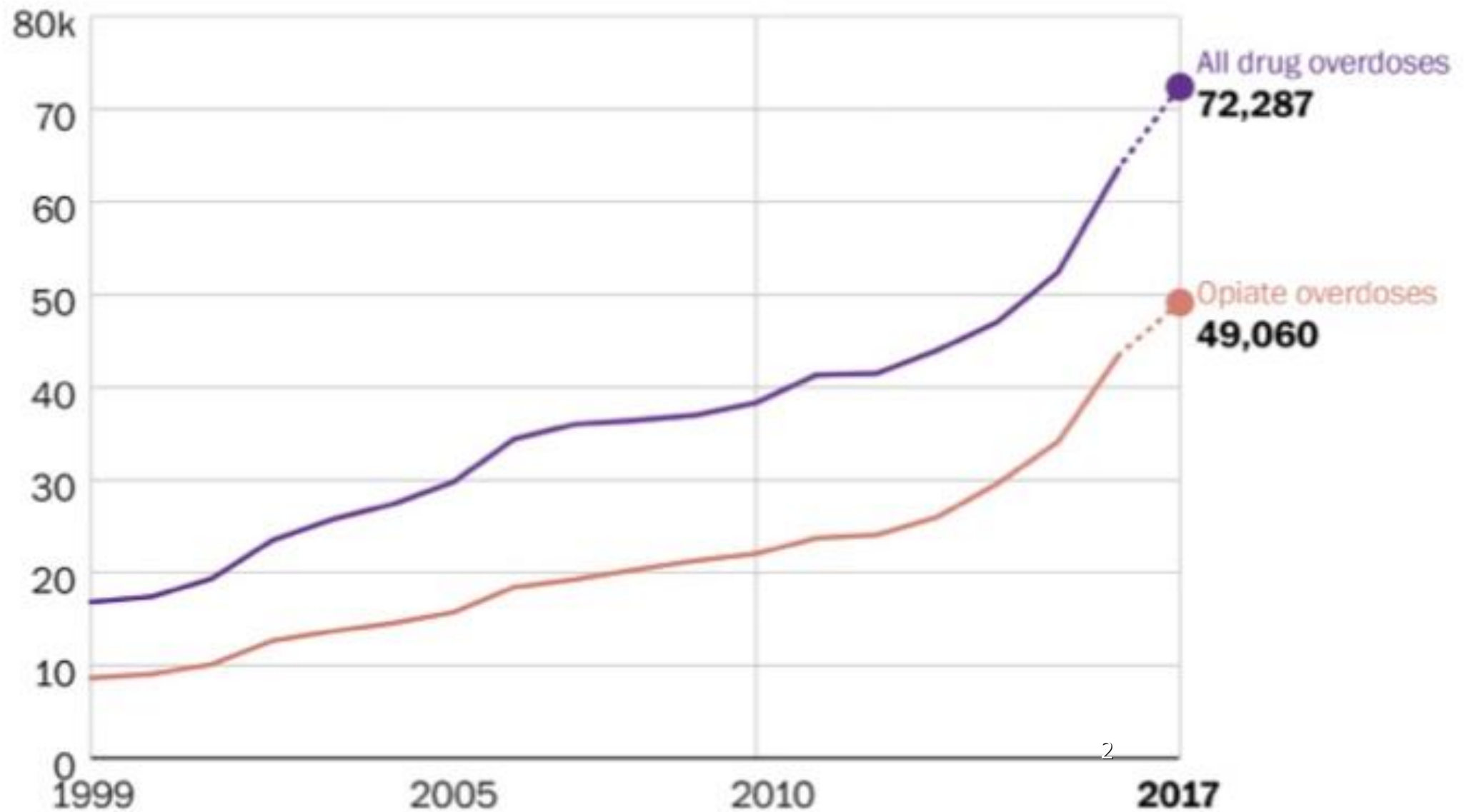


ACUPUNCTURE AND PEDIATRIC PAIN MANAGEMENT: What's the Point?



Overdose deaths hit record high in 2017

Annual deaths from all drug overdoses and opiate overdoses



Note: 2017 figures are provisional

Source: Centers for Disease Control and Prevention

WAPO.ST/WONKBLOG

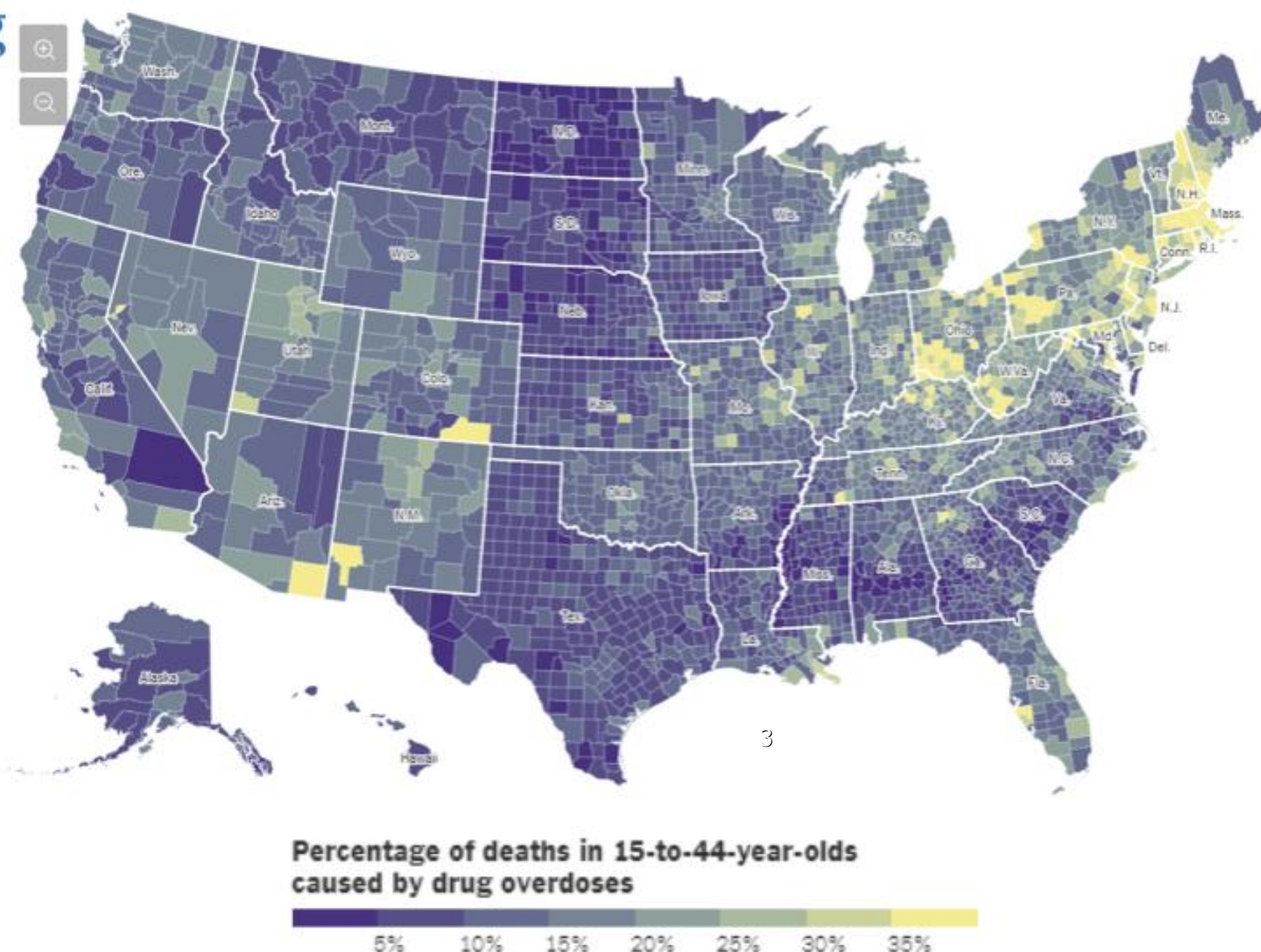
Drug Deaths in America Are Rising Faster Than Ever

By JOSH KATZ JUNE 5, 2017

AKRON, Ohio — Drug overdose deaths in 2016 most likely exceeded 59,000, the largest annual jump ever recorded in the United States. . .

Drug overdoses are now the leading cause of death among Americans under 50.

The New York Times



OUTLINE

- A. Basic theory of TCM and acupuncture
- B. Acupuncture and acute pain modulation-mechanism of action
- C. Effect of acupuncture modalities on acute and chronic opioid consumption



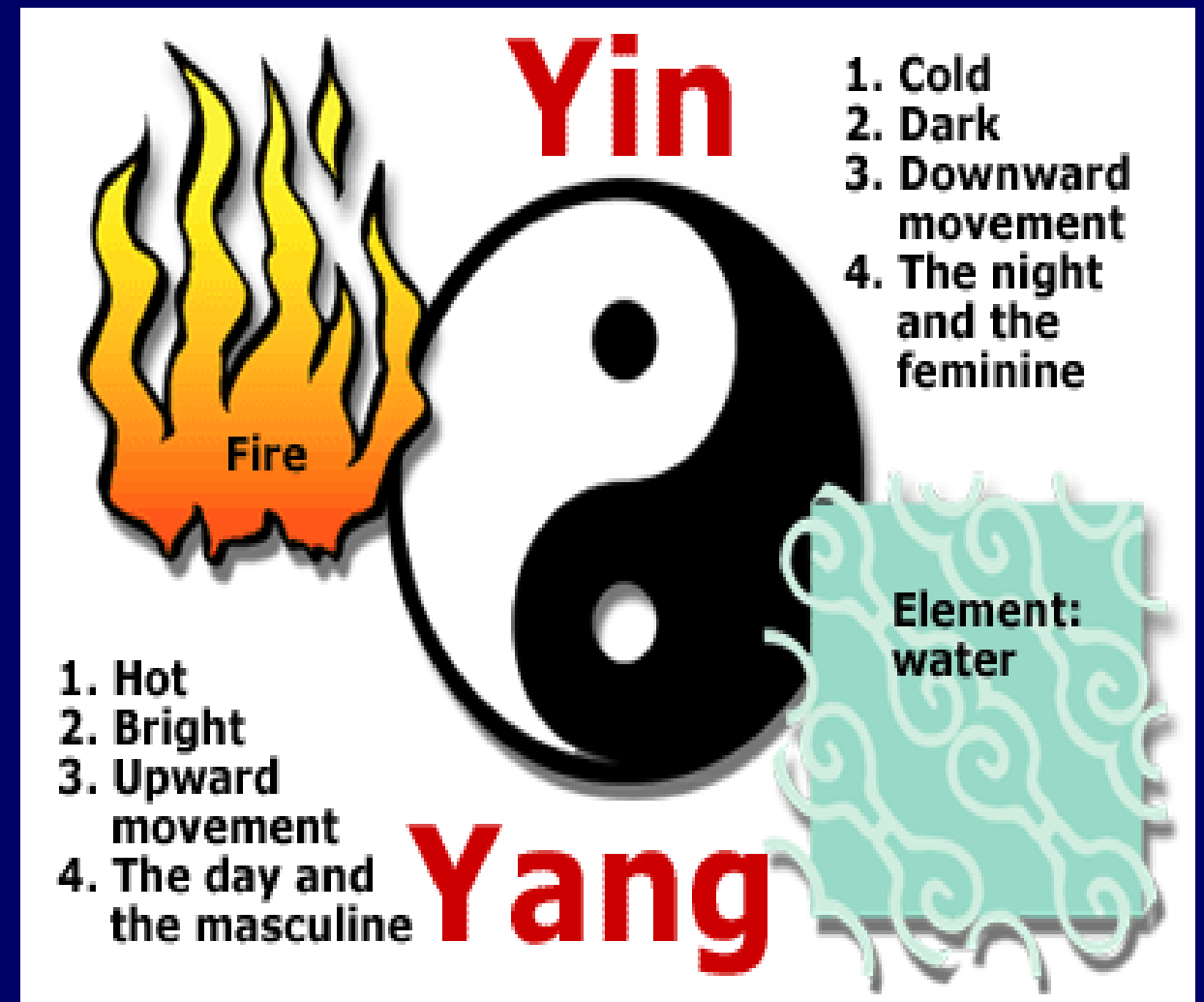
THAT'S ODD... MY NECK SUDDENLY
FEELS BETTER...



EARLY ACUPUNCTURE

YIN-YANG THEORY

- A. Yin-Yang theory - Most fundamental concept of TCM theory
- B. Symbol represents the philosophy of TCM
- C. All things in the universe are predominantly yin or yang, including organs
- D. Sum total of yin and yang must be in balance for good health



TCM Theory

- A. Illness caused by imbalance of yin and yang
- B. Treatment aimed at replenishing yin or yang through
 - acupuncture
 - herbal remedy
 - diet/exercise







BASIC THEORY OF ACUPUNCTURE

A. Three components: Qi, Jing-luo, Xue

1. Qi

- a. Vital energy, energy of life

2. Jing-luo

- a. Meridians, or channels, through which Qi circulates, regulating yin and yang
- b. Different meridians flow to different body systems, each organ having a corresponding meridian

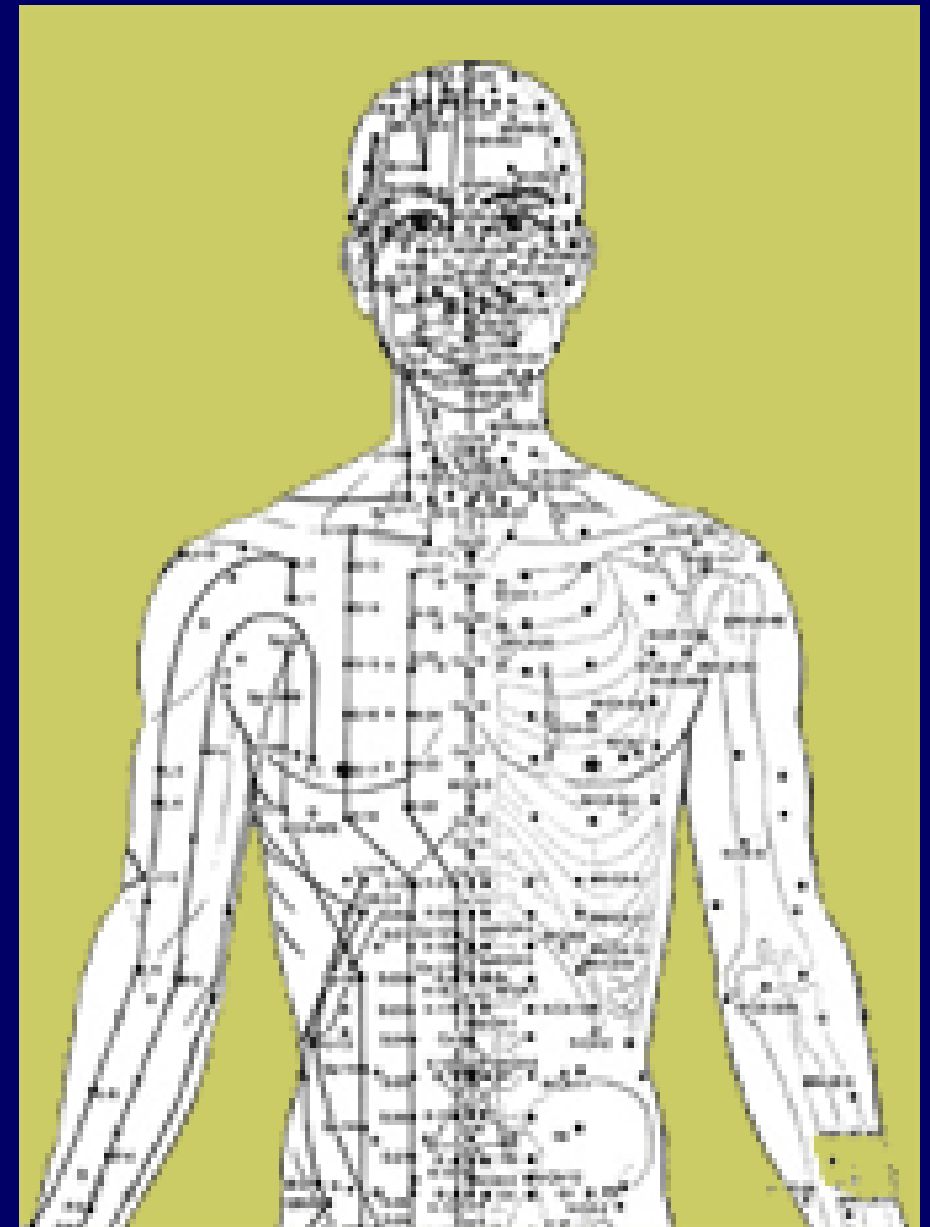
3. Xue

- a. Acupoints along the jing-luo through which qi to certain body systems can be manipulated (hollow areas, 3-15 mm)

BASIC THEORY OF ACUPUNCTURE (cont'd)

A. Commonly used Channels

1. Jing mai - 12 primary channels
 - a. These channels have bilateral distribution
2. Qi jing mai - extraordinary vessels
 - a. 8 total
 - b. Ren - conception vessel
 - c. Du mai - governor vessel
 - d. Ren and du mai are commonly used with the 12 primary channels

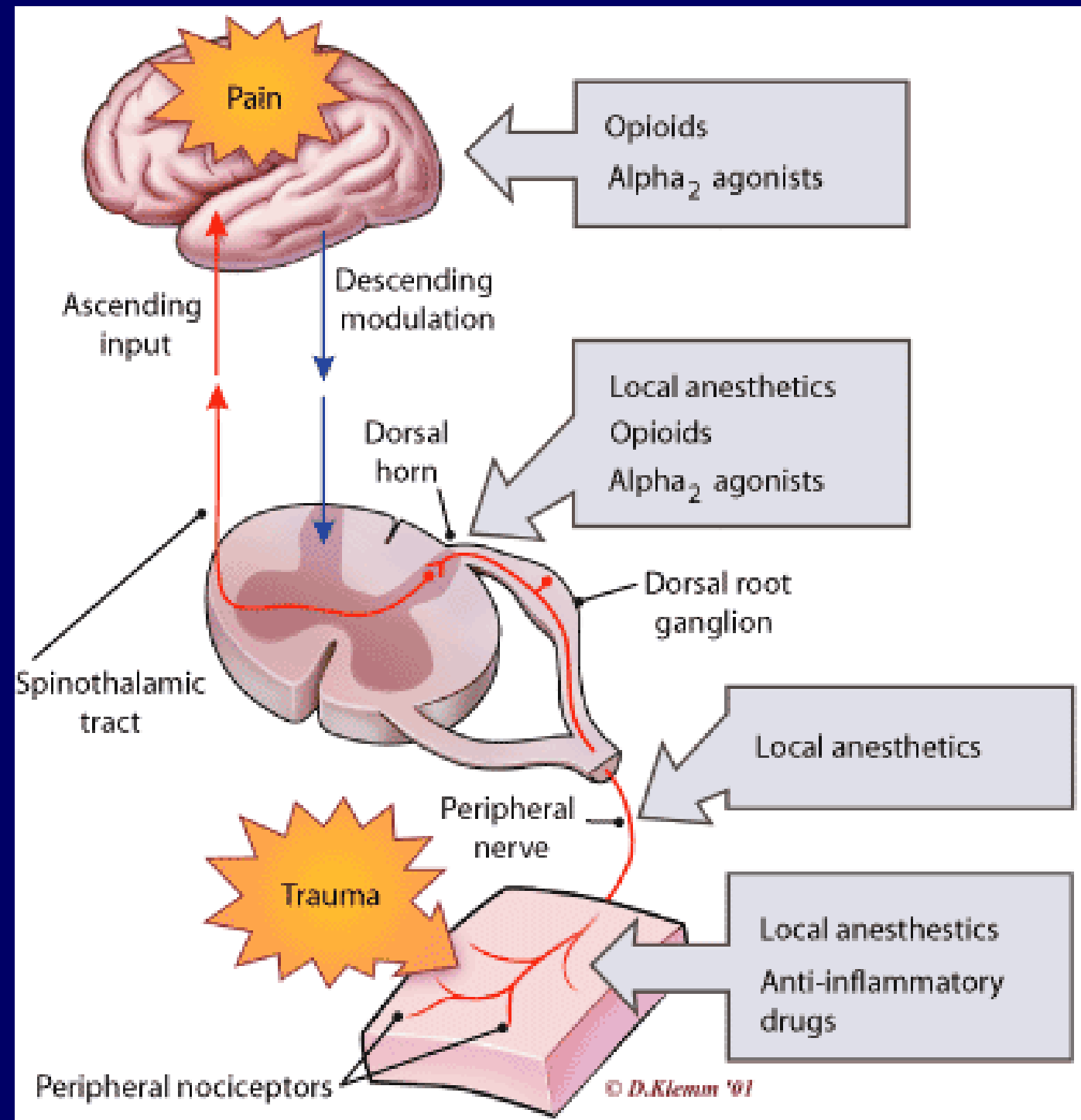


ACUPUNCTURE AND PAIN MODULATION: How does it work?



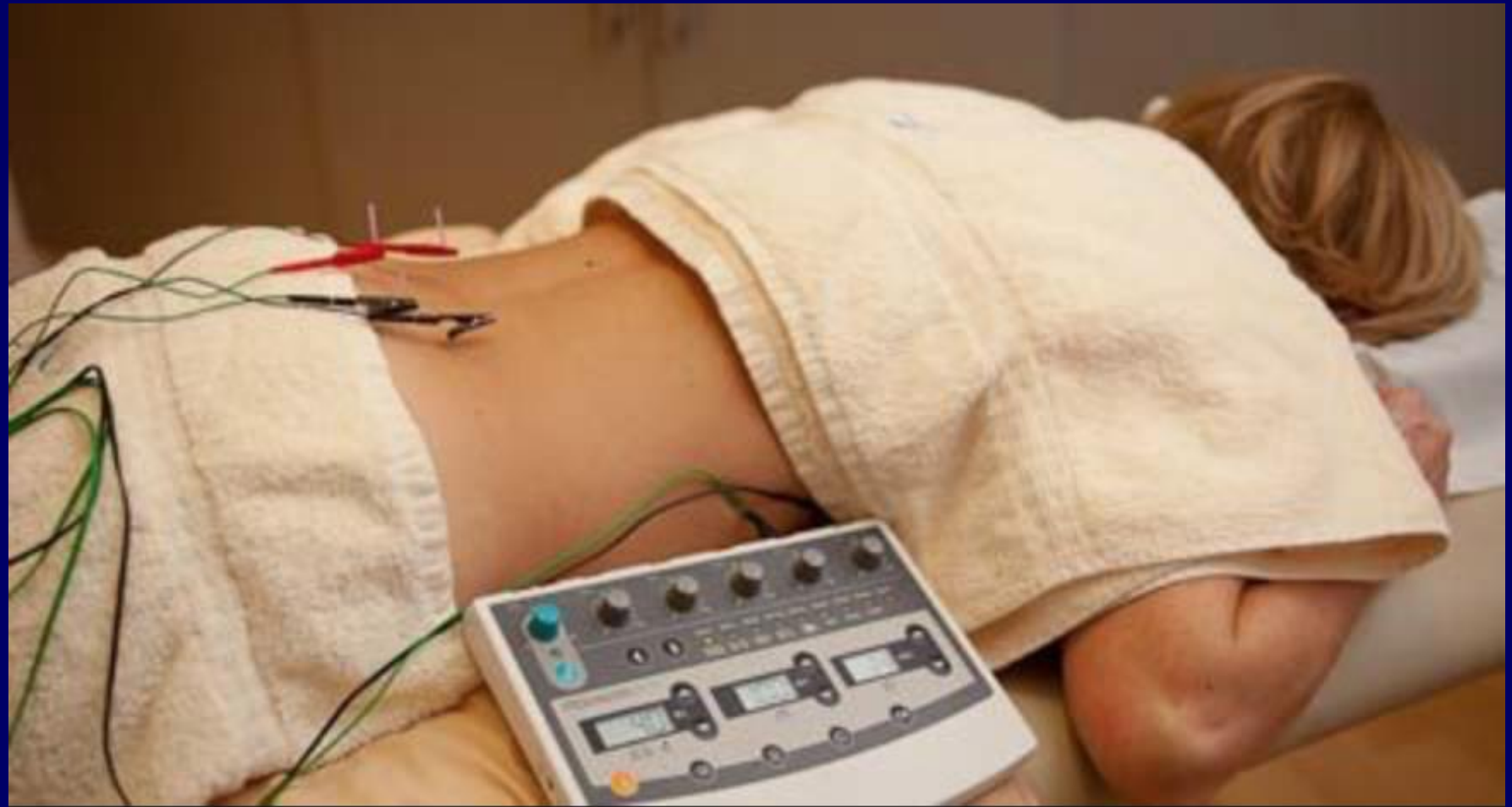
PROPOSED MECHANISM OF ACUPUNCTURE ANALGESIA

- A. Needles stimulate a-delta fibers
- B. Signals project to dorsal root of spinal cord, then to pons, midbrain, thalamus, hypothalamus
- C. Cells in periaqueductal gray matter and nucleus raphe receive these signals
- D. Norepinephrine, serotonin released, causing pre and post synaptic pain inhibition



TYPES OF INVASIVE ACUPUNCTURE

- A. needles
- B. electro-acupuncture
- C. intradermal



TYPES OF NON-INVASIVE ACUPUNCTURE

- A. acupressure
- B. moxibustion
- C. tens
- D. cupping
- E. patch/pellets







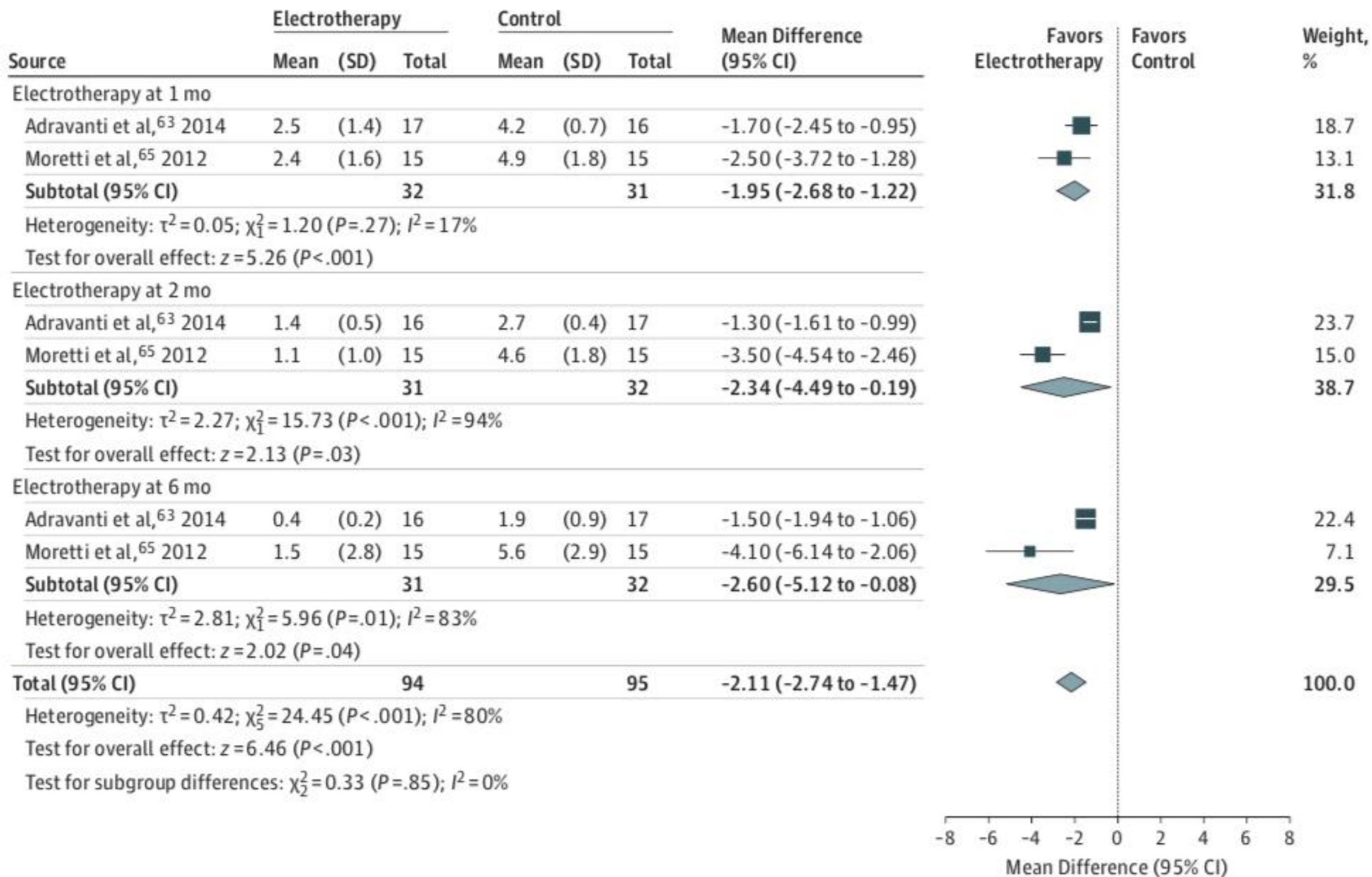
Drug-Free Interventions to Reduce Pain or Opioid Consumption After Total Knee Arthroplasty

A Systematic Review and Meta-analysis

- A. Objective: Review evidence of non pharmacological interventions for postoperative pain management after total knee arthroplasty.
- B. Of 5509 studies, 39 randomized clinical trials selected in meta-anaylsis (2391 patients)
- c. Passive motion, preoperative exercise, cryotherapy, electrotherapy, acupuncture
- D. Conclusion: Electrotherapy and acupuncture reduced or delayed opioid consumption and pain severity at 1,2 and 6 months
- E. May change the long-term trajectory of recovery

Figure 1. Pain Relief and Analgesic Consumption

A Electrotherapy

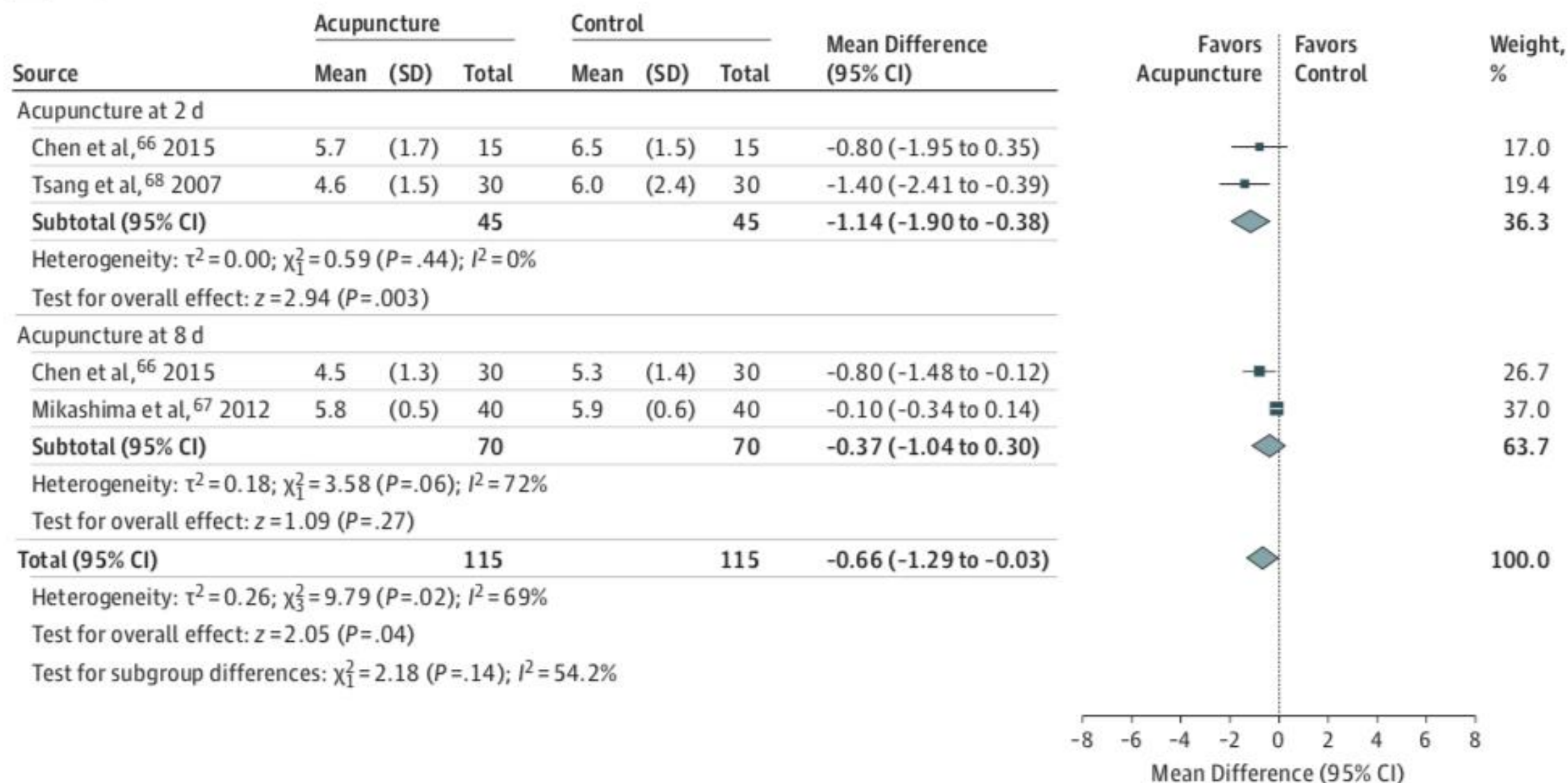


Shown are individual and pooled weighted mean differences in pain measured with a visual analog scale using the inverse variance method. A, The mean differences at 1, 2, and 6 months after surgery.^{63,65} B, The mean differences at 2

days and 8 days after surgery.⁶⁶⁻⁶⁸ A random-effects model was used to pool the data.

Figure 1. Pain Relief and Analgesic Consumption

B Acupuncture

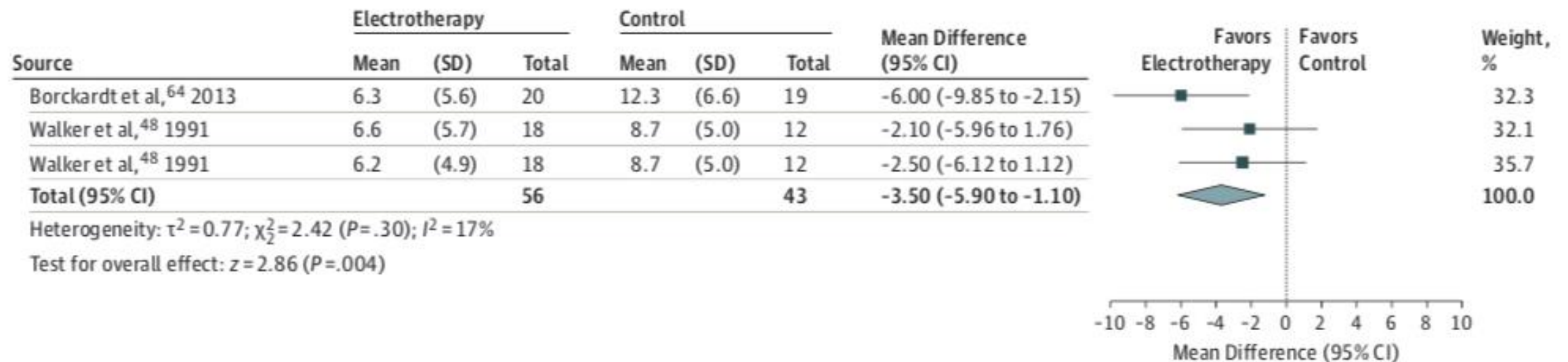


Shown are individual and pooled weighted mean differences in pain measured with a visual analog scale using the inverse variance method. A, The mean differences at 1, 2, and 6 months after surgery.^{63,65} B, The mean differences at 2

days and 8 days after surgery.⁶⁶⁻⁶⁸ A random-effects model was used to pool the data.

Figure 2. Opioid and Other Analgesic Consumption

A Electrotherapy



Shown are individual and pooled weighted mean differences in opioid consumption within 48 hours after surgery (morphine equivalents in milligrams per kilogram per 48 hours) using the inverse variance method.

A, Electrotherapy.^{48,64} B, Cryotherapy.^{48,53,55,56,59,61,62} A random-effects model was used to pool the data.

Effects of Electroacupuncture on Opioid Consumption in Patients with Chronic Musculoskeletal Pain: A Multicenter Randomized Controlled Trial

- A. Objective: Evaluate the efficacy and safety of electroacupuncture in reducing opioid consumption in pts with chronic musculoskeletal pain
- B. Randomized, participant-assessor-blinded, three arm trial
- C. 108 pts on similar opioids dosages, three groups: electroacupuncture (EA), sham EA, Education group with EA at 3 mo follow up only
- D. EA - 20.5% ($P < .05$), sham EA 13.7% ($P < .01$), 4.5% Education, 47% reduction after EA during follow-up
- E. Conclusion: Electroacupuncture could be a promising adjunct to facilitate opioid tapering in patients willing to reduce opioids





Xie Xie Nimen!

