

1 Bijlage: Zoekverantwoording

Methodology report PICO 1

Key question

1.1.1 Uitgangsvraag 1 (module 3.2)

Wat is het effect van vroegtijdige en herhaalde voorlichting over het stervensproces en palliatieve sedatie vergeleken met gebruikelijke zorg op de door patiënten EN/OF naasten ervaren tevredenheid en kwaliteit van leven en sterven?

P: Patiënten die mogelijk in aanmerking komen voor palliatieve sedatie.

I: Vroegtijdige en herhaalde voorlichting over het stervensproces en palliatieve sedatie.

C: Gebruikelijke zorg.

O: Door patiënten en of naasten ervaren tevredenheid en kwaliteit van leven en sterven.

Search strategy

Search date: July 22 2019.

Databases: OVID Medline, Embase, Cochrane Library, Cinahl (see appendix for search strings).

Search limits:

- Publication date: 2010-2019;
- English, French, Dutch and German only;
- Study design: meta-analyses, systematic reviews, comparative cohort studies of at least 50 patients.

Search Results

Table 3. Overall search results

| Database | Number of hits |
|---|----------------|
| OVID Medline | 822 |
| OVID PreMedline | 22 |
| EMBASE.com | 2537 |
| Cochrane Database of Systematic Reviews | 49 |
| CENTRAL | 221 |
| Cinahl | 346 |
| Total hits | 3997 |
| N excluded (language, duplicates) | 671 |
| Total unique eligible hits | 3326 |

Excluded studies

3326 unique hits were screened on title and abstract. Of these, 3291 were excluded. The most important reasons for exclusion were:

1. Other intervention: interventions other than those specified
2. Wrong study design: narrative reviews, case reports, etc

Of the remaining 35 papers, the full-text was retrieved. Based on the full-text, an additional 33 studies were excluded.

One very recent study (not yet indexed in OVID Medline at the time of the search) was added by the working group (Ingravallo 2019).

Included studies

Hong JH, Kwon JH, Kim IK, Ko JH, Kang Y-J, Kim H-K. Adopting Advance Directives Reinforces Patient Participation in End-of-Life Care Discussion. *Cancer Res.* 2016;48(2):753-8.

- Maltoni M, Miccinesi G, Morino P, Scarpi E, Bulli F, Martini F, et al. Prospective observational Italian study on palliative sedation in two hospice settings: differences in casemixes and clinical care. *Support Care Cancer.* 2012;20(11):2829-36.

- Ingravallo FA-OhooX, de Nooijer KA-Ohoo, Pucci V, Casini C, Miccinesi GA-Ohoo, Rietjens JACA-Ohoo, et al. Discussions about palliative sedation in hospice: Frequency, timing and factors associated with patient involvement. *Eur J Cancer Care (Engl)*. 2019; 28(3):e13019.

Table 4. Key question 2: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|---|---|
| Abarshi E, Rietjens J, Robijn L, Caraceni A, Payne S, Deliëns L, et al. International variations in clinical practice guidelines for palliative sedation: a systematic review. <i>BMJ Support Palliat Care</i> . 2017;7(3):223-9. | Review van richtlijnen; geen verwijzing naar vergelijkende onderzoeken ivm informatie |
| Beller E.M, van Driel M.L, McGregor L, Truong S, Mitchell G. Palliative pharmacological sedation for terminally ill adults. <i>Cochrane Database Syst Rev</i> . 2015;1:CD010206. | Geen vergelijking tussen al dan niet geven van informatie |
| Carlucci A, Vitacca M, Malovini A, Pierucci P, Guerrieri A, Barbano L, et al. End-of-Life Discussion, Patient Understanding and Determinants of Preferences in Very Severe COPD Patients: A Multicentric Study. <i>COPD</i> . 2016;13(5):632-8. | Gaat niet over palliatieve sedatie |
| Chambaere K, Rietjens JAC, Cohen J, Pardon K, Deschepper R, Pasman HRW, et al. Is educational attainment related to end-of-life decision-making? A large post-mortem survey in Belgium. <i>BMC Public Health</i> . 2013;13(1055):09. | Gaat over opleidingsniveau van patiënten |
| Chen C.H, Chen J.-S, Wen F.-H, Chang W.-C, Chou W.-C, Hsieh C.-H, et al. An Individualized, Interactive Intervention Promotes Terminally Ill Cancer Patients' Prognostic Awareness and Reduces Cardiopulmonary Resuscitation Received in the Last Month of Life: Secondary Analysis of a Randomized Clinical Trial. <i>J. Pain Symptom Manage</i> . 2019;57(4):705-14.e7. | Gaat niet over palliatieve sedatie |
| Cherny N.I. ESMO clinical practice guidelines for the management of refractory symptoms at the end of life and the use of palliative sedation. <i>Ann. Oncol</i> . 2014;25:iii143-iii52. | Richtlijn; geen verwijzing naar vergelijkende onderzoeken ivm informatie |
| Coulter A, Entwistle VA, Eccles A, Ryan S, Shepperd S, Perera R. Personalised care planning for adults with chronic or long-term health conditions. <i>Cochrane Database of Systematic Reviews</i> . 2015(3). | Gaat niet over palliatieve sedatie |
| Donker GA, Slotman FG, Spreeuwenberg P, Francke AL. Palliative sedation in Dutch general practice from 2005 to 2011: a dynamic cohort study of trends and reasons. <i>Br J Gen Pract</i> . 2013;63(615):e669-75. | Geen vergelijking tussen al dan niet geven van informatie |
| El-Jawahri A, Podgurski LM, Eichler AF, Plotkin SR, Temel JS, Mitchell SL, et al. Use of video to facilitate end-of-life discussions with patients with cancer: a randomized controlled trial. <i>J Clin Oncol</i> . 2010;28(2):305-10. | Gaat niet over palliatieve sedatie |
| Haun MW, Estel S, Rücker G, Friederich HC, Villalobos M, Thomas M, et al. Early palliative care for adults with advanced cancer. <i>Cochrane Database of Systematic Reviews</i> . 2017(6). | Gaat niet over palliatieve sedatie |
| Hoerger M, Perry LM, Gramling R, Epstein RM, Duberstein PR. Does educating patients about the Early Palliative Care Study increase preferences for outpatient palliative cancer care? Findings from Project EMPOWER. <i>Health Psychology</i> . 2017;36(6):538-48. | Gaat niet over palliatieve sedatie |
| Houben C.H.M, Spruit M.A, Luyten H, Pennings H.-J, Van Den Boogaart V.E.M, Creemers J.P.H.M, et al. Cluster-randomised trial of a nurse-led advance care planning session in patients with COPD and their loved ones. <i>Thorax</i> . 2019;74(4):328-36. | Gaat niet over palliatieve sedatie |
| Houben CHM, Spruit MA, Groenen MTJ, Wouters EFM, Janssen DJA. Efficacy of Advance Care Planning: A Systematic Review and Meta-Analysis. <i>Journal of the American Medical Directors Association</i> . 2014;15(7):477-89. | Gaat niet over palliatieve sedatie |
| Johnson MJ, McSkimming P, McConnachie A, Geue C, Millerick Y, Briggs A, et al. The feasibility of a randomised controlled trial to compare the cost-effectiveness of palliative cardiology or usual care in people with advanced heart failure: Two exploratory prospective cohorts. <i>Palliative Medicine</i> . 2018;32(6):1133-41. | Gaat niet over palliatieve sedatie |
| Kim Y.S, Song H.-N, Ahn J.S, Koh S.-J, Ji J.H, Hwang I.G, et al. Sedation for terminally ill cancer patients: A multicenter retrospective cohort study in South Korea. <i>Medicine (Baltimore)</i> . 2019;98(5):e14278. | Geen vergelijking tussen al dan niet geven van informatie |

| | |
|--|---|
| Nevis I. Educational intervention in end-of-life care: An evidence-based analysis. 2014;14(17). | Gaat niet over palliatieve sedatie |
| Papavasiliou E, Chambaere K, Deliens L, Brearley S, Payne S, Rietjens J, et al. Physician-reported practices on continuous deep sedation until death: A descriptive and comparative study. Palliative Medicine. 2014;28(6):491-500. | Geen vergelijking tussen al dan niet geven van informatie |
| Radwany SM, Hazelett SE, Allen KR, Kropp DJ, Ertle D, Albanese TH, et al. Results of the promoting effective advance care planning for elders (PEACE) randomized pilot study. Popul Health Manag. 2014;17(2):106-11. | Gaat niet over palliatieve sedatie |
| Rajala K, Lehto JT, Saarinen M, Sutinen E, Saarto T, Myllarniemi M. End-of-life care of patients with idiopathic pulmonary fibrosis. BMC Palliat Care. 2016;15(1):85. | Gaat niet over palliatieve sedatie |
| Schildmann E, Schildmann J. Palliative sedation therapy: a systematic literature review and critical appraisal of available guidance on indication and decision making. J Palliat Med. 2014;17(5):601-11. | Review van richtlijnen; geen verwijzing naar vergelijkende onderzoeken ivm informatie |
| Slama O, Pochop L, Svetlakova L, Sedo J, Horova R, Vyzula R. Different impact of early integrated palliative care for inpatient and out-patient treated with antineoplastic therapy. Single center randomized controlled trial. Palliative medicine. 2018;32(1):38-. | Conference abstract |
| Tabibian B.E, Salehani A.A, Kuhn E.N, Davis M.C, Shank C.D, Iii W.S.F. Transitioning the Treatment Paradigm: How Early Palliative Care Service Involvement Affects the End-of-Life Course for Critically Ill Patients in the Neuro-Intensive Care Unit. J. Palliative Med. 2019;22(5):489-92. | Gaat niet over palliatieve sedatie |
| Tang S.T, Chen J.-S, Wen F.-H, Chou W.-C, Chang J.W.-C, Hsieh C.-H, et al. Advance care planning improves psychological symptoms but not quality of life and preferred end-of-life care of patients with cancer. JNCCN J. Nat. Compr. Cancer Netw. 2019;17(4):311-20. | Gaat niet over palliatieve sedatie |
| Thomas H, Randolph M, Pruemer J. The effects of a palliative care program on antidepressant use and continuing maintenance medications in near end-of-life oncology patients (the HEALED study). J. Oncol. Pharm. Pract. 2015;21(5):331-8. | Gaat niet over palliatieve sedatie |
| Verreault R, Arcand M, Misson L, Durand P.J, Kroger E, Aubin M, et al. Quasi-experimental evaluation of a multifaceted intervention to improve quality of end-of-life care and quality of dying for patients with advanced dementia in long-term care institutions. Palliative Med. 2018;32(3):613-21. | Gaat niet over palliatieve sedatie |
| Volandes AE, Ferguson LA, Davis AD, Hull NC, Green MJ, Chang Y, et al. Assessing end-of-life preferences for advanced dementia in rural patients using an educational video: a randomized controlled trial. J Palliat Med. 2011;14(2):169-77. | Gaat niet over palliatieve sedatie |
| Weixler D, Roeder-Schur S, Likar R, Bozzaro C, Daniczek T, Feichtner A, et al. Austrian guideline for palliative sedation therapy (long version): Results of a Delphi process of the Austrian Palliative Society (OPG). Wien. Med. Wochenschr. 2017;167(1-2):31-48. | Richtlijn; geen verwijzing naar vergelijkende onderzoeken ivm informatie |
| Wells R, Stockdill ML, Dionne-Odom JN, Ejem D, Burgio KL, Durant RW, et al. Educate, Nurture, Advise, Before Life Ends Comprehensive Heartcare for Patients and Caregivers (ENABLE CHF-PC): study protocol for a randomized controlled trial. Trials. 2018;19(1):422. | Gaat niet over palliatieve sedatie |
| Won Y.-W, Chun H.S, Seo M, Kim R.B, Kim J.H, Kang J.H. Clinical Patterns of Continuous and Intermittent Palliative Sedation in Patients With Terminal Cancer: A Descriptive, Observational Study. J. Pain Symptom Manage. 2019;58(1):65-71. | Geen vergelijking tussen al dan niet geven van informatie |
| Zambrano S.C, Fliedner M.C, Eychmüller S. The impact of early palliative care on the quality of care during the last days of life: what does the evidence say? Curr Opin Support Palliat Care. 2016;10(4):310-5. | Gaat niet over palliatieve sedatie |
| Zaros M.C, Curtis J.R, Silveira M.J, Elmore J.G. Opportunity lost: End-of-life discussions in cancer patients who die in the hospital. J. Hosp. Med. 2013;8(6):334-40. | Gaat niet over palliatieve sedatie |
| Zheng N.T, Li Q, Hanson L.C, Wessell K.L, Chong N, Sherif N, et al. Nationwide Quality of Hospice Care: Findings From the Centers for Medicare & Medicaid Services Hospice Quality Reporting Program. J. Pain Symptom Manage. 2018;55(2):427-32.e1. | Gaat niet over palliatieve sedatie |
| Ziegler L.E, Craigs C.L, West R.M, Carder P, Hurlow A, Millares-Martin P, et al. Is palliative care support associated with better quality end-of-life care indicators for patients with advanced cancer? A retrospective cohort study. BMJ Open. 2018;8(1). | Gaat niet over palliatieve sedatie |

B1 Search strings Question 1

Medline (ovid)

- 1 exp Central Nervous System Depressants/ (648260)
- 2 exp Anesthesia/ (186342)
- 3 exp Benzodiazepines/ (64049)
- 4 exp Barbiturates/ (53462)
- 5 exp Histamine Antagonists/ (60755)
- 6 exp Psychotropic Drugs/ (361163)
- 7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (515588)
- 8 (symptom* adj6 (relie* or control*)).mp. (54118)
- 9 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (1135190)
- 10 Palliative Care/ (51230)
- 11 exp Terminal Care/ (49168)
- 12 Terminally Ill/ (6316)
- 13 palliat*.mp. (81291)
- 14 (terminal* adj6 (care or caring or ill*)).mp. (35365)
- 15 (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (33484)
- 16 (end adj3 life).mp. (19218)
- 17 hospice*.mp. (14404)
- 18 ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (42149)
- 19 ((incurable or advanced) adj6 (ill* or disease*)).mp. (46545)
- 20 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (235439)
- 21 9 and 20 (13478)
- 22 exp Patiënt Education as Topic/ (82585)
- 23 exp Health Education/ (234123)
- 24 exp Patiënt Participation/ (24132)
- 25 exp Decision Making/ (189847)
- 26 exp Communication/ (291691)
- 27 exp counseling/ (42017)
- 28 exp Health Communication/ (1879)
- 29 exp Consumer Health Information/ (8083)
- 30 exp Information Dissemination/ (15502)
- 31 exp Information Systems/ (211073)
- 32 exp Information Services/ (956040)
- 33 exp Computer-Assisted Instruction/ (11531)
- 34 exp Computer Systems/ (170404)
- 35 exp Telephone/ (20894)
- 36 exp Telecommunications/ (85739)
- 37 exp teaching materials/ (116190)
- 38 exp internet/ (73825)
- 39 ((patient or client or providing or provision of or supplying or supplied) adj (education or information)).mp. (104870)
- 40 (audio* or video* or cassette* or tape* or dvd* or compact dis* or cd or cds or multimedia or multi media).mp. (454012)
- 41 (internet or web or website* or online or blog* or weblog* or podcast* or computer program* or computer mediated or computer based or computer assisted or electronic mail* or email* or mail*).mp. (552591)
- 42 (telephon* or phone or phones or text messag* or sms).mp. (77305)
- 43 (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* material* or written material*).mp. (28622)
- 44 ((education* or teaching or instruction* or counsel?ing or advisory or information*) adj (material* or program* or session*)).mp. (55084)
- 45 or/22-44 (2902244)
- 46 21 and 45 (1647)
- 47 limit 46 to yr="2010 - 2019" (822)

PreMedline (OVID)

- 1 exp Central Nervous System Depressants/ (273)

- 2 exp Anesthesia/ (75)
- 3 exp Benzodiazepines/ (20)
- 4 exp Barbiturates/ (2)
- 5 exp Histamine Antagonists/ (17)
- 6 exp Psychotropic Drugs/ (102)
- 7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (6260)
- 8 (symptom* adj6 (relie* or control*)).mp. (1235)
- 9 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (7611)
- 10 Palliative Care/ (43)
- 11 exp Terminal Care/ (36)
- 12 Terminally Ill/ (7)
- 13 palliat*.mp. (1692)
- 14 (terminal* adj6 (care or caring or ill*)).mp. (238)
- 15 (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (637)
- 16 (end adj3 life).mp. (829)
- 17 hospice*.mp. (342)
- 18 ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (1035)
- 19 ((incurable or advanced) adj6 (ill* or disease*)).mp. (1019)
- 20 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (4617)
- 21 9 and 20 (224)
- 22 exp Patiënt Education as Topic/ (56)
- 23 exp Health Education/ (170)
- 24 exp Patiënt Participation/ (27)
- 25 exp Decision Making/ (223)
- 26 exp Communication/ (255)
- 27 exp counseling/ (45)
- 28 exp Health Communication/ (8)
- 29 exp Consumer Health Information/ (19)
- 30 exp Information Dissemination/ (13)
- 31 exp Information Systems/ (290)
- 32 exp Information Services/ (323)
- 33 exp Computer-Assisted Instruction/ (7)
- 34 exp Computer Systems/ (141)
- 35 exp Telephone/ (24)
- 36 exp Telecommunications/ (97)
- 37 exp teaching materials/ (45)
- 38 exp internet/ (101)
- 39 ((patiënt or client or providing or provision of or supplying or supplied) adj (education or information)).mp. (810)
- 40 (audio* or video* or cassette* or tape* or dvd* or compact dis* or cd or cds or multimedia or multi media).mp. (7940)
- 41 (internet or web or website* or online or blog* or weblog* or podcast* or computer program* or computer mediated or computer based or computer assisted or electronic mail* or email* or mail*).mp. (11516)
- 42 (telephon* or phone or phones or text messag* or sms).mp. (1952)
- 43 (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* material* or written material*).mp. (619)
- 44 ((education* or teaching or instruction* or counsel?ing or advisory or information*) adj (material* or program* or session*)).mp. (1187)
- 45 or/22-44 (23540)
- 46 21 and 45 (24)
- 47 limit 46 to yr="2010 - 2019" (22)

Embase (via embase.com)

| # | Search Terms | Number of hits |
|----|----------------------------------|----------------|
| #1 | central depressant agent'/exp | 1200175 |
| #2 | 'anesthesia'/exp | 347331 |
| #3 | 'benzodiazepine derivative'/exp | 223512 |
| #4 | 'barbituric acid derivative'/exp | 147640 |
| #5 | 'antihistaminic agent'/exp | 247493 |

| | | |
|-----|--|---------|
| #6 | psychotropic agent'/exp | 961986 |
| #7 | benzodiazepine*:ti,ab OR barbiturate*:ti,ab OR anaesthesia:ti,ab OR anesthesia:ti,ab OR opioid*:ti,ab OR antipsychotic*:ti,ab OR 'anti psychotic*':ti,ab OR antihistamine*:ti,ab OR 'anti histamine*':ti,ab OR hypnotic*:ti,ab OR sedat*:ti,ab OR tranquil*:ti,ab | 568692 |
| #8 | (symptom* NEAR/6 (relie* OR control*)):ti,ab | 91750 |
| #9 | #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 | 2330244 |
| #10 | palliative therapy'/exp | 103449 |
| #11 | 'terminal care'/exp | 65351 |
| #12 | 'terminally ill patient'/exp | 8235 |
| #13 | palliat*:ti,ab | 109057 |
| #14 | (terminal* NEAR/6 (care OR caring OR ill*)):ti,ab | 12376 |
| #15 | (end NEAR/3 life):ti,ab | 31488 |
| #16 | hospice*:ti,ab | 18131 |
| #17 | 'terminal stage*':ti,ab | 4201 |
| #18 | dying:ti,ab | 42175 |
| #19 | (close NEAR/6 death):ti,ab | 1236 |
| #20 | ((incurable OR advanced) NEAR/6 (ill* OR disease*)):ti,ab | 83853 |
| #21 | #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 | 320154 |
| #22 | #9 AND #21 | 32838 |
| #23 | 'patient education'/exp | 108267 |
| #24 | 'patient information'/exp | 25616 |
| #25 | ((patient OR client) NEAR/1 (education OR information)):ti,ab | 38042 |
| #26 | 'mass communication'/exp | 532273 |
| #27 | audio*:ti,ab OR video*:ti,ab OR cassette*:ti,ab OR tape?:ti,ab OR dvd*:ti,ab OR 'compact dis*:ti,ab OR cd:ti,ab OR cds:ti,ab OR multimedia:ti,ab OR 'multi media':ti,ab | 455959 |
| #28 | internet:ti,ab OR web:ti,ab OR website*:ti,ab OR online:ti,ab OR 'on line':ti,ab OR blog*:ti,ab OR weblog*:ti,ab OR podcast*:ti,ab OR portal?:ti,ab OR 'computer program*':ti,ab OR 'computer mediated':ti,ab OR 'computer based':ti,ab OR 'computer assisted':ti,ab | 408286 |
| #29 | telephon*:ti,ab OR phone:ti,ab OR phones:ti,ab OR 'text messag*':ti,ab OR sms:ti,ab | 121448 |
| #30 | pamphlet*:ti,ab OR booklet*:ti,ab OR leaflet*:ti,ab OR flyer*:ti,ab OR brochure*:ti,ab OR 'print* material*':ti,ab | 42742 |
| #31 | (education* OR teaching OR instruction* OR counseling OR advisory OR information*) NEAR/1 (material* OR pack* OR program* OR session* OR guide*) | 124435 |
| #32 | 'information service'/exp | 15776 |
| #33 | 'living will'/exp OR 'right to die'/exp OR 'patient advocacy'/exp OR 'power of attorney'/exp OR 'terminal care'/exp OR 'treatment refusal'/exp OR 'treatment withdrawal'/exp | 294004 |
| #34 | (living NEAR/1 will*):ab,ti | 1543 |
| #35 | ('advance care' NEAR/1 (plan OR plans OR planning)):ab,ti | 3852 |
| #36 | 'right to die':ab,ti | 959 |
| #37 | ((patient OR patients) NEAR/5 (advocat* OR advocacy)):ab,ti | 8980 |
| #38 | 'power of attorney':ab,ti | 627 |
| #39 | ((('end of life' OR eol) NEAR/5 (care OR discuss* OR decision* OR plan OR plans OR planning OR preference*)):ab,ti | 19724 |
| #40 | 'terminal care':ab,ti | 1803 |
| #41 | (treatment NEAR/2 (refus* OR withhold* OR withdraw*)):ab,ti | 12001 |
| #42 | 'advance care planning'/exp | 2051 |
| #43 | 'shared decision making'/exp | 4701 |
| #44 | #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 OR #41 OR #42 OR #43 | 1878419 |
| #45 | #22 AND #44 | 9878 |
| #46 | #22 AND #44 AND ([article]/lim OR [article in press]/lim OR [review]/lim) AND ([dutch]/lim OR [english]/lim OR [french]/lim OR [german]/lim) AND ([embase]/lim OR [medline]/lim OR [pubmed-not-medline]/lim) AND [2010-2019]/py AND [medline]/lim | 2537 |

Cochrane library (via Wiley)

- #1 MeSH descriptor: [Central Nervous System Depressants] explode all trees
#2 MeSH descriptor: [Anesthesia] explode all trees

- #3 MeSH descriptor: [Benzodiazepines] explode all trees
- #4 MeSH descriptor: [Barbiturates] explode all trees
- #5 MeSH descriptor: [Histamine Antagonists] explode all trees
- #6 MeSH descriptor: [Psychotropic Drugs] explode all trees
- #7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*):ti,ab
- #8 (symptom* NEAR/6 (relie* or control*)):ti,ab
- #9 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
- #10 MeSH descriptor: [Palliative Care] explode all trees
- #11 MeSH descriptor: [Terminal Care] explode all trees
- #12 MeSH descriptor: [Terminally Ill] explode all trees
- #13 pallia*:ti,ab
- #14 (terminal* NEAR/6 (care or caring or ill*)):ti,ab
- #15 (terminal-stage* or terminal stage* or dying or (close NEAR/6 death)):ti,ab
- #16 (end NEAR/3 life):ti,ab
- #17 hospice*:ti,ab
- #18 ((end-stage* or end stage*) NEAR/6 (disease* or ill* or care or caring)):ti,ab
- #19 ((incurable or advanced) NEAR/6 (ill* or disease*))
- #20 #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19
- #21 #9 and #20
- #22 MeSH descriptor: [Patient Education as Topic] explode all trees
- #23 ((patient or client or providing or provision of or supplying or supplied) NEAR/1 (education or information)):ti,ab
- #24 MeSH descriptor: [Teaching Materials] explode all trees
- #25 (audio* or video* or cassette* or tape? or dvd* or compact dis* or cd or cds or multimedia or multi media):ti,ab
- #26 MeSH descriptor: [Internet] explode all trees
- #27 MeSH descriptor: [Telecommunications] explode all trees
- #28 (internet or web or website* or online or on line or electronic mail* or email* or mail* or blog* or weblog* or podcast* or portal? or computer program* or computer mediated or computer based or computer assisted):ti,ab
- #29 MeSH descriptor: [Computer-Assisted Instruction] explode all trees
- #30 (telephon* or phone or phones or text messag* or sms):ti,ab
- #31 (pamphlet* or booklet* or leaflet* or flyer* or poster* or brochure* or print* material*):ti,ab
- #32 ((education* or teaching or instruction* or counsel?ing or advisory or information*) NEAR/1 (material* or program* or session*)):ti,ab
- #33 MeSH descriptor: [Communication] explode all trees
- #34 MeSH descriptor: [Counseling] explode all trees
- #35 MeSH descriptor: [Information Services] explode all trees
- #36 MeSH descriptor: [Information Dissemination] explode all trees
- #37 shared decision:ti,ab
- #38 #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 or #35 or #36 or #37
- #39 #21 and #38

Cinahl

| | | |
|-----|---|-----------|
| S38 | S21 AND S37 | 1,773 |
| S37 | S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 | 1,142,304 |
| S36 | (MH "Decision Making, Shared") | 950 |
| S35 | (MH "information services+") | 68,816 |
| S34 | (MW "information systems") | 26,457 |
| S33 | (MH "mail+") | 12,807 |
| S32 | (education material* or teaching material* or instruction material* or information material* or advisory material* or counseling material* or education program* or teaching program* or instruction program* or information program* or advisory program* or counseling program* or education session* or teaching session* or instruction session* or information session* or advisory session* or counseling session*) | 51,256 |

| | | |
|-----|---|---------|
| S31 | (pamphlet* or booklet* or leaflet* or flyer* or brochure* or print* material* or written material*) | 11,680 |
| S30 | (telephon* or phone or phones or text messag* or sms) | 49,426 |
| S29 | (MH "telephone+") | 20,725 |
| S28 | (MH "computer systems+") | 373,562 |
| S27 | (MH "computer assisted instruction") | 7,393 |
| S26 | (internet or web or website* or online or blog* or weblog* or podcast* or computer program* or computer mediated or computer based or computer assisted or electronic mail* or email* or mail*) | 281,858 |
| S25 | (audio* or video* or cassette* or tape* or dvd* or compact dis* or cd or cds or multimedia or multi media) | 139,384 |
| S24 | (MH "telecommunications+") | 114,707 |
| S23 | (MH "information resources+") | 424,404 |
| S22 | (MH "patient education") | 58,863 |
| S21 | S9 AND S20 | 8,588 |
| S20 | S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 | 103,469 |
| S19 | ((incurable or advanced) N6 (ill* or disease*)) | 10,768 |
| S18 | ((end-stage* or end stage*) N6 (disease* or ill* or care or caring)) | 9,922 |
| S17 | hospice* | 18,170 |
| S16 | (end N3 life) | 17,886 |
| S15 | (terminal-stage* or terminal stage* or dying or (close N6 death)) | 14,327 |
| S14 | (terminal* N6 (care or caring or ill*)) | 26,223 |
| S13 | palliat* | 46,075 |
| S12 | (MH "Terminally Ill Patiënts+") | 10,707 |
| S11 | (MH "Terminal Care+") | 57,294 |
| S10 | (MH "Palliative Care") | 31,514 |
| S9 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 | 280,442 |
| S8 | (symptom* and (relie* or control*)) | 94,703 |
| S7 | (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*) | 122,631 |
| S6 | (MH "Psychotropic Drugs+") | 50,890 |
| S5 | (MH "Histamine Antagonists+") | 5,286 |
| S4 | (MH "Barbiturates+") | 1,478 |
| S3 | (MH "Antianxiety Agents, Benzodiazepine+") | 8,447 |
| S2 | (MH "Anesthesia+") | 40,086 |
| S1 | (MH "Central Nervous System Depressants+") | 94,604 |

Methodology report PICO 2

Key question

1.1.2 Uitgangsvraag 2 (module 3.7)

Welke meetinstrumenten kunnen de mate van symptoomlast EN/OF onbehandelbaar discomfort (refractaire symptomen) vastgesteld en gemonitord worden bij patiënten die mogelijk in aanmerking komen voor palliatieve sedatie EN/OF palliatieve sedatie ondergaan?

P: Patiënten in de palliatieve fase die mogelijk in aanmerking komen voor palliatieve sedatie of palliatieve sedatie ondergaan.

I: Meetinstrumenten voor vaststellen en monitoren van refractaire symptomen.

C: -

O: Mate van symptoomlast, onbehandelbaar discomfort.

Search strategy

Search date: July 18 2019.

Databases: OVID Medline, Embase, Cochrane Library, Cinahl (see appendix for search strings).

Search limits:

- Publication date: 2010-2019;
- English, French, Dutch and German only;

- Study design: meta-analyses, systematic reviews, comparative cohort onderzoeken of at least 50 patients.

Search Results

Table 1. Overall search results

| Database | Number of hits |
|---|----------------|
| OVID Medline | 1072 |
| OVID PreMedline | 20 |
| EMBASE.com | 1307 |
| Cochrane Database of Systematic Reviews | 29 |
| CENTRAL | 241 |
| Cinahl | 122 |
| Total hits | 2791 |
| N excluded (language, duplicates) | 744 |
| Total unique eligible hits | 2047 |

Excluded studies

2047 unique hits were screened on title and abstract (

Table 1). Of these, 2022 were excluded. The most important reasons for exclusion were:

1. Other intervention: interventions other than palliative sedation, not about instrument
2. Wrong study design: narrative reviews, case reports, letters, etc

Of the remaining 25 papers, the full-text was retrieved. Based on the full-text, an additional 20 papers were excluded.

Table 2 provides an overview of these excluded studies.

Included studies

- Arevalo JJ, Brinkkemper T, van der Heide A, Rietjens JA, Ribbe M, Deliëns L, et al. Palliative sedation: reliability and validity of sedation scales. *J Pain Symptom Manage.* 2012;44(5):704-14.
- Benitez-Rosario MA, Castillo-Padros M, Garrido-Bernet B, Gonzalez-Guillermo T, Martinez-Castillo LP, Gonzalez A, et al. Appropriateness and reliability testing of the modified Richmond Agitation-Sedation Scale in Spanish patients with advanced cancer. *J Pain Symptom Manage.* 2013;45(6):1112-9.
- Brinkkemper T, van Norel AM, Szadek KM, Loer SA, Zuurmond WWA, Perez RSGM. The use of observational scales to monitor symptom control and depth of sedation in patients requiring palliative sedation: a systematic review. *Palliat Med.* 2013;27(1):54-67.
- Van Deijck RHPD, Hasselaar JGJ, Verhagen SCAHVM, Vissers KCP, Koopmans RTCM. Level of Discomfort Decreases After the Administration of Continuous Palliative Sedation: A Prospective Multicenter Study in Hospices and Palliative Care Units. *J Pain Symptom Manage.* 2016;52(3):361-9.
- Van der Maaden T, van der Steen JT, de Vet HCW, Hertogh CPM, Koopmans RTCM. Prospective Observations of Discomfort, Pain, and Dyspnea in Nursing Home Residents With Dementia and Pneumonia. *J AM MED DIR ASSOC.* 2016;17(2):128-35.

Table 2. Key question 1: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|---|--|
| Blum D, Rosa D, Dewolf-Linder S, Hayoz S, Ribi K, Koeberle D, et al. Development and validation of a medical chart review checklist for symptom management performance of oncologists in the routine care of patients with advanced cancer. <i>J. Pain Symptom Manage.</i> 2014;48(6):1160-7. | Geen symptoomscore of - schaal |
| Caraceni A, Zecca E, Martini C, Brunelli C, Pigni A, Gorni G, et al. The validity of average 8-h pain intensity assessment in cancer patients. <i>Eur J Pain.</i> 2010;14(4):441-5. | Geen patiënten die (potentieel) PS ondergaan |
| Chilcot J, Guirguis A, Friedli K, Almond M, Davenport A, Day C, et al. Measuring Fatigue Using the Multidimensional Fatigue Inventory-20: A Questionable Factor Structure in Haemodialysis Patients. <i>Nephron.</i> 2017;136(2):121-6. | Geen patiënten die (potentieel) PS ondergaan |

| Reference | Reason for exclusion |
|--|--|
| Chinda M, Jaturapatporn D, Kirshen AJ, Udomsubpayakul U. Reliability and validity of a Thai version of the edmonton symptom assessment scale (ESAS-Thai). <i>J Pain Symptom Manage.</i> 2011;42(6):954-60. | Geen patiënten die (potentieel) PS ondergaan |
| George N, Barrett N, McPeake L, Goett R, Anderson K, Baird J. Content Validation of a Novel Screening Tool to Identify Emergency Department Patients With Significant Palliative Care Needs. <i>Acad Emerg Med.</i> 2015;22(7):823-37. | Geen patiënten die (potentieel) PS ondergaan |
| Ghoshal A, Salins N, Deodhar J, Damani A, Muckaden M. Impact of symptom control on fatigue improvement in patients with advanced cancer: A prospective observational study. <i>Progress in Palliative Care.</i> 2017;25(2):63-74. | Geen patiënten die (potentieel) PS ondergaan |
| Hales S, Chiu A, Husain A, Braun M, Rydall A, Gagliese L, et al. The quality of dying and death in cancer and its relationship to palliative care and place of death. <i>J Pain Symptom Manage.</i> 2014;48(5):839-51. | Geen symptoomscore of -schaal |
| Higginson IJ, Koffman J, Hopkins P, Prentice W, Burman R, Leonard S, et al. Development and evaluation of the feasibility and effects on staff, patients, and families of a new tool, the Psychosocial Assessment and Communication Evaluation (PACE), to improve communication and palliative care in intensive care and during clinical uncertainty. <i>BMC Medicine.</i> 2013;11(213):01. | Geen patiënten die (potentieel) PS ondergaan |
| Kim KU. Measurement of quality of life in patients with end-stage cancer. <i>Cancer Nurs.</i> 2014;37(1):44-9. | Geen patiënten die (potentieel) PS ondergaan |
| Leonard MM, Nikolaichuk C, Meagher DJ, Barnes C, Gaudreau J-D, Watanabe S, et al. Practical assessment of delirium in palliative care. <i>J Pain Symptom Manage.</i> 2014;48(2):176-90. | Schaal om delier vast te stellen, niet om indicatie voor PS te bepalen |
| Lo C, Burman D, Swami N, Gagliese L, Rodin G, Zimmermann C. Validation of the QUAL-EC for assessing quality of life in patients with advanced cancer. <i>Eur J Cancer.</i> 2011;47(4):554-60. | Geen patiënten die (potentieel) PS ondergaan |
| Monteiro DdR, Kruse MHL, Almeida MdA. Evaluation of the Edmonton Symptom Assessment System as an instrument in palliative care: integrated review. <i>Revista Gaucha de Enfermagem.</i> 2010;31(4):785-93. | Portugees |
| Pelayo-Alvarez M, Perez-Hoyos S, Agra-Varela Y. Reliability and concurrent validity of the Palliative Outcome Scale, the Rotterdam Symptom Checklist, and the Brief Pain Inventory. <i>J Palliat Med.</i> 2013;16(8):867-74. | Geen patiënten die (potentieel) PS ondergaan |
| Pereira FMP, Santos CSVdB. Initial validation of the Mini-Mental Adjustment to Cancer (Mini-MAC) scale: study of Portuguese end-of-life cancer patients. <i>EUR J ONCOL NURS.</i> 2014;18(5):534-9. | Geen patiënten die (potentieel) PS ondergaan |
| Rha SY, Nam JM, Lee J. Development and evaluation of the Cancer Symptom Management System: Symptom Management Improves your Life (SMILE)-a randomized controlled trial. <i>Supportive Care in Cancer.</i> 2019;25:25. | Geen patiënten die (potentieel) PS ondergaan |
| Schultheis K, Hofheinz R-D, Gencer D, Blunk JA, Benrath J. Quality of life and symptom evaluation in daily oncology practice: a survey of 150 patients with advanced gastrointestinal tumours receiving palliative chemotherapy. <i>Onkologie.</i> 2013;36(1-2):33-7. | Geen patiënten die (potentieel) PS ondergaan |
| Siegert RJ, Gao W, Walkey FH, Higginson IJ. Psychological well-being and quality of care: a factor-analytic examination of the palliative care outcome scale. <i>J Pain Symptom Manage.</i> 2010;40(1):67-74. | Geen patiënten die (potentieel) PS ondergaan |
| Six S, Laureys S, Poelaert J, Bilsen J, Theuns P, Deschepper R. Comfort in palliative sedation (Compas): a transdisciplinary mixed method study protocol for linking objective assessments to subjective experiences. <i>BMC Palliat Care.</i> 2018;17(1):62. | Lopend onderzoek |
| Sperlinga R, Campagna S, Berruti A, Laciura P, Ginosa I, Paoletti S, et al. Alberta Breakthrough Pain Assessment Tool: A validation multicentre study in cancer patients with breakthrough pain. <i>Eur J Pain.</i> 2015;19(7):881-8. | Geen patiënten die (potentieel) PS ondergaan |
| Tai S-Y, Lee C-Y, Wu C-Y, Hsieh H-Y, Huang J-J, Huang C-T, et al. Symptom severity of patients with advanced cancer in palliative care unit: longitudinal assessments of symptoms improvement. <i>BMC Palliative Care.</i> 2016;15(32):11. | Geen patiënten die (potentieel) PS ondergaan |

B2 Search strings Question 2

Medline (ovid)

- 1 exp Central Nervous System Depressants/ (648166)
- 2 exp Anesthesia/ (186318)
- 3 exp Benzodiazepines/ (64044)
- 4 exp Barbiturates/ (53461)
- 5 exp Histamine Antagonists/ (60752)
- 6 exp Psychotropic Drugs/ (361128)
- 7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (515499)
- 8 (symptom* adj6 (relie* or control*)).mp. (54102)
- 9 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (1135025)
- 10 Palliative Care/ (51223)
- 11 exp Terminal Care/ (49160)
- 12 Terminally Ill/ (6316)
- 13 palliat*.mp. (81278)
- 14 (terminal* adj6 (care or caring or ill*)).mp. (35358)
- 15 (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (33476)
- 16 (end adj3 life).mp. (19212)
- 17 hospice*.mp. (14403)
- 18 ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (42134)
- 19 ((incurable or advanced) adj6 (ill* or disease*)).mp. (46537)
- 20 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (235392)
- 21 9 and 20 (13476)
- 22 limit 21 to yr="2010 - 2019" (5046)
- 23 exp Monitoring, Physiologic/ (166085)
- 24 exp Neurophysiological Monitoring/ (1270)
- 25 Follow-Up Studies/ (617617)
- 26 follow\$.mp. (3118267)
- 27 monitor\$.mp. (799435)
- 28 exp "Surveys and Questionnaires"/ (965130)
- 29 exp "Reproducibility of Results"/ (380720)
- 30 exp "Outcome Assessment (Health Care)"/ (1013155)
- 31 exp Psychometrics/ (71515)
- 32 ((awareness or sedati*) adj3 (level or depth)).mp. (4137)
- 33 discomfort*.mp. (37246)
- 34 (symptom* adj6 (control* or burden or refract*)).mp. (34980)
- 35 exp Nausea/ (19146)
- 36 exp Dyspnea/ (20218)
- 37 exp Psychomotor Agitation/ (6148)
- 38 exp Pain/ (377572)
- 39 exp Fatigue/ (28457)
- 40 exp Delirium/ (8625)
- 41 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 (5293501)
- 42 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 (512070)
- 43 22 and 41 and 42 (1072)

PreMedline (OVID)

- 1 exp Central Nervous System Depressants/ (179)
- 2 exp Anesthesia/ (51)
- 3 exp Benzodiazepines/ (15)
- 4 exp Barbiturates/ (1)
- 5 exp Histamine Antagonists/ (14)
- 6 exp Psychotropic Drugs/ (67)
- 7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (6144)
- 8 (symptom* adj6 (relie* or control*)).mp. (1223)

- 9 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (7423)
- 10 Palliative Care/ (36)
- 11 exp Terminal Care/ (28)
- 12 Terminally Ill/ (7)
- 13 palliat*.mp. (1680)
- 14 (terminal* adj6 (care or caring or ill*)).mp. (230)
- 15 (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (628)
- 16 (end adj3 life).mp. (815)
- 17 hospice*.mp. (341)
- 18 ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (1013)
- 19 ((incurable or advanced) adj6 (ill* or disease*)).mp. (1009)
- 20 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (4562)
- 21 9 and 20 (220)
- 22 limit 21 to yr="2010 - 2019" (192)
- 23 exp Monitoring, Physiologic/ (72)
- 24 exp Neurophysiological Monitoring/ (1)
- 25 Follow-Up Studies/ (267)
- 26 follow\$.mp. (58019)
- 27 monitor\$.mp. (13622)
- 28 exp "Surveys and Questionnaires"/ (801)
- 29 exp "Reproducibility of Results"/ (201)
- 30 exp "Outcome Assessment (Health Care)"/ (888)
- 31 exp Psychometrics/ (67)
- 32 ((awareness or sedati*) adj3 (level or depth)).mp. (89)
- 33 discomfort*.mp. (858)
- 34 (symptom* adj6 (control* or burden or refract*)).mp. (1001)
- 35 exp Nausea/ (11)
- 36 exp Dyspnea/ (11)
- 37 exp Psychomotor Agitation/ (1)
- 38 exp Pain/ (204)
- 39 exp Fatigue/ (21)
- 40 exp Delirium/ (7)
- 41 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31 (70030)
- 42 32 or 33 or 34 or 35 or 36 or 37 or 38 or 39 or 40 (2181)
- 43 22 and 41 and 42 (20)

Embase (via embase.com)

| # | Search terms | Number of hits |
|-----|--|----------------|
| #1 | central depressant agent'/exp | 1199691 |
| #2 | anesthesia'/exp | 347096 |
| #3 | benzodiazepine derivative'/exp | 223408 |
| #4 | barbituric acid derivative'/exp | 147608 |
| #5 | antihistaminic agent'/exp | 247432 |
| #6 | psychotropic agent'/exp | 961613 |
| #7 | benzodiazepine*:ti,ab OR barbiturate*:ti,ab OR anaesthesia:ti,ab OR anesthesia:ti,ab OR opioid*:ti,ab OR antipsychotic*:ti,ab OR 'anti psychotic*':ti,ab OR antihistamine*:ti,ab OR 'antihistamine*':ti,ab OR hypnotic*:ti,ab OR sedat*:ti,ab OR tranquil*:ti,ab | 568328 |
| #8 | (symptom* NEAR/6 (relie* OR control*)):ti,ab | 91692 |
| #9 | #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 | 2329266 |
| #10 | palliative therapy'/exp | 103393 |
| #11 | terminal care'/exp | 65302 |
| #12 | terminally ill patient'/exp | 8233 |
| #13 | palliat*:ti,ab | 109000 |
| #14 | (terminal* NEAR/6 (care OR caring OR ill*)):ti,ab | 12373 |
| #15 | (end NEAR/3 life):ti,ab | 31474 |
| #16 | hospice*:ti,ab | 18128 |
| #17 | terminal stage*:ti,ab | 4201 |

| | | |
|-----|---|---------|
| #18 | dying:ti,ab | 42155 |
| #19 | (close NEAR/6 death):ti,ab | 1236 |
| #20 | ((incurable OR advanced) NEAR/6 (ill* OR disease*)):ti,ab | 83812 |
| #21 | #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 | 319976 |
| #22 | #9 AND #21 | 32815 |
| #23 | physiologic monitoring'/exp | 5680 |
| #24 | neurophysiological monitoring'/exp | 923 |
| #25 | 'follow up'/exp | 1428062 |
| #26 | follow*:ti,ab | 4568048 |
| #27 | monitor*:ti,ab | 1020459 |
| #28 | 'questionnaire'/exp | 651930 |
| #29 | 'reproducibility'/exp | 202783 |
| #30 | 'outcome assessment'/exp | 491804 |
| #31 | 'psychometry'/exp | 88587 |
| #32 | ((awareness OR sedati*) NEAR/3 (level OR depth)):ti,ab | 7489 |
| #33 | discomfort*:ti,ab | 64318 |
| #34 | (symptom* NEAR/6 (control* OR burden OR refract*)):ti,ab | 63792 |
| #35 | 'nausea and vomiting'/exp | 338299 |
| #36 | 'dyspnea'/exp | 156905 |
| #37 | 'agitation'/exp | 25235 |
| #38 | 'pain'/exp | 1253100 |
| #39 | 'fatigue'/exp | 216402 |
| #40 | 'delirium'/exp | 29119 |
| #41 | #32 OR #33 OR #34 OR #35 OR #36 OR #37 OR #38 OR #39 OR #40 | 1741716 |
| #42 | #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 | 6627356 |
| #43 | #22 AND #41 AND #42 | 5381 |
| #44 | #22 AND #41 AND #42 AND ([article]/lim OR [article in press]/lim OR [review]/lim) AND ([dutch]/lim OR [english]/lim OR [french]/lim OR [german]/lim) AND ([embase]/lim OR [medline]/lim OR [pubmed-not-medline]/lim) AND [2010-2019]/py AND [medline]/lim | 1307 |

Cochrane Library (via Wiley)

- #1 MeSH descriptor: [Central Nervous System Depressants] explode all trees
- #2 MeSH descriptor: [Anesthesia] explode all trees
- #3 MeSH descriptor: [Benzodiazepines] explode all trees
- #4 MeSH descriptor: [Barbiturates] explode all trees
- #5 MeSH descriptor: [Histamine Antagonists] explode all trees
- #6 MeSH descriptor: [Psychotropic Drugs] explode all trees
- #7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*):ti,ab
- #8 (symptom* NEAR/6 (relie* or control*)):ti,ab
- #9 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
- #10 MeSH descriptor: [Palliative Care] explode all trees
- #11 MeSH descriptor: [Terminal Care] explode all trees
- #12 MeSH descriptor: [Terminally Ill] explode all trees
- #13 pallia*:ti,ab
- #14 (terminal* NEAR/6 (care or caring or ill*)):ti,ab
- #15 (terminal-stage* or terminal stage* or dying or (close NEAR/6 death)):ti,ab
- #16 (end NEAR/3 life):ti,ab
- #17 hospice*:ti,ab
- #18 ((end-stage* or end stage*) NEAR/6 (disease* or ill* or care or caring)):ti,ab
- #19 ((incurable or advanced) NEAR/6 (ill* or disease*))
- #20 #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19
- #21 #9 and #20
- #22 MeSH descriptor: [Monitoring, Physiologic] explode all trees
- #23 MeSH descriptor: [Neurophysiological Monitoring] explode all trees
- #24 MeSH descriptor: [Follow-Up Studies] explode all trees
- #25 follow*:ti,ab

- #26 monitor*:ti,ab
- #27 MeSH descriptor: [Surveys and Questionnaires] explode all trees
- #28 MeSH descriptor: [Reproducibility of Results] explode all trees
- #29 MeSH descriptor: [Outcome Assessment (Health Care)] explode all trees
- #30 MeSH descriptor: [Psychometrics] explode all trees
- #31 ((awareness or sedati*) NEAR/3 (level or depth)):ti,ab
- #32 discomfort*:ti,ab
- #33 (symptom* NEAR/6 (control* or burden or refract*)):ti,ab
- #34 MeSH descriptor: [Nausea] explode all trees
- #35 MeSH descriptor: [Dyspnea] explode all trees
- #36 MeSH descriptor: [Psychomotor Agitation] explode all trees
- #37 MeSH descriptor: [Pain] explode all trees
- #38 MeSH descriptor: [Fatigue] explode all trees
- #39 MeSH descriptor: [Delirium] explode all trees
- #40 #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30
- #41 #31 or #32 or #33 or #34 or #35 or #36 or #37 or #38 or #39
- #42 #21 and #40 and #41

Cinahl

| | | |
|-----|--|---------|
| S42 | (S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39) AND (S21 AND S30 AND S40) (Limiters - Published Date: 20100101-20191231; Exclude MEDLINE records; Publication Type: Clinical Trial, Journal Article, Meta Analysis, Meta Synthesis, Practice Guidelines, Randomized Controlled Trial, Research, Review, Systematic Review) | 123 |
| S41 | (S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39) AND (S21 AND S30 AND S40) | 926 |
| S40 | S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 | 239,459 |
| S39 | (MH "Delirium") | 5,512 |
| S38 | (MH "Fatigue+") | 19,936 |
| S37 | (MH "Pain+") | 180,119 |
| S36 | (MH "Agitation") OR (MH "Psychomotor Agitation+") | 3,174 |
| S35 | (MH "Dyspnea") | 7,786 |
| S34 | (MH "Nausea") | 3,796 |
| S33 | (symptom* N6 (control* or burden or refract*)) | 15,860 |
| S32 | discomfort* | 12,472 |
| S31 | ((awareness or sedati*) N3 (level or depth)) | 2,730 |
| S30 | (S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29) | 966,234 |
| S29 | (MH "Psychometrics") | 22,941 |
| S28 | (MH "Outcome Assessment") | 39,096 |
| S27 | (MH "Reproducibility of Results") | 56,330 |
| S26 | (MH "Surveys+") OR (MH "Structured Questionnaires") | 206,154 |
| S25 | monitor* | 151,068 |
| S24 | follow* | 539,467 |
| S23 | (MH "After Care") | 11,975 |
| S22 | (MH "Monitoring, Physiologic+") | 88,278 |
| S21 | S9 AND S20 | 8,588 |
| S20 | S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 | 103,469 |
| S19 | ((incurable or advanced) N6 (ill* or disease*)) | 10,768 |
| S18 | ((end-stage* or end stage*) N6 (disease* or ill* or care or caring)) | 9,922 |
| S17 | hospice* | 18,170 |
| S16 | (end N3 life) | 17,886 |
| S15 | (terminal-stage* or terminal stage* or dying or (close N6 death)) | 14,327 |
| S14 | (terminal* N6 (care or caring or ill*)) | 26,223 |
| S13 | palliat* | 46,075 |
| S12 | (MH "Terminally Ill Patiënts+") | 10,707 |
| S11 | (MH "Terminal Care+") | 57,294 |
| S10 | (MH "Palliative Care") | 31,514 |
| S9 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 | 280,442 |

| | | |
|----|---|---------|
| S8 | (symptom* and (relie* or control*)) | 94,703 |
| S7 | (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*) | 122,631 |
| S6 | (MH "Psychotropic Drugs+") | 50,890 |
| S5 | (MH "Histamine Antagonists+") | 5,286 |
| S4 | (MH "Barbiturates+") | 1,478 |
| S3 | (MH "Antianxiety Agents, Benzodiazepine+") | 8,447 |
| S2 | (MH "Anesthesia+") | 40,086 |
| S1 | (MH "Central Nervous System Depressants+") | 94,604 |

Methodology report PICO 3

Key question

1.1.3 Uitgangsvraag 3 (module 4.3)

Wat is het effect van sederen tot volledig bewustzijnsverlies vanaf het begin van de palliatieve sedatie bij een patiënt met refractaire symptomen in vergelijking met het proportioneel sederen op de tevredenheid van en door naasten ervaren kwaliteit van leven en sterven (van de patiënt) en de tijd tot overlijden?

P: Patiënten met een indicatie voor palliatieve sedatie.

I: Sederen tot volledig bewustzijnsverlies.

C: Proportioneel sederen.

O: Tevredenheid van en door naasten ervaren, kwaliteit van leven en sterven (van de patiënt), tijd tot overlijden.

Search strategy

Search date: July 18 2019.

Databases: OVID Medline, Embase, Cochrane Library, Cinahl (see appendix for search strings).

Search limits:

- Publication date: 1990-2019;
- English, French, Dutch and German only;
- Study design: meta-analyses, systematic reviews, comparative cohort studies of at least 50 patients.

Search Results

Table 11. Overall search results

| Database | Number of hits |
|---|----------------|
| OVID Medline | 975 |
| OVID PreMedline | 19 |
| EMBASE.com | 683 |
| Cochrane Database of Systematic Reviews | 1 |
| CENTRAL | 29 |
| Cinahl | 870 |
| Total hits | 2577 |
| N excluded (language, duplicates) | 756 |
| Total unique eligible hits | 1821 |

Of the remaining 89 papers, the full-text was retrieved. Based on the full-text, an additional 85 papers were excluded.

Included studies

- Azoulay D, Shahal-Gassner R, Yehezkel M, Eliyahu E, Weigert N, Ein-Mor E, et al. Palliative Sedation at the End of Life: Patterns of Use in an Israeli Hospice. *Am J Hosp Palliat Care*. 2016;33(4):369-73.
- Goncalves F, Cordero A, Almeida A, Cruz A, Rocha C, Feio M, et al. A survey of the sedation practice of Portuguese palliative care teams. *Support Care Cancer*. 2012;20(12):3123-7.

- Imai K, Morita T, Yokomichi N, Mori M, Naito AS, Tsukuura H, et al. Efficacy of two types of palliative sedation therapy defined using intervention protocols: proportional vs. deep sedation. *Support Care Cancer*. 2018;26(6):1763-71
- Won Y.-W, Chun H.S, Seo M, Kim R.B, Kim J.H, Kang J.H. Clinical Patterns of Continuous and Intermittent Palliative Sedation in Patients With Terminal Cancer: A Descriptive, Observational Study. *J. Pain Symptom Manage*. 2019;58(1):65-71 Table 8. Key question 4: overview of excluded studies based on full-text evaluation.

Table 12. Key question 6: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|---|--|
| a nation-wide study in palliative care units in Austria. <i>BMC Palliative Care</i> . 2016;15:1-8. | Dubbel |
| Abarshi E, Rietjens J, Robijn L, Caraceni A, Payne S, Deliens L, et al. International variations in clinical practice guidelines for palliative sedation: a systematic review. <i>BMJ support</i> . 2017;7(3):223-9. | Review van richtlijnen, geen verwijzing naar vergelijkende literatuur |
| Alonso-Babarro A, Varela-Cerdeira M, Torres-Vigil I, Rodriguez-Barrientos R, Bruera E. At-home palliative sedation for end-of-life cancer patients. <i>Palliat Med</i> . 2010;24(5):486-92. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Alt-Epping B, Sitte T, Nauck F, Radbruch L. Sedation in palliative medicine: Guidelines for the use of sedation in palliative care : European Association for Palliative Care (EAPC). <i>Schmerz</i> . 2010;24(4):342-54. | Richtlijn, geen verwijzing naar vergelijkende literatuur |
| Anquinet L, Rietjens JAC, Seale C, Seymour J, Deliens L, van der Heide A. The practice of continuous deep sedation until death in Flanders (Belgium), the Netherlands, and the U.K.: a comparative study. <i>J Pain Symptom Manage</i> . 2012;44(1):33-43. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Anquinet L, Rietjens JAC, Van den Block L, Bossuyt N, Deliens L. General practitioners' report of continuous deep sedation until death for patients dying at home: a descriptive study from Belgium. <i>Eur J Gen Pract</i> . 2011;17(1):5-13. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Anquinet L, Rietjens JAC, Vandervoort A, van der Steen JT, Vander Stichele R, Deliens L, et al. Continuous deep sedation until death in nursing home residents with dementia: a case series. <i>J Am Geriatr Soc</i> . 2013;61(10):1768-76. | Case series, enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking |
| Beller EM, van Driel ML, McGregor L, Truong S, Mitchell G. Palliative pharmacological sedation for terminally ill adults. <i>Cochrane Database of Systematic Reviews</i> . 2015;1:02. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Bruinsma SM, Rietjens JAC, Seymour JE, Anquinet L, van der Heide A. The experiences of relatives with the practice of palliative sedation: a systematic review. <i>J Pain Symptom Manage</i> . 2012;44(3):431-45. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Bruinsma SM, van der Heide A, van der Lee ML, Vergouwe Y, Rietjens JAC. No Negative Impact of Palliative Sedation on Relatives' Experience of the Dying Phase and Their Wellbeing after the Patient's Death: An Observational Study. <i>PLoS ONE [Electronic Resource]</i> . 2016;11(2):e0149250. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Bulli F, Miccinesi G, Biancalani E, Fallai M, Mannocci M, Paci E, et al. Continuous deep sedation in home palliative care units: case studies in the Florence area in 2000 and in 2003-2004. <i>Minerva Anesthesiol</i> . 2007;73(5):291-8. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Bush SH, Leonard MM, Agar M, Spiller JA, Hosie A, Wright DK, et al. End-of-life delirium: issues regarding recognition, optimal management, and the role of sedation in the dying phase. <i>J Pain Symptom Manage</i> . 2014;48(2):215-30. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Calvo-Espinos C, Ruiz de Gaona E, Gonzalez C, Ruiz de Galarreta L, Lopez C. Palliative sedation for cancer patients included in a home care program: a retrospective study. <i>Palliat Support Care</i> . 2015;13(3):619-24. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Cameron D, Bridge D, Blitz-Lindeque J. Use of sedation to relieve refractory symptoms in dying patients. <i>SAMJ, S</i> . 2004;Suid-Afrikaanse Tydskrif Vir Geneeskunde. 94(6):445-9. | Geen vergelijking tussen sedatie tot volledig |

| Reference | Reason for exclusion |
|---|--|
| | bewustzijnsverlies en proportionele sedatie |
| Campos-Calderon C, Montoya-Juarez R, Hueso-Montoro C, Hernandez-Lopez E, Ojeda-Virto F, Garcia-Caro MP. Interventions and decision-making at the end of life: the effect of establishing the terminal illness situation. BMC Palliat Care. 2016;15(1):91. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Caraceni A, Zecca E, Martini C, Gorni G, Campa T, Brunelli C, et al. Palliative sedation at the end of life at a tertiary cancer center. Support Care Cancer. 2012;20(6):1299-307. | Case series, enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking |
| Cellarius V, Henry B. Justifying different levels of palliative sedation. Ann Intern Med. 2010;152(5):332; author reply 3. | Letter |
| Chambaere K, Bilsen J, Cohen J, Rietjens JA, Onwuteaka-Philipsen BD, Mortier F, et al. Continuous deep sedation until death in Belgium: a nationwide survey. Arch Intern Med. 2010;170(5):490-3. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Cherny NI, Group EGW. ESMO Clinical Practice Guidelines for the management of refractory symptoms at the end of life and the use of palliative sedation. Annals of Oncology. 2014;25(3). | Richtlijn, geen verwijzing naar vergelijkende literatuur |
| Claessens P, Menten J, Schotsmans P, Broeckaert B, Palsed C. Palliative sedation, not slow euthanasia: a prospective, longitudinal study of sedation in Flemish palliative care units. J Pain Symptom Manage. 2011;41(1):14-24. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Claessens P, Menten J, Schotsmans P, Broeckaert B. Level of consciousness in dying patients. The role of palliative sedation: a longitudinal prospective study. Am J Hosp Palliat Care. 2012;29(3):195-200. | Verkeerde uitkomstmaat |
| Claessens P, Menten J, Schotsmans P, Broeckaert B. Palliative sedation: a review of the research literature. J Pain Symptom Manage. 2008;36(3):310-33. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Cohen J, Bilsen J, Fischer S, Lofmark R, Norup M, van der Heide A, et al. End-of-life decision-making in Belgium, Denmark, Sweden and Switzerland: does place of death make a difference? J Epidemiol Community Health. 2007;61(12):1062-8. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| de Graeff A, Dean M. Palliative sedation therapy in the last weeks of life: a literature review and recommendations for standards. J Palliat Med. 2007;10(1):67-85. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Donker GA, Slotman FG, Spreeuwenberg P, Francke AL. Palliative sedation in Dutch general practice from 2005 to 2011: a dynamic cohort study of trends and reasons. Br J Gen Pract. 2013;63(615):e669-75. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Elsayem A, Curry Iii E, Boohene J, Munsell MF, Calderon B, Hung F, et al. Use of palliative sedation for intractable symptoms in the palliative care unit of a comprehensive cancer center. Support Care Cancer. 2009;17(1):53-9. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Engstrom J, Bruno E, Holm B, Hellzen O. Palliative sedation at end of life - a systematic literature review. EUR J ONCOL NURS. 2007;11(1):26-35. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Epker JL, Bakker J, Lingsma HF, Kompanje EJO. An Observational Study on a Protocol for Withdrawal of Life-Sustaining Measures on Two Non-Academic Intensive Care Units in The Netherlands: Few Signs of Distress, No Suffering? J Pain Symptom Manage. 2015;50(5):676-84. | Niet over palliatieve sedatie |
| Fainsinger RL, De Moissac D, Mancini I, Oneschuk D. Sedation for delirium and other symptoms in terminally ill patients in Edmonton. Journal of Palliative Care. 2000;16(2):5-10. | Geen vergelijking tussen sedatie tot volledig |

| Reference | Reason for exclusion |
|---|---|
| | bewustzijnsverlies en proportionele sedatie |
| Fainsinger RL, Landman W, Hoskings M, Bruera E. Sedation for uncontrolled symptoms in a South African hospice. <i>J Pain Symptom Manage.</i> 1998;16(3):145-52. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Hasselaar JGJ, Reuzel RPB, Verhagen SCAHHVM, de Graeff A, Vissers KCP, Crul BJP. Improving prescription in palliative sedation: compliance with dutch guidelines. <i>Arch Intern Med.</i> 2007;167(11):1166-71. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Hoek P, Grandjean I, Verhagen CAHHVM, Jansen-Landheer MLEA, Schers HJ, Galesloot C, et al. Addressing Palliative Sedation during Expert Consultation: A Descriptive Analysis of the Practice of Dutch Palliative Care Consultation Teams. <i>PLoS ONE [Electronic Resource].</i> 2015;10(8):e0136309. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Holzappel L, Demingeon G, Piralla B, Biot L, Nallet B. A four-step protocol for limitation of treatment in terminal care. An observational study in 475 intensive care unit patiënts. <i>Intensive Care Med.</i> 2002;28(9):1309-15. | Niet over palliatieve sedatie |
| Hopprich A, Gunther LD, Laufenberg-Feldmann R, Reinholz U, Weber M. Palliative sedation at a university palliative care unit--a descriptive analysis. <i>Dtsch Med Wochenschr.</i> 2016;141(8):e60-6. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Hurst SA, Zellweger U, Bosshard G, Bopp M, Swiss Medical End-of-Life Decisions Study G. Medical end-of-life practices in Swiss cultural regions: a death certificate study. <i>BMC Med.</i> 2018;16(1):54. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Kettemann D, Funke A, Maier A, Rosseau S, Meyer R, Spittel S, et al. Clinical characteristics and course of dying in patients with amyotrophic lateral sclerosis withdrawing from long-term ventilation. <i>Amyotroph Lateral Scler Frontotemporal Degener.</i> 2017;18(1-2):53-9. | Verkeerde vergelijking |
| Kim YS, Song H-N, Ahn JS, Koh S-J, Ji JH, Hwang IG, et al. Sedation for terminally ill cancer patients: A multicenter retrospective cohort study in South Korea. <i>Medicine (Baltimore).</i> 2019;98(5):e14278. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Kohara H, Ueoka H, Takeyama H, Murakami T, Morita T. Sedation for terminally ill patients with cancer with uncontrollable physical distress. <i>J Palliat Med.</i> 2005;8(1):20-5. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Lundstrom S, Gyllenhammar E, Martinsson U, Strang P. Together we can: experiences from 7 years of cross-sectional studies in a Swedish palliative care clinical research network. <i>Palliat Med.</i> 2010;24(3):261-6. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Maeda I, Morita T, Yamaguchi T, Inoue S, Ikenaga M, Matsumoto Y, et al. Effect of continuous deep sedation on survival in patients with advanced cancer (J-Proval): a propensity score-weighted analysis of a prospective cohort study. <i>Lancet Oncol.</i> 2016;17(1):115-22. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Maltoni M, Miccinesi G, Morino P, Scarpi E, Bulli F, Martini F, et al. Prospective observational Italian study on palliative sedation in two hospice settings: differences in casemixes and clinical care. <i>Support Care Cancer.</i> 2012;20(11):2829-36. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Maltoni M, Pittureri C, Scarpi E, Piccinini L, Martini F, Turci P, et al. Palliative sedation therapy does not hasten death: results from a prospective multicenter study. <i>Ann Oncol.</i> 2009;20(7):1163-9. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Maltoni M, Scarpi E, Nanni O. Palliative sedation in end-of-life care. <i>Curr Opin Oncol.</i> 2013;25(4):360-7. | Narrative review |

| Reference | Reason for exclusion |
|---|--|
| Maltoni M, Scarpi E, Rosati M, Dorni S, Fabbri L, Martini F, et al. Palliative sedation in end-of-life care and survival: a systematic review. <i>J Clin Oncol.</i> 2012;30(12):1378-83. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Maltoni M, Setola E. Palliative Sedation in Patients With Cancer. <i>Cancer Control.</i> 2015;22(4):433-41. | Narrative review |
| Mercadante S, Intraivaia G, Villari P, Ferrera P, David F, Casuccio A. Controlled sedation for refractory symptoms in dying patients. <i>J Pain Symptom Manage.</i> 2009;37(5):771-9. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Mercadante S, Porzio G, Valle A, Aielli F, Casuccio A, Home Care-Italy G. Palliative sedation in patients with advanced cancer followed at home: a prospective study. <i>J Pain Symptom Manage.</i> 2014;47(5):860-6. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Mercadante S, Porzio G, Valle A, Fusco F, Aielli F, Adile C, et al. Palliative sedation in advanced cancer patients followed at home: a retrospective analysis. <i>J Pain Symptom Manage.</i> 2012;43(6):1126-30. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Mercadante S, Porzio G, Valle A, Fusco F, Aielli F, Costanzo V, et al. Palliative sedation in patients with advanced cancer followed at home: a systematic review. <i>J Pain Symptom Manage.</i> 2011;41(4):754-60. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Mermet O, Fourcade C. Deep and continuous sedation maintained until death: specific features at home. <i>Rev Prat.</i> 2017;67(10):1144-6. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Miccinesi G, Rietjens JAC, Deliens L, Paci E, Bosshard G, Nilstun T, et al. Continuous deep sedation: physicians' experiences in six European countries. <i>J Pain Symptom Manage.</i> 2006;31(2):122-9. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Morita T, Chinone Y, Ikenaga M, Miyoshi M, Nakaho T, Nishitaten K, et al. Efficacy and safety of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan. <i>J Pain Symptom Manage.</i> 2005;30(4):320-8. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Morita T, Ikenaga M, Adachi I, Narabayashi I, Kizawa Y, Honke Y, et al. Family experience with palliative sedation therapy for terminally ill cancer patients. <i>J Pain Symptom Manage.</i> 2004;28(6):557-65. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Morita T, Inoue S, Chihara S. Sedation for symptom control in Japan: the importance of intermittent use and communication with family members. <i>J Pain Symptom Manage.</i> 1996;12(1):32-8. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Morita T, Tsunoda J, Inoue S, Chihara S. Effects of high dose opioids and sedatives on survival in terminally ill cancer patients. <i>J Pain Symptom Manage.</i> 2001;21(4):282-9. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Onwuteaka-Philipsen BD, Brinkman-Stoppelenburg A, Penning C, de Jong-Krul GJF, van Delden JJM, van der Heide A. Trends in end-of-life practices before and after the enactment of the euthanasia law in the Netherlands from 1990 to 2010: a repeated cross-sectional survey. <i>Lancet.</i> 2012;380(9845):908-15. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Papavasiliou E, Payne S, Brearley S, Brown J, Seymour J. Continuous sedation (CS) until death: mapping the literature by bibliometric analysis. <i>J Pain Symptom Manage.</i> 2013;45(6):1073-82.e10. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |

| Reference | Reason for exclusion |
|--|---|
| Parra Palacio S, Giraldo Hoyos CE, Arias Rodriguez C, Mejia Arrieta D, Vargas Gomez JJ, Krikorian A. Palliative sedation in advanced cancer patients hospitalized in a specialized palliative care unit. Support Care Cancer. 2018;26(9):3173-80. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Pompili A, Telera S, Villani V, Pace A. Home palliative care and end of life issues in glioblastoma multiforme: results and comments from a homogeneous cohort of patients. Neurosurg. 2014;37(6):E5. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Porzio G, Aielli F, Verna L, Micolucci G, Aloisi P, Ficorella C. Efficacy and safety of deep, continuous palliative sedation at home: a retrospective, single-institution study. Support Care Cancer. 2010;18(1):77-81. | Case series, enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking |
| Prado BL, Gomes DBD, Uson Junior PLS, Taranto P, Franca MS, Eiger D, et al. Continuous palliative sedation for patients with advanced cancer at a tertiary care cancer center. BMC Palliat Care. 2018;17(1):13. | Enkel sedatie tot volledig bewustzijnsverlies , geen vergelijking met proportionele sedatie |
| Pype P, Teuwen I, Mertens F, Sercu M, De Sutter A. Suboptimal palliative sedation in primary care: an exploration. Acta Clin Belg. 2018;73(1):21-8. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking |
| Rady MY, Verheijde JL. Empirical Clinical Research in Continuous Deep Sedation at the End of Life. J Pain Symptom Manage. 2017;53(6):e10-e2. | Letter |
| Rietjens J, van Delden J, Onwuteaka-Philipsen B, Buiting H, van der Maas P, van der Heide A. Continuous deep sedation for patiënts nearing death in the Netherlands: descriptive study. BMJ. 2008;336(7648):810-3. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking |
| Rietjens JAC, van Zuylen L, van Veluw H, van der Wijk L, van der Heide A, van der Rijt CCD. Palliative sedation in a specialized unit for acute palliative care in a cancer hospital: comparing patients dying with and without palliative sedation. J Pain Symptom Manage. 2008;36(3):228-34. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Robijn L, Cohen J, Rietjens J, Deliëns L, Chambaere K. Trends in Continuous Deep Sedation until Death between 2007 and 2013: A Repeated Nationwide Survey. PLoS ONE [Electronic Resource]. 2016;11(6):e0158188. | Enkel sedatie tot volledig bewustzijnsverlies , geen vergelijking |
| Rosengarten OS, Lamed Y, Zisling T, Feigin A, Jacobs JM. Palliative sedation at home. Journal of Palliative Care. 2009;25(1):5-11. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Rys S, Deschepper R, Mortier F, Deliëns L, Bilsen J. Continuous sedation until death with or without the intention to hasten death--a nationwide study in nursing homes in Flanders, Belgium. J AM MED DIR ASSOC. 2014;15(8):570-5. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Rys S, Mortier F, Deliëns L, Bilsen J. The practice of continuous sedation until death in nursing homes in Flanders, Belgium: a nationwide study. J Am Geriatr Soc. 2014;62(10):1869-76. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking met proportionele sedatie |
| Sato K, Miyashita M, Morita T, Tsuneto S, Shima Y. End-of-Life Medical Treatments in the Last Two Weeks of Life in Palliative Care Units in Japan, 2005-2006: A Nationwide Retrospective Cohort Survey. J Palliat Med. 2016;19(11):1188-96. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Schildmann E, Schildmann J. Palliative sedation therapy: a systematic literature review and critical appraisal of available guidance on indication and decision making. J Palliat Med. 2014;17(5):601-11. | Review van richtlijnen, geen verwijzing naar vergelijkende literatuur |
| Schur S, Weixler D, Gabl C, Kreye G, Likar R, Masel EK, et al. Sedation at the end of life - a nation-wide study in palliative care units in Austria. BMC Palliative Care. 2016;15(50):14. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Song HN, Ahn JS, Koh SJ, Kim YS, Jun HJ, Hwang IG, et al. Use of sedatives in dying patients: a multicenter study. Supportive care in cancer. Conference: 2017 international | Geen vergelijking tussen sedatie tot volledig |

| Reference | Reason for exclusion |
|---|---|
| MASCC/ISOO symposium: supportive care in cancer. United states. 2017;25(2 Supplement 1):S202-S3. | bewustzijnsverlies en proportionele sedatie; abstract |
| Stiel S, Nurnus M, Ostgathe C, Klein C. Palliative sedation in Germany: factors and treatment practices associated with different sedation rate estimates in palliative and hospice care services. BMC Palliat Care. 2018;17(1):48. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie; abstract |
| Sykes N, Thorns A. Sedative use in the last week of life and the implications for end-of-life decision making. Arch Intern Med. 2003;163(3):341-4. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie; abstract |
| van Deijck RHPD, Hasselaar JGJ, Krijnsen PJC, Gloudemans AJM, Verhagen SCAHHVM, Vissers KCP, et al. The Practice of Continuous Palliative Sedation in Long-Term Care for Frail Patients with Existential Suffering. Journal of Palliative Care. 2015;31(3):141-9. | Enkel sedatie tot volledig bewustzijnsverlies sedatie, geen vergelijking |
| van Deijck RHPD, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. Determinants of the administration of continuous palliative sedation: a systematic review. J Palliat Med. 2013;16(12):1624-32. | Systematische review over sedatie tot volledig bewustzijnsverlies |
| van Deijck RHPD, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. Level of Discomfort Decreases After the Administration of Continuous Palliative Sedation: A Prospective Multicenter Study in Hospices and Palliative Care Units. J Pain Symptom Manage. 2016;52(3):361-9. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking |
| van Deijck RHPD, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. Patient-Related Determinants of the Administration of Continuous Palliative Sedation in Hospices and Palliative Care Units: A Prospective, Multicenter, Observational Study. J Pain Symptom Manage. 2016;51(5):882-9. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie; abstract |
| Van Deijck RHPD, Krijnsen PJC, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. The practice of continuous palliative sedation in elderly patients: a nationwide explorative study among Dutch nursing home physicians. J Am Geriatr Soc. 2010;58(9):1671-8. | Enkel sedatie tot volledig bewustzijnsverlies, geen vergelijking |
| van der Heide A, Onwuteaka-Philipsen BD, Rurup ML, Buiting HM, van Delden JJM, Hanssen-de Wolf JE, et al. End-of-life practices in the Netherlands under the Euthanasia Act. N Engl J Med. 2007;356(19):1957-65. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Verkerk M, van Wijlick E, Legemaate J, de Graeff A. A national guideline for palliative sedation in the Netherlands. J Pain Symptom Manage. 2007;34(6):666-70. | Richtlijn, geen verwijzing naar vergelijkende literatuur |
| Vissers KCP, Hasselaar J, Verhagen SAHHVM. Sedation in palliative care. Curr Opin Anaesthesiol. 2007;20(2):137-42. | Narrative review |
| Xiaoli Gu, Wenwu Cheng, Menglei Chen, Minghui Liu, Zhe Zhang. Palliative sedation for terminally ill cancer patients in a tertiary cancer center in Shanghai, China. BMC Palliative Care. 2015;14(1):1-6. | Geen vergelijking tussen sedatie tot volledig bewustzijnsverlies en proportionele sedatie |
| Ziegler S, Merker H, Schmid M, Puhan MA. The impact of the inpatient practice of continuous deep sedation until death on healthcare professionals' emotional well-being: a systematic review. BMC Palliat Care. 2017;16(1):30. | Enkel sedatie tot volledig bewustzijnsverlies sedatie, geen vergelijking |

B3 Search strings Question 3

Medline (ovid)

1. exp Central Nervous System Depressants/ (647987)
2. exp Anesthesia/ (186267)
3. exp Benzodiazepines/ (64029)
4. exp Barbiturates/ (53460)
5. exp Histamine Antagonists/ (60738)

6. exp Psychotropic Drugs/ (361061)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (515283)
8. (symptom* adj6 (relie* or control*)).mp. (54067)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (1134650)
10. Palliative Care/ (51187)
11. exp Terminal Care/ (49132)
12. Terminally Ill/ (6309)
13. palliat*.mp. (81206)
14. (terminal* adj6 (care or caring or ill*)).mp. (35329)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (33452)
16. (end adj3 life).mp. (19170)
17. hospice*.mp. (14377)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (42082)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (46501)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (235192)
21. 9 and 20 (13468)
22. exp Conscious Sedation/ (8490)
23. (sedat* adj6 (deep or intermitt* or continu* or palliat* or terminal* or proport*)).mp. (3676)
24. 22 or 23 (11136)
25. 21 and 24 (978)
26. limit 25 to yr="2010 - 2019" (561)
27. limit 25 to yr="1990 - 2009" (414)
28. 26 or 27 (975)

PreMedline (OVID)

1. exp Central Nervous System Depressants/ (179)
2. exp Anesthesia/ (51)
3. exp Benzodiazepines/ (15)
4. exp Barbiturates/ (1)
5. exp Histamine Antagonists/ (14)
6. exp Psychotropic Drugs/ (67)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (6144)
8. (symptom* adj6 (relie* or control*)).mp. (1223)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (7423)
10. Palliative Care/ (36)
11. exp Terminal Care/ (28)
12. Terminally Ill/ (7)
13. palliat*.mp. (1680)
14. (terminal* adj6 (care or caring or ill*)).mp. (230)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (628)
16. (end adj3 life).mp. (815)
17. hospice*.mp. (341)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (1013)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (1009)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (4562)
21. 9 and 20 (220)
22. exp Conscious Sedation/ (9)
23. (sedat* adj6 (deep or intermitt* or continu* or palliat* or terminal* or proport*)).mp. (66)
24. 22 or 23 (73)
25. 21 and 24 (19)
26. limit 25 to yr="2010 - 2019" (18)
27. limit 25 to yr="1990 - 2009" (1)
28. 26 or 27 (19)

Embase (via embase.com)

| # | Search Terms | Number of hits |
|---|--------------|----------------|
|---|--------------|----------------|

| | | |
|-----|---|---------|
| #1 | central depressant agent/exp | 1199691 |
| #2 | anesthesia/exp | 347096 |
| #3 | benzodiazepine derivative/exp | 223408 |
| #4 | barbituric acid derivative/exp | 147608 |
| #5 | antihistaminic agent/exp | 247432 |
| #6 | psychotropic agent/exp | 961613 |
| #7 | benzodiazepine*.ti,ab OR barbiturate*.ti,ab OR anaesthesia:ti,ab OR anesthesia:ti,ab OR opioid*.ti,ab OR antipsychotic*.ti,ab OR 'anti psychotic'.ti,ab OR antihistamine*.ti,ab OR 'anti histamine'.ti,ab OR hypnotic*.ti,ab OR sedat*.ti,ab OR tranquil*.ti,ab | 568328 |
| #8 | (symptom* NEAR/6 (relie* OR control*)):ti,ab | 91692 |
| #9 | #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 | 2329266 |
| #10 | palliative therapy/exp | 103393 |
| #11 | terminal care/exp | 65302 |
| #12 | terminally ill patiënt/exp | 8233 |
| #13 | palliat*.ti,ab | 109000 |
| #14 | (terminal* NEAR/6 (care OR caring OR ill*)):ti,ab | 12373 |
| #15 | (end NEAR/3 life):ti,ab | 31474 |
| #16 | hospice*.ti,ab | 18128 |
| #17 | terminal stage*.ti,ab | 4201 |
| #18 | dying:ti,ab | 42155 |
| #19 | (close NEAR/6 death):ti,ab | 1236 |
| #20 | ((incurable OR advanced) NEAR/6 (ill* OR disease*)):ti,ab | 83812 |
| #21 | #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 | 319976 |
| #22 | #9 AND #21 | 32815 |
| #23 | conscious sedation/exp | 7133 |
| #24 | deep sedation/exp | 2533 |
| #25 | (sedat* NEAR/6 (deep OR intermitt* OR continu* OR palliat* OR terminal* OR proport*)):ti,ab | 5546 |
| #26 | #23 OR #24 OR #25 | 12837 |
| #27 | #22 AND #26 | 1426 |
| #28 | #22 AND #26 AND ([article]/lim OR [article in press]/lim OR [review]/lim) AND ([dutch]/lim OR [english]/lim OR [french]/lim OR [german]/lim) AND ([embase]/lim OR [medline]/lim OR [pubmed-not-medline]/lim) AND [2010-2019]/py AND [medline]/lim | 441 |
| #29 | #22 AND #26 AND ([article]/lim OR [article in press]/lim OR [review]/lim) AND ([dutch]/lim OR [english]/lim OR [french]/lim OR [german]/lim) AND ([embase]/lim OR [medline]/lim OR [pubmed-not-medline]/lim) AND [1990-2009]/py AND [medline]/lim | 242 |
| #30 | #28 OR #29 | 683 |

Cochrane library (via Wiley)

- #1 MeSH descriptor: [Central Nervous System Depressants] explode all trees
- #2 MeSH descriptor: [Anesthesia] explode all trees
- #3 MeSH descriptor: [Benzodiazepines] explode all trees
- #4 MeSH descriptor: [Barbiturates] explode all trees
- #5 MeSH descriptor: [Histamine Antagonists] explode all trees
- #6 MeSH descriptor: [Psychotropic Drugs] explode all trees
- #7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*):ti,ab
- #8 (symptom* NEAR/6 (relie* or control*)):ti,ab
- #9 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
- #10 MeSH descriptor: [Palliative Care] explode all trees
- #11 MeSH descriptor: [Terminal Care] explode all trees
- #12 MeSH descriptor: [Terminally Ill] explode all trees
- #13 pallia*.ti,ab
- #14 (terminal* NEAR/6 (care or caring or ill*)):ti,ab
- #15 (terminal-stage* or terminal stage* or dying or (close NEAR/6 death)):ti,ab
- #16 (end NEAR/3 life):ti,ab
- #17 hospice*.ti,ab
- #18 ((end-stage* or end stage*) NEAR/6 (disease* or ill* or care or caring)):ti,ab

- #19 ((incurable or advanced) NEAR/6 (ill* or disease*))
- #20 #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19
- #21 #9 and #20
- #22 MeSH descriptor: [Conscious Sedation] explode all trees
- #23 (sedat* NEAR/6 (deep or intermitt* or continu* or palliat* or terminal* or proport*)):ti,ab
- #24 #22 or #23
- #25 #21 and #24

Cinahl

| | | |
|-----|--|---------|
| S26 | S21 AND S24 (Limiters - Published Date: 20100101-20191231; Exclude MEDLINE records; Publication Type: Clinical Trial, Journal Article, Meta Analysis, Meta Synthesis, Practice Guidelines, Randomized Controlled Trial, Research, Review, Systematic Review) | 258 |
| S25 | S21 AND S24 | 1,816 |
| S24 | S22 OR S23 | 6,201 |
| S23 | (MH "Conscious Sedation") | 2,837 |
| S22 | TX (sedat* N6 (deep or intermitt* or continu* or palliat* or terminal* or proport*)) | 3,660 |
| S21 | S9 AND S20 | 44,014 |
| S20 | S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 | 188,381 |
| S19 | TX ((incurable or advanced) N6 (ill* or disease*)) | 24,614 |
| S18 | TX ((end-stage* or end stage*) N6 (disease* or ill* or care or caring)) | 17,124 |
| S17 | TX hospice* | 52,038 |
| S16 | TX (end N3 life) | 40,465 |
| S15 | TX (terminal-stage* or terminal stage* or dying or (close N6 death)) | 44,057 |
| S14 | TX (terminal* N6 (care or caring or ill*)) | 35,662 |
| S13 | TX palliat* | 88,154 |
| S12 | (MH "Terminally Ill Patiënts+") | 10,707 |
| S11 | (MH "Terminal Care+") | 57,294 |
| S10 | (MH "Palliative Care") | 31,514 |
| S9 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 | 470,059 |
| S8 | TX (symptom* and (relie* or control*)) | 225,229 |
| S7 | TX (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*) | 218,721 |
| S6 | (MH "Psychotropic Drugs+") | 50,890 |
| S5 | (MH "Histamine Antagonists+") | 5,286 |
| S4 | (MH "Barbiturates+") | 1,478 |
| S3 | (MH "Antianxiety Agents, Benzodiazepine+") | 8,447 |
| S2 | (MH "Anesthesia+") | 40,086 |
| S1 | (MH "Central Nervous System Depressants+") | 94,604 |

Methodology report PICO 4

Key question

1.1.4 Uitgangsvraag 4 (module 4.5)

Wat is de effectiviteit van midazolam, benzodiazepines, barbituraten, propofol, levomepromazine, promethazine, sedativa, thiopenthal, en/of opioïden bij patiënten die een indicatie hebben voor palliatieve sedatie?

P: Patiënten die een indicatie hebben voor palliatieve sedatie.

I: Midazolam, benzodiazepines, barbituraten, propofol, levomepromazine, promethazine, sedativa, thiopenthal, en/of opioïden.

C: Andere medicamenteuze behandeling.

O: Symptoombestrijding; kwaliteit van sterven (ervaren door de patiënt); levenskwaliteit; tevredenheid van naasten.

Search strategy

Search date: July 18 2019.

Databases: OVID Medline, Embase, Cochrane Library, Cinahl (see appendix for search strings).

Search limits:

- Publication date: 2010-2019;
- English, French, Dutch and German only;
- Study design: meta-analyses, systematic reviews, comparative cohort studies of at least 50 patiënts.

Search Results

Table 5. Overall search results

| Database | Number of hits |
|---|----------------|
| OVID Medline | 4877 |
| OVID PreMedline | 92 |
| EMBASE.com | 3768 |
| Cochrane Database of Systematic Reviews | 34 |
| CENTRAL | 562 |
| Cinahl | 657 |
| Total hits | 9990 |
| N excluded (language, duplicates) | 2150 |
| Total unique eligible hits | 7840 |

Excluded studies

3326 unique hits were screened on title and abstract. Of these, 3291 were excluded. The most important reasons for exclusion were:

1. Other intervention: interventions other than those specified
2. Wrong study design: narrative reviews, case reports, etc.

Of the remaining 132 papers, the full-text was retrieved. Based on the full-text, an additional 129 studies were excluded.

Included studies

- Cowan Jd, Clemens L, Palmer T. Palliative sedation in a southern Appalachian community. American Journal of Hospice & Palliative Medicine. 2006;23(5):360-8.
- Hamatani Y, Nakai E, Nakamura E, Miyata M, Kawano Y, Takada Y, et al. Survey of palliative sedation at end of life in terminally ill heart failure patients — a single-center experience of 5-year follow-up —. Circ. J. 2019;83(7):1607-11.
- Morita T, Chinone Y, Ikenaga M, Miyoshi M, Nakaho T, Nishitaten K, et al. Efficacy and safety of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan. J Pain Symptom Manage. 2005;30(4):320-8.

Table 6. Key question 3: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|---|---|
| Abdul-Razzak A, Lemieux L, Snyman M, Perez G, Sinnarajah A. Description of Continuous Palliative Sedation Practices in a Large Health Region and Comparison with Clinical Practice Guidelines. Journal of Palliative Medicine. 2019;02:02. | Geen vergelijking van medicatie met andere medicatie |
| Agar MR, Lawlor PG, Quinn S, Draper B, Caplan GA, Rowett D, et al. Efficacy of Oral Risperidone, Haloperidol, or Placebo for Symptoms of Delirium Among Patients in Palliative Care: A Randomized Clinical Trial. JAMA Intern Med. 2017;177(1):34-42. | Niet over palliatieve sedatie |
| Alonso-Babarro A, Varela-Cerdeira M, Torres-Vigil I, Rodriguez-Barrientos R, Bruera E. At-home palliative sedation for end-of-life cancer patients. Palliat Med. 2010;24(5):486-92. | Geen vergelijking van medicatie met andere medicatie |
| Alt-Epping B, Sitte T, Nauck F, Radbruch L. Sedation in palliative medicine: Guidelines for the use of sedation in palliative care : European Association for Palliative Care (EAPC). Schmerz. 2010;24(4):342-54. | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |

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|--|---|
| Anquinet L, Rietjens J.A.C, Seale C, Seymour J, Deliëns L, Van Der Heide A. The practice of continuous deep sedation until death in Flanders (Belgium), the Netherlands, and the U.K.: A comparative study. <i>J. Pain Symptom Manage.</i> 2012;44(1):33-43. | Geen vergelijking van medicatie met andere medicatie |
| Anquinet L, Rietjens JAC, Van den Block L, Bossuyt N, Deliëns L. General practitioners' report of continuous deep sedation until death for patients dying at home: a descriptive study from Belgium. <i>Eur J Gen Pract.</i> 2011;17(1):5-13. | Geen vergelijking van medicatie met andere medicatie |
| Azoulay D, Shahal-Gassner R, Yehezkel M, Eliyahu E, Weigert N, Ein-Mor E, et al. Palliative Sedation at the End of Life: Patterns of Use in an Israeli Hospice. <i>Am J Hosp Palliat Care.</i> 2016;33(4):369-73. | Focus op uitkomst 'overleving' |
| Barnes H, McDonald J, Smallwood N, Manser R. Opioids for the palliation of refractory breathlessness in adults with advanced disease and terminal illness. <i>Cochrane Database of Systematic Reviews.</i> 2016;3:31. | Niet over palliatieve sedatie |
| Beller EM, van Driel ML, McGregor L, Truong S, Mitchell G. Palliative pharmacological sedation for terminally ill adults. <i>Cochrane Database of Systematic Reviews.</i> 2015;1:02. | Geen vergelijking van medicatie met andere medicatie |
| Ben-Aharon I, Gafter-Gvili A, Leibovici L, Stemmer SM. Interventions for alleviating cancer-related dyspnea: a systematic review and meta-analysis. <i>Acta Oncol.</i> 2012;51(8):996-1008. | Niet over palliatieve sedatie |
| Benitez-Rosario M.A, Castillo-Adrós M, Garrido-Bernet B, Ascanio-León B. Quality of care in palliative sedation: Audit and compliance monitoring of a clinical protocol. <i>J. Pain Symptom Manage.</i> 2012;44(4):532-41. | Geen vergelijking van medicatie met andere medicatie |
| Bodnar J. A Review of Agents for Palliative Sedation/Continuous Deep Sedation: Pharmacology and Practical Applications. <i>J Pain Pall Care Pharmacother.</i> 2017;31(1):16-37. | Narrative review |
| Booth S, Simon S, Higginson IJ, Harding R, Bausewein C. The efficacy of benzodiazepines for palliating dyspnoea: a systematic review. <i>European journal of cancer.</i> 2011;47:S77-. | Abstract van Cochrane review |
| Bruce A, Boston P. Relieving existential suffering through palliative sedation: discussion of an uneasy practice. <i>J Adv Nurs.</i> 2011;67(12):2732-40. | Geen kwaliteitsbeoordeling van geïnccludeerde onderzoeken |
| Bullì F, Miccinesi G, Biancalani E, Fallai M, Mannocci M, Paci E, et al. Continuous deep sedation in home palliative care units: case studies in the Florence area in 2000 and in 2003-2004. <i>Minerva Anesthesiol.</i> 2007;73(5):291-8. | Geen vergelijking van medicatie met andere medicatie |
| Calvo-Espinos C, Ruiz de Gaona E, Gonzalez C, Ruiz de Galarreta L, Lopez C. Palliative sedation for cancer patients included in a home care program: a retrospective study. <i>Palliat Support Care.</i> 2015;13(3):619-24. | Geen vergelijking van medicatie met andere medicatie |
| Cameron D, Bridge D, Blitz-Lindeque J. Use of sedation to relieve refractory symptoms in dying patients. <i>SAMJ, S.</i> 2004;Suid-Afrikaanse Tydskrif Vir Geneeskunde. 94(6):445-9. | Geen vergelijking van medicatie met andere medicatie |
| Candy B, Jackson KC, Jones L, Leurent B, Tookman A, King M. Drug therapy for delirium in terminally ill adult patients. <i>Cochrane Database of Systematic Reviews.</i> 2012;11:14. | Niet over palliatieve sedatie |
| Caraceni A, Speranza R, Spoldi E, Ambrosetti C.S, Canestrari S, Marinari M, et al. Palliative Sedation in Terminal Cancer Patients Admitted to Hospice or Home Care Programs: Does the Setting Matter? Results From a National Multicenter Observational Study. <i>J. Pain Symptom Manage.</i> 2018;56(1):33-43. | Geen vergelijking van medicatie met andere medicatie |
| Caraceni A, Zecca E, Martini C, Gorni G, Campa T, Brunelli C, et al. Palliative sedation at the end of life at a tertiary cancer center. <i>Support Care Cancer.</i> 2012;20(6):1299-307. | Geen vergelijking van medicatie met andere medicatie |
| Chambaere K, Rietjens JAC, Cohen J, Sterckx S, Mortier F, Deliëns L. Palliative sedation in Flemish palliative care units. <i>J Pain Symptom Manage.</i> 2011;41(6):e1-2; author reply e-5. | Letter |
| Cherny NI, Group EGW. ESMO Clinical Practice Guidelines for the management of refractory symptoms at the end of life and the use of palliative sedation. <i>Annals of Oncology.</i> 2014;25(3). | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |
| Cherny Ni. Palliative sedation for the relief of refractory physical symptoms. <i>Progress in Palliative Care.</i> 2008;16(1):51-62. | Narrative review |
| Chiu TY, Hu WY, Lue BH, Cheng SY, Chen CY. Sedation for refractory symptoms of terminal cancer patients in Taiwan. <i>J Pain Symptom Manage.</i> 2001;21(6):467-72. | Geen vergelijking van medicatie met andere medicatie |

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|--|--|
| Claessens P, Menten J, Schotsmans P, Broeckaert B. Level of consciousness in dying patiënts. The role of palliative sedation: a longitudinal prospective study. <i>Am J Hosp Palliat Care</i> . 2012;29(3):195-200. | Geen vergelijking van medicatie met andere medicatie |
| Claessens P, Menten J, Schotsmans P, Broeckaert B. Palliative sedation: a review of the research literature. <i>J Pain Symptom Manage</i> . 2008;36(3):310-33. | Geen bijkomende info tov gevonden primaire onderzoeken |
| Cowan JD, Walsh D. Terminal sedation in palliative medicine--definition and review of the literature. <i>Support Care Cancer</i> . 2001;9(6):403-7. | Geen kwaliteitsbeoordeling van geïncludeerde onderzoeken |
| Darvill E, Dorman S, Perkins P. Levomepromazine for nausea and vomiting in palliative care. <i>Cochrane Database of Systematic Reviews</i> . 2013;4:30. | Niet over palliatieve sedatie |
| Daud ML. Drug management of terminal symptoms in advanced cancer patients. <i>Curr</i> . 2007;1(3):202-6. | Narrative review |
| Davis MP. Does palliative sedation always relieve symptoms? <i>J Palliat Med</i> . 2009;12(10):875-7. | Narrative review |
| de Graeff A, Dean M. Palliative sedation therapy in the last weeks of life: a literature review and recommendations for standards. <i>J Palliat Med</i> . 2007;10(1):67-85. | Geen bijkomende info tov gevonden primaire onderzoeken |
| Donker GA, Slotman FG, Spreeuwenberg P, Francke AL. Palliative sedation in Dutch general practice from 2005 to 2011: a dynamic cohort study of trends and reasons. <i>Br J Gen Pract</i> . 2013;63(615):e669-75. | Geen vergelijking van medicatie met andere medicatie |
| Dunn J, O'Brien J, Andrews F. Palliative sedation therapy for intolerable suffering: a community hospital develops their clinical practice guideline...Hospice Palliative Care: at a crossroads. November 4-7, 2007, Westin Harbour Castle Hotel, Toronto, Ontario, Canada. <i>Journal of Palliative Care</i> . 2007;23(3):228-. | Geen Full-text |
| Elsayem A, Curry Iii E, Boohene J, Munsell MF, Calderon B, Hung F, et al. Use of palliative sedation for intractable symptoms in the palliative care unit of a comprehensive cancer center. <i>Support Care Cancer</i> . 2009;17(1):53-9. | Verkeerde uitkomsten |
| Enck RE. Drug-induced terminal sedation for symptom control. <i>Am J Hosp Palliat Care</i> . 1991;8(5):3-5. | Narrative review |
| Fainsinger RL, De Moissac D, Mancini I, Oneschuk D. Sedation for delirium and other symptoms in terminally ill patients in Edmonton. <i>Journal of Palliative Care</i> . 2000;16(2):5-10. | Geen vergelijking van medicatie met andere medicatie |
| Fainsinger RL, Landman W, Hoskings M, Bruera E. Sedation for uncontrolled symptoms in a South African hospice. <i>J Pain Symptom Manage</i> . 1998;16(3):145-52. | Geen vergelijking van medicatie met andere medicatie |
| Fainsinger RL, Waller A, Bercovici M, Bengtson K, Landman W, Hosking M, et al. A multicentre international study of sedation for uncontrolled symptoms in terminally ill patients. <i>Palliat Med</i> . 2000;14(4):257-65. | Geen vergelijking van medicatie met andere medicatie |
| Fainsinger RL. Use of sedation by a hospital palliative care support team. <i>Journal of Palliative Care</i> . 1998;14(1):51-4. | Case report |
| Flume PA. Medicinal treatment of intractable dyspnea in terminally ill patients. <i>J S C Med Assoc</i> . 2002;98(4):196-9. | Geen Full-text |
| Førde R, Kongsgaard U, Aasland O.G. Palliative sedation to the dying. <i>Tidsskr. Nor. Laegeforen</i> . 2006;126(4):471-4. | Noors |
| Gillon S, Johnson M, Campbell C. Review of phenobarbitone use for deep terminal sedation in a UK hospice. <i>Palliat Med</i> . 2010;24(1):100-1. | Geen vergelijking van medicatie met andere medicatie |
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| Hopprich A, Gunther LD, Laufenberg-Feldmann R, Reinholz U, Weber M. Palliative sedation at a university palliative care unit--a descriptive analysis. <i>Dtsch Med Wochenschr.</i> 2016;141(8):e60-6. | Geen vergelijking van medicatie met andere medicatie |
| Hui D, Frisbee-Hume S, Wilson A, Dibaj SS, Nguyen T, De La Cruz M, et al. Effect of Lorazepam With Haloperidol vs Haloperidol Alone on Agitated Delirium in Patients With Advanced Cancer Receiving Palliative Care: A Randomized Clinical Trial. <i>JAMA.</i> 2017;318(11):1047-56. | Niet over palliatieve sedatie |
| Imai K, Morita T, Yokomichi N, Mori M, Naito AS, Tsukuura H, et al. Efficacy of two types of palliative sedation therapy defined using intervention protocols: proportional vs. deep sedation. <i>Support Care Cancer.</i> 2018;26(6):1763-71. | Beide groepen kregen midazolam |
| Jackson KC, Lipman AG. Drug therapy for delirium in terminally ill patients. <i>Cochrane Database of Systematic Reviews.</i> 2004;2. | Niet over palliatieve sedatie |
| Janssen DJA. Palliative sedation in nursing homes: a good death? <i>J AM MED DIR ASSOC.</i> 2014;15(8):541-3. | Editorial |
| Jaspers B, Nauck F, Lindena G, Elsner F, Ostgathe C, Radbruch L. Palliative sedation in Germany: how much do we know? A prospective survey. <i>J Palliat Med.</i> 2012;15(6):672-80. | Geen vergelijking van medicatie met andere medicatie |
| Jennings AL, Davies AN, Higgins JP, Broadley K. Opioids for the palliation of breathlessness in terminal illness. <i>Cochrane Database of Systematic Reviews.</i> 2001;4. | Geüpdated |
| Jennings AL, Davies AN, Higgins JPT, Anzures-Cabrera J, Broadley KE. Opioids for the palliation of breathlessness in advanced disease and terminal illness. <i>Cochrane Database of Systematic Reviews.</i> 2012(7). | Niet over palliatieve sedatie |
| Jennings AL, Davies AN, Higgins JPT, Gibbs JSR, Broadley KE. A systematic review of the use of opioids in the management of dyspnoea. <i>Thorax.</i> 2002;57(11):939-44. | Zelfde als Cochrane review |
| Kazuki Sato, Mitsunori Miyashita, Tatsuya Morita, Satoru Tsuneto, Shima Y. End-of-Life Medical Treatments in the Last Two Weeks of Life in Palliative Care Units in Japan, 2005-2006: A Nationwide Retrospective Cohort Survey. <i>Journal of Palliative Medicine.</i> 2016;19(11):1188-96. | Geen vergelijking van medicatie met andere medicatie |
| Kim YS, Song H-N, Ahn JS, Koh S-J, Ji JH, Hwang IG, et al. Sedation for terminally ill cancer patients: A multicenter retrospective cohort study in South Korea. <i>Medicine (Baltimore).</i> 2019;98(5):e14278. | Geen vergelijking van medicatie met andere medicatie |
| Kohara H, Ueoka H, Takeyama H, Murakami T, Morita T. Sedation for terminally ill patients with cancer with uncontrollable physical distress. <i>J Palliat Med.</i> 2005;8(1):20-5. | Geen vergelijking van medicatie met andere medicatie |
| Le Divenah A, Guirimand F. When and how to provide a palliative sedation in terminally ill patients? <i>Rev Prat.</i> 2017;67(10):1139-43. | Narrative review |
| Lorenz KA, Lynn J, Dy SM, Shugarman LR, Wilkinson A, Mularski RA, et al. Evidence for improving palliative care at the end of life: a systematic review. <i>Ann Intern Med.</i> 2008;148(2):147-59. | Niet over palliatieve sedatie |
| Maeda I, Morita T, Yamaguchi T, Inoue S, Ikenaga M, Matsumoto Y, et al. Effect of continuous deep sedation on survival in patients with advanced cancer (J-Proval): A propensity score-weighted analysis of a prospective cohort study. <i>Lancet Oncol.</i> 2016;17(1):115-22. | Geen vergelijking van medicatie met andere medicatie |
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| Maltoni M, Pittureri C, Scarpi E, Piccinini L, Martini F, Turci P, et al. Palliative sedation therapy does not hasten death: results from a prospective multicenter study. <i>Ann Oncol.</i> 2009;20(7):1163-9. | Geen vergelijking van medicatie met andere medicatie |
| Maltoni M, Scarpi E, Rosati M, Derni S, Fabbri L, Martini F, et al. Palliative sedation in end-of-life care and survival: a systematic review. <i>J Clin Oncol.</i> 2012;30(12):1378-83. | Geen vergelijking van medicatie met andere medicatie |
| Maltoni M, Setola E. Palliative Sedation in Patients With Cancer. <i>Cancer Control.</i> 2015;22(4):433-41. | Narrative review |
| McWilliams K, Keeley PW, Waterhouse ET. Propofol for terminal sedation in palliative care: a systematic review. <i>J Palliat Med.</i> 2010;13(1):73-6. | Geen kwaliteitsbeoordeling van geïnccludeerde onderzoeken |

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| Mercadante S, Intraivaia G, Villari P, Ferrera P, David F, Casuccio A. Controlled sedation for refractory symptoms in dying patients. <i>J Pain Symptom Manage.</i> 2009;37(5):771-9. | Geen vergelijking van medicatie met andere medicatie |
| Mercadante S, Porzio G, Valle A, Aielli F, Casuccio A, Home Care-Italy G. Palliative sedation in patients with advanced cancer followed at home: a prospective study. <i>J Pain Symptom Manage.</i> 2014;47(5):860-6. | Geen vergelijking van medicatie met andere medicatie |
| Mercadante S, Porzio G, Valle A, Fusco F, Aielli F, Adile C, et al. Palliative sedation in advanced cancer patients followed at home: a retrospective analysis. <i>J Pain Symptom Manage.</i> 2012;43(6):1126-30. | Geen vergelijking van medicatie met andere medicatie |
| Mercadante S, Porzio G, Valle A, Fusco F, Aielli F, Costanzo V, et al. Palliative sedation in patients with advanced cancer followed at home: a systematic review. <i>J Pain Symptom Manage.</i> 2011;41(4):754-60. | Geen kwaliteitsbeoordeling van geïncludeerde onderzoeken |
| Miccinesi G, Rietjens JAC, Deliëns L, Paci E, Bosshard G, Nilstun T, et al. Continuous deep sedation: physicians' experiences in six European countries. <i>J Pain Symptom Manage.</i> 2006;31(2):122-9. | Geen vergelijking van medicatie met andere medicatie |
| Morita T, Akechi T, Sugawara Y, Chihara S, Uchitomi Y. Practices and attitudes of Japanese oncologists and palliative care physicians concerning terminal sedation: a nationwide survey. <i>J Clin Oncol.</i> 2002;20(3):758-64. | Geen vergelijking van medicatie met andere medicatie |
| Morita T, Bito S, Kurihara Y, Uchitomi Y. Development of a clinical guideline for palliative sedation therapy using the Delphi method. <i>J Palliat Med.</i> 2005;8(4):716-29. | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |
| Morita T, Chinone Y, Ikenaga M, Miyoshi M, Nakaho T, Nishitateno K, et al. Ethical validity of palliative sedation therapy: a multicenter, prospective, observational study conducted on specialized palliative care units in Japan. <i>J Pain Symptom Manage.</i> 2005;30(4):308-19. | Geen vergelijking van medicatie met andere medicatie |
| Morita T, Ikenaga M, Adachi I, Narabayashi I, Kizawa Y, Honke Y, et al. Family experience with palliative sedation therapy for terminally ill cancer patients. <i>J Pain Symptom Manage.</i> 2004;28(6):557-65. | Geen vergelijking van medicatie met andere medicatie |
| Morita T, Inoue S, Chihara S. Sedation for symptom control in Japan: the importance of intermittent use and communication with family members. <i>J Pain Symptom Manage.</i> 1996;12(1):32-8. | Geen vergelijking van medicatie met andere medicatie |
| Morita T, Tei Y, Inoue S. Correlation of the dose of midazolam for symptom control with administration periods: the possibility of tolerance. <i>J Pain Symptom Manage.</i> 2003;25(4):369-75. | Geen vergelijking van medicatie met andere medicatie |
| Morita T, Tsunoda J, Inoue S, Chihara S. Effects of high dose opioids and sedatives on survival in terminally ill cancer patients. <i>J Pain Symptom Manage.</i> 2001;21(4):282-9. | |
| Morita T, Tsunoda J, Inoue S, Chihara S. Terminal sedation for existential distress. <i>Am J Hosp Palliat Care.</i> 2000;17(3):189-95. | Geen vergelijking van medicatie met andere medicatie |
| Morita T. Palliative sedation to relieve psycho-existential suffering of terminally ill cancer patients. <i>J Pain Symptom Manage.</i> 2004;28(5):445-50. | Geen vergelijking van medicatie met andere medicatie |
| Muller-Busch HC, Radbruch L, Strasser F, Voltz R. Definitions and recommendations for palliative sedation. <i>Dtsch Med Wochenschr.</i> 2006;131(48):2733-6. | Narrative review |
| Murray-Brown F, Dorman S. Haloperidol for the treatment of nausea and vomiting in palliative care patients. <i>Cochrane Database of Systematic Reviews.</i> 2015;11:02. | Niet over palliatieve sedatie |
| Navigante AH, Cerchiëtti LCA, Castro MA, Lutteral MA, Cabalar ME. Midazolam as adjunct therapy to morphine in the alleviation of severe dyspnea perception in patients with advanced cancer. <i>J Pain Symptom Manage.</i> 2006;31(1):38-47. | Niet over palliatieve sedatie |
| Oosten AW, Oldenmenger WH, van Zuylén C, Schmitz PIM, Bannink M, Lieveise PJ, et al. Higher doses of opioids in patients who need palliative sedation prior to death: cause or consequence? <i>Eur J Cancer.</i> 2011;47(15):2341-6. | Geen vergelijking van medicatie met andere medicatie |
| Papavasiliou EE, Chambaere K, Deliëns L, Brearley S, Payne S, Rietjens J, et al. Physician-reported practices on continuous deep sedation until death: A descriptive and comparative study. <i>Palliat Med.</i> 2014;28(6):491-500. | Geen vergelijking van medicatie met andere medicatie |

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| Parra Palacio S, Giraldo Hoyos CE, Arias Rodriguez C, Mejia Arrieta D, Vargas Gomez JJ, Krikorian A. Palliative sedation in advanced cancer patients hospitalized in a specialized palliative care unit. <i>Support Care Cancer</i> . 2018;26(9):3173-80. | Geen vergelijking van medicatie met andere medicatie |
| Peppin JF. Intractable symptoms and palliative sedation at the end of life. <i>Christ Bioeth</i> . 2003;9(2-3):343-55. | Narrative review |
| Perlis M, Gehrman P, Riemann D. Intermittent and long-term use of sedative hypnotics. <i>Current Pharmaceutical Design</i> . 2008;14(32):3456-65. | Narrative review |
| Perrar KM, Golla H, Voltz R. Pharmacological treatment of delirium in palliative care patients. A systematic literature review. <i>Schmerz</i> . 2013;27(2):190-8. | Niet over palliatieve sedatie |
| Porzio G, Aielli F, Verna L, Micolucci G, Aloisi P, Ficorella C. Efficacy and safety of deep, continuous palliative sedation at home: a retrospective, single-institution study. <i>Support Care Cancer</i> . 2010;18(1):77-81. | Geen vergelijking van medicatie met andere medicatie |
| Prado BL, Gomes DBD, Uson Junior PLS, Taranto P, Franca MS, Eiger D, et al. Continuous palliative sedation for patients with advanced cancer at a tertiary care cancer center. <i>BMC Palliat Care</i> . 2018;17(1):13. | Focus op uitkomst 'overleving' |
| Quill TE, Byock IR. Responding to intractable terminal suffering: the role of terminal sedation and voluntary refusal of food and fluids. ACP-ASIM End-of-Life Care Consensus Panel. American College of Physicians-American Society of Internal Medicine. <i>Ann Intern Med</i> . 2000;132(5):408-14. | Case report |
| Rietjens J, van Delden J, Onwuteaka-Philipsen B, Buiting H, van der Maas P, van der Heide A. Continuous deep sedation for patients nearing death in the Netherlands: descriptive study. <i>BMJ</i> . 2008;336(7648):810-3. | Geen vergelijking van medicatie met andere medicatie |
| Rietjens J.A.C, Van Delden J.J.M, Van Der Heide A, Vrakking A.M, Onwuteaka-Philipsen B.D, Van Der Maas P.J, et al. Terminal sedation and euthanasia: A comparison of clinical practices. <i>Arch. Intern. Med</i> . 2006;166(7):749-53. | Geen vergelijking van medicatie met andere medicatie |
| Rietjens JAC, Swart SJ, van Delden JJM, van der Heide A. Preemptive use of palliative sedation and amyotrophic lateral sclerosis. <i>J Pain Symptom Manage</i> . 2012;44(3):e5-7. | Letter |
| Rietjens JAC, van Zuylen L, van Veluw H, van der Wijk L, van der Heide A, van der Rijt CCD. Palliative sedation in a specialized unit for acute palliative care in a cancer hospital: comparing patients dying with and without palliative sedation. <i>J Pain Symptom Manage</i> . 2008;36(3):228-34. | Geen vergelijking van medicatie met andere medicatie |
| Rousseau P. Palliative sedation in the management of refractory symptoms. <i>J. Supportive Oncol</i> . 2004;2(2):181-6. | Editorial |
| Rys S, Deschepper R, Mortier F, Deliëns L, Bilsen J. Continuous sedation until death with or without the intention to hasten death--a nationwide study in nursing homes in Flanders, Belgium. <i>J AM MED DIR ASSOC</i> . 2014;15(8):570-5. | Geen vergelijking van medicatie met andere medicatie |
| Rys S, Mortier F, Deliëns L, Bilsen J. The practice of continuous sedation until death in nursing homes in Flanders, Belgium: a nationwide study. <i>J Am Geriatr Soc</i> . 2014;62(10):1869-76. | Geen vergelijking van medicatie met andere medicatie |
| Salacz M.E, Weissman D.E. Controlled sedation for refractory suffering: Part I. <i>J. Palliative Med</i> . 2005;8(1):136-8. | Narrative review |
| Schildmann E, Pörnbacher S, Kalies H, Bausewein C. 'Palliative sedation'? A retrospective cohort study on the use and labelling of continuously administered sedatives on a palliative care unit. <i>Palliative Med</i> . 2018;32(7):1189-97. | Geen vergelijking van medicatie met andere medicatie |
| Schildmann E, Schildmann J. Palliative sedation therapy: a systematic literature review and critical appraisal of available guidance on indication and decision making. <i>J Palliat Med</i> . 2014;17(5):601-11. | Review van guidelines, geen verwijzing naar vergelijkende literatuur |
| Schildmann EK, Schildmann J, Kiesewetter I. Medication and monitoring in palliative sedation therapy: a systematic review and quality assessment of published guidelines. <i>J Pain Symptom Manage</i> . 2015;49(4):734-46. | Review van guidelines, geen verwijzing naar vergelijkende literatuur |
| Schur S, Weixler D, Gabl C, Kreye G, Likar R, Masel EK, et al. Sedation at the end of life - a nation-wide study in palliative care units in Austria. <i>BMC Palliative Care</i> . 2016;15(50):14. | Geen vergelijking van medicatie met andere medicatie |
| Seale C. Continuous deep sedation in medical practice: a descriptive study. <i>J Pain Symptom Manage</i> . 2010;39(1):44-53. | Geen vergelijking van medicatie met andere medicatie |

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| Shu DF, Dong BR. Evidence-based treatment for dyspnea in an end-stage cancer patient. <i>Chinese journal of evidence-based medicine</i> . 2007;7(10):757-60. | Geen Full-text |
| Simon ST, Higginson IJ, Booth S, Harding R, Bausewein C. Benzodiazepines for the relief of breathlessness in advanced malignant and non-malignant diseases in adults. <i>Cochrane Database of Systematic Reviews</i> . 2010;1:20. | Geüpdated |
| Simon ST, Higginson IJ, Booth S, Harding R, Weingartner V, Bausewein C. Benzodiazepines for the relief of breathlessness in advanced malignant and non-malignant diseases in adults. <i>Cochrane Database of Systematic Reviews</i> . 2016;10:20. | Niet over palliatieve sedatie |
| Simon ST, Koskeroglu P, Bausewein C. Pharmacological therapy of refractory dyspnoea : a systematic literature review. <i>Schmerz</i> . 2012;26(5):515-22. | Niet over palliatieve sedatie |
| Song HN, Ahn JS, Koh SJ, Kim YS, Jun HJ, Hwang IG, et al. Use of sedatives in dying patients: a multicenter study. <i>Supportive care in cancer. Conference: 2017 international MASCC/ISOO symposium: supportive care in cancer. United states</i> . 2017;25(2 Supplement 1):S202-S3. | Conference abstract |
| Stephenson J. The use of sedative drugs at the end of life in a UK hospice. <i>Palliat Med</i> . 2008;22(8):969-70. | Geen vergelijking van medicatie met andere medicatie |
| Stiel S, Nurnus M, Ostgathe C, Klein C. Palliative sedation in Germany: factors and treatment practices associated with different sedation rate estimates in palliative and hospice care services. <i>BMC Palliat Care</i> . 2018;17(1):48. | Geen vergelijking van medicatie met andere medicatie |
| Stone P, Phillips C, Spruyt O, Waight C. A comparison of the use of sedatives in a hospital support team and in a hospice. <i>Palliat Med</i> . 1997;11(2):140-4. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Brinkkemper T, Rietjens JAC, Blanker MH, van Zuylen L, Ribbe M, et al. Physicians' and nurses' experiences with continuous palliative sedation in the Netherlands. <i>Arch Intern Med</i> . 2010;170(14):1271-4. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Rietjens JAC, Brinkkemper T, van Zuylen L, van Burg-Verhage WA, Zuurmond WWA, et al. Palliative sedation largely in accordance with Dutch national guideline. <i>Nederlands Tijdschrift voor Geneeskunde</i> . 2011;155. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Rietjens JAC, van Zuylen L, Zuurmond WWA, Perez RSGM, van der Maas PJ, et al. Continuous palliative sedation for cancer and noncancer patients. <i>J Pain Symptom Manage</i> . 2012;43(2):172-81. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, van der Heide A, Brinkkemper T, van Zuylen L, Perez R, Rietjens J. Continuous palliative sedation until death: practice after introduction of the Dutch national guideline. <i>BMJ support</i> . 2012;2(3):256-63. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, van der Heide A, van Zuylen L, Perez RSGM, Zuurmond WWA, van der Maas PJ, et al. Considerations of physicians about the depth of palliative sedation at the end of life. <i>CMAJ</i> . 2012;184(7):E360-6. | Geen vergelijking van medicatie met andere medicatie |
| Sykes N, Thorns A. Sedative use in the last week of life and the implications for end-of-life decision making. <i>Arch Intern Med</i> . 2003;163(3):341-4. | Geen vergelijking van medicatie met andere medicatie |
| Tendas A, Niscola P, Cupelli L, Dentamaro T, Scaramucci L, Siniscalchi A, et al. Palliative sedation therapy in a bone marrow transplant unit. <i>Support Care Cancer</i> . 2009;17(2):107-8. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RH, Rondas AA, Berghmans RL. Terminal sedation in mentally competent patients: no overriding medical-ethical arguments against in the medical literature. <i>Ned Tijdschr Geneesk</i> . 2003;147(50):2479-83. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RHPD, Hasselaar JGJ, Krijnsen PJC, Gloudemans AJM, Verhagen SCAHHVM, Vissers KCP, et al. The Practice of Continuous Palliative Sedation in Long-Term Care for Frail Patients with Existential Suffering. <i>Journal of Palliative Care</i> . 2015;31(3):141-9. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RHPD, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. Level of Discomfort Decreases After the Administration of Continuous Palliative Sedation: A Prospective Multicenter Study in Hospices and Palliative Care Units. <i>J Pain Symptom Manage</i> . 2016;52(3):361-9. | Geen vergelijking van medicatie met andere medicatie |
| Van Deijck RHPD, Krijnsen PJC, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. The practice of continuous palliative sedation in elderly patients: a | Geen vergelijking van medicatie met andere medicatie |

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| nationwide explorative study among Dutch nursing home physicians. J Am Geriatr Soc. 2010;58(9):1671-8. | |
| Wayne-Bossert P, Zulian GB. Palliative sedation: from the family perspective. Am J Hosp Palliat Care. 2013;30(8):786-90. | Geen vergelijking van medicatie met andere medicatie |
| Verkerk M, van Wijlick E, Legemaate J, de Graeff A. A National Guideline for Palliative Sedation in The Netherlands. J. Pain Symptom Manage. 2007;34(6):666-70. | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |
| Vitetta L, Kenner D, Sali A. Sedation and analgesia-prescribing patterns in terminally ill patients at the end of life. Am J Hosp Palliat Care. 2005;22(6):465-73. | Focus op uitkomst 'overleving' |
| Weber M, Strohscheer I, Samonigg H, Huber C. Palliative sedation--an alternative to euthanasia in intractable pain at the end of life? Med Klin. 2005;100(5):292-8. | Narrative review |
| Whitehead PB. Palliative pharmacologic sedation for terminally ill adults. Clin J Oncol Nurs. 2015;19(3):373-4. | Samenvatting van Cochrane review |
| Won Y.-W, Chun H.S, Seo M, Kim R.B, Kim J.H, Kang J.H. Clinical Patterns of Continuous and Intermittent Palliative Sedation in Patients With Terminal Cancer: A Descriptive, Observational Study. J. Pain Symptom Manage. 2019;58(1):65-71. | Geen vergelijking van medicatie met andere medicatie |

Methodology report PICO 5

Key question

1.1.5 Uitgangsvraag 5 (module 4.5)

Wat is de effectiviteit van midazolam, benzodiazepines, barbituraten, propofol, levomepromazine, promethazine, sedativa, thiopenthal, en/of opioïden bij patiënten die een indicatie hebben voor palliatieve sedatie en al psychofarmaca gebruiken?

P: Patiënten die een indicatie hebben voor palliatieve sedatie en al psychofarmaca gebruiken.

I: Midazolam, benzodiazepines, barbituraten, propofol, levomepromazine, promethazine, sedativa, thiopenthal, en/of opioïden.

C: Andere medicamenteuze behandeling.

O: Symptombestrijding; kwaliteit van sterven (ervaren door de patiënt); levenskwaliteit; tevredenheid van naasten.

Search strategy

Search date: July 18 2019.

Databases: OVID Medline, Embase, Cochrane Library, Cinahl (see appendix for search strings).

Search limits:

- Publication date: 2010-2019;
- English, French, Dutch and German only;
- Study design: meta-analyses, systematic reviews, comparative cohort studies of at least 50 patiënten.

Search Results

Table 7. Overall search results

| Database | Number of hits |
|---|----------------|
| OVID Medline | 4877 |
| OVID PreMedline | 92 |
| EMBASE.com | 3768 |
| Cochrane Database of Systematic Reviews | 34 |
| CENTRAL | 562 |
| Cinahl | 657 |
| Total hits | 9990 |
| N excluded (language, duplicates) | 2150 |
| Total unique eligible hits | 7840 |

Of the remaining 131 papers, the full-text was retrieved. Based on the full-text, all 131 studies were excluded.

Included studies

None.

Table 8. Key question 4: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|---|---|
| Abdul-Razzak A, Lemieux L, Snyman M, Perez G, Sinnarajah A. Description of Continuous Palliative Sedation Practices in a Large Health Region and Comparison with Clinical Practice Guidelines. <i>Journal of Palliative Medicine</i> . 2019;02:02. | Geen vergelijking van medicatie met andere medicatie |
| Alonso-Babarro A, Varela-Cerdeira M, Torres-Vigil I, Rodriguez-Barrientos R, Bruera E. At-home palliative sedation for end-of-life cancer patients. <i>Palliat Med</i> . 2010;24(5):486-92. | |
| Alt-Epping B, Sitte T, Nauck F, Radbruch L. Sedation in palliative medicine: Guidelines for the use of sedation in palliative care : European Association for Palliative Care (EAPC). <i>Schmerz</i> . 2010;24(4):342-54. | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |
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| Simon ST, Koskeroglu P, Bausewein C. Pharmacological therapy of refractory dyspnoea : a systematic literature review. <i>Schmerz</i> . 2012;26(5):515-22. | Niet over palliatieve sedatie |
| Song HN, Ahn JS, Koh SJ, Kim YS, Jun HJ, Hwang IG, et al. Use of sedatives in dying patients: a multicenter study. <i>Supportive care in cancer. Conference: 2017 international MASCC/ISOO symposium: supportive care in cancer. United states</i> . 2017;25(2 Supplement 1):S202-S3. | Conference abstract |
| Stephenson J. The use of sedative drugs at the end of life in a UK hospice. <i>Palliat Med</i> . 2008;22(8):969-70. | Geen vergelijking van medicatie met andere medicatie |
| Stiel S, Nurnus M, Ostgathe C, Klein C. Palliative sedation in Germany: factors and treatment practices associated with different sedation rate estimates in palliative and hospice care services. <i>BMC Palliat Care</i> . 2018;17(1):48. | Geen vergelijking van medicatie met andere medicatie |
| Stone P, Phillips C, Spruyt O, Waight C. A comparison of the use of sedatives in a hospital support team and in a hospice. <i>Palliat Med</i> . 1997;11(2):140-4. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Brinkkemper T, Rietjens JAC, Blanker MH, van Zuylén L, Ribbe M, et al. Physicians' and nurses' experiences with continuous palliative sedation in the Netherlands. <i>Arch Intern Med</i> . 2010;170(14):1271-4. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Rietjens JAC, Brinkkemper T, van Zuylén L, van Burg-Verhage WA, Zuurmond WWA, et al. Palliative sedation largely in accordance with Dutch national guideline. <i>Nederlands Tijdschrift voor Geneeskunde</i> . 2011;155. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Rietjens JAC, van Zuylén L, Zuurmond WWA, Perez RSGM, van der Maas PJ, et al. Continuous palliative sedation for cancer and noncancer patients. <i>J Pain Symptom Manage</i> . 2012;43(2):172-81. | Geen vergelijking van medicatie met andere medicatie |

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| Swart SJ, van der Heide A, Brinkkemper T, van Zuylen L, Perez R, Rietjens J. Continuous palliative sedation until death: practice after introduction of the Dutch national guideline. <i>BMJ support</i> . 2012;2(3):256-63. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, van der Heide A, van Zuylen L, Perez RSGM, Zuurmond WWA, van der Maas PJ, et al. Considerations of physicians about the depth of palliative sedation at the end of life. <i>CMAJ</i> . 2012;184(7):E360-6. | Geen vergelijking van medicatie met andere medicatie |
| Sykes N, Thorns A. Sedative use in the last week of life and the implications for end-of-life decision making. <i>Arch Intern Med</i> . 2003;163(3):341-4. | Geen vergelijking van medicatie met andere medicatie |
| Tendas A, Niscola P, Cupelli L, Dentamaro T, Scaramucci L, Siniscalchi A, et al. Palliative sedation therapy in a bone marrow transplant unit. <i>Support Care Cancer</i> . 2009;17(2):107-8. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RH, Rondas AA, Berghmans RL. Terminal sedation in mentally competent patients: no overriding medical-ethical arguments against in the medical literature. <i>Ned Tijdschr Geneeskd</i> . 2003;147(50):2479-83. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RHPD, Hasselaar JGJ, Krijnsen PJC, Gloudemans AJM, Verhagen SCAHHVM, Vissers KCP, et al. The Practice of Continuous Palliative Sedation in Long-Term Care for Frail Patients with Existential Suffering. <i>Journal of Palliative Care</i> . 2015;31(3):141-9. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RHPD, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. Level of Discomfort Decreases After the Administration of Continuous Palliative Sedation: A Prospective Multicenter Study in Hospices and Palliative Care Units. <i>J Pain Symptom Manage</i> . 2016;52(3):361-9. | Geen vergelijking van medicatie met andere medicatie |
| Van Deijck RHPD, Krijnsen PJC, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. The practice of continuous palliative sedation in elderly patients: a nationwide explorative study among Dutch nursing home physicians. <i>J Am Geriatr Soc</i> . 2010;58(9):1671-8. | Geen vergelijking van medicatie met andere medicatie |
| Vayne-Bossert P, Zulian GB. Palliative sedation: from the family perspective. <i>Am J Hosp Palliat Care</i> . 2013;30(8):786-90. | Geen vergelijking van medicatie met andere medicatie |
| Verkerk M, van Wijlick E, Legemaate J, de Graeff A. A National Guideline for Palliative Sedation in The Netherlands. <i>J. Pain Symptom Manage</i> . 2007;34(6):666-70. | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |
| Vitetta L, Kenner D, Sali A. Sedation and analgesia-prescribing patterns in terminally ill patients at the end of life. <i>Am J Hosp Palliat Care</i> . 2005;22(6):465-73. | Geen aparte evaluatie van patiënten die psychofarmaca nemen |
| Weber M, Strohscheer I, Samonigg H, Huber C. Palliative sedation--an alternative to euthanasia in intractable pain at the end of life? <i>Med Klin</i> . 2005;100(5):292-8. | Narrative review |
| Whitehead PB. Palliative pharmacologic sedation for terminally ill adults. <i>Clin J Oncol Nurs</i> . 2015;19(3):373-4. | Samenvatting van Cochrane review |
| Won Y.-W, Chun H.S, Seo M, Kim R.B, Kim J.H, Kang J.H. Clinical Patterns of Continuous and Intermittent Palliative Sedation in Patients With Terminal Cancer: A Descriptive, Observational Study. <i>J. Pain Symptom Manage</i> . 2019;58(1):65-71. | Geen vergelijking van medicatie met andere medicatie |

Methodology report PICO 6

Key question

1.1.6 Uitgangsvraag 6 (module 4.5)

Wat is de effectiviteit van 'last resort' medicaties bij patiënten die onvoldoende symptoomcontrole bereiken met het aanvangsschema van palliatieve sedatie?

P: Patiënten waarbij onvoldoende symptoomcontrole wordt bereikt met het aanvangsschema palliatieve sedatie.

I: Midazolam, benzodiazepines, barbituraten, propofol, levomepromazine, promethazine, sedativa, thiopental, en/of opioïden, in andere dosering dan aanvangsschema.

C: Andere medicamenteuze behandeling.

O: Symptombestrijding; kwaliteit van sterven (ervaren door de patiënt); levenskwaliteit; tevredenheid van naasten.

Search strategy

Search date: July 18 2019.

Databases: OVID Medline, Embase, Cochrane Library (see appendix for search strings).

Search limits:

- Publication date: 2010-2019;
- English, French, Dutch and German only;
- Study design: meta-analyses, systematic reviews, comparative cohort studies of at least 50 patiënts.

Search Results

Table 9. Overall search results

| Database | Number of hits |
|---|----------------|
| OVID Medline | 2110 |
| OVID PreMedline | 83 |
| EMBASE.com | 1805 |
| Cochrane Database of Systematic Reviews | 30 |
| CENTRAL | 353 |
| Total hits | 4381 |
| N excluded (language, duplicates) | 1007 |
| Total unique eligible hits | 3374 |

Excluded studies

3374 unique hits were screened on title and abstract. Of these, 3305 were excluded. The most important reasons for exclusion were:

1. Other intervention: interventions other than those specified
2. Wrong study design: narrative reviews, case reports, etc

Of the remaining 69 papers, the full-text was retrieved. Based on the full-text, 68 studies were excluded.

Included studies

Won Y.-W, Chun H.S, Seo M, Kim R.B, Kim J.H, Kang J.H. Clinical Patterns of Continuous and Intermittent Palliative Sedation in Patients With Terminal Cancer: A Descriptive, Observational Study. *J. Pain Symptom Manage.* 2019;58(1):65-71.

Table 10. Key question 5: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|--|---|
| Abdul-Razzak A, Lemieux L, Snyman M, Perez G, Sinnarajah A. Description of Continuous Palliative Sedation Practices in a Large Health Region and Comparison with Clinical Practice Guidelines. <i>Journal of Palliative Medicine.</i> 2019;02:02. | Geen vergelijking van medicatie met andere medicatie |
| Alonso-Babarro A, Varela-Cerdeira M, Torres-Vigil I, Rodriguez-Barrientos R, Bruera E. At-home palliative sedation for end-of-life cancer patients. <i>Palliat Med.</i> 2010;24(5):486-92. | Geen aparte evaluatie van moeilijke sedaties |
| Alt-Epping B, Sitte T, Nauck F, Radbruch L. Sedation in palliative medicine: Guidelines for the use of sedation in palliative care : European Association for Palliative Care (EAPC). <i>Schmerz.</i> 2010;24(4):342-54. | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |
| Anquinet L, Rietjens J.A.C, Seale C, Seymour J, Deliëns L, Van Der Heide A. The practice of continuous deep sedation until death in Flanders (Belgium), the Netherlands, and the U.K.: A comparative study. <i>J. Pain Symptom Manage.</i> 2012;44(1):33-43. | Geen vergelijking van medicatie met andere medicatie |
| Anquinet L, Rietjens JAC, Van den Block L, Bossuyt N, Deliëns L. General practitioners' report of continuous deep sedation until death for patients dying at home: a descriptive study from Belgium. <i>Eur J Gen Pract.</i> 2011;17(1):5-13. | Geen vergelijking van medicatie met andere medicatie |
| Azoulay D, Shahal-Gassner R, Yehezkel M, Eliyahu E, Weigert N, Ein-Mor E, et al. Palliative Sedation at the End of Life: Patterns of Use in an Israeli Hospice. <i>Am J Hosp Palliat Care.</i> 2016;33(4):369-73. | Geen aparte evaluatie van moeilijke sedaties |
| Barnes H, McDonald J, Smallwood N, Manser R. Opioids for the palliation of refractory breathlessness in adults with advanced disease and terminal illness. <i>Cochrane Database of Systematic Reviews.</i> 2016;3:31. | Niet over palliatieve sedatie |

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| Beller EM, van Driel ML, McGregor L, Truong S, Mitchell G. Palliative pharmacological sedation for terminally ill adults. Cochrane Database of Systematic Reviews. 2015;1:02. | Geen vergelijking van medicatie met andere medicatie |
| Ben-Aharon I, Gafter-Gvili A, Leibovici L, Stemmer SM. Interventions for alleviating cancer-related dyspnea: a systematic review and meta-analysis. Acta Oncol. 2012;51(8):996-1008. | Niet over palliatieve sedatie |
| Benitez-Rosario M.A, Castillo-Padrós M, Garrido-Bernet B, Ascanio-León B. Quality of care in palliative sedation: Audit and compliance monitoring of a clinical protocol. J Pain Symptom Manage. 2012;44(4):532-41. | Geen vergelijking van medicatie met andere medicatie |
| Bodnar J. A Review of Agents for Palliative Sedation/Continuous Deep Sedation: Pharmacology and Practical Applications. J Pain Pall Care Pharmacother. 2017;31(1):16-37. | Narrative review |
| Booth S, Simon S, Higginson IJ, Harding R, Bausewein C. The efficacy of benzodiazepines for palliating dyspnoea: a systematic review. European journal of cancer. 2011;47:S77-. | Abstract van Cochrane review |
| Bruce A, Boston P. Relieving existential suffering through palliative sedation: discussion of an uneasy practice. J Adv Nurs. 2011;67(12):2732-40. | Geen kwaliteitsbeoordeling van geïnccludeerde onderzoeken |
| Calvo-Espinos C, Ruiz de Gaona E, Gonzalez C, Ruiz de Galarreta L, Lopez C. Palliative sedation for cancer patients included in a home care program: a retrospective study. Palliat Support Care. 2015;13(3):619-24. | Geen vergelijking van medicatie met andere medicatie |
| Candy B, Jackson KC, Jones L, Leurent B, Tookman A, King M. Drug therapy for delirium in terminally ill adult patients. Cochrane Database of Systematic Reviews. 2012;11:14. | Niet over palliatieve sedatie |
| Caraceni A, Speranza R, Spoldi E, Ambroset C.S, Canestrari S, Marinari M, et al. Palliative Sedation in Terminal Cancer Patients Admitted to Hospice or Home Care Programs: Does the Setting Matter? Results From a National Multicenter Observational Study. J Pain Symptom Manage. 2018;56(1):33-43. | Geen vergelijking van medicatie met andere medicatie |
| Caraceni A, Zecca E, Martini C, Gorni G, Campa T, Brunelli C, et al. Palliative sedation at the end of life at a tertiary cancer center. Support Care Cancer. 2012;20(6):1299-307. | Geen vergelijking van medicatie met andere medicatie |
| Chambaere K, Rietjens JAC, Cohen J, Sterckx S, Mortier F, Deliens L. Palliative sedation in Flemish palliative care units. J Pain Symptom Manage. 2011;41(6):e1-2; author reply e-5. | Letter |
| Cherny NI, Group EGW. ESMO Clinical Practice Guidelines for the management of refractory symptoms at the end of life and the use of palliative sedation. Annals of Oncology. 2014;25(3). | Richtlijn; geen duidelijke verwijzing naar vergelijkende literatuur |
| Claessens P, Menten J, Schotsmans P, Broeckaert B. Level of consciousness in dying patients. The role of palliative sedation: a longitudinal prospective study. Am J Hosp Palliat Care. 2012;29(3):195-200. | Geen vergelijking van medicatie met andere medicatie |
| Darvill E, Dorman S, Perkins P. Levomepromazine for nausea and vomiting in palliative care. Cochrane Database of Systematic Reviews. 2013;4:30. | Niet over palliatieve sedatie |
| Donker GA, Slotman FG, Spreeuwenberg P, Francke AL. Palliative sedation in Dutch general practice from 2005 to 2011: a dynamic cohort study of trends and reasons. Br J Gen Pract. 2013;63(615):e669-75. | Geen vergelijking van medicatie met andere medicatie |
| Gillon S, Johnson M, Campbell C. Review of phenobarbitone use for deep terminal sedation in a UK hospice. Palliat Med. 2010;24(1):100-1. | Geen vergelijking van medicatie met andere medicatie |
| Goncalves F, Cordero A, Almeida A, Cruz A, Rocha C, Feio M, et al. A survey of the sedation practice of Portuguese palliative care teams. Support Care Cancer. 2012;20(12):3123-7. | Geen vergelijking van medicatie met andere medicatie |
| Hopprich A, Gunther LD, Laufenberg-Feldmann R, Reinholz U, Weber M. Palliative sedation at a university palliative care unit--a descriptive analysis. Dtsch Med Wochenschr. 2016;141(8):e60-6. | Geen vergelijking van medicatie met andere medicatie |
| Janssen DJA. Palliative sedation in nursing homes: a good death? J AM MED DIR ASSOC. 2014;15(8):541-3. | Editorial |
| Jaspers B, Nauck F, Lindena G, Elsner F, Ostgathe C, Radbruch L. Palliative sedation in Germany: how much do we know? A prospective survey. J Palliat Med. 2012;15(6):672-80. | Geen vergelijking van medicatie met andere medicatie |

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| Jennings AL, Davies AN, Higgins JPT, Anzures-Cabrera J, Broadley KE. Opioids for the palliation of breathlessness in advanced disease and terminal illness. <i>Cochrane Database of Systematic Reviews</i> . 2012(7). | Niet over palliatieve sedatie |
| Kim YS, Song H-N, Ahn JS, Koh S-J, Ji JH, Hwang IG, et al. Sedation for terminally ill cancer patients: A multicenter retrospective cohort study in South Korea. <i>Medicine (Baltimore)</i> . 2019;98(5):e14278. | Geen vergelijking van medicatie met andere medicatie |
| Le Divenah A, Guirimand F. When and how to provide a palliative sedation in terminally ill patients? <i>Rev Prat</i> . 2017;67(10):1139-43. | Narrative review |
| Maeda I, Morita T, Yamaguchi T, Inoue S, Ikenaga M, Matsumoto Y, et al. Effect of continuous deep sedation on survival in patients with advanced cancer (J-Proval): A propensity score-weighted analysis of a prospective cohort study. <i>Lancet Oncol</i> . 2016;17(1):115-22. | Geen vergelijking van medicatie met andere medicatie |
| Maltoni M, Miccinesi G, Morino P, Scarpi E, Bulli F, Martini F, et al. Prospective observational Italian study on palliative sedation in two hospice settings: differences in casemixes and clinical care. <i>Support Care Cancer</i> . 2012;20(11):2829-36. | Geen vergelijking van medicatie met andere medicatie |
| Maltoni M, Scarpi E, Rosati M, Derni S, Fabbri L, Martini F, et al. Palliative sedation in end-of-life care and survival: a systematic review. <i>J Clin Oncol</i> . 2012;30(12):1378-83. | Geen vergelijking van medicatie met andere medicatie |
| Maltoni M, Setola E. Palliative Sedation in Patients With Cancer. <i>Cancer Control</i> . 2015;22(4):433-41. | Narrative review |
| McWilliams K, Keeley PW, Waterhouse ET. Propofol for terminal sedation in palliative care: a systematic review. <i>J Palliat Med</i> . 2010;13(1):73-6. | Geen kwaliteitsbeoordeling van geïnccludeerde onderzoeken |
| Mercadante S, Porzio G, Valle A, Aielli F, Casuccio A, Home Care-Italy G. Palliative sedation in patients with advanced cancer followed at home: a prospective study. <i>J Pain Symptom Manage</i> . 2014;47(5):860-6. | Geen vergelijking van medicatie met andere medicatie |
| Mercadante S, Porzio G, Valle A, Fusco F, Aielli F, Adile C, et al. Palliative sedation in advanced cancer patients followed at home: a retrospective analysis. <i>J Pain Symptom Manage</i> . 2012;43(6):1126-30. | Geen vergelijking van medicatie met andere medicatie |
| Mercadante S, Porzio G, Valle A, Fusco F, Aielli F, Costanzo V, et al. Palliative sedation in patients with advanced cancer followed at home: a systematic review. <i>J Pain Symptom Manage</i> . 2011;41(4):754-60. | Geen kwaliteitsbeoordeling van geïnccludeerde onderzoeken |
| Murray-Brown F, Dorman S. Haloperidol for the treatment of nausea and vomiting in palliative care patients. <i>Cochrane Database of Systematic Reviews</i> . 2015;11:02. | Niet over palliatieve sedatie |
| Oosten AW, Oldenmenger WH, van Zuylen C, Schmitz PIM, Bannink M, Lieveise PJ, et al. Higher doses of opioids in patients who need palliative sedation prior to death: cause or consequence? <i>Eur J Cancer</i> . 2011;47(15):2341-6. | Geen vergelijking van medicatie met andere medicatie |
| Papavasiliou EE, Chambaere K, Deliëns L, Brearley S, Payne S, Rietjens J, et al. Physician-reported practices on continuous deep sedation until death: A descriptive and comparative study. <i>Palliat Med</i> . 2014;28(6):491-500. | Geen vergelijking van medicatie met andere medicatie |
| Parra Palacio S, Giraldo Hoyos CE, Arias Rodriguez C, Mejia Arrieta D, Vargas Gomez JJ, Krikorian A. Palliative sedation in advanced cancer patients hospitalized in a specialized palliative care unit. <i>Support Care Cancer</i> . 2018;26(9):3173-80. | Geen vergelijking van medicatie met andere medicatie |
| Perrar KM, Golla H, Voltz R. Pharmacological treatment of delirium in palliative care patients. A systematic literature review. <i>Schmerz</i> . 2013;27(2):190-8. | Niet over palliatieve sedatie |
| Porzio G, Aielli F, Verna L, Micolucci G, Aloisi P, Ficorella C. Efficacy and safety of deep, continuous palliative sedation at home: a retrospective, single-institution study. <i>Support Care Cancer</i> . 2010;18(1):77-81. | Geen vergelijking van medicatie met andere medicatie |
| Prado BL, Gomes DBD, Uson Junior PLS, Taranto P, Franca MS, Eiger D, et al. Continuous palliative sedation for patients with advanced cancer at a tertiary care cancer center. <i>BMC Palliat Care</i> . 2018;17(1):13. | Geen aparte evaluatie van moeilijke sedaties |
| Rietjens JAC, Swart SJ, van Delden JJM, van der Heide A. Preemptive use of palliative sedation and amyotrophic lateral sclerosis. <i>J Pain Symptom Manage</i> . 2012;44(3):e5-7. | Letter |
| Rys S, Deschepper R, Mortier F, Deliëns L, Bilsen J. Continuous sedation until death with or without the intention to hasten death--a nationwide study in nursing homes in Flanders, Belgium. <i>J AM MED DIR ASSOC</i> . 2014;15(8):570-5. | Geen vergelijking van medicatie met andere medicatie |

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| Rys S, Mortier F, Deliens L, Bilsen J. The practice of continuous sedation until death in nursing homes in Flanders, Belgium: a nationwide study. <i>J Am Geriatr Soc.</i> 2014;62(10):1869-76. | Geen vergelijking van medicatie met andere medicatie |
| Schildmann E, Pörnbacher S, Kalies H, Bausewein C. 'Palliative sedation'? A retrospective cohort study on the use and labelling of continuously administered sedatives on a palliative care unit. <i>Palliative Med.</i> 2018;32(7):1189-97. | Geen vergelijking van medicatie met andere medicatie |
| Schildmann E, Schildmann J. Palliative sedation therapy: a systematic literature review and critical appraisal of available guidance on indication and decision making. <i>J Palliat Med.</i> 2014;17(5):601-11. | Review van guidelines, geen verwijzing naar vergelijkende literatuur |
| Schildmann EK, Schildmann J, Kiesewetter I. Medication and monitoring in palliative sedation therapy: a systematic review and quality assessment of published guidelines. <i>J Pain Symptom Manage.</i> 2015;49(4):734-46. | Review van guidelines, geen verwijzing naar vergelijkende literatuur |
| Schur S, Weixler D, Gabl C, Kreye G, Likar R, Masel EK, et al. Sedation at the end of life - a nation-wide study in palliative care units in Austria. <i>BMC Palliative Care.</i> 2016;15(50):14. | Geen vergelijking van medicatie met andere medicatie |
| Seale C. Continuous deep sedation in medical practice: a descriptive study. <i>J Pain Symptom Manage.</i> 2010;39(1):44-53. | Geen vergelijking van medicatie met andere medicatie |
| Simon ST, Higginson IJ, Booth S, Harding R, Bausewein C. Benzodiazepines for the relief of breathlessness in advanced malignant and non-malignant diseases in adults. <i>Cochrane Database of Systematic Reviews.</i> 2010;1:20. | Geüpdated |
| Simon ST, Higginson IJ, Booth S, Harding R, Weingartner V, Bausewein C. Benzodiazepines for the relief of breathlessness in advanced malignant and non-malignant diseases in adults. <i>Cochrane Database of Systematic Reviews.</i> 2016;10:20. | Niet over palliatieve sedatie |
| Simon ST, Koskeroglu P, Bausewein C. Pharmacological therapy of refractory dyspnoea : a systematic literature review. <i>Schmerz.</i> 2012;26(5):515-22. | Niet over palliatieve sedatie |
| Song HN, Ahn JS, Koh SJ, Kim YS, Jun HJ, Hwang IG, et al. Use of sedatives in dying patients: a multicenter study. <i>Supportive care in cancer. Conference: 2017 international MASCC/ISOO symposium: supportive care in cancer. United states.</i> 2017;25(2 Supplement 1):S202-S3. | Conference abstract |
| Stiel S, Nurnus M, Ostgathe C, Klein C. Palliative sedation in Germany: factors and treatment practices associated with different sedation rate estimates in palliative and hospice care services. <i>BMC Palliat Care.</i> 2018;17(1):48. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Brinkkemper T, Rietjens JAC, Blanker MH, van Zuylen L, Ribbe M, et al. Physicians' and nurses' experiences with continuous palliative sedation in the Netherlands. <i>Arch Intern Med.</i> 2010;170(14):1271-4. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Rietjens JAC, Brinkkemper T, van Zuylen L, van Burg-Verhage WA, Zuurmond WWA, et al. Palliative sedation largely in accordance with Dutch national guideline. <i>Nederlands Tijdschrift voor Geneeskunde.</i> 2011;155. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, Rietjens JAC, van Zuylen L, Zuurmond WWA, Perez RSGM, van der Maas PJ, et al. Continuous palliative sedation for cancer and noncancer patients. <i>J Pain Symptom Manage.</i> 2012;43(2):172-81. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, van der Heide A, Brinkkemper T, van Zuylen L, Perez R, Rietjens J. Continuous palliative sedation until death: practice after introduction of the Dutch national guideline. <i>BMJ support.</i> 2012;2(3):256-63. | Geen vergelijking van medicatie met andere medicatie |
| Swart SJ, van der Heide A, van Zuylen L, Perez RSGM, Zuurmond WWA, van der Maas PJ, et al. Considerations of physicians about the depth of palliative sedation at the end of life. <i>CMAJ.</i> 2012;184(7):E360-6. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RHPD, Hasselaar JGJ, Krijnsen PJC, Gloudemans AJM, Verhagen SCAHHVM, Vissers KCP, et al. The Practice of Continuous Palliative Sedation in Long-Term Care for Frail Patients with Existential Suffering. <i>Journal of Palliative Care.</i> 2015;31(3):141-9. | Geen vergelijking van medicatie met andere medicatie |
| van Deijck RHPD, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. Level of Discomfort Decreases After the Administration of Continuous Palliative Sedation: A Prospective Multicenter Study in Hospices and Palliative Care Units. <i>J Pain Symptom Manage.</i> 2016;52(3):361-9. | Geen vergelijking van medicatie met andere medicatie |

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| Van Deijck RHPD, Krijnsen PJC, Hasselaar JGJ, Verhagen SCAHHVM, Vissers KCP, Koopmans RTCM. The practice of continuous palliative sedation in elderly patients: a nationwide explorative study among Dutch nursing home physicians. J Am Geriatr Soc. 2010;58(9):1671-8. | Geen vergelijking van medicatie met andere medicatie |
| Wayne-Bossert P, Zulian GB. Palliative sedation: from the family perspective. Am J Hosp Palliat Care. 2013;30(8):786-90. | Geen vergelijking van medicatie met andere medicatie |
| Whitehead PB. Palliative pharmacologic sedation for terminally ill adults. Clin J Oncol Nurs. 2015;19(3):373-4. | Samenvatting van Cochrane review |

B4 Search strings Question 4,5 & 6

Medline (ovid)

1. exp Central Nervous System Depressants/ (648166)
2. exp Anesthesia/ (186318)
3. exp Benzodiazepines/ (64044)
4. exp Barbiturates/ (53461)
5. exp Histamine Antagonists/ (60752)
6. exp Psychotropic Drugs/ (361128)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (515499)
8. (symptom* adj6 (relie* or control*)).mp. (54102)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (1135025)
10. Palliative Care/ (51223)
11. exp Terminal Care/ (49160)
12. Terminally Ill/ (6316)
13. palliat*.mp. (81278)
14. (terminal* adj6 (care or caring or ill*)).mp. (35358)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (33476)
16. (end adj3 life).mp. (19212)
17. hospice*.mp. (14403)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (42134)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (46537)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (235392)
21. 9 and 20 (13476)
22. midazolam.mp. (12618)
23. exp Benzodiazepines/ (64044)
24. levomepromazin\$.mp. (499)
25. propofol.mp. (19030)
26. fenobarbital.mp. (141)
27. promethazin\$.mp. (3794)
28. exp Midazolam/ (8563)
29. exp Haloperidol/ (15538)
30. Dormicum.mp. (124)
31. exp Propofol/ (14178)
32. exp Phenobarbital/ (18449)
33. phenobarbital.mp. (24126)
34. exp Promethazine/ (2997)
35. exp Sedatives/ (120718)
36. exp Barbiturates/ (53461)
37. exp Analgesics, Opioid/ (110805)
38. opioid\$.mp. (99978)
39. exp Thiopental/ (6813)
40. thiopenta\$.mp. (8749)
41. 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 or 35 or 36 or 37 or 38 or 39 or 40 (324794)
42. 21 and 41 (5391)
43. limit 42 to yr="2010 - 2019" (2110)

44. limit 42 to yr="1990 - 2009" (2767)

PreMedline (OVID)

1. exp Central Nervous System Depressants/ (179)
2. exp Anesthesia/ (51)
3. exp Benzodiazepines/ (15)
4. exp Barbiturates/ (1)
5. exp Histamine Antagonists/ (14)
6. exp Psychotropic Drugs/ (67)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (6144)
8. (symptom* adj6 (relie* or control*)).mp. (1223)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (7423)
10. Palliative Care/ (36)
11. exp Terminal Care/ (28)
12. Terminally Ill/ (7)
13. palliat*.mp. (1680)
14. (terminal* adj6 (care or caring or ill*)).mp. (230)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (628)
16. (end adj3 life).mp. (815)
17. hospice*.mp. (341)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (1013)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (1009)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (4562)
21. 9 and 20 (220)
22. midazolam.mp. (169)
23. exp Benzodiazepines/ (15)
24. levomepromazin\$.mp. (8)
25. propofol.mp. (234)
26. fenobarbital.mp. (1)
27. promethazin\$.mp. (18)
28. exp Midazolam/ (2)
29. exp Haloperidol/ (1)
30. Dormicum.mp. (2)
31. exp Propofol/ (8)
32. exp Phenobarbital/ (0)
33. phenobarbital.mp. (91)
34. exp Promethazine/ (0)
35. exp Sedatives/ (25)
36. exp Barbiturates/ (1)
37. exp Analgesics, Opioid/ (52)
38. opioid\$.mp. (2059)
39. exp Thiopental/ (1)
40. thiopenta\$.mp. (25)
41. 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 or 35 or 36 or 37 or 38 or 39 or 40 (2564)
42. 21 and 41 (92)
43. limit 42 to yr="2010 - 2019" (83)
44. limit 42 to yr="1990 - 2009" (9)

Embase (via embase.com)

| | | |
|----|----------------------------------|---------|
| #1 | 'central depressant agent'/exp | 1199691 |
| #2 | 'anesthesia'/exp | 347096 |
| #3 | 'benzodiazepine derivative'/exp | 223408 |
| #4 | 'barbituric acid derivative'/exp | 147608 |
| #5 | 'antihistaminic agent'/exp | 247432 |
| #6 | 'psychotropic agent'/exp | 961613 |

| | | |
|-----|--|---------|
| #7 | benzodiazepine*.ti,ab OR barbiturate*.ti,ab OR anaesthesia:ti,ab OR anesthesia:ti,ab OR opioid*.ti,ab OR antipsychotic*.ti,ab OR 'anti psychotic':ti,ab OR antihistamine*.ti,ab OR 'anti histamine*':ti,ab OR hypnotic*.ti,ab OR sedat*.ti,ab OR tranquil*.ti,ab | 568328 |
| #8 | (symptom* NEAR/6 (relie* OR control*)):ti,ab | 91692 |
| #9 | #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 | 2329266 |
| #10 | 'palliative therapy'/exp | 103393 |
| #11 | 'terminal care'/exp | 65302 |
| #12 | 'terminally ill patiënt'/exp | 8233 |
| #13 | palliat*.ti,ab | 109000 |
| #14 | (terminal* NEAR/6 (care OR caring OR ill*)):ti,ab | 12373 |
| #15 | (end NEAR/3 life):ti,ab | 31474 |
| #16 | hospice*.ti,ab | 18128 |
| #17 | 'terminal stage*':ti,ab | 4201 |
| #18 | dying:ti,ab | 42155 |
| #19 | (close NEAR/6 death):ti,ab | 1236 |
| #20 | ((incurable OR advanced) NEAR/6 (ill* OR disease*)):ti,ab | 83812 |
| #21 | #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 | 319976 |
| #22 | #9 AND #21 | 32815 |
| #23 | 'midazolam'/exp | 44739 |
| #24 | 'levomepromazine'/exp | 5626 |
| #25 | 'propofol'/exp | 50967 |
| #26 | 'phenobarbital'/exp | 62072 |
| #27 | 'promethazine'/exp | 14231 |
| #28 | 'haloperidol'/exp | 57283 |
| #29 | 'midazolam maleate'/exp | 1397 |
| #30 | 'sedative agent'/exp | 17009 |
| #31 | 'barbituric acid derivative'/exp | 147608 |
| #32 | 'opiate'/exp | 78132 |
| #33 | 'thiopental'/exp | 25042 |
| #34 | 'benzodiazepine derivative'/exp | 223408 |
| #35 | #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 OR #32 OR #33 OR #34 | 486447 |
| #36 | #22 AND #35 | 8379 |
| #37 | #36 AND ([article]/lim OR [article in press]/lim OR [review]/lim) AND ([embase]/lim OR [medline]/lim OR [pubmed-not-medline]/lim) AND [2010-2019]/py AND [medline]/lim | 1805 |
| #38 | #36 AND ([article]/lim OR [article in press]/lim OR [review]/lim) AND ([embase]/lim OR [medline]/lim OR [pubmed-not-medline]/lim) AND [1990-2010]/py AND [medline]/lim | 1963 |

Cochrane library (via Wiley)

- #1 MeSH descriptor: [Central Nervous System Depressants] explode all trees
- #2 MeSH descriptor: [Anesthesia] explode all trees
- #3 MeSH descriptor: [Benzodiazepines] explode all trees
- #4 MeSH descriptor: [Barbiturates] explode all trees
- #5 MeSH descriptor: [Histamine Antagonists] explode all trees
- #6 MeSH descriptor: [Psychotropic Drugs] explode all trees
- #7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*):ti,ab
- #8 (symptom* NEAR/6 (relie* or control*)):ti,ab
- #9 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
- #10 MeSH descriptor: [Palliative Care] explode all trees
- #11 MeSH descriptor: [Terminal Care] explode all trees
- #12 MeSH descriptor: [Terminally Ill] explode all trees
- #13 pallia*.ti,ab
- #14 (terminal* NEAR/6 (care or caring or ill*)):ti,ab
- #15 (terminal-stage* or terminal stage* or dying or (close NEAR/6 death)):ti,ab
- #16 (end NEAR/3 life):ti,ab
- #17 hospice*.ti,ab

- #18 ((end-stage* or end stage*) NEAR/6 (disease* or ill* or care or caring)):ti,ab
- #19 ((incurable or advanced) NEAR/6 (ill* or disease*))
- #20 #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19
- #21 #9 and #20
- #22 midazolam:ti,ab
- #23 levomepromazin*:ti,ab
- #24 propofol:ti,ab
- #25 fenobarbital:ti,ab
- #26 promethazin*:ti,ab
- #27 MeSH descriptor: [Midazolam] explode all trees
- #28 MeSH descriptor: [Haloperidol] explode all trees
- #29 dormicum:ti,ab
- #30 MeSH descriptor: [Propofol] explode all trees
- #31 MeSH descriptor: [Phenobarbital] explode all trees
- #32 phenobarbital:ti,ab
- #33 MeSH descriptor: [Promethazine] explode all trees
- #34 MeSH descriptor: [Hypnotics and Sedatives] explode all trees
- #35 MeSH descriptor: [Barbiturates] explode all trees
- #36 MeSH descriptor: [Analgesics, Opioid] explode all trees
- #37 opioid*:ti,ab
- #38 MeSH descriptor: [Thiopental] explode all trees
- #39 thiopenta*:ti,ab
- #40 #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 or #35 or #36 or #37 or #38 or #39
- #41 #21 and #40

Cinahl

| | | |
|-----|--|--------|
| S46 | S44 OR S45 | 657 |
| S45 | S21 AND S40 (Limiters - Published Date: 20100101-20191231; Exclude MEDLINE records; Publication Type: Clinical Trial, Journal Article, Meta Analysis, Meta Synthesis, Practice Guidelines, Randomized Controlled Trial, Research, Review, Systematic Review) | 350 |
| S44 | S21 AND S40 (Limiters - Published Date: 19900101-20091231; Exclude MEDLINE records; Publication Type: Clinical Trial, Journal Article, Meta Analysis, Meta Synthesis, Practice Guidelines, Randomized Controlled Trial, Research, Review, Systematic Review) | 307 |
| S41 | S21 AND S40 | 3,039 |
| S40 | S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34 OR S35 OR S36 OR S37 OR S38 OR S39 | 61,898 |
| S39 | (MH "Thiopental") | 806 |
| S38 | (MH "Analgesics, Opioid+") | 31,275 |
| S37 | (MH "Barbiturates+") | 1,478 |
| S36 | (MH "Hypnotics and Sedatives+") | 15,626 |
| S35 | (MH "Promethazine") | 304 |
| S34 | (MH "Phenobarbital+") | 536 |
| S33 | (MH "Propofol") | 4,799 |
| S32 | (MH "Haloperidol") | 1,049 |
| S31 | (MH "Midazolam") | 2,448 |
| S30 | thiopenta* | 987 |
| S29 | opioid* | 32,596 |
| S28 | phenobarbital | 788 |
| S27 | Dormicum | 4 |
| S26 | promethazin* | 389 |
| S25 | fenobarbital | 8 |
| S24 | propofol | 6,199 |
| S23 | levomepromazin* | 38 |
| S22 | midazolam | 3,388 |

| | | |
|-----|---|---------|
| S21 | S9 AND S20 | 8,588 |
| S20 | S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 | 103,469 |
| S19 | (incurable or advanced) N6 (ill* or disease*) | 10,768 |
| S18 | (end-stage* or end stage*) N6 (disease* or ill* or care or caring) | 9,922 |
| S17 | hospice* | 18,170 |
| S16 | end N3 life | 17,886 |
| S15 | terminal-stage* or terminal stage* or dying or (close N6 death) | 14,327 |
| S14 | terminal* N6 (care or caring or ill*) | 26,223 |
| S13 | palliat* | 46,075 |
| S12 | (MH "Terminally Ill Patiënts+") | 10,707 |
| S11 | (MH "Terminal Care+") | 57,294 |
| S10 | (MH "Palliative Care") | 31,514 |
| S9 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 | 280,442 |
| S8 | symptom* and (relie* or control*) | 94,703 |
| S7 | benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil* | 122,631 |
| S6 | (MH "Psychotropic Drugs+") | 50,890 |
| S5 | (MH "Histamine Antagonists+") | 5,286 |
| S4 | (MH "Barbiturates+") | 1,478 |
| S3 | (MH "Antianxiety Agents, Benzodiazepine+") | 8,447 |
| S2 | (MH "Anesthesia+") | 40,086 |
| S1 | (MH "Central Nervous System Depressants+") | 94,604 |

Methodology report PICO 7

Key question

1.1.7 Uitgangsvraag 7 (module 4.6)

Wat is het effect van het wel toedienen van vocht en voeding in vergelijking met het niet toedienen van vocht en voeding bij patiënten die continue palliatieve sedatie ondergaan op de tijd tot aan het overlijden en op de tevredenheid van en door naasten ervaren kwaliteit van leven en sterven (van de patiënt)?

P: Patiënten die continue palliatieve sedatie ondergaan.

I: Toedienen van voeding en vocht.

C: Niet toedienen van voeding en vocht.

O: Tevredenheid van en door naasten ervaren, kwaliteit van leven en sterven (van de patiënt), tijd tot overlijden.

Search strategy

Search date: July 18 2019.

Databases: OVID Medline, Embase, Cochrane Library, Cinahl (see appendix for search strings).

Search limits:

- Publication date: 2010-2019;
- English, French, Dutch and German only;
- Study design: meta-analyses, systematic reviews, comparative cohort studies of at least 50 patients

Search Results

Table 13. Overall search results

| Database | Number of hits |
|---|----------------|
| OVID Medline | 352 |
| OVID PreMedline | 13 |
| EMBASE.com | 812 |
| Cochrane Database of Systematic Reviews | 14 |
| CENTRAL | 75 |
| Cinahl | 87 |

| | |
|-----------------------------------|-------------|
| Total hits | 1353 |
| N excluded (language, duplicates) | 305 |
| Total unique eligible hits | 1048 |

Of the remaining 39 papers, the full-text was retrieved. Based on the full-text, an additional 38 papers were excluded.

Included studies

- Maeda I, Morita T, Yamaguchi T, Inoue S, Ikenaga M, Matsumoto Y, et al. Effect of continuous deep sedation on survival in patients with advanced cancer (J-Proval): a propensity score-weighted analysis of a prospective cohort study. *Lancet Oncol.* 2016;17(1):115-22.

Table 14. Key question 7: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|---|--|
| Abdul-Razzak A, Lemieux L, Snyman M, Perez G, Sinnarajah A. Description of Continuous Palliative Sedation Practices in a Large Health Region and Comparison with Clinical Practice Guidelines. <i>Journal of Palliative Medicine.</i> 2019;02:02. | Geen vergelijkend onderzoek |
| Anquinet L, Rietjens JAC, Vandervoort A, van der Steen JT, Vander Stichele R, Deliens L, et al. Continuous deep sedation until death in nursing home residents with dementia: a case series. <i>J Am Geriatr Soc.</i> 2013;61(10):1768-76. | Geen vergelijkend onderzoek |
| Arcand M. End-of-life issues in advanced dementia: Part 2: management of poor nutritional intake, dehydration, and pneumonia. <i>Can Fam Physician.</i> 2015;61(4):337-41. | Narrative review; gaat niet over nutritie tijdens palliatieve sedatie |
| Brinkkemper T, Klinkenberg M, Deliens L, Eliel M, Rietjens JAC, Zuurmond WWA, et al. Palliative sedation at home in the Netherlands: a nationwide survey among nurses. <i>J Adv Nurs.</i> 2011;67(8):1719-28. | Niet over voeding en vocht |
| Bruera E, Anderson KO, Palmer JL, Cohen MZ, Coldman B, Roberts LE, et al. A randomized, controlled trial of parenteral hydration in patients with advanced cancer. <i>Journal of clinical oncology.</i> 2010;28(15). | Abstract; lopend onderzoek |
| Bruera E, Hui D, Dalal S, Torres-Vigil I, Trumble J, Roosth J, et al. Parenteral hydration in patients with advanced cancer: a multicenter, double-blind, placebo-controlled randomized trial. <i>J Clin Oncol.</i> 2013;31(1):111-8. | Niet specifiek over palliatieve sedatie |
| Bryniarski P, Andrysiak D, Jezioro M, Kozlowski M, Krzyzewski R, Kucharz J, et al. Evaluation of prognostic factors, symptoms and consequences of dehydration in patients with cancer based on retrospective data analysis of 102 patients treated in the Department of Palliative Medicine at the University Hospital in Cracow - preliminary report. <i>Folia Medica Cracoviensia.</i> 2017;57(3):5-14. | Niet specifiek over palliatieve sedatie |
| Campos-Calderon C, Montoya-Juarez R, Hueso-Montoro C, Hernandez-Lopez E, Ojeda-Virto F, Garcia-Caro MP. Interventions and decision-making at the end of life: the effect of establishing the terminal illness situation. <i>BMC Palliat Care.</i> 2016;15(1):91. | Niet over voeding en vocht tijdens palliatieve sedatie |
| Caraceni A, Speranza R, Spoldi E, Ambroset C.S, Canestrari S, Marinari M, et al. Palliative Sedation in Terminal Cancer Patients Admitted to Hospice or Home Care Programs: Does the Setting Matter? Results From a National Multicenter Observational Study. <i>J. Pain Symptom Manage.</i> 2018;56(1):33-43. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Cherny N.I. ESMO clinical practice guidelines for the management of refractory symptoms at the end of life and the use of palliative sedation. <i>Ann. Oncol.</i> 2014;25:iii143-iii52. | Richtlijn; geen verwijzing naar vergelijkend onderzoek ivm voeding/vocht |
| Claessens P, Menten J, Schotsmans P, Broeckaert B, Palsed C. Palliative sedation, not slow euthanasia: a prospective, longitudinal study of sedation in Flemish palliative care units. <i>J Pain Symptom Manage.</i> 2011;41(1):14-24. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Claessens P, Menten J, Schotsmans P, Broeckaert B. Food and fluid intake and palliative sedation in palliative care units: A longitudinal prospective study. <i>Progress in Palliative Care.</i> 2014;22(1):1-8. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Dalal S, Hui D, Isabel TV, Palmer JL, Allo J, Susan FH, et al. Parenteral hydration (PH) in advanced cancer patients: a multi-center, double-blind, placebo-controlled randomized trial. <i>Journal of clinical oncology.</i> 2012;30(15). | Niet specifiek over palliatieve sedatie |

| Reference | Reason for exclusion |
|--|--|
| Davies A, Waghorn M, Boyle J, Gallagher A, Johnsen S. Alternative forms of hydration in patients with cancer in the last days of life: study protocol for a randomised controlled trial. <i>Trials</i> [Electronic Resource]. 2015;16(464):14. | Onderzoeksprotocol |
| Del Río M.I, Shand B, Bonati P, Palma A, Maldonado A, Taboada P, et al. Hydration and nutrition at the end of life: A systematic review of emotional impact, perceptions, and decision-making among patients, family, and health care staff. <i>Psycho-Oncology</i> . 2012;21(9):913-21. | Niet specifiek over palliatieve sedatie |
| Gaertner J, Drabik A, Marschall U, Schlesiger G, Voltz R, Stock S. Inpatient palliative care: a nationwide analysis. <i>Health Policy</i> . 2013;109(3):311-8. | Niet specifiek over palliatieve sedatie |
| Galanakis C, Mayo NE, Gagnon B. Assessing the role of hydration in delirium at the end of life. <i>Curr</i> . 2011;5(2):169-73. | Niet specifiek over palliatieve sedatie |
| Giles A, Sykes N. To explore the relationship between the use of midazolam and cessation of oral intake in the terminal phase of hospice inpatients: A retrospective case note review: Does midazolam affect oral intake in the dying? <i>Palliat Med</i> . 2017;31(1):89-92. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Gillespie L, Raftery A-M. Nutrition in palliative and end-of-life care. <i>British Journal of Community Nursing</i> . Suppl:S15. 2014;20. | Geen full-text |
| Goncalves F, Cordero A, Almeida A, Cruz A, Rocha C, Feio M, et al. A survey of the sedation practice of Portuguese palliative care teams. <i>Support Care Cancer</i> . 2012;20(12):3123-7. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Good P, Richard R, Syrmis W, Jenkins-Marsh S, Stephens J. Medically assisted hydration for adult palliative care patients. <i>Cochrane Database of Systematic Reviews</i> . 2014;4:23. | Niet specifiek over palliatieve sedatie |
| Hanninen J, Hamunen K, Laakkonen M-L, Laukkala T, Lehto J, Matila A, et al. Palliative (symptomatic) care of (imminently) dying patients. <i>Duodecim</i> . 2013;129(4):372-3. | Fins |
| Hopprich A, Gunther LD, Laufenberg-Feldmann R, Reinholz U, Weber M. Palliative sedation at a university palliative care unit--a descriptive analysis. <i>Dtsch Med Wochenschr</i> . 2016;141(8):e60-6. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Igarashi A, Morita T, Miyashita M, Kiyohara E, Inoue S. Changes in medical and nursing care after admission to palliative care units: a potential method for improving regional palliative care. <i>Support Care Cancer</i> . 2010;18(9):1107-13. | Niet specifiek over palliatieve sedatie |
| Kazuki Sato, Mitsunori Miyashita, Tatsuya Morita, Satoru Tsuneto, Shima Y. End-of-Life Medical Treatments in the Last Two Weeks of Life in Palliative Care Units in Japan, 2005-2006: A Nationwide Retrospective Cohort Survey. <i>Journal of Palliative Medicine</i> . 2016;19(11):1188-96. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Lundstrom S, Gyllenhammar E, Martinsson U, Strang P. Together we can: experiences from 7 years of cross-sectional studies in a Swedish palliative care clinical research network. <i>Palliat Med</i> . 2010;24(3):261-6. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Maltoni M, Setola E. Palliative Sedation in Patients With Cancer. <i>Cancer Control</i> . 2015;22(4):433-41. | Narrative review |
| Mayland CR, Mulholland H, Gambles M, Ellershaw J, Stewart K. How well do we currently care for our dying patients in acute hospitals: the views of the bereaved relatives? <i>BMJ support</i> . 2017;7(3):316-25. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Nogueira FL, Sakata RK. Palliative sedation of terminally ill patients. <i>Rev Bras Anesthesiol</i> . 2012;62(4):580-92. | Narrative review |
| Papavasiliou EE, Chambaere K, Deliens L, Brearley S, Payne S, Rietjens J, et al. Physician-reported practices on continuous deep sedation until death: A descriptive and comparative study. <i>Palliat Med</i> . 2014;28(6):491-500. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Pompili A, Telera S, Villani V, Pace A. Home palliative care and end of life issues in glioblastoma multiforme: results and comments from a homogeneous cohort of patients. <i>Neurosurg</i> . 2014;37(6):E5. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Robijn L, Cohen J, Rietjens J, Deliens L, Chambaere K. Trends in Continuous Deep Sedation until Death between 2007 and 2013: A Repeated Nationwide Survey. <i>PLoS ONE</i> [Electronic Resource]. 2016;11(6):e0158188. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Rys S, Mortier F, Deliens L, Bilsen J. The practice of continuous sedation until death in nursing homes in Flanders, Belgium: a nationwide study. <i>J Am Geriatr Soc</i> . 2014;62(10):1869-76. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |

| Reference | Reason for exclusion |
|---|--|
| Sato K, Miyashita M, Morita T, Tsuneto S, Shima Y. End-of-Life Medical Treatments in the Last Two Weeks of Life in Palliative Care Units in Japan, 2005-2006: A Nationwide Retrospective Cohort Survey. <i>J Palliat Med.</i> 2016;19(11):1188-96. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Schildmann E, Schildmann J. Palliative sedation therapy: a systematic literature review and critical appraisal of available guidance on indication and decision making. <i>J Palliat Med.</i> 2014;17(5):601-11. | Review van richtlijnen; geen verwijzing naar vergelijkende literatuur over voeding/vocht |
| Suchner U, Reudelsterz C, Gog C. How to manage terminal dehydration. <i>Anaesthesist.</i> 2019;68:63-75. | Narrative review |
| Turker I, Komurcu S, Arican A, Doruk H, Ozyilkan O, Coskun HS, et al. Investigational tests and treatments performed in terminal stage cancer patients in two weeks before death: Turkish oncology group (TOG) study. <i>Med Oncol.</i> 2014;31(12):350. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Yamagishi A, Morita T, Miyashita M, Sato K, Tsuneto S, Shima Y. The care strategy for families of terminally ill cancer patients who become unable to take nourishment orally: recommendations from a nationwide survey of bereaved family members' experiences. <i>J Pain Symptom Manage.</i> 2010;40(5):671-83. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |

B5 Search strings Question 7

Medline (ovid)

1. exp Central Nervous System Depressants/ (647987)
2. exp Anesthesia/ (186267)
3. exp Benzodiazepines/ (64029)
4. exp Barbiturates/ (53460)
5. exp Histamine Antagonists/ (60738)
6. exp Psychotropic Drugs/ (361061)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (515283)
8. (symptom* adj6 (relie* or control*)).mp. (54067)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (1134650)
10. Palliative Care/ (51187)
11. exp Terminal Care/ (49132)
12. Terminally Ill/ (6309)
13. palliat*.mp. (81206)
14. (terminal* adj6 (care or caring or ill*)).mp. (35329)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (33452)
16. (end adj3 life).mp. (19170)
17. hospice*.mp. (14377)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (42082)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (46501)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (235192)
21. 9 and 20 (13468)
22. exp nutrition assessment/ (14124)
23. exp Nutrition Therapy/ (96821)
24. exp Feeding Methods/ (43024)
25. (feed or feeding or fed* or food*).tw. (698803)
26. exp Food/ (1230322)
27. (diet or nutrition*).tw. (454387)
28. Fluid Therapy/ (19244)
29. Dehydration/ (12850)
30. (hydrat* or dehydrat* or rehydrat* or (fluid* adj6 therap*) or (fluid* adj6 balance*) or (fluid* adj6 manag*) or hypodermoclysis).tw. (94839)
31. 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 (2038170)
32. 21 and 31 (871)
33. limit 32 to yr="2010 - 2019" (352)

PreMedline (OVID)

1. exp Central Nervous System Depressants/ (179)
2. exp Anesthesia/ (51)
3. exp Benzodiazepines/ (15)
4. exp Barbiturates/ (1)
5. exp Histamine Antagonists/ (14)
6. exp Psychotropic Drugs/ (67)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (6144)
8. (symptom* adj6 (relie* or control*)).mp. (1223)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (7423)
10. Palliative Care/ (36)
11. exp Terminal Care/ (28)
12. Terminally Ill/ (7)
13. palliat*.mp. (1680)
14. (terminal* adj6 (care or caring or ill*)).mp. (230)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (628)
16. (end adj3 life).mp. (815)
17. hospice*.mp. (341)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (1013)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (1009)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (4562)
21. 9 and 20 (220)
22. exp nutrition assessment/ (7)
23. exp Nutrition Therapy/ (70)
24. exp Feeding Methods/ (33)
25. (feed or feeding or fed* or food*).tw. (14587)
26. exp Food/ (698)
27. (diet or nutrition*).tw. (8798)
28. Fluid Therapy/ (11)
29. Dehydration/ (7)
30. (hydrat* or dehydrat* or rehydrat* or (fluid* adj6 therap*) or (fluid* adj6 balance*) or (fluid* adj6 manag*) or hypodermoclysis).tw. (1848)
31. 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 (21883)
32. 21 and 31 (18)
33. limit 32 to yr="2010 - 2019" (13)

Embase (via embase.com)

| # | Search Terms | Number of hits |
|-----|--|----------------|
| #1 | central depressant agent'/exp | 1199691 |
| #2 | anesthesia'/exp | 347096 |
| #3 | benzodiazepine derivative'/exp | 223408 |
| #4 | barbituric acid derivative'/exp | 147608 |
| #5 | antihistaminic agent'/exp | 247432 |
| #6 | psychotropic agent'/exp | 961613 |
| #7 | benzodiazepine*:ti,ab OR barbiturate*:ti,ab OR anaesthesia:ti,ab OR anesthesia:ti,ab OR opioid*:ti,ab OR antipsychotic*:ti,ab OR 'anti psychotic*:ti,ab OR antihistamine*:ti,ab OR 'antihistamine*:ti,ab OR hypnotic*:ti,ab OR sedat*:ti,ab OR tranquil*:ti,ab | 568328 |
| #8 | (symptom* NEAR/6 (relie* OR control*)):ti,ab | 91692 |
| #9 | #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 | 2329266 |
| #10 | palliative therapy'/exp | 103393 |
| #11 | terminal care'/exp | 65302 |
| #12 | terminally ill patiënt'/exp | 8233 |
| #13 | palliat*:ti,ab | 109000 |
| #14 | (terminal* NEAR/6 (care OR caring OR ill*)):ti,ab | 12373 |
| #15 | (end NEAR/3 life):ti,ab | 31474 |
| #16 | hospice*:ti,ab | 18128 |
| #17 | terminal stage*:ti,ab | 4201 |

| | | |
|-----|---|---------|
| #18 | dying:ti,ab | 42155 |
| #19 | (close NEAR/6 death):ti,ab | 1236 |
| #20 | ((incurable OR advanced) NEAR/6 (ill* OR disease*)):ti,ab | 83812 |
| #21 | #10 OR #11 OR #12 OR #13 OR #14 OR #15 OR #16 OR #17 OR #18 OR #19 OR #20 | 319976 |
| #22 | #9 AND #21 | 32815 |
| #23 | nutritional assessment'/exp | 27134 |
| #24 | diet therapy'/exp | 341069 |
| #25 | food intake'/exp | 314584 |
| #26 | food'/exp | 1006953 |
| #27 | feed:ti,ab OR feeding:ti,ab OR fed*:ti,ab OR food*:ti,ab | 1049471 |
| #28 | diet:ti,ab OR nutrition*:ti,ab | 687475 |
| #29 | fluid therapy'/exp | 89042 |
| #30 | dehydration'/exp | 39725 |
| #31 | hydrat*:ti,ab OR dehydrat*:ti,ab OR rehydrat*:ti,ab OR ((fluid* NEAR/6 therap*):ti,ab) OR ((fluid* NEAR/6 balance*):ti,ab) OR ((fluid* NEAR/6 manag*):ti,ab) OR hypodermoclysis:ti,ab | 141775 |
| #32 | #23 OR #24 OR #25 OR #26 OR #27 OR #28 OR #29 OR #30 OR #31 | 2551153 |
| #33 | #22 AND #32 | 3441 |
| #34 | #22 AND #32 AND ([article]/lim OR [article in press]/lim OR [review]/lim) AND ([dutch]/lim OR [english]/lim OR [french]/lim OR [german]/lim) AND ([embase]/lim OR [medline]/lim OR [pubmed-not-medline]/lim) AND [2010-2019]/py AND [medline]/lim | 812 |

Cochrane library (via Wiley)

- #1 MeSH descriptor: [Central Nervous System Depressants] explode all trees
- #2 MeSH descriptor: [Anesthesia] explode all trees
- #3 MeSH descriptor: [Benzodiazepines] explode all trees
- #4 MeSH descriptor: [Barbiturates] explode all trees
- #5 MeSH descriptor: [Histamine Antagonists] explode all trees
- #6 MeSH descriptor: [Psychotropic Drugs] explode all trees
- #7 (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*):ti,ab
- #8 (symptom* NEAR/6 (relie* or control*)):ti,ab
- #9 #1 or #2 or #3 or #4 or #5 or #6 or #7 or #8
- #10 MeSH descriptor: [Palliative Care] explode all trees
- #11 MeSH descriptor: [Terminal Care] explode all trees
- #12 MeSH descriptor: [Terminally Ill] explode all trees
- #13 pallia*:ti,ab
- #14 (terminal* NEAR/6 (care or caring or ill*)):ti,ab
- #15 (terminal-stage* or terminal stage* or dying or (close NEAR/6 death)):ti,ab
- #16 (end NEAR/3 life):ti,ab
- #17 hospice*:ti,ab
- #18 ((end-stage* or end stage*) NEAR/6 (disease* or ill* or care or caring)):ti,ab
- #19 ((incurable or advanced) NEAR/6 (ill* or disease*))
- #20 #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17 or #18 or #19
- #21 #9 and #20
- #22 MeSH descriptor: [Nutrition Assessment] explode all trees
- #23 MeSH descriptor: [Nutrition Therapy] explode all trees
- #24 MeSH descriptor: [Feeding Methods] explode all trees
- #25 (feed or feeding or fed* or food*):ti,ab
- #26 MeSH descriptor: [Food] explode all trees
- #27 (diet or nutrition*):ti,ab
- #28 MeSH descriptor: [Fluid Therapy] explode all trees
- #29 MeSH descriptor: [Dehydration] explode all trees
- #30 (hydrat* or dehydrat* or rehydrat* or (fluid* NEAR/6 therap*) or (fluid* NEAR/6 balance*) or (fluid* NEAR/6 manag*) or hypodermoclysis):ti,ab
- #31 #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30
- #32 #21 and #31

Cinahl

| | | |
|-----|---|---------|
| S36 | S21 AND S35 | 590 |
| S35 | (S22 OR S23 OR S24 OR S25 OR S26 OR S27 OR S28 OR S29 OR S30 OR S31 OR S32 OR S33 OR S34) | 437,030 |
| S34 | (diet or nutrition*) | 215,677 |
| S33 | (feed or feeding or fed* or food*) | 228,556 |
| S32 | (MH "Food+") | 145,968 |
| S31 | (MH "Feeding Methods+") | 36,632 |
| S30 | (MH "Diet Therapy+") | 26,876 |
| S29 | (MH "Nutritional Assessment") | 14,455 |
| S28 | (fluid* N6 manag*) | 1,782 |
| S27 | (fluid* N6 balance*) | 3,654 |
| S26 | (fluid* N6 therap*) | 7,154 |
| S25 | hypodermoclysis | 108 |
| S24 | (hydrat* or dehydrat* or rehydrat*) | 10,821 |
| S23 | (MH "Dehydration") | 3,574 |
| S22 | (MH "Fluid Therapy") | 5,623 |
| S21 | S9 AND S20 | 8,588 |
| S20 | S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S16 OR S17 OR S18 OR S19 | 103,469 |
| S19 | ((incurable or advanced) N6 (ill* or disease*)) | 10,768 |
| S18 | ((end-stage* or end stage*) N6 (disease* or ill* or care or caring)) | 9,922 |
| S17 | hospice* | 18,170 |
| S16 | (end N3 life) | 17,886 |
| S15 | (terminal-stage* or terminal stage* or dying or (close N6 death)) | 14,327 |
| S14 | (terminal* N6 (care or caring or ill*)) | 26,223 |
| S13 | palliat* | 46,075 |
| S12 | (MH "Terminally Ill Patiënts+") | 10,707 |
| S11 | (MH "Terminal Care+") | 57,294 |
| S10 | (MH "Palliative Care") | 31,514 |
| S9 | S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 | 280,442 |
| S8 | (symptom* and (relie* or control*)) | 94,703 |
| S7 | (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*) | 122,631 |
| S6 | (MH "Psychotropic Drugs+") | 50,890 |
| S5 | (MH "Histamine Antagonists+") | 5,286 |
| S4 | (MH "Barbiturates+") | 1,478 |
| S3 | (MH "Antianxiety Agents, Benzodiazepine+") | 8,447 |
| S2 | (MH "Anesthesia+") | 40,086 |
| S1 | (MH "Central Nervous System Depressants+") | 94,604 |

Methodology report PICO 8

Key question

1.1.8 Uitgangsvraag 8 (Inleiding)

Welke internationale richtlijnen over palliatieve sedatie zijn gepubliceerd, wat is de methodologische kwaliteit en welke individuele aanbevelingen met onderliggend bewijs en level of evidence zijn hierin opgenomen?

Search strategy

Search date: July 18 2019.

Databases: OVID Medline (see appendix for search strings), G-I-N library (MeSH: Palliative Care; publication type: guideline), Google scholar (iterative search), websites of guideline developers.

Search limits:

- Publication date: 2010-2019;
- English, French, Dutch and German only;
- Study design: guidelines

Search Results

Table 15. Overall search results.

| Database | Number of hits |
|-------------------|----------------|
| OVID Medline | 1041 |
| OVID PreMedline | 37 |
| G-I-N | 63 |
| Total hits | 1141 |

Of the 33 selected papers, the full-text was retrieved. Based on the full-text, an additional 23 papers were excluded.

Included studies

- **Alberta Health Services. Palliative Sedation Guideline. Edmonton Zone Palliative Care Program, 2015.**
- The Champlain Region Palliative Sedation Therapy Clinical Practice and Medication Guidelines, 2018.
- Collège des médecins du Québec 2016, Palliative sedation at the end of life.
- **Dean MM, Cellarius V, Henry B, Oneschuk D, Librach L. Framework for continuous palliative sedation therapy in Canada. J Palliat Med 2012;15:110: 870-879.**
- Cherny NI et al. ESMO Clinical Practice Guidelines for the management of refractory symptoms at the end of life and the use of palliative sedation. Annals of Oncology. 2014;25(3).
- Federatie Palliatieve Zorg Vlaanderen, Palliatieve Sedatie richtlijn voor de praktijk, 2012.
- Fraser Health, Refractory Symptoms and Palliative Sedation Therapy Guideline, 2011.
- IKNL, Palliative sedation Nation-wide guideline, Version: 2.0, 2010.
- Kirk TW, Mahon MM, Palliative Sedation Task Force of the National H, Palliative Care Organization Ethics C. National Hospice and Palliative Care Organization (NHPCO) position statement and commentary on the use of palliative sedation in imminently dying terminally ill patients. J Pain Symptom Manage. 2010;39(5):914-23.
- **Weixler D, Roider-Schur S, Likar R, Bozzaro C, Daniczek T, Feichtner A, et al. Austrian guideline for palliative sedation therapy (long version) : Results of a Delphi process of the Austrian Palliative Society (OPG). Wien Med Wochenschr. 2017;167(1-2):31-48.**
- WRHA, Sedation for Palliative Purposes Guideline, 2017.

These 10 guidelines were submitted to a quality appraisal with the AGREE II instrument (2 reviewers), and the best 3 guidelines (in bold) were selected for data extraction

Table 16. Key question 8: overview of excluded studies based on full-text evaluation

| Reference | Reason for exclusion |
|--|---|
| Abdul-Razzak A, Lemieux L, Snyman M, Perez G, Sinnarajah A. Description of Continuous Palliative Sedation Practices in a Large Health Region and Comparison with Clinical Practice Guidelines. Journal of Palliative Medicine. 2019;02:02. | Geen vergelijkend onderzoek |
| Anquinet L, Rietjens JAC, Vandervoort A, van der Steen JT, Vander Stichele R, Deliëns L, et al. Continuous deep sedation until death in nursing home residents with dementia: a case series. J Am Geriatr Soc. 2013;61(10):1768-76. | Geen vergelijkend onderzoek |
| Arcand M. End-of-life issues in advanced dementia: Part 2: management of poor nutritional intake, dehydration, and pneumonia. Can Fam Physician. 2015;61(4):337-41. | Narrative review; gaat niet over nutritie tijdens palliatieve sedatie |
| Brinkkemper T, Klinkenberg M, Deliëns L, Eliel M, Rietjens JAC, Zuurmond WWA, et al. Palliative sedation at home in the Netherlands: a nationwide survey among nurses. J Adv Nurs. 2011;67(8):1719-28. | Niet over voeding en vocht |
| Bruera E, Anderson KO, Palmer JL, Cohen MZ, Coldman B, Roberts LE, et al. A randomized, controlled trial of parenteral hydration in patients with advanced cancer. Journal of clinical oncology. 2010;28(15). | Abstract; lopend onderzoek |
| Bruera E, Hui D, Dalal S, Torres-Vigil I, Trumble J, Roosth J, et al. Parenteral hydration in patients with advanced cancer: a multicenter, double-blind, placebo-controlled randomized trial. J Clin Oncol. 2013;31(1):111-8. | Niet specifiek over palliatieve sedatie |
| Bryniarski P, Andrysiak D, Jezioro M, Kozłowski M, Krzyzewski R, Kucharz J, et al. Evaluation of prognostic factors, symptoms and consequences of dehydration in patients with cancer based on retrospective data analysis of 102 patients treated in the Department | Niet specifiek over palliatieve sedatie |

| Reference | Reason for exclusion |
|---|--|
| of Palliative Medicine at the University Hospital in Cracow - preliminary report. <i>Folia Medica Cracoviensia</i> . 2017;57(3):5-14. | |
| Campos-Calderon C, Montoya-Juarez R, Hueso-Montoro C, Hernandez-Lopez E, Ojeda-Virto F, Garcia-Caro MP. Interventions and decision-making at the end of life: the effect of establishing the terminal illness situation. <i>BMC Palliat Care</i> . 2016;15(1):91. | Niet over voeding en vocht tijdens palliatieve sedatie |
| Caraceni A, Speranza R, Spoldi E, Ambroset C.S, Canestrari S, Marinari M, et al. Palliative Sedation in Terminal Cancer Patients Admitted to Hospice or Home Care Programs: Does the Setting Matter? Results From a National Multicenter Observational Study. <i>J. Pain Symptom Manage</i> . 2018;56(1):33-43. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Cherny N.I. ESMO clinical practice guidelines for the management of refractory symptoms at the end of life and the use of palliative sedation. <i>Ann. Oncol</i> . 2014;25:iii143-iii52. | Richtlijn; geen verwijzing naar vergelijkend onderzoek ivm voeding/vocht |
| Claessens P, Menten J, Schotsmans P, Broeckeaert B, Palsed C. Palliative sedation, not slow euthanasia: a prospective, longitudinal study of sedation in Flemish palliative care units. <i>J Pain Symptom Manage</i> . 2011;41(1):14-24. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Claessens P, Menten J, Schotsmans P, Broeckeaert B. Food and fluid intake and palliative sedation in palliative care units: A longitudinal prospective study. <i>Progress in Palliative Care</i> . 2014;22(1):1-8. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Dalal S, Hui D, Isabel TV, Palmer JL, Allo J, Susan FH, et al. Parenteral hydration (PH) in advanced cancer patients: a multi-center, double-blind, placebo-controlled randomized trial. <i>Journal of clinical oncology</i> . 2012;30(15). | Niet specifiek over palliatieve sedatie |
| Davies A, Waghorn M, Boyle J, Gallagher A, Johnsen S. Alternative forms of hydration in patients with cancer in the last days of life: study protocol for a randomised controlled trial. <i>Trials [Electronic Resource]</i> . 2015;16(464):14. | Onderzoeksprotocol |
| Del Río M.I, Shand B, Bonati P, Palma A, Maldonado A, Taboada P, et al. Hydration and nutrition at the end of life: A systematic review of emotional impact, perceptions, and decision-making among patients, family, and health care staff. <i>Psycho-Oncology</i> . 2012;21(9):913-21. | Niet specifiek over palliatieve sedatie |
| Gaertner J, Drabik A, Marschall U, Schlesiger G, Voltz R, Stock S. Inpatient palliative care: a nationwide analysis. <i>Health Policy</i> . 2013;109(3):311-8. | Niet specifiek over palliatieve sedatie |
| Galanakis C, Mayo NE, Gagnon B. Assessing the role of hydration in delirium at the end of life. <i>Curr</i> . 2011;5(2):169-73. | Niet specifiek over palliatieve sedatie |
| Giles A, Sykes N. To explore the relationship between the use of midazolam and cessation of oral intake in the terminal phase of hospice inpatients: A retrospective case note review: Does midazolam affect oral intake in the dying? <i>Palliat Med</i> . 2017;31(1):89-92. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Gillespie L, Raftery A-M. Nutrition in palliative and end-of-life care. <i>British Journal of Community Nursing. Suppl</i> :S15. 2014;20. | Geen full-text |
| Goncalves F, Cordero A, Almeida A, Cruz A, Rocha C, Feio M, et al. A survey of the sedation practice of Portuguese palliative care teams. <i>Support Care Cancer</i> . 2012;20(12):3123-7. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Good P, Richard R, Syrmis W, Jenkins-Marsh S, Stephens J. Medically assisted hydration for adult palliative care patients. <i>Cochrane Database of Systematic Reviews</i> . 2014;4:23. | Niet specifiek over palliatieve sedatie |
| Hanninen J, Hamunen K, Laakkonen M-L, Laukkala T, Lehto J, Matila A, et al. Palliative (symptomatic) care of (imminently) dying patients. <i>Duodecim</i> . 2013;129(4):372-3. | Fins |
| Hopprich A, Gunther LD, Laufenberg-Feldmann R, Reinholz U, Weber M. Palliative sedation at a university palliative care unit--a descriptive analysis. <i>Dtsch Med Wochenschr</i> . 2016;141(8):e60-6. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Igarashi A, Morita T, Miyashita M, Kiyohara E, Inoue S. Changes in medical and nursing care after admission to palliative care units: a potential method for improving regional palliative care. <i>Support Care Cancer</i> . 2010;18(9):1107-13. | Niet specifiek over palliatieve sedatie |
| Kazuki Sato, Mitsunori Miyashita, Tatsuya Morita, Satoru Tsuneto, Shima Y. End-of-Life Medical Treatments in the Last Two Weeks of Life in Palliative Care Units in Japan, 2005-2006: A Nationwide Retrospective Cohort Survey. <i>Journal of Palliative Medicine</i> . 2016;19(11):1188-96. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |

| Reference | Reason for exclusion |
|---|--|
| Lundstrom S, Gyllenhammar E, Martinsson U, Strang P. Together we can: experiences from 7 years of cross-sectional studies in a Swedish palliative care clinical research network. <i>Palliat Med.</i> 2010;24(3):261-6. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Maltoni M, Setola E. Palliative Sedation in Patients With Cancer. <i>Cancer Control.</i> 2015;22(4):433-41. | Narrative review |
| Mayland CR, Mulholland H, Gambles M, Ellershaw J, Stewart K. How well do we currently care for our dying patients in acute hospitals: the views of the bereaved relatives? <i>BMJ support.</i> 2017;7(3):316-25. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Nogueira FL, Sakata RK. Palliative sedation of terminally ill patients. <i>Rev Bras Anesthesiol.</i> 2012;62(4):580-92. | Narrative review |
| Papavasiliou EE, Chambaere K, Deliens L, Brearley S, Payne S, Rietjens J, et al. Physician-reported practices on continuous deep sedation until death: A descriptive and comparative study. <i>Palliat Med.</i> 2014;28(6):491-500. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Pompili A, Telera S, Villani V, Pace A. Home palliative care and end of life issues in glioblastoma multiforme: results and comments from a homogeneous cohort of patients. <i>Neurosurg.</i> 2014;37(6):E5. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Robijn L, Cohen J, Rietjens J, Deliens L, Chambaere K. Trends in Continuous Deep Sedation until Death between 2007 and 2013: A Repeated Nationwide Survey. <i>PLoS ONE [Electronic Resource].</i> 2016;11(6):e0158188. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Rys S, Mortier F, Deliens L, Bilsen J. The practice of continuous sedation until death in nursing homes in Flanders, Belgium: a nationwide study. <i>J Am Geriatr Soc.</i> 2014;62(10):1869-76. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Sato K, Miyashita M, Morita T, Tsuneto S, Shima Y. End-of-Life Medical Treatments in the Last Two Weeks of Life in Palliative Care Units in Japan, 2005-2006: A Nationwide Retrospective Cohort Survey. <i>J Palliat Med.</i> 2016;19(11):1188-96. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Schildmann E, Schildmann J. Palliative sedation therapy: a systematic literature review and critical appraisal of available guidance on indication and decision making. <i>J Palliat Med.</i> 2014;17(5):601-11. | Review van richtlijnen; geen verwijzing naar vergelijkende literatuur over voeding/vocht |
| Suchner U, Reudelsterz C, Gog C. How to manage terminal dehydration. <i>Anaesthesist.</i> 2019;68:63-75. | Narrative review |
| Turker I, Komurcu S, Arican A, Doruk H, Ozyilkan O, Coskun HS, et al. Investigational tests and treatments performed in terminal stage cancer patients in two weeks before death: Turkish oncology group (TOG) study. <i>Med Oncol.</i> 2014;31(12):350. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |
| Yamagishi A, Morita T, Miyashita M, Sato K, Tsuneto S, Shima Y. The care strategy for families of terminally ill cancer patients who become unable to take nourishment orally: recommendations from a nationwide survey of bereaved family members' experiences. <i>J Pain Symptom Manage.</i> 2010;40(5):671-83. | Geen vergelijking tussen vocht/voeding of niet tijdens palliatieve sedatie |

Search strings Question 8

Medline (ovid)

1. exp Central Nervous System Depressants/ (647570)
2. exp Anesthesia/ (186146)
3. exp Benzodiazepines/ (64001)
4. exp Barbiturates/ (53454)
5. exp Histamine Antagonists/ (60723)
6. exp Psychotropic Drugs/ (360870)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (514895)
8. (symptom* adj6 (relie* or control*)).mp. (54012)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (1133908)
10. Palliative Care/ (51147)
11. exp Terminal Care/ (49090)
12. Terminally Ill/ (6308)
13. palliat*.mp. (81133)
14. (terminal* adj6 (care or caring or ill*)).mp. (35290)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (33422)

16. (end adj3 life).mp. (19140)
17. hospice*.mp. (14363)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (42028)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (46440)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (234951)
21. 9 and 20 (13454)
22. exp guideline/ (31576)
23. recommendation*.ti,ab. (198147)
24. guideline*.ti,ab. (262765)
25. guideline.pt. (16111)
26. practice guideline.pt. (24776)
27. 22 or 23 or 24 or 25 or 26 (432906)
28. 21 and 27 (1041)

PreMedline (OVID)

1. exp Central Nervous System Depressants/ (230)
2. exp Anesthesia/ (42)
3. exp Benzodiazepines/ (16)
4. exp Barbiturates/ (2)
5. exp Histamine Antagonists/ (11)
6. exp Psychotropic Drugs/ (155)
7. (benzodiazepine* or barbiturate* or anaesthesia or anesthesia or opioid* or antipsychotic* or anti-psychotic* or antihistamine* or anti-histamine* or hypnotic* or sedat* or tranquil*).mp. (6152)
8. (symptom* adj6 (relie* or control*)).mp. (1218)
9. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 (7496)
10. Palliative Care/ (16)
11. exp Terminal Care/ (25)
12. Terminally Ill/ (0)
13. palliat*.mp. (1654)
14. (terminal* adj6 (care or caring or ill*)).mp. (217)
15. (terminal-stage* or terminal stage* or dying or (close adj6 death)).mp. (627)
16. (end adj3 life).mp. (785)
17. hospice*.mp. (328)
18. ((end-stage* or end stage*) adj6 (disease* or ill* or care or caring)).mp. (1020)
19. ((incurable or advanced) adj6 (ill* or disease*)).mp. (1024)
20. 10 or 11 or 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 (4546)
21. 9 and 20 (213)
22. exp guideline/ (513)
23. recommendation*.ti,ab. (7205)
24. guideline*.ti,ab. (9172)
25. guideline.pt. (0)
26. practice guideline.pt. (513)
27. 22 or 23 or 24 or 25 or 26 (14374)
28. 21 and 27 (37)

