

## Guideline topic: Risk estimation and the prevention of cardiovascular disease

### **General comments**

Update of SIGN 97

### *Search coverage*

#### **Guidelines**

*Websites searched:*

Guidelines International Network (G-I-N) <http://www.g-i-n.net/>

Health Technology Assessment <http://www.hta.ac.uk/>

NHS Centre for Reviews and Dissemination

<http://www.york.ac.uk/inst/crd/welcome.htm>

NHS Healthcare Improvement Scotland

[http://www.healthcareimprovementscotland.org/welcome\\_to\\_healthcare\\_improvem.aspx](http://www.healthcareimprovementscotland.org/welcome_to_healthcare_improvem.aspx)

National Institute for Clinical Excellence (NICE) <http://www.nice.org.uk/>

National Guideline Clearinghouse <http://www.guideline.gov/>

National Health and Medical Research Council (NHMRC)

<http://www.nhmrc.gov.au/guidelines-publications>

Swedish Council on Technology Assessment in Health Care (SBU)

<http://www.sbu.se/en/>

TRIP Database <http://www.tripdatabase.com/>

Guidelines evaluated using AGREE instrument:

#### **Systematic reviews**

*Databases covered: Medline, Medline in Process, Cinahl, PsychInfo*

#### **RCTs**

*Databases covered:*

*KQ3 Medline, Medline in Process, CENTRAL KQ2 Medline, Medline in Process, CENTRAL*

*KQ4&5: Medline, Medline in Process, CENTRAL*

*KQ6: Medline, Medline in Process, Cinahl, CENTRAL*

*KQ7: Medline, Medline in Process, CENTRAL, Embase, 2012-2015*

*KQ8: Medline, Medline in Process, Embase, CENTRAL*

*KQ13: Medline, Medline in Process, Embase*

*KQ18&19 Medline and PsychInfo*

### ***Observational studies/ Searches without filter***

*Databases covered:*

*KQ9: Medline, Medline in process, CENTRAL*

### ***Economic searches***

*Databases covered:*

*NHS EED, HEED, Medline, Medline in Process, Embase, HTA database*

### ***Search strategies***

The following are listings of the main Medline strategies used for this guideline. All conventions and symbols are from the Ovid implementation of Medline. Strategies used in other databases were substantially the same, though different terminology may have been used to take account of different thesauri used in non-Medline databases.

Search filters were added to identify studies of a particular type (systematic review, RCT etc.)

Listings of the search filters used by SIGN can be found on the SIGN Web site.

### ***Patient & Generic Stem:***

No stem search used for KQ7, 8, 11, 12 or 13. All searches limited to English language.

exp Cardiovascular Diseases/

(cardio\* or cardia\*).tw.

(heart\* or coronary).tw.

(angina or ventric\* or myocard\* or pericard\* or peri-card\*).tw.

(isch?em\* or emboli\* or arrhythmi\* or thrombo\* or atrial fibrillat\* or tachycardi\*).tw.

(endocardi\* or (sick adj sinus)).tw.

exp Stroke/

stroke\*.tw.

(cerebrovasc\* or cerebral vascular).tw.

apoplexy.tw.

(brain adj2 accident\*).tw.

((brain\* or cerebral or lacunar) adj2 infarct\*).tw.

hypertensi\*.tw.

peripheral arter\* disease\*.tw.

((high or elevated or increased) adj2 (blood pressure or BP)).tw.

exp Hyperlipidemias/

(hyperlipid\* or hyper-lipid\*).tw.

(hypercholesterol\* or hyper-cholesterol\*).tw.

(hyperlip?emia\* or hypercholester?emia\*).tw.

(hyperlipoprotein?emia\* or hypertriglycerid?emia\*).tw.

atheroscleros\*.tw.

## Scope of searches for RCTs, observational studies (OBS) and no filter (NOF) searches

Search date	KQ	Type of studies	Date range	Initial recall	Sifted result
Sept 2014	KQ6 sedentary behaviour	All	2011-current	845	39
Aug 2014	KQ8 e-cigarettes	All primary	2012-current	578	32
Sept 2014	KQ7 varenicline	Economics	2009-current	201	35
Oct 2014	KQ12 statins	Economics	2009-current	1853	94
Oct 2014	KQ11 lipid lowering	Economics	2009-current	492	89
Jan 2015	KQ9 alcohol	Observational	2014-2015	346	84
Feb 2015	KQ7 varenicline	RCTs	2012-2015	526	28
Feb 2015	KQ4&KQ5	RCT	2009-2015	391	25
Feb 2015	KQ13 statin rechallenge	RCT	2009-2015	523	5
Feb 2015	KQ1 diets and high fat	RCT	2009-2015	644	46
April 2015	KQ18	SR	2009-2014	91	25
April 2015	KQ19	All	2009-2014	87	25
April 2015	KQ8	Economics	2009-2015	55	7
April 2015	KQ2	RCT	2009-2015	1204	59
May 2015	KQ3	SRs	2009-2015	230	34
May 2015	KQ5 (adverse events)	All	2009-2015	?	13
Sept 2015	KQ11	SR and RCT	All	305	1
Oct 2015	KQ1 mediterranean diet	RCT	2009-2015	532	7
Oct 2015	KQ3 lifestyle weight loss	RCT	2009-2015	2063	10
Mar 2017	KQ11 (lipid lowering – PCSK9 drugs)	SR	2014-2017	23	8

### Medline Search strategies used for specific key questions:

#### KQ1 (dietary stanols, sterols and GI diets)

1. stanol\*.tw.
2. ((diet\* and ester) not cholesterol).tw.
3. exp Phytosterols/
4. (phytosterol\* or plant sterol\* or plant steroid\*).tw.
5. exp Glycemic Index/

6. (glyc?emic index or low GI).tw.
7. (glyc?emic load or low GL).tw.
8. or/1-7

### **KQ1 (low carbohydrate, high fat diets)**

1. Diet, High-Fat/
2. (high fat diet\* or high diet\* fat).tw.
3. 1 or 2

### **KQ1 (Mediterranean diet)**

1. diet, mediterranean/
2. (mediterranean adj3 (diet\* or food\* or nutrition\* or eat\* or pattern\* or habit\*)).ti,ab.
3. ((high or more or increas\* or elevated or raised) adj6 (intake or consumption or consume or eat\* or amount\*) adj6 (seafood or fish oil\* or fish or seafood or monounsaturated fat or mono-unsaturated fat or olive oil\* or seed\* or potato\* or cereal\* or grain\* or bread\* or nuts or bean\* or legume\* or fruit\* or vegetable\*)).ti,ab.
4. or/1-3

### **KQ2 (modified unsaturated fat diet)**

1. exp Dietary Fats, Unsaturated/
2. exp Fatty Acids, Unsaturated/
3. exp Fats, Unsaturated/
4. 2 or 3
5. diet\*.tw.
6. 4 and 5
7. ((unsaturated or un-saturated) adj2 fat\*).tw.
8. (diet\* adj2 oil\*).tw.
9. ((unsaturated or un-saturated or polyunsaturated or poly-unsaturated or monounsaturated or mono-unsaturated) adj2 fatty acid\*).tw.
10. ((cod liver or corn or cottonseed or safflower or sesame or soybean or linseed) adj2 oil\*).tw.
11. ((omega\* or sorbic or trans or essential) adj2 fatty acid\*).tw.
12. (MUFA or linoleic acid or sorbic acid).tw.
13. 1 or 6 or 7 or 8 or 9 or 10 or 11 or 12

### **KQ3 (weight loss)**

1. Weight Loss/
2. (behavio?r\* adj2 weight).ti,ab.
3. ((lifestyle or life style) adj2 weight).ti,ab.
4. (weight adj2 (loss\* or reduc\* or decreas\* or lose or losing or lower\*)).ti,ab.
5. ((BMI or body mass index) adj2 (loss\* or reduc\* or decreas\* or lose or losing or lower\*)).ti,ab.
6. (weight adj2 (watch\* or control\*)).ti,ab.

7. or/1-6

#### **KQ4 & KQ5 (high-intensity physical activity)**

1. high intensity.tw.
2. moderate intensity.tw.
3. (intensive adj2 (physical or aerobic or cardio\* or activ\*)).tw.
4. interval training.tw.
5. (vigo?r\* adj2 (physical or aerobic or cardio\* or activ\*)).tw.
6. ((intensive or interval or vigo?r\* or intensity) adj2 exercis\*).tw.
7. or/1-6

#### **KQ5 (HI activity harms)**

1. high intensity.tw.
2. moderate intensity.tw.
3. (intensive adj2 (physical or aerobic or cardio\* or activ\*)).tw.
4. interval training.tw.
5. (vigo?r\* adj2 (physical or aerobic or cardio\* or activ\*)).tw.
6. ((intensive or interval or vigo?r\* or intensity) adj2 exercis\*).tw.
7. or/1-7
8. ae.fs.
9. (harm\* or side effect\*).tw.
10. safe\*.tw.
11. (undesirable effect or tolerability).tw.
12. (adverse effect\* or adverse reaction\*).tw.
13. or/8-12
14. 7 and 13

#### **KQ6 (sedentary behaviour)**

1. Sedentary Lifestyle/
2. sedentar\*.tw.
3. ("no exercis\*" or "no physical" or "physical\* inactiv\*" or motionless or stationary or seated or sitting or immobile).tw.
4. ((television or TV) adj2 (watch\* or view\* or hour\*)).tw.
5. couch potato\*.tw.
6. or/1-5

#### **KQ7 (varenicline)**

1. vareniclin\*.tw
2. (champix or chantix).tw
3. (cp526555 or cp 526555).tw
4. or/1-3

#### **KQ 8 (e-cigarettes)**

1. exp Electronics/

2. Smoking/
3. 1 and 2
4. smoking cessation/ or "tobacco use cessation"/
5. 1 and 4
6. "Tobacco Use Cessation Products"/
7. 1 and 6
8. exp "Electrical Equipment and Supplies"/
9. 2 and 8
10. 4 and 8
11. 6 and 8
12. electric\* cigarette\*.tw.
13. (e-cigar\* or electronic cigar\*).tw.
14. electronic nicotine delivery system\*.tw.
15. (ENDS adj2 (nicotine or smok\*)).tw.
16. cigalike\*.tw.
17. (tankomizer or tankomiser or cartomizer or cartomiser or clearomizer or clearomiser).tw.
18. carotank\*.tw.
19. nicotine containing product\*.tw.
20. ((cigar\* or nicotine) adj3 (vapo?r\* or batter\* or cartridge\* or vaping)).tw.
21. (personal\* adj2 vapo?r\*).tw.
22. or/3,5,7,9-21
23. (nobacco or green smoke or e-lite).tw.
24. (vapouriz or smokers angel or smokers halo).tw.
25. (vapestick or totally wicked or ruyan).tw.
26. (halo white cloud or blu south beach).tw.
27. ((V2 cigs atlantic or eGo or riva or tornado) adj3 cigar\*).tw.
28. ((KGo or apollo or henly or vapor zone or volcano) adj3 cigar\*).tw.
29. (cuvana marcello or vapor zeus royale).tw.
30. or/23-29
31. 22 or 30

#### **KQ9 (alcohol)**

1. exp Alcohols/
2. exp Drinking Behavior/
3. alcohol\*.tw.
4. (drink\* adj3 (binge\* or behavio?r\*)).tw.
5. or/1-4

#### **KQ11 (lipid lowering)**

1. exp Anion Exchange Resins/
2. (anion exchange resin\* or anion exchanger\*).tw.
3. (cholestyramin\* or colestyramin\*).tw.

4. (colestipol\* or cuemid\*).tw.
5. (questran\* or quantalan\*).tw.
6. (mk 135 or mk135).tw.
7. or/1-6
8. exp Fibric Acids/
9. fibrate\*.tw.
10. fibric acid\*.tw.
11. (arhalofenate or athromidin\* or atromid\* or ausgem or azufibrat\*).tw.
12. (beclobrat\* or beclobronic acid\* or befibrat\* or befizal or beza launde or beza puren or bezabeta of bezacur or bezafibrat\* or bezafisal\* or bezalande or bezalip of bezamerck or bezapuren or biclofibrat\* or binifibrat\* or bolutol).tw.
13. (cedur\* or ci 719 or ci719 or cinifibrat\* or ciprofibrat\* or clofenapat\* or clofibrat\* or clofibric acid\* or clofibrid\* or clofibrinic acid\* or cloibric acid\* or controlip).tw.
14. (decrelip or difaterol\* or dulofibrat\* or durabezur or durafenat\* or eniclobrat\* or etofibrat\* or etofyllin\* or eulitop).tw.
15. (fenirofibrat\* or fenobeta or fenofanton or fenofibrat\* or fenofibric acid\*).tw.
16. (gemfibrosil\* or genfibrozil\* or gemhexal or halfenat\*).tw.
17. (ici 55695 or ici55695 or jezil).tw.
18. (lf178 or lf 178 or lifibrat\* or lipanthyl or lipantil or liparison\* or lipazil or lipidil or lipox or lipur or litarek or livesan\* or lofibra\* or lopid).tw.
19. (methyclofenapat\* or methyl clofenapat\* or methyclofenapat\* or methyclofenapat\* or micronized procetofen\* or miscleron or miskeleron).tw.
20. (nicofibrat\* or normalip or nsc 1149 or nsc1149 or nugemfibrozil).tw.
21. (phenofibrat\* or picafibrat\* or pilder or pirifibrat\* or ponfibrat\* or procetofen\* or reducterol or regadrin or ronifibrat\*).tw.
22. (salafibrat\* or secalip or serfibrat\* or simfibrat\* or sitfibrat\* or sklerofibrat\* or solibay or supralip).tw.
23. (tazasubrat\* or tiadenol diclofibrat\* or tiafibrat\* or timofibrat\* or tocofibrat\* or trialmin\* or tricolor).tw.
24. (urefibrat\* or xanifibrat\*).tw.
25. or/8-24
26. ezetimib\*.tw.
27. azetidinon\*.tw.
28. (ezetib or ezetrol or zetia).tw.
29. (sch 58235 or sch58235).tw.
30. or/26-29
31. Cholestyramine Resin/
32. c?olestyramin\*.tw.
33. (cholesthexal or chol-less or cholybar).tw.
34. (colestepril or colestran or colestriamina or cuemid).tw.
35. (lipocol or lismol or locholest or mk 135 or mk135 or prevalite).tw.

36. (quantalan or questran or resinocole\* or vasosan).tw.
37. or/31-36
38. Niacin/
39. (nicotinic acid\* or niacin).tw.
40. (akotin or apelagrin or davitamom or direktan\*).tw.
41. (efacin or efasin or enduracin or induracinor lelonin).tw.
42. (naotin or natinat\* or niac\* or niaspan or nicacid or nicagin or nicamin\*).tw.
43. (nico 400 or nico400 or nicobid or nicocap or nicocidin\* or nicocrisin\* or nicodan\* or nicolar\*).tw.
44. (niconacid or nicoseptin or nicosod\* or nicospan or nicosyl\* or nicotab\* or nicotamin\* or nicotinat\* or nicotines\*).tw.
45. (nicotinipca or nicotyl or niten\* or nicyl or nikacid or nipellan or novoniacin or nyacin\* or nyclin\*).tw.
46. (pellagramin\* or pellagrin\* or pepevit\* or peviton\*).tw.
47. (valtherm or vitaplex\* or wampocap or wampopap).tw.
48. or/38-47
49. 7 or 25 or 30 or 37 or 48

#### **KQ11 (lipid lowering – PCSK9 drugs)**

1. evolocumab.tw.
2. ("amg 145" or amg145 or "amg-145").tw.
3. 1 or 2
4. alirocumab.tw.
5. ("regn 727" or regn727 or "regn-727").tw.
6. ("sar 236553" or sar236553 or "sar-236553").tw.
7. or/4-6

#### **KQ12 (statins)**

1. exp Hydroxymethylglutaryl-CoA Reductase Inhibitors/
2. hmg coa.tw.
3. (hydroxymethylglutaryl coa or hydroxymethylglutaryl coenzyme a).tw.
4. statin\*.tw.
5. atorvastatin\*.tw.
6. bervastatin\*.tw.
7. bristacol\*.tw.
8. cervistatin\*.tw.
9. compactin.tw.
10. crilvastatin\*.tw.
11. (cs514 or cs 514).tw.
12. dalvastatin\*.tw.

13. elisor\*.tw.
14. eptastatin\*.tw.
15. fluidostatin\*.tw.
16. glenvastatin\*.tw.
17. lipemol\*.tw.
18. liplat\*.tw.
19. lipostat\*.tw.
20. lovastatin\*.tw.
21. meglutol\*.tw.
22. mevacor\*.tw.
23. mevalotin\*.tw.
24. mevinolin\*.tw.
25. (mk 733 or mk733 or mk 803 or mk803).tw.
26. monacolin\*.tw.
27. pitavastatin\*.tw.
28. prareduct\*.tw.
29. pravacol\*.tw.
30. pravasin\*.tw.
31. pravastatin\*.tw.
32. (rms 431 or rms431).tw.
33. rosuvastatin\*.tw.
34. selektine.tw.
35. simvastatiin\*.tw.
36. (sq 31000 or sq31000).tw.
37. sumvastatin\*.tw.
38. synvinolin\*.tw.
39. tenivastatin\*.tw.
40. vastatin\*.tw.
41. vasten\*.tw.
42. zocor\*.tw.
43. or/1-42

### **KQ13 (statin rechallenge)**

1. exp Hydroxymethylglutaryl-CoA Reductase Inhibitors/
2. statin\*.tw.
3. (hydroxymethylglutaryl-coa or hmg-coa).tw.
4. (lovastatin or pravastatin or simvastatin or rosuvastatin or atorvastatin).tw.
5. or/1-4
6. (re-challenge\* or rechallenge\*).tw.
7. intoleran\*.tw.
8. reject\*.tw.
9. switch\*.tw.
10. (2nd line or second line).tw.

11. (3rd line or third line).tw.
12. or/6-11
13. 5 and 12

**KQ18-19 (anxiety)**

1. exp Anxiety Disorders/
2. exp Depressive Disorder/
3. Stress Disorders, Post-Traumatic/
4. (anxiety adj3 (state or neurotic or disorder\*)).tw.
5. (depression or depressive disorder\* or melancholia\*).tw.
6. (stress disorder\* or ptsd or chronic stress or multiple life stress\*).tw.
7. or/1-7