

Appendix 1: Search strategy

Cochrane Central Register of Controlled Trials (via ovid)

#1 exp aged/
#2 exp geriatrics/
#3 old.tw.
#4 elder*.tw.
#5 aged.tw.
#6 #1 OR #2 OR #3 OR #4 OR #5
#7 exp "Diabetes Mellitus, Type 2"/
#8 DM2.tw.
#9 NIDDM.tw.
#10 T2DM.tw.
#11 type 2 diabet*.tw.
#12 type II diabet*.tw.
#13 2 diabet*.tw.
#14 II diabet*.tw.
#15 #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14
#16 exp "Sodium-Glucose Transporter 2 Inhibitors"/
#17 "sodium glucose".tw.
#18 "sodium dependent glucose".tw.
#19 SGLT?2.tw.
#20 "sodium glucose ADJ4 inhibitor".tw.
#21 gliflozin*.tw.
#22 atigliflozin.tw.
#23 bexagliflozin.tw. OR EGT1442.tw. OR EGT0001442.tw. OR THR 1442.tw.
#24 canagliflozin.tw. OR Invokana.tw. OR JNJ 24831754.tw. OR TA 7284.tw.
#25 dapagliflozin.tw. OR BMS 512148.tw. OR BMS 512148.tw. OR farxiga.tw. OR forxiga.tw.
#26 empagliflozin.tw. OR BI 10773.tw. OR BI10773.tw. OR Jardiance.tw.
#27 ertugliflozin.tw. OR PF 04971729.tw. OR PF04971729.tw.
#28 ipragliflozin.tw. OR ASP 1941.tw. OR ASP1941.tw. OR suglat.tw.
#29 luseogliflozin.tw. OR TS 071.tw.
#30 sergliflozin.tw.
#31 remogliflozin.tw.
#32 sotagliflozin.tw. OR LX 4211.tw. OR LX4211.tw. OR LP 802034.tw.
#33 tofogliflozin.tw. OR CSG 452.tw. OR CSG452.tw. OR R7201.tw.

#34 BI 44847.tw.

#35 #16 OR #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26
OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34

#36 #6 AND #15 AND #35

MEDLINE (via Pub Med)

#1 aged[mh]

#2 geriatrics[mh]

#3 old[tiab]

#4 elder[tiab]

#5 aged[tiab]

#6 #1 OR #2 OR #3 OR #4 OR #5

#7 "Diabetes Mellitus, Type 2"[mh]

#8 DM2[tiab]

#9 NIDDM[tiab]

#10 T2DM[tiab]

#11 type 2 diabet*[tiab]

#12 type II diabet*[tiab]

#13 2 diabet*[tiab]

#14 II diabet*[tiab]

#15 #7 OR #8 OR #9 OR #10 OR #11 OR #12 OR #13 OR #14

#16 #6 AND #15

#17 "Sodium-Glucose Transporter 2 Inhibitors"[mh]

#18 "sodium glucose"[tiab] OR "sodium dependent glucose"[tiab] OR SGLT2[tiab] OR
"SGLT 2"[tiab]

#19 sodium[tiab] AND glucose[tiab] AND (cotransporter[tiab] OR transporter[tiab]) AND
2 inhibitor*[tiab]

#20 gliflozin*[tiab]

#21 atigliflozin[tiab]

#22 bexagliflozin[tiab] OR "EGT1442"[tiab] OR EGT0001442[tiab]

#23 canagliflozin[tiab] OR invokana[tiab] OR "JNJ 24831754"[tiab] OR "TA 7284"[tiab]

#24 dapagliflozin[tiab] OR "BMS 512148"[tiab] OR BMS512148[tiab] OR farxiga[tiab] OR
forxiga[tiab]

#25 empagliflozin[tiab] OR "BI 10773"[tiab] OR BI10773[tiab] OR jardiance[tiab]

#26 ertugliflozin[tiab] OR "PF 04971729"[tiab] OR PF04971729[tiab]

#27 ipragliflozin[tiab] OR "ASP 1941"[tiab] OR ASP1941[tiab] OR suglat[tiab]

#28 luseogliflozin[tiab] OR "TS 071"[tiab] OR TS071[tiab]
 #29 sergliflozin[tiab] OR remogliflozin[tiab]
 #30 sotagliflozin[tiab] OR "LX 4211"[tiab] OR LX4211[tiab]
 #31 tofogliflozin[tiab] OR "CSG 452"[tiab] OR CSG452[tiab]
 #32 #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25 OR #26 OR #27
 OR #28 OR #29 OR #30 OR #31
 #33 "randomized controlled trial" [pt]
 #34 "controlled clinical trial" [pt]
 #35 randomized [tiab]
 #36 placebo [tiab]
 #37 "drug therapy" [sh]
 #38 randomly [tiab]
 #39 trial [tiab]
 #40 groups [tiab]
 #41 #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40
 #42 animals [mh] NOT humans [mh]
 #43 #41 NOT #42
 #44 #16 AND #32 AND #43

Embase(via Dialog Proquest)

S1 (EMB.EXACT.EXPLODE("frail elderly"))
 S2 (EMB.EXACT.EXPLODE("institutionalized elderly"))
 S3 (EMB.EXACT.EXPLODE("very elderly"))
 S4 (ab,ti(old*))
 S5 (ab,ti(elder*))
 S6 (ab,ti(aged))
 S7 (ab,ti(geriatrics))
 S8 (S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7)
 S9 (EMB.EXACT.EXPLODE("non insulin dependent diabetes mellitus"))
 S10 (EMB.EXACT.EXPLODE("insulin dependent diabetes mellitus"))
 S11 (ab,ti(DM2))
 S12 (ab,ti(NIDDM))
 S13 (ab,ti(T2DM))
 S14 (ab,ti(type 2 diabet*))
 S15 (ab,ti(type II diabet*))
 S16 (ab,ti(2 diabet*))

S17 (ab,ti(II diabet*))
 S18 (S9 OR S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17)
 S19 S8 AND S18
 S20 (EMB.EXACT.EXPLODE("sodium glucose cotransporter 2 inhibitor "))
 S21 (ab,ti(sodium glucose))
 S22 (ab,ti(sodium dependent glucose))
 S23 (ab,ti(SGLT?2))
 S24 (ab,ti(sodium glucose NEAR/4 inhibitor))
 S25 (ab,ti(gliflozin*))
 S26 (ab,ti(atigliflozin))
 S27 (ab,ti(bexagliflozin)) OR (ab,ti(EGT1442)) OR (ab,ti(EGT0001442))
 OR (ab,ti(THR 1442))
 S28 (ab,ti(canagliflozin)) OR (ab,ti(Invokana)) OR (ab,ti(JNJ 24831754))
 OR (ab,ti(TA 7284))
 S29 (ab,ti(dapagliflozin)) OR (ab,ti(BMS 512148)) OR (ab,ti(BMS512148)) OR
 (ab,ti(f?rxiga))
 S30 (ab,ti(empagliflozin)) OR (ab,ti(BI 10773)) OR (ab,ti(BI10773)) OR (ab,ti(Jardiance))
 S31 (ab,ti(ertugliflozin)) OR (ab,ti(PF 04971729)) OR (ab,ti(PF04971729))
 S32 (ab,ti(ipragliflozin)) OR (ab,ti(ASP 1941)) OR (ab,ti(ASP1941)) OR (ab,ti(suglat))
 S33 (ab,ti(luseogliflozin)) OR (ab,ti(TS 071)) OR (ab,ti(TS071))
 S34 (ab,ti(sergliflozin))
 S35 (ab,ti(remogliflozin))
 S36 (ab,ti(sotagliflozin)) OR (ab,ti(LX 4211)) OR (ab,ti(LX4211))
 S37 (ab,ti(tofogliflozin)) OR (ab,ti(CSG 452)) OR (ab,ti(CSG452))
 S38 (S20 OR S21 OR S22 OR S23 OR S24 OR S25 OR S26 OR S26 OR S27 OR S28 OR S29
 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37)
 S39 (ab,ti(random*))
 S40 (ab,ti,su("clinical trial*"))
 S41 (EMB.EXACT.EXPLODE("health care quality"))
 S42 (S39 OR S40 OR S41)
 S43 S19 AND S38 AND S42
 ※RCT フィルター：Wong SS らのサーチフィルター、best sensitivity [1]

ICTRP

condition:

aged OR geriatrics OR old OR elder OR diabetes OR DM2 OR NIDDM OR T2DM OR type 2 diabet* OR type II diabet* OR 2 diabet* OR II diabet*

Intervention:

Sodium-Glucose Transporter 2 Inhibitors OR sodium glucose OR sodium dependent glucose OR SGLT2 OR SGLT 2 OR sodium glucose cotransporter 2 inhibitor OR gliflozin OR atigliflozin OR bexagliflozin OR EGT1442 OR EGT0001442 OR THR 1442 OR canagliflozin OR invokana OR JNJ 24831754 OR TA 7284 OR dapagliflozin OR BMS 512148 OR BMS512148 OR farxiga OR forxiga OR empagliflozin OR BI 10773 OR BI10773 OR jardiance OR ertugliflozin OR PF 04971729 OR PF04971729 OR ipragliflozin OR ASP1941 OR ASP 1941 OR suglat OR luseogliflozin OR TS 071 OR TS071 OR sergliflozin OR remogliflozin OR sotagliflozin OR LX 4211 OR LX4211 OR LP 802034 OR tofogliflozin OR CSG452 OR CSG 452 OR R7201 OR BI 44847

ClinicalTrials.gov

Condition or disease:

Diabetes Mellitus, Type 2 OR diabetes OR DM2 OR NIDDM OR T2DM OR type 2 diabetes OR type II diabetes OR 2 diabetes OR II diabetes

Study type: interventional studies(clinical trials)

Age group: older adult(65+)

Intervention/treatment:

sodium glucose OR SGLT2 OR gliflozin OR invokana OR farxiga OR forxiga OR jardiance OR suglat OR EGT0001442 OR THR 1442 OR TA 7284 OR BMS 512148 OR BI 10773 OR PF 04971729 OR ASP 1941 OR TS 071 OR LX 4211 OR CSG 452 OR BI 44847

Refarence

RCT filters

1. Lefebvre C, Glanville J, Briscoe S, Featherstone R, Littlewood A, Marshall C, Metzendorf M-I, Noel-Storr A, Paynter R, Rader T, Thomas J, Wieland LS. Technical Supplement to [Chapter 4](#): Searching for and selecting studies. In: Higgins JPT, Thomas J, Chandler J, Cumpston MS, Li T, Page MJ, Welch VA (eds). *Cochrane Handbook for Systematic Reviews of Interventions* Version 6.3 (updated February 2022). Cochrane, 2022. Available

from: www.training.cochrane.org/handbook. - Cochrane Highly Sensitive Search Strategy for identifying randomized trials in MEDLINE: sensitivity-maximizing version (2008 revision); PubMed format

2. Wong, S.S., N.L. Wilczynski, and R.B. Haynes, *Developing optimal search strategies for detecting clinically sound treatment studies in EMBASE*. J Med Libr Assoc, 2006. **94**(1): p. 41-7.

Search terms

1. Apóstolo, J., et al., *Effectiveness of interventions to prevent pre-frailty and frailty progression in older adults: a systematic review*. JBI Database System Rev Implement Rep, 2018. **16**(1): p. 140-232.
2. Areosa Sastre, A., et al., *Effect of the treatment of Type 2 diabetes mellitus on the development of cognitive impairment and dementia*. Cochrane Database of Systematic Reviews, 2017(6).
3. Gnesin, F., et al., *Metformin monotherapy for adults with type 2 diabetes mellitus*. Cochrane Database of Systematic Reviews, 2020(6).
4. Kanie, T., et al., *Dipeptidyl peptidase - 4 inhibitors, glucagon - like peptide 1 receptor agonists and sodium - glucose co - transporter - 2 inhibitors for people with cardiovascular disease: a network meta - analysis*. Cochrane Database of Systematic Reviews, 2021(10).
5. Hemmingsen, B., et al., *Sodium - glucose cotransporter (SGLT) 2 inhibitors for prevention or delay of type 2 diabetes mellitus and its associated complications in people at risk for the development of type 2 diabetes mellitus*. Cochrane Database of Systematic Reviews, 2016(4).

The search strategy were peer reviewed by senior reviewer before execution.