

Diabetes, Type 1 and Type 2 – Continuous glucose monitoring in adults

Diabetes, Type 1 – Continuous glucose monitoring in children and young people

Search strategies

NICE guideline

Search strategies

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1. Scoping search strategies

1.1 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 (CDSR)
- EMBASE (Ovid)
- Health Technology Assessment Database – HTA (CDSR)
- MEDLINE (Ovid)
- MEDLINE Epub Ahead of Print (Ovid)
- MEDLINE In-Process (Ovid)
- PsycINFO (Ovid)

1.2 Identification of evidence for review questions

Searching was conducted on 18th December 2019 with an update on 11th May 2021

Where appropriate, in-house and health-evidence.ca study design filters were used, to limit the retrieval to, for example, systematic reviews. Details of the study design filters used can be found in section 2. Other filter or search strategies were used where appropriate to limit results.

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

2. Review question search strategies

2.1 Search strategy review questions

Question 1: In adults with type 1 diabetes, what is the most effective method of glucose monitoring to improve glycaemic control:

- continuous glucose monitoring
- flash glucose monitoring
- intermittent capillary blood glucose monitoring?

Question 2: In adults with type 2 diabetes prescribed insulin, what is the most effective method of glucose monitoring to improve glycaemic control:

- continuous glucose monitoring
- flash glucose monitoring
- intermittent capillary blood glucose monitoring?

Question 3: In children and young people with type 1 and what is the most effective method of glucose monitoring to improve glycaemic control:

- continuous glucose monitoring
- flash glucose monitoring
- intermittent capillary blood glucose monitoring?

Table 1: search strategy

Medline Strategy, searched 18th December 2019	
Database: Ovid MEDLINE(R) 1946 to December 04, 2019	
Search Strategy:	
1	exp Diabetes Mellitus/ or Pregnancy in diabetics/
2	diabet*.tw.
3	(DM adj4 ("type 1" or type1 or "type I" or "type one" or T1 or T-1 or TI or T-I)).tw.
4	lada.tw.
5	(dm1 or iddm or t1d* or dka).tw.
6	(dm2 or t2d* or mody or niddm).tw.
7	(DM adj4 (autoimmun* or auto immun* or brittle or labile or insulin depend* or insulin deficien*)).tw
8	(DM adj4 onset* adj4 (maturit* or adult* or slow*)).tw. (62)
9	(DM adj4 depend* adj4 (non-insulin* or non insulin* or noninsulin*)).tw. (88)
10	(DM adj4 (earl* or sudden onset or juvenile or child*)).tw. (817)
11	(DM adj4 (keto* or acidi* or gastropare*)).tw. (71)
12	(DM adj4 ("type 2" or type2 or "type ii" or "type two" or T2 or T-2 or TII or T-II)).tw. (4068)
13	or/1-12 (593050)
14	Blood Glucose Self-Monitoring/ or Monitoring, Ambulatory/ or Blood Glucose/ (171402)
15	(continu* or flash or real-time or "real time" or realtime).tw. (1047267)
16	14 and 15 (13483)
17	(continu* adj4 glucose adj4 monitor*).tw. (3387)
18	(ambulatory adj4 glucose adj4 monitor*).tw. (45)
19	(CGM or CGMS or CBGM).tw. (2028)
20	Extracellular Fluid/ or Extracellular Space/ (28699)
21	((extracellular* or interstitial* or intercellular*) adj4 (fluid* or space)).tw. (26801)
22	IPRO2*.tw. (18)
23	("real time" or real-time or retrospective*) adj4 (glucose adj4 monitor*).tw. (329)
24	(RTCGM or RT-CGM or "RT CGM" or R-CGM or RCGM or "R CGM").tw. (113)

Medline Strategy, searched 18th December 2019

Database: Ovid MEDLINE(R) 1946 to December 04, 2019

Search Strategy:

25 flash.tw. (15315)
26 FGM.tw. (780)
27 glucorx.tw. (2)
28 (medtronic* adj4 (enlight* or veo* or guardian* or envision*)).tw. (58)
29 (Senseonic* adj4 everSense*).tw. (2)
30 (Dexcom* adj4 (G4* or G5* or G6* or 7* or seven*)).tw. (101)
31 (medtrum* adj4 (A6* or TouchCare*)).tw. (1)
32 (freestyle* adj4 navigator*).tw. (43)
33 ((freestyle* adj4 libre*) or (FSL-Pro* or "FSL Pro*" or FSLPro*)).tw. (70)
34 "free style libre".tw. (3)
35 or/16-34 (78927)
36 13 and 35 (9257)
37 animals/ not humans/ (4622703)
38 36 not 37 (7991)
39 limit 38 to english language (7467)
40 randomized controlled trial.pt. (496527)
41 randomi?ed.mp. (770516)
42 placebo.mp. (190347)
43 or/40-42 (821353)
44 (MEDLINE or pubmed).tw. (151434)
45 systematic review.tw. (109769)
46 systematic review.pt. (117831)
47 meta-analysis.pt. (108624)
48 intervention\$.ti. (117766)
49 or/44-48 (355796)
50 43 or 49 (1075015)
51 39 and 50 (1760)

Note: McMaster Balanced RCT and health-evidence.ca systematic review filters were appended. No date limit was used as these were new questions.

3. Study Design Filters

Table 2: Study design filters

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

Randomised Controlled Trial

- 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)
- International HTA Database (INAHTA)
- 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 18th December 2019, with an update on 11th May 2021. A separate update with a sensitive cost utility filter appended to the population search was undertaken on 5th May 2021.

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

Table 3: Economic evaluation and quality of life filters

Medline Strategy	
Economic evaluations	
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.

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- 23 expenditure\$.tw.
- 24 (value adj3 (money or monetary)).tw.
- 25 (pharmacoeconomic\$ or (pharmaco 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 hqi 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

Cost utility

- 1 Cost-Benefit Analysis/
- 2 Quality-Adjusted Life Years/
- 3 Markov Chains/
- 4 exp Models, Economic/
- 5 cost*.ti.
- 6 (cost* adj2 utilit*).tw.
- 7 (cost* adj2 (effective* or assess* or evaluat* or analys* or model* or benefit* or threshold* or quality or expens* or saving* or reduc*)).tw.

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- 8 (economic* adj2 (evaluat* or assess* or analys* or model* or outcome* or benefit* or threshold* or expens* or saving* or reduc*)).tw.
- 9 (qualit* adj2 adjust* adj2 life*).tw.
- 10 QALY*.tw.
- 11 (incremental* adj2 cost*).tw
- 12 ICER.tw.
- 13 utilities.tw.
- 14 markov*.tw.
- 15 (dollar* or USD or cents or pound or pounds or GBP or sterling* or pence or euro or euros or yen or JPY).tw.
- 16 ((utility or effective*) adj2 analys*).tw.
- 17 (willing* adj2 pay*).tw.
- 18 (EQ5D* or EQ-5D*).tw.
- 19 ((euroqol or euro-qol or euroquol or euro-quol or eurocol or euro-col) adj3 ("5" or five)).tw.
- 20 (european* adj2 quality adj3 ("5" or five)).tw.
- 21 or/1-20