

# Placebo – What is it?

Uncovering the Harmony between Science and Religion?

# Placebo - Workshop

- Definitions
- History of Placebo
- Current knowledge of placebo mechanisms
  - Scientific studies of placebo analgesia, etc.
- Interactive Session
  - Selections of Baha'i writings related to health
    - Work together to advance our knowledge on placebo mechanisms
    - Discussion on how to apply this knowledge in the clinic

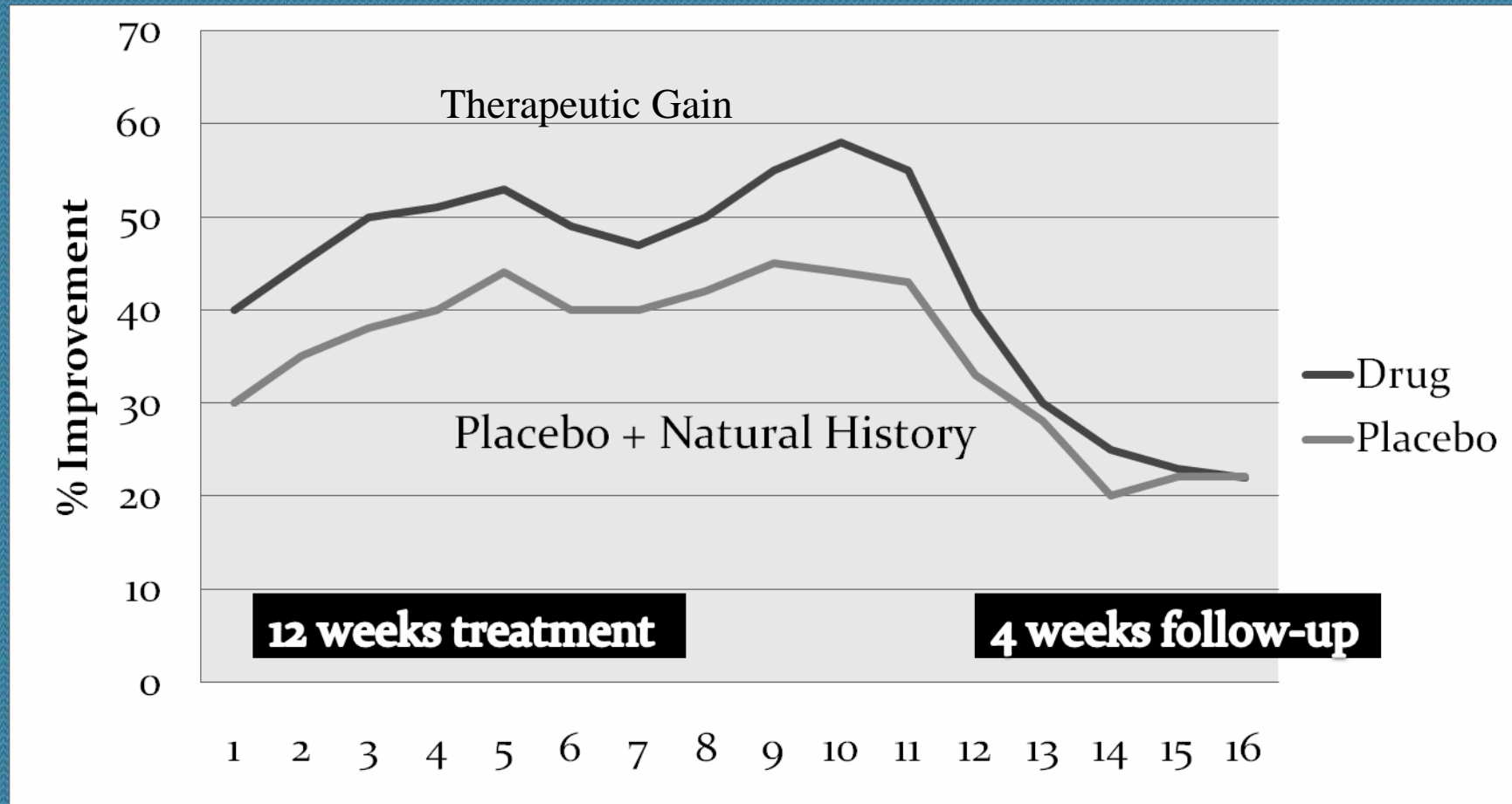
# Placebo - Definitions

- Latin verb – placere - French – plaisir - “to please”
  - Translates to “I will please”, “I shall please”, “I shall be pleasing”

# Placebo

- Current Gold-Standard of Medicine
  - Double-blind placebo controlled randomized clinical trials
    - Treatment must be proven to be better than placebo
    - Placebo can be perceived as being a nuisance

# Placebo – Pain Study



Adapted from The Placebo Effect and Health. W. Grant Thompson

# Placebo

- Treatment benefit = Therapeutic gain + Natural History + Placebo Effect
  
- Other confounding factors
  - Hawthorne Effect
  - Regression to the mean
  - Observer or Patient bias
  - Nocebo effect

# Placebo

- How can an inert substance have an effect?
- Is the inert substance necessary?
- Is there a placebo component to all medical interventions?  
How large is this component?
- What is happening during the patient – physician interaction?

# Placebo – Positive attitudes enhance treatments

	N	Diagnosis	Physician Attitude	Improved
Positive	50	Yes	“You will be better soon”	32/50 (64%)
Positive + Placebo Pill	50	Yes	“Pills will help”	32/50 (64%)
Negative	50	No	“I don’t know what you have”	18/50 (36%)
Negative + Placebo Pill	50	No	“I don’t know if pills will help”	21/50 (42%)

Adapted from The Placebo Effect and Health.  
W. Grant Thompson

# Placebo – Investigations

176 patients with non-cardiac chest pain

½ had ECG and  
serum CPK

½ had no tests,  
same treatment

Less chest pain, disability, and work loss  
More satisfaction with treatment

Adapted from The Placebo Effect and Health.  
W. Grant Thompson

# Placebo – History

- Anecdotal evidence for years
  - New Medical Dictionary – (1785) A commonplace method of medicine
  - Hooper's Medical Dictionary – (1811) A medicine “given more to please than benefit the patient”
- Classic Meta-analysis – Beecher (1955)
  - Placebo accounts for 35% of the treatment effect across various illnesses
- 1970's – 90's
  - Increasing data that placebo causes actual physiological changes that can be measured

## Neuropharmacological Dissection of Placebo Analgesia: Expectation-Activated Opioid Systems versus Conditioning-Activated Specific Subsystems

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- *Nervous System* is involved in Placebo analgesia
- Three main findings
  - 1) Placebo analgesia can be blocked by naloxone.
  - 2) However, in certain circumstances the placebo analgesia could not be blocked by naloxone.
  - 3) Expectation of pain relief seems to be entirely mediated by opioid system

Several studies showed that conditioning plays an important

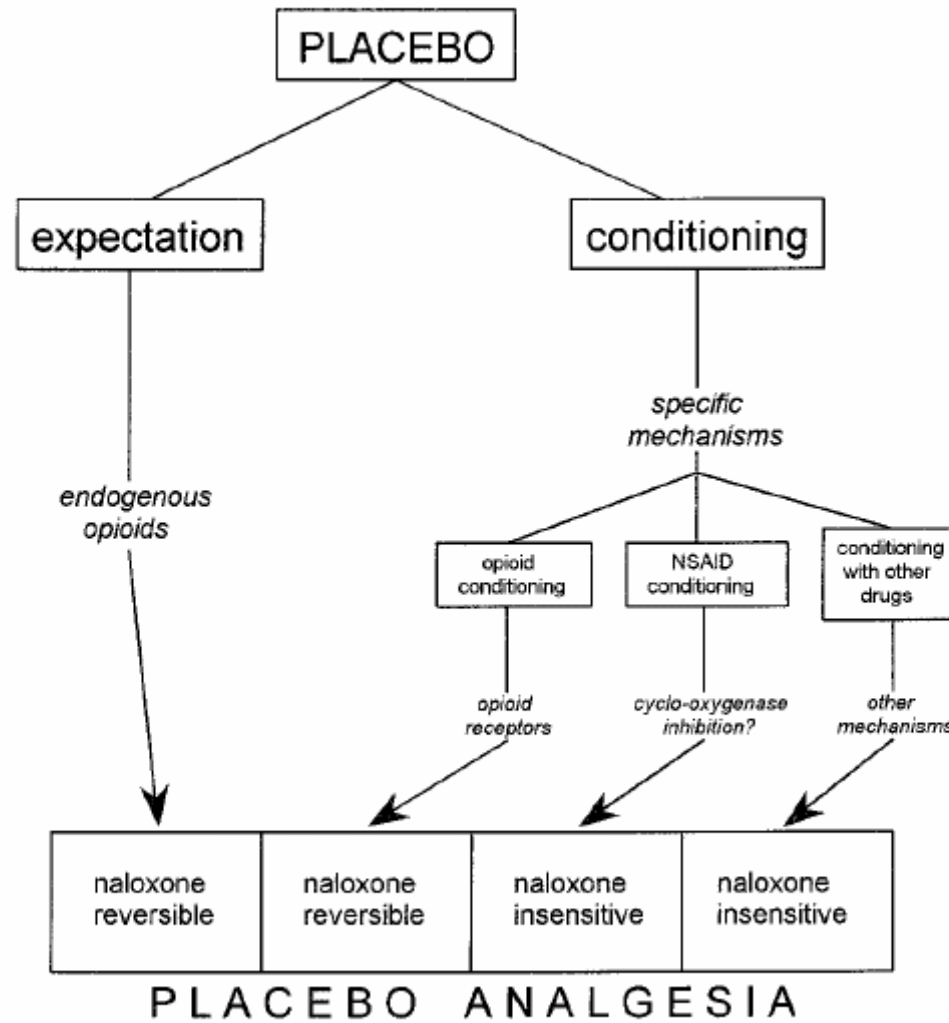


Figure 9. Schematic diagram of the mechanisms activating endogenous opioid systems and nonopioid systems in placebo analgesia. The administration of a placebo can trigger both cognitive (*expectation*) and condi-

# Placebo Analgesia Experiments

## Perceptual Factors

- Desire and Expectation

- Possible to increase magnitude of placebo analgesia to a level that matches that of an active ingredient
- Placebo factors strongly contribute to efficacy of active treatments.

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## Glucosamine, Chondroitin Sulfate, and the Two in Combination for Painful Knee Osteoarthritis

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### ABSTRACT

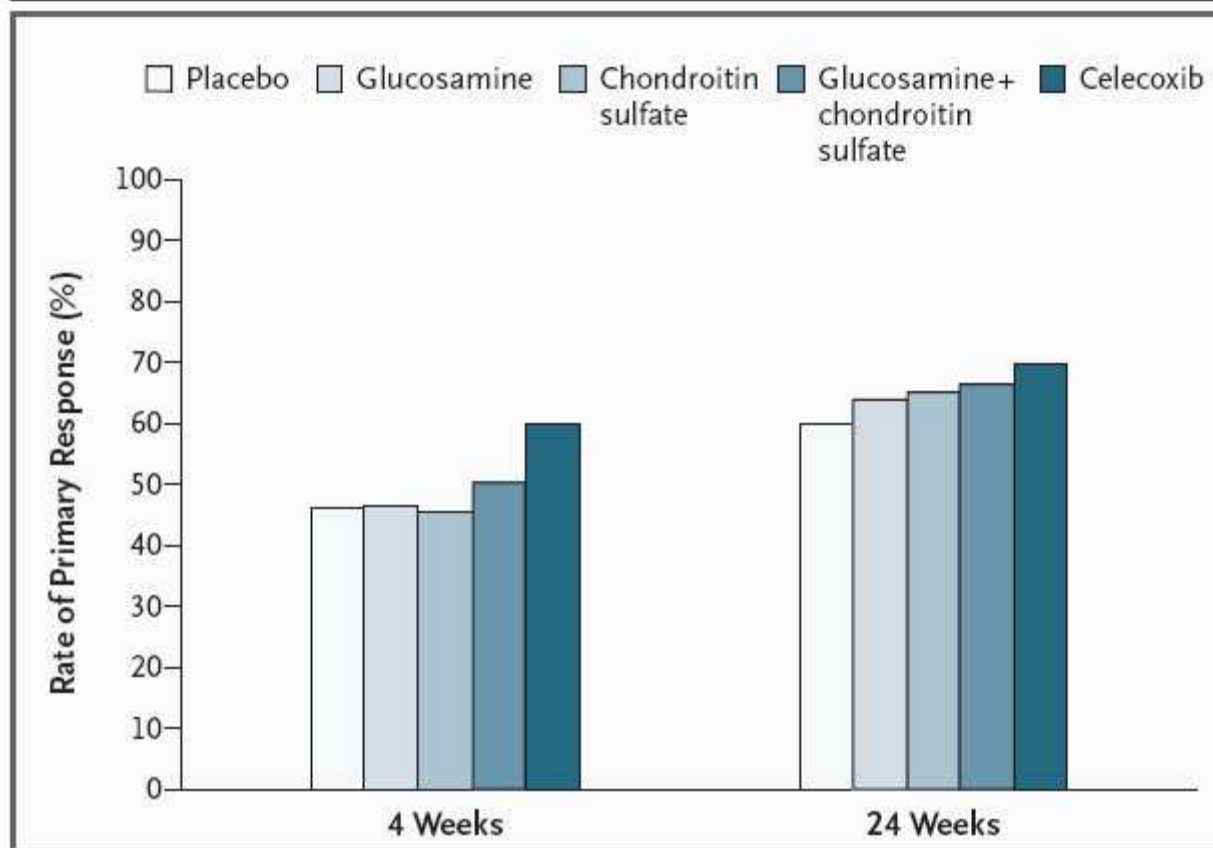
#### BACKGROUND

Glucosamine and chondroitin sulfate are used to treat osteoarthritis. The multicenter, double-blind, placebo- and celecoxib-controlled Glucosamine/chondroitin Arthritis Intervention Trial (GAIT) evaluated their efficacy and safety as a treatment for knee pain from osteoarthritis.

#### METHODS

We randomly assigned 1583 patients with symptomatic knee osteoarthritis to re-

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**Figure 3.** Rates of a Primary Response in the Five Groups at 4 and 24 Weeks.

# Placebo

- How can an inert substance have an effect?
  - The thought of receiving treatment stimulates the nervous system
- Is the inert substance necessary?
  - Positive attitude more important
- Is there a placebo component to all medical interventions?
  - Yes. It can be large and is complementary
- What is happening during the patient – physician interaction??
  - Faith in the health-care service provided

# Placebo – Ethical considerations

- Is it ethical to give placebo treatment?
- If enhancing the placebo component of treatment increases the overall therapeutic effect, is omission of such enhancement ethical?