

# Beyond Drugs: Integrating Osteopathic Treatments and Lifestyle Changes for Chronic Pain Management

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## OBJECTIVES

- \* Recognize non-narcotic options for the treatment of acute & chronic pain
- \* Recognize indications for using non-narcotic options
- \* Recognize role of therapeutic exercise in treating chronic pain
- \* Introduce Advanced Aqua Healing concept

## Integrative Pain Management

“To find health should be the object of the doctor. Anyone can find disease.”

—*Philosophy of Osteopathy*  
Andrew Taylor Still, M.D., D.O.

## An Iatrogenic Epidemic

“Between 1999 and 2013, the intensified focus on adequate treatment of pain led to a quadrupling of opioid prescriptions in the United States. A tragic consequence was a surge in opioid abuse and overdose deaths.”

\* By 2014, drug overdoses surpassed motor vehicle crashes as the leading cause of injury deaths.

Centers for Disease Control and Prevention. National Vital Statistics System Mortality Data.  
<http://www.cdc.gov/nchs/deaths.htm>. 2015.

## An Iatrogenic Epidemic

- \* 16,000 Americans died from an overdose of prescription pain medication, and nearly 2 million Americans either abused or were dependent on opioids.

Centers for Disease Control and Prevention. National Vital Statistics System Mortality Data. <http://www.cdc.gov/nchs/deaths.htm>. 2015.

## An Iatrogenic Epidemic

- \* During the 2003-2013 years, among adults aged 18 through 64 years, the percentage of **nonmedical** use of prescription opioids decreased. In contrast, the prevalence of prescription opioid use disorders, frequency of use, and related mortality increased.

JAMA. 2015;314(14):1468-1478. doi:10.1001/jama.2015.11859

## Integrative Pain Management

“ Nonpharmacologic therapies include cognitive behavioral therapy, self-management strategies, mindfulness-based stress reduction, yoga, acupuncture, and physical therapy”

Schiff GD, Galanter WL, Duhig J, Lodolce AE, Koronkowski MJ, Lambert BL. Principles of conservative prescribing. *Arch Intern Med.* 2011;171 (16):1433-1440.

## Integrative Pain Management Chronic Pain

Chronic pain affects nearly 100 million Americans and costs the United States up to \$635 billion per year to treat. According to the Institute of Medicine, chronic pain affects a growing number of people.

- NIH-funded study suggests brain is hard-wired for chronic pain

## Integrative Pain Management



## Integrative Pain Management

“Osteopathy is based on the perfection of Nature’s work. When all parts of the human body are in line we have health. When they are not the effect is disease.”

—Osteopathy Research and Practice

\* Andrew Taylor Still, M.D., D.O.

## Integrative Pain Management

- \* History
- \* Physical
- \* Discuss patients goals
- \* Establish realistic timeline
- \* Involve patient in treatment choices
- \* Define roles of physician & patient

## Integrative Pain Management

- \* Factors influencing Pain:
  - \* Anatomic changes
  - \* Deconditioning
  - \* Anxiety/depression
  - \* Insomnia
  - \* Smoking

## Integrative Pain Management Insomnia

- \* Stress
- \* Anxiety
- \* Depression
- \* Too much caffeine, alcohol or nicotine
- \* Pain from medical conditions, such as arthritis
- \* Changes in work shifts
- \* Poor sleep habits, such as an irregular sleep schedule
  - \* Worrying too much about not being able to sleep

## Integrative Pain Management Deconditioning

- \* Age related
- \* Disuse
- \* Disease related
- \* Obesity
- \* Pain
- \* Depression

## Integrative Pain Management

- \* Anxiety/depression
  - \* Decreased immunity
  - \* High blood pressure
  - \* Obesity
  - \* Pain perception
  - \* Insomnia

## Integrative Pain Management

- \* Accurate Physical Assessment
- \* Therapeutic Exercise
- \* Acupuncture
- \* Injections
- \* OMT



## Integrative Pain Management Physical Assessment

- \* Gait
- \* Posture
- \* Tissue texture
- \* Muscle strength
- \* Sequence of muscle recruitment

## Gait

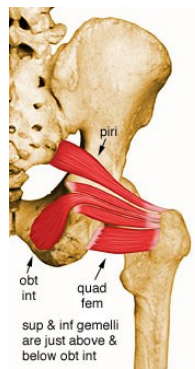
“The human being is a dynamic unit of function”



# Gait

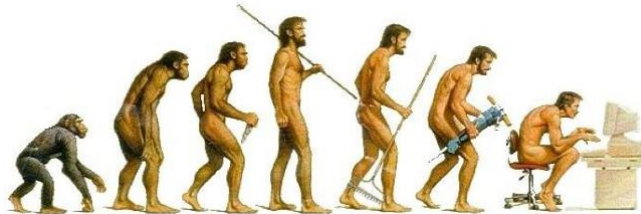


# Integrative Pain Management



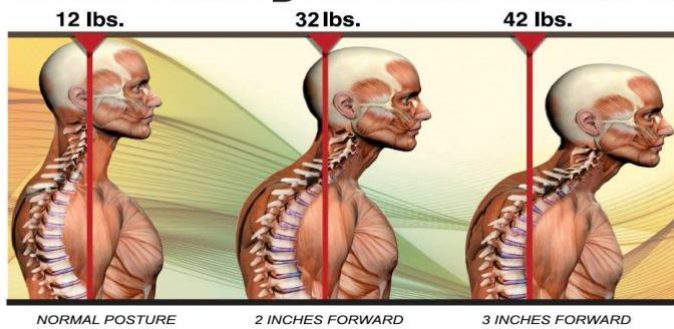
# Posture

- \* Sagittal curves
  - \* Cervical
  - \* Thoracic
  - \* Lumbar
- \* Shoulders
- \* Hips
- \* Knees

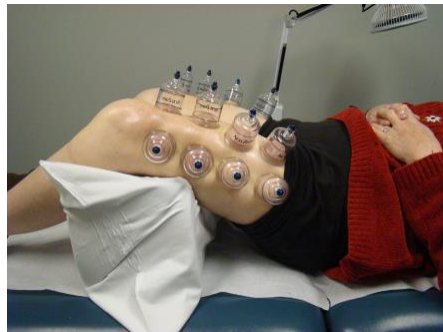
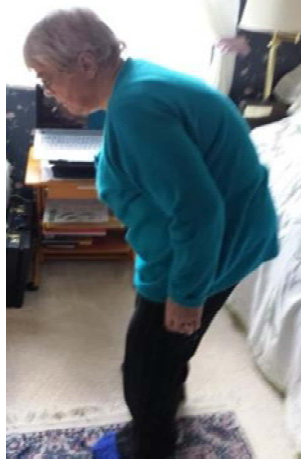


# Posture

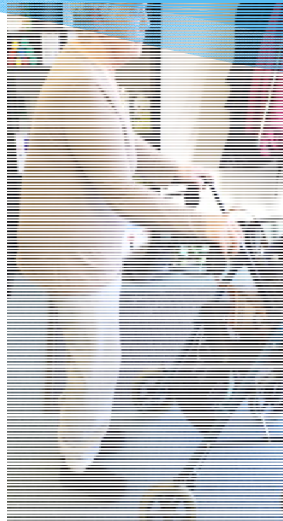
## How Heavy is Your Head?



# Posture



## Posture



## Tissue Texture

- \* TART Changes
- \* Fascial tension
- \* Muscle spasm
- \* Trigger points
- \* Chapman reflexes
- \* Restricted joint motion

## Fascial tension Muscle shortening



## Restricted Joint Motion Anterior Hip Capsule



## Integrative Pain Management

“ Structure and function are interrelated at all levels”



- \* Iliotibial Band Syndrome
- \* Tight piriformis muscle
- \* Tight hip external rotators and adductors
- \* Hip abductor weakness
- \* Lower lumbar spine dysfunction
- \* Sacroiliac joint hypomobility

## Knee pain



- \* Pes anserine bursitis:
- \* Overweight
- \* Female
- \* Diabetes
- \* Age-50 -80 y/o

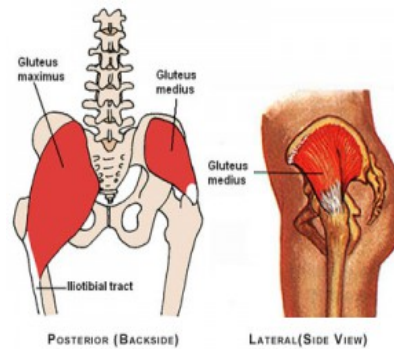


## Muscle strength

- \* Sit -to -Stand Test
  - \* Functional mobility & strength
  - \* Timed test- pt rises from chair without using arms 5 times.
- \* Community -dwelling elderly
  - \* 60-69 y/o- 11.4 sec
  - \* 70-79 y/o- 12.6 sec
  - \* 80-89 y/o-14.8 sec

## Muscle strength

- \* Trendelenburg test





## Sequence of muscle recruitment

- \* Prone Hip Extension test
  - \* 1. Hamstrings
  - \* 2. Glute max
  - \* 3. Contralateral QL
  - \* 4. Ipsi QL
  - \* 5. Contra E.Spinae
  - \* 6. Ipsi E.Spinae



## Integrative Pain Management Prescriptive exercises

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>* Tight muscles lower quarter Iliopsoas               <ul style="list-style-type: none"> <li>* Rectus femoris</li> <li>* Adductor</li> <li>* Piriformis</li> <li>* Hamstrings</li> <li>* Tensor fascia lata</li> <li>* Quadratus lumborum</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>* Weak muscles lower quarter               <ul style="list-style-type: none"> <li>* Gluteus maximus</li> <li>* Gluteus medius</li> <li>* Abdominals</li> </ul> </li> </ul> |
|---|---|

## Integrative Pain Management Muscle Imbalance

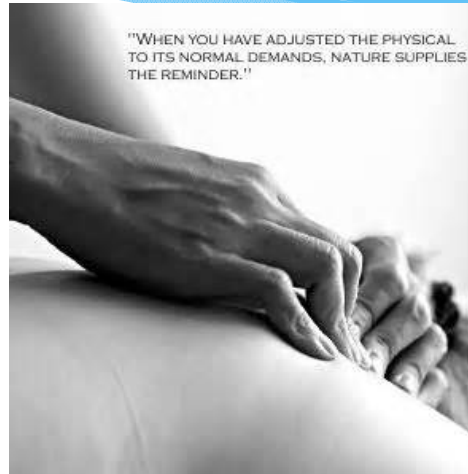
- \* Weak glute max/tight hip flexors
- \* Weak abs
- \* Short e. spinae
- \* Weak glute med.,min/short TFL/QL
- \* Anterior pelvic tilt/increased lumbar lordosis
- \* Hypermobility lower T/L spine

## Normal Firing Patterns

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>* Hip extension</li> <li>* 1. Hamstrings</li> <li>* 2. Glute max</li> <li>* 3. Contralateral QL</li> <li>* 4. Ipsi QL</li> <li>* 5. Contra E.Spinae</li> <li>* 6. Ipsi E.Spinae</li> </ul> | <ul style="list-style-type: none"> <li>* Hip Abduction</li> <li>* 1.TFL</li> <li>* 2.Glute med.</li> <li>* 3. QL</li> <li>* 4.E. Spinae</li> </ul> |
|---|--|

**Abnormal Firing Patterns = muscle imbalance**

# Integrative Pain Management

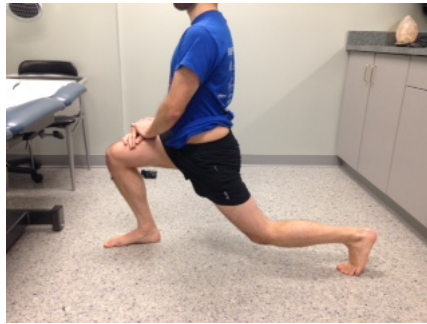


# Integrative Pain Management

- \* Therapeutic Exercise
  - \* Prescriptive exercises based on assessment
    - \* Strength
    - \* Posture
    - \* Range of motion



## Iliopsoas Stretch

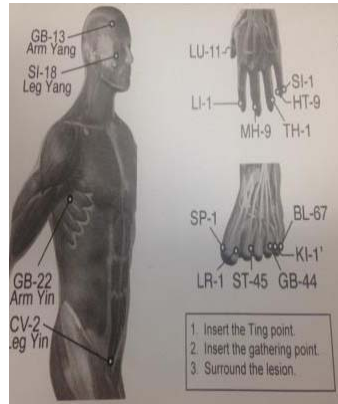


## Integrative Pain Management Acupuncture

- \* Acute
  - \* Battlefield auricular
  - \* Chinese scalp acupuncture
  - \* Tendinomuscular Meridian Treatment
- \* Chronic
  - \* PENS
  - \* Meridian points
  - \* Auricular points
  - \* Chinese scalp acupuncture
  - \* Psychoemotional conditions

## Integrative Pain Management Acupuncture for Acute Pain

### \* Tendinomuscular Meridian Treatment



## Integrative Pain Management Acupuncture

### \* Pain

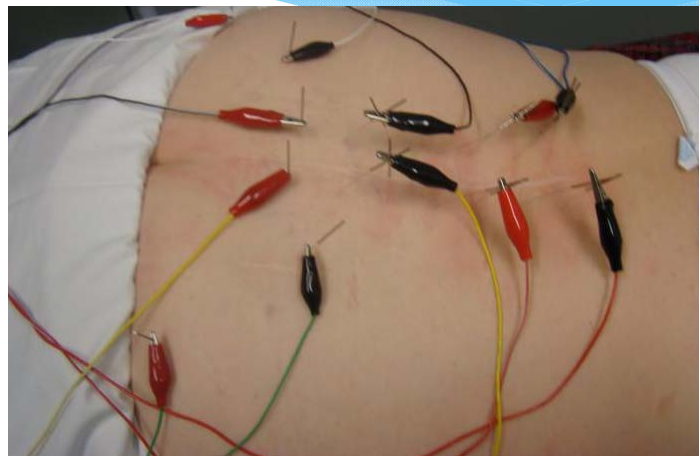
- \* Fatigue
- \* Nausea & vomiting caused by chemotherapy
- \* Neuropathy caused by chemotherapy
- \* Weight loss.
- \* Anxiety
- \* Depression
- \* Insomnia

- \* Dry mouth/dry eyes
- \* Hot flashes
- \* Nerve problems - CTS
- \* Constipation & diarrhea - IBS
- \* Interstitial Cystitis
- \* Migraine
- \* Headache
- \* Raynaud's

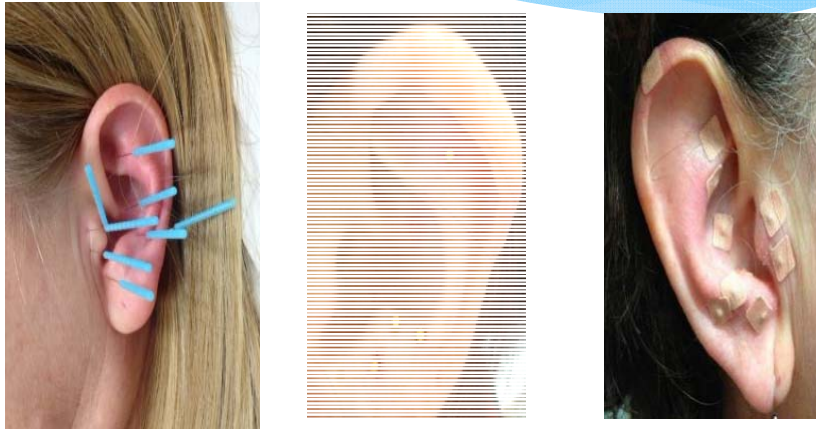
## Integrative Pain Management Acupuncture



## Integrative Pain Management Acupuncture



## Integrative Pain Management Acupuncture



## Integrative Pain Management Injections

- \* Homeopathic
  - \* Traumeel
- \* Bioregenerative
  - \* Prolotherapy
    - \* Platelet Rich Plasma (PRP)
    - \* Dextrose
  - \* Hyaluronic Acid
- \* Steroid

## Integrative Pain Management

- \* Treatment options
  - \* Trigger Point injections



**Active Ingredients:** Aconitum napellus 2X 1.32 µl, Arnica montana, radix 2X 2.20 µl, Bellis perennis 2X 1.10 µl, Belladonna 2X 2.20 µl, Calendula officinalis 2X 2.20 µl, Chamomilla 3X 2.20 µl, Echinacea 2X 0.55 µl, Echinacea purpurea 2X 0.55 µl, Hamamelis virginiana 1X 0.22 µl, Hepar sulphuris calcareum 6X 2.20 µl, Hypericum perforatum 2X 0.66 µl, Mercurius solubilis 6X 1.10 µl, Millefolium 3X 2.20 µl, Symphytum officinale 6X 2.20 µl.

**Inactive Ingredients:** Water for injection 2,179.10 µl, Sodium Chloride 19.40 µl

## Integrative Pain Management

“The rule of the artery is absolute, universal, and must be unobstructed or disease will result.”

—Autobiography of A. T. Still



# Integrative Pain Management

- \* Treatment options
  - \* Cupping



# Integrative Pain Management

- \* OMT
  - \* Five Models
    - \* Biomechanical
    - \* Respiratory-Circulatory
    - \* Neurological
    - \* Behavioral

Foundations of Osteopathic Medicine, 3<sup>rd</sup> edition, Chap. 5, pp 53-56

## Integrative Pain Management Advanced Aqua Healing

- Biomechanical –structural model

A photograph of a man floating on his back in a pool. He is wearing black shorts. Four white foam rollers are positioned around him: two under his arms and two under his knees. The water is clear and blue.

## Integrative Pain Management Advanced Aqua Healing

- \* Biomechanical –structural model

A photograph of a woman floating on her back in a pool. She is wearing a blue and white patterned swimsuit. Four white foam rollers are positioned around her: two under her arms and two under her knees. The water is clear and blue. In the background, other people are partially visible.



## Integrative Pain Management Advanced Aqua Healing



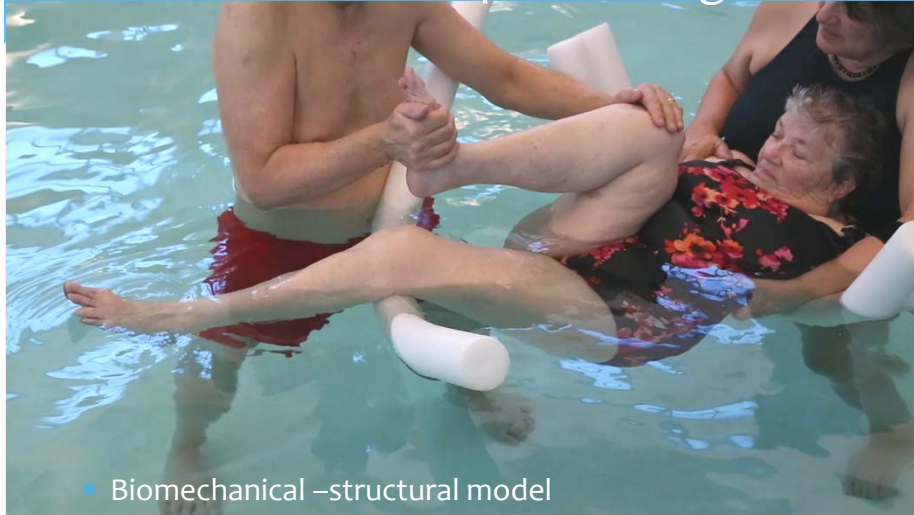
• Biomechanical –structural model

## Integrative Pain Management Advanced Aqua Healing



\* Biomechanical –structural model

## Integrative Pain Management Advanced Aqua Healing



• Biomechanical –structural model

## Integrative Pain Management Advanced Aqua Healing



• Respiratory- circulatory model



## Integrative Pain Management Advanced Aqua Healing



• Metabolic-nutritional model

The image shows a man in a pool with a blue overlay at the top containing the text 'Integrative Pain Management Advanced Aqua Healing'. A small blue asterisk icon is positioned to the left of the text 'Metabolic-nutritional model' in the bottom left corner of the image area.

## Integrative Pain Management Advanced Aqua Healing



• Behavioral-psycho-social model

The image shows two women in a pool with a blue overlay at the top containing the text 'Integrative Pain Management Advanced Aqua Healing'. A small blue asterisk icon is positioned to the left of the text 'Behavioral-psycho-social model' in the bottom left corner of the image area.

## Integrative Pain Management

Thank you for your attention

Questions are welcome



## Integrative Pain Management Deconditioning

- \* Lower back pain was most common among smokers (16.5 percent), alcohol-dependent drinkers (almost 15 percent), obese people (close to 17 percent) and those suffering from depression (slightly over 19 percent).

\* Obesity, Smoking, Drinking, Depression: All Linked to Low Back Pain  
\* MedPlus ,Wednesday, March 25, 2015

## Integrative Pain Management

- \* Anatomic Changes
  - \* Joint changes – stiffness or hypermobility
  - \* Bone changes –osteoporosis
  - \* Muscle
  - \* Neuropathy

## Integrative Pain Management

### Anatomic Changes

- \* **Joint pain**
- \* **1 out of 3** American adults suffer from some type of joint disease. Gaining **one** pound puts **four** times more stress on knee and hip joints. Although symptoms usually develop years later, osteoarthritis damage can begin as early as age **20** – especially among athletes who overtrain or sustain injuries. By age **50**, you've probably logged **75,000** miles or more on your knees.
- \* **Four keys to defeating osteoarthritis pain**
- \* **Stay lean** – Sometimes just losing excess weight relieves the pain.
- \* **Stay active** – Physically fit people suffer less arthritis pain than people who aren't active.
- \* **Stay strong** – Strong muscles help take the weight load off your joints, limiting cartilage damage. A strong core – abdominal and back muscles – keeps your body stable and balanced.

## Integrative Pain Management

### Muscle pain

- \* The most common causes are:
  - \* Injury or trauma including sprains & strains
  - \* Overuse: using a muscle too much, too soon, too often
  - \* Tension or stress
- \* Muscle pain may also be due to:
  - \* Certain drugs, including ACE inhibitors for lowering blood pressure, cocaine, and statins for lowering cholesterol
  - \* Dermatomyositis
  - \* Electrolyte imbalance ,i.e. potassium & calcium
  - \* Fibromyalgia
  - \* Infections, including influenza (the flu),
  - \* Lyme disease, malaria, muscle abscess, polio, Rocky Mountain spotted fever, trichinosis
  - \* Lupus
  - \* Polymyalgia rheumatica
  - \* Rhabdomyolysis

## Integrative Pain Management Smoking

Smoking constricts blood vessels

Low tolerance for exercise and fatigue

Osteoporosis and hip fractures

- \* The longer you smoke and the more cigarettes you consume, the greater risk of fracture in old age.
- \* longer to heal than nonsmokers and may experience more complications during the healing process.
- \* Significant bone loss has been found in older women and men who smoke
- \* Reduces Vitamin D<sub>3</sub> (1)

1. Exposure to cigarette smoke reduces vitamin D<sub>3</sub> in the blood stream and respiratory tract. Published Online April 3, 2011

## Integrative Pain Management Fibromyalgia

- \* Fibromyalgia is a common syndrome in which a person has long-term pain, spread throughout the body. The pain is most often linked to fatigue, sleep problems, headaches, depression, and anxiety.
- \* People with fibromyalgia may also have tenderness in the joints, muscles, tendons, and other soft tissues.
- \* **Causes**
- \* The cause is unknown. Possible causes or triggers of fibromyalgia include:
  - \* Physical or emotional trauma
  - \* Abnormal pain response (Areas in the brain that control pain may react differently in people with fibromyalgia.)
  - \* Sleep disturbances
  - \* Infection, such as a virus, although none has been identified
- \* Fibromyalgia is most common among women age 20 to 50.

# Integrative Pain Management



# Integrative Pain Management Nerve pain



# Integrative Pain Management



## Integrative Pain Management Somatic dysfunction

- \* Impaired or altered dysfunction of related components of the somatic ( body framework) system

**Acute somatic dysfunction**

Diagnosed by history & palpatory assessment of tenderness, asymmetry of motion and relative position, restriction of motion, and tissue texture changes.

**Chronic Somatic dysfunction**

Tenderness, itching , fibrosis, paresthesias, and tissue contraction

- \* Osteopathic Manual Treatment (OMT)