



eAPPENDIX A Literature Search

<i>Database</i>	<i># of refs</i>	<i>After de-duplication</i>
embase.com	2306	2268
Medline Ovid	2342	839
Cochrane Central	1211	594
Total	5859	3701

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(music/de OR 'music therapy'/de OR 'sensory evoked potential'/de OR 'auditory evoked potential'/exp OR 'tape recorder'/de OR 'auditory stimulation'/de OR 'voice recorder'/de OR (music OR musical OR musicotherap* OR ((auditor* OR vestibul* OR sensory) NEAR/3 (process* OR evoke* OR information*)) OR tape-record* OR (suggestion* NEAR/3 (positive OR negative OR therapeutic OR played OR auditory)) OR melod* OR headphone* OR (recording NEAR/3 (story OR stories OR auditory))):ab,ti) AND (surgery/exp OR 'obstetric operation'/exp OR 'postoperative complication'/exp OR 'anesthesiological procedure'/exp OR 'perioperative nursing'/de OR 'postanesthesia nursing'/de OR 'operating room'/de OR 'recovery room'/de OR 'operating room personnel'/de OR 'surgical stress'/de OR (surger* OR surgic* OR peroperat* OR perioperat* OR preoperat* OR postoperat* OR operati* OR interoperat* OR intraoperat* OR anesthe* OR anaesthe* OR perianesthe* OR peranesthe* OR perianaesthe* OR peranaesthe* OR preanasthe* OR preanaesthe* OR postanasthe* OR postanaesthe*):ab,ti OR surgery:lnk) AND ('Controlled clinical trial'/exp OR 'Crossover procedure'/de OR 'Double-blind procedure'/de OR 'Single-blind procedure'/de OR (random* OR factorial* OR crossover* OR (cross NEXT/1 over*) OR placebo* OR ((doubl* OR singl*) NEXT/1 blind*) OR assign* OR allocat* OR volunteer* OR trial OR groups):ab,ti) NOT ([animals]/lim NOT [humans]/lim) NOT ([Conference Abstract]/lim) AND [English]/lim

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(music/ OR music therapy/ OR Evoked Potentials/ OR exp Evoked Potentials, Auditory/ OR Tape Recording / OR Acoustic Stimulation / OR (music OR musical OR musicotherap* OR ((auditor* OR vestibul* OR sensory) ADJ3 (process* OR evoke* OR information*)) OR tape-record* OR (suggestion* ADJ3 (positive OR negative OR therapeutic OR played OR auditory)) OR melod* OR headphone* OR (recording ADJ3 (story OR stories OR auditory))):ab,ti.) AND (General Surgery/ OR exp Surgical Procedures, Operative/ OR exp Postoperative Complications/ OR exp Anesthesiology/ OR exp Perioperative Care/ OR exp Perioperative Nursing/ OR Operating Rooms/ OR Recovery Room/ OR

(surger* OR surgic* OR peroperat* OR perioperat* OR preoperat* OR postoperat* OR operati* OR interoperat* OR intraoperat* OR anesthe* OR anaesthe* OR perianesthe* OR perianesthe* OR perianaesthe* OR peranaesthe* OR preanasthe* OR preanaesthe* OR postanasthe* OR postanaesthe*).ab,ti. OR surgery.fx.) AND (Controlled clinical trial/ OR Crossover procedure/ OR Double-blind procedure/ OR Single-blind procedure/ OR (random* OR factorial* OR crossover* OR (cross ADJ over*) OR placebo* OR ((doubl* OR singl*) ADJ blind*) OR assign* OR allocat* OR volunteer* OR trial OR groups).ab,ti.) NOT (exp animals/ NOT humans/) NOT (news OR congres* OR abstract* OR book* OR chapter* OR dissertation abstract*).pt. AND english.la.

Cochrane

((music OR musical OR musicotherap* OR ((auditor* OR vestibul* OR sensory) NEAR/3 (process* OR evoke* OR information*)) OR tape NEXT record* OR (suggestion* NEAR/3 (positive OR negative OR therapeutic OR played OR auditory)) OR melod* OR headphone* OR (recording NEAR/3 (story OR stories OR auditory)))):ab,ti) AND ((surger* OR surgic* OR peroperat* OR perioperat* OR preoperat* OR postoperat* OR operati* OR interoperat* OR intraoperat* OR anesthe* OR anaesthe* OR perianesthe* OR perianesthe* OR perianaesthe* OR peranaesthe* OR preanasthe* OR preanaesthe* OR postanasthe* OR postanaesthe*):ab,ti)



eAPPENDIX B General anesthesia regimens

Study	Premedication (time before surgery)	Anesthesia induction	Anesthesia maintenance	Postoperative analgesia	Anesthesia monitoring	Surgery duration
Aceto 2003 ³⁸	None	Thiopental 5 mg/kg Fentanyl 3 mcg/kg Vecuronium 0.08 mg/kg	One of four inhalational anesthesia regimens (MAC 1.0) with fentanyl 2 mcg/kg if needed	Not reported	MAC (Datex Capnomac Ultima)	91 (10.5) 90 (12.5) 107 (9.0) 97 (9.5)
Aceto 2013 ³⁶	None	Propofol 2 mg/kg Remifentanyl 0.25 mcg/kg/min Cisatracurium 0.15mg/kg	Sevoflurane ETAG 2.2% (1.0 MAC) Remifentanyl 0.1-0.4 mcg/kg/min (MAP and HR within 20% baseline)	Morphine 0.06 mg/kg Acetamonphen 1000 mg	BIS Vista (unspecified)	86.8 (28.8) 90.3 (25.7)
Aceto 2015 ³⁷	None	Propofol 2 mg/kg Fentanyl 3 mcg/kg Cisatracurium 0.15 mg/kg	MAC Sevoflurane BIS- or hemodynamic parameter (MAP and HR within 20% baseline) guided	Acetamonphen 1000 mg Tramadol 1.2 mg/kg	BIS Vista (unspecified), MAP and HR	74.4 (15.2) 77.6 (13.6)
Adams 1998 ³⁸	None	Midazolam 0.05-0.15 mg/kg Etomidate 0.1 mg/kg if needed Fentanyl 10-20 mcg/kg	Midazolam with isoflurane in O ₂ Fentanyl	Not reported	Not reported	300 (51)
Bejjani 2009 ²⁸	Alprazolam 0.5 mg p.o. (30 min)	Propofol Remifentanyl Cisatracurium	Propofol (target-controlled infusion) Remifentanyl Cisatracurium Ventilation mix air/O ₂	Not reported	BIS A-2000 (V3.21); Infusion Toolbox ITB	221 (45) 213 (52)
Bennett 1985 ⁴⁶	No protocol, meperidine, morphine, glycopyrrolate, hydroxyzine, droperidol, pentobarbitone all used	Thiopental	N ₂ O and either enflurane or halothane Neuromuscular blocking, unspecified	Not reported	Not reported	Not reported
Block 1991 ⁸²	Morphine 9.6 mg with or without glycopyrrolate 0.2 mg i.m. (30-60 min)	Thiopental Non-depolarizing muscle relaxant	70% N ₂ O in O ₂ with isoflurane ETAG 1.0, 1.3, 1.5 MAC and fentanyl 0.75 mcg/kg; or 70% N ₂ O in O ₂ with fentanyl 7.5 mcg/kg and 2.5 mcg/kg bolus (BP and HR within 15% baseline); or 70% N ₂ O in O ₂ with alfentanil 50 mcg/kg and infusion 1-3 mcg/kg/min	Codeine, meperidine, morphine, acetaminophen and/or ibuprofen	Clinical signs and ETAG	128 (61) 121.1 (47)
Boeke 1988 ⁸³	Lorazepam 2 mg p.o. (120 min) or thalamonal 1-2 ml i.m. (60 min)	Thiopental Succinylcholine Atropine 0.25-0.50 mg i.m.	67%N ₂ O in O ₂ , enflurane if needed Fentanyl Pancuronium	Not reported	Clinical signs	72.5 60.0
Bonebakker 1993 ⁴⁴	Diazepam 0.1 mg/kg, temazepam 10 mg or oxazepam 10 mg (night before)	Thiopental 4 mg/kg Sufentanil 0.5 mcg/kg Vecuronium 0.1 mg/kg Atropine 0.5 mg i.m.	N ₂ O in O ₂ 2:1 with isoflurane 0.25-0.5% ETAG 0.2-0.4 MAC Sufentanil if needed Vecuronium if needed	Not applicable	Not reported	Not reported

Study	Premedication (time before surgery)	Anesthesia induction	Anesthesia maintenance	Postoperative analgesia	Anesthesia monitoring	Surgery duration
Bonke 1986 ⁶⁶	Droperidol-fentanyl 1-2 ml Atropine 0.25-0.5 mg (60 min)	Thiopental Succinylcholine	N ₂ O in O ₂ Fentanyl Droperidol (45%) Pancuronium	Not reported	Not reported	128 (42) 130 (45) 134 (42)
Caseley-Rondi 1994 ²⁵	Diazepam 0.1 mg/kg p.o. (90 min) if needed	Thiopental 2-5 mg/kg Sufentanil 0.5 mcg/kg Atracurium 0.5 mg/kg or vecuronium 0.1 mg/kg	70%N ₂ O in O ₂ , isoflurane 0.5% (ETAG CO ₂ 35-45 mm Hg) Sufentanil 1 mcg/kg/h Atracurium or vecuronium as needed	PCA morphine	Clinical signs and ETAG	Not specified, but differed significantly
Dawson 2001 ⁵⁹	Morphine 10 mg i.m. Domperidone 30 mg rect. (90 min)	Thiopental 3-5 mg/kg Morphine 0.1-0.15 mg/kg Vecuronium 0.1 mg/kg Diclofenac 100 mg rect.	66%N ₂ O in O ₂ (ETAG CO ₂ 4.7-5.3 kPa) and isoflurane ETAG 0.8-1.2% Morphine as needed Vecuronium as needed	Diclofenac 100 mg rect. PCA morphine	Clinical signs and ETAG	97 (27.9) 90 (18.8)
De Roode 1995 ³⁹	Midazolam 0.1 mg/kg i.m. (30 min)	Thiopental 4-5 mg/kg Alfentanil 30 mcg/kg Succinylcholine 1 mg/kg Atropine 0.5 mg	70%N ₂ O in O ₂ (ETAG CO ₂ 3.5-4%) Alfentanil 0.5-1.0 mg if needed (HR and BP within 10% baseline) Vecuronium 4-6 mg	Not applicable	Clinical signs and ETAG	Not reported
Deeprise 2005 ²⁶	None	Propofol with or without fentanyl 1.5 mcg/kg	Propofol 3-9 mg/kg/h target controlled infusion with 66% N ₂ O in 33% O ₂	Morphine 'as clinically appropriate'	BIS A1000 (V2.51)	34 (12) 41 (22)
Donker 1996 ⁴⁰	None	Induction dose of 0.2 ml/kg mixture sufentanil 5 mcg/ml and propofol 10 mg/ml Atropine 0.5 mg Atracurium 15 mg	Maintenance dose of induction mixture of 15ml with 0.2 ml/kg Bolus 2ml of mixture if necessary (HR and BP within 10% baseline) ETAG CO ₂ 35 mm Hg)	Not applicable	Clinical signs and ETAG	27.6 (9.0) 28.6 (12.2)
Eberhart 1988 ⁶⁰	Midazolam 7.5 mg p.o. (at least 120 min)	Droperidol 100 mcg/kg Fentanyl 4 mcg/kg Methohexital 1-1.5 mg/kg	N ₂ O in O ₂ 3:1.6 with ETAG CO ₂ 4.4-5.0 Fentanyl 2 mcg/kg after skin incision Fentanyl 2 mcg/kg bolus (BP and HR within 30% baseline), if insufficient additional droperidol 30 mcg/kg	Piritramide	Clinical signs and ETAG	69.9 (20.5) 64.9 (21.0)
Evans and Richardson 1988 ⁵⁰	Not reported	Thiopental	N ₂ O, halothane (85% patients), enflurane (15% patients)	Not reported	Not reported	70.6 (23.9) 66.3 (16.8)
Ghoneim 2000 ²¹	None	Thiopental with either:	70% N ₂ O in 30% O ₂ with either:	Not reported	Clinical signs and ETAG	Not reported
		- Fentanyl 7.5 mcg/kg bolus	- Fentanyl bolus 2.5 mcg/kg if needed (HR and BP within 15% baseline)			
		- Alfentanil 50 mcg/kg	- Alfentanil 1.5 mcg/kg/min infusion			
		- Fentanyl 1 mcg/kg	- Isoflurane ETAG 0.3%, fentanyl - Isoflurane ETAG 0.7%, fentanyl			

Study	Premedication (time before surgery)	Anesthesia induction	Anesthesia maintenance	Postoperative analgesia	Anesthesia monitoring	Surgery duration
Hughes 1994 ⁴⁸	Not specified, but received by majority	Propofol, thiopental or etomidate	Inhalational volatile drug with opioid and positive pressure ventilation	Not reported	Not reported	Not reported
Ikedo 2007 ⁶⁹	Not reported	Not reported	Not reported	Morphine	Not reported	228 (78) 210 (66) 222 (60)
Jansen 1991 ⁴⁷	Lorazepam 1.0 mg p.o. (night before) and/or midazolam 2.5 mg i.m. (30 min) if necessary	Thiopental 4 mg/kg Fentanyl 0.005 mg/kg Pancuronium 0.1 mg/kg or vecuronium 0.1 mg/kg	N ₂ O in O ₂ 2:1 with enflurane ETAG 0.2-0.4 MAC, ETAG CO ₂ 4.3-4.5% Incremental fentanyl (HR and BP) Pancuronium or vecuronium if needed	Not reported	Not reported	Not reported
Jayaraman 2006 ⁶²	Alprazolam 0.5 mg p.o. (night before) Metoclopramide 10 mg and ranitidine 150 mg (morning of surgery)	Propofol 1 mg/kg Fentanyl 1 mg/kg Vecuronium 0.1 mg/kg	70% N ₂ O in O ₂ with sevoflurane ETAG 0.6-1.0%	Diclofenac	Clinical signs and ETAG	79.1 (43.6) 82.6 (36.6)
Jelicic 1992 ⁴¹	None	Thiopental 4-5 mg/kg Alfentanil 20 mcg/kg Succinylcholine 1 mg/kg Atropine 0.5 mg	65% N ₂ O in O ₂ (ETAG CO ₂ 3.5-4.0%) Alfentanil 0.5-1.0 mg (HR and BP within 10% baseline) Vecuronium 4-6 mg, 1mg every 20 min	Not applicable	Clinical signs and ETAG	Not reported
Jelicic 1993 ⁴²	Morphine 10-15 mg and cyclizine 50 mg i.m. (45 min)	Thiopental	N ₂ O and enflurane in 34% O ₂ with ETAG enflurane 1.1%	Morphine 10 mg and cyclizine 50 mg as needed	Clinical signs and ETAG	Not reported
Kahloul 2017 ⁵¹	Not reported	Propofol Fentanyl 3 mcg/kg Cisatracurium 0.15 mg/kg	Isoflurane with 50% O ₂ /50% air Fentanyl as needed Cisatracurium as needed	Nefopam	Clinical signs	79.1 (43.6) 82.6 (36.6)
Kerssens 2001 ⁴⁵	None	Propofol 6 mcg/ml target-controlled infusion Alfentanil 0.02 mg/kg Vecuronium 0.1 mg/kg	BIS-guided propofol target controlled infusion Ventilation mixture 40% air/60%O ₂	Not applicable	BIS A1000 (V3.2)	38 (28) 34 (23)
Kerssens 2009 ²²	Fentanyl 50-100 mcg if needed during epidural or PCA placement	Propofol 2 mg/kg Fentanyl 3 mcg/kg Vecuronium 0.1 mg/kg	Sevoflurane in O ₂ Fentanyl 50-100 mcg Esmolol 0.5 mg/kg Phenylephrine 100 mcg if needed	Epidural (meperidine / bupivacaine or morphine) or PCA (hydromorphone or morphine)	ETAG and/or BIS XP (V3.4)	126 (51) 112 (48)
Kliempt 1999 ⁸⁴	None	Propofol 2.5 mg/kg	66%N ₂ O in 33%O ₂ with isoflurane ETAG MAC 1.2% Fentanyl (BP and HR within 20% baseline)	Not applicable	Clinical signs and ETAG	53 (42) 63 (41) 48 (28)

Study	Premedication (time before surgery)	Anesthesia induction	Anesthesia maintenance	Postoperative analgesia	Anesthesia monitoring	Surgery duration
Lebovits 1999 ⁶³	None	Propofol 1-2 mg/kg Succinylcholine 1 mg/kg with tubocurarine 3 mg or vecuronium 0.1 mg/kg or atracurium 0.5 mg/kg	Propofol 75-200 mcg/kg/min with 65% N ₂ O in 35% O ₂ Isoflurane < 0.6% if needed Fentanyl 5 mcg/kg Vecuronium 0.01 mg/kg	Fentanyl 1-2 mcg/kg Local infiltration with bupivacaine 0.25-0.5%	Not reported	77.6 75.5
Lequeux 2014 ²⁹	Midazolam 0.1 mg/kg p.o. (before arrival in operating room)	Propofol Remifentanyl	BIS-guided propofol target controlled infusion with remifentanyl effect-site either same or double	Not applicable	BIS XP (unspecified)	54 (36) 52 (48) 69 (40)
Lewis 2004 ⁸⁵	Midazolam 2 mg (entering operating room)	Propofol Fentanyl 100 mcg (lumbar) or 250 mcg (bariatric) Vecuronium 8-10 mg	Isoflurane with N ₂ O (lumbar) or without N ₂ O (bariatric), and O ₂ Fentanyl 25 mcg (SBP within 20% and HR within 15% baseline)	Not applicable	BIS (unspecified)	150 (70) 156 (58)
Liu 1992 ⁵²	Papaveretum 0.15 mg/kg and prochlorperazine 0.18 mg/kg i.m. (before surgery)	Thiopental 5 mg/kg Vecuronium 0.1 mg/kg	66% N ₂ O and 1-1.5% enflurane in O ₂ Papaveretum 0.1 mg/kg if needed	Papaveretum i.m. Coproxamol p.o.	Not reported	81.4 (16.2) 75.6 (14.3)
Maroof 1997 ⁶⁴	Promethazine 0.5 mg/kg and buprenorphine 0.04 mg/kg i.m. (before surgery)	Thiopental 5 mg/kg Vecuronium 0.1 mg/kg	Halothane 1-2% in 60%N ₂ O and 40%O ₂	Diclofenac 75 mg i.m.	Clinical signs and ETAG	126 (13.7) 118 (15.3)
McLintock 1990 ⁵³	Midazolam (unspecified)	Thiopental 4 mg/kg Morphine 0.15 mg/kg Vecuronium	66% N ₂ O with O ₂ , enflurane 0.8-1.5%	PCA morphine	Not reported	Not reported
Melzack 1996 ³²	None	Thiopental 5 mg/kg Fentanyl 100 mg Vecuronium 0.1 mg/kg	Isoflurane 1-2% with 100%O ₂ Vecuronium as needed	Opioid as needed	Not reported	79.5 (21.1) 70.7 (20.4)
Migneault 2004 ⁶¹	None	Propofol 1.5-2 mg/kg Fentanyl 3 mcg/kg Rocuronium 0.6 mg/kg	BIS-guided isoflurane ETAG 0.3-1.5% and 50% O ₂ /50%air Fentanyl 0.5-1 mcg/kg (BP and HR within 20% baseline) Rocuronium 10-20 mg	Morphine 3-5 mg bolus followed by PCA morphine	BIS (unspecified), clinical signs and ETAG	106 (18) 125 (45)
Millar and Watkinson 1983 ⁵⁰	Papaveretum or perphenazine with scopolamine, or pethidine and promethazine	Thiopental or althesin	N ₂ O 66% in O ₂ with or without halothane 0.25-1.0%	Not reported	Isolated forearm technique	Not reported

Study	Premedication (time before surgery)	Anesthesia induction	Anesthesia maintenance	Postoperative analgesia	Anesthesia monitoring	Surgery duration
Myles 1996 ⁴⁹	Benzodiazepine, opioid or other unspecified (60%)	Thiopental or propofol	Isoflurane or enflurane Neuromuscular blocker (60%)	Not reported	Not reported	56 (46) 50 (41)
Nilsson 2001 ⁵⁴	Pethidine 50 mg and dixyrazine 10 mg i.m. (unspecified)	Propofol 1-2 mg/kg Fentanyl 2-3 mcg/kg Rocuronium 0.6 mg/kg	70% N ₂ O in O ₂ and isoflurane ETAG ≥ 0.7	PCA ketobemidone	Clinical signs and ETAG	96 (31.7) 90 (29.1) 100 (31.7)
Nilsson 2003 ⁵⁵	None	Propofol 1-2 mg/kg Fentanyl 1-2 mcg/kg	70% N ₂ O in O ₂ with sevoflurane ETAG ≥ 1.2 MAC	Diclofenac 100 mg rect. Morphine 1-3 mg	Clinical signs and ETAG	23 (8.4) 24 (7.2)
Nilsson 2005 ⁵⁶	None	Propofol 1-2 mg/kg Fentanyl 1-2 mcg/kg	70% N ₂ O in O ₂ with sevoflurane ETAG ≥ 1.2 MAC	Diclofenac 100 mg rect. Morphine 1-3 mg	Clinical signs and ETAG	23 (8.8) 23 (4.9)
Oddby-Muhrbeck 1995 ⁶⁷	Midazolam 4-5 mg i.m. (30-45 min)	Thiopental Fentanyl 2 mcg/kg Succinylcholine	O ₂ to N ₂ O 1:2 with isoflurane	Morphine or ketobemidone	Clinical signs	62 (16) 69 (22)
Parker 1994 ³¹	Diazepam 10 mg p.o. (90-360 min)	Thiopental 5 mg/kg Fentanyl 3 mcg/kg Midazolam 0.07 mg/kg Atracurium 0.6 mg/kg	70% N ₂ O in O ₂ , ETAG CO ₂ 4-4.7 kPa Fentanyl 50 mcg if needed Atracurium if needed	Not reported	Clinical signs and ETAG	57.9 (32.1) 63.4 (30.5)
Kalyani 2015 ⁸⁶	Midazolam 0.03 mg/kg (unspecified)	Propofol (eyelash reflex loss) Fentanyl 1.5 mcg/kg Vecuronium 0.1 mg/kg	BIS-guided isoflurane ETAG 0.3-1.5% Mixture 50 %O ₂ in air Fentanyl 1 mcg/kg if needed	Diclofenac in 100 ml normal saline	BIS (unspecified)	125 (20) 130 (34)
Renna 2000 ²⁷	Ketorolac 10 mg (30 min)	Sevoflurane in O ₂ (ETAG 1.2, 1.5 or 2.0% randomized)	Sevoflurane in O ₂ (ETAG 1.2, 1.5 or 2.0% randomized) during auditory intervention followed by 'surgical anesthesia'	Not applicable	BIS A1000 (V2.51), ETAG	Not reported
Reza 2007 ⁵⁷	None	Thiopental 3-5 mg/kg Succinylcholine 1 mg/kg	50% N ₂ O in O ₂ with halothane 0.8 MAC Midazolam 1-2 mg Morphine 5-7 mg	Morphine	Not reported	23.7 (6.4) 21.6 (5.2)
Russel and Wang 2001 ³³	Temazepam 20 mg p.o. (60-120 min) Epidural 0.5% bupivacaine L2-L3	Propofol 2-2.5 mg/kg target-controlled infusion Alfentanil 10-12.5 mcg/kg Succinylcholine 1-1.5 mg/kg	Propofol 10-8-6-4 mg/kg/h stepdown with incremental alfentanil (1 mg:5 mcg) Atracurium 0.2-0.4 mg/kg Ventilation mixture air 35-40%O ₂ (ETAG CO ₂ 4-5%)	Epidural topped up with 10 mL of 0.125% bupivacaine with 3 mg diamorphine	Isolated forearm technique	78.9 (35.5) 109.3 (58.8)
Simcock 2008 ²³	Not reported	Spinal-epidural anesthesia with propofol sedation	Spinal-epidural anesthesia with propofol sedation	Ketorolac, oxytocin, oxycodone	Not reported	Not reported

Study	Premedication (time before surgery)	Anesthesia induction	Anesthesia maintenance	Postoperative analgesia	Anesthesia monitoring	Surgery duration
Szmuk 2008 ⁵⁸	None	Sevoflurane 6% ETAG, with 100% O ₂ Fentanyl 2 mcg/kg Rocuronium 0.6 mg/kg	50% N ₂ O in O ₂ with BIS-guided sevoflurane, ETAG CO ₂ 30-35 mm Hg Fentanyl 1 mcg/kg/h Rocuronium if needed	Meperidine 20 mg and dipyrone 2000 mg bolus if needed	BIS AS3 (unspecified)	83 (37) 74 (28)
Tsuchiya 2003 ⁸⁷	Midazolam 0.08 mg/kg i.m. (60 min) Epidural catheter T9-10	Propofol 3-4 mg/kg Fentanyl 4 mcg/kg Vecuronium 0.15 mg/kg Epidural 1.5% lidocaine 5ml, fentanyl 0.1 mg loading dose	Propofol 5-8 mg/kg 100% O ₂ and ETAG CO ₂ 35-38 mm Hg Continuous epidural infusion of 1.5% lidocaine 5 ml/h	Epidural lidocaine infusion until leaving PACU after 20 min	BIS (unspecified)	Not specified, but same
Westmoreland 1993 ³⁴	Ranitidine 150 mg and metoclopramide 10 mg p.o. (morning of surgery); Randomized to 2 mg midazolam or saline	Propofol 2.5 mg/kg Fentanyl 3 mcg/kg	Isoflurane 1.3 MAC until incision, then isoflurane 1.0 MAC in 70% N ₂ O Fentanyl 50-100 mcg increments	Not reported	Not reported	Not reported
Williams 1994 ⁶⁵	Papaveretum 10-20 mg and hyoscine 0.2-0.4 mg i.m. (unspecified)	Thiopental 4-6 mg/kg Succinylcholine 1 mg/kg Vecuronium 0.1 mg/kg	66% N ₂ O in 33% O ₂ with isoflurane 1% (ETAG CO ₂ 4-4.7 kPa) Vecuronium as needed	Papaveretum 10-20 mg, diclofenac 100 mg rect.	Clinical signs and ETAG	Not specified, but same
Zhang 2005 ⁶⁸	Spinal epidural L2-3 tetracaine 0.55% 1.5-2.0 mL followed by lidocaine 2% 4-6 mL	Propofol 0.5 mg/kg Fentanyl 1 mcg/kg	Propofol 0.2-1.2 mcg/ml every 10 min target controlled infusion, OOA/S guided	Not reported	OOA/S BIS HXD-I (V3.31)	86 (28) 85 (28)

eAppendix B. Perioperative anesthesia regimen of studies investigating intraoperative auditory interventions during general anesthesia on memory formation and patient outcome. All medication are either intravenously administered, except in the case of inhalational anesthesia administration or if otherwise stated (p.o. = per os, oral administration, i.m. = intramuscular administration).

BIS = Bispectral index; BP = Blood pressure; Clinical signs = Monitoring with standard equipment (electrocardiogram, non-invasive blood pressure, pulse oximetry); CO₂ = carbon dioxide; ETAG = End-tidal anesthesia gas concentration; HR = Heart rate; kg = kilogram; kPa = kilopascal; MAC = Minimum alveolar concentration; MAP = Mean arterial pressure; mcg = microgram; mg = milligram; ml = milliliter; mm = millimeter; Not applicable = No postoperative medication was given before memory formation testing; OOA/S = Observer Assessment of Alertness/Sedation Scale; O₂ = oxygen; PCA = patient-controlled analgesia; Surgery duration = Surgery duration in minutes, reported as mean (standard deviation) in minutes. Group 1 is noted first, followed by group 2 and other groups if applicable



eAPPENDIX C Risk of Bias Assessment

Study	Method of randomization	Allocation concealment	Blinding participants	Blinding personnel	Blinding assessors	Incomplete outcome	Selective reporting	Other bias addressed
Aceto 2003 ³⁸	Yes, premade randomization tables	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Aceto 2013 ³⁶	Yes, computerized randomization list	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Aceto 2015 ³⁷	Yes, computer generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Adams 1998 ³⁵	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (OR)
Bejjani 2009 ²⁸	Yes, random number generator	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes
Bennett 1985 ⁴⁶	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (OR)
Block 1991 ⁸²	Unclear, premade randomization tables	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes
Boeke 1988 ⁸³	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (BMI)
Bonebakker 1993 ⁴⁴	Yes, premade randomization	Yes	Yes	Yes	Yes	Unclear	Unclear	Unclear (BMI)
Bonke 1986 ⁶⁶	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (BMI)
Caseley-Rondi 1994 ²⁵	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	No (OR)
Dawson 2001 ⁵⁹	Yes, table of random numbers	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Deepröse 2005 ²⁶	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (Age)
De Roode 1995 ³⁹	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (OR)
Donker 1996 ⁴⁰	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (BMI)
Eberhart 1998 ⁶⁰	Unclear, but stratified randomization	Unclear	Yes	Yes	Yes	Unclear	Unclear	Yes
Evans and Richardson 1988 ⁵⁰	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (BMI)
Ghoneim 2000 ²¹	Yes, premade randomization tables	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear (OR)
Hughes 1994 ⁴⁸	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (OR)
Ikedo 2007 ⁶⁹	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Unclear	Unclear	No (SS)
Jansen 1991 ⁴⁷	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (BMI)
Jayaraman 2006 ⁶²	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (age, BMI, OR)
Jelicic 1992 ⁴¹	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Unclear (BMI)
Jelicic 1993 ⁴²	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (BMI)
Kahloul 2017 ⁵¹	No, odds and even days	No	Yes	Yes	Yes	Yes	Unclear	Yes
Kerssens 2001 ⁴⁵	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Yes
Kerssens 2009 ²²	Yes, computer-generated list	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes
Kliempt 1999 ⁸⁴	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Lebovits 1999 ⁶³	Yes, random numbers table	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes
Lequeux 2014 ²⁹	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes

Study	Method of randomization	Allocation concealment	Blinding participants	Blinding personnel	Blinding assessors	Incomplete outcome	Selective reporting	Other bias addressed
Lewis 2004 ⁸⁵	Predetermined randomization list	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear (Age)
Liu 1992 ⁵²	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes
Maroof 1997 ⁶⁴	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Yes
McLintock 1990 ⁵³	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes
Melzack 1996 ³²	Yes, random number list	Yes	Yes	Yes	Yes	Unclear	Unclear	Yes
Migneault 2004 ⁶¹	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Yes
Millar and Watkinson 1983 ³⁰	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (OR)
Myles 1996 ⁴⁹	Yes, random number list	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear (BMI)
Nilsson 2001 ⁵⁴	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Nilsson 2003 ⁵⁵	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Nilsson 2005 ⁵⁶	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Oddby-Muhrbeck 1995 ⁶⁷	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Yes	Unclear	Yes
Parker 1994 ³¹	Yes, sealed envelopes method	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Kalyani 2015 ⁸⁶	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Renna 2000 ²⁷	Yes, drawing code from a hat	Yes	Yes	Yes	Yes	Yes	Unclear	Unclear (OR)
Reza 2007 ⁵⁷	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Russel and Wang 2001 ³³	Yes, sealed envelopes method	Yes	Yes	Yes	Yes	Yes	Unclear	No (age, OR)
Simcock 2008 ²³	Yes, sealed envelopes method	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Szmuk 2008 ⁵⁸	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes
Tsuchiya 2003 ⁸⁷	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (age)
Westmoreland 1993 ³⁴	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (age, BMI, OR)
Williams 1994 ⁶⁵	Unclear, randomly assigned	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear (age, BMI)
Zhang 2005 ⁶⁸	Yes, computer-generated randomization	Yes	Yes	Yes	Yes	Yes	Unclear	Yes

eAppendix C. Detailed risk of bias summary.

Yes = Yes, low risk of bias; No = No, high risk of bias; Unclear = Unclear risk of bias; Other bias = Potential bias factors include group sex, age, BMI or weight, and duration of surgery; OR = Surgery duration not reported; BMI = BMI or weight not reported; Age = age not reported; SS = Sample size not reached