Affective Science Perspectives on Cancer Control
The Placebo Effect

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Wendy Nelson, PhD
Jerry Suls, PhD
Laura Buccini, PhD
Affective Science Perspectives: Placebo Effect

How can emotion theory and research inform our understanding of the placebo effect?

Can we leverage the placebo effect to benefit cancer prevention and control?
Affective Science Perspectives: Placebo Effect

“…a genuine psychological or physiological effect, in a human or another animal, which is attributable to receiving a substance or undergoing a procedure, but is not due to the inherent powers of that substance or procedure.”

(Stewart-Williams & Podd, *Psychol Bull*, 2004)

“…the psychological phenomenon that involves expectation and anticipation of clinical improvement.”

(Benedetti, *Placebo Effects*, 2009)
“…the study of the placebo effect is the study of the psychosocial context around the patient.” (Benedetti et al., J Neurosci, 2005)

“Contextual healing” (Miller & Kaptchuk, J R Soc Med, 2008)

“…the placebo response is an evolutionarily adaptive trait…” (Thompson et al., Cult Med Psychiatry, 2009)

“Placebo effects are treatment effects caused not by the physical properties of a treatment but by the meaning ascribed to it.” (Wager et al., PNAS, 2007)
Affective Science Perspectives: Placebo Effect

Expectancy
- Conscious process
- Influenced by verbal suggestion

Conditioning
- Involuntary process
- Influenced by experience (association between a treatment context and a neurophysiological response)

There is not a single placebo effect, but many effects
COGNITION
• Expectation
• Belief
• Trust
• Hope

Unconditioned stimulus (e.g. drug inside the pill)

Conditioned stimulus (e.g. colour or shape of a pill)

Unconscious

Conscious

Conditioned response

Affective Science Perspectives: Placebo Effect

- Pain
- Anxiety
- Depression
- Motor function (Parkinson’s disease)
- Addiction

- Anticipatory nausea and vomiting
- Immune function
Mechanisms Activating Endogenous Opioid Systems and Nonopioid Systems in Placebo Analgesia

Amanzio & Benedetti, J Neurosci, 1999
Linking Expectations and Placebo Effects

- Positive affectivity pathway
- Anxiety-reduction pathway
- Interpretive frame pathway

(Geers & Rose, *Soc Personal Psychol Compass*, 2011)
Top: Open versus hidden administration of morphine treatment (10 mg) for postoperative pain.

Bottom: Open versus hidden interruption of a morphine treatment.

NRS=numerical rating scale

Affective Science Perspectives: Placebo Effect

Effects of Perceived Treatment on Quality of Life and Medical Outcomes in a Double-blind Placebo Surgery Trial

McRae et al., Arch Gen Psychiatry, 2004
Concurrent Pain Ratings as a Function of Choice Condition and Time
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