

# Manual Therapy: What is it, and does it work?

## The science of hands-on treatments like massage and spinal manipulation to “fix” tissue

[Paul Ingraham](#) • [Mar 1, 2024](#) • 10m read

### Article Summary



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“Manual therapy” refers mainly to massage, spinal manipulation, and acupuncture for common musculoskeletal problems and injuries, provided mainly by massage therapists, chiropractors, acupuncturists, and (more surprisingly) physical therapists.

Although extremely popular, manual therapy is badly polluted with pseudoscience and nonsense. But the power of compassionate touch and novel sensations to inspire, comfort, and reassure is not trivial. Manual therapists also provide a lot of what medicine often cannot: *time*.

Time is both valuable and costly, and so the best of what manual therapy has to offer is out of reach to many of the people who need it the most — poverty and prejudice are constant bedfellows of chronic pain, for complex socioeconomic reasons. To a surprising

degree, it is a service for the privileged, much less affordable than a cleaning service. This is almost never highlighted by manual therapy's enthusiastic, idealistic practitioners! And yet the worst of manual therapy is persuasively marketed and amazingly popular, and that drives many people to pay more than they can comfortably afford — even if they are a bit skeptical — to give it chance to help with their serious problems. I have heard countless rather tragic stories of people who have nearly bankrupted themselves to pay for a “package” or “course” of expensive treatments that are of dubious value at best.

*Caveat emptor!*

PainScience.com has articles or book chapters about *all* of the treatment methods mentioned here. This is a high-level overview, summarizing what I've learned in 27 years of experience in the field, and so it is lightly referenced: for the details and citations, please consult the more focussed articles, [all indexed here](#).

## An unfamiliar term for a family of very familiar treatment methods

“Manual therapy” is mentioned almost a *thousand times* on this website, and yet it's an unfamiliar term for many visitors, even if all the major examples are well-known. It is a broad, fuzzy category of many therapeutic methods or “modalities,” countless branded and improvised variations on the major themes of poking, kneading, scraping, jostling, wiggling, zapping and so on.

*Hands on* is the soul of manual therapy, but *tools on* methods are closely related. Many tools are substitutes for hands — like attacking “muscle knots” with needles instead of thumbs — while many others bring something else to the table, usually some form of energy. Ultrasound, laser therapy, dry needling [[book chapter](#)], and hydrotherapy are all mostly provided by the same professionals for all the same kinds of reasons.

Manual therapy even includes methods with no hands or tools at all, based on the delivery of *imaginary* energy: therapeutic touch and Reiki are also generally considered part of the manual therapy family (albeit an embarrassing one <sup>1</sup>). So there's a broader definition of manual therapy that goes beyond “hands” on, and is based mainly on the intent:

*Manual therapy is any therapy that tries to directly and immediately produce pain relief and/or facilitate healing by doing things to*



*A major theme in manual therapy is hands-on “manipulation” — of spinal joints especially, but virtually any tissue is up for “grabs.” There are even*

*patients' tissues with hands or tools, and mostly without breaking the skin.*

*manual therapists who claim to tinker with organs ("visceral" manipulation) & the brain (craniosacral therapy).*

Exercise therapy is immediately adjacent to manual therapy, but it is not quite the same thing. Some ideas blur the lines between exercise and manual therapy, most notably strength training (because it so often is another way to try to "correct" the same alleged defects), stretching, and therapy taping.

## Who provides manual therapy, and what are the major examples?

**Massage therapists and chiropractors** are the two most familiar professions that almost entirely devoted to manual therapies. Massage therapists practice countless styles of massage, but the field is dominated by trigger point therapy and fascia-inspired therapy, with everything else falling under the heading of "other." Chiropractors are largely defined by spinal manipulation (and they are fighting a perpetual losing public relations battle to be well known for anything else).

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*You can read more about the good, bad & ugly of the manual therapy professions in another article, "an opinionated guide to the most popular sources of professional help for injuries and chronic pain": see Reviews of Pain Professions.*

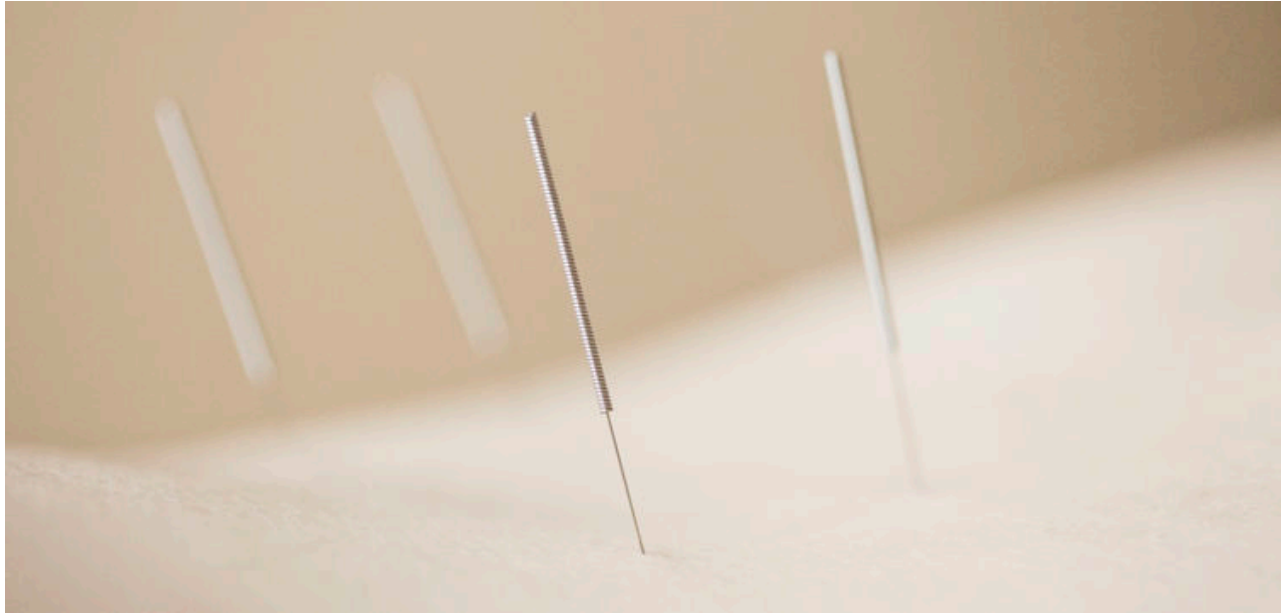
**Osteopaths** are much less well known, but also practice manual therapy almost exclusively, and are probably best-known for craniosacral therapy (which massage therapists also often sell).

**Physical therapists (AKA physiotherapists)** used to do a lot more hands-on manual therapy, especially spinal manipulation, but as the profession became increasingly mainstream, they (notoriously) started to provide much more "modern" and technological therapies like ultrasound, transcutaneous electrical nerve stimulation, and laser therapy, which substantially differentiated them from chiropractors and massage therapists.

But the manual therapy that PTs are most strongly associated with in the 21st Century is, weirdly, dry needling — which looks almost exactly like acupuncture (same needles), but is much more closely related to trigger point therapy, because the point (ha) is to treat muscle knots by stabbing them. If you're not familiar with this, I promise it's more popular than you would guess! Physical therapists tend to be the main source of dry needling, because in many jurisdictions they are the only non-doctors who can legally needle anyone (and the doctors are much less interested, although some of them also do it).

What about **doctors**? It's a very rare physician that stoops to offer the more conventional kinds of manual therapy. Perhaps they steer clear of it because of the strong stink of "alternative" on it.

Those are all the major examples of manual therapy providers, but there's plenty more around the edges.



*Acupuncture is one of the stranger members of the manual therapy family & some people might exclude it. But it is so in sync with the intention & sensibilities of manual therapy that I think it belongs.*

## Other sources of manual therapy

Acupuncture, of course, is almost exclusively the domain of the acupuncturists — odd members of the manual therapy family, but too popular not to include. <sup>2</sup>

Hydrotherapy was a major part of manual therapy historically, and has never fully gone away — and still has faddish revivals, like ice baths in the 2020s — but it is no longer associated with any particular profession.

Finally, there are millions of “**body workers**” and “**energy workers**” and various and sundry other self-identified “healers.” The majority are just unlicensed massage therapists, providing mainly massage, but a great many of them are also vitalists at heart, convinced that they are massaging your chakras and acupuncture points and meridians. Much this childish garbage still counts as manual therapy: the intent is the same, even if they “tissue” they are targeting is your aura. But many of these “professionals” get very weird indeed, and get up to all kinds of methods that are more like psychic healing and traditional folk medicine (e.g. ear candling, crystal therapy, iridology).

And it's not clear that *any* kind of manual therapy is actually therapeutic...

## Is manual therapy effective? The bad news

The shortest simple answer: probably not very well, but no one really knows. Unfortunately, much of it isn't even plausible, let alone evidence-based.

Manual therapy contains much of the worst of alternative medicine. It is thoroughly dominated by pseudoscientific and simplistic nonsense. The field has a hall of shame the size of Grand Central Station, exhibiting some of the nastiest snake oils in history, as well as the silliest. However, even if we ignore all of that, there are *still* major problems!

Despite the practically infinite variety of technique, there only a few major, simplistic themes. Manual therapy is mostly fuelled by faith in the rather implausible idea that that tissue can be fixed or improved by just the right kind of physical manipulation or force.

Sometimes that force is implausibly subtle, relying on extraordinary claims of the therapist's ability to detect and/or "adjust" something in the body. And sometimes that force is intense, and so the no-pain-no-gain hubris of many methods involves some medical risks ... which cannot be justified by evidence.

Much the problem can be traced to the industry's obsession with the pathologization of misalignment and things that are "tight" or "out of balance" — especially f\*cking fascia! — and "increasing circulation," or "kick-starting" healing" (often almost violently). All of these ideas are shallow and at odds with the evidence, no matter how dressed up in jargon, and they are clearly at the heart of all the major modalities. And so literally *all* of the well-known ideas and methods are of dubious value, and some are extremely problematic — like spinal manipulation, especially when performed on infants, a shockingly common bit of chiropractic quackery (of which there is plenty).

## The state of the science of manual therapy

The only popular manual therapy exclusively offered by physical therapists, dry needling, is sketchy as hell, with real risk of harm and clear evidence-of-absence. <sup>3</sup> And that's from the most mainstream of the providers!

We have half decent evidence that neither massage nor spinal adjustment are helpful for the average back pain patient. <sup>4 5</sup> Those three modalities probably account for at least two thirds of all manual therapy, and most other techniques are barely studied and range from implausible to inane, and what little science we do have invariably shows no benefit at all, or damns with faint praise.

But mostly the science is just inadequate. The field is plagued by small, junky little studies that cannot actually answer the questions they are trying to answer. Bias, methodological jiggery-pokery. Slightly positive results are common, but probably almost always the product of bias-powered p-hacking. Those "positive" studies are barely worth mentioning, and yet they are routinely spun as "promising" by the minority of practitioners that look at the science at all.

The handful of journals dedicated to manual therapy are poor quality. Their editors and contributors are supposedly the best and brightest that manual therapy has to offer, and of course many of them actually are — but the overwhelming impression their work makes on a scientifically literate outsider is that it's an amateurish mess. As a science journalist specializing in this field, I actually just gave up regularly reading some of the key journals that I originally focused on. The juice just isn't worth the squeeze!

It's all rather weak sauce for services that costs most patients at least a buck a minute (and often double that). It's quite disheartening.

But it's not *all* bad. Believe it or not.

## The good news about the effectiveness of manual therapy

Testimonials abound! People truly love to love the hands-on therapies, especially massage, but even the snake oiliest of them get plenty of love. Why?

Because pleasant and/or intense and interesting sensations are rocket fuel for placebo! But perhaps not *just* a placebo. I call it a “sensation-enhanced” placebo. While placebo may not actually “fix” much — the power of placebo is often exaggerated for ideological reasons <sup>6</sup> — it *can* blunt pain at least as well as an ibuprofen, and often for conditions that pain pills don't help at all. Note that it's also hard to separate analgesia from optimism and reduced suffering.

Many kinds of manual therapy — *especially* massage — are also inherently pleasurable and/or satisfying, independently of whether they actually have any *specific medical effects*. And that can probably go way beyond merely being “nice”: we know massage does ease depression and anxiety (one of its only proven benefits), <sup>7</sup> and the value of that should never be underestimated. Manual therapy can also be a great context for coaching, encouragement, and education in other rehab strategies (like exercise).

All that general satisfaction, relief, encouragement, and education may also create some significant “windows of (rehab) opportunity” for optimization of healing — by boosting confidence at the very least. While some experts have argued that too much has been made of this idea, <sup>8</sup> it's not nothing.

Finally, my shameful punchline: despite my cynicism, despite being notoriously skeptical and critical of alternative medicine, I have somehow managed to hold on to a little optimism. I do suspect that there are at least a few useful ideas, a little signal in all that noise, a handful of gems buried in the dumpster fire of manual therapy. Shhh! Don't tell the skeptics! Massage therapy in particular still has a piece of my heart, and — in a striking contrast to the bleakness of this article — I have tried hard to reassure massage therapists that they can be proud of what they do.

## About Paul Ingraham



Headshot  
of Paul  
Ingraham

*I am a science writer in Vancouver, Canada. I was a Registered Massage Therapist for a decade and the assistant editor of ScienceBasedMedicine.org for several years. I've had many injuries as a runner and ultimate player, and I've been a chronic pain patient myself since 2015. Full bio. See you on Facebook or Twitter, or subscribe:*

## What's new in this article?

Mar 1, 2024 — Substantial editing, with particularly meticulous improvements to the article summary, which is widely reproduced wherever relevant around the site. “Integration” with the rest of the library is a standard production step for all articles — linking to and from other articles — but it was particularly extensive here, because the topic is so important to PainScience.com as a whole. There are many dozens of appropriate places to summarize manual therapy, or some aspect of it, and link to more information, so it was very important to have a highly polished summary.

January — Publication.

## Notes

1. They are pure “vitalism” — a childish belief in an undetectable energy system in biology, like the Force in *Star Wars*). It's on the same level as believing in psychic powers, and I do not apologize for holding it in contempt.
2. On the other hand, it isn't nearly as popular as they'd like us to think. *Most* people do not go to an acupuncturist for that case of frozen shoulder that has been dragging on — certainly not in the West, and quite possibly not even in China.
3. Stieven FF, Ferreira GE, Wiebusch M, *et al.* No Added Benefit of Combining Dry Needling With Guideline-Based Physical Therapy When Managing Chronic Neck Pain: A Randomized Controlled Trial. J Orthop Sports Phys Ther. 2020 Apr:1–21. [PubMed 32272030](#)


This is a rare good quality trial of dry needling of trigger points as a treatment for chronic neck pain. It had a clearly negative result, and it's a bit of a nail-in-coffin study for dry needling, as much as any one study ever could be.

The researchers compared standard “guideline-based physio” — as garden-variety as possible — to a combination of that with dry needling in more than a hundred patients, with follow-up at 1, 3, and 6 months. It seems like a fair comparison to me, and I agree with the authors that it is effectively testing and “mimicking the clinical decision-making process seen in daily practice.” Their conclusions:

Adding dry needling to guideline-based physical therapy resulted in a small, not clinically meaningful, reduction in average neck pain intensity at one-month post-randomization, but not at 3 and 6 months in participants with chronic neck pain. Clinicians should not consider dry needling in addition to physical therapy as an approach to managing chronic neck pain.


I will keep following the evidence on needling, but after this data, I know where I am placing my bets on the long-term outcome of this controversy.

This is probably the best single citation for this, but there's a great deal more detail about dry needling in my weirdly skeptical trigger points book (weird because most people who write entire books about trigger points are boosting it, not giving it the side eye).

4. Furlan AD, Giraldo M, Baskwill A, Irvin E, Imamura M. [Massage for low-back pain](#). Cochrane Database Syst Rev. 2015 Sep;9:CD001929. [PubMed 26329399](#) 

Previous versions of this meta-analysis of massage therapy for back pain ([Furlan 2002](#) and [Furlan 2008](#)) are among the most cited scientific papers about massage therapy. This one is unlikely to wear that crown, because it has a pessimistic conclusion — a change of tune from the optimism of the previous versions. In 2008, the authors concluded that “massage might be beneficial.” In 2015, based on 25 studies instead of a thirteen, they wrote, “We have very little confidence that massage is an effective treatment.” This is a reasonable change, considering that the evidence available is that they “judged the quality of the evidence to be ‘low’ to ‘very low’, and the main reasons for downgrading the evidence were risk of bias and imprecision.” *Every* study of this topic has serious flaws, even the biggest and most rigorous (eg [Cherkin](#)). The evidence is inconclusive at best.

See [Does Massage Therapy Work?](#) for much more detailed discussion of this and related studies.



5. Rubinstein SM, de Zoete A, van Middelkoop M, *et al.* [Benefits and harms of spinal manipulative therapy for the treatment of chronic low back pain: systematic review and meta-analysis of randomised controlled trials](#). BMJ. 2019 Mar;364:l689. [PubMed 30867144](#) 

This review in the *British Medical Journal* continues the tradition of damning spinal manipulative therapy with extremely faint praise. It has a putatively positive conclusions, and so it will be widely cited by chiropractors as evidence of the efficacy of SMT for back pain. However, even trying to spin the data in favour of SMT, the conclusions seem tepid at best: they not some short term benefits, and declaring that “SMT produces similar effects to recommended therapies for chronic low back pain.” But chronic low back pain is notoriously untreatable, and *all* treatments produce minor short term benefits and no long term benefits (see [Artus, Machado](#)). The evidence has been available for many years that SMT is just as ineffective as everything else. These conclusions are disingenuous nonsense.

There are other serious methodological concerns here, summarized by Mary O'Keeffe & Neil O'Connell in [a letter to the editors of the British Medical Journal](#). Their conclusions are far more in tune with the evidence reviewed:

These results demonstrate no convincing evidence for the superiority of SMT over sham SMT and a lack of clinically important benefit of SMT when compared with any other treatment. The lack of a benefit of SMT over sham therapy indicates that SMT is unlikely to have any direct benefits and observed improvements are the result of contextual and other effects. It is likely that the apparent equivalence with both ‘recommended’ and ‘non-recommended’ therapies tells us more about the disappointing effectiveness of those approaches than it does about the benefit of SMT.

See [Does Spinal Manipulation Work?](#) for much more detailed discussion of this and related studies.

6. Placebo is fascinating, but its “power” isn’t all it’s cracked up to be: the power of belief is strictly limited and accounts for only a modest portion of what we think of as “the” placebo effect. There are no mentally-mediated healing miracles. But there is an awful lot of ideologically motivated hype about placebo! For more information, see [Placebo Power Hype: The placebo effect is fascinating, but its “power” isn’t all it’s cracked up to be](#).
7. Moyer CA. [Affective massage therapy](#). Int J Ther Massage Bodywork. 2008;1(2):3–5. [PubMed 21589715](#)  [PainSci Bibliography 54758](#) 



8. A “window of opportunity” (WOO) in therapy is a period of minor pain relief or boosted confidence that facilitates normal activity / exercise, which in turn is what delivers the true rehab value. This is exemplified in some cases of frozen shoulder. A placebo can also generate a bit of WOO, but a good WOO is a little more substantive. The idea of WOOs is *also* often used as a self-serving justification for ineffective methods that only produce trivial, transient benefits. See “Windows of Opportunity” in Rehab: The importance of WOO in recovery from injury and chronic pain (using frozen shoulder as an major example).

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