

# The Pressure Question in Massage Therapy

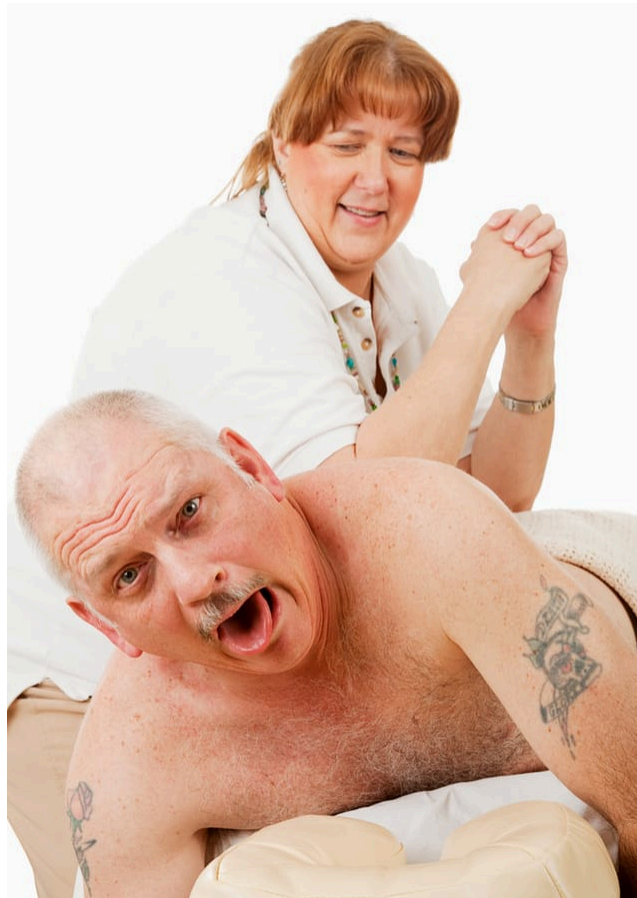
**What's the right amount of pressure to apply to muscles in massage therapy and self-massage?**

Paul Ingraham • Jan 19, 2020 • 30m read

Article Summary

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*An obnoxious, silly stereotype? Yes. But a totally relatable one? Also yes.*

How much is enough? How deep is too deep for a deep tissue massage? Should massage be painful? Should we ever joke about massage being like "torture"? For the decade that I worked as a massage therapist, the most frequently discussed question in my office was "the pressure question."

There's rarely any justification for extremely painful massage, unless it clearly produces a better result than gentler treatment — which is rarely clear. <sup>1</sup> It is *possible* that a few "brutal" deep tissue massages could do the trick where gentler treatment would fail — but there is no way to know this in advance, massage is expensive stuff, and people can get hurt. If you're going to gamble on a treatment, gamble on cheaper and less painful and risk ones.

The reason the Pressure Question exists is that it's hard for patients to tell the difference between nasty pain that *might* be a necessary part of therapy, and ugly pain that is just abusive. Not everything that hurts is therapeutic, but not every therapeutic procedure is painless! How can we tell if an intense massage technique is therapeutic or not?

## What is “deep tissue” massage?

Deep tissue massage is an informal and imprecise term for intense massage. The term has no specific medical meaning, and what it means will vary from one massage therapist to the next. In most cases, therapists assume that it involves some kind of helpful change to soft tissue, though exactly what that means is perpetually unclear.

In practice, deep tissue massage mostly just means “strong massage.” Probably the majority of therapists offering deep tissue massage consider causing mild to moderate pain to be a normal and acceptable part of the work.

Strong massage may not be called “deep tissue”; there are several other massage styles and manual therapies that are quite intense.

## Survey says: a super scientific poll of massage therapy clients

On my client intake form, I asked clients why they left their last massage therapist. The results, after several years of doing that ...

### *Why people “fired” their massage therapists*

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55%	too intense! <sup>2</sup>
20%	not intense enough!
20%	unfocused or wrong focus
5%	other

People vote with their feet, and it seems clear that many people have been dissatisfied with the pressure they’ve received during massage. They do not like their massage to be too painful ... or too fluffy, *regardless* of whether or not they think it works. <sup>3</sup>

People also clearly don’t like their preferences to be ignored. Many of these clients, whether they wanted less pressure or more, have told me that massage therapists should *ask* about the pressure, to find out what each person wants. So there is one point, above all, that I would like to make about pressure ...

***People vote with their feet & they do not like their massage to be too painful ... or too fluffy.***

## Everyone's different: massage pressure tolerance is extremely varied

It fascinates me just *how* different people's pressure tolerance can be. Pressure that would be quite comfortable for one person would certainly cause severe pain and emotional distress in another, and even injury. <sup>4</sup>

These differences can also occur between body parts. Pressures that worked well on the back can prove to be disastrously intense in the lower legs. And pressure tolerance changes with time: pressures that seemed fine on Tuesday can be brutal on Friday.

All of this highlights the necessity of massage therapy that is:

- communicative
- respectful
- attentive

That is, regardless of all other considerations, a massage therapist must *talk* to you about pressure, respect your preferences (they are more important than any treatment ideology), and be careful about stumbling into areas that need much less pressure (for comfort) or much more pressure (for satisfaction). Far too many therapists make the mistake of setting a "default" pressure for a client early on, and then using roughly that much pressure everywhere.

And if therapy isn't communicative, respectful, and cautious? If the pressure feels wrong to you again and again?

## Be assertive! Politely demand the pressure *you* want

A reader told me this alarming story by email, a typical example of unpleasantly intense massage therapy:

My massage therapist has been doing massages for 30 years. He is really aggressive. I thought that I was going to die. The pain was so intense that I honestly feel that it was worse than having children. When the massage was complete, I felt relaxed. When I got home I felt exhausted, like I had been in a major accident. Truthfully I feel like crap. I ache from head to toe, what the heck is this? I feel absolutely horrible. I had a bath before bed and it did help somewhat. But this morning I still feel like hell ...

~ an anonymous reader

It's tough to be assertive with a therapist like that! How much luck do you think most new clients would have telling an "aggressive" 30-year veteran of massage therapy to "ease up, please"? The trouble with most therapists like this is that they are set in their ways and are *not* communicative, respectful, or cautious.

You'd hope this sort of thing would be rare, but it's not. Readers regularly tell me about massage therapists who do *not* ask them what they want, who *dismiss* their patients' concerns about pressure, and who *ignore* signs that their clients are in pain. They display a "doctor knows best" arrogance — ironic for an alternative health care professional — imposing their own idea of the "right" intensity.

If you have the misfortune of hiring such a therapist, and you are not a natural masochist — hey, everyone's different! — then by all means *find another therapist*. Be a consumer and *shop around*. Painfully intense massage therapy may be regrettably common, but it is by no means the only kind available. There are therapists who do it right. <sup>5</sup>

See [How Do You Find Good Quality Massage Therapy?](#)

The Answer to the Pressure question begins with three flavours of pain ...

## Pain in three flavours: the good, the bad, and the ugly

Painful experiences on the massage table can be divided into three familiar categories: the good, the bad, and the ugly. Here's a summary of each, and then I'll go into much more detail.

**Good pain.** In massage, there is a curious phenomenon widely known as "good pain." It arises from a sensory contradiction between the sensitivity to pressure and the "instinctive" sense that the pressure is also a source of relief. So pressure can be an intense sensation that *just feels right* somehow. It's strong, but it's welcome. Good pains are usually dull and aching, and are often described as a "sweet" aching. The best good pain may be *such* a relief that "pain" isn't even really the right word.

**Bad pain.** Bad pain comes with no *obvious, immediate* benefits. If there is anything good about it, there is no way to tell from the sensation at the time. Bad pains are usually sharp, burning, or hot. Such pain is usually caused by excessive but harmless pressure. As bad as it feels, it probably won't hurt you — maybe a little bruising — but there's also a good chance that it won't be therapeutic either. The big question about bad pain is whether or not it is ever justified.

**Ugly pain.** This is a type of pain in massage therapy that is, by my definition, *never okay*. Ugly pain is often caused by things that aren't likely to offer even a delayed benefit, and may even be dangerous.

## Ugly pain in massage therapy

Ugly pain in massage therapy is, by my definition, *never* okay. Ugly pain is often caused by things that are not going to offer even minimal, delayed benefits, and may even be dangerous. It's important to be able to spot ugly pain for what it is and *completely eliminate it from any therapy you're receiving*. What kinds of handling may cause “ugly” pain?

- truly excessive pressure or overstretch that is simply way over your personal pain threshold for that day, location, or situation (it might be therapeutic or even good pain if the pressure was reduced, but it's just too much)
- fingernail digging or skin tearing sensations, very common in “fascial release” therapy
- nerve pinching (electric zapping) or gland compression (strong sensitivity without a trace of goodness) in one of the body's “endangerment zones,” vulnerable spots where sensitive tissue is exposed
- disturbing infected or inflamed tissue, which is usually hypersensitive to light pressures

“Ugly” pain is inflicted only by careless, incompetent therapists. Ugly pain should simply never happen. Yet it *does* happen, and a shocking number of therapists will actually attempt to justify it or minimize the concern.

For instance, many poorly trained therapists do not know the endangerment sites, and will carelessly dig their thumbs into that hollow between your jaw and your ear, where there are exposed nerve bundles and salivary glands that can *really* smart when poked. <sup>6</sup>

Another alarmingly common example is the sensation of skin tearing. This has been inflicted on me personally on at least three occasions, and not by poorly trained therapists — quite the opposite, the perpetrators were all well-trained massage therapists doing a kind of “fascial release” therapy that they clearly thought of as an “advanced” technique. <sup>7</sup>

This may come as a surprise, but in fact there is no therapeutic benefit to stretching skin so hard that it feels like it is going to tear! And it is a completely different and uglier sensation than how fascial stretching can feel and should feel (more like a good massage). When I complained about this (politely), the therapists made no distinction between skin-tearing and fascial stretching, and more or less tried to tell me that I was objecting to perfectly good therapy. Needless to say, I never returned to those therapists.

***There are massage therapists who seem to believe that any painful sensation is simply part of the process & if they poked you in the eye they would call it “ocular release therapy.”***

There are massage therapists who seem to believe that *any* painful sensation is simply part of the process, and if they poked you in the eye they would call it “ocular release therapy.”

Ugly pain can be a sign of real dangers, one more obvious than the other:

1. **Direct injury.** Tissues may actually tear, break, bruise. Significant damage is unlikely, of course, but it's not impossible. For instance, I even know of a patient whose *femur* (the big leg bone!) was fractured by a massage — it was a weak and injured femur already ... but wow!
2. **Sensory injury.** A painful, alarming experience can actually *dial up pain sensitivity* — even long term. <sup>8</sup> Vulnerability to this awful phenomenon is much more common and significant in desperate patients who already have chronic pain — so they seek and tolerate intense therapy.

Consequently, ugly pain in massage therapy is all too common and tragic. I cringe to think how many people have been abused this way. If you have a therapist you suspect of carelessly or deliberately inflicting ugly pain, *just say no!*

I go over some worst-case scenarios at the end of the article. For now, let's move on to "bad" pain.

Laura's awful story:

Thank you so much for your article *The Pressure Question in Massage Therapy*. I just read it all. I went for a sports massage two weeks ago as I was recommended to have one as it was suggested it might help with tight calves, a side effect of some other injuries I have. I've been for sports massages many, many times before over the years. This one was one of the most painful experiences of my life — when I got home I was almost sick and felt in shock. My right achilles tendon was raging and it's been bad ever since. It hurt so much when it was done (like someone was sticking knives in) and I kept asking if it was meant to hurt. I wish I'd just stopped the session or objected but I didn't. It used to be a bad injury that affected my walking for about 6 months so I'm just devastated about this. I can hardly bear to put shoes on. I know there are good practitioners out there but experiences like this just make me want to stay away. I wish I'd gone to a "gentle" one.

I get an email like this at least a couple times a month.

## Bad pain in massage

Bad pain in massage comes with no *obvious* benefits — it hurts, but without being obviously dangerous or beneficial. The benefits may be subtle, or delayed ... or nonexistent.

Once again, the Pressure Question is basically about whether or not bad pain is ever justified. If unpleasant pain is therapeutic, then I would call it "bad pain" — unpleasant, but worthwhile. If it's *not* therapeutic, and you are paying to experience pain with no benefit, then it should be considered ugly pain — both unpleasant and pointless!

But how do you know?

For starters, you bear in mind the things described above that tend to cause ugly pain, and you avoid that kind of therapy like the plague. Then you look for some clues that painful pressure is okay. Here are at least three reasons why unpleasantly intense pressure *might* be therapeutic — “bad pain,” but not ugly. In each of these situations, it might be acceptable to tolerate sensations so intense and painful that the *only* thing about them that is pleasant is the part where it stops.

## Motor end plate destruction: one possible good reason for painful massage

Myofascial trigger points — muscle knots — are a ubiquitous painful phenomenon, sore spots linked to aching and stiffness, which both cause trouble and also complicate virtually any other kind of painful problem. A lot of massage is focused on them, directly or indirectly. Massage may be helpful because it relieves the symptoms of muscle knots, or even unties them. (No, not literally.)

One theory is that muscle knots may be caused by something that goes wrong at the “motor end plate” — where a nerve ending attaches to a muscle cell.<sup>9</sup> We don’t know *why* this happens, or what *exactly* goes wrong, but there is circumstantial evidence that motor end plates are the “point” in trigger point. That evidence is too complex and controversial to review properly here. It is explored in detail in my book. Some research has suggested that it may actually be possible to physically *destroy* the motor end plate with strong massage, thereby inactivating the trigger point.<sup>10</sup> When it regrows — these are microscopic structures, it doesn’t take them long to heal — the trigger point may be gone.

It’s just a theory: no one knows if this is actually effective.<sup>11</sup> However, it may explain why so many massage patients report a “gets a bit worse before it gets much better” response to quite painful treatments: motor end plates are (painfully) destroyed by strong pressures, and then that tissue is quite sensitive and a bit weak as it heals over a day or two ... and then you finally feel much better after that!

Maybe. But I repeat, *no one really knows* — and there is *also* good evidence that intense pressures, which cause a fight-or-flight reaction in your nervous system, almost certainly

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**Quick muscle knot orientation:** So-called “muscle knots” — AKA trigger points — are small unexplained sore spots in muscle tissue associated with stiffness and soreness. No one doubts that they are there, but they are unexplained and controversial. They can be surprisingly intense, cause pain in confusing patterns, and they grow like weeds around other painful problems and injuries, but most healthcare professionals know little about them, so misdiagnosis is epidemic. For more information about how trigger points might be involved in your own medical history, see [PainScience.com](https://www.painscience.com)’s best-selling tutorial:

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**The Complete Guide to Trigger Points & Myofascial Pain** — An

extremely detailed guide to the unfinished science of muscle pain, with reviews of every theory and treatment option

~ 210,000 words

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can *aggravate* trigger points. There are dozen variables that could affect which of these two ideas might be more relevant to a given person on a particular day.

The best we can say is that there is *some reason to believe* that painful pressures on muscles *might* be therapeutic for *some* people *some* of the time. Pretty decisive, eh? This is why it drives me nutters that so many therapists insist that strong pressures are “essential” to achieve “a complete release.” It really isn’t possible to know! It really does depend! Why would anyone pretend to “know”?

## Three more reasons painful massage might be okay

**Somatoemotional release.** Mental and emotional context is a major factor in how we experience pain. Painful sensations are unusually good at stimulating catharsis — the expression of strong or repressed emotion. — because physical pain often strongly “resonates” with emotional pain. <sup>12</sup> For instance, the pain of an injury may blur together with the emotional frustrations of functional limits and rehab. That’s a basic example, and much more complex interactions between emotional and physical pain are obviously possible. Whether it is the clear goal of therapy, or simply a natural side benefit, experiencing very strong sensations can certainly be a meaningful part of a personal growth process “just” by changing your sense of yourself, how it feels to be in your skin, and perhaps bumping you out of some other sensory rut. <sup>13</sup>

**Flushing.** If massage can “improve” any tissue — unknown — one way it might do it is through simple hydraulics: physically pumping tissue fluids around, stimulating the circulation of blood and lymph. It’s a myth that typical massage increases circulation to any meaningful degree, <sup>14</sup> but the possible exceptions probably involve more intense massage. <sup>15</sup> *if* it’s true then it may not much matter if the process is uncomfortable. Maybe some biological benefits can only be achieved with a more intense style. For instance, in the case of trigger points, which may be quite polluted with waste metabolites, <sup>16</sup> there could be a greater need for mechanical “flushing.”

But it’s not like anyone actually *knows* that more pressure is helpful. It’s just a possibility that hasn’t been definitively eliminated.

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**Trust and pain.** Bear in mind that feeling safe is *critical* to the experience of good pain. Tiny differences in trust and comfort can make the difference between an intense pain being good or bad. Much of the “goodness” of good pain comes from mental context, from knowing that a pain is not dangerous or pointless, that it will not increase suddenly, or anything else yucky or shocking.

In fact, when therapists tell patients “no pain, no gain,” this is often just a clumsy and mostly ineffective way of trying to make the pain seem safe and reasonable and less bad — but there are much (much) better ways to do that, and the “no pain, no gain” rationalization is usually a cover-up for sloppy technique.

This is why it is so important, especially for chronic pain sufferers, to find a massage therapist who is curious and concerned about your sensory experience and *responsive* when you ask for pressure changes.

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**Connective tissue stimulation.** A lot of therapists are keen on stretching connective tissues — tendons, ligaments, and layers of Saran-wrap-like tissue called “fascia.” I’m not a huge fan of this style, but certainly it’s a way of generating many potent and novel sensations, which may be inherently valuable to us — another form of touch. Although “improving” the fascia itself is implausible and unproven, perhaps fascial manipulations affect bodies indirectly, just as a sailboat is affected by pulling on its rigging. People have written whole books full of speculation along these lines. So, as long as the sensations are not like skin tearing (that’s an ugly pain for sure), you might choose to tolerate this kind of massage *if* it seems to be helping you.

## The choice is yours

In massage therapy, so much can be achieved while inflicting only good pain on patients that bad pain must be justified by vivid, quick, and somewhat lasting benefits — which is a high bar to clear. All health care practices *must* be justified by benefits. As risk and pain and expense increase, the benefits must also. There is simply no point in tolerating — and paying for — painful treatment without an obvious return on the investment.

## Good pain: a sensory paradox

Good pain is an interesting subject because it’s a contradiction that somehow manages to make perfect sense when you experience it. The sensation is unique and distinctive, but it doesn’t have its own word.

And it comes from *inside* of people. Therapists have not imposed the idea of good pain on patients the way that they have imposed many other common therapy ideas. Even massage newbies recognize the sensory paradox clearly. It’s always fun and interesting to listen to an inexperienced patient discovering good pain ...

*Oooh, wow ... oh, that's sensitive ... but it's good ... but it's definitely pain ... but it's definitely good ...*

*~ typical patient discovering "good pain"*

The contradiction between the good and bad parts of pain can be strong. Good pain may involve an undeniably nasty or gross or sickening component, a truly unpleasant quality, and yet *still* be accompanied by a distinct sense of relief, like an itch being scratched.

No one really knows how a painful massage can also feel so good at the same time. This is a sensory phenomenon mostly beyond the reach of science — not entirely <sup>17</sup> — all we can do is speculate. A main question is whether good pain is good because we expect relief to *follow* pain, or because positive and negative qualities are being produced simultaneously. My bet is on the latter.

But the relief model is certainly tempting. There are *many* painful-but-relieving analogies in medicine and biology. <sup>18</sup> That's *similar* to what good pain in massage feels like, but it's not the same: no one thinks that lancing a boil or popping a shoulder joint back in is anything but painful *while it's happening*. <sup>19</sup> And we can't necessarily take the good pain sensation at face value and assume it means there's actually going to be a positive outcome. Brains are not all-knowing. Sometimes they see danger where there is none, and sometimes they see help where there is none.

A satisfying sensation doesn't necessarily imply successful treatment, unfortunately. Scratching mosquito bites feels *great*... but it's not helping them! Trigger points may be like mosquito bites: it may feel terrific to massage those mysterious sensitive spots in soft tissue, but it may not be doing much to actually "release" or resolve them. It may be a purely sensory experience, the satisfaction of dealing with an "itch" that we cannot easily reach on our own.

Regardless of what hurts so good ...

### **Referred pain spreads the goodness.**

Undoubtedly another reason that massage pain can feel good is the phenomenon of *referred sensation*. If you stimulate internal tissues anywhere in the body, muscle or otherwise, the brain really has trouble telling quite *where* the sensation is coming from. When you press hard enough on your muscles, particularly on sensitive trigger points, the pain is often experienced as though it originated from a much broader area.

***The referred pain phenomenon basically just makes trigger point release feel bigger, more important.***

Referred pain basically just makes trigger point stimulation feel *bigger*, more *important*. Press on a small spot ... feel it *down your entire arm*. Wow! Impressive! Even though it's just a thumb on a trigger point, it feels as though that "itch" is being scratched throughout

an entire region. Referred pain *amplifies* the good pain effect — or the bad pain effect, if the pressure is too intense!

## Horror stories: what's the worst-case scenario from too much pressure?

The range of possible responses to an uncomfortably strong massage is very wide: helpful, dangerous, or anything between.

For most unlucky patients, too much pressure causes only the unpleasantness of the treatment and a temporary worsening of symptoms. But the *worst* case scenario is considerably more dire: direct and serious injury is rare but possible, as with a man who ripped his own intestines doing self-massage for constipation. <sup>20</sup> That's quite extreme, obviously, but how many milder versions go undiagnosed and unreported? Probably quite a few. Thanks to the reach of PainScience.com, I get exposed to many of the more ordinary massage horror stories reported to me by my readers. Three main types seem prevalent:

1. One risk is clearly neurological and complex: some people are basically sitting ducks for the well-documented and nasty phenomenon of "sensitization," and indeed may already be in pain and seeking help because of it. A strong massage can severely aggravate that situation, with long term and extremely unfortunate consequences. It's rare, but it happens. The typical clinical scenario here is a gung-ho under-trained therapist over-treating someone in, say, the early stages of fibromyalgia. Bad, bad, bad.
2. Another horror story variant is just *simple* neurology: frank trauma to nerves, just plain old damaging them. For more about this risk, see [Can Massage Therapy Cause Nerve Damage?](#) Yes, you can! But usually only if someone is being much too intense and careless.
3. Another worst-case scenario is *rhabdomyolysis*, the release of proteins from damaged muscles into the bloodstream. A mild version of this may actually be responsible for a lot of ordinary [soreness and malaise caused by massage](#). And it can definitely be acute and severe, even a medical emergency.

None of these things are likely in the average too-strong massage, but dial things up just a little bit with the wrong person, and suddenly they are on the radar.

There's just no reason to push a client to that "cringe point." It's ham-handed, tends to indicate a simplistic "more is better" approach to the work, and simply isn't needed — that's not what defines "intensity" in a good massage. Very strong and satisfying pressure can always be achieved *without* that edgy, nervous-system-almost-rebelling feeling.

Imagine a personal trainer pushing someone too hard, too fast. The client will *probably* be okay. But is it good training? No. And a few clients will actually get hurt. Same with intense massage.

For more information about the potential hazards of intense manual therapy, see [Massage Therapy Side Effects: What could possibly go wrong with massage? The risks and side effects of massage therapy are usually mild, but “deep tissue” massage can cause trouble.](#)

## About 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:*

## Related Reading

- [How Do You Find Good Quality Massage Therapy?](#) — Tips for finding good quality medical massage, and avoiding nonsense and quackery
- [Massage Therapy Side Effects](#) — What could possibly go wrong with massage? The risks and side effects of massage therapy are usually mild, but “deep tissue” massage can cause trouble
- [Does Massage Therapy Work?](#) — A review of the science of massage therapy ... such as it is

## What's new in this article?


2020 — Added reference to a case study of severe injury from deep abdominal massage.

2017 — Added a new section: “Horror stories: what’s the worst-case scenario from too much pressure?”


2016 — Added a particularly high quality [mobile-only article summary](#).

2007 — Publication.


## Notes

1. To put it bluntly, it's not clear that massage has any musculoskeletal benefits at all. It probably does, but mostly quite temporary and highly unpredictable. There's not nearly enough science, and therapists are hopelessly biased assessing their own efficacy. See Does Massage Therapy Work? A review of the science of massage therapy ... such as it is.
2. By midway through my massaging decade, I had developed a reputation as a *gentle therapist* (but not *too gentle*!), so it's not surprising that this number was high: it's a perfect example of a "skewed sample." I have no doubt that other therapists would get different numbers.
3. The physiological effects are a bit of a moot point: if the pressure doesn't suit you, you're not likely to continue with the therapy. The exception is the patient who is willing to put up with intense pain long enough to find out if there appears to be a therapeutic effect afterwards, which there may be. But that judgement call is often made without much knowledge of whether or not the pain is really justified.
4. It's not just pressure tolerance that varies, but actual biological vulnerability to injury. Consider how easily some people bruise compared to others! There are several ways that a given massage intensity could be safe for one person and not another.
5. For instance, I tried a new young massage therapist. He introduced a pain scale right away, and asked me to use it to define an intensity I was comfortable with — a 5 out 10, say — and then actually *used* that scale to check with me quite a few times throughout an hour treatment. He also responded with clear adjustments to his technique when I reported that we were under or over the target I'd set. Great work!
6. No, those nerves do not get the slightest benefit from being mangled. Yet that therapist may well put out a "no pain, no gain" message or try to justify it as a crucial part of treating jaw tension, which is simply ridiculous. Jaw tension is treated by treating jaw muscles, not the salivary glands!
7. Sheets and wrappings of connective tissue called *fascia* are considered an exciting frontier in massage therapy. Supposedly fascia can so tight that it needs to be "released." But research does not support this, and often actually undermine it — for instance, fascia is too tough to actually change. Fascia enthusiasm seems to be a fad. For more information, see Does Fascia Matter? A detailed critical analysis of the clinical relevance of fascia science and fascia properties.
8. Pain itself often modifies the way the central nervous system works, so that a patient actually becomes more sensitive and gets *more pain* with *less provocation*. This is called "central sensitization." (And there's peripheral sensitization too.) Sensitized patients are not only more sensitive to things that should hurt, but also to ordinary touch and pressure as well. Their pain also "echoes," fading more slowly than in other people. See Sensitization in Chronic Pain: Pain itself can change how pain works, resulting in more pain with less provocation.
9. Mense S, Simons DG, Russell IJ. Muscle pain: understanding its nature, diagnosis and treatment. 1st hardcover ed. Lippincott Williams & Wilkins; 2000. p. 205–288.
10. Danneskiold-Samsoe B, Christiansen E, Bach Andersen R. Myofascial pain and the role of myoglobin. Scand J Rheumatol. 1986;15(2):174–178. [PubMed 3462906](#) 
11. Botox injections should, in theory, paralyze the motor end plate and completely destroy trigger points, but the evidence about this is mixed: Botox injections for trigger points seem to work, but not nearly as well as they should if the theory was correct.
12. "Resonate" in this context means that physical pain may transmogrify into emotional pain and vice versa. Emotional and physical pain readily create and reinforce each other. I assume that catharsis is inherently valuable, and I think that's a fairly safe assumption. I discuss the relationship between pain and emotions from

many angles in several articles, like [Mind Over Pain](#), [Pain Relief from Personal Growth](#), [Why Do We Get Sick?](#), [The Art of Bioenergetic Breathing](#), [Insomnia Until it Hurts](#), and [Anxiety & Chronic Pain](#). Whether catharsis is medically helpful for pain obviously depends on many factors, but it's certainly possible — just as they can reinforce each other, relief from one may also be coupled to relief from the other.

13. In “bodywork,” as practiced at [Haven](#), painful physical manipulations are just one part of a package of techniques explicitly designed to evoke and provoke emotional expression and vitality. While a participant lies on the ground breathing hard, two facilitators may be applying extremely painful pressures to key points in the body, *deliberately* pushing the participant well outside of his or her comfort zone. This may launch people out of emotional ruts (fairly dramatically), relieving intense emotional denial and suppression, and leading to vivid insights and profound new body awareness.
14. Massage therapy supposedly “increases circulation,” and this is one of the main mechanisms of helping patients. Although massage probably does sometimes modestly boost circulation in some ways, the scientific evidence shows that it's too little to matter. Most importantly, light exercise is clearly a much stronger driver of circulation. Because the circulatory system is closed and blood volume is constant, circulation can only “increase” in an area at the expense of another. Also, the relaxation that we expect from any decent massage actually shunts blood into the core, *away* from the muscles, a robust effect that likely dominates the equation. Blood clots broken loose by massage will be swept downstream by the circulation until they finally get trapped by the filter of the lungs, with symptoms ranging from trivial to deadly: a kind of circulatory effect, with vital safety implications. Serious examples are rare, but “minor” lung damage may be disturbingly under-reported. Clots mostly form in the calves (deep vein thrombosis), and so calf massage for a higher-risk person is like playing Russian roulette. Notably, COVID has increased clotting risks in huge numbers of people. For more information, see [Does Massage Increase Circulation? Almost certainly not in a clinically important way, and definitely not as much as even a small amount of exercise](#).
15. The evidence on this topic is mixed. More recent studies, probably using better methods of measuring blood flow, are clearly negative — no significant effect, even with vigorous sports-style massage (see [Hinds 2004](#), [Shoemaker 1997](#)). But some (much) earlier studies show a clear discrepancy between normal versus intense massage, with noteworthy increases in muscular perfusion (e.g. see [Wakim 1949](#), [Hovind 1974](#)).
16. Shah JP, Danoff JV, Desai MJ, *et al.* [Biochemicals associated with pain and inflammation are elevated in sites near to and remote from active myofascial trigger points](#). Arch Phys Med Rehabil. 2008;89(1):16–23. [PubMed 18164325](#) 

This significant paper demonstrates that the biochemical milieu of trigger points is acidic and contains a lot of pain-causing metabolites: this is among the best evidence supporting the energy crisis theory of trigger point formation and/or perpetuation. It's an improvement on an earlier paper from 2005 ([Shah](#)), with better methods. It is cogently summarized by [Simons](#), and in my own short article: [Toxic Muscle Knots](#).

The validity of these findings have been questioned by [Quintner et al.](#) I think their concerns are justified, but they aren't deal-breakers either.
17. Bastian B, Jetten J, Hornsey MJ, Leknes S. [The Positive Consequences of Pain: A Biopsychosocial Approach](#). Pers Soc Psychol Rev. 2014 Apr;18(3):256–279. [PubMed 24727972](#)  Bastian et al. write about “pain's capacity to produce positive consequences, thereby decoupling the experience of pain from the experience of suffering” — pain's silver linings, basically.
18. Reducing dislocated joints; stretching muscle cramps; warming up freezing hands and feet, or restoring circulation to a leg that has fallen asleep; and nearly anything that relieves awful pressure, like lancing boils and cysts or hematomas under toenails, or childbirth, or evacuation of impacted bowels — all very painful, but also very relieving.
19. Although a lot of [Bastian 2014](#) is certainly *relevant* to the concept of “good pain,” strictly speaking I don't think they are writing about the good pain paradox, which is defined by simultaneous pleasure and pain. They are writing about pleasure *following* pain (relief from pain). This is more comfortable scientific ground: it's pretty straightforward that relief from pain might be “associated with positive consequences” or lead to “activation of the brain's reward circuitry,” for instance. Lance a boil, then feel better, right? Of course. But that's definitely not what we mean by “good pain” in massage.



20. Mori S, Ai T, Otomo Y. Laceration of the transverse mesocolon in an old man with a habit of abdominal massage for constipation: a case report. Surg Case Rep. 2020 Jan;6(1):1. PubMed 31898753 [PainSci Bibliography 52515](#)

This is a description of a case of intestinal injury following self-massage of the abdomen intended to help constipation. A 68-year-old man with chronic constipation had a habit of abdominal self-massage, and “did it hard” shortly before developing severe belly pain. He was misdiagnosed with a tumour at the hospital. A day later, still bleeding internally, a surgeon found a litre and a half of blood and a five centimetre tear in his upper colon. The patient recovered surprisingly well after an imperfect repair — the intestinal tissue was too fragile to stitch the tear closed properly. His only complication was an ironic increase in constipation from a paralyzed intestine. When traumatized, the intestine stops contracting for safety.

The authors of the report reasonably assume that the injury was caused by the self-massage, but note other possible explanations, “such as rupture of small aneurysms.” However, the lesion was quite a bit too large to be explained by anything but the most obvious.

## Permalinks

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