

UPMC Center for Integrative Medicine

Dedicated to increasing knowledge about safe and effective complementary and integrative medicine approaches.

A Tale of Two Studies—Acupuncture for Cancer-Related Pain

Ronald Glick, MD, Patricia Smith, LAc, and Carol Greco, PhD

In 1971 President Nixon declared a *War on Cancer*, with the expectation that given appropriate resources, we would find a cure in our lifetimes. While that goal has been elusive, the last decade has seen tremendous strides in our understanding and treatment of cancer. Still, the incidence of new cases of cancer has remained relatively constant over the years¹.

Another constant is the connection between cancer and pain, which affects approximately 70% of patients with advanced disease^{2,3}. Pain can come directly from the disease, as when metastases spread to other organs such as bone. It can also be treatment-related, due to lasting effects from chemotherapy, radiation, or surgery. Medications, the primary treatment, commonly have adverse effects. Opioids, in particular, may contribute to fatigue, depression, nausea, and constipation. These symptoms can compound the difficulties patients are already experiencing, related to chemotherapy and the disease itself. While narcotics are beneficial for acute pain, we've learned through the opioid crisis that long-term use can create more problems than it solves. This is particularly important as our treatments advance. Now more people are living years with advanced-stage disease that a decade ago would have resulted in a quite limited life-expectancy.

Of the various non-pharmacological therapies for pain, acupuncture holds the greatest promise. The gold standard for biomedical research is the randomized-controlled trial (RCT) and until the last decade, acupuncture results were mixed. A landmark article in 2012 analyzed the results of 29 treatment studies with close to 18,000 patients experiencing chronic pain⁴. They found significant benefit of acupuncture over placebo techniques. Along with other support in the literature, this led to many health insurance companies covering acupuncture for conditions such as low back pain, knee arthritis, and chronic migraines.

It is only in the last few years that a moderate level of support has developed in research on acupuncture for cancer-related pain. Three recent meta-analyses, each analyzing multiple studies, found significant benefit of acupuncture for cancer-related pain⁵⁻⁷.

Here's what we learned:

- Acupuncture has a comparable effect to drug therapy.
- Acupuncture, when administered along with medication, provides even greater pain relief.
- Acupuncture allows people to reduce the dose of narcotics.
- Acupuncture for cancer pain has a moderate effect size. This is a measure of the magnitude of the treatment effect. Many standard medical treatments, such as blood pressure medications for hypertension and steroids for asthma, fall into this moderate category⁸.

If these reviews show such good results, why do we need more studies? First, the numbers of patients treated in these meta-analyses is low, in the range of 1,000. Compared to the 18,000⁴, we have a long way to go for the evidence to be on more solid footing. Each of these articles commented on the high level of variability in methodology of the studies and note the need for further high-quality research.

To design a high-quality study, one starts with a pilot study. Pharmaceutical companies use this process in developing new drugs. Pilot studies allow the team to accomplish several things before devoting resources to a larger RCT, including:

- Develop and systematize a treatment approach that can be carried out on a larger basis.
- Develop and fine-tune assessments that describe the treatment outcomes.
- Problem solve around pragmatic issues, which is especially important when working with a severely ill population, to ensure that the approach is feasible.
- Determine if the treatment is tolerable, in other words, does it result in bothersome problems or side-effects.
- Obtain preliminary measurement of treatment effect, to confirm the likelihood of the approach being helpful.

At the Center for Integrative Medicine, we have been working in this area for several years. In our 1st project, we developed an acupuncture treatment program based on Traditional Chinese Medicine (TCM) principles, which would treat both pain as well as associated symptoms such as fatigue, nausea, and anxiety⁹. We treated 57 patients with cancer-related pain and of these, 25 completed 9 or more sessions. Those 25 patients experienced a 32% reduction in pain severity and a 40% decrease in pain's impact on life. Additionally, nausea and fatigue dropped by 50%. Generally, a 30% or greater reduction in symptoms such as pain is considered clinically meaningful. *Continued on page 2....*

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In considering next steps, we looked at two questions. What is an appropriate comparison; and can we do better as far as pain reduction? In research, we commonly compare one treatment with another. One consideration is placebo, like a sugar pill, and there are forms of acupuncture that are inert or inactive. We chose to avoid this idea, given that our patients were severely ill and struggling with significant pain. Given the success that the massage therapists at the Center find with bodywork, we selected massage as a comparison treatment. Regarding the possibility of a more effective treatment, our acupuncturists had found tremendous success with Dr. Tan's Balance Method, a regional anatomical approach¹⁰. This may not directly target associated symptoms, such as nausea or fatigue, as well as the TCM approach. However, it allows the acupuncturist to focus in on the body areas affected by pain.

Forty-five patients were offered their choice of acupuncture using the Tan Balance Method or massage therapy, and they were evenly split between the two¹¹. As we anticipated, the reduction in pain was greater with this anatomic approach, with pain intensity dropping by 52% and pain's impact decreasing by 67%. Surprisingly anxiety, nausea, and fatigue also decreased by around 50%. The massage therapy patients also experienced improvement, on par with our previous TCM-based acupuncture trial.

What next? With the goal of obtaining external funding for an RCT, there are two challenges. The 1st is that our team is the only group that has applied Dr. Tan's Balance Method to cancer pain treatment; it will be helpful to see if the approach holds up in a second study with a greater number of patients. Additionally, our previous trials included a diverse group of patients with cancer-related pain. Funding agencies encourage tighter guidelines for enrollment in research. Since the approach is flexible, we did not want to focus on only one form of cancer. Rather, we are planning to treat patients with advanced-stage cancer; those with active malignancy that is either locally invasive or associated with metastases and resulting in moderate or greater pain. Our long-term goal is to add to the body of literature, which will determine how effective acupuncture may be for treating cancer pain, through high-quality research.

Acknowledgements:

These studies were accomplished with the generous support of the Shadyside Hospital Foundation, whose mission is to support the care of patients on the UPMC Shadyside campus. The Foundation is devoted to enhancing the quality of life and developing integrative programs for patients receiving treatment through the hospital as well as through the Hillman Cancer Center.

We wish to thank Christine McFarland, Anya Novikova, Jessie Violet Larson, EngKeat Teh, Xiaotian Chen, and Dr's. Yu Cheng, Dana Bovbjerg, Judith Balk, and Mary Matsumoto for their involvement and support with our research.

Visit the [Newsletter Archive](#) on our website for a full list of references to this article.

Integrative Medicine Program for Children and Young Adults with Autism Spectrum Disorder

Thanks to a very generous donation given to the Center, we are offering a clinical care program for children and young adults ages 3-25 years with the diagnosis of autism spectrum disorder. The program offers reduced rate services from two clinicians and covers costs of laboratory tests and supplements over one year. The clinicians involved in this program are Karl Holtzer, MD, MS, a pediatrician specializing in functional medicine, and Lu-Ann Scarton, MS, RDN, a nutrition specialist with over 25 years of experience. If interested, please call our office at the UPMC Center for Integrative Medicine at 412-623-3023.



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Research Announcements

UPMC
LIFE CHANGING MEDICINE

Research Study: Acupuncture for Pain Related to Advanced Cancer

UPMC Shadyside—Center for Integrative Medicine

**If you or someone you know has cancer & pain, you may be eligible for
acupuncture at no charge.**

A research study at UPMC's Center for Integrative Medicine is offering acupuncture for cancer-related pain.

Acupuncture is the practice of inserting needles into specific parts of the body and can be helpful for pain, nausea, fatigue, and other physical symptoms.

WHO can participate?

Adults with advanced-stage cancer, associated pain, and in treatment at a UPMC facility

WHAT is involved?

Free acupuncture sessions
Questionnaires
Free parking

WHERE does it take place?

Center for Integrative Medicine
Shadyside Place, Suite 310
580 South Aiken Ave.
Pittsburgh, PA 15232
integrativemedicine.upmc.com

**WANT PAIN RELIEF?
TRY ACUPUNCTURE**

A form of **alternative medicine** that can reduce pain

Has been studied extensively and **is FDA-approved**

How does it work?
Acupuncture stimulates the nerves, muscles, and other systems in the body. As your body releases its natural painkillers, pain is reduced.

For more information, contact:

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Research Announcements

The UPMC Center for Integrative Medicine is dedicated to increasing knowledge about the effectiveness and safety of complementary and integrative medicine approaches. Other integrative medicine modalities may not have been subjected to the same level of scientific inquiry as western medicine treatments. The Center for Integrative Medicine, in concert with the University of Pittsburgh, is actively pursuing research to support the benefits of these therapies.

Got Back Pain?

Are you:

- age 18 or older?
- currently experiencing low back pain?

You may be eligible for a University of Pittsburgh federally funded research study exploring different therapies to treat low back pain and prevent it in the future.

There is no cost to you to participate in this year-long study. Compensation will be provided.



To learn if you may qualify for a screening appointment, visit

www.pacback.org

UPMC Center for Integrative Medicine class offerings

Tuesday's	7:00-8:30pm	MBSR Orientation —> 2/25/20, 3/10/20, 3/24/20	free	Barbara Ivanko, LCSW
Tuesday's 2/11-3/31/20	12-1:45pm	Mindfulness-Based Anxiety Reduction (8 classes)	Ins.	Dinnie Goldring, LCSW
Tuesday's 2/18-4/7/20	6:30-9:00pm	Mindfulness-Based Stress Reduction (8 classes)	\$325	Carol Greco, PhD
Thursday's 2/20-4/9/20	6:30-9:00pm	Mindfulness-Based Stress Reduction (8 classes)	\$325	Kelly Beck, PhD
Monday's 4/6—W 5/27	6:30-9:00pm	Mindfulness-Based Stress Reduction (8 classes)	\$325	Barbara Ivanko, LCSW

UPMC Center for Integrative Medicine Team

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Alicja W. Walczak, MS, CRS
Biofeedback, Yoga Instructor

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