 0.6 (SD NR) (n=140) *Fluvastatin:* Mean 1.0 (SD NR) (n=140)*Lovastatin:* Mean 1.0 (SD NR) (n=140)*Pravastatin:* Mean 0.4 (SD NR) (n=140)*Simvastatin:* Mean 0.64 (SD NR) (n=140) |
| **Christian 2013** | USA | MI (1.6%) | 1yr | *Niacin+ statin combo pill:* Mean 0.86 (SD 0.23) (n=9,384)*Niacin+ statin multi pill:* Mean 0.89 (SD 0.21) (n=2,896) |
| **Gibson 2006 (1)** | USA | Acute MI (2.1%); angina (15.5%);  | < 36mths | *19mths follow-up:* Mean 0.71 (SD 0.45) (n=92,344)*36mths follow-up:* Mean 0.48 (SD 0.5) (n=42,341) |
| **Gibson 2006 (2)** | USA | Chronic IHD (1.9%); AMI (1.9%) | 18mths | New users: Mean 0.28 (SD 0.45) (n=24,113)Continuing users: Mean 0.59 (SD 0.45) (n=93,253) |
| **Marrs 2008** | USA | NR | 1yr | *Uninsured:* Mean 0.64 (SD 0.32) (n=200)*Insured:* Mean 0.46 (SD 0.24) (n=40) |
| **Wisniowska 2011** | Poland | NR | 180 days | Mean 55.8 (SD 29.8) % (n=42799) |
| **Morotti 2014** | USA | NR | 675 days | Mean 0.87 (SD NR) (n=37214) |
| **Conti 2010** | USA | NR | 1yr | *Atorvastatin:* Mean 91% (SD NR) |
| **Primary prevention in high risk populations (i.e. population selected on basis of increased CVD risk)** |
| **Wu 2011** | USA | CVD (30.6%) events, Diabetes (100%) | 1yr | Mean 0.61 (SD 0.32) (n=1705) |
| **Parris 2005** | USA | Diabetes (100%) | 9mths | *All statins:*Mean 0.7 (SD 0.3) (n=653)*Atorvastatin:*Mean 0.71 (SD NR) (n=470)*Pravastatin:*Mean 0.7 (SD NR) (n=161)*Simvastatin:*Mean 0.69 (SD NR) (n=128)*Cerivastatin:*Mean 0.62 (SD NR) (n=41)*Fluvastatin:*Mean 0.7 (SD NR) (n=19)*Lovastatin:* Mean 0.86 (SD NR) (n=19) |
| **Robertson 2008** | USA | NR | 18mths | *All patients:* Mean 76.9 (SD 25.5) % (n=3058) *Patients who changed LLT:* Mean 72.1 (SD 25.3) % (n=1288) *Patients who did not change LLT:* Mean 80.3 (SD 21.5) % (n=1770) |
| **Secondary prevention (i.e. in patients with known previous CVD events)** |
| **Study ID** | **Country** | **CVD history** | **Follow-up** | **MPR** |
| **Cooke 2006** | USA | CAD history (100%) | 1yr | Mean 0.78 (SD 0.25) (n=865) |
| **Nwokeji 2011** | USA | Primary CV event (100%) | 6-18mths | *6mths:* Mean 89 (SD 22) % (n=21053)*12mths:* Mean 84 (SD 25) % (n=21053)*18mths:* Mean 81 (SD 26.4) % (n=21053) |
| **Summaria 2013** | Italy | CVD history (100%) | 2yrs | Mean 0.79 (SD 0.34) (n=288) |
| **Mixed population selecting both primary prevention and secondary prevention populations** |
| **Wu 2011** | USA | 1o (69.4%) & 2o (30.6%) | 1yr | Mean 0.61 (SD 0.32) (n=1705) |
| **Valdez 2005** | USA | 1o (75%) & 2o (25%) popn | NR | Mean 0.96 (SD 0.23) (n=819) |

1o primary; 2o secondary**;** % percentage; AMI acute myocardial infarction; CAD coronary artery disease; CHD coronary heart disease; combo combination; CV cardiovascular; CVD cardiovascular disease; IHD ischemic heart disease; LLT lipid lowering therapy; MI myocardial infarction; mth month; n total number of patients; NR not reported; PDC proportion of days covered; popn population; SD standard deviation; USA United States of America; yr year

**eTable 5: Summary of persistence with lipid lowering therapy – dichotomous outcomes (n=22)**

| **Study ID Time point** | **Country** | **CVD history** | **Follow-up** | **Outcome** | **Definition** | **Persistence (%) n** |
| --- | --- | --- | --- | --- | --- | --- |
| **Primary prevention in the general population (i.e. population not selected on basis of previous events of CVD risk)** |
| **Svensson 2015** | Europe (Denmark) | MI (7.0%); unstable angina (2.0%); HF (3.0%); angina/IHD (10.0%) | 3 yrs | Dichotomous - number (%) of patients in a persistence category | Persistent patients continued statin treatment |  84% (n=161646) |
| **Latry 2011** | Europe (France) | No history | 15 mths | Dichotomous - number (%) of patients in a persistence category | Percentage of patients still treated at the end of the period | 44.3% (n=3560) |
| **Husser 2005** | N. America (USA) | NR | 12 mths | Dichotomous - number (%) of patients in a persistence category | Percentage of a group given a specific therapy that continues on that treatment | *Any Statin*: 35% (n= 140)*Atorvastatin*: 36% (n=80)*Fluvastatin*: 100% (n=3) *Lovastatin*: 0 (n=1)*Pravastatin*: 5% (n=20)*Simvastatin*: 26% (n=36) |
| **Dreambrosis 2007** | Europe (Italy) | NR | 1 yr | Dichotomous - number (%) of patients in a persistence category | At least one prescription for any statin agent dispensed in the year under consideration. Patients who switched from one statin to another were considered to be persistent. | 50% (n=11890)  |
| **Chodick 2008** | Middle east (Israel) | No CVD history | 2.9 yrs | Dichotomous - number (%) of patients in a non-persistence category | Number discontinuing during study period;Number discontinuing statin after one prescription refill | 37.3% (n=136052);31.7% (n=136052) |
| **MULTI GAP** | Europe (Hungary) | NR | 6 mths and 12 mths | Dichotomous - number (%) of patients in a persistence category | A patient was considered to have discontinued therapy if they did not obtain a replenishment of drug for at least 60 days | *Atorvastatin*: 27.3% (n=277378) and 20.9% (n=277378)*Rosuvastatin*: 28.1% (n=19687) and 21.3% (n=19687)*Simvastatin*: 26% (n=12092) and 20.5% (n=120921)*Ezetimibe*: 36.6% (n=8893) and 26.7% (n=8893)*Statin + Ezetimibe*: 39.4% (n=2044) and 25.5% (n=2044) |
| **Yeaw 2009** | N. America (USA) | NR | 6 mths ; 12 mths | Dichotomous - number (%) of patients in a persistence category | Persistence with 60-day refill grace period | 56% (n=94700); 43% (n= 94700) |
| **Wisniowska 2011** | Europe (Hungary) | NR | 180 days | Dichotomous - number (%) of patients in a persistence category | Continuous treatment or switch to another drug (C10A) with maximal permissible gap of 30 days; 60 days | 10.9% (n=42,799) ; 19.7% (n=42,799) |
| **Perreault 2005** | N. America (Canada) | No prior history | 6 mths | Dichotomous - number (%) of patients in a persistence category | Persistence was defined as having any statin prescription dispensed at least every 60 days after the end of a previous prescription for a statin. | *Atorvastatin*: 58% (n=13,642)*Fluvastatin*: 65% (n=13,642)*Lovastatin*: 64% (n=13,642)*Pravastatin*: 70% (n=13,642)*Simvastatin*: 40% (n=13,642) |
| **Lachaine 2006** | N. America (Canada) | CVD 24.1% | 2 yrs | Dichotomous - number (%) of patients in a non-persistence category | Proportion of patients who switched from initial statin treatment | *Pravastatin*: 19.9% (n=14,076)*Simvastatin*: 15.5% (n=14,076)*Atorvastatin*: 7.1% (n=14,076)*Fluvastatin*: 34.4% (n=14,076) *Lovastatin*: 26.4% (n=14,076) |
| **Thiebaud 2005** | N. America (USA) | NR | 180 days | Dichotomous - number (%) of patients in a non-persistence category | Switching before 180 days | 56.5% (n=3248) |
| **Morotti 2014** | N. America (USA) | NR | 675 days | Dichotomous - number (%) of patients in a persistence category | Patient continued to refill their statin prescription, with non-persistence occurring when a given patient did not refill their statin for a period of > 135 days | 44% (n=37214) |
| **Wang 2015** | N. America (USA) | NR | 3-12 mths | Dichotomous - number (%) of patients in a non-persistence category | Discontinued statin therapy | 3 mths: 48% (n=4,83,902); 6 mths: 50% (n=4,83,902);9 mths: 53% (n=4,83,902);12 mths: 54% (n=4,83,902); |
| **Primary prevention in high risk populations (i.e. population selected on basis of increased CVD risk)** |
| **Latry 2011** | Europe (France) | NR | 15 mths | Dichotomous - number (%) of patients in a persistence category | Patients with at least two or three risk factors. Percentage of patients still treated at the end of the period | Two risk factors: 50.1% (n=5072) Three risk factors: 59.4% (n=7765) |
| **Eren 2014** | Europe (Turkey) | 8.8% | Cross- sectional study | Dichotomous - number (%) of patients in a persistence category | Number of patients discontinuing therapy due to side effects | 7% (n=13) |
| **Secondary prevention (i.e. in patients with known previous CVD events)** |
| **EUROASPIRE IV** | Europe (Multiple countries) | CVD event (100%) | 6 mths | Dichotomous - number (%) of patients in a non-persistence category | Discontinued statin treatment prescribed at discharge and not taking any statin at follow up | *Statin*: 11.6% (n=6008); *Statin (low to moderate intensity regimen)*: 13% (n=3506);*Statin (high intensity regimen)*:9.5% (n=2502) |
| **NET-SCA Registry** | Europe (Italy) | CVD event (100%) | 90 days | Dichotomous - number (%) of patients in a persistence category | NR | *Statin*: 76.1%;*Atorvastatin 40-80 mg*: 73.6%; *Rosuvastatin 20-40 mg*: 82.2% |
| **Nwokeji 2011** | N. America (USA) | CHD event (100.0%) | 6- 18 mths | Dichotomous - number (%) of patients in a persistence category | Percentage of patients experiencing a >35-day refill gap | At 6 mths: 34% (n=21053)At 12 mths: 53% (n=21053)At 18 mths: 63% (n=21053) |
| **Chodick 2008** | Middle east (Israel) | CVD event (100%) | 4.1 yrs (median) | Dichotomous - number (%) of patients in a non-persistence category | Number discontinuing during study period or after one prescription refill | During study :22.8% (n=93866); After one prescription refill: 25.4% (n=93866) |
| **Perreault 2005** | N. America (Canada) | CVD event (100%) | 6 mths | Dichotomous - number (%) of patients in a persistence category | Persistence was defined as having any statin prescription dispensed at least every 60 days after the end of a previous prescription for a statin. | *Atorvastatin 16 mg*: 69% (n=4316)*Fluvastatin 27 mg*: 63% (n=4316)*Lovastatin 23 mg*: 67% (n=4316)*Pravastatin 22 mg*: 76% (n=4316) *Simvastatin* 17mg: 77% (n=4316) |
| **Mixed population (i.e. A mixture of primary and secondary prevention population)** |
| **Simpson 2013** | N. America (USA) | 27% (CHD) | 1 yr | Dichotomous - number (%) of patients in a non-persistence category | Discontinued statin therapy | *Initial therapy*: 46.9% (n=11473) *Second therapy*: 57.6% (n=1011) |
| **Rosenbaum 2013** | Europe (France) | 16% (2 o prevention) | Cross-sectional | Dichotomous - number (%) of patients in a non-persistence category | Patients with muscular symptoms who declared that they had stopped their statin medication. | 30% (n=104) |

2o secondary; % percentage; CHD coronary heart disease; CVD cardiovascular disease; HF heart failure; IHD ischemic heart disease; MI myocardial infarction; mth month; NR not reported; USA United States of America; yr year

**eTable 6: Summary of persistence with lipid lowering therapy – continuous outcomes (n=4)**

| **Study ID Time point** | **Location** | **CVD history** | **Follow-up** | **Outcome** | **Definition** | **Persistence** |
| --- | --- | --- | --- | --- | --- | --- |
| **Primary prevention in the general population (i.e. population not selected on basis of previous events of CVD risk)** |
| **Christian 2013** | USA | MI (2.6% to 10.3%); CHF (3.1% to 10.3%); cerebrovascular disease (2.3% to 4.3%) | 1 yr | Continuous - mean number of days until discontinuation | Number of mths that patient had a supply of medication on hand. One month defined as 30 days. | *Statin + nicotinic acid*: Mean 6.65(SD 4.96) mths (n=12280)*Nicotinic acid + fibric acid*: Mean 5.69(SD 4.92) mths (n=441)*Statin + nicotinic acid + fibrate*: Mean 7.2(SD 5.05) mths (n=145) |
| Number of days that patient had a supply of medication on hand; calculated using date of first fill to date of last fill plus number of days the supply was given at the last fill. | *Statin + nicotinic acid*: Mean 209.2 (SD 153.5) days (n=12280)*Nicotinic acid + fibric acid*: Mean 179.2 (SD 152) days (n=441)*Statin + nicotinic acid + fibrate*: Mean 224.5(SD 155) days (n=145) |
| **Primary prevention in high risk populations (i.e. population selected on basis of increased CVD risk)** |
| **Robertson 2008** | USA | NR  | 18mths | Continuous - mean number of days until discontinuation  | Length of time in days that patients remained on an LLT drug following the index date. | *Statin (>80%) all patients* : Mean 288.9 (SD 210.1) days (n=3058)*Switched to other LLT*: Mean 263.1 (SD 207) days (n=1288)*Did not switch LLT*: Mean 307.7 (SD 210.4) days (n=1770) |
| **Secondary prevention (i.e. in patients with known previous CVD events)** |
| **Cooke 2006** | USA | CVD history (100%) | 1yr | Continuous - mean and median persistence | Length of time (mths) patient continued on statin therapy without a gap in days’ supply greater than 30 days; Median time (days) from the dates when prescription refills were due and the dates when they were actually filled | Mean 0.85 (SD 3.41) mths (n=865); Median 5.71 (range NR) days (n=865) |
| **Nwokeji 2011** | USA | CVD history (100%) | 18mths | Continuous - mean persistence | Overall mean persistence to statins in days | Mean 322 (SD NR) days(n=21,053) |

% percentage; CVD cardiovascular disease; CHF coronary heart failure; LLT lipid lowering therapy; MI myocardial infarction; mth month; NR not reported; SD standard deviation; USA United States of America; yr year

**eTable 7: List of citation for studies included in tables**

| **Study ID** | **Citations** |
| --- | --- |
| Svensson 2015 | Svensson E, Nielsen RB, Hasvold P, Aarskog P, Thomsen RW. Statin prescription patterns, adherence, and attainment of cholesterol treatment goals in routine clinical care: a Danish population-based study. Clin Epidemiol 2015;7:213-23. |
| ADDITION study | Graversen L, Christensen B, Borch-Johnsen K, Lauritzen T, Sandbaek A. Lipid-lowering drugs as primary prevention in general practice: do patients reach guideline goals and continue treatment? ADDITION Denmark. *Scand J Prim Health Care* 2011;29(4):216-21. |
| APPROACH | Barry AR, Koshman SL, Norris CM, Ross DB, Pearson GJ. Evaluation of preventive cardiovascular pharmacotherapy after coronary artery bypass graft surgery. *Pharmacotherapy* 2014;34(5):464-72. |
| Ferrajolo 2014 | Ferrajolo C, Arcoraci V, Sullo MG, Rafaniello C, Sportiello L, Ferrara R, et al. Pattern of statin use in southern Italian primary care: Can prescription databases be used for monitoring long-term adherence to the treatment? *PLoS One* 2014;9(7):no pagination. |
| Arcoraci 2014 | Arcoraci V, Santoni L, Ferrara R, Furneri G, Cannata A, Sultana J, et al. Effect of an educational program in primary care: the case of lipid control in cardio-cerebrovascular prevention. *Int J Immunopathol Pharmacol* 2014;27(3):351-63. |
| Barghouty 2012 | Barghouty FF, Yasein NA. Adherence to lipid lowering drugs (statins) in patients attending family medicine clinic at Jordan University hospital. *Int Med J* 2012;19(2):115-119. |
| Blackburn 2005 | Blackburn DF, Dobson RT, Blackburn JL, Wilson TW. Cardiovascular morbidity associated with nonadherence to statin therapy. Pharmacotherapy 2005;25(8):1035-43. |
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| Nichol 2009 | Nichol MB, Knight TK, Wu J, Tang SS, Cherry SB, Benner JS, et al. Transition probabilities and predictors of adherence in a California Medicaid population using antihypertensive and lipid-lowering medications. Value Health 2009;12(4):544-50. |
| CAPISH Study | Krasuski RA, Doeppenschmidt D, Henry JS, Smith PB, Adinaro J, Beck R, et al. Conversion to atorvastatin in patients intolerant or refractory to simvastatin therapy: the CAPISH study. Mayo Clinic Proceedings 2005;80(9):1163-8. |
| Vodonos 2015 | Vodonos A, Ostapenko I, Toledano R, Henkin Y, Zahger D, Wolak T, et al. Statin adherence and LDL cholesterol levels. Should we assess adherence prior to statin upgrade? Eur J Intern Med 2015;26(4):268-72. |
| Cooke 2006 | Cooke CE, Bresette JL, Khanna R. Statin use in American Indians and Alaska Natives with coronary artery disease. Am J Health Syst Pharm 2006;63(18):1717-1722. |
| Couto 2014 | Couto JE, Panchal JM, Lal LS, Bunz TJ, Maesner JE, O'Brien T, et al. Geographic variation in medication adherence in commercial and medicare part D populations. J Manag Care Pharm 2014;20(8):834-842. |
| Cunico 2014 | Cunico C, Picheth G, Correr CJ, Scartezini M. Assessing the adherence to and the therapeutic effectiveness of hypolipidemic agents in a population of patients in Brazil: a retrospective cohort study. Pharm Pract (Granada) 2014;12(2):378. |
| Daly 2010 | Daly MW, Seaton T, Moore N, Wang F, Ralko A, Bailey T. Medication adherence in Medicaid patients with dyslipidemia. Pharmacotherapy 2010;30(10):419e. |
| Donnelly 2008 | Donnelly LA, Doney AS, Morris AD, Palmer CN, Donnan PT. Long-term adherence to statin treatment in diabetes. Diabet Med 2008;25(7):850-5. |
| Del Mar Garcia 2012 | Del Mar Garcia M, Comas M, Ponjoan A, Marti R, Ramos R. Predictors of non-adherence to statins: Population-based restrospective cohort study. Pharmacoepidemiol Drug Saf 2012;21:287. |
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| Kazerooni 2013 | Kazerooni R, Watanabe JH, Bounthavong M. Association between statin adherence and cholesterol level reduction from baseline in a veteran population. Pharmacotherapy 2013;33(10):1044-52. |
| Watanabe 2013 | Watanabe JH, Bounthavong M, Chen T, Ney JP. Association of Polypharmacy and Statin New-User Adherence in a Veterans Health Administration Population: A Retrospective Cohort Study. Ann Pharmacother 2013;47(10):1253-1259. |
| Virani 2014 | Virani SS, Woodard LD, Akeroyd JM, Ramsey DJ, Ballantyne CM, Petersen LA. Is high-intensity statin therapy associated with lower statin adherence compared with low- to moderate-intensity statin therapy? Implications of the 2013 American College of Cardiology/American Heart Association Cholesterol Management Guidelines. Clinical Cardiology 2014;37(11):653-9. |
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**eTable 8: Studies excluded from the systematic review – not a relevant population**

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**eTable 12: Unobtainable studies – not available online or at the British Library**

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