



5 Myths and Truths about Massage Therapy

Letting Go
Without Losing Heart

Written by:

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Part 1: A Story

The physician on my table wanted to chat for the first few minutes of his massage. It was early in my career, and I was seeing him at a well-known spa. He was a big fan of massage therapy and knew many people I knew. He had hired MTs and recommended them to his patients. Our conversation took a turn when he said:

“Even though I really see the value of massage therapy, there’s one thing that massage therapists say, one word you all use, that has always bugged me.”

“What word is that?”

“Toxin.”

“Toxin?”

“Yes. Toxin.”

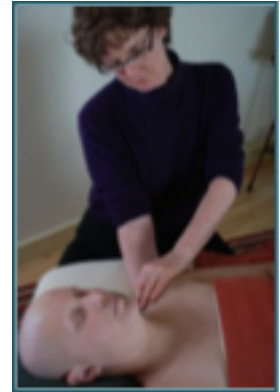
There was silence for a bit as I thought about this. Then we talked some more: How vague the term is. How no one seems to know what it really means, but the idea of “detoxification” has great appeal. He said most any substance in the body is toxic at too high a level. He said the word “toxin” doesn’t have much meaning, the way it is used in massage therapy.

That conversation took place more than 20 years ago. I came away from it with a desire to be thoughtful in my claims about massage.

Much has been learned since then about the effects of massage, but much is still a mystery. In this rapidly developing field, new ideas and information are growing.

Some old ideas are being cleared away so that the profession can move forward. As an oncology massage therapist, I can tell you that shedding the “massage spreads cancer” myth opened up whole new frontiers for clients and therapists alike.

The growth in information serves our profession. As massage therapists, we value good information. We want to pass on the best, most accurate data about the effects of massage. In particular, we want to be as clear as we can about commonly held beliefs. Among these are the effects of massage on:

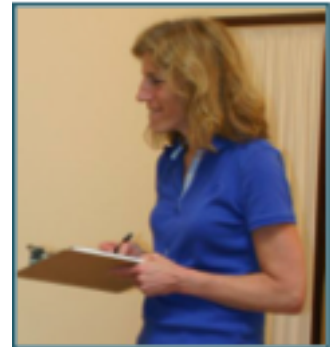


- Endorphins
- Immunity
- Cortisol
- Blood circulation
- “Toxins” and toxin release

In this e-book, we look at each one of these factors and check our assumptions against the best available evidence.

WHY? THERE ARE GOOD REASONS TO CHALLENGE OUR BELIEFS ABOUT MASSAGE.

- ▶ **Ethics.** We have an ethical responsibility to make accurate claims about massage therapy. False claims are a serious breach of ethics in any profession.
- ▶ **Avoiding embarrassment.** If we are called out on a claim we make, and it is found to be untrue, it casts doubt on other, well-established benefits of massage! Inaccurate statements reflect poorly on the profession, so that our work is not taken seriously.
- ▶ **Moving massage forward.** We are more likely to move our profession forward and earn a role in healthcare if we are sharing the truth about our work.
- ▶ **Staying current.** Healthcare providers update knowledge regularly. So should we.
- ▶ **Keeping it simple.** Massage is wonderful in so many ways. It can sell itself. We don't need to grasp at shaky statements to try and oversell it.



Part 2: Why It's So Hard to Let Go of Old Claims

For decades, we have passed along a lengthy list of massage benefits. These claims have helped us promote and justify our work, so we've leaned heavily on them for credibility. When bits of research started to emerge, seeming to support these very foundations of massage therapy, we celebrated.

But it's been challenging to keep a good, accurate list of massage effects or outcomes. Why? There are many reasons. Massage was taught in an "oral history" fashion for many decades, without scrutiny for the many claims we made. There wasn't a lot of literature, and very little research on massage. Our field does not have many educators who are research-literate, so that research hasn't gotten into the classroom.

Those things are changing, and that's good news. But a couple of points of confusion have clouded our understanding of massage therapy:

PROBLEM 1: WE CONFUSE TWO TYPES OF MESSAGE OUTCOMES.

Clinical outcomes and mechanistic outcomes are different.

What are Clinical Outcomes?

A *clinical outcome* is a change in a patient's signs and symptoms, mental state, or ability to cope. Clinical outcomes are changes in the effects of a disease, injury, or exercise on how a person functions. A clinical outcome tells us *whether* massage helps or "works."

A change in stress level is a clinical outcome.

- Clinical outcomes are often measured with client self-reports (“My pain is better”), questionnaires, or scales (“My pain is a 3 on a 0-10 scale”).
- Some are “objective” third-party observations: function, range of motion, results from palpation, athletic performance, or observations by nurses.

What are Mechanistic Outcomes?

A ***mechanistic outcome*** is a change in a biological substance, mechanism, or pathway. A mechanistic outcome or mechanism of action may explain *how* massage works.

- In massage therapy, researchers looking at biochemical changes are measuring mechanistic outcomes.
- Examples of mechanistic outcomes are changes in epinephrine, dopamine, serotonin, blood sugar, endorphin levels, cortisol, and even changes in gene expression.
- Mechanistic studies of massage might involve samples of saliva, blood, urine, or tissue.
- Ultrasound and other imaging can help us examine mechanisms of action.



WE LEAP FROM ONE TO THE OTHER

As massage therapists, we sometimes confuse clinical and mechanistic outcomes. We leap too quickly from a clinical observation (“massage reduces stress”) to explaining the mechanisms behind it (“massage lowers cortisol”).



This muddies our thinking and our communication.

In massage therapy, mechanistic explanations are often weak or lacking. Often they don't really support the clinical outcomes we see. That doesn't mean massage doesn't "work," it just means it might not work the way we think, or the way we've been taught.

And clients rarely ask for mechanistic outcomes!



Not so much.

Clients usually ask for clinical outcomes!

"I need help with my pain."

"I am struggling with sleep."

"I want to run without injuring myself."

"I have lots of stress right now. I need to relax."



Better. Focus on the clinical outcomes!

Our confusion about clinical outcomes vs. underlying mechanisms has kept us from moving massage therapy forward. Another problem, involving the research evidence, also has held us back.

PROBLEM 2: WE'VE QUOTED MASSAGE STUDIES AS THOUGH ALL OF THEM WERE OF HIGH QUALITY, WITHOUT EVALUATING THE RESEARCH WE ARE USING TO BACK UP OUR CLAIMS.

It is hard to get traction or gain credibility with claims that are based on weak research. It's not always easy to tell which research is strongest. In the next section, we will take a quick look at a few basics for evaluating research.

Part 3: All Evidence Is Not Equal.

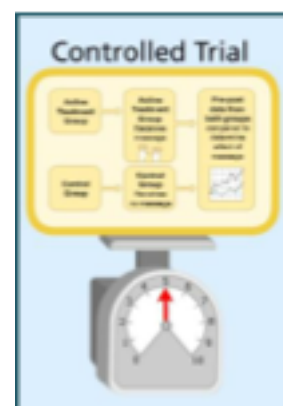
EACH TIME YOU SAY, “A STUDY PROVES THAT MASSAGE IS HELPFUL FOR...[FILL IN THE BLANK],” REMEMBER THIS:

- One study does not “prove” a point or support a claim.
- A few small studies do not “prove” a point or support a claim.
- A large, strong body of evidence from different sources is needed to support a claim. The evidence must show consistent results, based on good research.

Health care practices should be informed by strong, systematic research. In choosing a therapy, practitioners consider the direction of evidence (what it is saying) and the strength of the evidence (the quality of the research). Not all research is equal.

Some of the massage research we’ve been quoting for years is neither strong, nor conclusive!

This is really important. We typically see one study reporting massage effects, then treat it as fact. It shows up in our trade journals and in our classrooms. It gets repeated in social media and on our websites. The results get trumpeted: “Massage increases this! It reduces that! It helps with this problem and that problem!” without mentioning the weaknesses or limitations of the study.



This used to be understandable, because we had so little research to start with, but we’ve grown since then. There is more literature on the subject, and in the last few years, textbooks have emerged, with guidelines for evaluating emerging massage research.¹

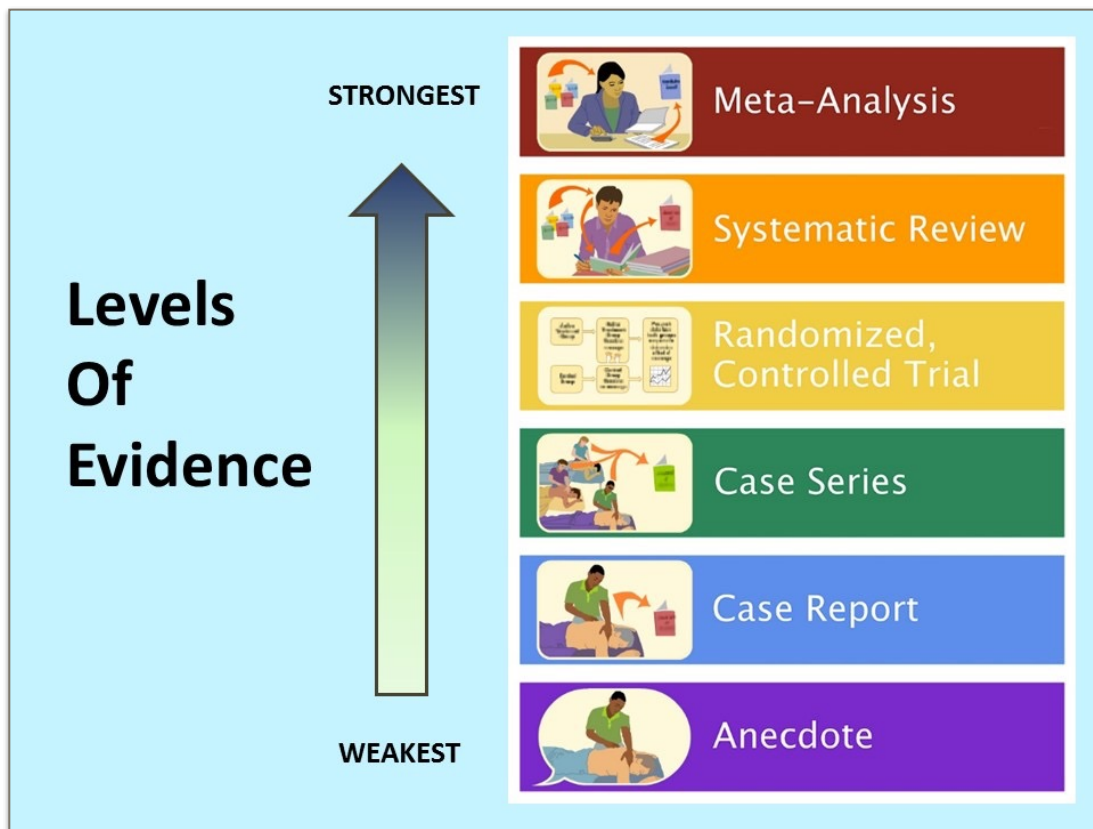
For a massage claim to be accurate, it needs to be supported at the highest, strongest *level of evidence*, not just a small or poorly executed study. There are several factors in the evaluation of research and plenty of places to learn about them (see “Resources” at the end of this book). We will focus on just one factor here:

WHAT ARE THE LEVELS OF EVIDENCE, AND WHY DO THEY MATTER TO MASSAGE?

Levels of evidence show how medicine and health care define strong and weak evidence, and everything in between.

For each of the claims we make about massage: endorphins, immunity, cortisol, blood flow, and toxins; we will look at the level of evidence behind it and what the evidence tells us.

There are many levels of evidence, but six main levels are shown here. The strongest evidence is at the top; the weakest is at the bottom. Each level is described briefly, below.

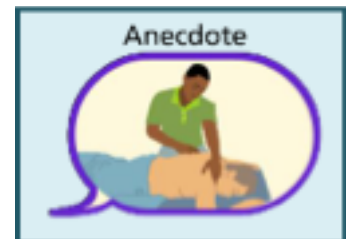


LEVELS OF EVIDENCE

THE ANECDOTE: "AND THEN THIS HAPPENED..."

When you tell a single story of a client experience, it is called an *anecdote*. A client sharing that story in a public forum is giving a *testimonial*.

"I have a client whose tension headaches disappeared after 8 weekly sessions of massage therapy."



"My tension headaches disappeared after 8 weeks of massage therapy."

Anecdotes are important to share, but they are considered the weakest level of evidence. Just because it happened in one client case does not mean it will happen for others. There is no way to know for sure whether the improvement is due to massage itself or to some other factor.

THE CASE REPORT: WRITE IT DOWN SO YOU DON'T FORGET

A **case report** is a formal, published write-up of a single case. It is a step above an anecdote, with a detailed client presentation, a description of treatment, and the outcome.



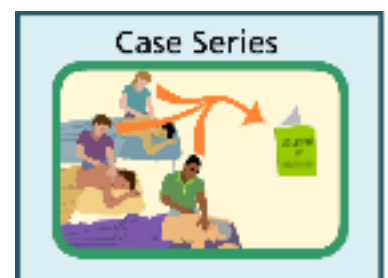
Even a published case report is considered one of the weakest levels of evidence, because it describes only a single case. Again, there is no way to be certain that massage caused an observed change, or if something else was at play.

But case reports are important. They give us a start. More case reports are needed in massage therapy to inspire higher-level research. In order to know what to study next, we need to hear about what is going on in massage therapy practice.

Case reports also help health care providers understand what massage therapy looks like in practice. Published case reports provide an intimate picture that larger-scale research does not. If you are interested in sharing a client story via a case report, look up the Massage Therapy Foundation's many resources on how to write one, and learn more about the MTF case report [contest](#).

THE CASE SERIES: STRENGTH IN NUMBERS

A **case series** is a formal write-up of two or more cases that are similar in presentation and massage treatment.



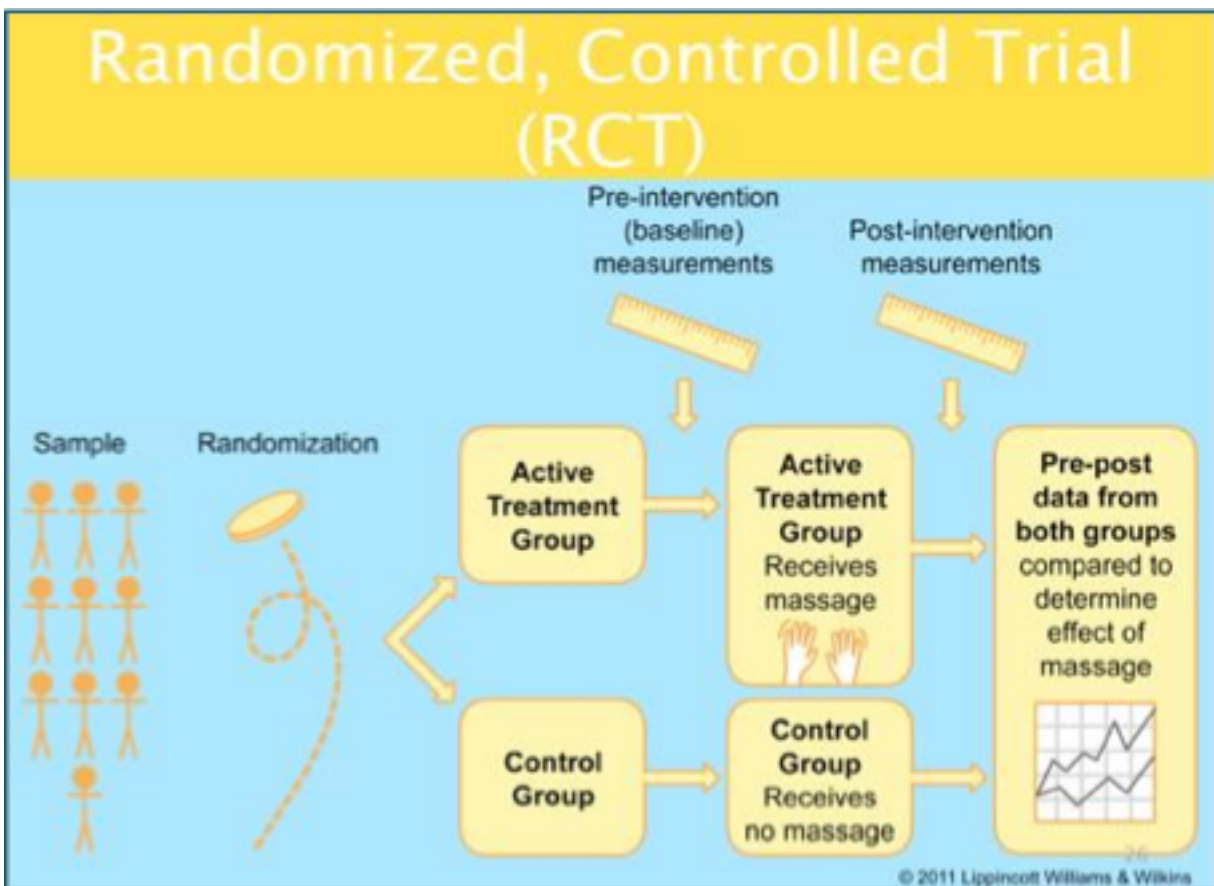
"This case series describes three female clients, age range 45-58, who presented with frequent headaches..."

Although a case series is more convincing than a case report or anecdote, it lacks an important feature of the next level of evidence. It lacks a **control group**.

THE RCT: THE GOLD STANDARD

The **Randomized, Controlled Clinical Trial (RCT)** is sometimes called the “gold standard” of clinical research.

In this diagram, you can see that in a massage therapy RCT, a research subject is randomly assigned to either a massage therapy (“active treatment”) group or a **control group**/comparison group that does **not** receive massage. Space limits an explanation here, but random assignment is important for many reasons.²



Subjects in the control group receive no intervention at all, or they receive some other intervention, such as personal attention without touch. This control group is essential, so that any outcomes observed in the massage therapy group can be attributed to the massage.

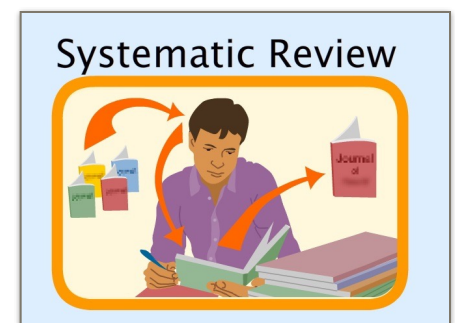
In other words, changes and improvements can happen over time for many reasons, whether or not a person receives massage. Because of a control or comparison group, a researcher is more able to determine whether changes are a true effect of massage therapy.

Notice in the diagram that the same measurements, for example, of sleep, change in mood, change in function, ROM, and so on, are collected from both groups, and the two groups' results are compared at the end.

Although the RCT is a “gold standard” in the levels of evidence, it’s still easy to overstate the results. We’ve often pointed at a single study as “proof” of massage benefit. A single RCT does not give us the final word on a research question. Instead, keep climbing to the next levels of evidence.

THE SYSTEMATIC REVIEW: SOMEONE GAVE UP THEIR SUMMER TO SUMMARIZE THE RESEARCH

One study, or RCT, does not really prove a point, nor do a handful of studies, even if they are all saying the same thing. So even though the RCT is the gold standard, you need a critical mass of good RCTs, all saying the same thing, to really settle a question, like an effect of massage.



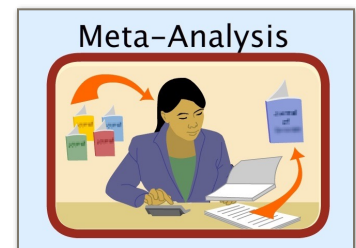
In a **systematic review**, a researcher looks to see whether that critical mass of data exists. Armed with a thoughtful set of research standards (**selection criteria**), he searches the literature and pulls out the strongest studies. After combing through the data, he shares his impression, along with the methods he used in his search.

It is a time-consuming process, but by providing a systematic review, a researcher saves other people time and energy going through the research. He generates a “yes” or “no” answer to the question about a massage effect.

But the top level of evidence is yet to come...

THE META-ANALYSIS: THE PLATINUM STANDARD OF EVIDENCE

In a **meta-analysis**, a researcher goes through the literature again, but this time she pools the data from multiple studies into one large “mega-study” and crunches the numbers.



This quantitative approach, the **meta-analysis**, is the highest form of a systematic review. The researcher uses sophisticated analytical techniques and an awareness of how to group studies without mixing “apples and oranges.”

In a meta-analysis, the authors can quantify the “size” of any effects of massage, called the **effect size**. They give us a number, not just a yes or no.

Through such quantitative techniques, researchers can detect a much more definitive voice in the body of literature. In a massage therapy meta-analysis, researchers typically deliver one of the following conclusions:

Conclusion 1: *Massage therapy is helpful and is recommended* for a certain problem or outcome.

Conclusion 2: *Massage therapy is not helpful and is not recommended* for a certain problem or outcome.

Conclusion 3: *There is not enough good evidence to say either way.* The body of evidence is not sufficient to give us a recommendation. Perhaps the studies are few in number, poor in design, or vulnerable to bias. So the question of whether massage is helpful is still unsettled.

[Spoiler alert: As of this writing, most—not all—meta-analyses deliver conclusion #3 about massage therapy. When a reviewer goes to explore a certain area of interest—say, massage and dementia—they must focus their questions to start looking at the literature. In any one area of focus, you will not typically see plentiful numbers of high-quality studies, waiting to be crunched. More often there are a few small, lower-quality studies on a topic.]

If the RCT is the gold standard, the meta-analysis is considered the platinum level of evidence. With a good, positive meta-analysis, we can begin to use words like ***strong evidence***, a ***body of evidence***, and ***research reports that...*** behind certain statements about massage.

There are a handful of meta-analyses in massage therapy. [Click here](#) for a list of more than a dozen reviews on pain, cancer, anxiety and depression, as well as several other topics. Some are lukewarm at best, but some have positive conclusions to report.

Part 4: Setting Free the Sacred Cows

Some of the claims we make about massage have been around and repeated for so many decades that they have become “sacred cows” in the massage profession. We have only recently begun to look closely at them. There are many such claims, but here we will focus on just five sacred cows commonly found in massage therapy classrooms, on websites, and in conversation:

- Massage elevates endorphins
- Massage boosts immunity
- Massage lowers cortisol
- Massage increases blood circulation
- Massage detoxifies the body/tissues



For each sacred cow, we'll look at these things:

- *The claim we've been making*
- *What we might have meant by it*
- *The highest level of evidence that addresses the claim*
- *What the evidence says*
- *A more accurate statement*

And sometimes...

- *Why it's complicated.*

SACRED COW 1: MASSAGE AND ENDORPHINS



The claim we've been making:

"Massage therapy elevates endorphins." [For the record, a *mechanistic* outcome.]

What we might have meant by it:

"Massage increases feelings of well-being and reduces pain." [For the record, a *clinical* outcome. See where this is going?]

The highest level of evidence that addresses this claim:

Randomized, controlled trial (RCT)

What the evidence says:

It's inconclusive, based on only two research papers.

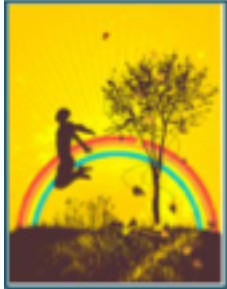
Day et al (1987) tested endorphin levels in 21 healthy volunteers after 30 minutes of back massage, compared to a control group who rested.³ **They found no significant differences** in beta-endorphins or beta- lipotropin levels between the two groups.

Kaada and Torsteinbo (1989) tested plasma beta-endorphins before and at three time points after connective tissue massage (CTM) in twelve volunteers.⁴ They found a moderate elevation of beta-endorphins in the plasma at 5 minutes after



and lasting a while longer after a massage. **However, this study had no control group. Moreover, just twelve volunteers make it a *tiny* study.** (For comparison, pharmaceutical studies typically enroll hundreds or even thousands of subjects.)

On the claim of massage and endorphins, two small studies.



That is all.

Our claim about massage and endorphins reflects wishful thinking, not reality.

Now do a web search for “massage” and “endorphins” and you bring up more than 400,000 hits. Most of those pages report that massage elevates endorphins. Few of those mention actual research, but when they do, it’s often one or the other of these two studies.

Somehow, humble findings from a single, small, uncontrolled, mechanistic study became amplified thousands of times, becoming a nearly unanimous—yet inaccurate—public message about massage therapy. ***A foundational claim in massage therapy— one we have made with utter certainty—has only two inconclusive studies behind it.*** In further research, we may discover more useful stuff about massage and endorphins, but for now, it is time to put aside this claim.

A more accurate statement:

We do not know whether massage therapy has an effect on endorphins. Despite what many sources say, there is little research on this question. The available research does not settle the question.

SACRED COW 2: MASSAGE BOOSTS IMMUNITY



The claim we've been making:

"Massage boosts the immune system." "Massage enhances immune function."

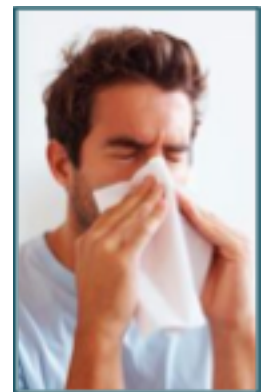
What we might have meant by it:

"Massage promotes relaxation and relieves stress. Therefore it must enhance immunity."

Why it's complicated:

The question of massage and its effect on immunity is much more than a single question. The immune system is extremely complex, made up of many cell types, substances, and functions. Layers of the immune system are involved in the inflammatory response as well as defense against specific substances such as viruses, bacteria, fungi, and even cancer cells.

Research on immunity is hard work. With so many functions, the immune system could be affected by massage in a range of ways. A boost, if it actually happens, could occur in one or more functions, could be cancelled out by other factors, or could actually be detrimental to the body.



For example, in most circumstances, you would not want to aggravate inflammation with massage, or see an increase in the factors involved in autoimmune disease.

The highest level of evidence that addresses this claim:

It depends on the question. There is no single, broad review on massage and immunity. Several reviews mention it, usually while focusing on certain populations. A hodge-podge of RCTs report on massage and immunity.

What the evidence says:

There are no firm conclusions, but here are two meta-analyses:

1. In a 2010 meta-analysis of studies of massage and HIV infection, Hillier et al. reported that massage may aid immune function.⁵ The word “may” is important here, because they also reported that the studies they looked at were small, “...and at moderate risk of bias. Further studies are needed using larger sample sizes and rigorous design/reporting before massage therapy can be strongly recommended for PLWHA [People Living with HIV and AIDS].”



By itself, this is not a ringing endorsement for the claim that massage affects the immune system.

2. In another paper in 2014, Spanish researchers reviewed the literature for studies on effects on immunity of post-exercise massage. Some of those reported a positive effect of massage on immune recovery, but they also concluded that more research is needed in the area to determine if this is true.⁶

Examples of the complexity of such research can be found at the RCT level. A 2012 study of 120 preterm infants by Ang et al. suggested that daily massage did not seem to affect the total number of white blood cells, B- or T-cells, or natural killer (NK) cells.⁷ However, in the same study, massage was associated with increased NK activity, even without an increase in NK numbers. NK cells have antiviral and anti-tumor activities.

Another group of researchers, Rapaport et al., found increases in certain lymphocytes and decreases in certain pro-inflammatory cytokines (immune regulators) when they applied just a single massage⁸, and in a later study with five weekly massage sessions. However, when twice-weekly massage sessions were administered for 5 weeks, they found a slight increase in those cytokines, but little change in lymphocyte levels. They concluded that the massage dose might play a role in how massage affects the immune system.⁹

Space limits a fuller discussion of the research, but these studies reflect the some of the questions being asked about massage and immunity. In each case above, investigators conclude with a measured, humble statement. **Preliminary evidence is**

promising, but more research is needed in order to establish any clear effect of massage therapy on immune function.

Until then, it's premature to claim a benefit to immunity. It is especially important to soften our language with certain client populations, such as people with cancer or HIV, who might be searching for an immune boost, or for a cure, and are more vulnerable to our casual claims about massage. It's also important to keep reading. Be on the lookout for emerging research in this area, as new information might come into view.

A more accurate statement:

Right now, we don't have enough research to know whether massage affects immunity, but scientists feel it is worth pursuing. More studies are needed. The immune system has many different functions, so we're careful not to oversimplify any effects of massage therapy. Our clients do report reduced stress and increased well-being. It's possible this could influence immunity over time.

SACRED COW 3: MASSAGE REDUCES CORTISOL LEVELS



The claim we've been making:

"Massage reduces cortisol, a stress hormone." [Mechanistic outcome.]

What we might have meant by it:

"Massage reduces stress [clinical outcome], and high cortisol is involved in stress, so massage must reduce cortisol [mechanistic outcome]." Or "Massage reduces cortisol. Cortisol is bad. Massage must be good."

Why it's complicated:

Excess stress has many factors. Cortisol is one factor in long-term stress, but there are many more.

The highest level of evidence that addresses this claim:

Meta-Analysis

What the evidence says:

A 2010 meta-analysis by Christopher Moyer et al. concluded that massage does **not** lower cortisol. They did not see massage affecting the levels of this particular molecule for most populations.¹⁰



Is this review on cortisol the final word? There have been other reviews that suggest massage *could* have an effect on cortisol, so which do we believe?

It is possible that additional cortisol evidence will mount in the other direction, and one day we will find that massage does reduce blood, salivary, or urinary cortisol levels. Meta-analyses analyze past studies, not future ones, so our understanding of massage and cortisol could change.

Or not.

Either way, holding out hope for lowered cortisol is not a wise use of our energy. It is better to put effort into being clear and humble about existing evidence than to wish for it to say a certain thing. By wishing for certain results, we might miss something else, right in front of us...

...Like the clinical effects of massage!



For all of our focus on the mechanism of cortisol, one thing that has escaped our attention is clinical research on mood. An earlier 2004 meta-analysis from Moyer is very clear on the benefits of massage in *anxiety and depression*.¹¹ In fact, in their 2010 cortisol paper, the authors propose that because massage does not appear to affect cortisol levels in adults, there is a need for future research on *other* mechanisms to explain the clearly established effects of massage on anxiety and depression.

Take this as another sign to carefully separate the *mechanistic* effects of massage (cortisol levels) from more meaningful *clinical* parameters (stress, anxiety, and depression).

For the record, another systematic review, Coelho et al., 2008, found no effect on depression.¹² However, recently, one of the authors on that review observed that since their review, additional research has appeared that may suggest growing evidence to reverse their findings one day. (Click [here](#) for that amended discussion.)

This discussion illustrates the evolving nature of scientific knowledge. Far from being static, research continues to give us new understanding. There are good reasons to be humble about our claims, soft in our language, and to look sharp for new evidence.

But back to cortisol.

A more accurate statement:

Massage therapy does not appear to reduce cortisol levels. However, clients often report reduced stress and increased well-being. We have good research showing massage reduces depression and anxiety, but we're not sure of the mechanisms behind these changes.

SACRED COW 4: MASSAGE INCREASES BLOOD CIRCULATION



The claim we've been making:

"Massage increases blood flow," or "Massage improves circulation,"
"induces venous return," or simply, "moves blood." [Mechanistic outcome.]

What we might have meant by it:

"Massage promotes tissue health [clinical outcome] because it brings blood to the area [mechanistic outcome]."

Why it's complicated:

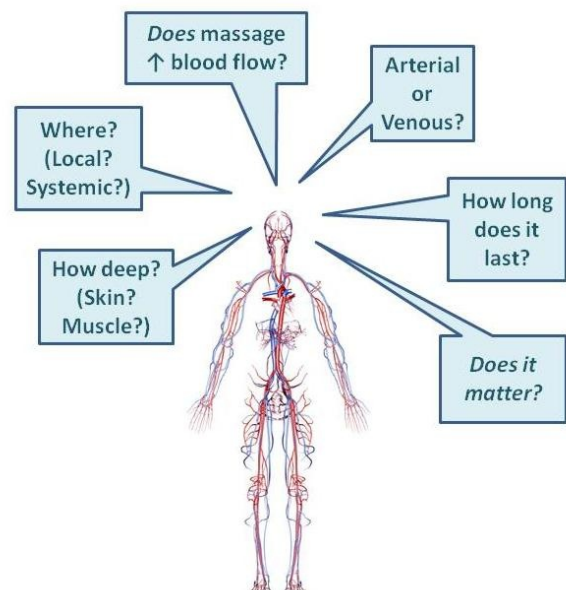
The statement is vague. "Increased blood flow" is a broad topic. It raises more questions. If massage increases blood flow, then...

- **Where?**

At the site of the massage? Local effects? Or systemically, throughout the body, including non-massaged areas?

- **How deep?**

In the superficial tissues, the skin? Or in deeper tissues—deep skeletal muscle, for example?



- Which system? Arterial? Or venous?

- For how long?

Is it an immediate effect that subsides quickly? Or does it last for a while?

- And finally: Does it really *matter* if massage increases blood flow? Is a bump in blood flow from massage a real benefit to the client? Does it make a difference in the health of tissues, athletic performance, or other factors? Is it *clinically significant*, or is it just a nice, interesting effect of massage that sounds like a good idea?

These questions add a number of layers to the topic of massage and circulation.

The highest level of evidence that addresses this claim:

Randomized Clinical Trial

What the evidence says:

A handful of RCTs address this question. Some of them suffer from common limitations in massage research: small sample sizes and poor methods. In addition, early research on this question took place before sophisticated instrumentation such as ultrasound was available to test this question.

Here are a few studies on this question.



- *Two investigators have explored new instruments to measure blood flow* in massaged and non-massaged clients.

- o In a study of 17 volunteers, Sefton et al. found skin temperature changes in both massaged and non-massaged areas of the body after a 20-minute neck and shoulder massage. They used dynamic infrared thermography to measure peripheral blood flow changes.¹³

- o In another study, Munk et al. began using two other infrared technologies to measure muscle blood flow and oxygenation.¹⁴

These investigators are doing important work, refining the measurement tools used to determine blood flow changes in massage studies, as well as looking at the massage-circulation question itself.

- Another recent study by Franklin et al. suggested massage *could help restore vascular function* after exercise.¹⁵

- A few papers suggest massage therapy *might increase peripheral blood flow*.

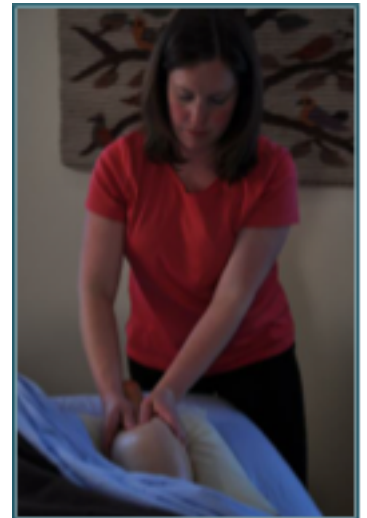
- o In a 2014 paper, Portillo-Soto et al. reported increases in a massaged leg compared to a non-massaged leg after 10 minutes of massage.¹⁶

- o In another small trial 10 years earlier, Mori et al. found that blood flow appeared to increase in the direct area following lumbar massage.¹⁷

- o And in a study of healthy newborns, Agarwal et al. found that massage was associated with increased blood flow, but curiously, the effect was seen only with a certain type of oil of the several oils tested.¹⁸
- A few papers suggest massage therapy has *no significant effect on blood circulation*.
 - o Hinds et al. reported that even though massage seemed to elevate skin blood flow in the quadriceps after exercise, there was no change in blood flow to the muscle, and questioned the value of it in post-exercise.¹⁹
 - o A couple of studies suggested massage did *not* increase limb blood flow as previously believed.^{20,21}
- And one small 2010 study suggests that massage might even *impair* blood flow when it is used after exercise, which is the opposite of what we've been taught.²²

Clearly, these recent studies, all published in the English language, report a range of results. The studies themselves show different approaches and research questions. The body of literature on this question is still small, and most of it is on local circulation changes, at the site of the massage.

We are a long way away from answering the “Why it’s complicated” questions above.



A more accurate statement:

There are a handful of studies on massage and circulation, but they are inconclusive. It's too early to say whether or not massage increases circulation at the site of massage, overall throughout the body, or whether it's clinically important if it does. Since we don't know the answer to this question, in my practice, I focus on helping my clients in other ways.

SACRED COW 5: MASSAGE RELEASES “TOXINS”



The claim we've been making:

“Massage releases toxins from the body,” or “Massage detoxifies the body,” or “Massage moves toxins out of the tissues and into the

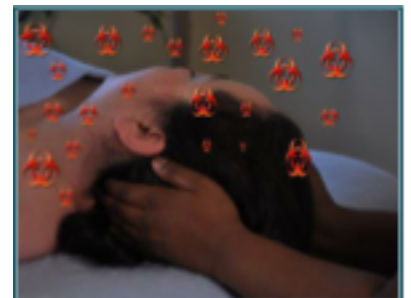
bloodstream.” We’ve used this belief for everything from urging our clients to drink water after a massage, to promoting its “detoxifying” effects.

What we might have meant by it:

As the physician on my table noted, it’s hard to pin down what we mean by “toxin.” Do we mean metabolic wastes, such as CO₂ or lactic acid? (See below about lactic acid.) Do we mean poisonous substances from the environment, such as PCBs or parabens? How about by-products of strong medications such as chemotherapy? It’s never been quite clear.

Even without knowing the meaning, we have passed on the toxin belief in decades of massage classrooms, websites, and conversations with clients. ***On the web, a quick search for “massage” along with “toxin,” “toxic,” or “detoxification” brings up a million-plus websites.***

Looking closely at a few of them, it appears that we believe that massage somehow pushes waste products or toxins out of our muscle or fat cells. Supposedly, our sheer massage pressure dislodges certain substances from these cells, releasing them into the bloodstream and out of the body.



Or we might have meant that massage speeds the movement of lactic acid out of the blood. (If it was lactic acid all this time, that question is addressed below.)

The highest level of evidence that addresses this claim:

I know of no published research in the English language that answers the toxin question.

Try this: Rather than looking for truth on thousands of websites from spas, massage therapy, and CAM therapies, many of which are repeating the same viral message, focus in on an area of the web that catalogues research from peer-reviewed journals.



To see how little research there is on this topic, start at the [US National Library of Medicine](https://pubmed.ncbi.nlm.nih.gov/) database. Type in **massage** and **toxin**. Of the 20 or so papers that come up, nothing is available on this question. The only paper that is remotely of interest describes the apparent effects of endotoxin on massage therapists who were using aging seaweed in their spa treatments. (For practice, type in those terms to see if you can find the article. And check the expiration date on the seaweed!)

As long as we cannot agree on a definition of “toxin,” we can’t even begin research to answer this question.

Assuming we *could* agree on a specific substance, we would have to look at blood or urine levels, before and after massage therapy, at certain time points to know

whether massage had an effect. We would have to have a good number of RCTs like that in order to yield a conclusive meta-analysis.

Clearly, many steps would be needed to understand any role massage might play in “toxins,” but first and foremost, we need to understand what we mean when we use that term.

What the evidence says:

Because we’re not sure of what we meant by “toxin,” we haven’t researched the question, so there is no conclusion.

Wait! One more question: Weren’t we referring to lactic acid when we said “toxin?”

If, by “toxin,” we meant “lactic acid,” it opens up a separate discussion. There are several RCTs that suggest that massage has **no** effect on blood lactate levels. They were reviewed about 10 years ago by Albert Moraska.²³ A small, more recent study suggested that massage may actually **slow** the removal of lactic acid post-exercise.²⁴

For further analysis on massage therapy and lactic acid, as well as massage therapy and delayed onset muscle soreness, visit Paul Ingraham’s article, [“Should You Drink Water after Massage?”](#) You might be surprised at his analysis: that massage could potentially be a little more “toxifying” than “detoxifying.” (The site offers thought-provoking reflection on other beliefs about massage, injury, and pain, as well.)

A more accurate statement:

Although this belief sounds good and this claim is everywhere, no research shows massage releases toxins. It's an old myth. We're not even sure what was meant by the word "toxin." That makes it hard to do research on the question. In massage therapy, we're more focused on whether or not massage helps people *feel* better. Clients and growing research suggests that it does.

Our language needs cleaning, not our clients.

We don't need to detoxify our clients. We need to clean up our language. Although "detoxification" is a widespread claim in popular media—who doesn't want to clean out toxins?—we are better off dropping this view as soon as possible, along with the practice of telling clients to drink water after massage in order to speed stirred-up toxins out of the body.



Because we've been making a false claim, this is also an urgent ethical concern. Scrubbing it from our massage therapy websites, conferences, conversations, and classrooms is an act of professional housecleaning. A cleanse, in the truest sense of the word.

Each one of us can contribute to this group effort, by checking every corner of massage therapy for language about detoxification. Challenge it when it comes up. Do so thoughtfully, with respect for the believer as well as the belief. Appreciate how many decades we invested in this view, how we've clung to it as a foundation of our

work. Encourage MTs and MT organizations to let it go, and take up other, more responsible claims instead.

Eventually, like the ideal detox treatment of our dreams, we will eliminate this and other outdated views from the profession. On that clear day, we'll be better able to see the true effects of massage therapy.

After a few days of leaving this myth behind us, we won't miss it, and our credibility will improve in an instant.

Part 5: So...What Do We Have Left?

The sacred cows have left the building. Who is left? What's the damage? Anything left to stand on?

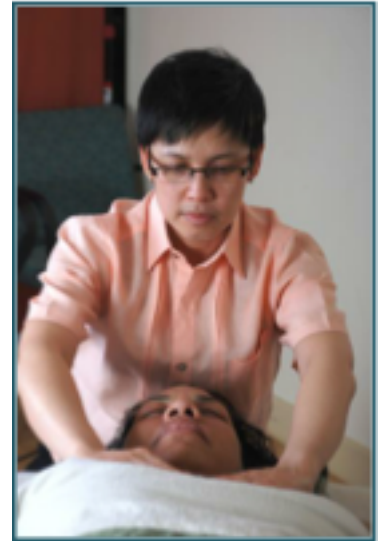
Well, for starters, we still have massage therapy.

That counts for a lot. Massage therapy feels good. It is a popular therapy, with real benefits that persist, no matter how hard we try to explain them! Promising evidence shows that it helps some people. There is plenty left to make our hearts sing.

It can be difficult to let go of old beliefs, especially beliefs and assumptions that were treated as truth for decades. It can turn things upside-down and lead us to question other claims. This is not necessarily a bad thing. Massage therapy educator and author Laura Allen describes her own process of re-learning her profession in [Excuse Me, Exactly How Does That Work? Hocus Pocus in Holistic Healthcare](#).

If we clean up our claims, people are likely to take us more seriously, not less. By clearing out untruths, and claims that are too vague to be declared either true or untrue, we no longer have to defend the indefensible. We have more integrity and credibility with which to advance the profession. We can step forward with a true heart.

Does it mean that massage is ineffective?



NO. It just means that five popular massage claims are either unsupported or contradicted by the evidence at this time. (The “at this time” part is important. Who knows what we’ll find out down the road?)

Remember, we’ve looked only at those five claims. Researchers are focused on all manner of possible massage outcomes. There are some promising trends in massage therapy:

1. We have some good research in massage therapy, and a growing body of it.

There is a strong body of research on massage therapy benefits for people with depression, anxiety, and pain. More and more researchers are conducting systematic reviews and meta-analyses on the data we have. [Check out about 20 of them on my blog](#). Look for more of these in the future, focused on both clinical outcomes and mechanisms. In particular, keep an eye out for several reviews on massage and pain from the Massage Therapy Foundation partnership with the [Samueli Institute](#). ETA 2016!

2. We have massage therapists learning to do good research, and at least one foundation devoted to massage therapy research.

Current and future massage researchers will tell us more about the clinical effects of massage therapy, as well as its underlying mechanisms. The Massage Therapy Foundation continues to publish good work, and to fund further inquiry.

3. *We have our stories.*

Observations from our practice, things clients tell us, and formal testimonials are encouraging. Not necessarily conclusive, but encouraging.

4. *And we have the mystery. Three words: "I don't know."*

Given the current understanding of massage therapy, cutting loose a few sacred cows does not diminish our work, it enhances it.

If we substitute, "*We don't know*," for some of the claims we've been making, it might seem like we're giving up authority. By stepping from what-we-thought-we-knew into the *true* unknown, we substitute reality for wishful thinking. We choose mystery over false certainty.

If "*I don't know*" seems like a big whack to your professionalism, remember that we do not know much about how massage works, or even *if* it works in many situations. (For perspective, the mechanisms behind many drug therapies are also poorly understood. We may be in the dark about mechanisms, but we are not sitting here alone.)

In such a climate of mystery, humility improves our integrity in an instant. Then, when a questioning or skeptical client comes along, as mine did, we have the best possible response.

Oddly enough, "*We don't know*," puts the wonderful work of massage therapy back on solid ground.



Part 6: Resources.

LEARNING MORE ABOUT MESSAGE RESEARCH

Published by the Massage Therapy Foundation, the [International Journal of Therapeutic Massage and Bodywork](#) is an open-access journal, meaning all of the content is free and available online.

In partnership with [Education and Training Solutions](#), the Massage Therapy Foundation offers an engaging online 6-hour CE course, [Basics of Research Literacy](#).

In archived webinars available for free, therapists/researchers tell you how to evaluate and use research in your practice. These [no-cost webinars are part of the Project to Enhance Research Literacy of the Academic Consortium for Alternative Health Care](#).

Ruth Werner's [How to Connect with a Researcher](#) is a free e-book from the Massage Therapy Foundation. If you have a massage research question, check it out.

Look at Paul Ingraham's [science writing](#) for plain, clear writing on massage research.

CASE REPORTS

Share a client story! Learn to write case reports through a series of free [webinars](#) from the Massage Therapy Foundation.

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Massage Bodywork. Sep 2014; 7(3): 32–40. Free full text at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4145002/>

FINDING RESEARCH—PUBLISHED AND IN PROGRESS:

- PubMed (www.pubmed.gov). Search for research in health, medicine, massage therapy
- Cochrane Collaboration (www.cochrane.org). Find meta-analysis in health and medicine here.
- NIH Report Tool (www.projectreporter.nih.gov/reporter.cfm). Find NIH-funded research in progress in the U.S.
- ClinicalTrials.gov (www.clinicaltrials.gov). Find publicly-funded research around the world.

TEXTBOOKS:

Dryden T and Moyer C. [Massage Therapy: Integrating Research and Practice](#). Champaign, IL: Human Kinetics Publishing, 2012.

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About the Author, the Foundation, and the Sponsor

ABOUT THE AUTHOR

Tracy Walton is a researcher, writer, and award-winning educator. A dynamic voice for the power of touch, she is the author of [Medical Conditions and Massage Therapy: A Decision Tree Approach](#), (Lippincott Williams & Wilkins, 2011), where she first wrote about the need to challenge some of the myths in massage therapy. (Parts of this e-book are adapted from that text.) She has maintained a private practice in massage therapy since 1990.



Tracy appears in the film [Touch, Caring, and Cancer](#), an inspiring home instruction program for people with cancer and their care partners. As a researcher, Tracy has worked on NIH-funded clinical trials of professional massage and massage by caregivers. Research partners include the Osher Institute at Harvard Medical School, Beth-Israel Deaconess Medical Center, H. Lee Moffitt Cancer Center, and Collinge and Associates.

Tracy and her staff teach the art and heart of massage along with hands-on skills and clinical thinking. Visit www.tracywalton.com for more information about courses in oncology massage, online offerings, and her blog.

About the Massage Therapy Foundation

The Massage Therapy Foundation was founded by AMTA in 1990 with the mission of bringing the benefits of massage therapy to the broadest spectrum of society through the generation, dissemination, and application of knowledge in this field. We do this by receiving donations and granting funds for research, community service, educational initiatives, and conferences. We also do this by providing direct consultation to the medical and research communities, and by educating massage therapists about the world of research.



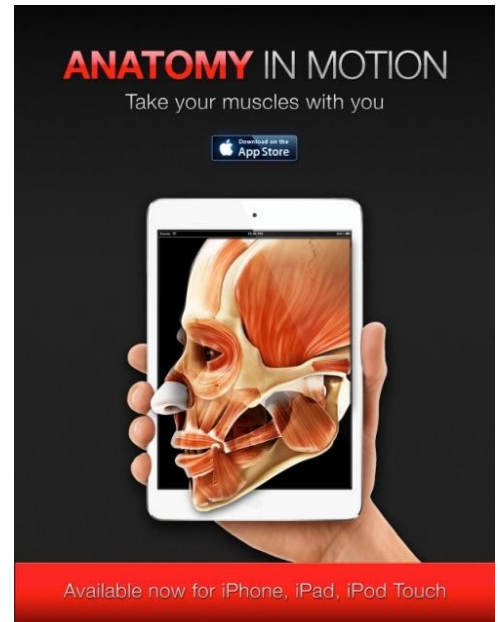
Learn more about the Massage Therapy Foundation at

www.massagetherapyfoundation.org.

To support e-books and other work by the Massage Therapy Foundation, please consider making a [donation](#).

About Our Sponsor: Anatomy in Motion

Anatomy in Motion is a premier medical education app focused on the study of myology created by Joe Russ & Melissa Finley. Anatomy in Motion is also one of the largest anatomy focused communities on Facebook featuring a diverse curation of anatomical art and information.



Mografi is the creative outlet of Joe Russ, a critically acclaimed director and motion designer. Anatomy in Motion was created in partnership with Mending Hands Massage Therapy. Mending Hands is the passion of Melissa Finley, a top rated massage therapist in Sarasota, FL and graduate of the Swedish Institute - College of Health Sciences in New York City.

For more information about Anatomy in Motion, visit:

<http://mografi.com/anatomyinmotion/>

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