



# Acupuncture to Help Manage Chemotherapy-Induced Peripheral Neuropathy

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Acupuncturist, Integrative Medicine

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# Land Acknowledgement

Fred Hutchinson Cancer Center acknowledges the Coast Salish peoples of this land, the land which touches the shared waters of all tribes and bands within the Duwamish, Puyallup, Suquamish, Tulalip and Muckleshoot nations.



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# Katherine Taromina, DACM, MSTOM, L.Ac.

## Acupuncturist, FHCC Integrative Medicine

### Training

Doctor of Acupuncture and Chinese Medicine

Board Certified in Oriental Medicine (Dipl. OM)

Washington State Licensed Acupuncturist

Previously worked as Program Manager and Acupuncturist at Columbia University Medical Center, Integrative Therapies Program

Currently serve as Academic Dean at the Seattle Institute of East Asian Medicine

### Clinical Focus

Mitigating side effects associated with cancer and its treatment

Improving quality of life during all stages of cancer care and survivorship

### Patient Care Philosophy

*My clinical approach is rooted in the principles and theories of East Asian medicine and informed by advances in biomedical research.*

# Integrative Medicine at Fred Hutch

# What is Integrative Oncology?

*At FHCC, we believe state-of-the-art care includes support for the healing of our patients in body, mind and spirit*

- Integrative Oncology is an evidence-based field of cancer care that utilizes mind-body practices, natural products and/or lifestyle modifications from different traditions *alongside conventional cancer treatments.*
- Our integrative medicine providers have expertise in mind-body medicine, acupuncture and naturopathic medicine.

# Integrative Medicine and Supportive Care at Fred Hutch

## Lifestyle counseling

- Diet
- Physical activity

## Symptom management

## Mind-body therapies

- Acupuncture
- Meditation

## Dietary supplement counseling



QR Code for Fred Hutch  
Integrative Medicine



Fred Hutch  
Cancer Center

# Current Funded Research –2023

## **Acupuncture trials**

- Oral cryotherapy +/- acupuncture/acupressure to decrease CIPN in GI cancers (PI: Cohen, Safeway)
- Acupuncture to decrease BCG-related adverse events in bladder cancer (PI: Psutka, CCSG)
- Acupuncture to reduce opioid use in myeloma and lymphoma BMT patients (PI: Deng, PCORI)

## **Diet/physical activity trials**

- Online Culinary Education Program and Pilot Study (PI Greenlee, Apex Foundation)
- Digital nutrition intervention to decrease side effects during breast cancer treatment (PI: Greenlee, PHS)
- SMS-based conversational agent to improve sleep in breast cancer patients (PI: Redding, SWOG)
- Improving bioavailability of phytonutrients in New Mexican diets (MPI: Greenlee/Guzman, NCI U54)

## **Observational studies**

- Predictors of CVD among KPNC breast cancer survivors (MPI: Greenlee/Kwan, NCI R01)
- Breast white adipose tissue inflammation and breast cancer outcomes (PI: Kushi, NCI R01)
- Dietary supplement interactions in breast cancer patients (PI: Kushi, NCI Admin Supp)

## **Clinical practice guidelines**

- Integrative oncology clinical practice guidelines (PI: Greenlee, SIO/Samueli Foundation)

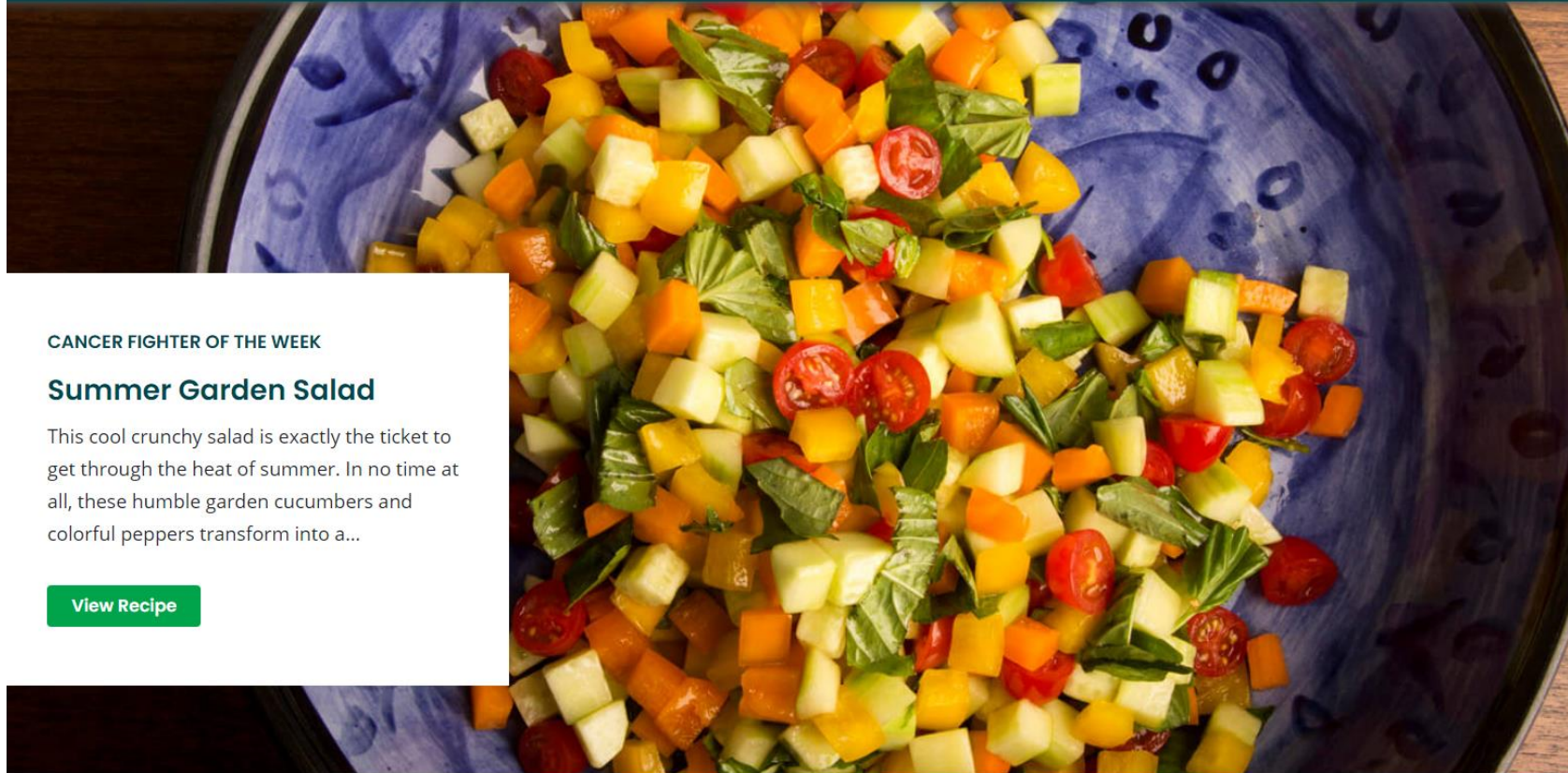


# Cook For Your Life



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CANCER FIGHTER OF THE WEEK

## Summer Garden Salad

This cool crunchy salad is exactly the ticket to get through the heat of summer. In no time at all, these humble garden cucumbers and colorful peppers transform into a...

[View Recipe](#)

Evidenced-based | Dietitian-approved | Cancer Prevention | Side effect management

Fred Hutchinson Cancer Center

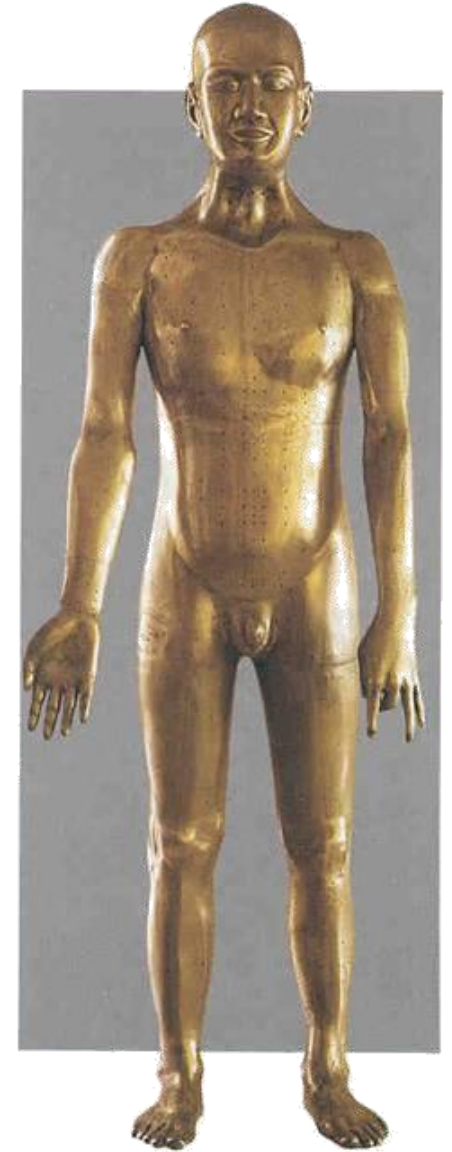


# What is acupuncture and what to expect during a treatment

# History

*3,000 – 5,000 years old: oldest continuously practiced medical system*

Based on the concept of the body  
as a dynamic connected system



# East Asian Medicine

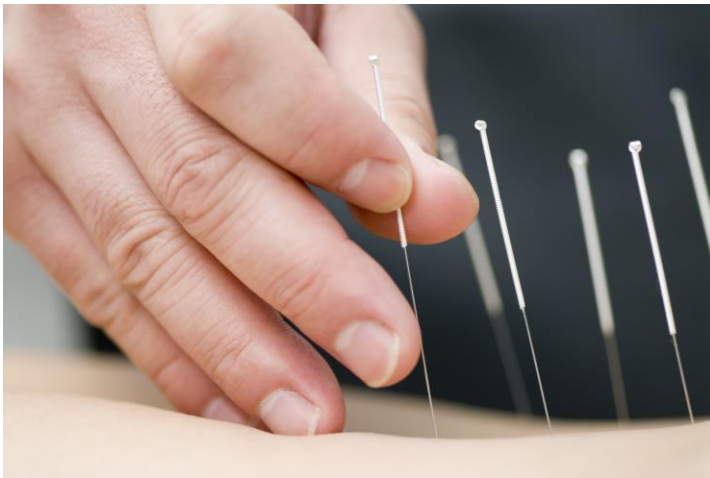
- Acupuncture & Moxa
- Chinese Herbs
- Diet & Lifestyle
- Exercises (Qi gong)
- Other Techniques  
*(tuina/bodywork, electrical stimulation, cupping, etc.)*



# Definition

The term “acupuncture” describes a family of procedures involving the stimulation of points on the body using a variety of techniques.

The acupuncture technique that has been most often studied scientifically involves penetrating the skin with thin, solid, metallic needles that are manipulated by the hands or by electrical stimulation.

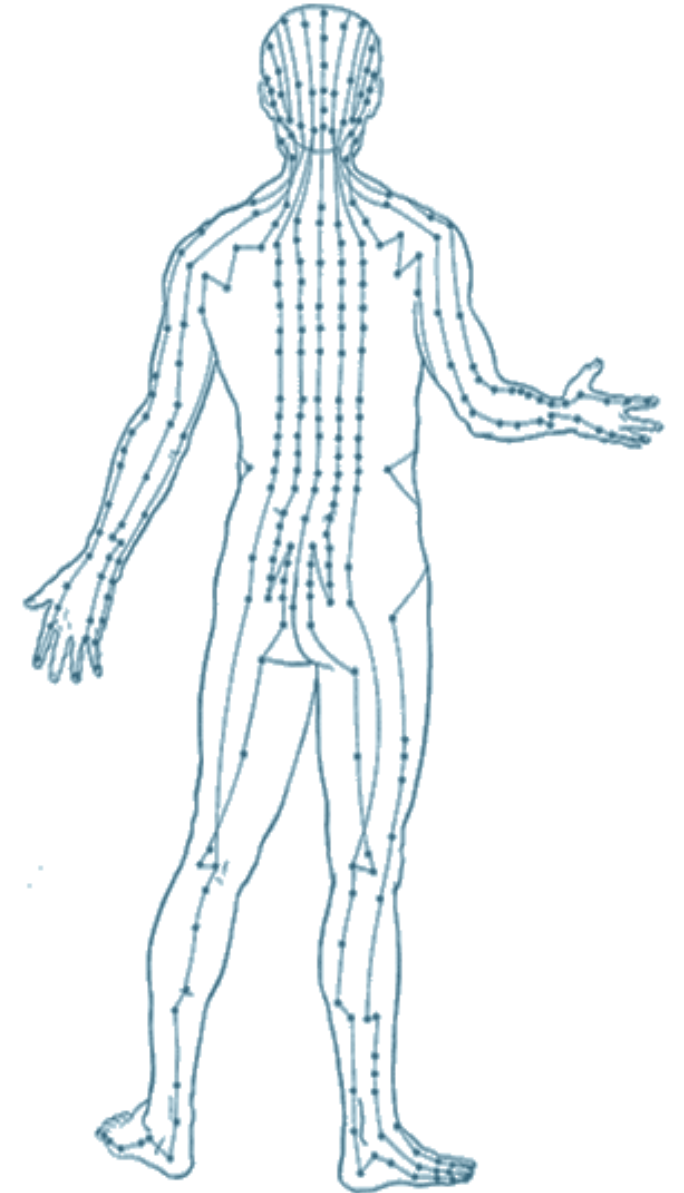




# Acupuncture

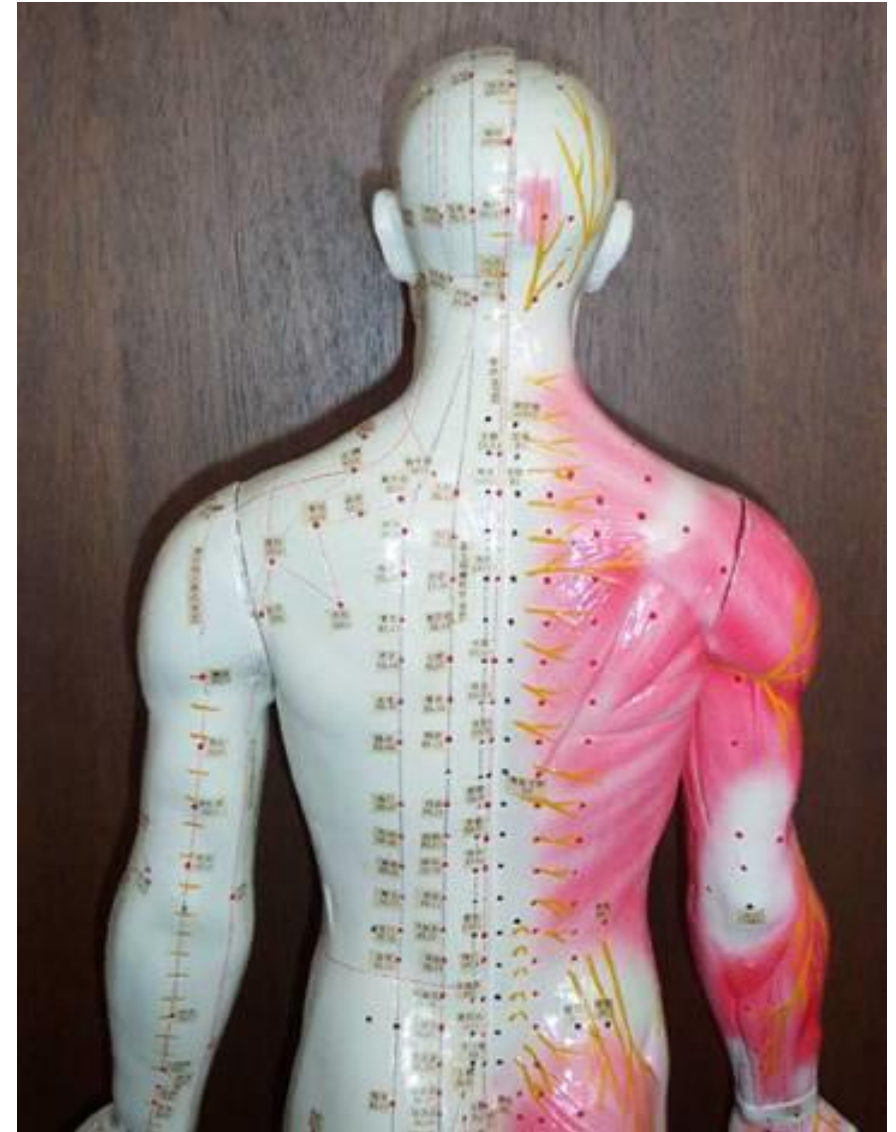
Traditional Chinese Medicine (TCM) explains acupuncture as a method for harmonizing the flow of *Qi* through a complex channel (pathway) system.

We can connect to this network of pathways through specific anatomical locations (acupoints).



# Acupuncture Channels

hundreds of points are  
located on all surfaces  
of the body

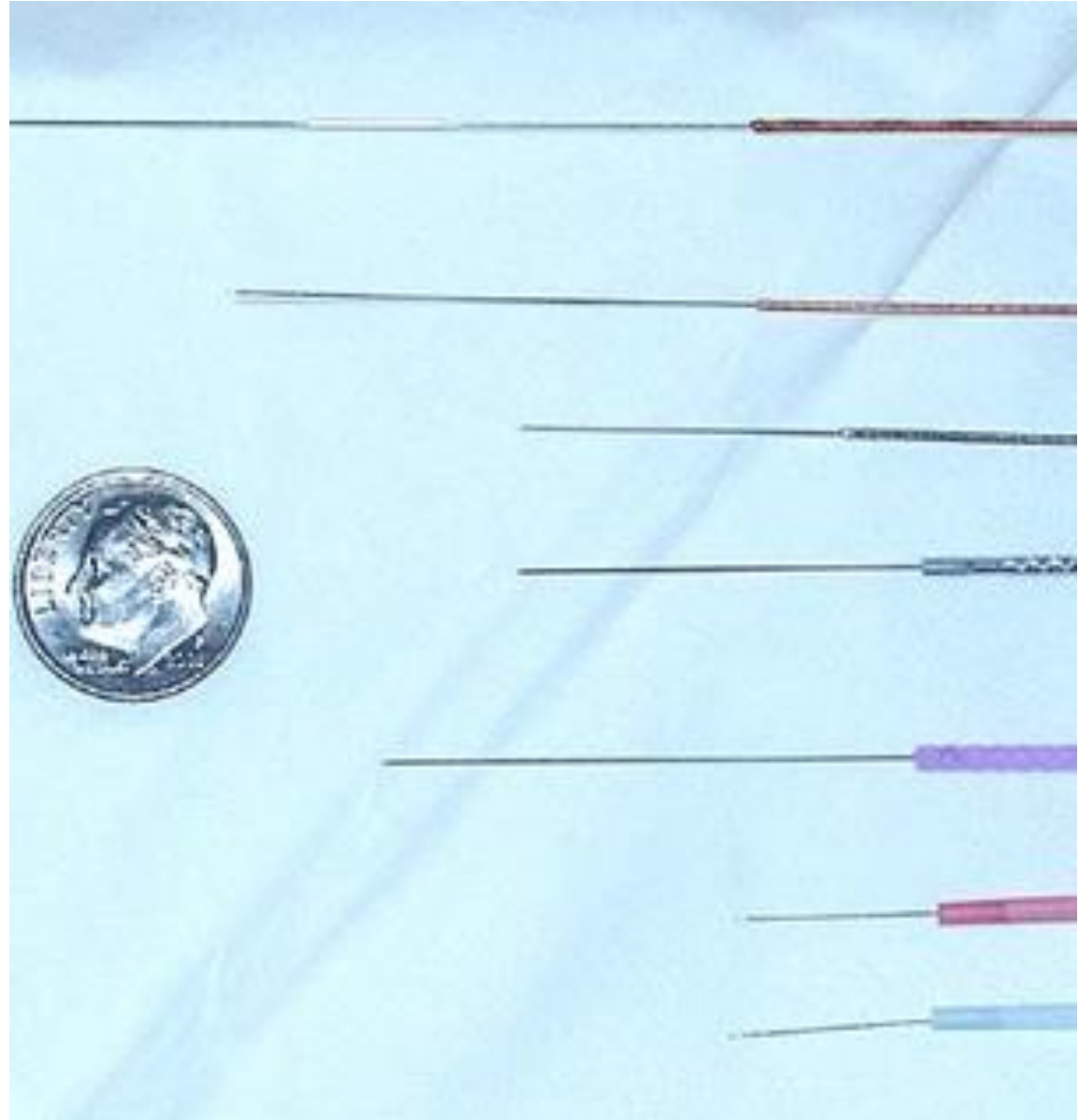


- Acupuncture needles:
  - Single use
  - Stainless steel
  - Sterile
  - Filiform needle



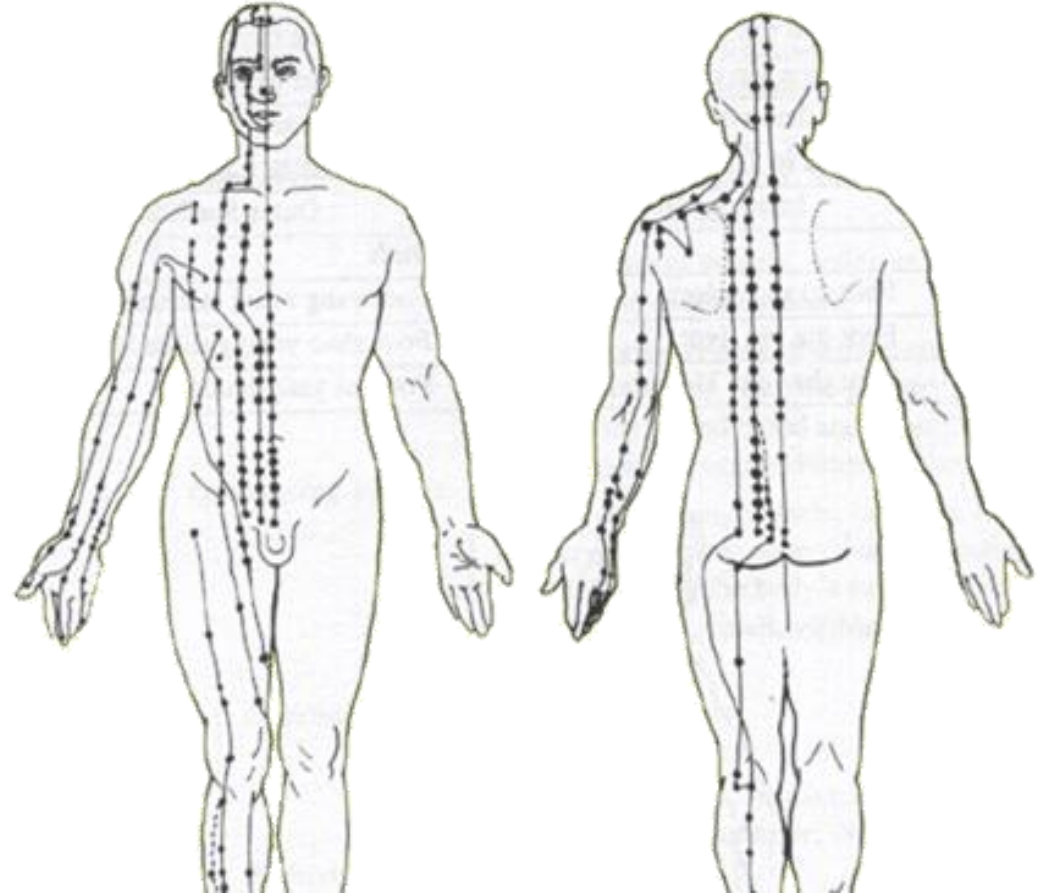


# Acupuncture Needles



# Mechanism (TCM)

- Can stimulate the body's natural healing processes and enhance circulation
- By manipulating specific acupuncture points you can restore the free flow of qi.
- We can use points locally or distally to treat a complaint



## Basic Science: Mechanism of Action

- Acupuncture stimulates the discharge of endogenous (internally-sourced) opioids, e.g. endorphins – substances that suppress the sensation of pain
- This discovery initiated a scientific and evidence-based explanation for the mechanism of acupuncture
- How is this so?
  - If the stimulation of the acupoint by the needle sets off a nerve signal to the brain to release endorphin, acupuncture may activate additional neural pathways and neurotransmitters
- Acupuncture increases endomorphin-1, beta endorphin, enkephalin, and serotonin levels in plasma and brain tissue



# Safety

**Table 1. Nonserious Adverse Events of Acupuncture Reported in 97 733 Patients**

<b>Event</b>	<b>No.</b>	<b>% of Total</b>	<b>99% Confidence Interval</b>
Needling pain	3202	3.28	3.13-3.43
Hematoma	3114	3.19	3.04-3.34
Bleeding	1346	1.38	1.28-1.48
Orthostatic problems	447	0.46	0.40-0.52
Forgotten needles	242	0.25	0.21-0.29
Other	674	0.69	0.62-0.76
Local skin irritation	173		
Deterioration of symptoms	118		
Headache	38		
Fatigue	26		
Any nonserious adverse event	6936	7.10	6.88-7.32

*Melchart et al. 2004: 97,733 patients, >760,000 treatments, ([Arch Intern Med.](#) 2004 Jan 12;164(1):104-5.): 6 patients had serious adverse events (AEs) (asthma attack, vasovagal reaction, hypertensive crisis, exacerbation of depression)*



# Biomedical theory

## Acupuncture and the treatment of pain:

- Acupuncture is known to stimulate release of endogenous opioids (i.e. endorphins, enkephalins, dynorphins).
- Studies have demonstrated that acupuncture can induce analgesia, but that these effects were blocked by naloxone, an opioid antagonist.



# Commonly Treated Conditions

What can we treat?

Acupuncture can be used to address a wide variety of health concerns

# Commonly treated conditions in the oncology setting

- Nausea/Vomiting,
- Loss of appetite
- Pain (including post-surgical)
- Manage side-effects of hormonal therapy
  - Joint pain
    - Aromatase Inhibitors (AIs)
  - Hot-flashes –
    - Selective estrogen receptor modulator (SERM)
- Chemotherapy Induced Peripheral Neuropathy (CIPN)



## Conditions treated (cont.)

- Stress/Anxiety
- Insomnia
- Gastrointestinal Tract Dysfunction
  - Constipation (OIC)
  - Diarrhea
- Headaches/Migraines
- Xerostomia

# East Asian Medicine Theory: Pain

- Pain arises when there is obstruction of the free flow of qi within the channels (meridians).
- By manipulating specific acupuncture points you can restore the free flow of qi and relieve pain.

# Detailed Intake Interview

- Chief complaint & general history
- Digestion & dietary/lifestyle habits
- Sleep, emotions, stress levels
- Energy & general vitality, aches & pains
- Nearly all aspects of day-to-day activity and general well-being



# Pulse Analysis



Detailed analyses of radial pulses are used to help determine an EAM diagnosis.



# Acupuncture Treatment



# Acupuncture treatments

- Needle insertions are usually painless
  - Insertions are typically done with guide tubes
  - Typically, between 10 and 20 needles are used per treatment
- Needles are retained for 30 mins
- A typical course of acupuncture is 8-10 treatments
- Treatments are usually given 1-2x per week
- The effects of acupuncture treatments are cumulative
- # of treatments and frequency may vary based on condition and patient response



# Acupuncture for CIPN

## Treatment is individualized

- Acupuncture can help alleviate symptoms of numbness, tingling, muscle weakness and pain in the affected area
- Common acupuncture points for neuropathy are located on the hands, feet, legs and back.
- Needles are often placed at and around the affected area

# Acupuncture for CIPN

- May use electrical stimulation on the needles to enhance effect for certain types of CIPN presentations
- May add heat to affected area with a heat lamp





# Integrative Medicine Clinical Team

**Naturopathic Physician &  
Medical Director**

**Heather Greenlee, ND, PhD**



**Manager, Integrative Medicine**

**Jonathan Siman, DACM, LAc**



**Naturopathic Physician**

**Zach Kadro, ND, MPH**



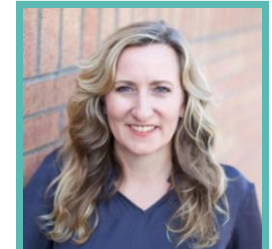
**Nurse Practitioner**

**Susanna Myers, MSN, ARNP**



**Clinical Nurse Coordinator**

**Heidi Stecher, MN, RN, OCN**



**Acupuncture Team**

**Jonathan Siman, DACM, LAc**  
**Susan Veleber, DACM, LAc**  
**Melissa Romeo, PhD, LAc**  
**Katherine Taromina, DACM, LAc**  
**Geoffrey Bender, ND, L.Ac.**





**Thank you**