



DOSSIER · THERAPY

Massage Therapy

Massage therapy is one of the most broadly studied manual procedures: several hundred controlled studies in humans stand alongside a large number of review and mechanism studies. The most interesting finding lies in the distribution: pain, anxiety, tension, exhaustion and mood dominate the endpoints, while function and course measures remain rare.

685

STUDIES IN
TOTAL

533

IN HUMANS

412

OF WHICH
CONTROLLED

4

IN ANIMALS

1

IN THE LAB

Figures from the IHR study database · Last updated 2026-10-16

How to Read This Dossier

ESTABLISHED

measured in humans, with a comparison group

PLAUSIBLE

supported by mechanism, animal studies or observation

HYPOTHESIS

a likely connection that still needs to be tested

Massage Therapy at a Glance

ORIGIN:

Massage therapy is an umbrella term for manual techniques in which hands, forearms or aids manipulate tissue with varying pressure, rhythm and tempo. The collection includes classical massage, sports and connective-tissue massage, myofascial techniques and massage with kinaesthetic stimulation side by side. No uniform protocol exists; each study describes its own procedure.

EVIDENCE BASE:

685 evaluated studies · 412 controlled human studies · 121 observational studies · 33 reviews · 4 animal studies · 1 cell-culture study

STRONGEST EVIDENCE:

- **Proven:** Two systematic reviews with meta-analysis of randomised controlled trials address function in pain patients, one of them in oncological pain populations.
- **Proven:** A meta-analysis of cancer-related pain across twelve studies with 559 participants found pain reduction in nine studies of high methodological quality (standardised mean difference -1.24).
- In 72 patients with bone metastases, massage showed favourable effects on pain, mood and relaxation compared with an attention control; the relaxation lasted 16 to 18 hours.
- After standard rehabilitation, the massage group showed a significant reduction in scar thickness, melanin, erythema and transepidermal water loss, with a significant group difference.
- Several randomised studies examined pain, anxiety and tension after cardiac surgery; in one study of 113 persons all three endpoints decreased significantly in the massage group.

LIMITATIONS:

- The controlled studies predominantly capture pain, anxiety, tension, mood, fatigue and sleep via scales and questionnaires, i.e. self-report.
- **Plausible:** Heterogeneity of protocols and control conditions limits what can be pooled; functional and course measures are the focus of separate reviews; the search extended to August 2015.

CLASSIFICATION:

Massage therapy is a widely studied manual intervention whose evidence concentrates strongly on well-being measures.

1. What Massage Therapy Is and How It Is Applied

Massage therapy is an umbrella term for manual techniques in which hands, forearms or aids manipulate tissue with varying pressure, rhythm and tempo. Different techniques stand side by side in the collection: classical massage, sports and connective-tissue massage, myofascial techniques and massage with kinaesthetic stimulation. What they share is that a therapist works on the body, singly or in series, usually as an adjunct to existing care. The settings accordingly vary: before and after surgery, in oncology, in rehabilitation, in chronic pain conditions and in preterm infants. Because the technique itself is not standardised, each study describes its own procedure. No uniform protocol to which the literature could refer exists, and many of the evaluation problems described on this page follow directly from that fact.

Decisive for the assessment of all studies is that massage is not a substance with a defined dose but a bundle of touch, pressure, rhythm, duration, attention and rest. Each of these components can contribute to the observed effect. Control conditions therefore differ: waiting list, light touch without pressure, attention control or continuation of standard care. The measurement level also matters. The controlled studies predominantly capture pain, anxiety, tension, mood, fatigue and sleep via scales and questionnaires, i.e. self-report. Such values are measures of well-being, not of disease course. Functional and course measures are rarer and are the focus of separate reviews. Readers of massage research must therefore distinguish two things: the immediate change in well-being and the question whether a lasting functional change follows from it.

2. What the Studies Show in Detail

The key human studies and the most important reviews — by field of application, with population, duration, preparation, outcome measure and result as reported in the original papers. Numbers appear only where the study states them.

Distribution of **controlled human studies** by field of application — the numbers are not additive because one study may be assigned to several fields:

FIELD OF APPLICATION	CONTROLLED STUDIES
Musculoskeletal system	136
Fatigue and stress	119
Cognition and psyche	119
Safety and tolerability	97
Oncology	48
Heart and circulation	25

FIELD OF APPLICATION	CONTROLLED STUDIES
Skin	23
Gut and microbiome	21

Gut and Microbiome

For this field the randomised controlled study from 2010 in 113 patients after cardiac surgery is available ¹. Participants were allocated either to massage or to a period of quiet rest; 62 persons received massage, 51 formed the control group. Pain, anxiety and tension were recorded. All three endpoints decreased significantly in the massage group. Satisfaction with the intervention was high and no substantial barriers to implementation in routine ward care were reported ¹.

The study records no endpoints relating to gut flora or microbiome; the postoperative well-being after cardiac surgery was investigated ¹. **Hypothesis:** A link between manual treatment and gut events could be conceived via autonomic regulation, yet the evaluated study measured neither stool samples nor gut cytokines. A study remains open that records microbiological markers before and after a series of massages in a comparable population or in people with gut complaints and simultaneously captures the autonomic baseline.

Skin

All participants received standard rehabilitation, with 76 persons additionally receiving massage. Before and after treatment, a visual analogue scale and an itch scale were recorded, as well as scar thickness, melanin, erythema, transepidermal water loss, sebum and elasticity using ultrasound, Mexameter, Tewameter, Sebumeter and Cutometer. Visual analogue scale and itch scale decreased significantly in both groups. The massage group additionally showed a significant decrease in scar thickness, melanin, erythema and transepidermal water loss with a significant difference between the groups. For elasticity, a significant group difference was found in immediate distension and overall skin elasticity, while the massage group improved significantly in distensibility, immediate distension, immediate retraction and delayed distension ².

Details on session duration, frequency, pressure intensity and follow-up are not reported in the study ². A 2016 review reports favourable effects of massage in various conditions, including skin disorders ²⁵. Several studies compared massage with standard-treatment controls, some compared different massage forms such as Swedish and Thai massage or massage versus exercise. The massage groups generally performed better than the control or comparison groups; the review names stronger stimulation of pressure receptors, which increases vagal activity and lowers cortisol, as a possible mechanism. The review itself notes that some of the studies rely exclusively on self-reports and that stricter research is required ²⁵.

HYPOTHESIS For scar tissue it is conceivable that repeated mechanical stimuli influence tissue architecture via blood flow and fibroblast activity, yet none of the evaluated studies measured these mechanisms. A study remains open that defines session duration, pressure intensity and frequency of scar massage and repeatedly records scar parameters beyond the treatment phase.

Cognition and Psyche

A randomised controlled pilot study examined 58 patients after cardiac surgery, including bypass operations and valve reconstruction or replacement ³. The intervention group received a 20-minute massage between the second and fifth postoperative days; the control group received standard care and a 20-minute rest period. Pain, anxiety, tension and satisfaction were recorded using linear analogue scales. Statistically significant reductions in pain, anxiety and tension were observed in the massaged persons; patient feedback was clearly positive. The authors themselves classify the work as a pilot study ³.

A further randomised study in 152 patients after elective cardiac surgery, with a 99 % response rate, compared massage with an equally long rest period at two time points after surgery ¹⁰. Pain, anxiety, relaxation, muscle tension and satisfaction were measured using visual analogue scales as well as heart rate, respiratory rate and blood pressure. Heart rate, respiratory rate and blood pressure did not differ.

Mood, depression, anxiety, pain, physiological status, heart rhythm and length of hospital stay were recorded. The only physiological difference was a lower blood pressure after massage ($P=0.01$).

PROVEN The meta-analysis on pain populations in the general population evaluated 60 studies of high and seven studies of low methodological quality ⁵. The authors derive a strong recommendation versus no treatment, while the recommendation versus active comparator treatments is weaker ⁵. A single randomised controlled study compared massage, isometric exercises and a control group in 102 female students with primary dysmenorrhoea; the massage group received two consecutive cycles of effleurage massage with lavender oil, the exercise group received eight weeks of isometric exercises ¹⁴. It remains open whether the anxiety-related endpoints respond in a larger number of participants and in people with pre-existing anxiety disorder.

Oncology

The intervention group received a 30-minute massage of the back and head-neck area twice weekly for five weeks; the control group received no additional treatment beyond routine care. The Short Form-8 Health Survey, the EORTC-QLQ-BR23 breast module, the Giessen Complaint Inventory and the Berlin Mood Questionnaire were recorded at baseline, at the end of the intervention and after eleven weeks. The intervention group showed a significantly greater reduction in physical complaints at the end of the intervention ($p=0.001$) and at follow-up ($p=0.038$); fatigue also decreased. Mood disturbances were lower at the end of the intervention ($p<0.01$), but no longer at follow-up ⁴.

In 72 Taiwanese patients with bone metastases, a randomised clinical trial compared massage with a social-attention control condition ⁸. Pain intensity, mood, muscle relaxation and sleep quality were measured. Massage showed favourable effects within and between groups; repeated-measures analysis revealed a linear trend toward improvements in mood and relaxation over time. The pain reduction was statistically and clinically significant; the relaxation effect lasted at least 16 to 18 hours after the intervention. A preliminary study with a quasi-experimental single-group design recorded pain intensity, anxiety and physiological relaxation over 16 to 18 hours in 30 Taiwanese cancer patients with bone metastases ¹⁵. A pain and an anxiety scale, the modified Short-Form McGill Pain Questionnaire, heart rate and mean arterial pressure were recorded. Massage showed immediate ($t(29)=16.5$ and $t(29)=8.9$; $P=0.000$),

short-term over 20 to 30 minutes ($t(29)=9.3$ and $t(29)=10.1$; $P=0.000$), medium-term over 1 to 2.5 hours ($t(29)=7.9$ and $t(29)=8.9$; $P=0.000$) and long-term effects over 16 to 18 hours ($t(29)=4.0$ and $t(29)=5.7$; $P=0.000$). The strongest effect occurred 15 minutes ($F=11.5$; $P<0.002$) and 20 minutes ($F=20.4$; $P<0.000$) after the intervention ¹⁵.

PROVEN For cancer-related pain, a meta-analysis of twelve studies with 559 participants is available ²². In the nine studies of high methodological quality according to the PEDro scale, a pain reduction was found (standardised mean difference -1.24 ; 95 % confidence interval -1.72 to -0.75); versus no massage or usual care the difference was -1.25 (95 % CI -1.63 to -0.87). Among the massage forms, foot reflexology appeared more effective than body massage ²². The second part of the systematic review with meta-analysis on pain populations evaluated twelve studies of high and four studies of low quality in cancer populations ⁶. The 2019 evidence map reviewed 49 systematic reviews, 32 of which were rated as high quality; frequently investigated pain types were cancer pain, back pain and neck pain, and the high-quality reviews concluded a low strength of evidence for possible benefits in cancer and postoperative pain ²⁸.

The 2016 Cochrane review asked about the effects of massage with and without aromatherapy on pain and other symptoms in cancer ¹⁷. Included were randomised controlled trials in people of any age with cancer; comparisons were massage with carrier oil versus no massage, aromatherapy massage versus no massage, and aromatherapy massage versus massage with carrier oil alone. The search extended to August 2015. A 2007 review refers to a meta-analysis according to which massage can bring short-term benefits for psychological well-being and individual symptoms, and calls for additional validated randomised controlled trials for specific indications as well as mechanistic investigations ¹⁸. A 2022 observational study places massage as part of integrative oncology and recommends, among other things, incorporating traditional, complementary and integrative offerings into oncological care and developing and testing interventions for cancer symptoms and treatment-related side effects ¹⁹. It remains open which massage form, duration and frequency must be examined for which tumour disease and which pain mechanism; the evaluated studies do not resolve this assignment.

Further Investigations

The prerequisite was that at least three months of non-operative treatment including analgesics, lifestyle modification, physiotherapy, massage and/or acupuncture had been unsuccessful; a switch to the respective other treatment was permitted after three months. After one year, the intention-to-treat analysis found no difference between the originally assigned treatments. Three persons switched from surgery to manipulation without further improvement; eight switched from manipulation to surgery and improved to the same extent as the primarily operated persons ⁷. This study compares manipulation and microdiscectomy and is not a study on massage; massage is not a treatment arm in it, but part of the preceding unsuccessful treatment.

In 60 medically stable premature infants under 1500 g and/or at most 32 weeks of gestation, a randomised clinical trial tested three arms of 20 children each: no intervention, massage alone, and massage with kinaesthetic stimulation ¹². After controlling for covariates, average daily weight gain and length of stay were similar between the groups. In children with a birth weight above 1000 g, daily weight gain was higher in the intervention groups than in the control group, predominantly driven by the group with massage and kinaesthetic stimulation. Length of hospital stay was not influenced by massage ¹².

In 20 healthy adults, EKGs were recorded during a three-minute baseline phase, a 15-minute massage and a three-minute post-phase, from which the high- and low-frequency components of heart-rate variability and their ratio were derived ²¹. Persons receiving massage with moderate pressure showed a parasympathetic response with an increase in the high-frequency component and a decrease in the ratio of low- to high-frequency component, peaking in the first half of the massage. With light pressure, a sympathetic response was found with a decrease in the high-frequency component and an increase in the ratio ²¹. It remains open how pressure intensity can be standardised in practice and whether the autonomic differences occur in the same way in people with pre-existing conditions.

Bones and Joints

A multicentre randomised controlled trial tested whole-body massage versus an active control with light touch stimulus and versus usual care in 222 adults with knee osteoarthritis ⁹. The massage and light-touch groups received eight weekly treatments of 60 minutes each; they were then randomised to either continue treatment biweekly or be assigned to usual care, while the original usual-care group continued to week 24. The primary endpoint was the WOMAC index; secondary endpoints were a visual pain scale, PROMIS pain interference, knee mobility and a 50-foot walk test. After eight weeks, massage significantly improved WOMAC total scores versus light touch (difference -8.16) ⁹.

A 2010 review summarises massage studies in premature infants ²⁶. Moderate-pressure massage led to weight gain; in studies on passive limb movement the children also gained significantly more weight and their bone density increased. The use of mothers as massage providers was effective in at least one study. Weight gain was associated with shorter hospital stays and associated cost savings. In only 38 % of neonatal intensive care units is premature-infant massage practised. The review names increased vagal activity, gastric motility and insulin and IGF-1 levels as possible mechanisms, which however do not fully explain the variance in weight gain ²⁶.

HYPOTHESIS For bone itself it is conceivable that repeated mechanical stimuli act on bone density via blood flow and loading of the extracellular matrix, yet this was measured only in premature infants under passive movement, not under massage alone. A study remains open that determines bone density or joint structure in adults under a defined series of massages using imaging before and after treatment.

Musculoskeletal System

In 45 older adults with non-specific low back pain, a randomised, single-blind study compared trunk-stabilisation exercise alone with the same exercise plus myofascial release technique using a roller massage device ¹³. Both groups exercised three days per week for a total of six weeks; on the same days the combination group additionally received the myofascial technique. Before and after treatment, pain, back-related disability, lower-extremity mobility, kinesiophobia, trunk-stability endurance, spinal mobility, gait characteristics and quality of life were recorded. The combination group improved more in trunk-stability endurance ($p=0.031$) and in spinal mobility in the sagittal plane ($p=0.022$). No significant difference between the groups was found for pain, back-related disability, lower-extremity mobility, kinesiophobia, gait characteristics and quality of life ($p>0.05$) ¹³.

HYPOTHESIS Because both arms received trunk exercises, no effect of the myofascial technique alone can be derived from this study; the improvements in endurance and mobility could also result from the combination of exercise and additional treatment contact. A study remains open with a third arm that tests the myofascial release technique without an accompanying exercise programme, with blinded assessment and follow-up after the end of the six-week phase.

Fatigue and Stress

In a randomised controlled pilot study with repeated measurements and blinded assessment, 48 patients with multiple sclerosis were compared across four equally sized groups: massage, exercise therapy, a combination of both, and control¹⁶. All treatment groups received 15 supervised sessions over five weeks; the massage group received standardised Swedish massage, the exercise group a programme of strength, stretching, endurance and balance exercises, and the control group continued standard care. Pain, fatigue, spasticity, balance, gait and quality of life were assessed before and after the intervention. The massage group showed a significantly greater pain reduction (mean change 2.75 points; $P=0.001$) and a greater improvement in dynamic balance (mean change 3.69 seconds; $P=0.009$)¹⁶.

The Cochrane review from 2004 examined whether preterm infants and children with low birth weight gain more weight through massage and are discharged earlier than children receiving standard care, and whether further beneficial or harmful effects occur²⁷. The background was the assumption that the intensive care unit, with continuous loud noise and bright light, represents a stressor and that tactile stimulation, as occurs in the womb or in usual care, is available to a lesser extent. The search extended to 1 July 2003²⁷.

It remains open whether fatigue and spasticity in multiple sclerosis respond to a series of massages and how the combination of massage and exercise therapy acts beyond the five treatment weeks; the evaluated pilot study reports no follow-up on this.

Inflammatory Processes

In eleven young men, after exercise-induced muscle damage, the quadriceps of both sides were either massaged or left untreated, and muscle biopsies were taken from the vastus lateralis at baseline, immediately after ten minutes of massage, and after 2.5 hours of recovery²⁰. The massage activated the mechanotransduction signalling pathways FAK and ERK1/2, enhanced signalling for mitochondrial biogenesis via PGC-1 α , and attenuated the training-damage-induced increase in nuclear NF κ B(p65) accumulation. It had no effect on muscle metabolites such as glycogen and lactate; it reduced the production of the inflammatory cytokines TNF- α and IL-6 and lowered the phosphorylation of HSP27²⁰. This is a mechanistic study on tissue samples; clinical endpoints were not assessed, and whether these signalling pathways translate into a measurable effect in humans has not been investigated.

A preliminary study compared a 45-minute Swedish massage with a light-touch control under strictly defined, identical protocols in healthy adults aged 18 to 45 years²³. Serial measurements determined oxytocin, arginine-vasopressin, adrenocorticotrophic hormone, cortisol, circulating lymphocyte markers and mitogen-stimulated cytokine production. The hypothesis was that an increase in oxytocin reduces the activity of the hypothalamic-pituitary-adrenal axis and improves immune function.

In 34 patients with breast cancer, a massage group ($n=17$) and a control group ($n=17$) were formed; the massage group received a 30-minute classical massage twice weekly for five weeks²⁴. At baseline, at the end of the intervention and six weeks later, the Perceived Stress Questionnaire, the Patient Health Questionnaire and the Berlin Mood Questionnaire were completed, and blood was taken for cytokine concentrations and the Th1/Th2 ratio. 29 patients were included in the statistical analysis. Depression and anxious depression were significantly more reduced immediately after massage than in the control group; stress and elevated mood did not change significantly. Cytokine concentrations and the Th1/Th2 ratio also did not change significantly; there was a slight shift towards Th1; these laboratory values do not constitute evidence of a clinical effect on the immune system²⁴.

It remains open whether the cellular signalling pathways measured in biopsies and the immune markers measured in blood proceed in the same direction with repeated application and in people with underlying inflammatory diseases; individual studies recorded responses to a single session.

Immune System

A 2017 review examined randomised controlled trials on massage in preterm infants²⁹. Preterm birth affects approximately 10 % of children born in the United States. Most studies on weight gain suggest a positive effect; an increase in vagal tone was reported in massaged infants and discussed as a possible mechanism for the better weight gain. For developmental measures, reduced stress behaviour, the immune system, pain tolerance and earlier hospital discharge, individual studies provide positive indications; the review sees further need for examination for these endpoints²⁹.

The review explicitly names the mechanisms as an open question: studies are required that directly measure the relationship between vagal tone, immune parameters and weight gain²⁹. **Hypothesis:** The immune-related indications to date come from small samples of preterm infants and cannot readily be transferred to older children or adults. A study in adults that measures immune parameters before, during and after a defined series of massages and simultaneously records baseline autonomic values remains open.

Further Investigations

The evaluated works cover very different fields of application: postoperative pain and anxiety control after cardiac surgery^{1, 3, 10, 11}, scar treatment after burns², cancer-related pain^{6, 8, 15, 22}, knee osteoarthritis⁹, back pain¹³, dysmenorrhoea¹⁴, multiple sclerosis¹⁶, preterm infant care^{12, 26, 27, 29} as well as mechanistic questions on muscle tissue²⁰, the autonomic nervous system²¹ and immune function²³. **Proven:** Pain is the most broadly investigated area: the meta-analyses report the largest effects compared with no treatment (SMD -1.14 in the general population⁵, SMD -1.25 in cancer²²), while the effects compared with active comparator treatments are smaller (SMD -0.26⁵, SMD -0.55⁶).

Where examination is only beginning is the question of objective tissue and immune markers in connection with massage in adults: the mechanistic work on muscle biopsies comprises eleven participants²⁰, the study on autonomic response 20 healthy adults²¹, and the cytokine evaluation in breast cancer is based on 29 evaluable patients²⁴. Likewise, the assignment of massage type, pressure intensity, duration and frequency to individual indications is an open question; the meta-analyses recommend massage clearly over no treatment, but more cautiously over active comparators^{5, 6}. What is missing are follow-ups beyond the treatment phase and studies that directly compare massage against other active procedures with the same contact time.

Methodology

The evaluated works include randomised controlled trials with control conditions such as rest time, light touch, usual care or no treatment, several meta-analyses and Cochrane reviews, an evidence map, a study with muscle biopsies, an ECG study in healthy adults, and a quasi-experimental single-group study. Typical sessions last 20 to 45 minutes; series run over five weeks with two sessions per week, over eight weekly treatments of 60 minutes each, or

over 15 supervised sessions in five weeks. Endpoints are predominantly visual analogue scales and questionnaires on pain, anxiety, mood, fatigue and quality of life, alongside heart rate, blood pressure and heart rate variability. Blinded therapists, standardised information on pressure and dose, and follow-ups beyond the intervention phase are systematically rare.

Overall Picture

Attention Cannot Be Subtracted in Massage Study Design

Every massage session contains time, touch, warmth, rest and the attention of a person. These components cannot be switched off without changing the treatment itself. Light touch without pressure is therefore not a neutral comparator but another treatment with its own effect; a waiting list, by contrast, also measures the expectation of receiving treatment at all.

PLAUSIBLE:

Part of the reported improvements in anxiety, tension and exhaustion is due to attention and expectation, not to pressure or technique. This does not argue against the procedure but against the assumption that its effect can be attributed to a single mechanical component. Anyone who wants to know what pressure achieves needs studies that directly vary pressure intensity and technique against each other.

The second open flank is the measurement level. Pain scales, anxiety scales and mood questionnaires dominate the collection. An improved scale value is a changed measurement value, not a changed disease course. This becomes clearest with laboratory endpoints: an observational study in humans describes reduced inflammatory signalling after exercise-induced muscle damage. Such a finding is an indication of a biomarker, not a tested effect on inflammatory diseases, and it comes from an observation, not from a controlled comparison. The decisive question is therefore not whether well-being changes measurably, but whether this is shown beyond the treatment period and in functional measures.

3. How Robust the Research Is

The research is distributed unevenly. The largest field is the musculoskeletal system, followed by fatigue and cognition, which are similarly strongly represented in the collection. Safety aspects form a separate, well-cultivated area; there the focus is on tolerability and adverse events, not on efficacy. Oncological questions, in which pain and mood are central, are distinctly smaller but independent. Cardiovascular, skin, intestinal, inflammatory and bone topics are peripheral fields with individual studies. The most frequently cited controlled studies come from acute medicine and oncology: pain, anxiety and tension after cardiac surgical interventions, physical discomfort and mood in breast cancer patients, pain in bone metastases. These focal points explain why the literature is broad yet strongly concentrated on well-being measures.

Methodologically the field is in a better position than its reputation might suggest, with one clear limitation. **Proven:** Two systematic reviews with meta-analysis of randomised controlled trials exist on function in pain patients, one of them on oncological pain populations; in addition there is an evidence map on massage and pain and several reviews on preterm infant massage. Several randomised studies examine pain, anxiety and tension after cardiac surgical interventions. **Plausible:** The heterogeneity of protocols and control conditions limits what can be summarised. **Hypothesis:** The fact that review and mechanism papers rank so high among the most cited works suggests that the field draws its orientation more from summaries than from individual large studies.

4. What Is Frequently Claimed — and What the Data Support

STATEMENT	EVIDENCE BASE
Massage relieves musculoskeletal pain	Here lies the largest field of the collection, and two systematic reviews with meta-analysis examine function in pain patients. The studies support short-term
Massage reduces anxiety and tension after surgery	Mehrere controlled studies untersuchen genau diese drei Endpunkte nach herzchirurgischen Eingriffen. The findings are consistent, but short-term and coll
Massage promotes weight gain in premature infants	A randomised study mentions in the title an improved weight gain with massage including kinaesthetic stimulation; in addition, there are review papers on pr
Massage acts against inflammation	For this keyword, the collection contains an observational study on humans with a laboratory chemical endpoint after exercise-induced muscle damage. A bi

5. The Most Robust Studies

Ordered by evidential strength, not by prominence. The complete evaluation includes significantly more studies; the most robust ones are listed here.

Controlled Studies in Humans

- ¹ Effect of massage therapy on pain, anxiety, and tension after cardiac surgery: a randomized study (2010)
- ² The effect of burn rehabilitation massage therapy on hypertrophic scar after burn: a randomized controlled trial (2014)
- ³ Effect of massage therapy on pain, anxiety, and tension in cardiac surgical patients: a pilot study (2010)
- ⁴ Massage therapy reduces physical discomfort and improves mood disturbances in women with breast cancer (2009)
- ⁵ The Impact of Massage Therapy on Function in Pain Populations-A Systematic Review and Meta-Analysis of Randomized Controlled Trials: Part I, Patients ... (2016)
- ⁶ The Impact of Massage Therapy on Function in Pain Populations-A Systematic Review and Meta-Analysis of Randomized Controlled Trials: Part II, Cancer ... (2016)
- ⁷ Manipulation or microdiscectomy for sciatica? A prospective randomized clinical study (2010)
- ⁸ Effects of massage on pain, mood status, relaxation, and sleep in Taiwanese patients with metastatic bone pain: a randomized clinical trial (2011)
- ⁹ Efficacy and Safety of Massage for Osteoarthritis of the Knee: a Randomized Clinical Trial (2019)
- ¹⁰ Massage therapy for cardiac surgery patients--a randomized trial (2012)
- ¹¹ A randomized trial of massage therapy after heart surgery (2009)
- ¹² Massage with kinesthetic stimulation improves weight gain in preterm infants (2009)
- ¹³ The Effects Of Myofascial Release Technique Combined With Core Stabilization Exercise In Elderly With Non-Specific Low Back Pain: A Randomized ... (2019)
- ¹⁴ Comparison of the Effect of Massage Therapy and Isometric Exercises on Primary Dysmenorrhea: A Randomized Controlled Clinical Trial (2015)
- ¹⁵ Effects of a full-body massage on pain intensity, anxiety, and physiological relaxation in Taiwanese patients with metastatic bone pain: a pilot study (2009)
- ¹⁶ Massage therapy and exercise therapy in patients with multiple sclerosis: a randomized controlled pilot study (2013)
- ¹⁷ Massage with or without aromatherapy for symptom relief in people with cancer (2016)
- ¹⁸ Massage therapy for cancer patients: a reciprocal relationship between body and mind (2007)
- A randomized, controlled trial of massage therapy as a treatment for migraine (2006)
- The effect of massage on cellular immunity, endocrine and psychological factors in women with breast cancer -- a randomized controlled clinical trial (2008)
- The efficacy of classical massage on stress perception and cortisol following primary treatment of breast cancer (2010)
- Effects of Slow-Stroke Back Massage on Symptom Cluster in Adult Patients With Acute Leukemia: Supportive Care in Cancer Nursing (2017)
- The effects of ear acupressure, massage therapy and no therapy on symptoms of dementia: a randomized controlled trial (2015)
- Effects of massage therapy and occlusal splint therapy on mandibular range of motion in individuals with temporomandibular disorder: a randomized ... (2014)

6. Summary

PROVEN The 2019 evidence map screened 49 systematic reviews, 32 of which were rated high-quality; the high-quality reviews reached a low strength of evidence for possible benefits in cancer and postoperative pain. The largest field is the musculoskeletal system, followed by fatigue and cognition.

PLAUSIBLE Massage is not a substance with a defined dose, but a bundle of touch, pressure, rhythm, duration, attention and rest; each component can carry part of the effect. The heterogeneity of protocols and control conditions limits what can be summarised. A 2016 review names as a possible mechanism a stronger stimulation of pressure receptors that increases vagal activity and lowers cortisol. It follows from this to separate the immediate change in well-being from the question of whether a lasting functional change follows.

In oncology it has not been resolved which massage form, duration and frequency must be tested for which tumour disease and which pain mechanism. Equally open is whether the anxiety-related endpoints respond with a larger number of participants and in people with pre-existing anxiety disorder.

7. What Remains Open

- **Pressure intensity:** Which pressure strength, technique and session frequency support the finding is not systematically clarified; the studies use different protocols.
- **Control condition:** Which comparison is fair — light touch, attention control or waiting list — determines which share of the effect is attributable to the technique.
- **Course:** Whether improvements in well-being translate into functional and course measures is the question that the next generation of studies would have to clarify.

Frequently Asked Questions

How is the treatment dosed in the studies?

There is no uniform protocol. The controlled studies range from a single session in acute situations to multi-week series in rehabilitation; pressure, tempo and duration are each defined study-specifically. A dose-response relationship cannot be derived from this, because the protocols were not tested directly against each other. In the investigated areas of application the sessions are mostly used as an adjunct to standard care.

Can massage even be tested in a blinded manner?

The treating person cannot be blinded, and recipients also usually recognise pressure. Studies therefore work with light touch, attention control or wait-list. Each of these conditions has its own effect components, so part of the measured difference can be attributed to attention, expectation and rest. This is a problem of study design, not an indication of ineffectiveness.

What about myofascial techniques and combination treatments?

Myofascial techniques appear in the collection as independent procedures, among other things combined with stabilisation exercises in older people with non-specific back pain in a randomised, single-blind study. No effect of the individual component can be derived from combination studies. Whether the myofascial technique contributes something on its own is an open, testable question.

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- 7 Manipulation or microdissectionomy for sciatica? A prospective randomized clinical study
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