

NADA: The 5 Point Ear Acupuncture Protocol in Opioid Treatment

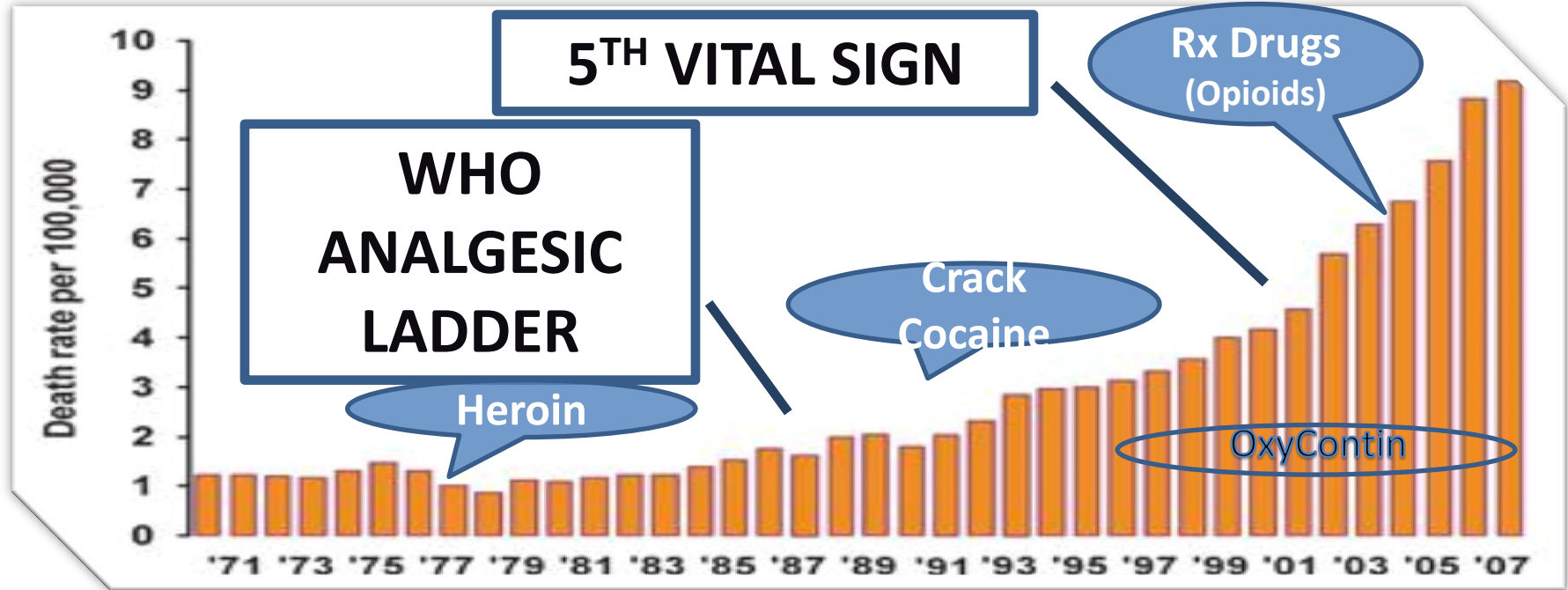


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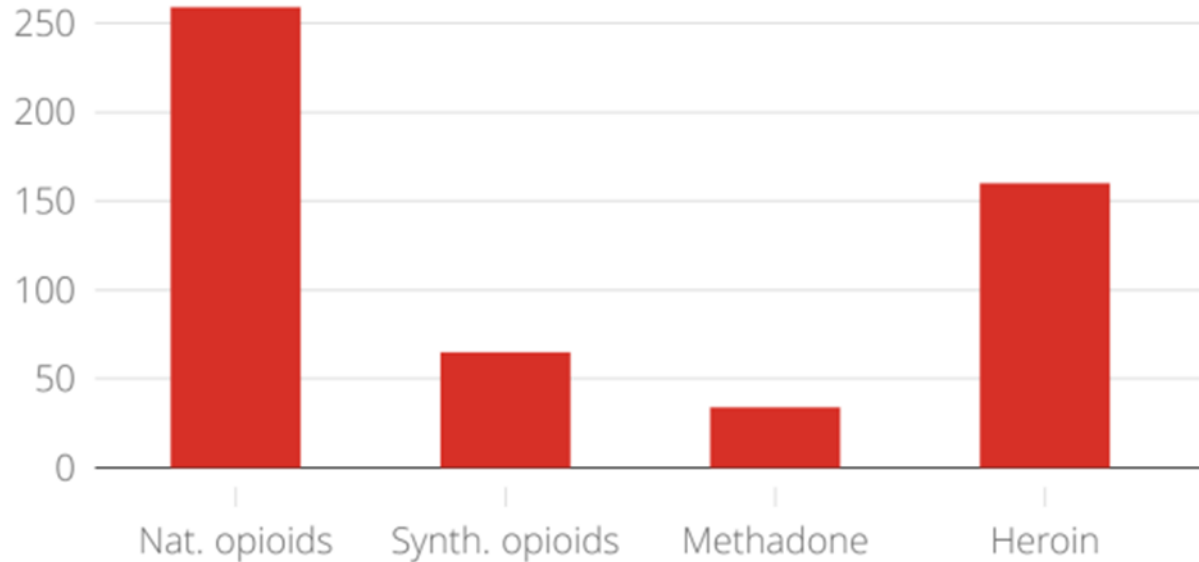
Unintended outcome of Pain as the 5th Vital Sign Epidemic of Unintentional Rx Drug Overdose and Death



CDC's Issue Brief: Unintentional drug poisoning in the United States. Unintentional drug poisoning includes drug overdoses resulting from drug misuse, drug abuse, and taking too much of a drug for medical reasons.

Heroin follows prescription opiates

Opiate overdose deaths in Colorado in 2015

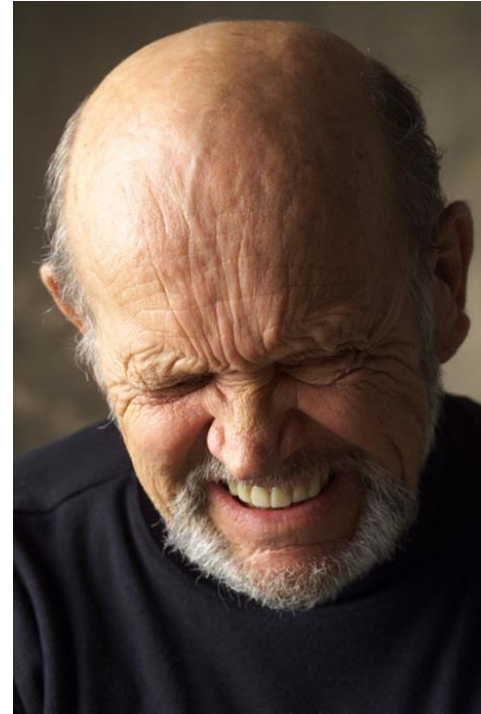


Made with Chartbuilder

Data: Colorado Department of Public Health and Environment

Rethinking Treatment of Pain

- **Acute Pain** - Examples: major surgery, trauma with broken bones, sickle cell crisis
 - Can benefit from opioid medication – short term
- **Chronic Malignant Pain** - Examples: Terminal Cancer, AIDS
 - often benefit from opioids and should be prescribed to improve quality of life if necessary
- **Chronic Non-Malignant Pain** - Examples: RA, Fibromyalgia, osteoarthritis, chronic back pain, chronic headaches, DJD, post surgery – years before, etc.
 - opioids are not the treatment of choice for these patients and can actually make them worse in the long run



Beware: “Iatrogenic Addiction”

- **Tolerance** causes patient to state this dose is no longer working
- Physician increases dose and/or adds extra narcotic for “break through” pain, which is actually often **withdrawal pain**
- This becomes a vicious cycle
- The patient does not think they are “addicted” because it was “**doctor prescribed**”
- Estimates that the US consumes over 80% of the world opioids and has 3 % of the population



Substance Abuse

- Is more often than not a trauma based illness
- People can not recover from substance abuse unless they process and deal with the trauma underlying it and
- Relearn to live without substances, in a substance free environment where they are taught skills to manage stress/feelings related to the trauma

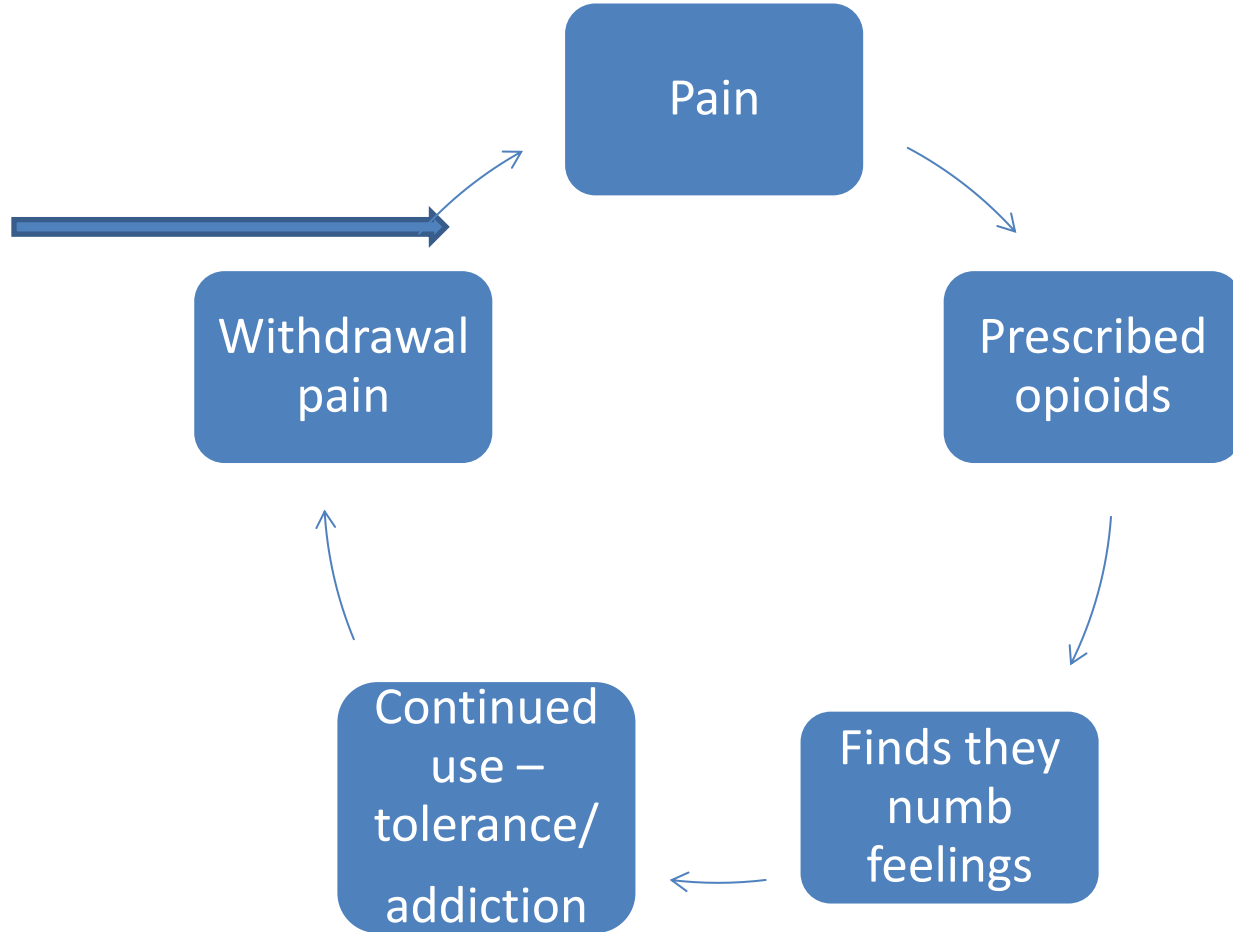


Recognize that Trauma and subsequent psychological disorders can contribute to chronic pain

- There is a high prevalence of psychological comorbidities among patients with chronic pain
- The presence of pain may cause emotional distress and exacerbate pre-morbid psychological disorders
- Emotional problems may increase perceived pain intensity, disability and perpetuate dysfunction
- Unrecognized and untreated psychological distress may interfere with successful treatment of chronic pain



Traumatic Experience



NADA is a simple tool that can help break this vicious cycle by helping with:

- opioid withdrawal symptoms
- Improved sleep
- Pain management
- PTSD
- Preventing PTSD after experiencing a trauma
 - Allows people to calm down enough to cope



Acupuncture for Addiction Treatment

- Initially discovered by Dr. Wen in 1972— neurosurgeon in Hong Kong found serendipitously that electrical stimulation of an ear point used as preoperative anesthetic abated physical withdrawal of opium
- He then published successfully treating 40 heroin-and opium-addicted individuals (Asian J Med 1973;9:138-141)
- “We don’t claim it’s a cure for drug addiction. If we can treat the withdrawal symptoms, make the patient more comfortable, and alleviate their suffering, then we have achieved something. Our treatment is not the complete answer to drug addiction.” NYT article



NADA history

- The 1970's in the South Bronx, New York was a time of a rampant opioid epidemic and social unrest
- Lincoln Hospital developed a Methadone Detox program – one of the first of its kind
- The impoverished community of the South Bronx was looking for improved treatment services as part of the social justice movement, they want more natural, non-pharmaceutical approaches

NADA history

- Michael Smith MD and colleagues adopted Dr. Wen's method and over several years, with input from the clients, they added other ear points
- In addition to lung point – they added Shen Men (spirit gate), and points for the sympathetic nervous system, kidney and liver.
- They dropped the electrical stimulation and found that manual stimulation was more “tonifying”, producing a more prolonged effect.

NADA

- The National Acupuncture Detoxification Association was founded and incorporated in 1985 by Dr. Smith and others to promote the training of behavioral health clinicians
- The term “acudetox” was adopted to differentiate it from other forms of acupuncture
- Lincoln was the largest training institute for Acupuncture Detoxification Specialists (ADS) and people came from all over the world to be trained until it closed in 2011

ADS = Acupuncture Detoxification Specialist

- The National Acupuncture Detoxification Association (NADA) has established a formal curriculum involving 70 hours of didactic and clinical training with a NADA Registered Trainer.
- In many states, anyone who completes the training and is certified as an ADS may practice the 5-point ear acupuncture for addiction or behavioral health treatment independently or under the supervision of an acupuncturist or a physician.

Use of NADA spread by word of mouth

- Primarily because there was no money behind it (as in pharmaceutical aids to treatment)
- The use of acudetox has evolved and has been found to be a useful tool in substance abuse treatment as well as
 - Drug courts/behavioral courts
 - Mental health
 - Trauma
 - Chronic pain management

Availability in Substance Abuse Treatment Programs

- Substance Abuse and Mental Health Services Administration (SAMHSA)
- 2012 national survey of programs
- 628 of 14,311 tracked programs reported using acupuncture in their program
- Which means less than 5% of patients actually receive this form of treatment

During the early 2000s – the use of acudetox took off around the world

- With the realization that the NADA protocol is helpful as a stress reduction technique
- Improves sleep, helps people feel better able to cope
- Not only in those with substance abuse issues
- But in those exposed to horrific trauma
- Terrorists' attacks – Sept 11, 2001
- Natural disasters – Forest Fires
- Acupuncturists Without Borders – 2005 and the Colorado Acupuncture Medical Reserve Corps - 2014



Western Medicine Perspective

- The effectiveness of acupuncture in the treatment of substance abuse and mental illness is difficult to study.
- It is difficult to study this treatment modality in a controlled/blinded fashion
- Some placebo-controlled studies have suggested acupuncture shows promise for treating cocaine, heroin, alcohol and nicotine dependence as well as depression and anxiety.

Use in Heroin Dependence

(Washburn et al. 1993, J Sub Abuse Tx,10,345-351)

- 100 heroin-addicted adults (not in methadone treatment) randomly assigned
- Treatment group- needles in four treatment points (sympathetic, Shen Men, kidney and lung points)
- Control group - needles in sham points, geographically close to standard points but not thought to be specific for addiction.

Use in Heroin Dependence

(Washburn et al. 1993, J Sub Abuse Tx,10,345-351)

- Subjects receiving the standard treatment for addiction attended the clinic more days than subjects in the sham group and were more likely to return for additional treatment beyond the 21-day detoxification period.

Use of NADA for Cocaine Dependence in Heroin Dependent Patients on Methadone Maintenance

(Avants et al. Arch Intern Med. 2000;160:2305-2312)

- Eighty-two, cocaine-dependent, methadone maintained patients were randomly assigned
- Auricular acupuncture using 3-5 points (sympathetic, Shen Men, kidney, lung and liver)
- Sham acupuncture (needles inserted subcutaneously at four points along the helix)
- No-needle relaxation control.

Results (Avants et al. 2000)

- Analysis of longitudinal urine toxicology data indicated - NADA auricular acupuncture protocol was significantly more effective in reducing cocaine use than either the relaxation control ($P = .01$) or the needle insertion control ($P = .05$).
- Patients who completed the 8-week course of acupuncture abstained from cocaine significantly longer during treatment and were more likely to be abstinent at completion than either of the control conditions ($P < .05$).

Large, Multi-Site, Randomized, Single Blinded Clinical Trial
(Margolin et al. JAMA 2002;287:55-63)

- 620 patients in six sites throughout the US
- They found that the NADA protocol was not more effective than sham or relaxation control in reducing cocaine use
- Concluded: The NADA protocol is not a stand alone treatment for cocaine addiction
- Sadly – this was a “water shed” moment where much NADA research and application stopped

Analysis of what happened

- Margolin, Avants and Holford *J Altern Complem Med.* 2002;8(2):111-121
- Cash incentives rewarding attendance, not abstinence
 - Financial incentives - \$2 after each treatment session and \$10 each week for 2 sessions and 3 urines no matter whether positive or negative
- Elimination of coping skills therapy group
 - Counseling sessions poorly attended

Use of Auricular Acupuncture in Smoking Cessation

(Beir et al. Am J Pub Health 2002;92:1642-1647)

- Compared the NADA protocol alone to the NADA protocol plus smoking cessation education to sham acupuncture plus the smoking cessation education
- Combination of acupuncture plus education 40% cessation, compared to 22% for sham plus education to 10% for acupuncture alone



NADA and Self-Injurious Behavior

- Nixon MK, Cheng M, Cloutier P. An open trial of auricular acupuncture for the treatment of repetitive self-injury in depressed adolescents. *Canadian Child and Adolescent Psychiatry Review*. 2003;12:10-12.
 - 9 adolescents, NADA treatments once a week for three weeks with metallic balls on tape on all five points after needles
 - Comparison of baseline frequency of SIB and urges to one week and four weeks post treatment, also BDI, HDRS, STAXI
 - Significant reduction in SIB at 1 week ($p=.004$), and at 4 weeks ($p=.03$)
 - No change on depression rating scales but significant reduction in internalizing anger scores
 - “I felt as if the stress was relieved.” “I was calmer and didn’t have any urges (to self injure).” treatments “three times per week would be better.”

Auricular Acupuncture for Dental Anxiety: A RCT

(Karst et al. Anesthesia and Analgesia 2007;104:295-300)

- 67 patients randomized to auricular acupuncture, placebo auricular acupuncture and intranasal midazolam
- Assessed for anxiety and sedation
- No differences between auricular acupuncture and intranasal midazolam could be detected
- Anxiety-reducing effects started as early as 30 minutes after insertion of needles or application of midazolam
- Duration of sedation less prolonged in the acupuncture group



Cost-effectiveness in substance abuse treatment

Santasiero RP et al. Med Acupuncture 2005;16:39-42

- 22 patients treated with NADA, 22 without, all received treatment as usual in an outpatient HMO chemical dependency program
- At 6 months follow-up the acupuncture group had
 - Higher program completion (74% vs 44%)
 - Higher rates of negative urines (96% vs 85%)
 - Fewer inpatient rehab days (39 vs 57 days)
 - Cost incurred for acupuncture group = \$15,580
 - Cost for non-acupuncture group = \$17,890



Governmental support

- 1996 – Center for Substance Abuse Treatment (CSAT) of the NIH published TIP19 “Detoxification from alcohol and other drugs” – giving modest support for the use of acupuncture in opiate detoxification
- 1997 – “Acupuncture, NIH Consensus Statement” – acupuncture may be useful as an adjunct treatment in a comprehensive treatment program
- 2006 – CSAT updated TIP 19 with TIP 45 – supporting the use of NADA as an adjunct in substance abuse treatment

Since 2010 there has been a renewed interest in the NADA protocol and studies are coming out regularly – the most promising are those that compare NADA plus usual care to usual care alone.

NADA in pregnant opiate dependent mothers and NAS in newborns

- Janssen et al. *Subst Abuse Treat Prev Policy*.2012;7:48.
- NADA + methadone vs methadone alone
- Daily NADA sessions – 45 min
- Only 28% compliance with the NADA but in those who used it:
 - Mothers could tolerate larger reductions in their methadone dose prior to delivery
 - Babies required almost 2 fewer days of morphine treatment and shorter period of NAS



Comparing NADA and relaxation response in Veterans with substance abuse

Chang BH and Sommers E Am J Addictions 2014;23:129-136

- 3 arm randomized control trial on residents in a homeless veteran rehabilitation program
 - NADA group twice weekly sessions for 10 weeks
 - RR group – weekly group session for 10 weeks – learn and practice 5 techniques daily on their own
 - Usual care group – all three groups received UC
- Significant reduction in both craving and anxiety occurred after just one session of each intervention with continual reduction after subsequent sessions – both equally effective

NADA for protracted withdrawal

- Qualitative study – 15 outpatients, NADA 2 times per week for 5 weeks – 40 min sessions
- No major negative symptoms
- Improvement in cravings and protracted withdrawal symptoms
- Bergdahl L, Berman AH, Haglund K. Patients' experience of auricular acupuncture during protracted withdrawal. *J Psych Men Health Nurs*. 2014;21:163–169.

NADA in psychiatric patients with anxiety disorders (AD) and major depression (MDD)

- Addition of NADA compared with Progressive Muscle Relaxation in patients with AD or MDD in usual care treatment
- NADA 2 times per week for 2 weeks, 30 min
- Using a visual analog scale (VAS) – both treatments showed improvement in tension, anxiety, anger, and aggression
- There was no control for usual care
- De Lorent L, Agorastos A, Yassouridis A, Kellner M, Muhtz C. *J Acupunct Meridian Stud.* 2016;9:191–199.

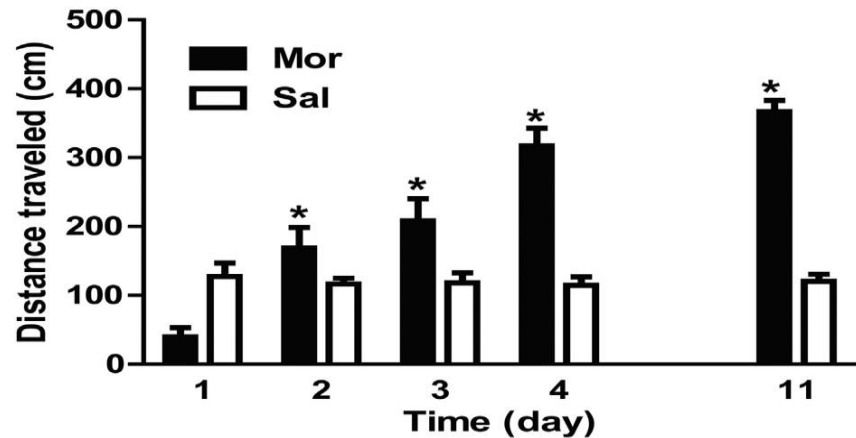
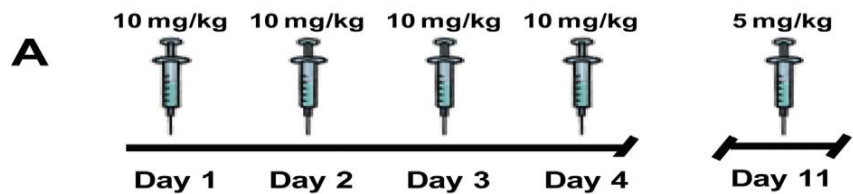
NADA in patients with chronic insomnia

Bergdahl L et al. Sleep Disorders 2016;
<http://dx.doi.org/10.1155/2016/7057282>

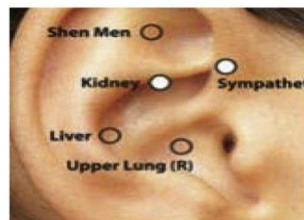
- NADA compared with CBT-i in patients with chronic insomnia >6months – taking Z-drugs
- NADA 2 times per week for 4 weeks, 45 min
- Both resulted in decrease in insomnia severity index (ISI) score
- CBT-i was superior to NADA in terms of changing dysfunctional beliefs about sleep
- Would have been interesting to see them combine the two treatments

Animal Model for NADA

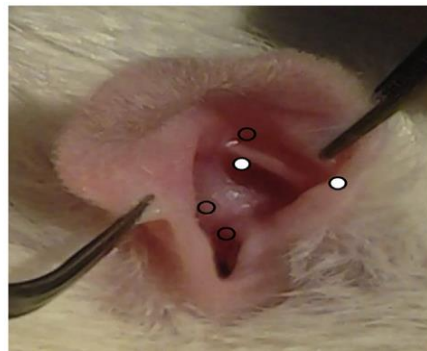
- Kailasam, Anand and Melyan. Establishing an animal model for National Acupuncture Detoxification Association (NADA) auricular acupuncture protocol. Neuroscience Letters. 2016;624:29-33.
- NADA can reduce morphine-induced locomotor sensitization in rats (comparable to cravings in humans) and prevents the development of morphine tolerance in rats. NADA also aided the earlier onset of analgesia from morphine.



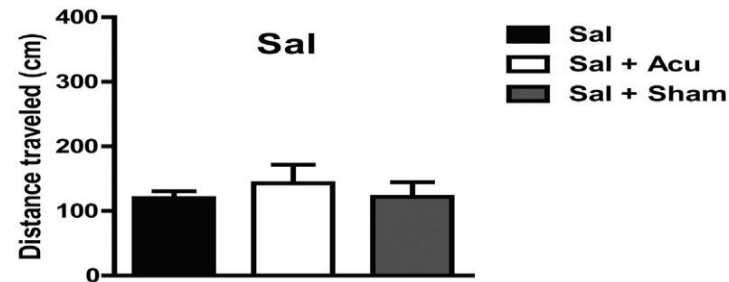
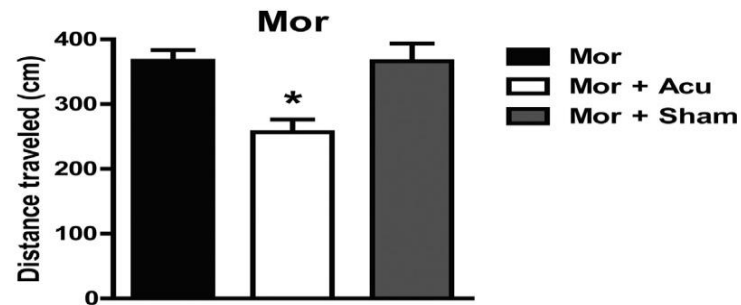
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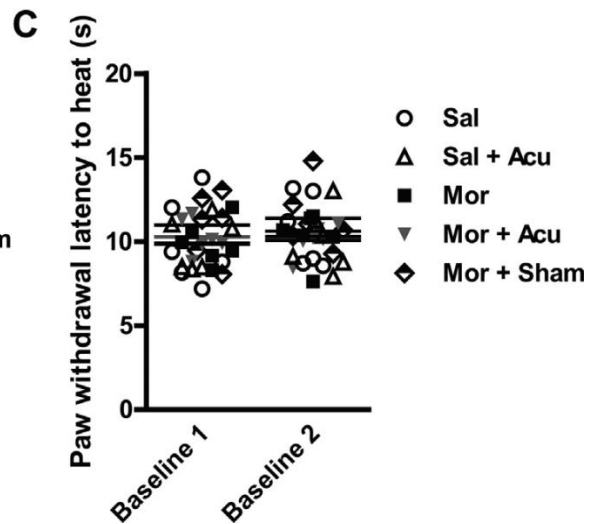
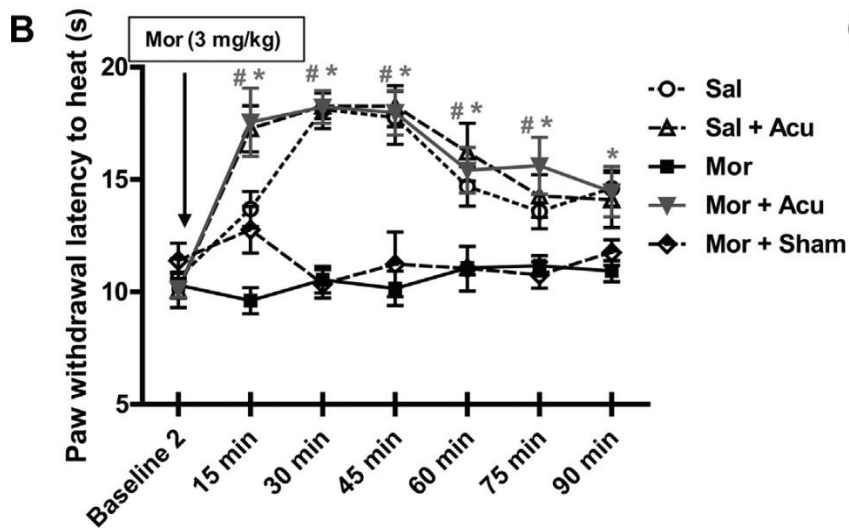
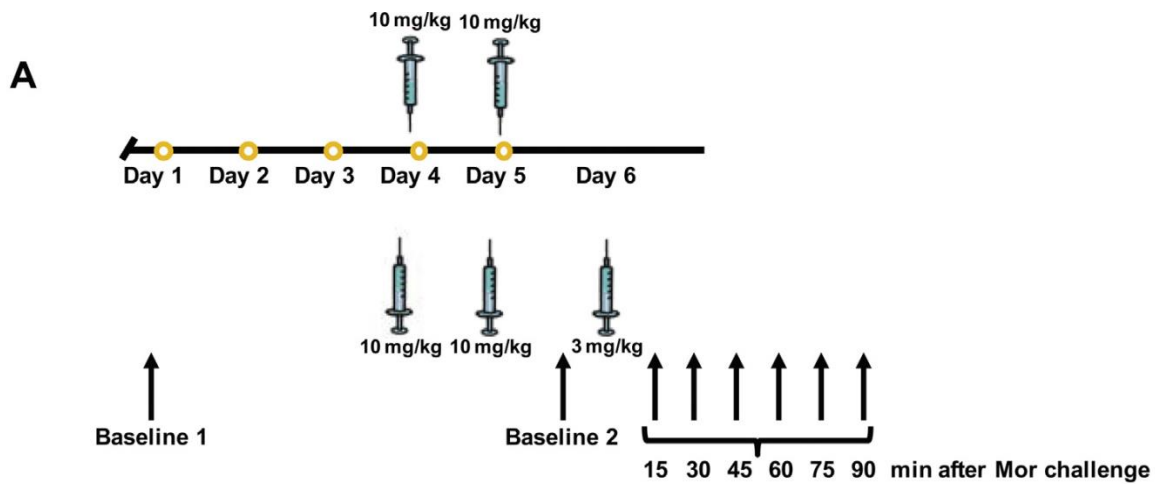


www.nadauk.com



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For all these studies and more

- Stuyt EB and Voyles CA. The National Acupuncture Detoxification Association protocol, auricular acupuncture to support patients with substance abuse and behavioral health disorders: current perspectives. *Substance Abuse and Rehabilitation*. 2016;7:169-180.



Chinese Medicine Perspective

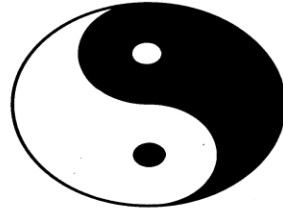
- There is no separation between body, mind, and spirit.
- These are perceived as a whole and empowered by the energy or life force, Qi (pronounced 'chee').
- Symptoms of illness, whether mental, emotional or physical, are considered an indication of imbalance of Qi.
- Acupuncture's goal is to help the patient's Qi achieve balance.

氣
Qi

Chinese Medicine

- Developed over thousands of years – based on observations of nature, very preventative in philosophy
- “Maintaining order rather than correcting disorder is the ultimate principle of wisdom. To cure disease after it has appeared is like digging a well when one already feels thirsty, or forging weapons after the war has already begun.” *Nei Jing* – second century B.C.
- Yin and Yang are reflected in the organs in the body





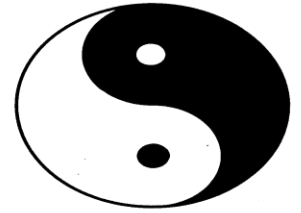
YIN

- Dark
- Nighttime
- Internal
- Moon
- Water
- Blood/fluids
- Female
- Winter
- Passive

YANG

- Light
- Daytime
- External
- Sun
- Fire
- Bone/structure
- Male
- Summer
- Active

Balancing Qi



- Important to keep it full and keep it moving smoothly.
- Qi is kept full by nurturing - the “Yin” aspect.
- The “Yang” aspect is responsible for the movement of Qi.
- Qi is the commander of Blood; Blood is the mother of Qi.

Addiction “empty fire” or Xu Huo

- Lack of calm inner tone – depletion of Yin
- Heat of aggressiveness burns out of control when inner calm is lost – unbalanced Yang
- It is easy to be confused by empty fire and many attempt to treat this by “putting out the fire” with sedatives – which only worsen the situation
- Acupuncture helps balance Yin and Yang -restoring inner calm/control

Holistic Approach: example: how Chinese medicine views the Liver

- physical liver with all its physiology
- mental abilities of planning and implementing
- emotional capabilities of anger and determination
- spiritual activity of hope.

Functions of the five points used in the NADA protocol

- Sympathetic
 - Used for numerous diseases related to disruption in both sympathetic and parasympathetic nervous systems
 - decreases flight or fight reflex
 - Strong analgesic and relaxant effect on internal organs
 - Dilates blood vessels, lowers blood pressure
- Shen Men (Gateway to the Spirit)
 - Regulates excitation and inhibition of the cerebral cortex
 - Produces sedative and anti-allergy effects
 - Used in many neuropsychiatric disorders

Functions of points - continued

- Kidney
 - Strengthening point for the cerebrum, hematopoietic system and kidneys
 - Used for neurasthenia, lassitude, headache and urogenital problems
 - Associated with will power, coping with fear and new growth
- Liver
 - Used for hepatitis, anemia, neuralgia, muscle spasms, and eye diseases
 - Associated with resolving aggression, spiritual quality of hope
- Lung
 - Used for analgesia, sweating, and various respiratory conditions
 - Associated with the grieving process

How the Science of Acupuncture Explains the Mysteries of Western Medicine

- Acupuncture shares a great deal with embryological science
- Collagen forming fascia plays a big role in development – separating ectoderm from mesoderm and endoderm layers and folding of the embryo during development of organs
- “The Spark in the Machine” by Daniel Keown

Proposed model of physiological effects seen in acupuncture

(Langevin & Yandow, Anatom Rec 2002;269:257-265)

- Acupuncture meridians
- Acupuncture points
- Qi
- Needle grasp
- De qi sensation
- Connective tissue plains
- Convergence of connective tissue plains
- Sum of all body energetic phenomena
- Tissue winding and/or contraction of fibroblasts around needle
- Stimulation of connective tissue sensory mechanoreceptors

Needle Grasp – De Qi

(Langevin HM, Churchill DL,
Cipolla MJ. FASEB J 2001;15:2275-2282)

- Widely viewed as essential to the therapeutic effect of acupuncture
- Acupuncturist feels pulling and increased resistance to further movement of needle
- Patient feels an ache or heaviness in area surrounding the needle



Beyond the Endorphin Concept

- Hypothesis that acupuncture may amplify the interaction between neuropeptides and cytokines (Bonta, Med Hypothesis 2002;58:221-224)
- Does winding of the connective tissues by the needle release cytokines from immune cells (ie. interleukin-4, interleukin-10) that modulate the inflammatory process and interact with neuropeptides (ie. endorphin) through meridian channels of liquid crystalline collagen fibers of the connective tissue?

Expanding role of Microglia

- Lin L et al. Acupuncture-induced analgesia: the role of microglial inhibition. *Cell Transplantation* 2016;25:621-628
- Microglia is the connective tissue in the nervous system
- “The Other Brain” by R. Douglas Fields

Use of NADA in Hospital Systems

- In the Circle Program at CMHIP since 2000 – 4-5 times per week
 - Benefits of Auricular Acupuncture in Tobacco-Free Inpatient Dual-Diagnosis Treatment. Stuyt EB. J Dual Diagnosis, 2006;2(4):41-52
 - Ear acupuncture for co-occurring substance abuse and borderline personality disorder: an aid to encourage treatment retention and tobacco cessation. Stuyt EB. Acupunct Med 32, 2014, 318-324.
- NADA helps with
 - Distress tolerance
 - Anger/acting out
 - Developing therapeutic alliance
 - Improved motivation to engage in treatment
 - Decreasing opioid withdrawal symptoms

Use of NADA in Hospital Systems

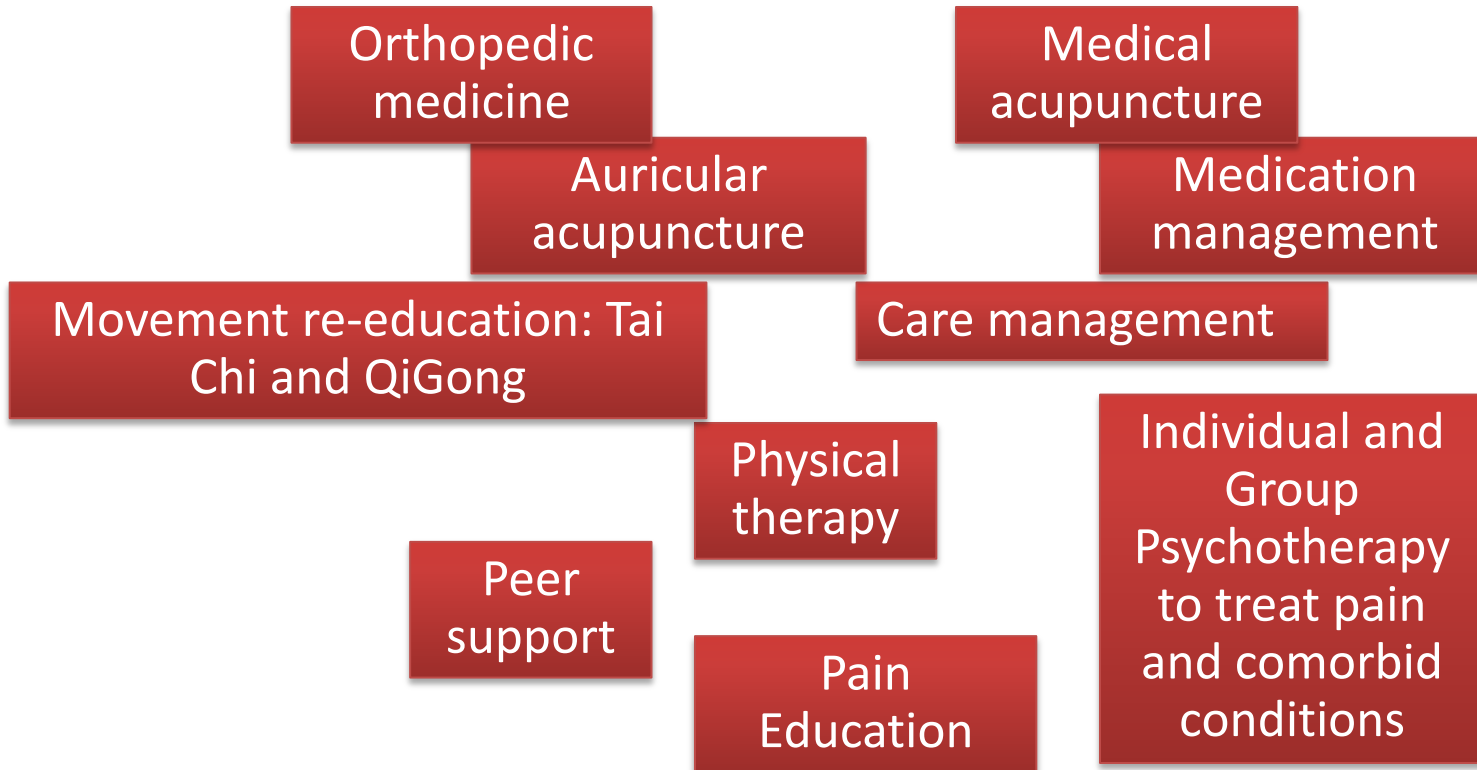
- Royal Victoria Regional Health Centre – Barrie, Ontario – largest hospital in Simcoe County, serving over 546,000 people, 2,500 employees, 300 physicians
 - In one year 8,700 treatments provided to patients and also staff in the Wellness program, 4 programs have integrated NADA into their treatment approach
- St Mary-Corwin Medical Center in Pueblo -Kari Gant Chandler, MA, LPC, Psychiatric Liaison Manager
 - Something to offer in the ED to patients seeking pain medications
- VA hospital in Richmond, Virginia

Veteran's Integrative Pain (VIP) Center:

A program for high risk patients on chronic opioids

At the Hunter Holmes McGuire VA
in Richmond, VA
Maggie Roma ANP-BC
Clinic Administrative Coordinator

Veteran's Integrative Pain Center



Auricular Acupuncture

- Daily Drop-in auricular acupuncture group
- Meets noon daily for 60 minutes
- Utilize Mental Health group rooms with comfortable seating and background music
- Trained providers may utilize NADA protocol during individual sessions when appropriate

Veteran Testimonials

- “I simply sleep better when I attend group that day”
- “I haven’t noticed anything after I leave, but I like being in the room during that hour”
- “My wife insists that I come because I’m different at home that night”
- “I’m less anxious. I need to be here”
- “This almost works like a drug. I came in here miserable with a tension headache and now it’s gone”

Integrated Health Project Pilot

Portland, Oregon

- Initiated to treat patients in a family practice with behavioral health conditions and pain
- Integrated clinical team with PCP, acupuncture both NADA and full body, and behavioral health
- Treatment may consist of one on one therapy, group therapy based in either CBT or DBT, acupuncture, and medication management for psychiatric disorders.
- Medication not initiated nor maintained without client participating in other parts of the project
- Acupuncture is covered by Medicaid

Reasons to Incorporate NADA into your treatment program

- Effective tool to add to your staff's tool box
- Detoxing off opiates – use with or without medication including buprenorphine, Methadone
- Problems sleeping in early recovery
- Anxiety about being in treatment, not able to use
- Enable program to go tobacco free

Cost Effective

- Primary cost is training staff – but can train your staff – don't have to hire someone from the outside, then can be offered when needed
- Supplies cost about \$0.50 per treatment
- Minimal side effects
- For more information - www.acudetox.com

Important Aspects to Recognize

- This is a non-verbal, non-threatening treatment that has been shown to increase retention and participation in treatment – allows people to be more open to other aspects of treatment
- This is often the first time the person has experienced sitting still and not having to do anything – introduces people to mindfulness
- This is not a stand-alone treatment – it is a safe, effective and low cost addition to a multi-pronged treatment approach that has minimal side effects

Michael Smith – Founder of NADA

“There are times when verbal interaction is trampling on the flowers. Non-verbal treatment is important because no trust is needed at first. The patients don’t trust themselves, why should they trust you?”



I Ching

10th – 4th Century BC



“The radiance of your smile, your speech, your conduct and your way of life weaves a cohesive and beneficial medicine for all sick minds and bodies.”



Questions?