The relation of mind to body. Psychophysiological studies of the placebo effect

Results:

Placebo analgesia is the reduction in pain after administration of a placebo with information that it will reduce pain. We have shown that placebo analgesia can be objectively recorded by physiological measures (electromyography, heart rate variability, and event-related potentials (ERP)). Reduced ERPs indicate that placebos activate descending pain inhibitory pathways. The placebo response, or more precisely, the expectation of drug effects, can add to the effect of the drug. There is some evidence that placebo effects are strongest when expectations are reinforced by administration of an active drug. Of special importance to the present project was the investigation of the role of stress and negative emotions in placebo analgesia. Our hypothesis was that the placebo reduced stress and nervousness, and thereby reduced pain. Fear of pain was positively related to stress both during pain and in the anticipation of pain, and negatively related to placebo analgesia. However, other factors also contribute to the placebo analgesia. The present findings suggest that decreased stress may strengthen the placebo response. This may have important clinical consequences, as stress reduction could aid in treatment of pain. Furthermore, male subjects responded with lower stress after placebo medication, and larger placebo responses. These findings suggest that males respond differently to verbal placebo information compared to females. It is not know whether this is due to more effective pain inhibitory mechanisms in males, or to cognitive factors. In sum, there is a contribution of reduced stress to placebo analgesia, and for reasons unknown this effect is larger in males.

Published work:

Proceedings and meetings:

2007
Aslaksen, P.M. & Flaten, M.A. Expectancy of pain relief reduces stress that mediates placebo analgesia. Meeting of the American Psychosomatic Society, Budapest, 7-10/3.
Flaten, M.A. The role of gender in pain and placebo analgesia. Meeting of the American Psychosomatic Society, Budapest, 7-10/3.
Flaten, M.A. Placebo effekten – finnes den? Lecture, Department of Anaesthesiology, University Hospital of North Norway, 1/6.
Flaten, M.A. The role of gender in experimental placebo research. Invited symposium, the 10th European Congress of Psychology, Praha, Checkia, 3-5/7.


Flaten, M.A. Doping og placebo i idretten. [Doping and placebo in sports]. Verdt å vite, NRK, [The Norwegian Broadcasting Corporation], 8/11.


2008

Flaten, M.A. Om placebo-analgesi: Introduksjon og forsking ved UiT. Neurology Dept., University Hospital of North Norway (UNN), 3/1.

Flaten, M.A. Betydninga av placebo analgesi. Norwegian Association for the study of Pain, Rikshospitalet, Oslo, 10/1.

Flaten, M.A. Om placebo-effekten og korleis den kan studeraast. Institutt for Biologisk og Medisinsk Psykologi, University of Bergen, 23.1.

Flaten, M.A. Smerte og placebo analgesi. The Pain Clinic, St. Olavs Sykehus, Trondheim, 25/1.

Flaten, M.A. Smerte og kjønn. Schrödinger Katt, Norwegian Broadcasting Cooperation, 14/2.

Aslaksen, P.M. & Flaten, M.A. The relation of stress and heart rate variability to placebo analgesia. American Pain Society meeting, Tampa, FL, USA, 7-10/5.

Flaten, M.A. The placebo effect exists, but does it have any consequences for health? Invited lecture at Tulsa University, Tulsa, OK, USA, 13/5.


Flaten, M.A. The role of gender in placebo analgesia. Meeting of the International College of Behavioral Medicine, Tokyo, Japan, 27-30/8.


Aslaksen, P.M. & Flaten, M.A. An ERP study of placebo analgesia. Meeting of the Society for Psychophysiological Research, Austin, TX, USA, 1-5/10.

Åsli, O. & Flaten, M.A. Fear potentiated startle after delay and trace aversive classical conditioning. Meeting of the Society for Psychophysiological Research, Austin, TX, USA, 1-5/10.

Flaten, M.A. The psychology of pain. Invitet foredrag ved Institutt for Klinisk Odontologi, UiT, 15/10.


2009
Flaten, M.A. Neurobiology of placebo analgesia. Annual meeting of the Norwegian Association for the Study of Pain, Rikshospitalet, Oslo, 8-9/1.
Aslaksen, P.M. & Flaten, M.A Event-related potentials to painful stimuli are reduced during placebo analgesia. Meeting of the American Psychosomatic Society, Chicago, IL, USA, 4-7/3.
Flaten, M.A. The role of experimenter gender in placebo analgesia. Meeting of Deutsche Psychosomatische Gesellschaft, Mainz, Germany, 18-21/3.
Aslaksen, P.M., & Flaten, M.A A methodological problem in pain research and how to deal with it. 11th European Congress of Psychology, Oslo, 7-10/7.
Flaten, M.A. & Enck, P. Symposium on the placebo effect across different response systems. 11th European Congress of Psychology, Oslo, 7-10/7.
Flaten, M.A. How do we know that the placebo effect exists? Invited lecture at Wake Forest University, Winston-Salem, NC, USA, 14/10.
Bjørkedal, E. & Flaten, M.A. Does placebo analgesia modulate diffuse noxious inhibitory control. Meeting of the Society for Neuroscience, Chicago, IL, USA, 17-21/10.
Flaten, M.A. Is the placebo effect underestimated in health care? Invited lecture at the 30-years anniversary, Sogn og Fjordane College, Førde, 5-6/11.
Flaten, M.A. Negative affect as a mediator of placebo analgesia. Placebo conference, München, Germany, 27-28/11.

2010
Flaten, M.A. Kva er det som verker i behandling? (What is the active ingredient in treatment?) Academia Borealis, Tromsø, 11/2.
Flaten, M.A. Mechanisms in placebo analgesic responding. Meeting of the American Pain Society, Baltimore, MD, 6-8/5.

Full journal articles


Chapters in books

Areas of interest:
Placebo analgesia, psychopharmacology, pain, event related potentials.

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