

# **Diabetes Type 1: insulin therapies**

## **Search strategies**

*NICE guideline <number>*

*Search strategies*

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# 1. Scoping search strategies

## 1.1 Scoping searches

Scoping searches were undertaken on the following websites and databases (listed in alphabetical order) in December 2019 to provide information for scope development and project planning. Browsing or simple search strategies were employed.

Guidelines/website	Systematic review/economic evaluations
Agency for Healthcare Research and Quality (AHRQ)	Campbell Collaboration
American Diabetes Association	Cochrane Database of Systematic Reviews (CDSR)
American Heart Association	Database of Abstracts of Reviews of Effects (DARE) – last updated April 2015
Association of British Clinical Diabetologists (ABCD)	DUETS
Audit Commission (Archived)	Health Technology Assessment (HTA) Database – last updated October 2016
BMJ Best Practice	NHS Economic Evaluation Database (NHS EED) – last updated April 2015
British Columbia Guidelines and Protocols Advisory Committee	NIHR Health Technology Assessment Programme
Canadian Diabetes Association	NIHR Health Services and Delivery Research (HS&DR) Programme
Canadian Medical Association Infobase	PROSPERO
Care Quality Commission	TRIP Database
Centers for Disease Prevention and Control	
Core Outcome Measures in Effectiveness Trials (COMET)	
Cross Border Patient Registries (PARENT)	
Department of Health & Social Care	
Diabetes and Nutrition Study Group of the Association for the Study of Diabetes	
Diabetes Canada	
Diabetes UK	
DVLA	
Endocrine Society	
General Medical Council	
Glenmark Pharmaceuticals Europe	
Guidelines & Audit Implementation Network (GAIN)	
Guidelines International Network (GIN)	
Guidelines Trust (ECRI)	
Health & Social Care Information Centre	
Health Foundation	
Healthcare Quality Improvement Partnership	
Healthtalk Online	
ISD – NHS Scotland	
Institute for Quality and Efficiency in Health Care (IQWiG)	
International Guideline Library	
Kaiser Permanente Clinical Guidelines	
Medicines and Products Regulatory Agency (MHRA)	
National Audit Office	

Guidelines/website	Systematic review/economic evaluations
<p>National Clinical Audit and Patient Outcomes Programme</p> <p>National Health and Medical Research Council – Australia</p> <p>National Heart, Lung &amp; Blood Institute</p> <p>National Institute for Health and Care Excellence (NICE) - published &amp; in development guidelines</p> <p>National Institute for Health and Care Excellence (NICE) - Topic Selection</p> <p>NHS Choices</p> <p>NHS Digital</p> <p>NHS England</p> <p>NICE Clinical Knowledge Summaries (CKS)</p> <p>NICE Evidence Search</p> <p>Office for National Statistics</p> <p>Patient UK</p> <p>PatientsLikeMe</p> <p>PatientVoices</p> <p>PCORnet</p> <p>Public Health England</p> <p>Queensland Health</p> <p>Royal College of General Practitioners</p> <p>Royal College of Nursing</p> <p>Royal College of Pathologists</p> <p>Scottish Intercollegiate Guidelines Network (SIGN)</p> <p>UK Data Service</p> <p>UK National Statistics</p> <p>UK Research &amp; Innovation</p> <p>US National Guideline Clearinghouse</p> <p>WHO Europe</p> <p>YouthHealthTalk</p>	

## 1.2 Main searches

Bibliographic databases searched for the guideline

- Cochrane Database of Systematic Reviews – CDSR (Wiley)
- Cochrane Central Register of Controlled Trials – CENTRAL (Wiley)
- Database of Abstracts of Reviews of Effects – DARE (CRD)
- EMBASE (Ovid)
- Health Technology Assessment Database – HTA (CRD)
- MEDLINE (Ovid)
- MEDLINE Epub Ahead of Print (Ovid)
- MEDLINE In-Process (Ovid)
- PsycINFO (Ovid)

### **1.3 Identification of evidence for review question**

Searching was conducted on 26<sup>th</sup> May 2020

Where appropriate, in-house study design filters were used to limit the retrieval to randomised controlled trials and systematic reviews. Details of the study design filters used can be found in section 2.

Searches were limited to those in the English language. Animal studies were removed from results

## 2. Review question search strategies

### 2.1 Main searches

Bibliographic databases searched for the guideline

- Cochrane Database of Systematic Reviews – CDSR (Wiley)
- Cochrane Central Register of Controlled Trials – CENTRAL (Wiley)
- Database of Abstracts of Reviews of Effects – DARE (CRD)
- EMBASE (Ovid)
- Health Technology Assessment Database – HTA (CRD)
- MEDLINE (Ovid)
- MEDLINE Epub Ahead of Print (Ovid)
- MEDLINE In-Process (Ovid)
- PsycINFO (Ovid)

### 2.2 Identification of evidence for review questions

Searching was conducted on 26<sup>th</sup> May 2020

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Searches were limited to those in the English language. Animal studies were removed from results.

### 2.3 Search strategy review question

In adults with type 1 diabetes, what are the most effective long-acting insulins (detemir versus degludec versus glargine versus Neutral Protamine Hagedorn (NPH)) for optimal diabetic control?

**Table 1: search strategy**

<b>Medline Strategy, searched 26 May 2020</b>	
<b>Database: Ovid MEDLINE(R) 1946 to May 22, 2020</b>	
<b>Search Strategy:</b>	
1	exp Diabetes Mellitus, Type 1/ (75446)
2	Diabetic Ketoacidosis/ (6369)
3	((diabet* or DM) adj4 ("type 1" or type1 or "type I" or "type one" or T1 or T-1)).tw. (48994)
4	(diabet* adj4 (autoimmun* or auto immun*)).tw. (6103)
5	lada.tw. (527)
6	(diabet* adj4 (brittle or labile)).tw. (444)
7	(diabet* adj4 (sudden onset or majority onset or juvenile or childhood or adolescen*)).tw. (8726)
8	(diabet* adj4 (keto* or acido* or gastropare*)).tw. (7302)
9	(dm1 or iddm or t1d* or dka).tw. (18936)
10	((diabet* adj4 (insulin depend* or insulin deficien*)) not non insulin depend*).tw. (16133)



**Medline Strategy, searched 26 May 2020**

**Database: Ovid MEDLINE(R) 1946 to May 22, 2020**

**Search Strategy:**

- 11 diabetes mellitus.ti. (62972)
- 12 ((diabet\* or DM) adj4 ("type 2" or type2 or "type ii" or "type two" or T2 or T-2 or TII or T-II)).ti. (57069)
- 13 11 not 12 (47824)
- 14 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 13 (134889)
- 15 exp Insulin, Long-Acting/ (3965)
- 16 Biphasic insulins/ (225)
- 17 ((long-act\* or longact\* or "long act\*" or ultralong\* or ultra-long\* or "ultra long\*" or semilent\* or ultralent\* or lent\* or biphas\* or mix\* or basal\*) adj4 insulin\*).tw. (10732)
- 18 (Detemir or Levemir).tw. (724)
- 19 (Degludec or Tresiba or Xultrophy or Xultophy).tw. (362)
- 20 (Glargine or Lantus or Solostar or Suliqua or Soliqua).tw. (2159)
- 21 (Isophane or NPH or Protamine or Protophan\* or Insulatard or Humulin or Insuman or infusat or Novomix or Novolin or Actrapid or Hypurin or Novolin or Exubera or Myxredlin or Afrezza).tw. (9647)
- 22 monotard.tw. (69)
- 23 Biosimilar Pharmaceuticals/ (1971)
- 24 (biosimilar\* or bio-similar\* or BioIns\*).tw. (4956)
- 25 ((follow\* or subsequent\* or similar\*) adj2 biologic\*).tw. (5338)
- 26 (Abasaglar or Basaglar or Basalog or Basalin or Toujeo or Admelog or Lusduna or Lusdana or Semglee or Glaritus or Glarzia).tw. (33)
- 27 (SAR342434 or MYL-1501D or MK-1293 or LY2963016).tw. (28)
- 28 or/15-27 (31782)
- 29 14 and 28 (3229)

*Note: No date limit was used as these were new questions.*

### 3. Study Design Filters

**Table 11: Study design filters**

The study filters and limiting search strategies used as part of the literature searches are presented below.

**RCT**

- 1 randomized controlled trial.pt.
- 2 randomi?ed.mp.
- 3 placebo.mp.
- 4 or/1-3

**Systematic Review**

- 1 MEDLINE or pubmed).tw.
- 2 systematic review.tw.
- 3 systematic review.pt.
- 4 meta-analysis.pt.
- 5 intervention\$.ti.
- 6 or/1-5

## 4. Health economics search strategies

### 4.1 Economic evaluations and quality of life data

#### Sources searched to identify economic evaluations

- Econlit (Ovid)
- Embase (Ovid)
- Health Technology Assessment Database (CRD)
- MEDLINE (Ovid)
- MEDLINE In-Process (Ovid)
- MEDLINE Epub Ahead of Print (Ovid)
- NHS Economic Evaluation Database (CRD)
- PsychINFO (Ovid)

Search filters to retrieve economic evaluations and quality of life papers were appended to the population search for the guideline. The search was conducted on 26<sup>th</sup> May 2020.

The search was limited to those in the English language. Animal studies were removed from results.

**Table 12: Economic evaluation and quality of life filters**

Medline Strategy	
<b>Economic evaluations</b>	
1	Economics/
2	exp "Costs and Cost Analysis"/
3	Economics, Dental/
4	exp Economics, Hospital/
5	exp Economics, Medical/
6	Economics, Nursing/
7	Economics, Pharmaceutical/
8	Budgets/
9	exp Models, Economic/
10	Markov Chains/
11	Monte Carlo Method/
12	Decision Trees/
13	econom\$.tw.
14	cba.tw.
15	cea.tw.
16	cua.tw.
17	markov\$.tw.
18	(monte adj carlo).tw.
19	(decision adj3 (tree\$ or analys\$)).tw.
20	(cost or costs or costing\$ or costly or costed).tw.
21	(price\$ or pricing\$).tw.
22	budget\$.tw.
23	expenditure\$.tw.
24	(value adj3 (money or monetary)).tw.

### Medline Strategy

25 (pharmacoeconomic\$ or (pharmac adj economic\$)).tw.  
26 or/1-25

### Quality of life

1 "Quality of Life"/  
2 quality of life.tw.  
3 "Value of Life"/  
4 Quality-Adjusted Life Years/  
5 quality adjusted life.tw.  
6 (qaly\$ or qald\$ or qale\$ or qtime\$).tw.  
7 disability adjusted life.tw.  
8 daly\$.tw.  
9 Health Status Indicators/  
10 (sf36 or sf 36 or short form 36 or shortform 36 or sf thirtysix or sf thirty six or shortform thirtysix or shortform thirty six or short form thirtysix or short form thirty six).tw.  
11 (sf6 or sf 6 or short form 6 or shortform 6 or sf six or sfsix or shortform six or short form six).tw.  
12 (sf12 or sf 12 or short form 12 or shortform 12 or sf twelve or sftwelve or shortform twelve or short form twelve).tw.  
13 (sf16 or sf 16 or short form 16 or shortform 16 or sf sixteen or sfsixteen or shortform sixteen or short form sixteen).tw.  
14 (sf20 or sf 20 or short form 20 or shortform 20 or sf twenty or sftwenty or shortform twenty or short form twenty).tw.  
15 (euroqol or euro qol or eq5d or eq 5d).tw.  
16 (qol or hql or hqol or hrqol).tw.  
17 (hye or hyes).tw.  
18 health\$ year\$ equivalent\$.tw.  
19 utilit\$.tw.  
20 (hui or hui1 or hui2 or hui3).tw.  
21 disutili\$.tw.  
22 rosser.tw.  
23 quality of wellbeing.tw.  
24 quality of well-being.tw.  
25 qwb.tw.  
26 willingness to pay.tw.  
27 standard gamble\$.tw.  
28 time trade off.tw.  
29 time tradeoff.tw.  
30 tto.tw.  
31 or/1-30