Appendix 1. Search strategy

1.1 Medline

Step	Search strategy	References
1	(((MH "Patients+") OR TI (patient* OR subject* OR participant* OR client* OR inpatient* OR outpatient*) OR AB (patient* OR subject* OR participant* OR client* OR inpatient* OR outpatient*)) AND ((MH "Health Personnel+") OR TI (provider* OR doctor* OR physician* OR specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist*" OR physiotherapist*) OR AB (provider* OR doctor* OR physician* OR specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist*" OR physiotherapist*)))	680238
2	(MH "Professional-Patient Relations+") OR (MH "Therapeutic Alliance") OR TI ("therapeutic alliance*" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*) OR AB ("therapeutic alliance*" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*)	5082759
3	(MH "Pain, Postoperative+") OR TI (pain* N6 (postoperative OR "post-operative" OR "following surgery" OR "following operation*" OR perioperative OR postprocedur* OR "postprocedur*" OR "after surgery" OR "after operation*" OR "postsurgical" OR postsurg*	67469

	OR "post-surg*")) OR AB (pain* N6 (postoperative OR "post-operative" OR "following surgery" OR "following operation*" OR perioperative OR postprocedur* OR "postprocedur*" OR "after surgery" OR "after operation*" OR "postsurgical" OR postsurg* OR "post-surg*"))	
4	S1 AND S2 AND S3	957
5	S1 AND S2 AND S3 NOT ((MH "Animals+") NOT (MH "Humans"))	955

1.2 PsycInfo

Step	**Search strategy**	**References**
1	((DE "Patients" OR DE "Geriatric Patients" OR DE "Hospitalized Patients" OR DE "Medical Patients" OR DE "Outpatients" OR DE "Psychiatric Patients" OR DE "Surgical Patients") OR TI (patient* OR subject* OR participant* OR client* OR inpatient* OR outpatient*) OR AB (patient* OR subject* OR participant* OR client* OR inpatient* OR outpatient*)) AND ((DE "Health Personnel" OR DE "Allied Health Personnel" OR DE "Caregivers" OR DE "Medical Personnel" OR DE "Mental Health Personnel") OR TI (provider* OR doctor* OR physician* OR specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist*" OR physiotherapist*) OR AB (provider* OR doctor* OR physician* OR specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist*" OR physiotherapist*))	245162
2	(DE "Therapeutic Alliance") OR TI ("therapeutic alliance*" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told	2228179

	OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*) OR AB ("therapeutic alliance*" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*)	
3	TI (pain* N6 (postoperative OR "post-operative" OR "following surgery" OR "following operation*" OR perioperative OR postprocedur* OR "postprocedur*" OR "after surgery" OR "after operation*" OR "postsurgical" OR postsurg* OR "post-surg*")) OR AB (pain* N6 (postoperative OR "post-operative" OR "following surgery" OR "following operation*" OR perioperative OR postprocedur* OR "postprocedur*" OR "after surgery" OR "after operation*" OR "postsurgical" OR postsurg* OR "post-surg*"))	2305
4	S1 AND S2 AND S3	144

1.3 Cinahl

Step	**Search strategy**	**References**
1	((MH "Patients+") OR TI (patient* OR subject* OR participant* OR client* OR inpatient* OR outpatient*) OR AB (patient* OR subject* OR participant* OR client* OR inpatient* OR outpatient*)) AND ((MH "Health Personnel+") OR TI (provider* OR doctor* OR physician* OR specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist*" OR physiotherapist*) OR AB (provider* OR doctor* OR physician* OR specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist*" OR physiotherapist*))	459165

2	(MH "Professional-Patient Relations+") OR (MH "Therapeutic Alliance") OR TI ("therapeutic alliance*" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*) OR AB ("therapeutic alliance*" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*)	1305264
S3	(MH "Postoperative Pain") OR TI (pain* N6 (postoperative OR "post-operative" OR "following surgery" OR "following operation*" OR perioperative OR postprocedur* OR "postprocedur*" OR "after surgery" OR "after operation*" OR "postsurgical" OR postsurg* OR "post-surg*")) OR AB (pain* N6 (postoperative OR "post-operative" OR "following surgery" OR "following operation*" OR perioperative OR postprocedur* OR "postprocedur*" OR "after surgery" OR "after operation*" OR "postsurgical" OR postsurg* OR "post-surg*"))	25234
4	S1 AND S2 AND S3	794
5	S1 AND S2 AND S3 NOT ((MH "Animals+") NOT (MH "Humans"))	791

1.4 Cochrane Library

Step	**Search strategy**	**References**
1	((patient* OR subject* OR participant* OR client* OR inpatient* OR outpatient*) AND (provider* OR doctor* OR physician* OR	103925

	specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist" OR physiotherapist*)):ti,ab,kw	
2	(("therapeutic alliance" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*)):ti,ab,kw	290773
3	((pain* NEAR/6 (postoperative OR "post-operative" OR "following surgery")) OR (pain* NEAR/6 ("following operation" OR perioperative OR postprocedur*)) OR (pain* NEAR/6 ("post-procedure" OR "post-procedural" OR "after surgery"))):ti,ab,kw	64010
4	((pain* NEAR/6 "after operation") OR (pain* NEAR/6 "post-surgical") OR (pain* NEAR/6 postsurg*) OR (pain* NEAR/3 "post-surgery")):ti,ab,kw	1891
5	#1 AND #2 AND (#3 OR #4)	1279

1.5 Embase

Step	**Search strategy**	**References**
1	('patient'/exp OR patient*:ti,ab OR subject*:ti,ab OR participant*:ti,ab OR client*:ti,ab OR inpatient*:ti,ab OR outpatient*:ti,ab) AND ('health care personnel'/exp OR provider*:ti,ab OR doctor*:ti,ab OR physician*:ti,ab OR specialist*:ti,ab OR nurs*:ti,ab OR psychiatrist*:ti,ab OR therapist*:ti,ab OR psychologist*:ti,ab OR 'physical therapist*':ti,ab OR physiotherapist*:ti,ab)	1403118

2	'professional-patient relationship'/exp OR 'therapeutic alliance'/exp OR 'therapeutic alliance*':ti,ab OR 'interpersonal communication'/exp OR discuss*:ti,ab OR communicat*:ti,ab OR interact*:ti,ab OR conversation*:ti,ab OR reassur*:ti,ab OR tell:ti,ab OR told:ti,ab OR consultat*:ti,ab OR consult:ti,ab OR explan*:ti,ab OR disrespect*:ti,ab OR dismiss*:ti,ab OR relation*:ti,ab OR instruct*:ti,ab OR advis*:ti,ab OR counsel*:ti,ab OR talk*:ti,ab	6928433
3	'postoperative pain'/exp OR ((pain* NEAR/6 (postoperative OR 'post-operative' OR 'following surgery' OR 'following operation*' OR perioperative OR postprocedur* OR 'post-procedur*' OR 'after surgery' OR 'after operation*' OR 'post-surgical' OR postsurg* OR 'post-surg*')):ti,ab)	101508
4	#1 AND #2 AND #3	3379
5	#1 AND #2 AND #3 NOT ([animals]/lim NOT [humans]/lim) NOT [conference abstract]/lim	1733

1.6 Web of Science

Step	**Search strategy**	**References**
1	(TS=(patient* OR subject* OR participant* OR client" OR inpatient* OR outpatient*)) AND (TS=(provider* OR doctor* OR physician* OR specialist* OR nurs* OR psychiatrist* OR therapist* OR psychologist* OR "physical therapist*" OR physiotherapist*)	573105
2	TS=("therapeutic alliance*" OR discuss* OR communicat* OR interact* OR conversation* OR reassur* OR tell OR told OR consultat* OR consult OR explan* OR disrespect* OR dismiss* OR relation* OR instruct* OR advis* OR counsel* OR talk*)	11483587

3	TS=pain* NEAR/6 postoperative OR “post-operative” OR “following surgery” OR “following operation*” OR perioperative OR postprocedur* OR “post-procedur*” OR “after surgery” OR “after operation*” OR “post-surgical” OR postsurg* OR “post-surg*”)	46939
4	#3 AND #2 AND #1 AND	813

Appendix 2. Quality assessed with the Scottish Intercollegiate Guidelines Network (SIGN) methodology checklist for RCTs

	Internal validity										Overal Assessment		
Author, year, study ID, refHi	**1.1**	**1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**1.7**	**1.8**	**1.9**	**1.10**	**2.1**	**2.2**	**2.3**
Abbott AD et al. 2010, 44[1]	Y	Y	Y	NA	Y	Y	Y	19%	Y	NA	++	Y	Y
Archer KR et al. 2016, 2[4]	Y	Y	CS	Y	Y	Y	Y	21%	Y	NA	+	Y	Y
Arthur HM et al. 2000, 27[5]	Y	Y	Y	NA	Y	Y	Y	33%	CS	NA	++	Y	Y
Barnason S et al. 2003, 58.1[10] Barnason S et al. 2006, 58.2[9]	Y	Y	N	N	Y	Y	Y	0%	CS	NA	-	Y	Y
Beaupre LA et al. 2004, 38[13]	Y	Y	Y	NA	Y	Y	Y	31%	Y	NA	+	Y	Y
Bini SA et al. 2016, 9[15]	Y	CS	Y	CS	Y	Y	Y	43%	N	NA	-	Y	Y
Boesen EH et al. 2011, 31[16]	Y	Y	Y	NA	Y	Y	Y	9%	CS	NA	++	Y	Y
Dams L et al. 2023, 22.1[25] Dams et al. 2024, 22.2[26]	Y	Y	Y	Y	Y	Y	Y	7%	CS	NA	++	Y	Y
Chang H-L et al. 2024, 69[21]	Y	Y	Y	NA	Y	Y	Y	8%	CS	NA	+	Y	Y
Christensen FB et al. 2003, 41[23]	Y	CS	N	NA	CS	Y	Y	10%	CS	NA	-	Y	Y
Crawford DA et al. 2021, 67.1[24] Alexander JS et al. 2023, 67.2[3]	Y	Y	CS	NA	Y	Y	Y	28%	Y	CS	+	Y	Y
den Hertog A et al. 2012, 14[28]	Y	Y	Y	N	Y	Y	Y	13%	Y	NA	+	Y	Y
Eichler S et al. 2019, 3[32]	Y	Y	N	NA	Y	Y	Y	22%	Y	NA	-	Y	Y
Erdogmus CB et al. 2007, 48[33]	Y	Y	Y	NA	Y	Y	Y	8%	Y	NA	++	Y	Y
Gocen Z et al. 2004, 42[42]	Y	Y	Y	NA	N	Y	Y	2%	CS	NA	+	Y	Y
Han DF et al. 2021, 15[44]	Y	CS	N	CS	Y	Y	Y	0%	NA	NA	-	Y	Y
Hong YL et al. 2022, 53[45]	Y	Y	Y	NA	Y	Y	Y	0%	NA	NA	+	Y	Y
Hørdam B et al. 2010, 30[46]	Y	Y	Y	NA	Y	Y	Y	30%	CS	CS	++	Y	Y
Huysmans E et al. 2023, 51[49]	Y	Y	N	Y	Y	Y	Y	19%	N	CS	+	Y	Y
Ihedioha U et al. 2013, 1[50]	Y	Y	Y	NA	Y	Y	Y	11%	CS	NA	+	Y	Y
Ji et al. 2023, 64[51]	Y	CS	CS	CS	Y	Y	Y	CS	CS	NA	-	Y	Y
Johansson AC et al. 2009, 45[53]	Y	Y	Y	NA	Y	Y	Y	3%	Y	CS	++	Y	Y
Kanat C et al. 2024, 68[55]	Y	Y	CS	Y	Y	Y	Y	0%	NA	NA	+	Y	Y

Koet LL et al. 2021, 29[61]	Y	Y	N	NA	Y	Y	Y	0%	NA	NA	+	Y	Y
Kulig K et al. 2009, 46.1[62], Beneck GJ et al. 2014, 46.2[14]	Y	Y	N	NA	Y	Y	Y	21%	Y	CS	++	Y	Y
Lenz ER et al. 2000, 37[64]	Y	Y	N	CS	Y	Y	Y	16%	CS	NA	-	Y	Y
Lin P-C et al. 2009, 11[66]	Y	CS	N	N	CS	Y	Y	0%	NA	NA	-	Y	Y
Lin C-Y et al. 2017, 66[65]	Y	Y	Y	NA	Y	Y	Y	12%	Y	CS	++	Y	Y
Lindbäck Y et al. 2018, 36[68]	Y	Y	Y	NA	Y	Y	Y	30%	Y	NA	++	Y	Y
Lluch E et al. 2018, 55[69]	Y	Y	Y	Y	Y	Y	Y	19%	N	NA	+	Y	Y
Lotzke H et al. 2023, 65.1[70] Kemani MK et al. 2024, 65.2[60]	Y	Y	Y	Y	Y	Y	Y	17%	Y	CS	++	Y	Y
Louw A et al. 2014, 59.1[71], Louw A et al. 2016, 59.2[72]	Y	Y	Y	NA	Y	Y	Y	9%	Y	CS	++	Y	Y
Mahfouz Khalil MI et al. 2024, 40[76]	Y	Y	Y	NA	Y	Y	Y	5%	CS	CS	+	Y	Y
Maguire P et al. 1983, 43[75]	Y	Y	N	CS	CS	Y	CS	12%	N	NA	+	Y	Y
Master H et al. 2024, 63[77]	Y	Y	NA	Y	Y	Y	Y	6.5%	CS	NA	+	Y	Y
McCorkle R et al. 2009, 21[79]	Y	Y	Y	NA	Y	Y	Y	17%	CS	NA	+	Y	Y
Moffet H et al. 2015, 19[81]	Y	Y	Y	NA	Y	Y	Y	4%	Y	CS	++	Y	Y
Monticone M et al. 2014, 35[83]	Y	Y	Y	NA	Y	Y	Y	10%	CS	NA	++	Y	Y
Onwude JL et al. 2004, 23[86]	Y	Y	Y	CS	Y	Y	Y	51%	Y	CS	+	U	Y
Ostelo RWJG et al. 2003, 60.1[87] Ostelo RWJG et al. 2003, 60.2[88]	Y	Y	Y	NA	Y	Y	Y	11%	Y	CS	++	Y	Y
Percope de Andrade MA et al. 2022, 50[91]	Y	Y	Y	N	Y	Y	Y	15%	N	NA	+	Y	Y
Petersen MK et al. 2006, 56.1[94] Petersen MK et al. 2008, 56.2[93]	Y	Y	Y	N	Y	Y	Y	28%	Y	NA	+	Y	Y
Piqueras M et al. 2013, 8[95]	Y	Y	N	NA	Y	Y	Y	27%	N	NA	+	Y	Y
Piva SR et al. 2017, 26[96]	Y	Y	Y	NA	N	Y	Y	7%	N	NA	+	Y	Y
Rolving N et al. 2015, 57.1[99] Rolving N et al. 2016, 57.2[100]	Y	Y	N	NA	Y	Y	Y	14%	Y	NA	+	Y	Y
Roustaee S et al. 2023, 54[102]	Y	Y	N	NA	Y	Y	Y	33%	N	NA	+	Y	Y
Shuldham CM et al. 2002, 24[106]	Y	Y	CS	NA	Y	Y	Y	7%	Y	NA	+	Y	Y
Shyu Y-IL et al. 2005, 10[108]	Y	Y	N	N	Y	Y	Y	21%	Y	NA	+	Y	Y
Shyu YI et al. 2013, 33[107]	Y	Y	N	NA	Y	Y	Y	10%	Y	NA	+	Y	Y
Siggeirsdottir K et al. 2005, 25[109]	Y	Y	Y	CS	CS	Y	Y	0%	NA	Y	+	Y	Y
Smith TO et al. 2022, 52[114]	Y	Y	Y	NA	Y	Y	Y	19%	Y	CS	+	Y	Y
Sun Z et al. 2019, 32[115]	Y	CS	N	CS	Y	Y	Y	0%	NA	CS	-	Y	Y
Tinetti ME et al. 1999, 47[121]	Y	Y	N	NA	Y	Y	Y	10%	CS	CS	+	Y	Y

Tousignant M et al. 2011, 20[122]	Y	Y	Y	NA	Y	Y	Y	15%	N	NA	+	Y	Y
Vukomanović A et al. 2008, 39[127]	Y	CS	N	NA	Y	Y	Y	20%	CS	NA	+	Y	Y
Wang T-F et al. 2020, 18[128]	Y	CS	N	CS	Y	Y	Y	17%	CS	NA	-	Y	Y
Wang Z et al. 2020, 5[129]	Y	CS	N	CS	Y	Y	Y	0%	NA	NA	-	Y	Y
Wibault J et al. 2018, 61.1[130] Peolsson A et al. 2019, 61.2[90]	Y	Y	Y	NA	Y	Y	Y	15%	Y	CS	++	Y	Y
Zieren J et al. 2007, 34[132]	Y	Y	N	CS	Y	Y	Y	12%	CS	NA	+	Y	Y
Zuo J et al. 2021, 17[133]	Y	Y	N	CS	Y	Y	Y	0%	NA	NA	-	Y	Y

Y, yes; N, no; CS, can't say; NA, not applicable; U, unsure; ++, high quality; +, acceptable; -, low quality

1.1 The study addresses an appropriate and clearly focused question.
1.2 The assignment of subjects to treatment groups is randomized.
1.3 An adequate concealment method is used.
1.4 The design keeps subjects and investigators "blind" about treatment allocation.
1.5 The treatment and control groups are similar at the start of the trial.
1.6 The only difference between groups is the treatment under investigation.
1.7 All relevant outcomes are measured in a standard, valid and reliable way.
1.8 What percentage of the individuals or clusters recruited into each treatment arm of the study dropped out before the study was completed?
1.9 All the subjects are analyzed in the groups to which they were randomly allocated (often referred to as intention to treat analysis).
1.10 Where the study is carried out at more than one site, results are comparable for all sites.
2.1 How well was the study done to minimize bias?
2.2 Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, are you certain that the overall effect is due to the study intervention?
2.3 Are the results of this study directly applicable to the patient group targeted in this guideline?

Appendix 3. Quality assessed with the Scottish Intercollegiate Guidelines Network (SIGN) methodology checklist for cohort studies

	Internal validity														Overall assessment		
	Focused question	Selection of subjects					Assessment						Confounding	Confidence intervals	Risk of bias	Clinical judgement	Applicability
Author, year, study ID	**1.1**	**1.2**	**1.3**	**1.4**	**1.5**	**1.6**	**1.7**	**1.8**	**1.9**	**1.10**	**1.11**	**1.12**	**1.13**	**1.14**	**2.1**	**2.2**	**2.3**
Bayram JM et al. 2019, 7[12]	Y	CS	Y	Y	19.5%	CS	Y	CS	Y	Y	Y	N	Y	N	+	Y	Y
Eastwood D et al. 2019, 6[30]	Y	Y	Y	NA	0%	NA	Y	CS	Y	Y	Y	N	CS	N	+	Y	Y
Pool MK et al. 2012, 4[97]	Y	Y	Y	NA	0%	NA	Y	CS	Y	Y	Y	N	N	N	+	Y	Y
Skolasky RL et al. 2015, 62.1[112] Skolasky RL et al. 2018, 62.2[113]	Y	Y	Y	NA	2.4%	CS	Y	N	Y	Y	Y	N	CS	N	+	Y	Y
Moulton LS et al. 2015, 49[85]	Y	Y	Y	NA	0%	NA	Y	NA	CS	Y	Y	N	Y	N	+	Y	Y
Ayalon O et al. 2011, 28[7]	Y	CS	Y	NA	0%	NA	Y	N	CS	Y	Y	N	N	N	+	Y	Y
Tappen RM et al. 2003, 12[118]	Y	Y	Y	NA	32%	CS	Y	N	Y	Y	Y	N	CS	N	+	Y	Y
Guo YJ et al. 2022, 16[43]	Y	Y	Y	NA	8%	CS	Y	N	Y	Y	Y	Y	Y	Y	+	Y	Y

Y, yes; N, no; CS, can't say; NA, not applicable; ++, high quality; +, acceptable; -, low quality

1.1 The study addresses an appropriate and clearly focused question.
1.2 The two groups being studied are selected from source populations that are comparable in all respects other than the factor under investigation.
1.3 The study indicates how many of the people asked to take part did so, in each of the groups being studied.
1.4 The likelihood that some eligible subjects might have the outcome at the time of enrolment is assessed and taken into account in the analysis.
1.5 What percentage of individuals or clusters recruited into each arm of the study dropped out before the study was completed? Only in prospective studies.
1.6 Comparison is made between full participants and those lost to follow-up, by exposure status.
1.7 The outcomes are clearly defined.
1.8 The assessment of outcome is made blind to exposure status.
1.9 Where blinding was not possible, there is some recognition that knowledge of exposure status could have influenced the assessment of outcome.
1.10 The method of assessment of exposure is reliable.
1.11 Evidence from other sources is used to demonstrate that the method of outcome assessment is valid and reliable.
1.12 Exposure level or prognostic factor is assessed more than once.

1.13 The main potential confounders are identified and taken into account in the design and analysis.
1.14 Confidence intervals are provided.
2.1 How well was the study done to minimize the risk of bias or confounding?
2.2 Taking into account clinical considerations, your evaluation of the methodology used, and the statistical power of the study, do you think there is clear evidence of an association between exposure and outcome?
2.3 Are the results of this study directly applicable to the patient group targeted in this guideline?

Appendix 4: Overview of treatment results for all studies and types of interventions

Author, year, ID	Type of surgery	Results	Pain intensity	Disability	Global improvement	Quality of life
Education						
Petersen MK et al, 2006 and 2008; ID 56.1, 56.2	THA	No significant differences between groups for pain. More improvement in the WOMAC function subscale and the total WOMAC score in the control group compared to the intervention group.	No difference in WOMAC-pain (p=0.1) and SF-36 bodily pain (p=0.6) between groups. WOMAC mean pain change between baseline and 6 months intervention group 149 (95% CI 100-199), control group 194 (153 - 235), p=0.01. Baseline mean scores intervention group 194 (142-245), control group 226 (184-269); No difference in SF-36 bodily mean pain (95% CI) change between groups (p=0.6).	No difference between groups in WOMAC function (mean change from baseline to 6 months 456 (325-588) vs. control 620 (497-743), p=0.03). No difference in SF-36 physical function (mean change 31 (22-40) vs. 32 (24-41) in the control group, p=1.0).	No difference in SF-36 general health between groups (p=0.6)	More improvement in the WOMAC total score in the control group compared to the intervention group (control group baseline mean 1126 (95% CI: 944-1308) 6 months 894 (95% CI: 728-1061) vs. intervention group, baseline mean 941 (95% CI: 737-1146), 6 months mean 668 (95% CI: 476-859); p=0.03

Louw A et al, 2014, and Louw A et al, 2016; ID 59.1, 59.2	Lumbar spine surgery	No difference in pain (leg and low back) and disability at 1-and 3-year follow-up. The intervention group used fewer postoperative health care resources	Decrease in NRS leg pain between baseline and 12 months (intervention group from 5.37 to 1.63 vs. usual care 6.06 to 2.73, p= 0.075). Decrease NRS low back between baseline and 12 months (intervention group from 4.44 to 3.07 vs. usual care pre 5.12 to 2.64, p = 0.183). No difference at 3 year follow-up	Decrease ODI between baseline and 12 months (intervention group 43.11 to 24.15 vs. usual care 46.67 to 23.58, p = 0.365). No difference in ODI (p=0.520) at 3-year follow-up	N.r.	N.r.
Bayram JM et al, 2019; ID 7	Knee arthroskopy	No difference in pain, joint awareness during daily activities, and satisfaction between the two groups after 3 months.	No difference in maximum pain (intervention median 4.0 (IQR 1.3 to 6.0) vs. control 4 (IQR 2.0 to 5.9, p= 0.97) and average pain (intervention median 2.0 (IQR 0 to 3.7) vs. 2 IQR 0.0 to 3.0, p= 0.94) at 3 months	FJS-12 (joint awareness during daily activities): no difference between intervention and control group after 3 months (p=.48)	N.r.	N.r.
Moulton LS et al, 2015; ID 49	THA	No difference in OHS after 6 and 24 months. The intervention group had a significantly reduced lenght of stay when compared with the control group.	N.r.	No difference in OHS between groups after 6 (intervention baseline mean 13.1; 6 months 37.58 vs. control group baseline 15.49; 6 months 36.70, p=0.368) and 24 months (intervention group mean 41.25 vs. control mean 36.50, p=0.800).	N.r.	N.r.
de Andrade MAP et al,	TKA	No difference in improvement between the groups after 6months,	VAS improved in the control group from 7.6 (SD=2.0) to 2.0 (SD=2.8)	Overall WOMAC scores improved in both groups without difference between	N.r.	SF-36 scores significantly improved in both

2021; ID 50		VAS, WOMAC and SF-36. Knee ROM and walking ability improved more in the intervention group	and in the intervention group from 7.6 (SD=2.0) to 2.4 (SD=2.7), no difference between groups (P=0.96)	groups (p=0.27): Intervention group baseline 60.2 (SD=20.7), 6 months 16.8 (SD=20.1); control group 62.8 (SD=15.4) to 9.2 (SD=11.9). After 6 months, knee ROM was higher (intervention: baseline 103.9, SD=22.7, after 6 months 106.9, SD=5.7); control baseline 104.6, SD=25.5, 6 months 92.5, SD=12.1, p=0.02), walking ability better (more than 400 m 97.4% vs. control 72.4%, p = 0.003) in the intervention compared to control.		groups, and no difference was observed between groups (intervention group baseline, 62.6 (SD=5.3), after 6 months 86.7 (6.7) vs. control group baseline, 58.1 (SD=4.6) after 6 months, 92.8 (6.7), p=0.6)
Mirror therapy						
Roustaee S et al, 2023; ID 54	Mastectomy	SPADI pain and disability were significantly improved in the MT group compared with the ST group after 3 months.	SPADI pain (baseline MT before 5.51±2.01, control before 5.67±2.47) lower at three months (MT 2.46±1.84, control 5.05±2.94; 95% CI: -3.85 to -1.32; p<0.001).	SPADI disability (baseline MT 3.92±2.45, control 3.67±2.95, p=0.71) significantly lower in the MT group at three months (MT 1.75±1.8, control 3.07±2.33; 95% CI: -2.39 to -0.24; p=0.02).	N.r.	No difference in the EORTC QLQ-C30- and QLQ BR-23 (QOL-C30 p=0.47), QLQ-BR23 function score (p=0.71) and symptom score (p=0.32) after 3 months
Mixed						

Han DF et al, 2021; ID 15	Cervical cancer	No difference in abdominal pain at 1 month between the groups; better function, quality of life, psychological outcomes and other outcomes at 3 months in the intervention group compared to the control group.	Abdominal pain did not differ between groups at 1 month (intervention group 2 cases vs. control group 3 cases; P=0.648).	SF-36 physical function at 3 months was higher in the intervention group than that of the control group (78.17±10.23 vs control group 65.88±9.21; p=0.000)	General health (MOS SF-36) at 3 months in the intervention group higher than in the control group (91.62±10.23 vs. control group 85.05±12.11; p=0.001)	N.r.
Dams L et al, 2023, and Dams L et al, 2024; ID 22.1, 22.2	Breast cancer	No difference in any outcomes after 18 months between groups	VAS intervention group baseline mean 15.5 to 19.0 at 18 months vs. Control group baseline mean 15.1 to 14.5 at 18 months; difference in change between groups: -4.8 [95% CI: -12.7; -3.09], p=0.2315	Pain-related disability no difference between groups: intervention baseline mean 4.9 to 7.9 vs. control 4.6 to 8.7; difference in change between groups -1.07 [95% CI: -4.64 to 2.51], p=0.559. DASH upper limb function intervention baseline mean 13.2 to 19.1 vs. control baseline mean 12.0 to 22.1; change between groups -3.16 [95% CI: -7.94-1.63], p=0.1944).	N.r.	No difference in existential well-being MQOL between groups after 18 months (p=0.1363)

Mahfouz Khalil et al, 2024; ID 40	CABG	More improvement in physical function and ADL in the intervention compared to the control group	N.r.	More improvement in the CROQv2 score in the intervention (baseline 9.19±1.04; 6 months 13.04±2.58) vs. control (baseline 9.18±1.02; 6 months 10.98±1.27; mean difference 2.05 [95% CI: 1.32-2.79], p<0.001)); ADL: more improvement (baseline 1.60±0.59, after 6 months 4.56±0.76) vs. control group (baseline 1.59±0.59, 6 months 2.98±0.90; mean difference 1.58 [95% CI: 0.15-1.27], p<0.001)	N.r.	N.r.
Arthur HM et al, 2000; ID 27	CABG	The intervention group showed a better overall physical score, and reported more support, after 6 months. Before surgery, pain improved more in the intervention group. No information about follow-up pain.	SF-36 bodily pain decreased during the waiting period in the intervention group and remained unchanged in the control group. No pain reported for six months	SF-36 physical improved more during the waiting period (intervention change 1.55 ±7.48 vs. control -1.46±7.81, mean difference 3.00 (95% CI 0.94 - 5.04, p 0.04). At 6 months the SF-36 physical composite score was higher in the intervention group (baseline mean 34.7, after 6 months mean 48 vs. control group baseline 34.2, after 6 months mean 45, p=0.0038).	N.r.	N.r.

Shyu YI et al, 2005; ID 10	Hip fracture	No difference in NRS, more improvement in SF-36 bodily pain and physical functioning in the intervention group compared to the control group. Higher proportion of recovered walking ability und more improvement in ADLs in the intervention compared to the control group.	No difference in mean pain (NRS) intensity at three months (intervention group mean 1.70±2.24 vs. control group mean 2.48±2.71; p=0.13); SF-36 bodily pain more improvement in the intervention (mean 75.34±22.9) compared to the control group (mean 64.06±29.89; p=0.03) at three months.	SF-36 physical functioning: Intervention group more improvement compared to control (mean 48.35±30.42 vs. 28.22±27.16; p<0.001) after three months. Activities of daily living: intervention group more improvement (mean 89.75±12.9 vs. 78.28±21.28, p=0.001) at three months	N.r.	SF-36 Quality of life General health perceptions no difference between groups (p=0.11); Intervention group had better ADLs 3 months after discharge (mean 89.76±12.89) compared to control (mean 79.28±21.28, p=0.001): no differences in IADLs (p=0.12)
Chang H-L et al, 2024; ID 63	TKA	Knee function improved more in the intervention group compared to the control group after 4 months.	N.r.	Knee function was higher in the intervention group compared to the control group (intervention group baseline, 50.2, after 4 months, 84.01 vs. Control group baseline 45.99, after 4 months 61.45, p=0.001)	N.r.	N.r.
den Hertog A et al, 2012; ID 14	TKA	Intervention group more improvement in the WOMAC score, less analgesics use, reduced LOS, and lower number of adverse events compared to the control group. The AKKS score was higher in the	Summary AKSS score (see disability)	At 3 months, WOMAC score (baseline intervention 6.8 vs. control group 6) higher in the intervention compared to control (2.2 vs. 2.5; p=0.0123); AKSS score intervention group higher compared to control (n.s.)	N.r.	N.r.

		intervention group but not significant.				
Ayalon O et al, 2011; ID 28	TKA	No difference in chronic pain due to joint replacement before and after the new pathway. Shorter LOS and more muscle weakness in the new pathway compared to the old pathway.	Less postoperative pain in the intervention group (day 4 mean pain intervention 1.21 vs. 1.81 before, p=0.0037). Persistent pain from joint replacement after 6 months pre-intervention 28 patients (15.4%) vs. post-pathway 24 (11.5%), p=0.2973)	N.r.	N.r.	N.r.
Christensen FB et al, 2003; ID 41	Lumbar spine surgery	At 2-year follow-up, no difference in LBP; the café group and the video group had lower leg pain compared to training groups. Daily functioning was best in the café group compared to the other groups.	Mean NRS at baseline (3 months after surgery) was comparable in all groups and higher compared to pre-surgery (median 3.3 range 0-8; leg pain median 1.3 (range 1-10). After 2-years LBP no difference between the groups (p=0.065). Compared to the training group worst leg pain: median 6.0 (range 0-10), mean leg pain median 4.0 (range 0-9)), the leg pain was lower in the cafe´(worst	At 2-year follow-up, the cafe´ group showed better daily function: carrying a bag of 5 kg (café 67% yes, training 26% yes, video 35 yes), rising from a chair (café 82% yes, training 57% yes, video 52% yes), and climbing stairs (café 89% yes, training 52% yes, video 66% yes; all P < 0.01). The trend towards better capacities to work (café 58% yes, training 26% yes, video 21% yes), walking 400 m	N.r.	Quality of life improvement after operation was not different between groups: café 78%, training 79%, and video (control) 62%

			leg pain median 3.0 (range 0-10), mean leg pain median 2.0 (range 0-7)) and video group (worst leg pain: median 3.5 (range 0-10), mean leg pain: median 2.5 (range 0-10); worst leg pain: P < 0.008; mean leg pain: P < 0.03). Can you perform your daily work without low back pain? At 6 months video group 22%, café 41%, training 36%, 12 months video 21%, café group 58%, training group 26% (p=0.01)	(café 85% yes, training 70% yes, video 59% yes), and driving proficiently (café 52% yes, training 26% yes, video 28% yes; was not significant (all P<0.09). Can you climb stairs from one floor to another without resting because of low back pain? At 6 months 59% video, 90% café, and 88% training group (p=0.01); at 24 months, 66% video, 89% café, and 52% training group (p=0.01)		
Kulig K et al, 2009, and Beneck GJ et al, 2014; 46.1, 46.2	Lumbar spine surgery	More improvement in SF-36 bodily pain in the exercise and education group compared to education only. More improvement in function (ODI, walking distance, SF-36 physical component) in the exercise and education group compared to education-only.	Intervention group more changes from baseline in SF-36 bodily pain (baseline 37.7 (±7.8), change baseline to follow-up 13.4 (95% CI 10.5 to 16.4)) vs. control (baseline 35.6 (±7.3, p=0.18), change baseline to follow-up 8.4 (95% CI 6.2 to 10.6), p=0.007)	Intervention group greater reduction in ODI scores (mean change -18.4 (95% CI -22.5 to -14.3) vs. -9.4 (95% CI -13.0 to -5.8), p= 0.001), more improvement in 5-min. walk test (mean 281.2 feet vs. education only mean 133.6 feet, p= 0.024). No difference in SF-36 physical function scores	SF-36 (general health): No difference in general health between the groups.	SF-36 mental component no difference; more change in the physical component in the intervention group between baseline and follow-up (13.19 (95% CI 11.0 to 15.3) vs. 8.93 (95% CI 6.5 to 11.3, p=0.010)

Tinetti ME et al, 1999; ID 47	Hip fracture	Intervention group reported more musculoskeletal pain related to exercise (n.s.) and stopped exercising because of pain. No significant difference in recovery to prefracture levels ADLs at 6 months or 12 months, mobility tasks, balance, or lower extremity strength.	More patients in the intervention group (59%) reported musculoskeletal pain related to exercise than patients in the control group (48%) at 6 months, p<.07 and to stop exercising because of pain (19% vs 11%; p < .06)	No difference in the proportion of participants in the two groups who recovered to pre-fracture levels in self-care ADL at 6 months (intervention n=98 (71%) vs control n=107 (75%), p=.40) or 12 months (intervention n=101 (74%) vs. control n=102 (74%), p=.89) or in home management ADL (6 months: intervention n=48 (35%) vs control n=62 (44%), p=.15); 12 months intervention n=60 (44%) vs control n=66 (48%), p=.59). No difference in timed mobility tasks, balance, or lower extremity strength.	N.r.	N.r.
Erdogmus CB et al, 2007; ID 48	Lumbar spine surgery	At the end of therapy (3 months), PT group lower LBP-RS than control group and comparable LBP-RS. No difference between the ST-group and control group. No difference between the groups after 1.5 years. Physical function was better in the PT vs. Control group after 3 months. No difference between PT vs. ST. No	At the end of treatment (3 months), PT group better LBP-RS sum score compared to control group (mean difference 11.24 (95% CI 3.4 to 19.1), P=0.005). No difference between the PT and the ST group (mean difference 4.14 (95% CI -3.69 to 11.98), P=0.296), no difference between ST and control group (mean difference 7.09 (95% CI -1.39 to 15.57),	Physical function subscore: baseline to end of therapy (3 months): More improvement in PT vs. control group (mean difference -3.82 (95% CI -6.96 to -.69), p=0.017; no difference after 1.5 years, p=0.220). No difference between PT vs. ST (mean difference -2.75 (95% CI -5.65 to 0.15), p=0.063. No difference after 1.5 years, p=0.74).	Activity of daily living subscores: Baseline to end of therapy (3 months): Significant difference between PT vs control group (mean difference -2.67 (95% CI -5.32 to -.03), p=0.047; no difference after 1.5 years (p=0.15). No difference between PT vs ST (mean	N.r.

		difference between the groups after 1.5 years.	P=0.10). No difference between the groups after 1.5 years. Pain subscore baseline to end of therapy (3 months): Significant difference between PT vs. control group (mean difference -4.92 (95% CI -9.23 to -.60), p=0.026; but no difference after 1.5 years, p=0.29). Chronic pain: Discectomy related pain (often/permanent) PT N=14 (34%), control group N=16 (40%), sham therapy N=9 (22.5%) after 1.5 years. PT vs. No therapy, p=0.63		difference -0.15 (95% CI -2.94 to 2.64), p=0.92; no difference after 1.5 years (p=0.82). Patients' ratings of general improvement with a 5-point Likert scale did not differ between groups. In control group 26 (75% after 3 months vs. 26 (80%); after 1.5. years), in the ST group 30 (78% after 3 months vs. 30 (93%), after 1.5. years), and in the PT group 33 (83% after 3 months vs. 32 (89%), after 1.5. years) reported an improvement.	

Ostelo RWJG et al, 2003, and Ostelo RWJG et al, 2003; 60.1, 60.2	Lumbar spine surgery	No differences in pain, function, and perceived recovery rate after 6 and 12 months.	No difference in VAS LBP severity between intervention (baseline mean 43.40 (SD=30.0); 3 months mean –9.3 (SD=27.8)) vs. control (baseline mean 46.7 (SD=27.3); 3 months mean –16.0 (SD=25.3); between group difference 6.6 [95% CI –3.8; 17.1]); VAS sciatica intervention (baseline mean 39.0 (SD=28.2); 3 months –11.6 (SD=31.3)) vs control (baseline 41.3 (SD=30.8); 3 months –14.2 (SD=23.9); between group difference 2.6 [95% CI, –8.3; 13.5]). No difference for VAS LBP severity after 6 months (intervention group -13.7 (SD=31.4) vs control group -20.9 (SD=31.6); between group differences 7.2 [95% CI -4.9; 19.4], VAS sciatica (between group differences 2.9 [95% CI -7.5; 13.3].	No difference in the RDQ scores after 3 months (intervention baseline mean 14.5 (SD=3.7), 3 months mean -5.2 (SD=5.9) vs. Control group baseline mean 13.5 (SD=4.5), after 3 months mean -5.6 (SD=5.3); between group difference 0.4 [95% CI, –1.8; 2.6]). Higher recovery rate in control group (67%) compared to the intervention group (48%) after 3 months; between group difference –19.3% [–38.5%; –0.1%]; after adjustment no longer significant. No difference at 6 months (intervention group 65% vs. Control group 62%, mean difference 3.0% (95% CI -16.3; 22.4) and 12 months (intervention group 75% vs. Control group 73%, mean difference 2.0% (95% CI -19.5; 15.7).	No difference in SF-36 General health between the groups (intervention group baseline mean 68.2 (SD=18.4), after 3 months mean 0.7 (SD=12.5) vs control group baseline mean 65.6 (SD=20.0), after 3 months mean 2.9 (SD=14.2), between groups difference 2.2 [95% CI -7.5; 3.1]. No difference after 6 and 12 months.	N.r.
Nurse-led						
McCorkle R et al, 2009; ID 21	Abdominal cancer	Intervention group (APN) reported a higher physical function score, less uncertainty, less symptom	N.r.	SF-12 physical: APN plus PCLN had better physical QoL after 6 months (<0.0001)	N.r.	SF-12 mental: APN plus PCLN had better mental QoL after 6 months (p=0.0001)

	surgery	distress, and better SF-12 mental QOL over time.				
Ji X et al, 2023; ID 64	Lung cancer surgery	VAS, anxiety and depression, and hospital stay was lower in the intervention group compared to the control group. 6MWT was longer in the intervention group compared to the control group after 1 month. Quality of life and nursing satisfaction were higher in the intervention group compared.	Pain VAS scores were significantly lower in the intervention group (3.5 vs. Control group, 4.5 <0.05)	6MWT distance was longer in the intervention group (baseline 515, after 1 month 480 vs. Control group baseline 500, after 1 month 425, p<0.05) after 1 month	N.r.	Quality of life in role function, social function was significantly better in the intervention group (85 vs. Control group 75, p<0.5)
Hong YL et al, 2022; ID 53	Head and neck cancer surgery	SPADI Shoulder pain and disability, UW-QOL quality of life were significantly improved in the intervention group compared with the control group after 3 months.	SPADI shoulder pain improved more in the intervention group (baseline mean score 24.6±12.0, after 3 months mean score 11.50±6.5) compared to the control group (baseline mean score 21.8±11.7, after 3 months mean score 19.7±5.8), p<0.01; ANCOVA analysis intervention compared to UC adjusted mean difference baseline to 3 months -11.4 (control -3,3) beta -8,09 (SE 1.87, p<0.01)	SPADI shoulder disability improved more in the intervention group (baseline 41.0±18.1, after 3 months 14.6±12.1) compared to the control group (baseline 22.3±10.6, after 3 months 26.7±19.6). ANCOVA analysis intervention compared to control adjusted mean -22.07 (control -2.57), Beta - 19.49 (SE 5.26, p<0.01).	N.r.	UW-QOL improved more in the intervention group (baseline 771.3±91.9; 3 months 943.8±69.2) compared to control (baseline 1047.5±82.2; 3 months 817.5±108.6), p<0.01); adjusted mean difference baseline to 3 months intervention 172.5±86.6 vs.

						control group - 423.3±900.2.
Maguire P et al, 1983; ID 43	Mastectomy	Intervention group reported less pain (n.s.), less disability (n.s.) and was significantly more active compared to the control group.	Proportion of patients with chronic pain at 12-18 months was lower in the intervention group (12 patients (16%) vs. 18 patients in the control group (23%). Considerable/severe pain in lower in the intervention group (5 patients (7%) vs. 8 (10%) in control patients). Both p=>0.05).	Arm disability was similar proportion in both groups (counselling 11, 15%; control 14, 18%). One patient was severely handicapped and unable to manage much movement in the counselling group (p=>0.05).	Return to work yes: Counselling 32 patients (76%) vs. Control group 25 patients (54%); p=>0.05	N.r.
Wang Z et al, 2020; ID 5	Endoscopic surgery for sinusitis	More improvement in pain scores and somatic function scores in the intervention group compared to the control group. Better quality of life scores, somatic function, psychological	WHO pain score decreased in both groups: intervention group (day 1 5.16 (±1.23), day 3 3.86 (±0.75), day 7 2.94 (±0.54), and day 14 1.26 (±0.34)), control group day 1 6.86 (±1.29), day 3 4.53 (±0.78), day 7 3.75	QoL (Somatic function): the intervention group had higher somatic function compared with the control group after 3 months. Intervention group pre 53.45±4.86, after 3 months 79.38±7.86 vs. Control	N.r.	QoL better in the intervention group compared to the control group at 3 months. Higher psychological (pre 56.38±5.49; at 3 months 78.49±8.68)

		function, and social function in the intervention group compared to the control group after 3 months.	(±0.61), and day 7 2.05 (±0.41). The difference between the groups was significant (p=<0.05)	group pre 54.02±6.02, after 3 months 70.54±6.32.		vs. control (pre 55.72±5.18, after 3 months 70.42±6.83) and social functioning (p<0.05)
Zuo J et al, 2021; ID 17	Hip fracture	More improvement in pain and function in the intervention group. Less anxiety / depression, and shorter LOS compared to the control group.	NRS baseline comparable (p>0.05), at follow-up NRS scores were lower in the intervention group (baseline 8.1 at 3 months 3.7 vs. control group pre 8.1, at 3 months 6.8; P<0.05)	Berg Balance Scale (BBS) more improvement in the intervention group vs. control (pre intervention 22, after intervention 35 vs. control pre 21, after 31; P<0.05).	N.r.	N.r.
Sun Z et al, 2019; ID 32	Hip fracture	More improvement in pain and function, lower complication rate, higher satisfaction with their nursing in the intervention group compared to the control group. The control group had lower annoyance rate.	Patients in the control group had a higher VAS score (mean 5.89 ± SD 1.46) compared to the intervention group (4.28 ± 1.18) (t = 6.861, P < 0.001)	Knee function was better in the intervention group after 1 year (intervention group 84.29 ± 5.24 vs. control group 75.18 ± 6.12, P< 0.001).	N.r.	QoL more increase in the intervention compared to the control group (p=0.001). Higher overall good quality of life (intervention 93.8% vs. 73.4%, p=0.001)
Lin P-C et al, 2009; ID 11	Hip fracture	The intervention group had less pain (SF-36 bodily pain), better general health perceptions and the mental aspects of social functioning than the control group. No differences between the two groups for function and LOS.	SF-36 bodily pain: The intervention pretest 88.15 (SD=18.48) to after 3 months 55.16 (SD=23.20) was higher, indicating less pain, than control group (pre 77.08 (SD=22.44), after 3 months 38.58 SD=27.68), p = 0.009)	SF-36 physical functioning intervention before 74.8 (SD 25.15) to 3 months 55.77 (22.56) vs. Control group before 73.33 (SD 28.04) to 51.46 (SD 24.82), p=0.606). ADL functional status: No difference between groups after 3 months (intervention group baseline 17.53 (SD=1.13) vs. after 3	SF-36 general health perception: Intervention higher scores, indicating better general health, than the control group (pre 67.03 (SD=15.31); 3 months 68.46 (SD=16.55); control group (pre 56.54	N.r.

				months 16.92 (SD=1.41) vs. control group baseline 17.62 (SD=0.71) vs. after 3 months 16.83 (SD=1.71), p=0.409	(SD=19.96); 3 months 55.70 (SD=22.23), p=0.029)	
Hørdam B et al, 2010; ID 30	THA	No difference in pain and physical function between the groups at 9 months.	SF-36 bodily pain: Improved in both groups, no between group difference (change baseline to 9 months intervention 23.5 (95%CI 17.7-29.3), control 29.2 (21.8-36.7, p 0.227).	SF-36 physical function improved in both groups; no between group difference (mean change baseline to 9 months intervention 17.9 (95% CI 11.9-23.9) vs. control group 16.9 (10.3-23.36, p=0.955)	Both groups improved without significant difference in general health from baseline to 9 months (intervention group 5.7 vs. control group 1.4, p=0.255)	N.r.
Prehab						
Lotzke H et al, 2019, and Kemani MK et al, 2024; ID 65.1, 65.2	Lumbar fusion	No differences in any outcomes between groups	No difference in VAS between the groups at 6 and 24 months: VAS LBP (intervention baseline mean 57.3 (51.7 to 62.9); 6 months mean change -29.2 [95% CI -36.7 to -21.7], after 24 months mean change -31 [95% CI -40.8 to -21.3]; control group baseline mean 65.0 (61.0 to 68.9), after 6 months mean change -31.8 [95% CI -39.2 to -24.4], after 24 months mean change -37.8 [95% CI -47.1 to -28.4]). Mean difference in between group change from baseline to 6	No difference in ODI between groups after 6 and 24 months (ODI: mean difference between group change from baseline to 6 months after surgery -16 [95% CI -0.55 to 0.23], p=0.98, mean difference between group change from baseline to 24 months after surgery -0.03 [95% CI -0.42 to 0.37], p=.85. No difference in PSFS between groups after 6 and 24 months.	N.r.	No difference in QoL EQ-5D Index and general health EQ-5D VAS between groups after 6 and 24 months

			months after surgery -0.10 [95% CI -0.49 to 0.29], p=0.19. VAS Leg pain no difference (after 6 months mean difference between groups -0.08 [95% CI -0.47 to 0.31], p=0.47)			
Lindbäck Y et al, 2018; ID 36	Lumbar spine surgery	No differences between PT and waiting list for pain, function, and quality of life after 1 year	VAS LBP: PT (baseline 56.0 (SD=24.4) vs. control 59.7 (SD=21.6); p=.0.264) no difference at 1-year follow-up (PT mean change -24.5 (95% CI: -30.4 to -18.6) vs. control mean change -31.8 (95% CI: -37.8 to -25.9). Mean difference in between group change 4.7 (95% CI: -2.4 to 11.8); p=0.195. VAS leg pain: No difference between PT (baseline 65.3 (SD=22.1) vs. control 64.0 (SD=20.0) and control after 1-year (mean change -35.0 (95% CI: -41.5 to -28.5) vs. control mean change -36.5 (95% CI: -43.0 to -30.0); mean group difference in change 2.9 (95% CI: -5.4 to 11.2); p=0.484.	ODI: No difference between PT (baseline 37.9 (SD=12.8) vs. control 40.5 (SD=12.6) and control at 1-year follow up (mean change -15.0 (95% CI: -18.3 to -11.7) vs. control mean change -20.4 (95% CI: -23.7 to -17.1); mean between group difference in change 4.0 (95% CI: -0.5 to 8.5); p=0.080. No difference in SF-36 PCS between PT and control group	PT group: After presurgery intervention 49% reported "improved," (vs. 17% waiting-list), 13% "worse" (vs. 42%), and no change 41% (vs. 38%). No differences between the groups at 3-month and 1-year in the Patient Global Impression of Change follow-up	Quality of life-EQ-5D: Baseline physiotherapy 0.371 (SD=0.3) vs. waiting list 0.356 (SD=0.3). 1-year follow-up physiotherapy mean change 0.280 (95% CI: 0.2 to 0.4) vs. waiting list mean change 0.329 (95% CI: 0.3 to 0.4); Mean difference in between group change -0.030 (95% CI: -0.1 to 0.0); p=0.455

Beaupre LA et al, 2004; ID 38	TKA	No differences between the group for pain, function, knee measurements, and general health after 12 months.	No difference in improvement of WOMAC pain and SF-36 bodily pain between groups from baseline to 12 months. WOMAC pain intervention (baseline mean 49 (SD=15); 1 year mean 82 (SD=13)) vs. control (mean 49 (SD=20); 1 year 80 (SD=16), p=0.39). SF-36 bodily pain: intervention group (baseline mean 38 (SD=16); 12 months mean 69 (SD=22)) vs. control (37 (SD=16), 12 months mean 70 (SD=22), p=0.75)	No difference in the improvement of WOMAC function and SF-36 physical functioning between groups from baseline to 12 months. WOMAC function: intervention baseline mean 50 (SD=17), 12 months mean 77 (SD=14) Control baseline mean 49 (SD=19), after 12 months mean 77 (SD=16), p=0.80), SF-36 PCS no difference after 12 months (p=0.45).	No difference in SF-36 general health between the groups after 1 year (intervention group baseline mean 70 (SD=16), after 12 months mean 73 (SD=16) vs. control group baseline mean 71 (SD=18), after 12 months mean 76 (SD=18), p=0.40)	N.r.
Vukomanović A et al, 2008; ID 39	THA	No difference between the groups for pain and function after 15 months.	No difference in pain at rest/while moving after 15 months: VAS at rest (intervention baseline 37.5 (SD ±25.3) to 3.95 (SD ±13.08) vs. control baseline 33.5 (±29.1) to 6.2 (SD ±14.95) no significant difference at 15 months (p=0.89). VAS while moving (intervention baseline 69.9 (±19.1) to 10.25 (SD ±17.33) vs. control baseline 72.0 (±15.3) to 11.5 (SD ±17.33) no	No difference in functional assessments at 15 months in the JOA hip score p=0.34 and the Oxford hip score p=0.66.	N.r.	N.r.

			difference at 15 months (p= 0.88).			
Gocen Z et al, 2004; ID 42	THA	No difference between the groups in the functional Harris Hip Score after 24 months.	N.r.	Comparable improvement in the Harris Hip Score (HHS) in the intervention to the control group from preoperative (baseline mean 51.48±18.32 vs. 45.30±12.98) to 3 (33.2±16.9 vs. 32.30±15.9, p=0.84) and to 24 months (54.53±16.39, vs. 50.96±15.27); change mean intervention group 97.14±4.32 vs. control group 95.66±6.08, p=0.28).	N.r.	N.r.
Psychological & education						

Koet LL et al, 2021; ID 29	Colorectal surgery	No difference between the groups in physical, emotional, and social functioning. Shorter LOS in the intervention group compared with the control group.	No pain assessed	No difference in physical functioning between the two groups after 6 months (intervention baseline 82.8; 6 months 84.1 vs control baseline 81.2; 6 months 78.0; mean difference between groups -6.1 (95% CI: -14.4-2.3); p=0.151)	No difference in global health status between the two groups after 6 months (p=0.775)	N.r.
Boesen EH et al, 2011; ID 31	Mastectomy, lumpectomyes, other	No difference between the two groups for pain, physical function, and quality of life after 12 months.	Pain (EORTC): between group differences in the changes from baseline to 12 months –0.1 (95% CI –6.9 to 6.7), p= 0.98	Physical Function (EORTC): between group difference change in baseline to 12 months 1.4 (95% CI –2.6 to 5.3), p= 0.49	N.r.	Quality of life (EORTC): between group differences change from baseline to 12 months 2.1 (95% CI –4.5 to 8.7), p= 0.54
Lin C-Y et al, 2017; ID 66	CABG	More improvement in the intervention group for SF-36 PCS and MCS compared to the control group (TAU) at 18 months	N.r.	More improvement in SF-36 PCS in the intervention group compared to the control group (intervention group baseline, 46.88 (SD=10.68), after 18 months, 49.93 (SD=9.65) vs. control group baseline, mean 46.07 (SD=11.66), after 18 months 47.08 (SD=10.10), p = 0.02	N.r.	Intervention group more improvement in SF-36 MCS (intervention group baseline 44.92 (SD=10.14); 18 months 49.69 (SD=11.84) vs. control baseline 43.42 (SD=12.76); 18 months 46.48 (SD=10.35), p=0.04

Shuldham CM et al, 2002; ID 24	CABG	No differences between the groups for pain, physical health, wellbeing dimensions, anxiety and depression after 6 months. The control group had a shorter LOS compared to the intervention group.	Pain mean change at 6 months intervention 11 (-86 to +98) vs. Control 11 (-83 to +82), p=0.48	Physical health (SF-36): Baseline intervention group median 31.15 (range 9.76-55.9) vs. control median 31.25 (range 14.03-59.53). No follow-up reported.	No difference in wellbeing with GWBQ: Worn out dimension median change intervention group 2 (-19 to +20) vs. control group 3 (-14 to +30); p=0.11.	N.r.
Lenz ER et al, 2000; ID 37	CABG	No differences in overall functional health status, depressive symptoms, and patient satisfaction between groups at 12 weeks.	No results for the groups reported. Non-incisional chest pain in 5 out of 39 patients (13.3%). Incision pain 16 of 39 patients (41%) after 12 weeks.	No difference in improvement of functional health status between the groups (intervention group baseline 24.74; 12 weeks 14.84 vs. control group baseline 25.05; 12 weeks 15.31), p<0.67); No difference in improvement of physical health status (intervention baseline 9.90; 12 weeks 5.74 vs. control baseline 9.72; 12 weeks 5.33), p<0.63).	N.r.	N.r.
Archer KR et al, 2016; ID 2	Lumbar spine surgery	More improvement in the CBPT group for pain, disability, general health, and physical performance compared to education group at 3 months.	BPI back pain: CBPT more improvement vs. education group (between group difference CBPT vs. Education -0.88 (95% CI -1.5 to -0.25, p=0.007) after 3 months. BPI leg pain: CBPT more improvement (between group difference -1.2 (-2.1 to -0.34), p= 0.007). BPI interference: CBPT more	ODI: CBPT more improvement (between group difference -9.8 (95% CI -15.3 to -4.4), p= <0.001) vs. education after 3 months. 5-Chair Stand test: CBPT more improvement (between group difference -7 (-13.7 to -0.37), p=0.04). No significant differences in the functional mobility (TUG,	N.r.	More improvement in the SF-12 PCS (between group difference 7.1 (2.9 to 11.3), p=0.001) and the SF-12 MCS (between group difference 13.0 (95% CI 8.7-17.2), p= <0.001) after 3 months.

			improvement (between group difference -1.5 (-2.4 to -0.57), p= 0.002)	p=0.08) and 10-Meter Walk (p=0.08) test.		
Rolving N et al, 2015, and Rolving N et al, 2016; ID 57.1, 57.2	Lumbar spine surgery	No difference between the groups for back and leg pain, catastrophizing, and fear of avoidance belief after 1 year. ODI more improvement at 3 months in the intervention group. The effect was no longer significant at 1 year.	Back pain: No difference between intervention baseline to 3 months median change -3.0 (IQR -4.3 to -1.3) and to 12 months median -2.5 (IQR -4.3 to -1.0) and control group (change to 3 months median -2.6 (IQR-4.3 to -0.3); p=0.41) and to 12 months -2.7 (IQR -5.0 to -0.3); p=0.81). Leg pain: No difference between (change from baseline intervention group median -3.2 (IQR -5.3 to -1.3) vs. control group median -2.3 (IQR -4.7 to -0.3), p=0.23)	ODI: Intervention group more improvement at 3 months (change baseline to 3 months median -15 (IQR -26 to -4) vs. control group median 1 (IQR -14 to 8), p=0.003); No difference in ODI score after 1 year between the two groups (change from baseline intervention group median -14 (IQR -26 to -5) vs. control group median -6 (IQR -26 to 4), p=0.082).	N.r.	N.r.

Piva SR et al, 2017; ID 26	TKA	More improvement in the intervention group for pain and physical function, single-leg stance test compared to the control group after 6 months.	The intervention group had more reduction in WOMAC pain scores (changes in pain in the CBI of -1.7 [95% confidence interval (95% CI) -3.0, -0.4] versus -0.3 [95% CI -1.5, 1.0] in the SCE; P = 0.035).	WOMAC-PF: No difference between groups (intervention baseline 19.5±9.3, after 6 months 11.8±6.7 vs. control group baseline 18.2±10.4, after 6 months 12.8±10.8; P=0.558). SF-36 physical function: Intervention more improvements (baseline 56.4±23.0; 6 months 76.7±16.1 vs. control group baseline 63.5±17.3; 6 months 70.3±24.2; p=0.017). MCID (20% improvement) in WOMAC-PF CBI 16 (76%), SCE 12 (60%), SF-36 PF CBI 14 (67%), SCE 8 (40%)	N.r.	N.r.
Monticone M et al, 2014; ID 35	Lumbar spine surgery	More improvement in the intervention group for pain, disability, fear-avoidance beliefs, catastrophic thoughts, and quality of life domain scores compared to the control group after 1 year.	NRS LBP: Intervention group more improvement (before 6.57±1.67, and after 2.06±0.93 vs. control group before 6.72 ± 1.66, and after 4.98 ± 1.38, p<0.001) NRS Leg pain: intervention group before 5.28±1.29, after 1.19 ± 1.01 vs. control group before 5.25±1.38, after 2.50 ± 0.54, p<0.001; SF-36 bodily pain: Intervention group more	ODI: Intervention group more improvement (before 49.06±5.84, after 15.98±5.15) vs. control (before 48.51±12.62, after 26.53±5.14, p<0.001); SF-36 physical functioning: Intervention group more improvement (before 32.31±21.12, after 78.47±13.40) vs. control (before 28.85±27.10, after 56.81±15.35, p=0.001).	SF-36 general health: Intervention group more improvement (before 44.38±16.48, after 67.20±12.97) vs. control group (before 46.69±12.48, after 45.17±11.43, p<0.001)	N.r.

			improvement (before 35.11±21.11, after 60.29 ± 13.98) vs. control before 34.58±21.57, after 39.26 ± 16.57, p<0.001).			
Abbott AD et al, 2010; ID 44	Lumbar spine surgery	Intervention group more improvement for pain and disability after 3, and 6 months. Whereas the difference in disability was significantly different after 12 months and 3 years between the groups, no differences in pain scores were observed. More improvement in SES, BBQ, and TSK at every follow-up in the intervention group. After 3 years, the intervention group used less external health care providers.	VAS: Intervention group more improvement compared to control group at 3 and 6 months (between group difference after 3 months: -11.7 (95% CI 19.0 to 4.3), p=0.002; between group difference after 6 months: -9.9 (95% CI -17.6 to -2.2), p=0.012); No difference between groups after 12 months (p=0.250) and 2-3 years (p=0.080).	ODI: Intervention group more improvement compared to control group after 3, 6, 12 months, and 3 years (between group difference after 3 months -9.7 (95% CI -15.8 to -3.6), p=0.002; between group difference after 6 months -10.7 (95% CI -16.8 to 4.6), p=0.001; between group difference after 12 months -11.1 (95% CI -17.3 to -4.9), p=0-001; between group difference after 2-3 years -9.8 (95% CI -17.4 to -2.3), p=0.011).	N.r.	Quality of life EQ5D: Intervention group more improvement compared to control group after 12 months (between group difference 13.3 (95% CI 3.6 to 23.0), p=0.008; No difference after 3 (p=0.055), and 6 (p=0.170) months, and after 2-3 years (p=0.224).

Johansson AC et al, 2009; ID 45	Lumbar spine surgery	Whereas no significant differences in pain and function were observed at 3 months, the control group reported a significant greater reduction in back pain after 12 months compared to the intervention group. No difference for leg pain, ODI, quality of life, coping and kinesiophobia at 3 and 12 months between the groups.	VAS LBP: Control group (home based training) had less pain at 12 months (baseline VAS median 70, 3 months 14, 12 months 9; change baseline to 12 months median -45 (IQR -13, -73)). Intervention group (baseline VAS median 70, 3 months 23, and 12-months 34, change baseline to 12 months median -19 (IQR -10, -43); p = 0.04). VAS leg pain: No difference between (control: change baseline to 12 months median -58 (IQR -32, -80) vs. intervention change from baseline to 12 months median -23 (IQR -11, -67), p=0.06); SF-36 Bodily pain: no difference between groups after 3 months (intervention group 51 vs. control group 61); At 12 months higher score in control group (75 vs. 50, no p-value).	No significant differences between the two groups in ODI after 12 months. Intervention group baseline ODI 39, 3 months 16, 12-months 15; change from baseline to 12 months median -23 (IQR -9, -38). Control group: Baseline ODI 39, 3-months 14, 12-months 6; change from baseline to 12 months median -32 (IQR -17, -42), p=0.09). No difference in SF-36 Physical function after 3 months (intervention group 65 vs. control group 80, no p-value reported); SF-36 Physical function was significantly higher in the control group after 12 months (90 vs. 70, no p-value provided).	No difference in SF-36 General health between the two groups at 3 (intervention group 70 vs. Control group 81, no p-value provided) and 12 months (Intervention group 65 vs. control group 81, no p-value).	Quality of life EQ-5D VAS more increase in the control group (change from baseline to 12 months median 30 (IQR 15, 55)) compared to the intervention group (change from baseline to 12 months median 13 (IQR 0.8, 33), p=0.03).

Wibault J et al, 2018 and Peolsson A et al, 2019; ID 61.1, 61.2	Cervical spine surgery	No differences between the groups in neck pain, arm pain, neck disability, global outcome, or enablement after 6, 24, and 48 months.	VAS neck: No differences between the groups at 3, 6 and 24 months (VAS neck pain: intervention group baseline mean 56.1 (SD=25.3), after 3 months mean 24.9 (SD=24.3); after 6 months mean 21.5 (SD=25.4) vs control group baseline mean 56.7 (SD=23.5), after 3 months mean 22.0 (SD=24.3); after 6 months mean 22.8 (SD=25.4); p=>0.43). VAS arm pain: No difference (intervention baseline mean 53.3 (SD=27.1); 3 months 21.5 (SD=25.3); 6 months 17.3 (SD=23.9) vs. control baseline mean 47.5 (SD=29.4), 3 months 17.7 (SD=24.3). Neck pain always to every day at 3 months: intervention 45 (45%) vs. control 37 (38%); 6 months intervention 29 (29%), control 34 (35%); 12-months intervention 15 (15%), control 28 (29%)	NDI: No difference between the groups at 3, 6, and 24 months (intervention group baseline mean 42.4 (SD=15.1), 3 months mean 30.6 (SD=18.1) vs. control group baseline mean 43.3 (SD=15.3), 3 months mean 27.0 (SD=16.0); after 6 months (intervention group mean 24.5 (SD=18.5) vs control group mean 22.3 (SD=17.3). 6 months: Complete recovery intervention 9 (10%) vs. control 9 (11%) Complete recovery + much better intervention group 53 (60%) vs. Control group 45 (56%).	N.r.	Mean EQ-5D VAS baseline to 3, 6, and 12 months intervention group 53 (SD 21.6) to 69 (22.1) to 75 (21.2) to 77 (21.2). Control group 45 (21.2) to 74 (19.4) to 74 (20.3) to 74 (23.4). EQ-5D mean intervention group baseline 0.43 (SD=0.30) to 0.64 (SD=0.26) to 0.68 (SD=0.28) to 0.75 (0.23). EQ-5 D mean control group baseline 0.36 (SD=0.32) to 0.70 (SD=0.25) to 0.74 (SD=0.24) to 0.72 (0.27). No difference between the two groups after 24 months (p=0.94).
Siggeirsdottir K et al,	THA	More improvement in pain and function in the intervention group	Oxford Hip score: Intervention group more improvement (baseline mean	NHP domain physical mobility intervention group better than the control group	N.r.	The intervention group was doing better than the

2005; ID 25		compared to the control group after 6 months.	33 (SD=7.5); 6 months 14 (SD=4.3)) vs. control group (baseline 37 (SD=6.5); 6 months 21 (SD=7.2), p<0.001). NHP pain domain: Intervention better than control (p=0.02)	at 6 months (p=0.003); No other differences between the two groups for functional outcomes.		control group at 6 months, in 4 NHP domains: lack of energy (p=0.007), and social isolation (p=0.03)
Shyu YI et al, 2013; ID 33	Hip fracture	Comprehensive care group more pain, and more improvement in physical function compared to UC at 3 and 6 months. No difference between subacute care and UC group. No difference in pain for all groups after 12 months. More improvement in the subacute care group compared to the usual care group. No significant difference in the mental component between the groups.	SF-36 bodily pain: UC group better bodily pain than the comprehensive care group at 3 (79.03±21.54 vs. 69.75±23.32, p <0.01) and 6 months (84.59±21.99 vs. 72.95±26.54, p= <0.05). No significant difference at 12 months. UC and subacute care group similar bodily pain health outcomes.	SF-36 physical component summary score comparable at 3 months in the comprehensive and UC group (55.07±9.12 vs. 55.43±8.72, p=n.s.) and higher at 12 months (64.25±11.19 vs. 60.61±11.19, p<0.01). Physical functioning comparable between the groups at any timepoints.	SF-36 (general health): Comprehensive group better general health than the UC group, after 12 months (p<0.05). Comprehensive group pre-score 57, after 12 months mean 60.66+/-24.89. Usual care group: pre-score 54, after 12 months mean 52.66+/-28.0.	N.r.

Huysmans E et al, 2023; ID 51	Lumbar spine surgery	No difference in pain between the groups. More improvement in physical function in the intervention group compared to the control group	VAS LBP: No significant difference (intervention baseline 45.68 (SE=3.40), at 12 months 19.44 (SE=2.71), mean difference -21.95 (SD=26.04) vs. control baseline 41.14 (SE=3.45); 12 months 21.8 (SE=3.28); mean difference -16.76, SD=29.26), p=0.19). Pain VAS leg: No difference between groups (intervention baseline 54.22 (SE=3.17); 12 months 12.28 (SE=2.58) vs. control baseline 54.75 (SE=3.09); 12 months 18.35 (SE=3.36), p=0.29).	SF-36 PCS: PPNE group significant time * intervention interaction with an additional increase of 46.94 (95% CI: 14.16; 79.73) at 12 months; p=0.016 (SF-36 physical component intervention group at 12 months 270.6 (12.41) vs. 243.72 (12.68))		SF-36 MCS improved in both groups after 6 and 12 months (intervention group baseline 127.78, SE=7.14, after 6 months 242.33, SE=12.44, mean difference 114.43, SD=83.30) vs. control group baseline 147.77, SE=8.22, after 6 months 245.66, SE=13.76, mean difference 88.54, SD=89.95; p=0.30.
Smith TO et al, 2022; ID 52	THA or TKA	No difference in pain, disability, quality of life, and other outcomes after 12 months.	NRS: Both groups improved over time without difference (intervention baseline 7.23 (SD=1.79), after 12 months 3.33 (SD=2.85) vs. control baseline 6.87 (SD=1.94), after 12 months 4.08 (SD=2.87)); mean difference: -0.75 (95% CI: -1.59 to 0.09); p=0.08). EQ-VAS: No difference (mean difference: 1.47 (95% CI .3.73 to 6.68); p=0.58)). Pain in the joint undergoing surgery: 10.4% in the	LEFS: No difference (intervention baseline 24.50 (SD=14.07); 12 months 50.67 (SD=21.40) vs. control group baseline 23.72 (SD=13.11); 12 months 47.86 (SD=18.97); mean difference: 1.26 (95% CI -4.61 to 7.13, p=0.67)). OHS: No difference (mean difference: 2.37 (95% CI -2.53 to 7.27), p= 0.34)), OKS (mean difference: -1.43 (95% CI -4.72 to 1.86), p=0.39))	N.r.	No between-group difference in EQ-5D-5L (mean difference: 0.00 (95% CI -0.06 to 0.07); 0.93))

			intervention group vs. 9% in the control group Pain in other joints: 13.4% in the intervention group vs. 11.4% in the control group.	UCLA score (mean difference: −0.03 (95% CI −0.52 to 0.45, p=0.89; per protocol mean difference: -0.17 (95% CI -0.81,0.48)).		
Lluch E et al, 2018; ID 55	TKA	No difference in functional improvement and knee pain after 3 months. More improvement in the PCS and TSK in the intervention group after 3 months compared to the control group.	WOMAC score: Both groups improved after 3 months (intervention baseline 52.4±14.6, after 3 months 21.1±10.9, P<0.05) vs. control group baseline 52.1±18.4, after 3 months 32.6±20.6, P<0.05, with no between-group differences.	WOMAC see pain	N.r.	N.r.
Skolasky RL et al, 2015, and Skolasky RL et al, 2018; ID 62.1, 62.2	Lumbar spine surgery	More improvement in pain and disability over the first 12 months in the intervention group compared to the control group. The differences were no longer significant during the long-term follow-up	Brief pain inventory improved in both group: intervention baseline 6.4 (SD±2.9), three months 4.0 (±1.2), 6 months 2.8 (±1.1) vs. control group baseline 6.7 (±2.5), 3 months 5.1 (±1.9), 6 months 3.7 (±2.1). The improvement was in the intervention group greater (change per month) in the first 12 months (estimate, 20.10 [95% CI, 20.17 to 20.03]; p = 0.008).	ODI: More improvement in the intervention group (baseline 65 (±17), 3 months 28 (±12), 6 months 24 (±15) vs. control group baseline 60 (±20), 3 months 36 (±17), 6 months 36 (±15) until 12 months (change per month, estimate 20.75 [95% CI, 21.43 to 20.08]; p = 0.028). SF-36 physical health: Intervention more improvement (estimate, 0.36 [95% CI, 0.04 to 0.67]; p = 0.025) vs. control group.	SF-36 physical health: intervention group greater improvements (change per month) estimate, 0.36 [95% CI, 0.04 to 0.67]; p = 0.025) compared to control group during the first 12 months. Between 24 and 36 months no longer significant (estimate, 0.08 [95% CI, 20.02 to 0.17]; p=0.123).	N.r.

Pool MK et al, 2012; ID 4	Esophageal surgery	More improvement in pain and physical function in the intervention group compared to the control group after 3 months. Significant increase of QOL in the intervention group for physical functioning, emotional functioning, and social functioning compared to the control group.	QLQ-C30 pain: Intervention group more pain improvement (baseline mean 38.18 (SD=16.3), 3 months mean 35.41 (SD=16.2)) vs. control (baseline mean 41.62 (SD=18.9), 3-months mean 42.79 (SD=19), p=<0.001); No difference in QLQ-OES18 symptom scale pain (Intervention group vs. control group at 3 months p=0.949))	QLQ-30 physical functioning: Intervention group more improvement (baseline 46.87 (SD=13.6), 3 months 54.21 (SD=13.1)) vs. control group (baseline 47.41 (SD=12), 3 months 45.67 (SD=11.5), p =.001)	QLQ-30 Global health status: Intervention group more improvement (baseline 48.61 (SD=14.7); 3 months 56.5 (SD=14.1)) vs. control group (baseline 47.49 (SD=13.9), 3-months 43.22 (SD=12.6), p =<0.001)	QOL score: Intervention group improvement (total score mean before 48.61, after 12 weeks 56.5, p=.001); control group decreased (mean before 47.49, after 3-months 43.22, p=.09)
Eastwood D et al, 2019; ID 6	Spine surgery	Less back pain in the intervention group at 3 months that did not reach a clinically important difference. Patients in the intervention group were more satisfied and had fewer emergency room visits. No difference in disability between the groups.	In the intervention group a time x cohort interaction was significant (F [1,202] = 3.99, p= <0.05); Intervention group less NRS pain scores at 3 months, the difference did not meet the minimal clinical important difference (of 2.0 points). Leg pain, no significant differences	No significant difference in the ODI scores between the two groups (p=.334)	N.r.	N.r.
Telehealth						

Wang T-F et al, 2020; ID 18	Oral cancer surgery	No difference in QOL-pain, and quality of life after 3 months	QOL-pain score: No difference between the groups after 3 months (intervention group before 22.50 (SD=22.40), after 18.99 (SD=20.89) vs. control group before 19.50 (SD=20.10), after 19.33 (SD= 18.24); P=0.93)	N.r.	N.r.	QOL-total score: No difference between groups (intervention before 32.15 (SD=18.65), after 24.91 (SD=17.13) vs. control (before 28.99 (SD=16.40), after 24.63 (16.97), p=0.94); mean change intervention –7.24 (SD=12.77) vs control –4.36 (SD=10.26); p=0.22).
Barnason S et al, 2003, and Barnason S et al, 2006; ID 58.1, 58.2	CABG	No differences in pain and physical function between the two groups after 3 months. The intervention group had higher general health functioning score compared to the control group.	SF-36 bodily pain: Both groups improved over time without differences between the groups after 3 months (intervention baseline 71, 3 months 94 vs. control baseline 61; 3months 79)	SF-36 physical functioning: Both groups improved without differences between the two groups after 3 months. Lower PCS score 6 weeks to baseline: Intervention 33.3% vs. control 52%. Lower PCS score 3 months to 6 weeks: Intervention 21.7%; control 29.2%.	SF-36 general health: Intervention group had a higher adjusted mean general health functioning score vs. control (intervention group 77.6 vs. Control group 65.59, $p < .01$)	N.r.
Crawford DA et al, 2021, and Alexander JS et al, 2023; ID 67.1, 67.2	TKA und partial TKA	Intervention group: more improvement in KOOS JR scores from baseline to three months. No difference at 12 months. EQ-5D-5L scores did not differ between groups.	N.r.	KOOS JR scores: Intervention more improvement (baseline 53.6 (SD=12.6); 3 months 70.4 (12.6)) vs. control group (baseline 51.7 (13.1); 3 months 73.6 (13.4; difference at three months	N.r.	EQ-5D-5L: No difference between groups. Mean change baseline to 3 months intervention group 0.2 (SD=0.2) vs Control group 0.2 (SD=0.3), p=0.322).

				p=0.026), Mean change baseline to three months: Intervention group 18.4 (SD=15.7) vs. Control group 23.5 (18.0), p=0.008; At 12 months 13.8) vs. Control group 22.8 (15.6), p=0.200. No difference between groups and in mean changes from baseline to 1 year.		
Kanat C et al, 2024; ID 68	Rotator cuff surgery	No difference in MCM pain scores between the groups after 3 months. No difference in the DASH score between the two groups. DASH-Work significantly improved in the intervention group compared to the control group after 3 months.	MCM pain: Intervention group baseline 12.7±1.6 to 3.4±2.0 at 3 months vs. Control group baseline 10.7±3.3 to 5.0±3.6 at 3 months (between group difference at 3 months p=0.087)	DASH: Intervention group (baseline 81.5±10.1; 3 months 40.6±13.7) vs. control group (baseline 71.9±17.3; 3 months 45.8±15.9) no difference (at 3 months between group difference p=0.239). DASH-Work intervention (baseline 90.7±9.8; 3 months 33.3±8.4) vs. control group (baseline 77.9±17.7 to 47.3±17.4); between group difference at 3 months p=0.001).	N.r.	N.r.
Piqueras M et al, 2013; ID 8	TKA	No difference in pain and disability after 3 months between the groups.	VAS: No significant differences between groups (intervention baseline mean 3.8 (SD=2.01), difference from baseline to 3 months mean –1.79 (SD=2.45)) vs. control group (mean 4.3 (SD=1.93), difference from	No significant difference in WOMAC between groups (no results reported)	N.r.	N.r.

			baseline at 3 months mean –2.30 (SD=2.03); p=0.284)			
Bini SA et al, 2017; ID 9	TKA	No difference in pain and disability between the groups after 3 months. Overall utilization of hospital-based resources was 60% less in intervention group than for the control group.	VAS change between baseline and 3-months intervention group mean -3.426 (SD 2.68), control group -4.0 (SD 3.23), no difference (p=0.610)	KOOS: Intervention group no difference in change between baseline and 3 months (-17.59 (SD 17.15) vs. control group -17.25 (SD 14.20); p=0.954). SF-12 PCS: No difference (intervention change between baseline and 3-months 15.12 (SD 10.2) vs. control 15.5 (SD 10.5); p=0.922).	N.r.	Mean SF-12 MCS change intervention group 6.33 (SD 9.33), control group 1.08 (SD 11.4), no difference (p=0.187)
Moffet H et al, 2015; ID 19	TKA	No difference in pain and disability between the groups after 4 months (the confidence intervals were all within the predetermined zone of noninferiority).	WOMAC pain: Intervention group no difference (PP-analysis mean gain from baseline 31.3 vs. control group 29.7; between group difference –1.6 (95% CI: –5.9, 2.8); ITT analysis between group difference -0.7 (95% CI: -4.8, 3.4). KOOS pain: Intervention group no difference (PP-analysis mean gain from baseline 33.6 vs. control 31.1; between group	WOMA function: Intervention group no difference (PP-analysis mean gain from baseline 31.2 vs. control group 29.4; between group difference –1.8 (95% CI: –5.9, 2.3). ITT analysis: between group difference -0.4 (95% CI: -4.3, 3.4). WOMAC total: Intervention no difference (mean gain from baseline 30.6 vs. control 29.0; between group	WOMAC total: Intervention no difference (PP-analysis mean gain from baseline 30.6 vs. control group 29.0; between group difference -1.6 (95% CI: –5.6, 2.3); ITT analysis: between group difference -0.1 (95% CI: -3.9, 3.7).	KOOS quality of life: Intervention group no difference (PP-analysis mean gain from baseline 41.9 vs. control group 41.6; between group difference -0.9 (95% CI: -7.5, 5.7); ITT analysis between group difference -0.4 (95% CI: -6.8, 6.1)

			difference -2.5 (95% CI: –7.1, 2.1); ITT analysis between group difference -1.8 (95% CI: -6.2, 2.5).	difference -1.6 (95% CI: -5.6, 2.3).		
Tousignant M et al, 2011 (pilot trial of Moffet 2015); ID 20	TKA	No difference between the groups in bodily pain after 4 months. More functional improvement in the control group compared to the intervention group.	In both groups bodily pain improved over 4 months. There was no difference in bodily pain between the groups.	Functional activities: Control group more improvement than the intervention group in e.g. climbing stairs, walking; WOMAC difficulty section (p= 0.047).	N.r.	N.r.
Eichler S et al, 2019; ID3	THA or TKA	No difference in pain, function, and quality of life between the groups after 3 months.	WOMAC index for pain: No difference between the two groups after 3 months.	WOMAC function score: no difference. SF-36 PCS: No significant difference between intervention and control group -3.27 (95% CI -6.54-0.00, p=0.05). No difference in 6-minute walk distance, stair test, time up and go.	N.r.	N.r.
Guo Y-J et al, 2022; ID 16	Lumbar spine surgery	More improvement in pain and more self-efficacy in the intervention group compared to control group at 3 months. No difference in disability and LOS.	NRS: The intervention group reported less pain (pre score of 2, score after median 0 (IQR 0;0)) vs. control group (pre score of 2, score after median 1 (IQR 1;2)) after 3 months (P<0.05)	ODI: Intervention group not different (before 45; 3 months 10.8) vs. control group (before 46.8; 3 months 14.4; P>0.05)	N.r.	N.r.

Master H et al, 2024; ID 63	Lumbar spine surgery	NRS back and leg pain, and ODI disability decreased in both groups without significant differences after 6 months.	NRS LBP: No difference in the improvement between the groups: intervention group baseline mean 5.6 (SD=1.8), 6 months mean 2.4 (SD= 2.3), control group baseline mean 5.0 (SD=2.5), 6 months mean 1.6 (SD=1.3). NRS leg pain: No difference in improvement: intervention baseline mean 5.0 (SD=3.0), 6 months mean 1.9 (SD=2.2), control baseline mean 6.5 (SD=1.6), 6 months mean 1.4 (SD=1.6)	No difference in the ODI decrease between the groups: intervention baseline mean 31.5 (SD=16.2), 6 months mean 10.8 (SD=13.4), control group baseline mean 32.3 (SD=16.3), 6 months mean 5.8 (SD=9.9).	N.r.	N.r.
Video & photo						
Ihedioha U et al, 2013; ID 1	Colorectal surgery	No differences in all outcomes (pain, SF-36 components, anlagesics and length of stay) between the two groups after 3 months.	Pain at rest (p=0.99) and on movement (p=0.338) no difference between the two groups on day 1-4	No difference in all components of the SF-36 at 3 months	N.r.	No difference in all components of the SF-36 at 3 months
Zieren J et al, 2007; ID 34	Inguinal hernia repair	No difference in pain, physical function, and quality of life between the groups after 12 months. Intervention group referred a prompter resumption of their everyday professional,	SF-36 bodily pain decreased in both groups without significant differences: Intervention group baseline 44.2 (6.4), 12 months 18.6 (5.2), control group baseline 42.9 (7.8), 12 months 21.3 (4.7))	SF-36 physical function: Intervention no difference after 12 months (pre 38.1 (6.2); 12 months 63.5 (7.4)) vs. control group (pre 36.9 (9.4); 12 months 66.1 (8.3)). Intervention group: prompter resumption of their everyday professional, and	SF-36 global health: No difference between the two groups; both groups showed higher values after 12 months indicating better global health	SF-36 social function: No difference between the two groups; both groups showed higher values after 12 months indicating better social function

		and sport, compared with the control group.		sport compared to control group.		
Tappen RM et al, 2003; ID 12	Hip fracture hip repair or total hip replacement	No difference in ADLs between the groups after 3 months. Longer time walked and higher coping in the intervention group compared to the control group after 3 months.	N.r.	No difference in functional ability (p=0.227), I-ADLs (p=0.089), and physical activity (p=0.332). Intervention group: Walked longer time 3 months after discharge (intervention group 314.79 (SD=139.59) vs. control group 204.77 (SD=179.70), p=0.027);	N.r.	N.r.
Onwude JL et al, 2004; ID 23	Diagnostic laparoscopy	No difference in pain scores between the groups at 6 months.	VAS: Intervention group not different (mean baseline 96 (SD=38); 3 months 60.7 (SD=48), 6 months 52.6 (SD=49)vs. control group (mean 80 (SD=32); 3 months 45.2 (SD=41.6), 6 months 45.1 (SD=45); adjusted mean between group difference 15.8 [-3.8, 35.2] at 3 months, 10.9 [95% CI -10.1, 31.9]. at 6 months). McGill sensory score: no difference (mean between	N.r.	McGill affect score (mean between group difference 0.82 [95% CI 0.46, 2.10]	N.r.

			group difference 0.10 [95% CI -1.6, 1.8] at 6 months. McGill present pain intensity: No difference (mean between group difference 0.40 [95% CI -0.37, 1.2] at 6 months.			

Legend: SD, standard deviation; SE, standard error; CI, confidence intervall; **THA**, total hip replacement; **WOMAC**, Western Ontario and McMaster Universities Osteoarthritis Index (score 0-96, higher scores = worse knee pain and disability); **VAS**, visual analogue scale (score 0-10 or 0 -100 mm); **LOS**, length of stay; **PT**, Physical therapy / physiotherapy; **UC**, Usual care; **NRS**, numeric rating scale (score 0-10); **ODI**, Oswestry disability index (score 0-100, higher scores = higher disability); **FJS-12**, Forgotten Joint Score-12; **OHS**, Oxford Hip Score; **TKA**, total knee replacement; **SF-36**, short form 36 (score 0-100, higher scores = better health / functioning); **SPADI**, Shoulder pain and disability Index (score 0-10, 0=lowest pain or disability, 10=highest pain or disability); **EORT QLQ-C30- and QLQ BR-23**, European Organization for Research and Treatment of Cancer Breast Cancer-Specific Quality of Life Questionnaire; **DASH**, Disabilities of the Arm, Shoulder and Hand questionnaire (score 0-100; higher scores = higher disability/worse symptoms); **PCS**, Pain Catastrophizing Scale (three subscales: rumination about pain, magnification of negative consequences in the context of pain, and experienced helplessness in the context of pain; score 0-52, scores of 30 or more = clinically relevant degree of pain catastrophizing); **MQOL**, McGill Quality of Life Questionnaire; **CABG**, Coronary Artery Bypass Grafting; **CROQv2**, Coronary Revascularization Outcome Questionnaire-Version Two; **ADL**, Activity of daily living; **PCS**, Physical component score, and **MCS**, Mental component score of SF-36 / SF-12; **ROM**, Range of motion; **CBI**, Chinese Barthel Index; **IADL**, Instrumental activities of daily living; **KOOS**, Knee injury and Osteoarthritis Outcome Score (pain, symptoms, functions, quality of life; score 0-100, 0=extreme knee problems, 100=no knee

problems); **AKSS**, American Knee Society Score (score 0-100); **LBP-RS**, low back pain rating scale (pain, disability, and physical impairment; score 0 (best) to 130 (worst);; **RDQ**, Roland Disability Questionnaire; **TSK**, Tampa Scale for Kinesiophobia (score 17–68, higher scores = greater kinesiophobia); **APN**, Advanced Practice Nurse; **6MWT**, 6-Minute Walk Test; **UW-QOL**, University of Washington Quality of Life Questionnaire; **BBS**, Berg Balance Scale; **EQ-5D**, EuroQol-5-dimension; **SES**, Self-Efficacy Scale (score 0-200, higher score = better self-efficacy). **HHS**, Harris Hip Score with 4 domains (with 4 domains: pain, function, deformity, and motion (score 0-100, higher scores >80 = good function, lower scores <70 = poor function); **OKS**, Oxford Knee Score; **GWBQ**, General Well-Being Questionnaire; **BPI**, Brief Pain Inventory (score 0-10); **PSEQ**, Pain Self-Efficacy Questionnaire (score 0-60; score >40 = high self-efficacy); **BBQ**, The Back Beliefs Questionnaire; **NDI**, Neck Disability Index; **NHP**, Nottingham Health Profile with 6 domains (including pain, physical mobility, lack of energy, social isolation, emotional reaction, sleep disturbance; score n.r.); **LEFS,** Lower Extremity Functional Scale; **UCLA**, University of California Los Angeles Activity Score; **QLQ-OES18**, Quality of Life Questionnaire-Oesophageal 18; **MCM**, modified Constant-Murley scores;

Appendix Figures

Appendix Figure 1: Funnel plot