L'hypnose médicale au cabinet dentaire

Society for Dental Science

26 septembre 2024

Pr Vianney DESCROIX

UFR d'Odontologie Université Paris Cité

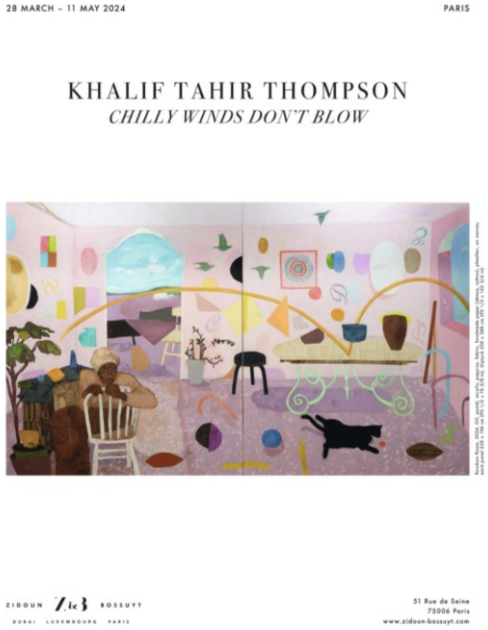
Institut de Chirurgie Dentaire - Hôpital de la Pitié Salpêtrière, APHP

Institut Français d'Hypnose

Conflit d'intérêt

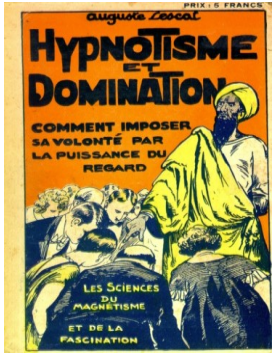
Je déclare n'avoir aucun conflit

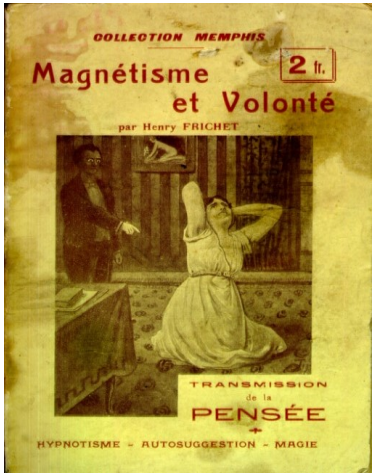
HYPNOSE ?


28 MARCH – 11 MAY 2024
PARIS
KHALIF TAHIR THOMPSON
CHILLY WINDS DON'T BLOW
ZIDOUN Z&B BOSSUYT
DUBAI LUXEMBOURG PARIS
51 Rue de Seine
75006 Paris
www.zidoun-bossuyt.com

L'hypnose ?


PPD
?!!


PRIX : 5 FRANCS
Auguste Lescat
HYPNOTISME ET DOMINATION
COMMENT IMPOSER SA VOLONTÉ PAR LA PUISSANCE DU REGARD
LES SCIENCES DU MAGNÉTISME ET DE LA FASCINATION


COLLECTION MEMPHIS
Magnétisme et Volonté
2 fr.
par Henry FRICHET
TRANSMISSION de la PENSÉE
HYPNOTISME - AUTOSUGGESTION - MAGIE


AIE CONFIANCE !

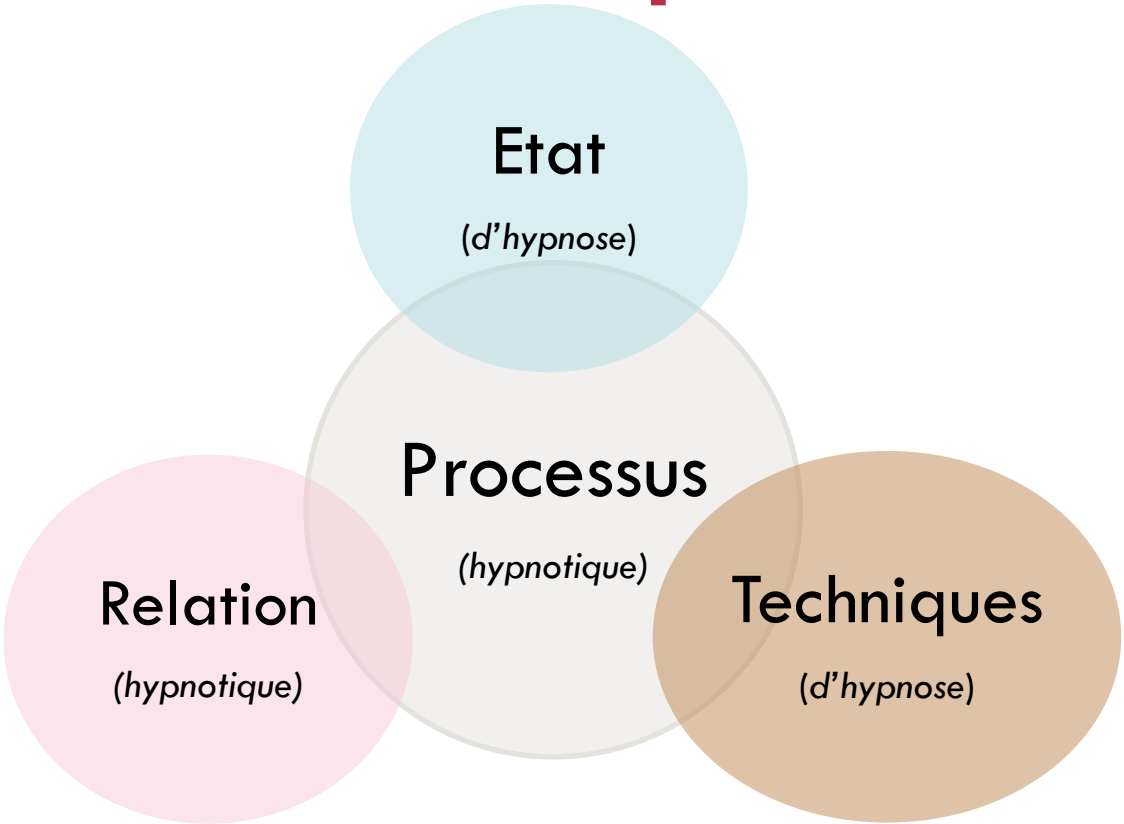

MAIS SI L'HYPNOSE NE MARCHE PAS?
RIF

Qu'appelle-t-on « hypnose » ?

- Etat hypnotique
- Rapport hypnotique
- Conscience corporelle

Takashi Murakami, 2019

Notions sémantiques imbriquées



Est-ce que l'hypnose existe ?

Inserm U1178
Santé Mentale & Santé Publique

Evaluation de l'efficacité de la pratique de l'hypnose

Juliette Gueguen

Caroline Barry

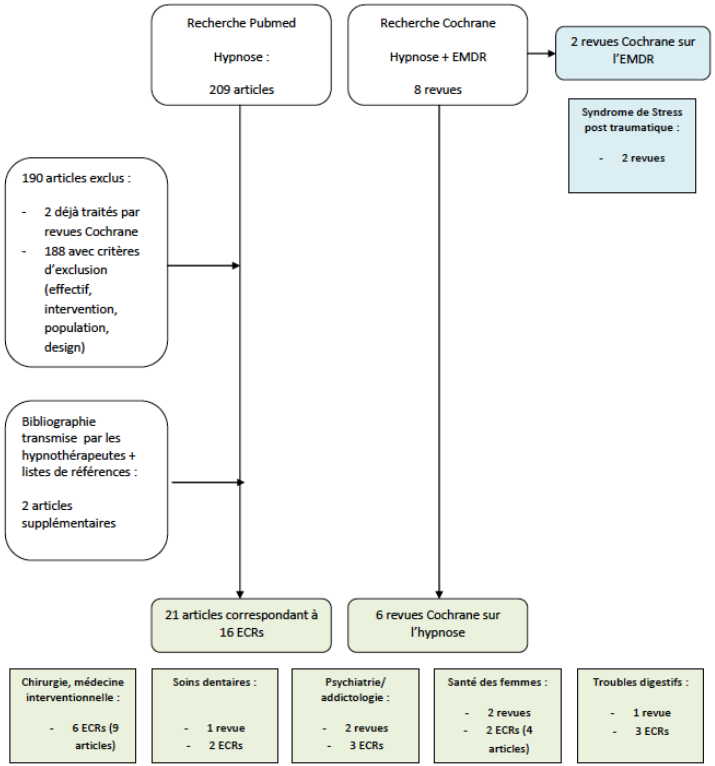
Christine Hassler

Bruno Falissard

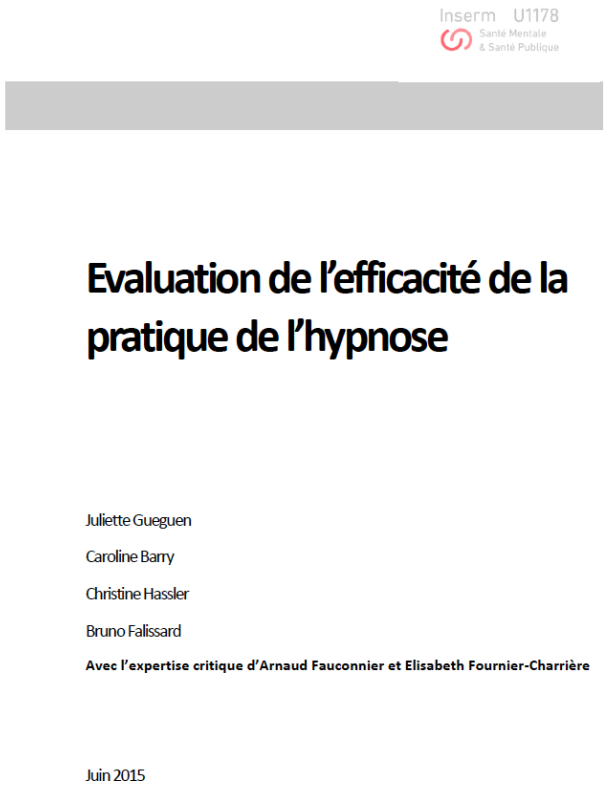
Avec l'expertise critique d'Arnaud Fauconnier et Elisabeth Fournier-Charrière

Juin 2015

Arbre de sélection des articles sélectionnés en Hypnose et en EMDR



Est-ce que l'hypnose existe ?



- Seules deux indications réunissent à ce jour suffisamment de données pour conclure à un intérêt thérapeutique
  - Sédation/analgésie pendant l'acte chirurgical
  - Syndrome du côlon irritable
- Dans les autres situations médicales, il n'existe pas de preuve de l'efficacité de l'hypnose
- L'hypnose à visée antalgique ou pendant l'anesthésie doit être réalisée dans le cadre d'une prise en charge médicale conventionnelle et ne doit pas se substituer à celle-ci

La douleur est expérience

La douleur est toujours une **expérience personnelle**

Elle est **influencée** à des degrés divers par des facteurs

- **Biologiques**
- **Psychologiques**
- **Sociaux**

Raja SN et al. Pain, 2020

Boutique Hermès de Hong Kong, Job Smeets

La douleur est apprise

À travers leurs expériences de vie, les individus **apprennent** le concept de la douleur

Le rapport d'une personne sur une expérience de douleur doit être respecté

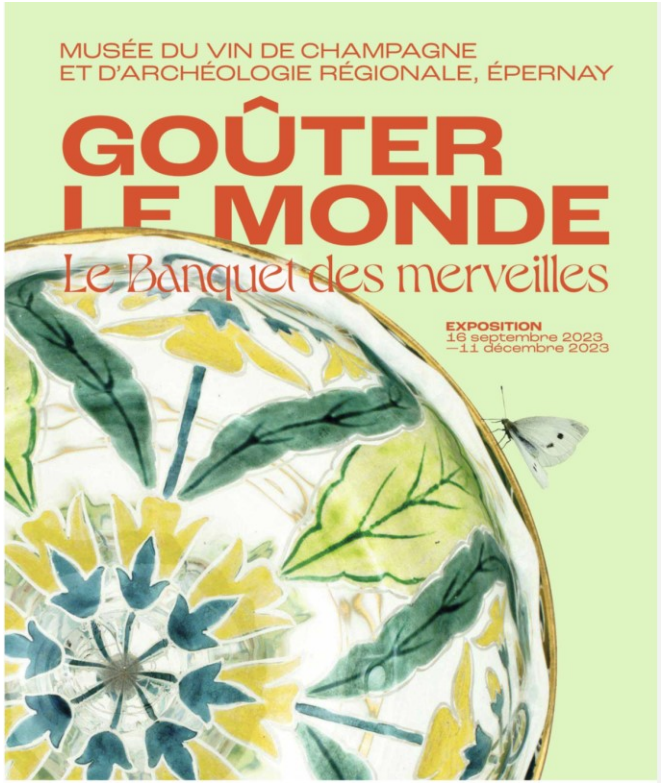
Raja SN et al. Pain, 2020

La douleur est adaptation

La douleur joue généralement un rôle d'**adaptation**

Elle peut avoir des effets négatifs sur

- Le fonctionnement
- Le bien-être social
- Le bien-être psychologique



Raja SN et al. Pain, 2020

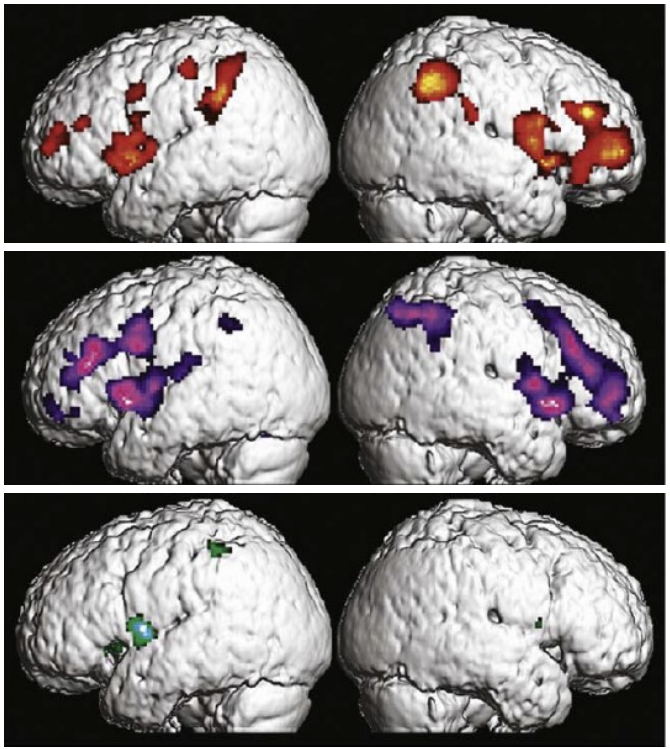
La douleur est complexe

La **douleur** et la **nociception** sont des phénomènes différents

- La douleur ne peut être déduite uniquement de l'activité des neurones sensoriels

Raja SN et al. Pain, 2020

La douleur est dans la tête



Douleur induite par la chaleur

Douleur induite par l'hypnose

Douleur induite par le souvenir

Derbyshire SWG; et al. Neuroimage. 2004

La douleur est construite

REVIEW

Deconstructing the sensation of pain: The influence of cognitive processes on pain perception

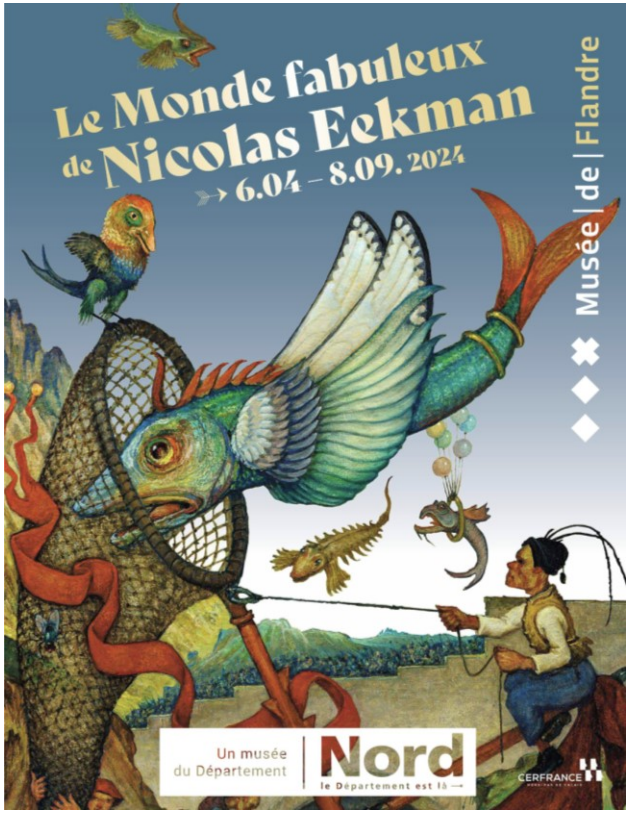
Katja Wiech[1,2]*

Phenomena such as placebo analgesia or pain relief through distraction highlight the powerful influence cognitive processes and learning mechanisms have on the way we perceive pain. Although contemporary models of pain acknowledge that pain is not a direct readout of nociceptive input, the neuronal processes underlying cognitive modulation are not yet fully understood. Modern concepts of perception—which include computational modeling to quantify the influence of cognitive processes—suggest that perception is critically determined by expectations and their modification through learning. Research on pain has just begun to embrace this view. Insights into these processes promise to open up new avenues to pain prevention and treatment by harnessing the power of the mind.

Wiech K. Science, 2006

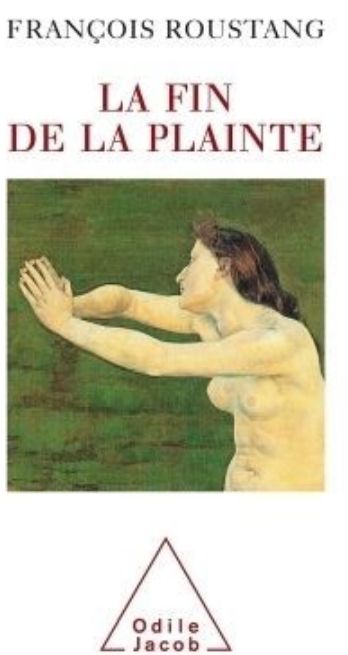
Ce que l'on attend a déjà commencé à exister

EXPECTATION



Expectation, attente, imagination

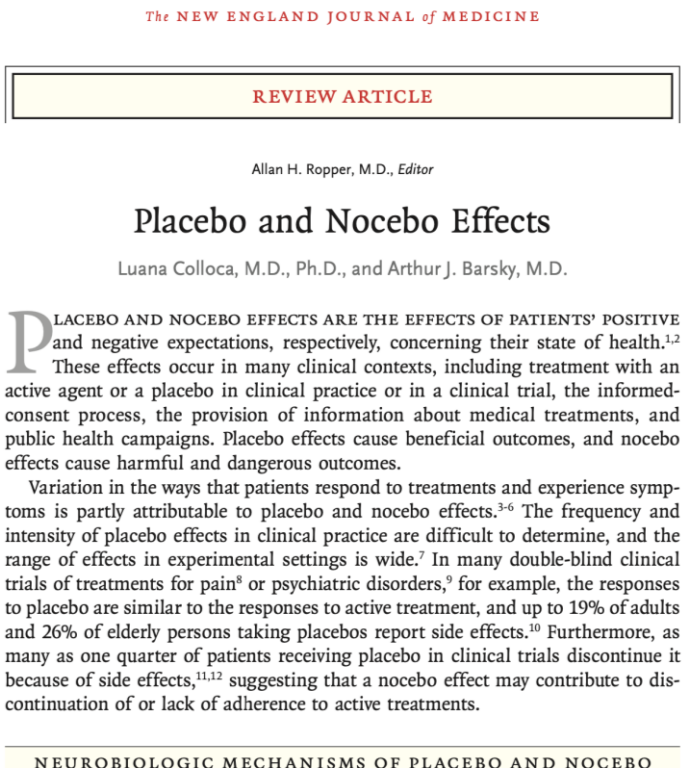
- Une attente fondée sur des promesses ou des probabilités, c'est-à-dire une attente dont la réalisation est déjà entamée
- Lorsqu'on est dans l'expectation, ce que l'on attend a déjà commencé à exister à la fois pour l'esprit, pour le corps et dans la relation au monde environnant



Roustang F. La fin de la plainte, chapitre 12, O Jacob, 2000

Expectation, attente, imagination

- Les attentes : résultats anticipés
  - Expériences préalables
  - Suggestions verbales
  - Effets de contexte
  - Interactions interpersonnelles



The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

Allan H. Ropper, M.D., *Editor*

Placebo and Nocebo Effects

Luana Colloca, M.D., Ph.D., and Arthur J. Barsky, M.D.

PLACEBO AND NOCEBO EFFECTS ARE THE EFFECTS OF PATIENTS' POSITIVE and negative expectations, respectively, concerning their state of health.[1,2] These effects occur in many clinical contexts, including treatment with an active agent or a placebo in clinical practice or in a clinical trial, the informed-consent process, the provision of information about medical treatments, and public health campaigns. Placebo effects cause beneficial outcomes, and nocebo effects cause harmful and dangerous outcomes.

Variation in the ways that patients respond to treatments and experience symptoms is partly attributable to placebo and nocebo effects.[3-6] The frequency and intensity of placebo effects in clinical practice are difficult to determine, and the range of effects in experimental settings is wide.[7] In many double-blind clinical trials of treatments for pain[8] or psychiatric disorders,[9] for example, the responses to placebo are similar to the responses to active treatment, and up to 19% of adults and 26% of elderly persons taking placebos report side effects.[10] Furthermore, as many as one quarter of patients receiving placebo in clinical trials discontinue it because of side effects,[11,12] suggesting that a nocebo effect may contribute to discontinuation of or lack of adherence to active treatments.

NEUROBIOLOGIC MECHANISMS OF PLACEBO AND NOCEBO

Colloca L. et al. NEJM, 2020

L’attente crée t-elle ce que nous attendons

Henri Matisse. Femme devant un aquarium. 1921-1923

Est-ce que dire c’est faire ?

Le fameux « attention tu vas tomber ! »,

Fait-il tomber ?

Le fameux « ça va faire mal ! »,

Fait-il mal ?

L'attente crée t-elle ce que nous attendons

The Journal of Neuroscience, April 19, 2006 • 26(16):4437–4443 • 4437

Behavioral/Systems/Cognitive

Isolating the Modulatory Effect of Expectation on Pain Transmission: A Functional Magnetic Resonance Imaging Study

John R. Keltner,[1] Ansgar Furst,[2] Catherine Fan,[2] Rick Redfern,[2] Ben Inglis,[2] and Howard L. Fields[3]
[1]Pain Management Center, Department of Anesthesia and Perioperative Care, University of California San Francisco, San Francisco, California 94143, [2]Henry H. Wheeler, Jr. Brain Imaging Center, Helen Wills Neuroscience Institute, University of California Berkeley, Berkeley, California 94608, and [3]Wheeler Center for the Neurobiology of Addiction, Department of Neurology, University of California San Francisco, Emeryville, California 94608

We use a novel balanced experimental design to specifically investigate brain mechanisms underlying the modulating effect of expected pain intensity on afferent nociceptive processing and pain perception. We used two visual cues, each conditioned to one of two noxious thermal stimuli [~48°C (high) or 47°C (low)]. The visual cues were presented just before and during application of the noxious thermal stimulus. Subjects reported significantly higher pain when the noxious stimulus was preceded by the high-intensity visual cue. To control for expectancy effects, for one-half of the runs, the noxious thermal stimuli were accompanied by the cue conditioned to the other stimulus. Comparing functional magnetic resonance imaging blood oxygenation level-dependent activations produced by the high and low thermal stimulus intensities presented with the high-intensity visual cue showed significant activations in nociceptive regions of the thalamus, second somatosensory cortex, and insular cortex. To isolate the effect of expectancy, we compared activations produced by the two visual cues presented with the high-intensity noxious thermal stimulus; this showed significant differences in the ipsilateral caudal anterior cingulate cortex, the head of the caudate, cerebellum, and the contralateral nucleus cuneiformis (nCF). We propose that pain intensity expectancy modulates activations produced by noxious stimuli through a distinct modulatory network that converges with afferent nociceptive input in the nCF.

Key words: pain modulation; brainstem; cingulate; cuneiformis; insula; sensory cortex

Keltner et al., J Neurosci. 2006

Henri Matisse. Femme devant un aquarium. 1921-1923

L’attente crée t-elle ce que nous attendons

Ressentons nous une douleur plus forte

1. Si nous nous attendons à une douleur forte ?

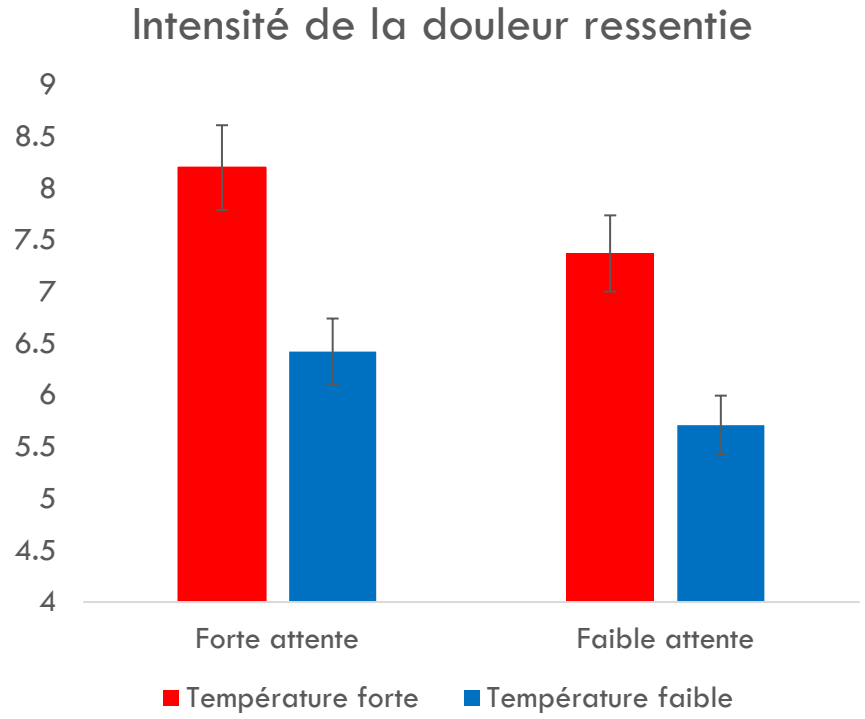
FORTE TEMPERATURE

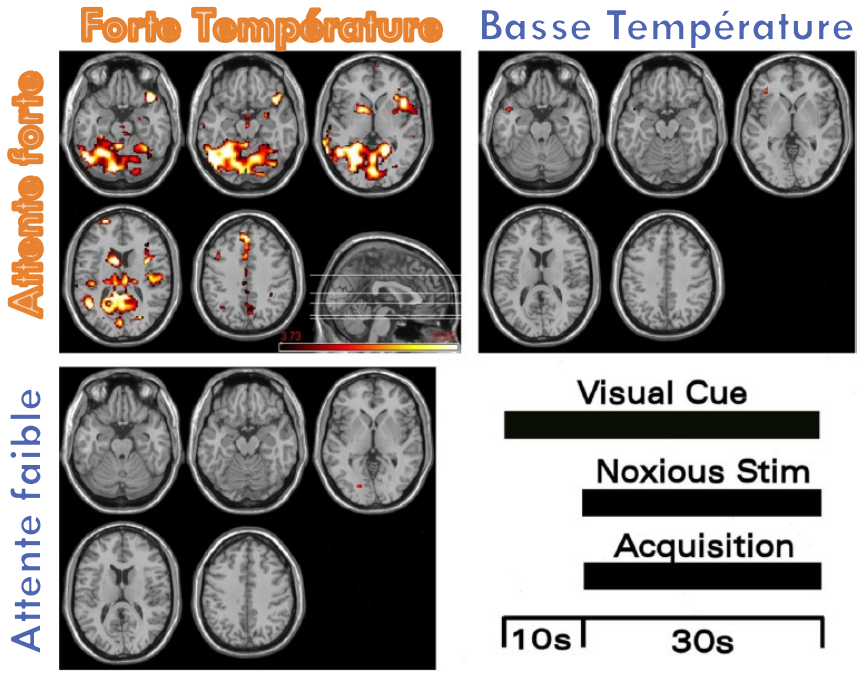
2. Si nous nous attendons à une douleur faible ?

BASSE TEMPERATURE

Keltner et al., J Neurosci. 2006

L'attente crée t-elle ce que nous attendons





Keltner et al., J Neurosci. 2006

En attendant Brupré…

Pain 93 (2001) 77–84

PAIN

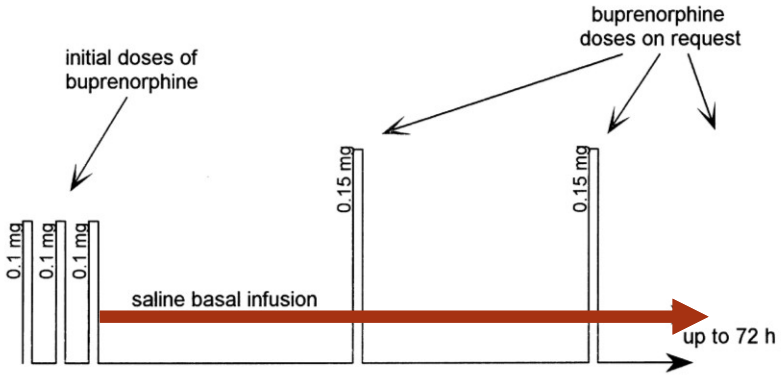
www.elsevier.nl/locate/pain

Response expectancies in placebo analgesia and their clinical relevance

Antonella Pollo[a], Martina Amanzio[a], Anna Arslanian[b], Caterina Casadio[b], Giuliano Maggi[b], Fabrizio Benedetti[a,c,*]

[a]*Department of Neuroscience, University of Torino Medical School, 10125 Torino, Italy*
[b]*Division of Thoracic Surgery, University of Torino, 10126 Torino, Italy*
[c]*Rita Levi-Montalcini Center for Brain Repair, University of Torino, 10125 Torino, Italy*

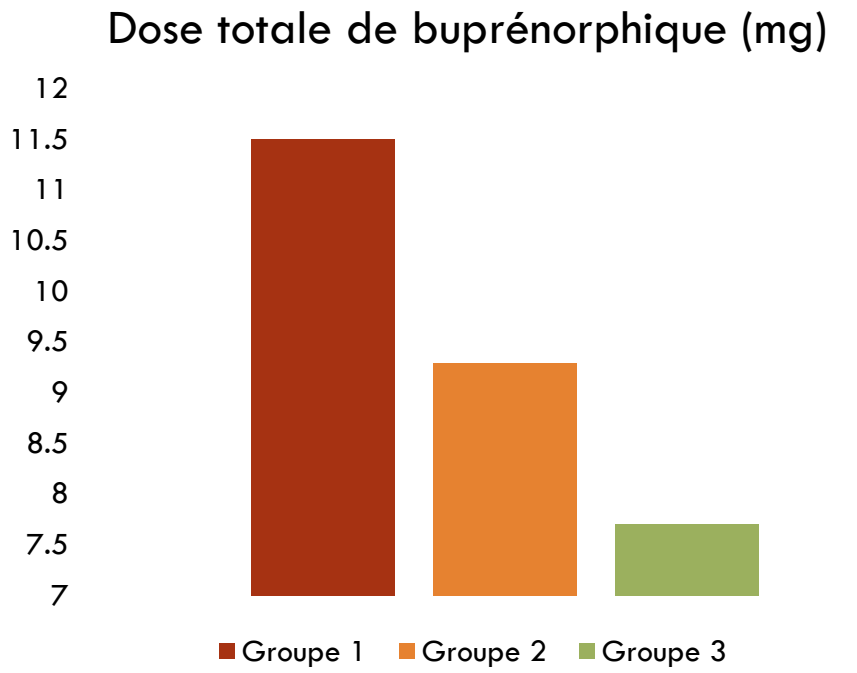
Received 8 November 2000; received in revised form 22 January 2001; accepted 30 January 2001



38 patients post chirurgie thoracique
Groupe 1 : aucune explication
Groupe 2 : double aveugle classique
Groupe 3 : puissant antalgique (mensonge)

Pollo A. et al. Pain, 2001

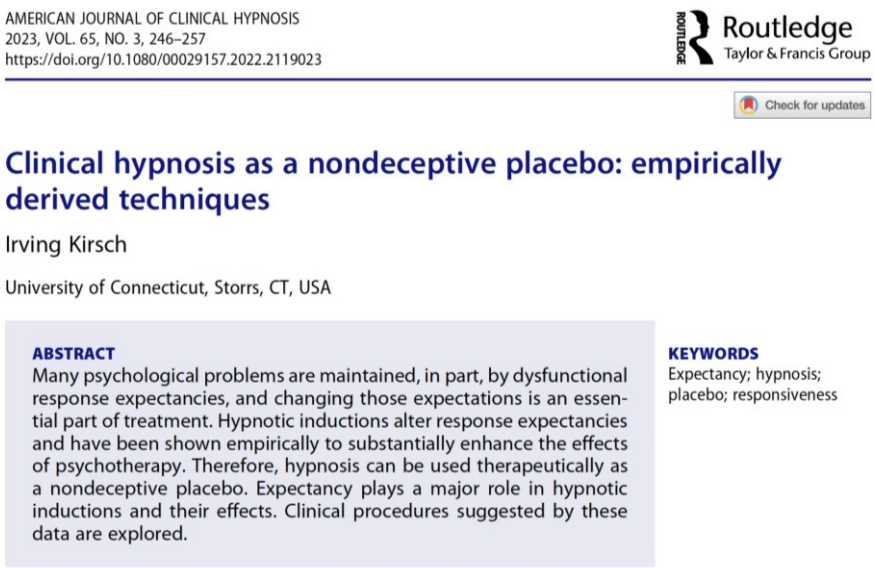
En attendant Bupré…



- Les suggestions verbales
  - Induisent des attentes
  - Produisent de l'antalgie
- Mais
  - Est-ce que duper c'est tromper ?

Pollo A. et al. Pain, 2001

Duper c'est tromper ?



AMERICAN JOURNAL OF CLINICAL HYPNOSIS
2023, VOL. 65, NO. 3, 246–257
https://doi.org/10.1080/00029157.2022.2119023

Clinical hypnosis as a nondeceptive placebo: empirically derived techniques

Irving Kirsch

University of Connecticut, Storrs, CT, USA

ABSTRACT

Many psychological problems are maintained, in part, by dysfunctional response expectancies, and changing those expectations is an essential part of treatment. Hypnotic inductions alter response expectancies and have been shown empirically to substantially enhance the effects of psychotherapy. Therefore, hypnosis can be used therapeutically as a nondeceptive placebo. Expectancy plays a major role in hypnotic inductions and their effects. Clinical procedures suggested by these data are explored.

KEYWORDS

Expectancy; hypnosis; placebo; responsiveness

"Hypnosis can be used therapeutically as a nondeceptive placebo.

Expectancy plays a major role in hypnotic inductions and their effects."

Kirsch I. Am J Clin Hypn 1994

Duper ou raisonner ?

OPEN ACCESS Freely available online

PLOS one

Placebos without Deception: A Randomized Controlled Trial in Irritable Bowel Syndrome

Ted J. Kaptchuk[1,2]*, Elizabeth Friedlander[1], John M. Kelley[3,4], M. Norma Sanchez[1], Efi Kokkotou[1], Joyce P. Singer[2], Magda Kowalczykowski[1], Franklin G. Miller[5], Irving Kirsch[6], Anthony J. Lembo[1]

1 Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, United States of America, **2** Osher Research Center, Harvard Medical School, Boston, Massachusetts, United States of America, **3** Psychology Department, Endicott College, Beverly, Massachusetts, United States of America, **4** Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, United States of America, **5** Department of Bioethics, National Institutes of Health, Bethesda, Maryland, United States of America, **6** Department of Psychology, University of Hull, Hull, United Kingdom

Abstract

Background: Placebo treatment can significantly influence subjective symptoms. However, it is widely believed that response to placebo requires concealment or deception. We tested whether open-label placebo (non-deceptive and non-concealed administration) is superior to a no-treatment control with matched patient-provider interactions in the treatment of irritable bowel syndrome (IBS).

Methods: Two-group, randomized, controlled three week trial (August 2009-April 2010) conducted at a single academic center, involving 80 primarily female (70%) patients, mean age 47±18 with IBS diagnosed by Rome III criteria and with a score ≥150 on the IBS Symptom Severity Scale (IBS-SSS). Patients were randomized to either open-label placebo pills presented as "placebo pills made of an inert substance, like sugar pills, that have been shown in clinical studies to produce significant improvement in IBS symptoms through mind-body self-healing processes" or no-treatment controls with the same quality of interaction with providers. The primary outcome was IBS Global Improvement Scale (IBS-GIS). Secondary measures were IBS Symptom Severity Scale (IBS-SSS), IBS Adequate Relief (IBS-AR) and IBS Quality of Life (IBS-QoL).

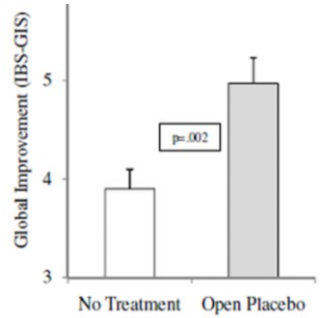
Findings: Open-label placebo produced significantly higher mean (±SD) global improvement scores (IBS-GIS) at both 11-day midpoint (5.2±1.0 vs. 4.0±1.1, $p<.001$) and at 21-day endpoint (5.0±1.5 vs. 3.9±1.3, $p=.002$). Significant results were also observed at both time points for reduced symptom severity (IBS-SSS, $p=.008$ and $p=.03$) and adequate relief (IBS-AR, $p=.02$ and $p=.03$); and a trend favoring open-label placebo was observed for quality of life (IBS-QoL) at the 21-day endpoint ($p=.08$).

Conclusion: Placebos administered without deception may be an effective treatment for IBS. Further research is warranted in IBS, and perhaps other conditions, to elucidate whether physicians can benefit patients using placebos consistent with informed consent.

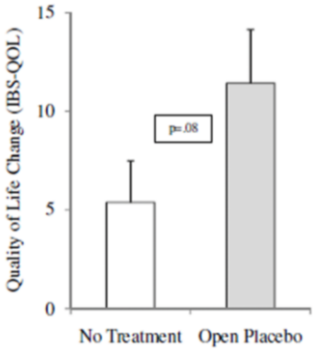
Trial Registration: ClinicalTrials.gov NCT01010191

Kaptchuk TJ et al. Plos One 2015

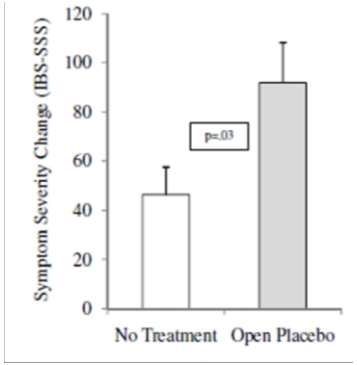
Amélioration globale



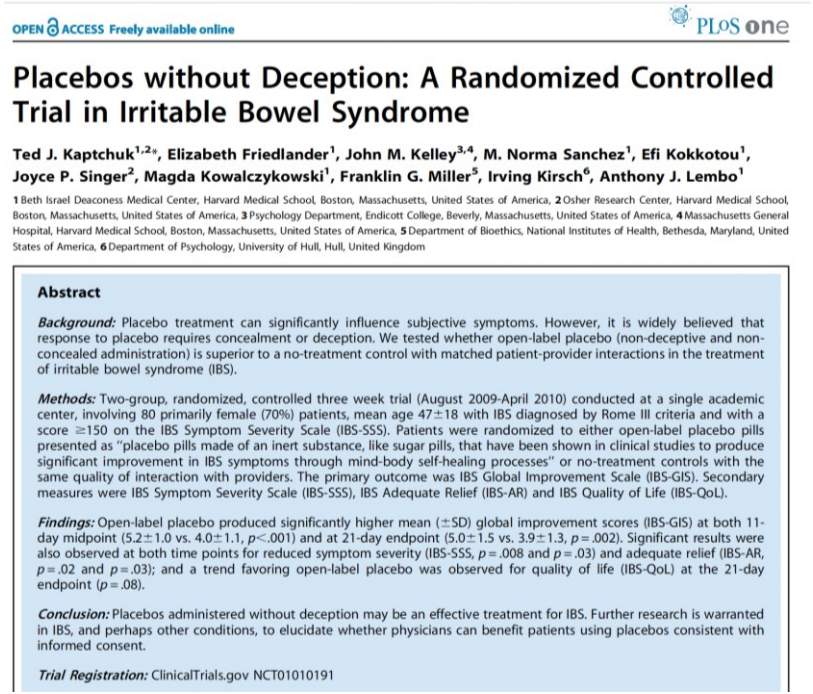
Qualité de vie



Sévérité symptômes



Duper ou raisonner ?



OPEN ACCESS Freely available online PLOS one

Placebos without Deception: A Randomized Controlled Trial in Irritable Bowel Syndrome

Ted J. Kaptchuk[1,2*], Elizabeth Friedlander[1], John M. Kelley[3,4], M. Norma Sanchez[1], Efi Kokkotou[1], Joyce P. Singer[2], Magda Kowalczykowski[1], Franklin G. Miller[5], Irving Kirsch[6], Anthony J. Lembo[1]

1 Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, Massachusetts, United States of America, **2** Osher Research Center, Harvard Medical School, Boston, Massachusetts, United States of America, **3** Psychology Department, Endicott College, Beverly, Massachusetts, United States of America, **4** Massachusetts General Hospital, Harvard Medical School, Boston, Massachusetts, United States of America, **5** Department of Bioethics, National Institutes of Health, Bethesda, Maryland, United States of America, **6** Department of Psychology, University of Hull, Hull, United Kingdom

Abstract

Background: Placebo treatment can significantly influence subjective symptoms. However, it is widely believed that response to placebo requires concealment or deception. We tested whether open-label placebo (non-deceptive and non-concealed administration) is superior to a no-treatment control with matched patient-provider interactions in the treatment of irritable bowel syndrome (IBS).

Methods: Two-group, randomized, controlled three week trial (August 2009-April 2010) conducted at a single academic center, involving 80 primarily female (70%) patients, mean age 47±18 with IBS diagnosed by Rome III criteria and with a score ≥150 on the IBS Symptom Severity Scale (IBS-SSS). Patients were randomized to either open-label placebo pills presented as "placebo pills made of an inert substance, like sugar pills, that have been shown in clinical studies to produce significant improvement in IBS symptoms through mind-body self-healing processes" or no-treatment controls with the same quality of interaction with providers. The primary outcome was IBS Global Improvement Scale (IBS-GIS). Secondary measures were IBS Symptom Severity Scale (IBS-SSS), IBS Adequate Relief (IBS-AR) and IBS Quality of Life (IBS-QoL).

Findings: Open-label placebo produced significantly higher mean (±SD) global improvement scores (IBS-GIS) at both 11-day midpoint (5.2±1.0 vs. 4.0±1.1, $p<.001$) and at 21-day endpoint (5.0±1.5 vs. 3.9±1.3, $p=.002$). Significant results were also observed at both time points for reduced symptom severity (IBS-SSS, $p=.008$ and $p=.03$) and adequate relief (IBS-AR, $p=.02$ and $p=.03$); and a trend favoring open-label placebo was observed for quality of life (IBS-QoL) at the 21-day endpoint ($p=.08$).

Conclusion: Placebos administered without deception may be an effective treatment for IBS. Further research is warranted in IBS, and perhaps other conditions, to elucidate whether physicians can benefit patients using placebos consistent with informed consent.

Trial Registration: ClinicalTrials.gov NCT01010191

1. L'effet placebo est puissant
2. Le corps peut réagir automatiquement à la prise de pilules placebo comme les chiens de Pavlov
3. Une attitude positive aide mais n'est pas nécessaire
4. Il est essentiel de prendre les pilules régulièrement

Kaptchuk TJ et al. Plos One 2015

Duper ou raisonner ?

Research Paper

PAIN

Is the rationale more important than deception? A randomized controlled trial of open-label placebo analgesia

Cosima Locher[a,*], Antje Frey Nascimento[a], Irving Kirsch[b], Joe Kossowsky[a,c], Andrea Meyer[d], Jens Gaab[a]

Abstract

Research on open-label placebos questions whether deception is a necessary characteristic of placebo effects. Yet, comparisons between open-label and deceptive placebos (DPs) are lacking. We therefore assessed effects of open-label placebos and DPs in comparison with no treatment (NT) with a standardized experimental heat pain paradigm in a randomized controlled trial in healthy participants. Participants (N = 160) were randomly assigned to NT, open-label placebo without rationale (OPR-), open-label placebo with rationale (OPR^+), and DP. We conducted baseline and posttreatment measurements of heat pain threshold and tolerance. Apart from the NT, all groups received an application of a placebo cream. Primary outcomes were planned comparisons of heat pain tolerance and the corresponding intensity and unpleasantness ratings. Objective posttreatment pain tolerance did not differ among groups. However, for subjective heat pain ratings at the posttreatment tolerance level, groups with a rationale (OPR^+ and DP) reported diminished heat pain intensity ($t(146) = -2.15$, $P = 0.033$, $d = 0.43$) and unpleasantness ratings ($t(146) = -2.43$, $P = 0.016$, $d = 0.49$) compared with the OPR-group. Interestingly, the OPR^+ and the DP groups did not significantly differ in heat pain intensity ($t(146) = -1.10$, $P = 0.272$) or unpleasantness ratings ($t(146) = -0.05$, $P = 0.961$) at the posttreatment tolerance level. Our findings reveal that placebos with a plausible rationale are more effective than without a rationale. Even more, open-label placebos did not significantly differ in their effects from DPs. Therefore, we question the ubiquitously assumed necessity of concealment in placebo administration.

Keywords: Pain, Open-label placebos, TSA-II, Rationale, Deception, Heat pain paradigm

Table 1

Sociodemographic characteristics of study participants.

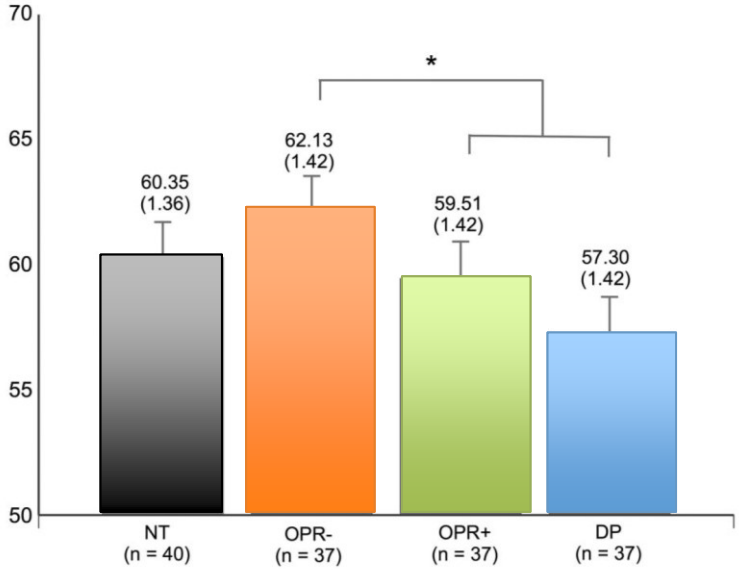
Group	N (included)	Age (SD)	N (%) female	Family status N (%)	Highest educational level N (%)	Employment level N (
NT	40	27.9 (8.52)	29 (73%)	Single: 37 (92.5%) Married: 0 (0%) Registered partnership: 1 (2.5%) Divorced: 2 (5%)	Primary school: 0 (0%) Secondary school: 6 (15%) High school: 15 (37.5%) University: 19 (47.5%)	Full time: 5 (12.5%) Part time: 21 (52.5%) None or student: 14 (35
OPR^-	37	28.27 (11.34)	24 (65%)	Single: 32 (86.5%) Married: 5 (13.5%) Registered partnership: 0 (0%) Divorced: 0 (0%)	Primary school: 0 (0%) Secondary school: 4 (10.8%) High school: 23 (62.2%) University: 10 (27%)	Full time: 3 (8.1%) Part time: 15 (40.5%) None or student: 19 (51
OPR^+	37	25.7 (7.76)	27 (73%)	Single: 34 (91.9%) Married: 2 (5.4%) Registered partnership: 0 (0%) Divorced: 1 (2.7%)	Primary school: 0 (0%) Secondary school: 3 (8.1%) High school: 23 (62.2%) University: 11 (29.7%)	Full time: 6 (16.2%) Part time: 19 (51.4%) None or student: 12 (32
DP	37	26.65 (10.25)	23 (62%)	Single: 35 (94.6%) Married: 1 (2.7%) Registered partnership: 0 (0%) Divorced: 1 (2.7%)	Primary school: 1 (2.7%) Secondary school: 5 (13.5%) High school: 19 (51.4%) University: 12 (32.4%)	Full time: 7 (18.9%) Part time: 14 (37.8%) None or student: 16 (43

DP, deceptive placebo; NT, no treatment group; OPR^-, open-label placebo without rationale; OPR^+, open-label placebo with rationale.

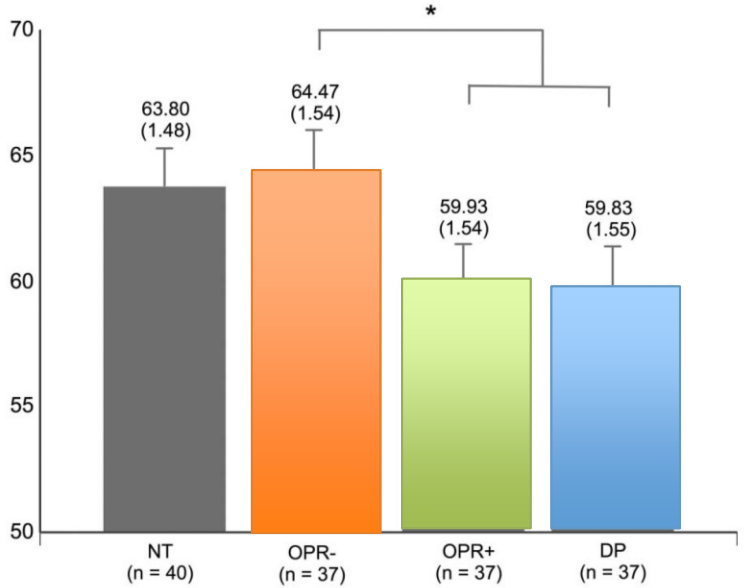
Locher C et al. Pain 2017

Duper ou raisonner ?

Evaluations subjectives de l'intensité de la douleur



Evaluations subjectives de l'aspect désagréable de la douleur



Locher C et al. Pain 2017

Tromper, raisonner, choisir ?

Research Paper

PAIN®

Choice over placebo administration enhances open-label placebo hypoalgesia

Biya Tang*, Evan Livesey, Ben Colagiuri

Abstract

Many studies indicate that deceptively administered placebos can improve pain outcomes. However, the deception involved presents an ethical barrier to translation because it violates informed consent and patient autonomy. Open-label placebos (OLPs), inert treatments that are openly administered as placebos, have been proposed as an ethically acceptable alternative. Early studies have suggested that OLP can improve pain outcomes, but important questions remain as to how to maximise OLP hypoalgesia to improve treatment outcomes in pain patients. This study investigated whether providing choice over when to administer an OLP treatment has the capacity to enhance OLP hypoalgesia using an electrocutaneous pain paradigm. One hundred thirty-two healthy volunteers were randomised to 3 types of treatment: OLP with choice, OLP without choice, and no treatment (natural history). The OLP groups were further randomised such that half were tested with a consistent pain intensity and the other half were tested with variable pain intensity to mimic day-to-day variability in pain intensity in health settings. The results indicated that treatment provided with choice exhibited greater OLP hypoalgesia than that provided without choice and that greater expectancy mediated this effect. Of interest, there was no evidence for OLP hypoalgesia without choice relative to natural history. Furthermore, variability in pain intensity did not affect OLP hypoalgesia. The current findings present novel evidence that choice over treatment administration may be a cheap and effective strategy for boosting the efficacy of OLPs in the clinical care of pain.

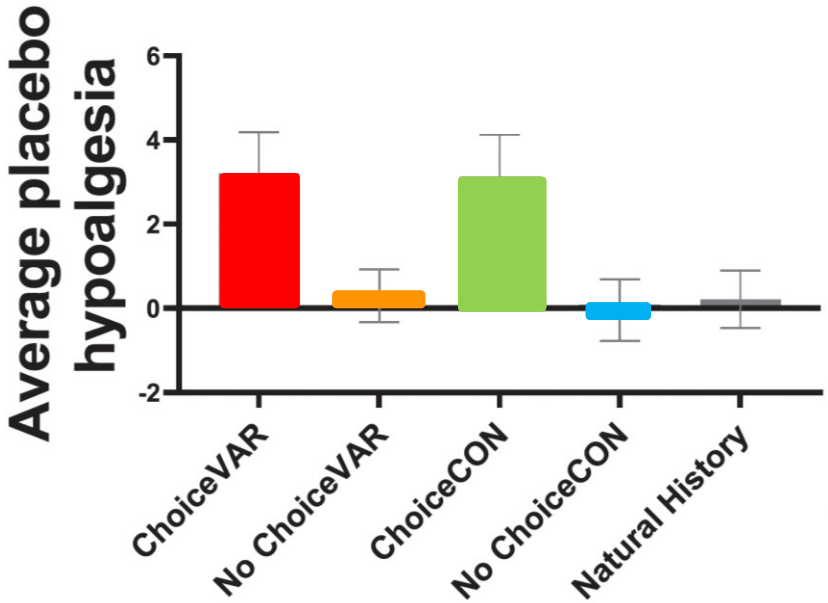
Keywords: Placebo, Expectancy, Open-label placebo, Choice, Instrumental control

Experimental design.

Group	Choice Manipulation	Variability Manipulation	
ChoiceVAR (n = 25)	Chose whether or not to activate placebo TENS on each trial, but with a maximum of 5 placebo trials within each block	4 placebo TENS → 60% 4 placebo TENS → 70% 4 placebo TENS → 80% 4 placebo TENS → 90% 4 placebo TENS → 100%	4 No placebo → 60% 4 No placebo → 70% 4 No placebo → 80% 4 No placebo → 90% 4 No placebo → 100%
No ChoiceVAR (n = 24)	Placebo administration and shock intensity yoked to ChoiceVAR	4 placebo TENS → 60% 4 placebo TENS → 70% 4 placebo TENS → 80% 4 placebo TENS → 90% 4 placebo TENS → 100%	4 No placebo → 60% 4 No placebo → 70% 4 No placebo → 80% 4 No placebo → 90% 4 No placebo → 100%
ChoiceCON (n = 26)	Chose whether or not to activate placebo TENS on each trial, but with a maximum of 5 placebo trials within each block	20 placebo TENS → 80%	20 No placebo → 80%
No ChoiceCON (n = 26)	Placebo administration yoked to ChoiceCON	20 placebo TENS → 80%	20 No placebo → 80%
Natural History (n = 25)	No placebo controls	2 placebo TENS → 60% 2 placebo TENS → 70% 12 placebo TENS → 80% 2 placebo TENS → 90% 2 placebo TENS → 100%	2 No placebo → 60% 2 No placebo → 70% 12 No placebo → 80% 2 No placebo → 90% 2 No placebo → 100%

Tang B et al. Pain 2023

Tromper, raisonner, choisir ?



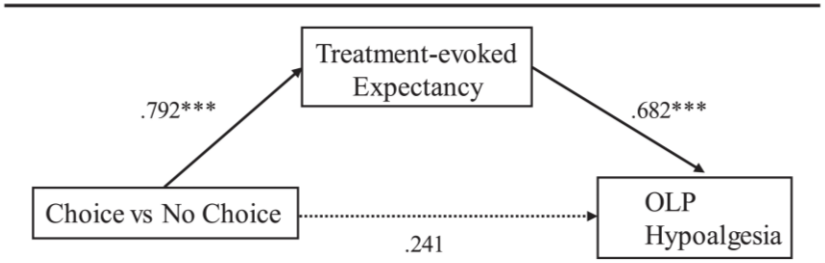
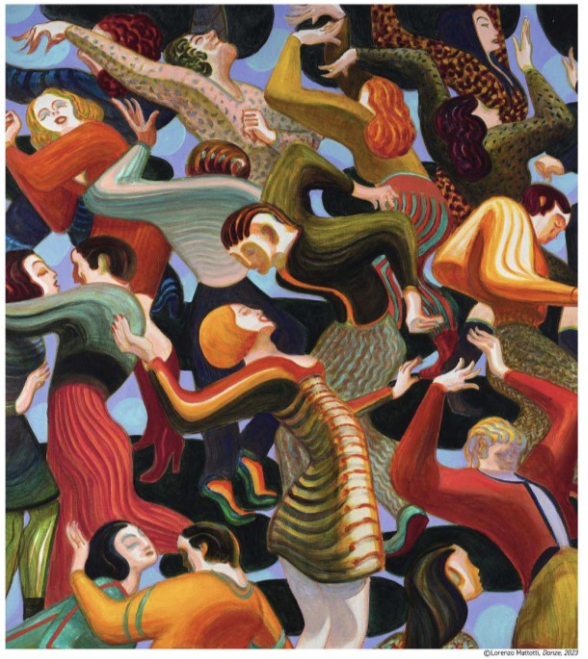


Figure 5. Mediation analysis involving choice manipulation (independent variable), average placebo hypoalgesia (dependent variable), and average treatment-evoked reduction in expectancy (mediator). ***$P < 0.001$.

Tang B et al. Pain 2023

EXPÉRIENCE ÉMOTIONNELLE



©Lorenzo Mattotti, *Danze*, 2023

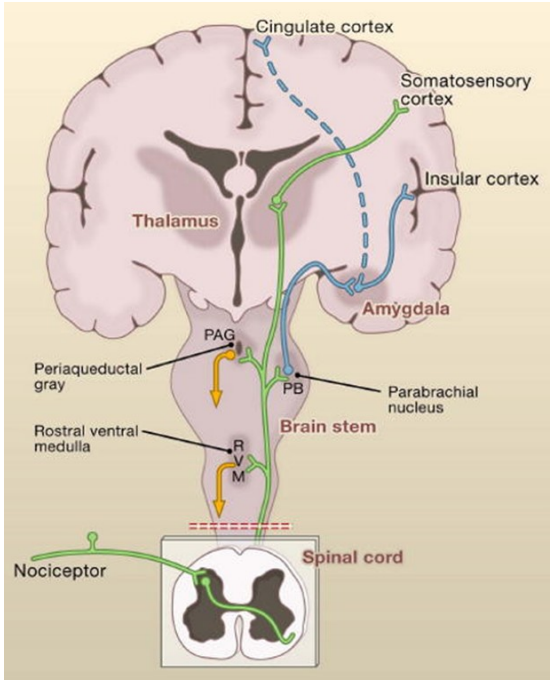
BRECHT EVENS
MILES HYMAN
LORENZO MATTOTTI

ART PARIS
STAND H1
ART FAIR

galeriemartel

17, rue Martel 75010 Paris
tel. 01 42 46 35 09
www.galeriemartel.com
du mardi au samedi de 14h30 à 19h

Expérience sensorielle et émotionnelle



Science
AAAS

Pain Affect Encoded in Human Anterior Cingulate But Not Somatosensory Cortex

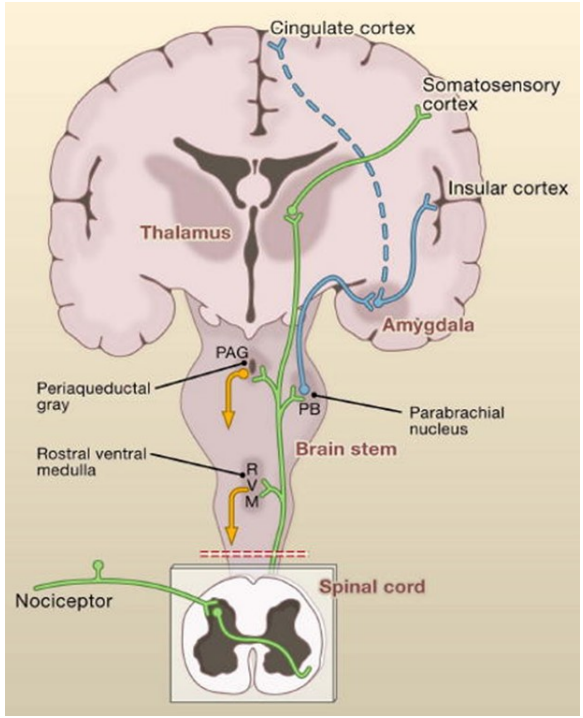
Pierre Rainville, *et al.*

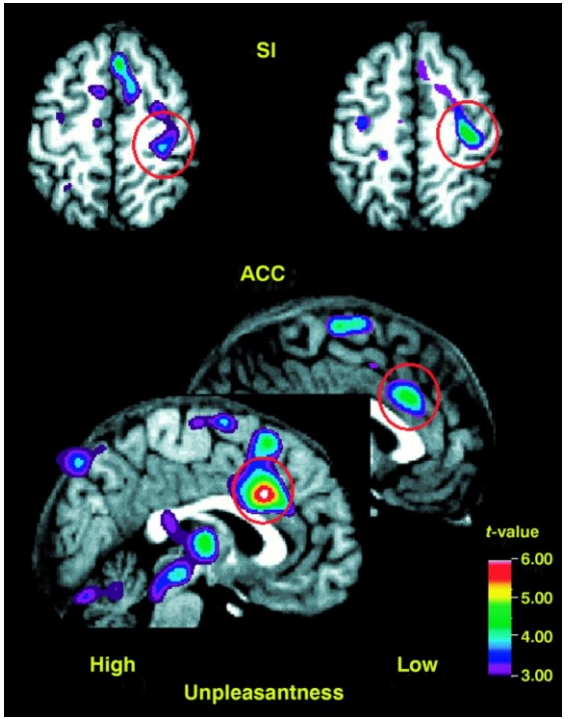
Science **277**, 968 (1997);
DOI: 10.1126/science.277.5328.968

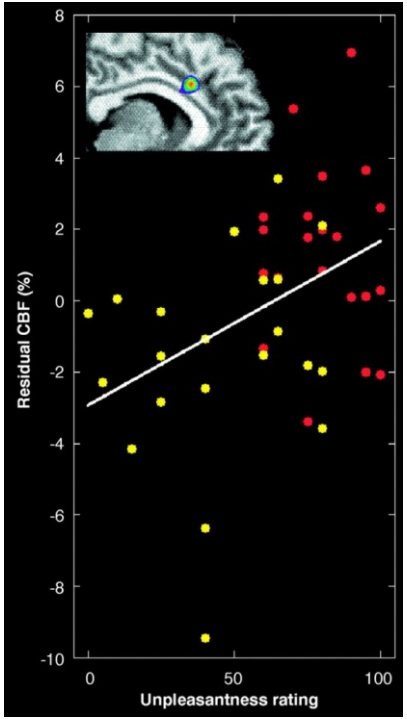
- Tomographie par émission de positron / Flux sanguin cérébral mesuré $H_2{}^{15}O$
- Main gauche plongée
  - + Stimuli neutre = eau à 35 °C
  - + Stimuli douloureux = eau à 47 °C
- Contrôle : activation des aires SI, SII, CI, CCA
- Suggestions hypnotiques renforçant sensations désagréables
  - + CCA ↗↗↗
- Suggestions hypnotiques diminuant sensations désagréables
  - + CCA ↘↘↘

Basbaum AI, et al., Cell 2009

Expérience sensorielle et émotionnelle





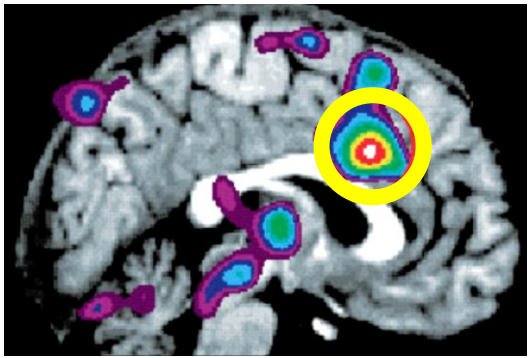


Basbaum AI, et al., Cell 2009

Rainville et al. Science 1997

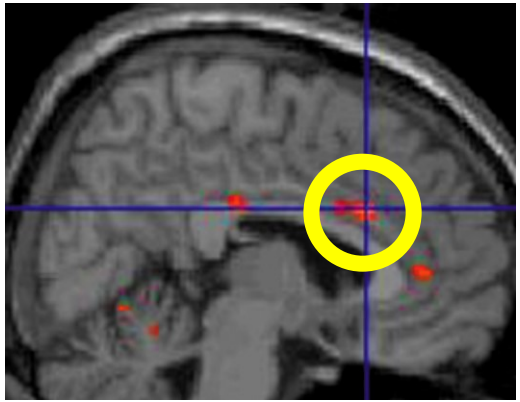
L'émotion et les douleurs

Douleur physique
Augmentation vs.
Réduction hypnotique
(Rainville et al. 1997)



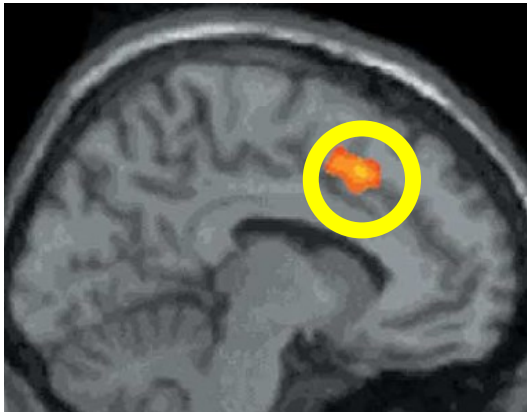
TEP

Douleur du deuil
Défunt vs. Etranger
(Gündel et al. 2003)



IRMf

Douleur de l'exclusion
Exclusion vs. Inclusion
(Eisenberger et al. 2003)



IRMf

N'ayez pas peur…

ARTICLES

Adjunctive non-pharmacological analgesia for invasive medical procedures: a randomised trial

Elvira V Lang, Eric G Benotsch, Lauri J Fick, Susan Lutgendorf, Michael L Berbaum, Kevin S Berbaum, Henrietta Logan, David Spiegel

Summary

Background Non-pharmacological behavioural adjuncts have been suggested as efficient safe means in reducing discomfort and adverse effects during medical procedures. We tested this assumption for patients undergoing percutaneous vascular and renal procedures in a prospective, randomised, single-centre study.

Methods 241 patients were randomised to receive intraoperatively standard care (n=79), structured attention (n=80), or self-hypnotic relaxation (n=82). All had access to patient-controlled intravenous analgesia with fentanyl and midazolam. Patients rated their pain and anxiety on 0–10 scales before, every 15 min during and after the procedures.

Findings Pain increased linearly with procedure time in the standard group (slope 0·09 in pain score/15 min, p<0·0001), and the attention group (slope 0·04/15 min; p=0·0425), but remained flat in the hypnosis group. Anxiety decreased over time in all three groups with slopes of −0·04 (standard), −0·07 (attention), and −0·11 (hypnosis). Drug use in the standard group (1·9 units) was significantly higher than in the attention and hypnosis groups (0·8 and 0·9 units, respectively). One hypnosis patient became haemodynamically

Introduction

Minimally invasive, image-guided, percutaneous medical procedures increasingly replace open surgery. Technical refinement minimises tissue injury and largely obviates the need for general anaesthesia, but patients may still experience distress, which can tax the coping mechanisms of even well-functioning individuals.[1] Most physicians rely on intravenous conscious sedation with narcotics and sedatives to manage pain and anxiety.[2] These drugs, however, can induce cardiovascular depression, hypoxia, apnoea, unconsciousness, and, rarely, death, even in dosages usually well tolerated.[3,4] The operator typically has to weigh the risks of medically induced oversedation against the risks of uncontrolled discomfort and restlessness. An approach that provides comfort while reducing or eliminating the need for intravenous drugs is, therefore, highly desirable.

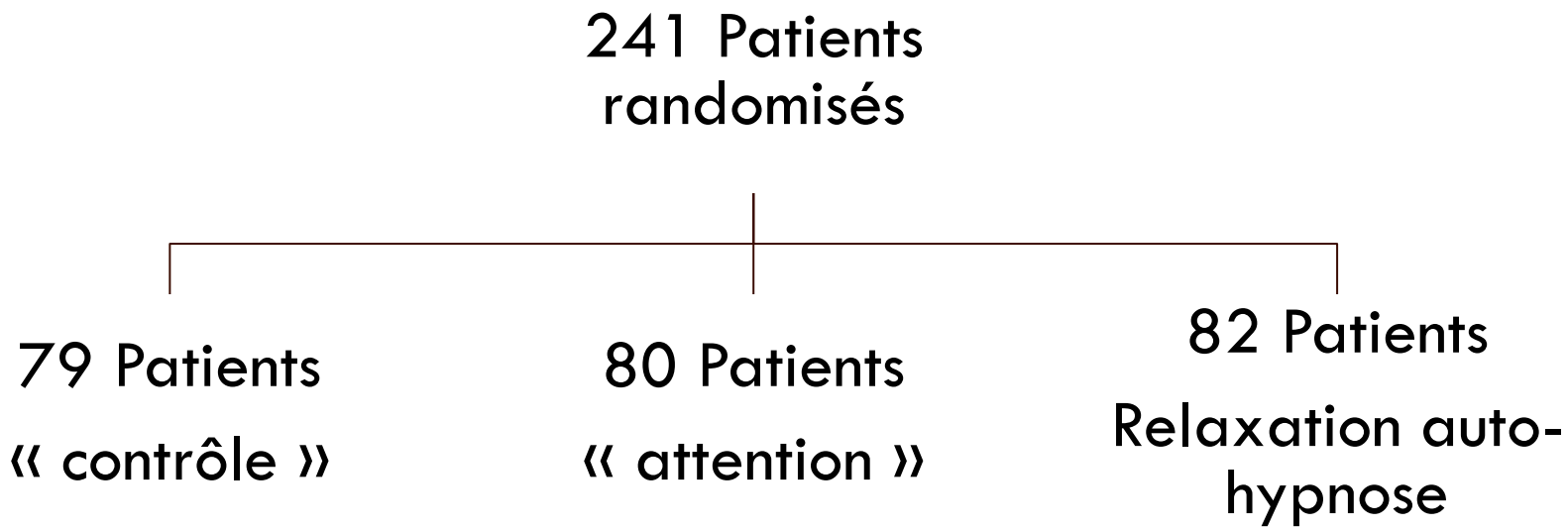
Biobehavioural "non-pharmacological" analgesia in the form of imagery, relaxation training, and hypnosis has been used successfully to treat procedure pain.[5–10] Clinical practice guidelines for acute pain management, published by the US Public Health Service, mention relaxation exercises and cognitive approaches, but do not elaborate.[2] Behavioural methods still need testing in larger clinical studies. To address this need, we designed a prospective

Characteristic	Standard group (n=79)	Attention group (n=80)	Hypnosis group (n=82)
Age*	57 (18–92)	57 (18–84)	54 (19–82)
Weight (kg)*	74 (44–118)	80 (40–143)	80 (45–147)
Male/female	36/43	40/40	38/44
Ethnicity			
White	74	75	78
Black	5	5	3
Native American	0	0	1
Procedure			
Arterial	48	55	51
Venous	19	17	17
Nephrostomy	12	8	14
Disease category			
1	24	34	25
2	41	37	44
3	12	8	10
4	2	1	3
Anaesthesia class (mean)	2·24	2·22	2·24
Previous procedures*	4 (0–17)	4 (0–18)	4 (0–47)
Mean baseline pain	2·1	1·8	1·9
Mean baseline anxiety	3·5	3·8	3·8

Lang EV., et al., 2000

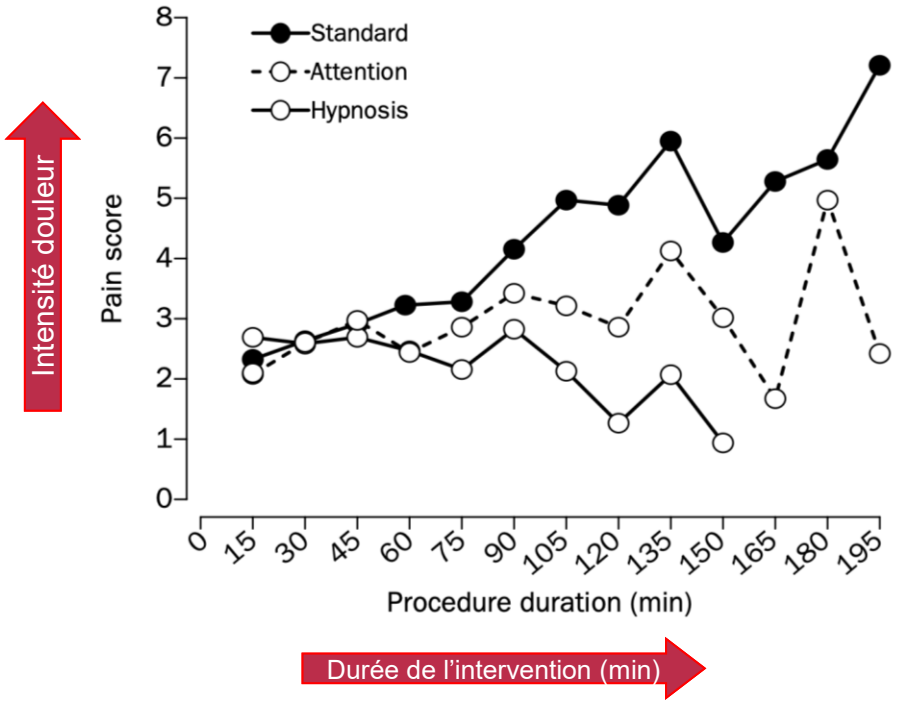
Expérience sensorielle et émotionnelle

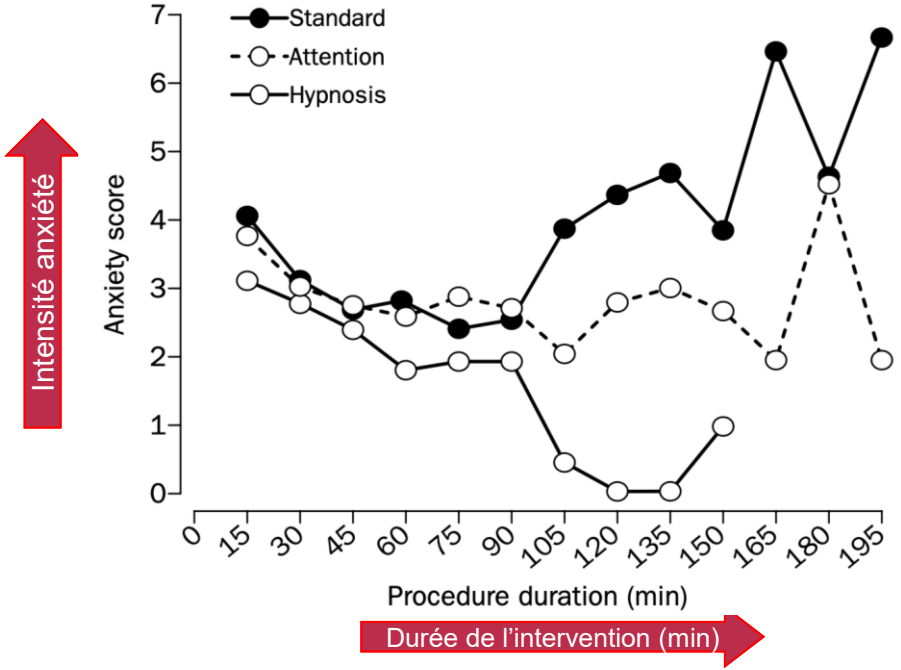
"Adjunctive non-pharmacological analgesia for invasive medical procedures: a randomised trial."



Lang EV., et al., 2000

Du vicieux au vertueux





Lang EV., et al., 2000

La peur ou l'anxiété ?

Pain 84 (2000) 65–75

PAIN

www.elsevier.nl/locate/pain

Fear and anxiety: divergent effects on human pain thresholds

Jamie L. Rhudy, Mary W. Meagher*

Texas A&M University, College Station, TX 77843-4235, USA

Received 1 March 1999; received in revised form 4 June 1999; accepted 13 July 1999

Abstract

Animal studies suggest that fear inhibits pain whereas anxiety enhances it; however it is unclear whether these effects generalize to humans. The present study examined the effects of experimentally induced fear and anxiety on radiant heat pain thresholds. Sixty male and female human subjects were randomly assigned to 1 of 3 emotion induction conditions: (1) fear, induced by exposure to three brief shocks; (2) anxiety, elicited by the threat of shock; (3) neutral, with no intervention. Pain thresholds were tested before and after emotion induction. Results suggest that findings from animal studies extend to humans: fear resulted in decreased pain reactivity, while anxiety led to increased reactivity. Pain rating data indicated that participants used consistent subjective criteria to indicate pain thresholds. Both subjective and physiological indicators (skin conductance level, heart rate) confirmed that the treatment conditions produced the targeted emotional states. These results support the view that emotional states modulate human pain reactivity. © 2000 International Association for the Study of Pain. Published by Elsevier Science B.V.

Qu'est ce qui fait le plus mal La peur ou l'anxiété ?

60 sujets randomisés en 3 groupes

- Neutre
- Peur
- Anxiété

Rhudy JL, Meagher MW. Pain, 2000

Qu'est ce qui fait le plus mal
La peur ou l'anxiété ?

Peur : « Vous allez, ou non, recevoir des chocs électriques brefs, surprenants et douloureux »
1 choc de 12 mA toutes les 20 secondes

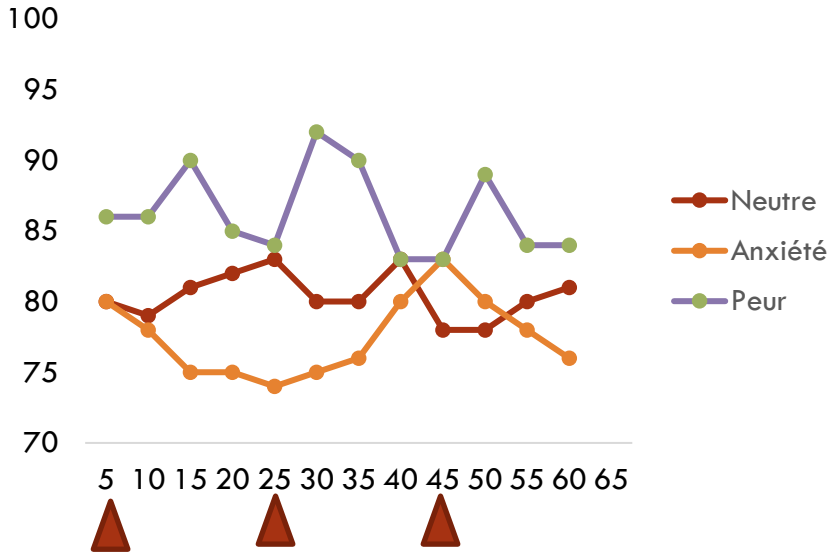
Anxiété : « Vous allez ou non recevoir des chocs électriques brefs, surprenants et douloureux »
Aucun choc

Neutre : « Vous ne recevrez aucune stimulation surprenante pendant cette expérience »

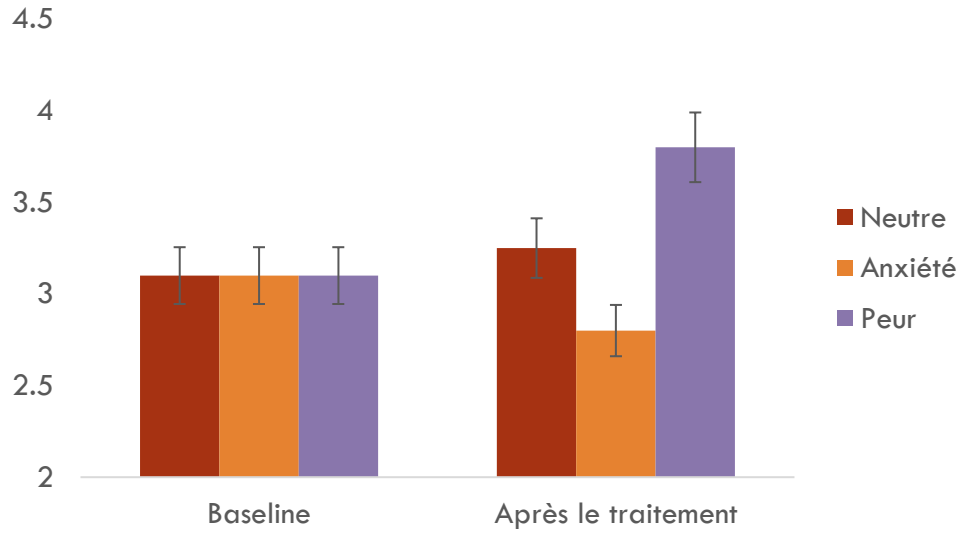
Rhudy JL, Meagher MW. Pain, 2000

La peur ou l'anxiété ?

Fréquence cardiaque (bpm)



Temps de latence du retrait (s)



Rhudy JL, Meagher MW. Pain, 2000

LE CHOIX DANS LES MOTS

Les mots de la douleur

Pain 114 (2005) 303–309

PAIN

www.elsevier.com/locate/pain

Clinical note

Can words hurt? Patient–provider interactions during invasive procedures

Elvira V. Lang*, Olga Hatsiopoulou, Timo Koch, Kevin Berbaum, Susan Lutgendorf, Eva Kettenmann, Henrietta Logan, Ted J. Kaptchuk

Department of Radiology, Beth Israel Deaconess Medical Center, 330 Brookline Ave, West CC Room 308F, 02215 Boston, MA, USA

Received 21 July 2004; received in revised form 20 November 2004; accepted 20 December 2004

- 159 interventions chirurgicales
- Durée des interventions
  - 22-330 min
- Interventions filmées et analysées
  - Discours et comportement des personnels
    - Chirurgiens et infirmières

Lang E.V et al., 2005

Les mots nocebo

Mise en garde d'événements à venir

	Mise en garde	Pas de mise en garde	p
Douleur	3.9	2.8	***
Score d'anxiété	4.4	3.2	***
Consommation de médicament	0.35	0.46	ns

Mise en garde après une intervention

	Mise en garde	Pas de mise en garde	p
Douleur	2.7	2.5	ns
Score d'anxiété	3.7	2.9	**
Consommation de médicament	0.32	0.26	ns

Lang E.V et al., 2005

Les mots nocebo

12014 • The Journal of Neuroscience, November 15, 2006 • 26(46):12014–12022

Behavior/Systems/Cognitive

The Biochemical and Neuroendocrine Bases of the Hyperalgesic Nocebo Effect

Fabrizio Benedetti,[1] Martina Amanzio,[2] Sergio Vighetti,[1] and Giovanni Asteggiano[3]
[1]Department of Neuroscience, University of Turin Medical School, 10125 Turin, Italy, [2]Department of Psychology, University of Turi
and [3]Division of Neurology, S. Lazzaro Medical Center, 12051 Alba, Italy

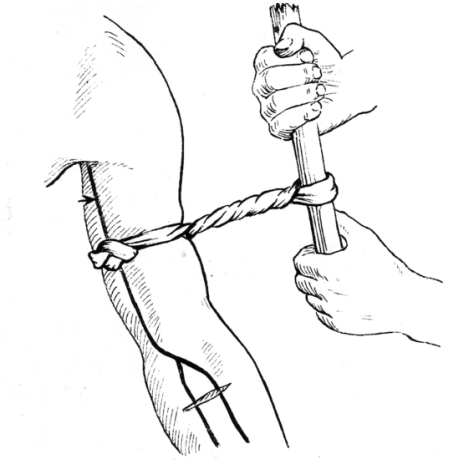
49 sujets / 4 groupes

Torture du tourniquet

Tensiomètre 300 mmHg – 10 min

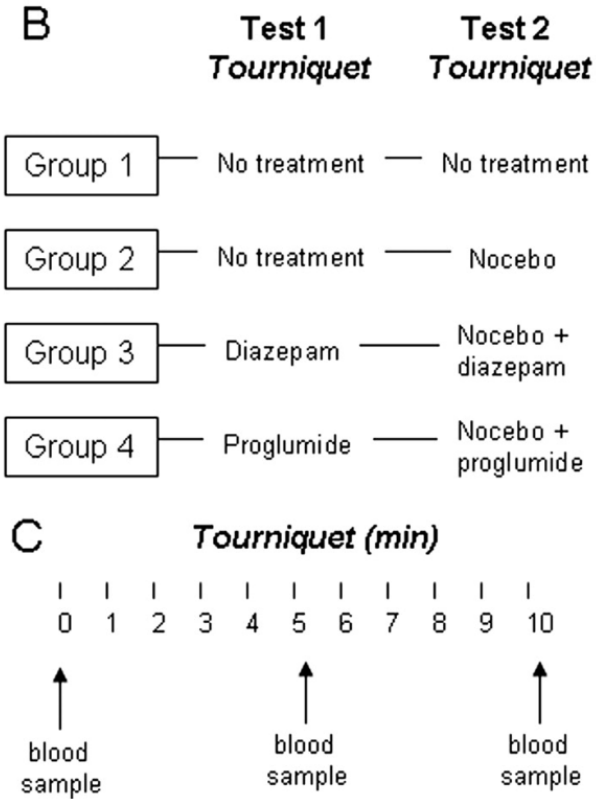
Exerciseur à main (7,2 kg)

Douleur insupportable au bout de 14 min



Benedetti F. et al. J Neurosci. 2006

Les mots nocebo



Diazépam

Anxiolytique

Proglumide

Antagoniste de la cholécystokinine

Pilule nocébo

Pilule inerte suggestion d'un puissant vasoconstricteur

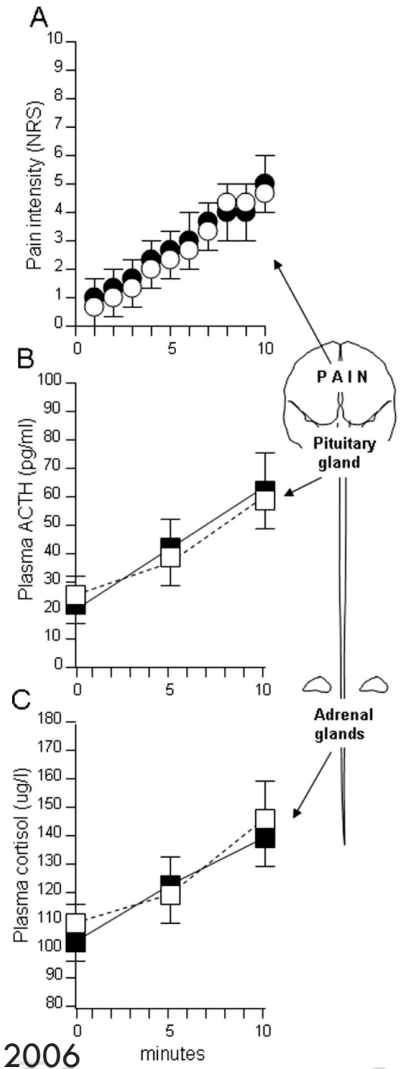
En raison de la vasoconstriction rapide, augmentation plus rapide et plus importante de l'intensité de la douleur

S'attendre à un effet hyperalgésique assez fort

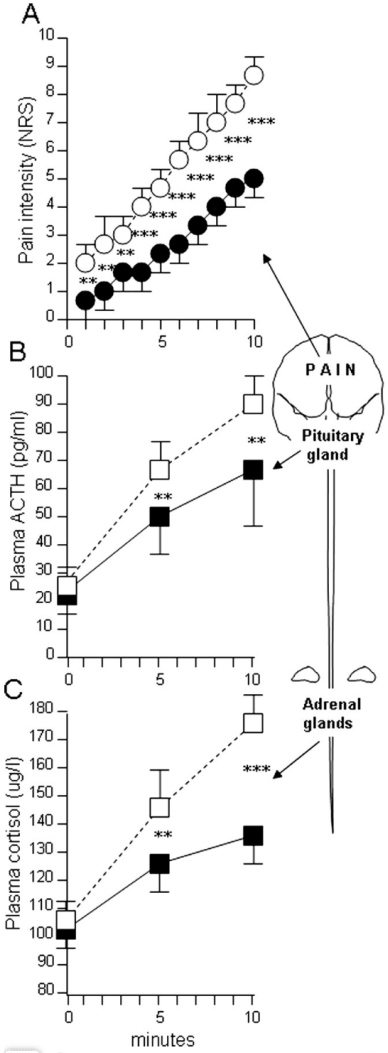
Pour renforcer encore les suggestions verbales, les sujets ont été informés qu'ils pouvaient abandonner à tout moment

Benedetti F. et al. J Neurosci. 2006

Groupe 1
Noir 1ère série
Blanc 2ème série

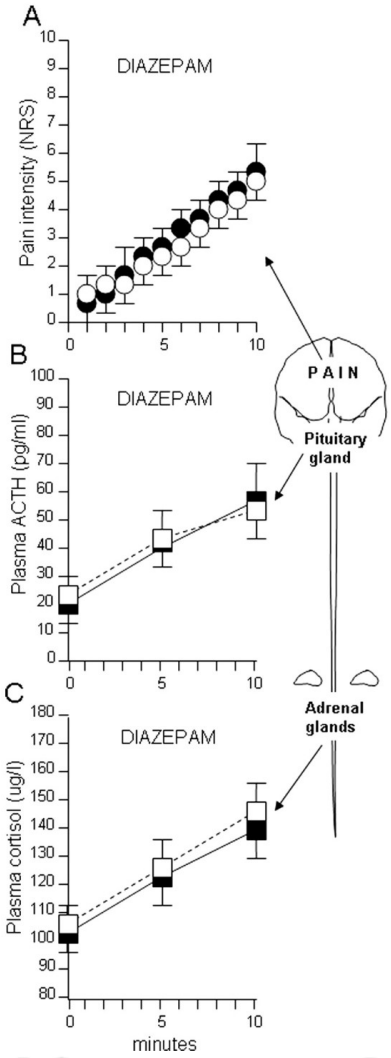


Groupe 2 Nocébo
Noir 1ère série
Blanc 2ème série, nocébo

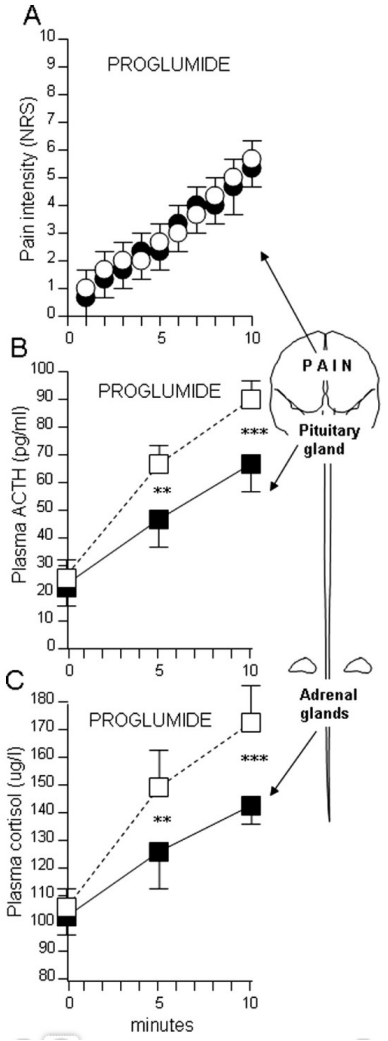


Benedetti F. et al. J Neurosci. 2006

Groupe 3 Diazépam
Noir 1ère série Diazépam
Blanc 2ème série, nocébo

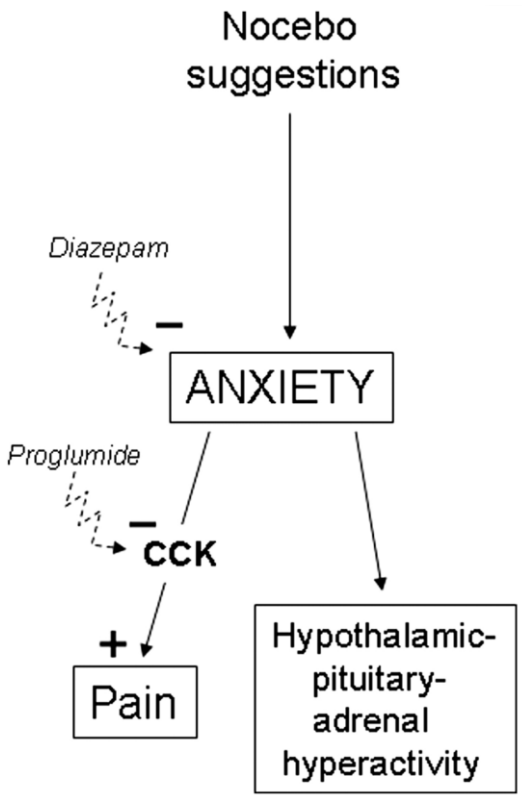


Groupe 4 Proglumide
Noir 1ère série Proglumide
Blanc 2ème série, nocébo



Benedetti F. et al. J Neurosci. 2006

Les mots nocebo



Benedetti F. et al. J Neurosci. 2006

Daisy Collingridge. Lean on me, (Burt and hillary), 2021

La douleur comme récompense

PAIN® 154 (2013) 361–367

PAIN®

www.elsevier.com/locate/pain

Pain as a reward: Changing the meaning of pain from negative to positive co-activates opioid and cannabinoid systems

Fabrizio Benedetti [a,b,*], Wilma Thoen [c], Catherine Blanchard [c], Sergio Vighetti [a,b], Claudia Arduino [b]

[a] Department of Neuroscience, University of Turin Medical School, Turin 10125, Italy
[b] National Institute of Neuroscience Laboratories, Plateau Rosà Research Station, Breuil-Cervinia 11021, Italy
[c] Center for Endocrine and Metabolic Disorders, Aoste 11100, Italy

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

ARTICLE INFO

Article history:
Received 31 August 2012
Accepted 14 November 2012

Keywords:
Pain
Reward
Endogenous opioids
Endocannabinoids
Naltrexone
Rimonabant

ABSTRACT

Pain is a negative emotional experience that is modulated by a variety of psychological factors through different inhibitory systems. For example, endogenous opioids and cannabinoids have been found to be involved in stress and placebo analgesia. Here we show that when the meaning of the pain experience is changed from negative to positive through verbal suggestions, the opioid and cannabinoid systems are co-activated and these, in turn, increase pain tolerance. We induced ischemic arm pain in healthy volunteers, who had to tolerate the pain as long as possible. One group was informed about the aversive nature of the task, as done in any pain study. Conversely, a second group was told that the ischemia would be beneficial to the muscles, thus emphasizing the usefulness of the pain endurance task. We found that in the second group pain tolerance was significantly higher compared to the first one, and that this effect was partially blocked by the opioid antagonist naltrexone alone and by the cannabinoid antagonist rimonabant alone. However, the combined administration of naltrexone and rimonabant antagonized the increased tolerance completely. Our results indicate that a positive approach to pain reduces the global pain experience through the co-activation of the opioid and cannabinoid systems. These findings may have a profound impact on clinical practice. For example, postoperative pain, which means healing, can be perceived as less unpleasant than cancer pain, which means death. Therefore, the behavioral and/or pharmacological manipulation of the meaning of pain can represent an effective approach to pain management.

Douleur de tourniquet

45 sujets randomisés en 3 groupes

1. Contrôle (sug neg)
2. Sug Neg (ttt pharmaco)
3. Sug Pos (ttt pharamco)

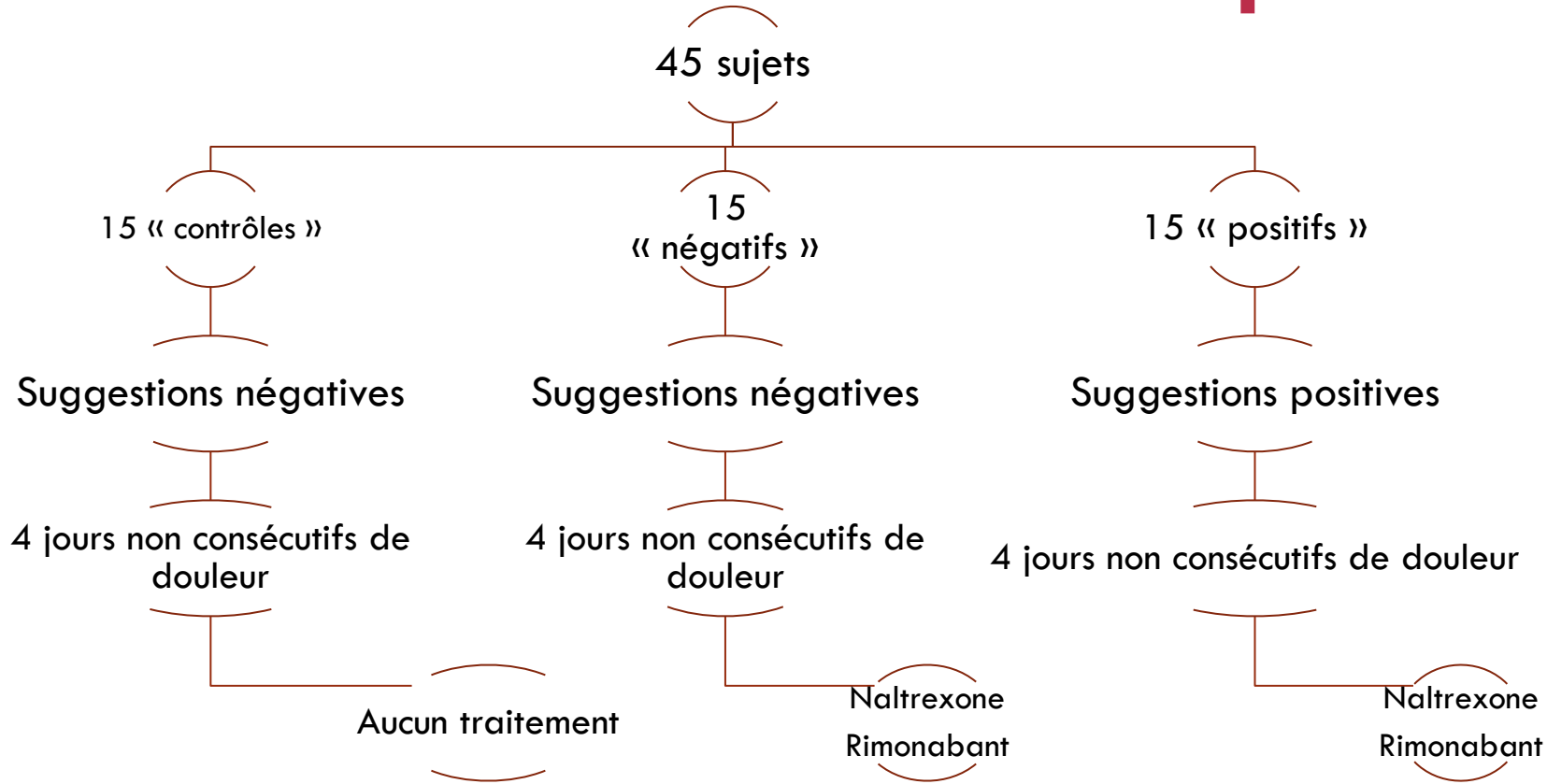
Ttt pharmacologique

Naltrexone

Rimonabant

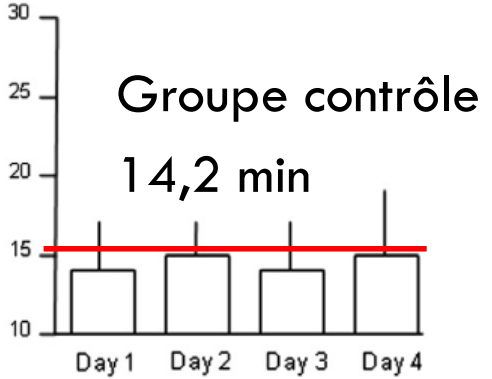
Benedetti F. et al. Pain 2013

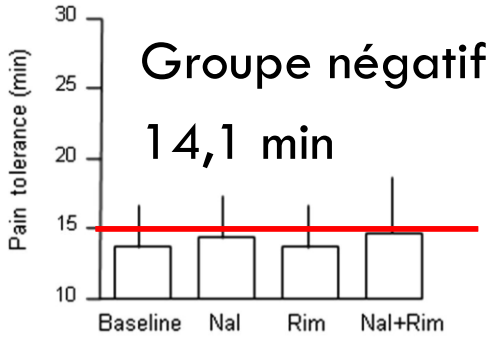
La douleur comme récompense

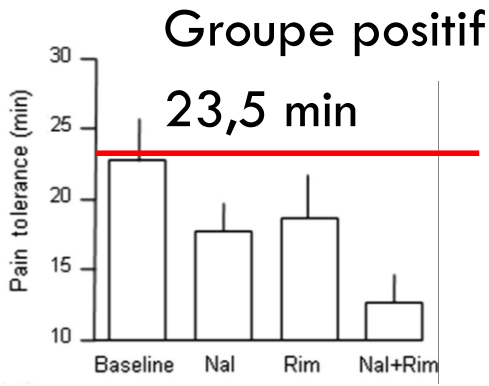


Benedetti F. et al. Pain 2013

La douleur comme récompense







Benedetti F. et al. Pain 2013

Est-ce mieux à deux ?

EMPATHIE ET DOULEUR

Jean Hélion. Nature morte à la citrouille. 1948

L'empathie est elle antalgique ?

EJN European Journal of Neuroscience

FENS Federation of European Neuroscience Societies

European Journal of Neuroscience, Vol. 46, pp. 2629–2637, 2017

doi:10.1111/ejn.13701

BEHAVIOURAL NEUROSCIENCE

Does an observer's empathy influence my pain? Effect of perceived empathetic or unempathetic support on a pain test

C. Fauchon,[1] I. Faillenot,[1,2] A. M. Perrin,[2,3] C. Borg,[2,3] V.Pichot,[4] F. Chouchou,[1] L. Garcia-Larrea[1] and R. Peyron[1,2]

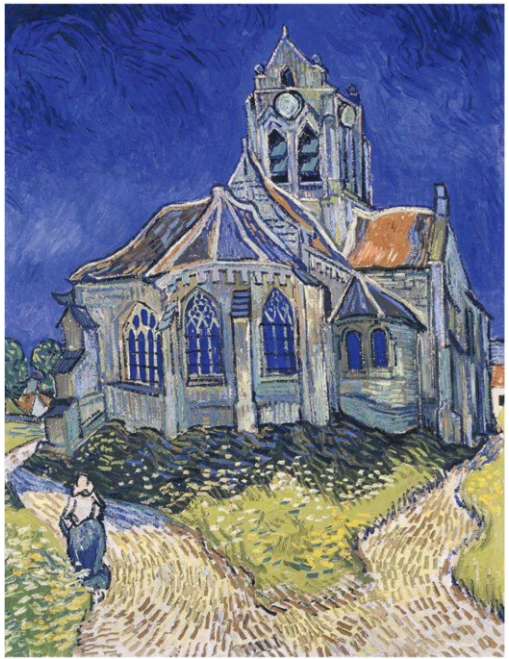
[1]Central Integration of Pain (NeuroPain), Inserm U1028, UCB Lyon1, UJM, Saint-Etienne, France
[2]Department of Neurology & Pain Center, CHU de Saint-Etienne, Saint-Etienne, France
[3]Laboratory EMC (EA3082), University Lyon 2, Lyon-Bron, France
[4]Department of Clinical and Exercise Physiology, EA SNA-EPIS, CHU de Saint-Etienne, Saint-Etienne, France

Keywords: contextual modulation, heart rate variability, social feedback, thermal pain

Abstract

The physiological and behavioural effects of empathy for other's pain have been widely investigated, while the opposite situation, i.e. the influence on one's pain of empathetic feedback from others, remains largely unexplored. Here, we assessed whether and how empathetic and unempathetic comments from observers modulate pain and associated vegetative reactions. In Study 1, conversations between observers of a pain study were recorded by professional actors. Comments were prepared to be perceived as empathetic, unempathetic or neutral, and were validated in 40 subjects. In a subsequent pain experiment (Study 2), changes in subjective pain and heart rate were investigated in 30 naïve participants who could overhear the empathetic or unempathetic conversations pre-recorded in study 1. Subjective pain was significantly attenuated when hearing empathetic comments, as compared to both unempathetic and neutral conditions, while unempathetic comments failed to significantly modulate pain. Heart rate increased when hearing unempathetic remarks and when receiving pain stimuli, but heart acceleration to nociceptive stimulation was not correlated with pain ratings. These results suggest that empathetic feedback from observers has a positive influence on pain appraisal and that this effect may surpass the negative effect of unempathetic remarks. Negative remarks can either trigger

Fauchon C. et al. Eur J Neurosci. 2017

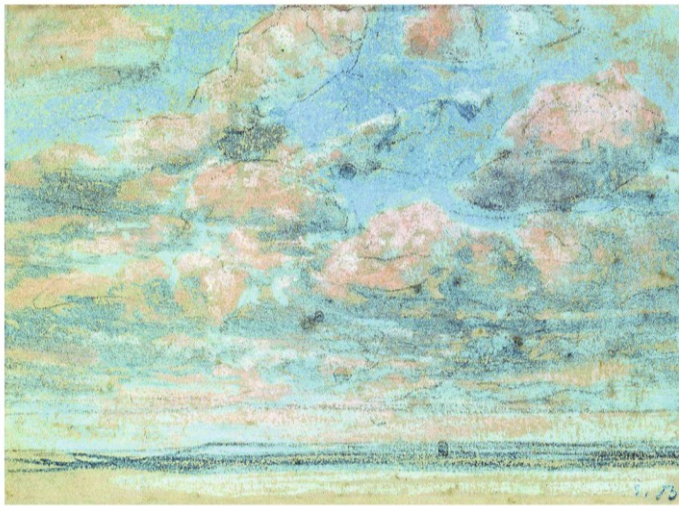


Vincent van Gogh. L'Église d'Auvers-sur-Oise. 1890

L'empathie est elle antalgique ?

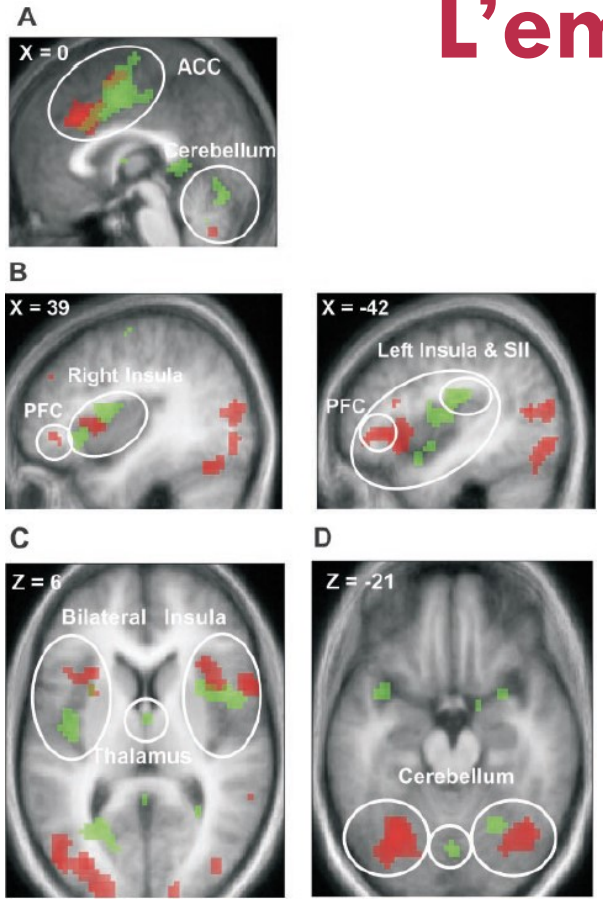
L'activité neurologique de l'empathie est modulée par

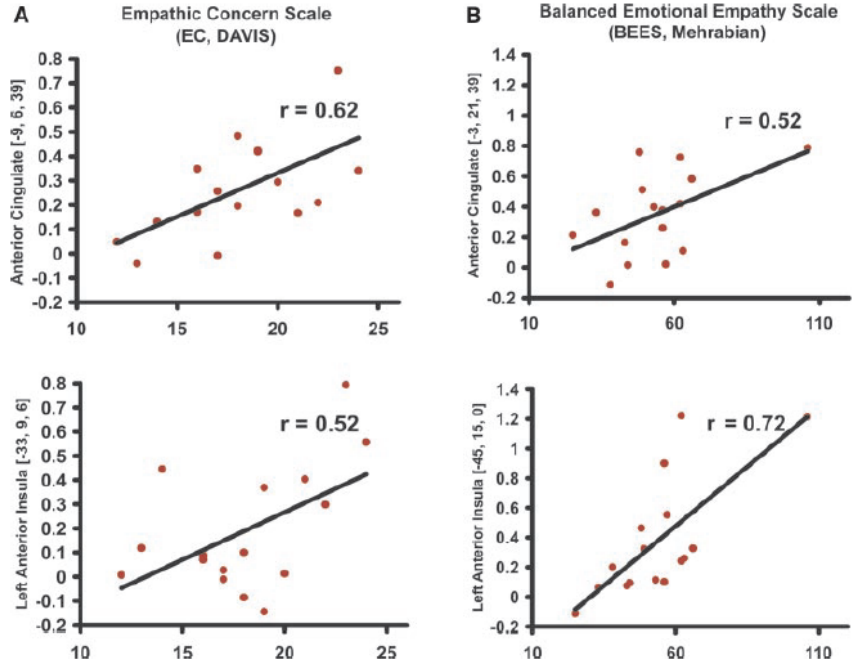
- Le contexte
- Les expériences personnelles
- Les liens affectifs



Eugène Boudin. Ciel bleu, nuages blancs. 1874

L'empathie est elle antalgique ?





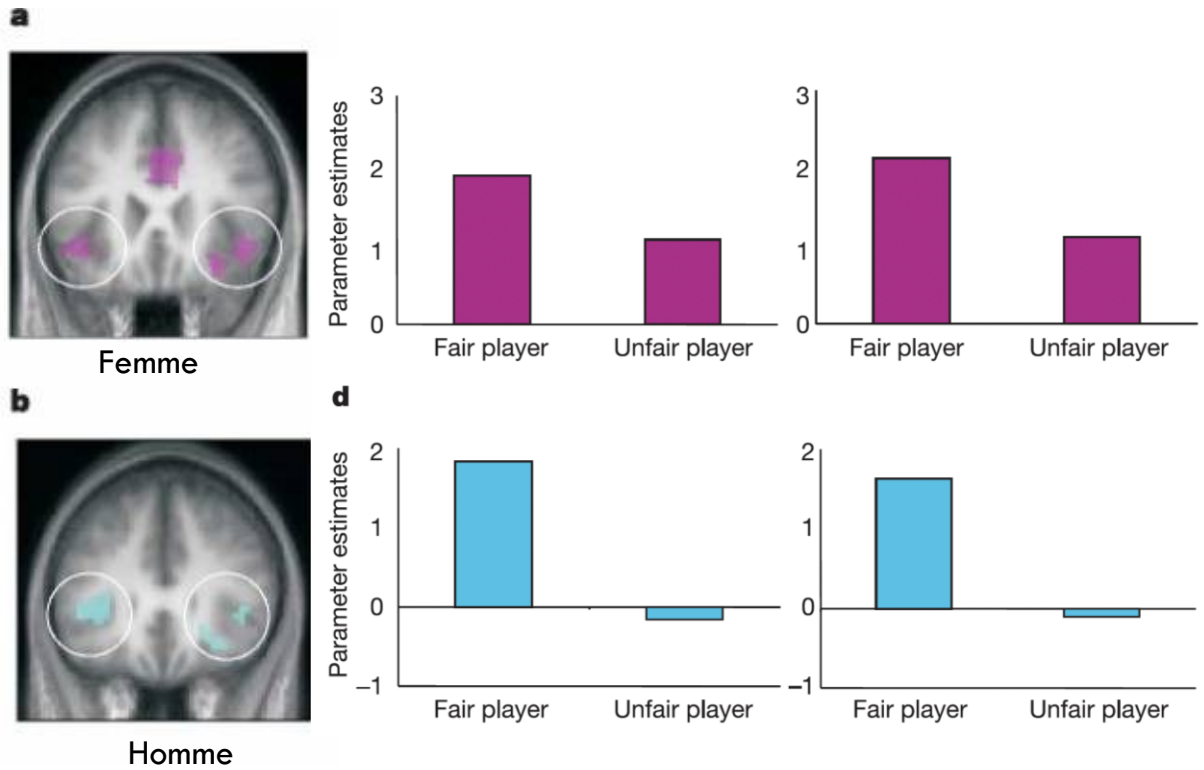
La douleur de soi

L'empathie à la douleur d'un être aimé

Singer T. et al., Science 2004

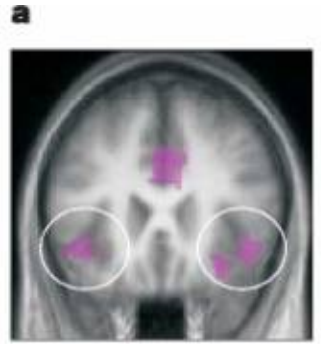
L'empathie est elle antalgique ?

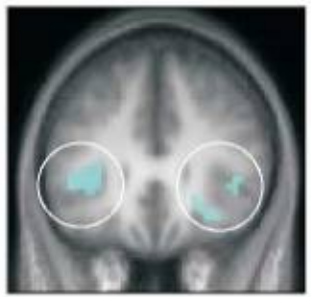
Georges de la Tour. Tricheur à l'as de carreau. XVIIe

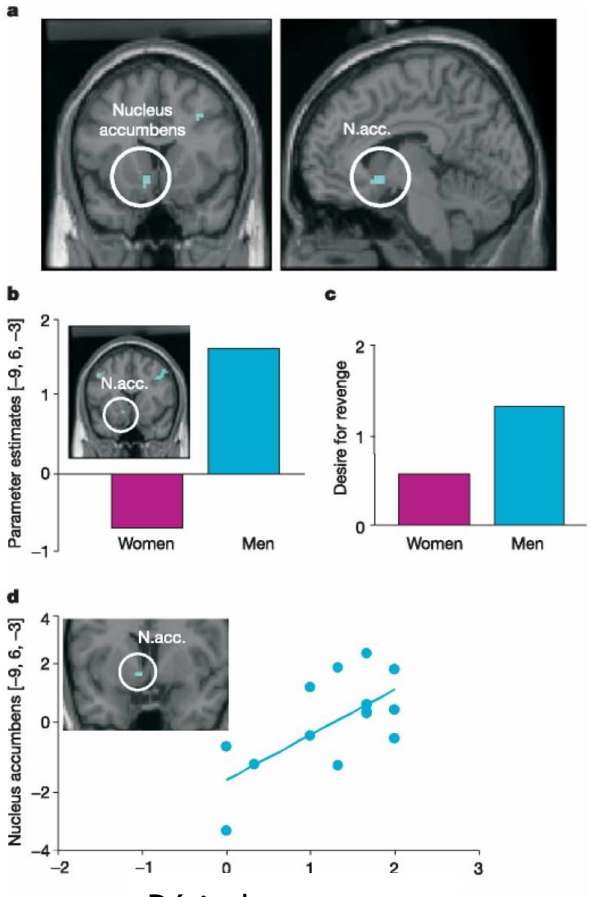


Singer T. et al., Nature 2006

Georges de la Tour. Tricheur à l'as de carreau. XVIIe



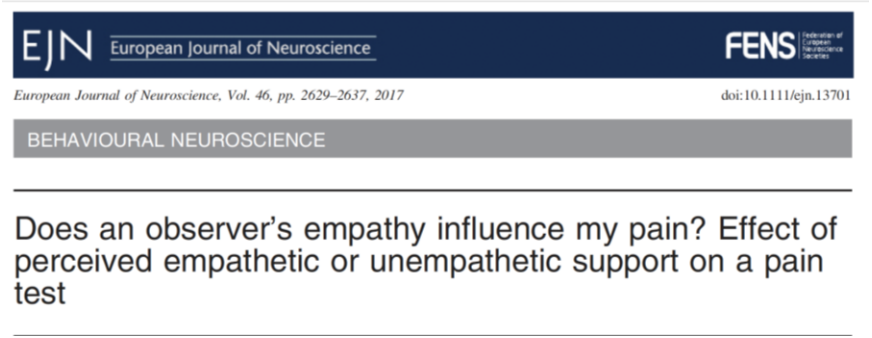




Désir de vengeance

Singer T. et al., Nature 2006

L'empathie est elle antalgique ?



L'empathie peut elle soulager ?

26 volontaires confortablement installés

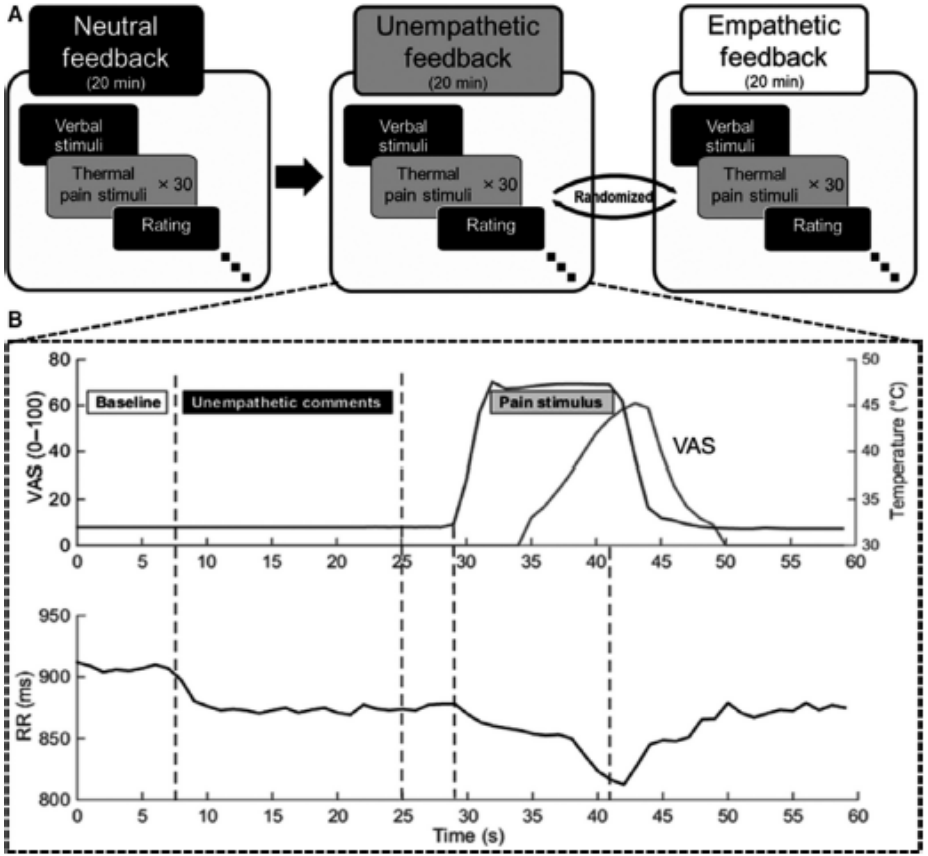
Douleur provoquée par une électrode thermique

Pendant ce temps ils « entendent » trois discours

- Neutre
- Non empathique
- Empathique

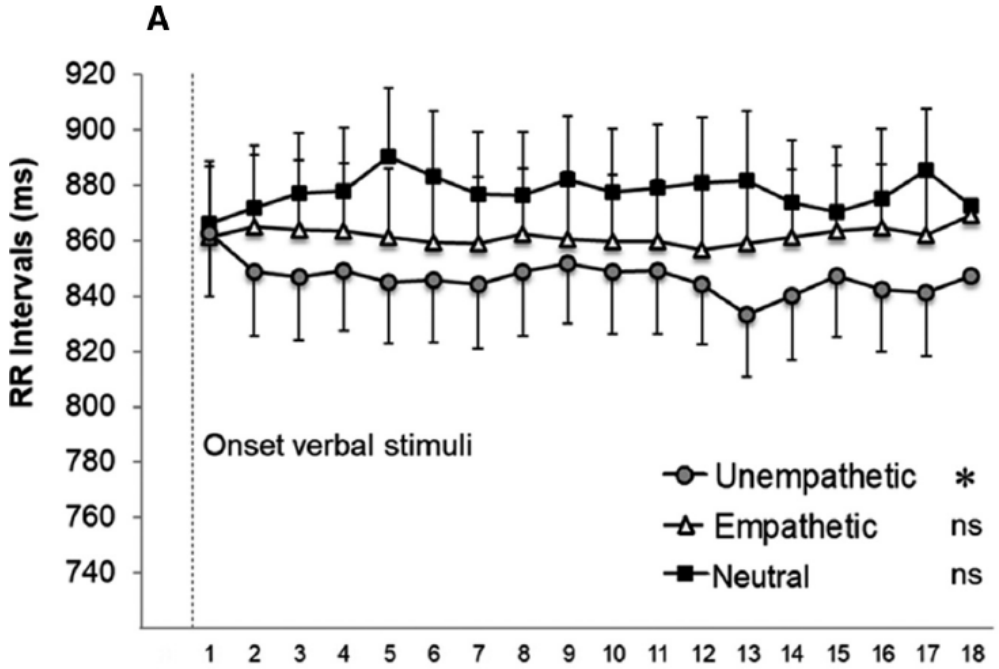
Fauchon C. et al. Eur J Neurosci. 2017

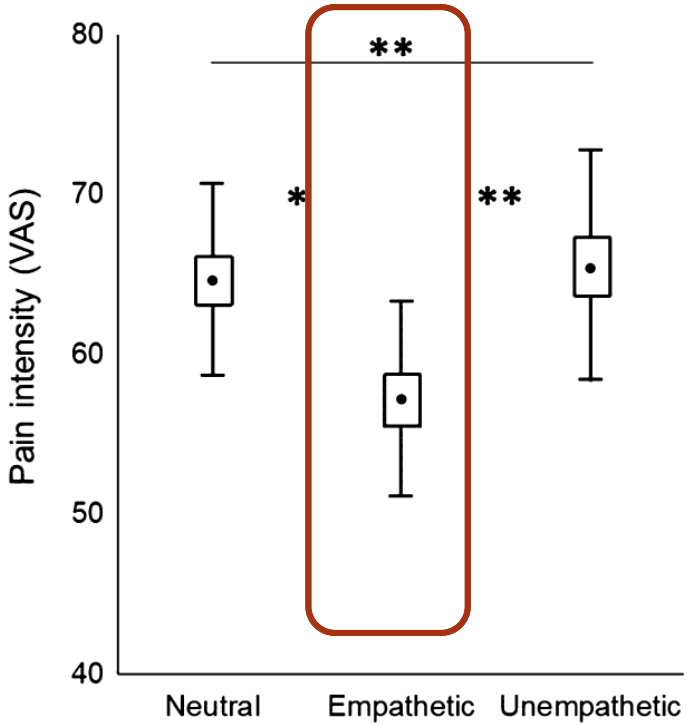
L'empathie est elle antalgique ?



Fauchon C. et al. Eur J Neurosci. 2017

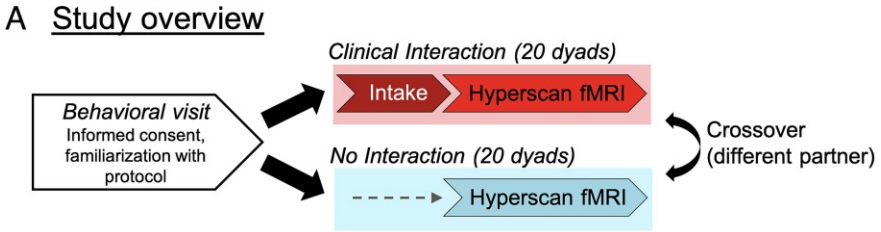
L'empathie est elle antalgique ?





Fauchon C. et al. Eur J Neurosci. 2017

La présence est elle antalgique ?

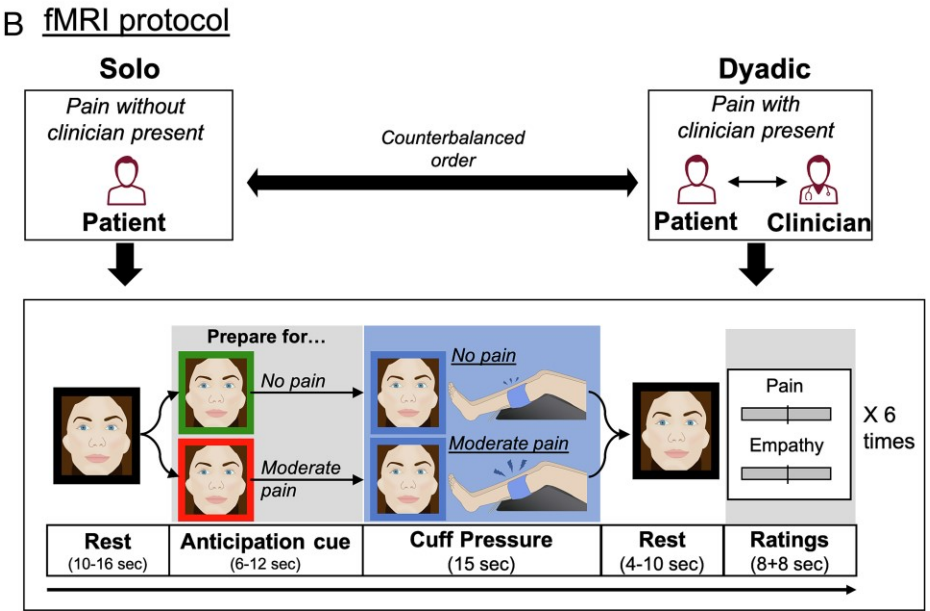


PNAS RESEARCH ARTICLE | PSYCHOLOGICAL AND COGNITIVE SCIENCES NEUROSCIENCE

Brain-to-brain mechanisms underlying pain empathy and social modulation of pain in the patient-clinician interaction

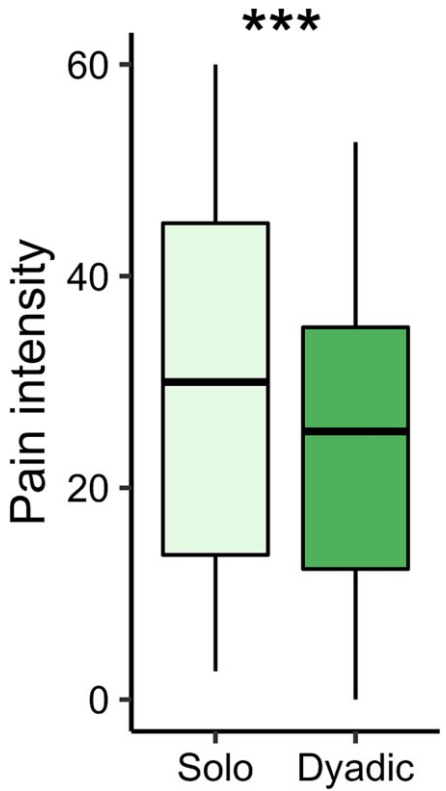
Dan-Mikael Ellingsen[a,b,c,1], Kylie Isenburg[c], Changjin Jung[c,d], Jeungchan Lee[c,e], Jessica Gerber[c], Ishtiaq Mawla[c], Roberta Sclocco[c,e,f], Arvina Grahl[c,e], Alessandra Anzolin[c,e], Robert R. Edwards[g], John M. Kelley[h,i], Irving Kirsch[i], Ted J. Kaptchuk[i], and Vitaly Napadow[c,e,f]

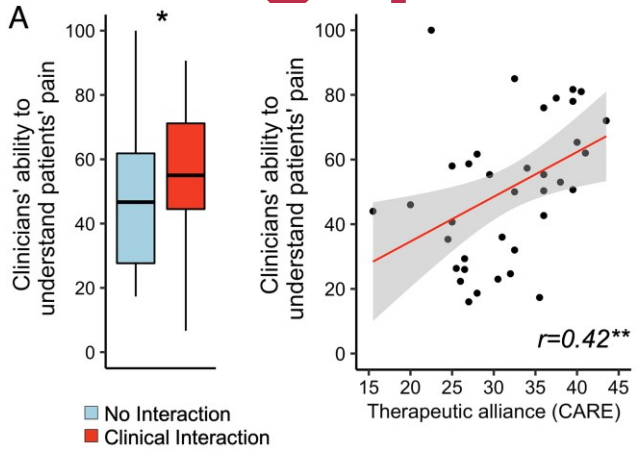
Edited by Samuel A. Nastase, Princeton University, Princeton, NJ; received August 25, 2022; accepted April 25, 2023 by Editorial Board Member Michael S. Gazzaniga

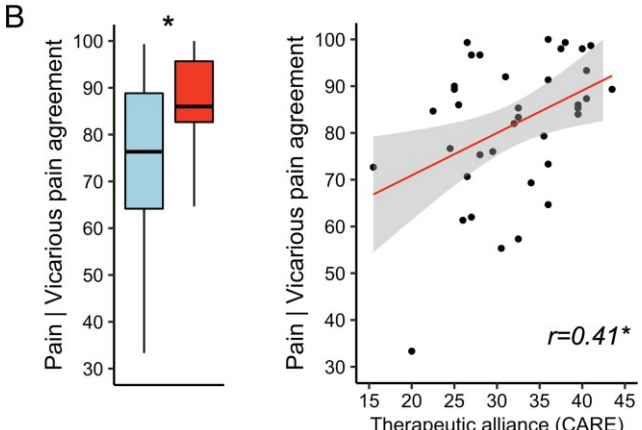


Ellingsen D-M, et al Proc Natl Acad Sci U S A. 2023

La présence est elle antalgique ?

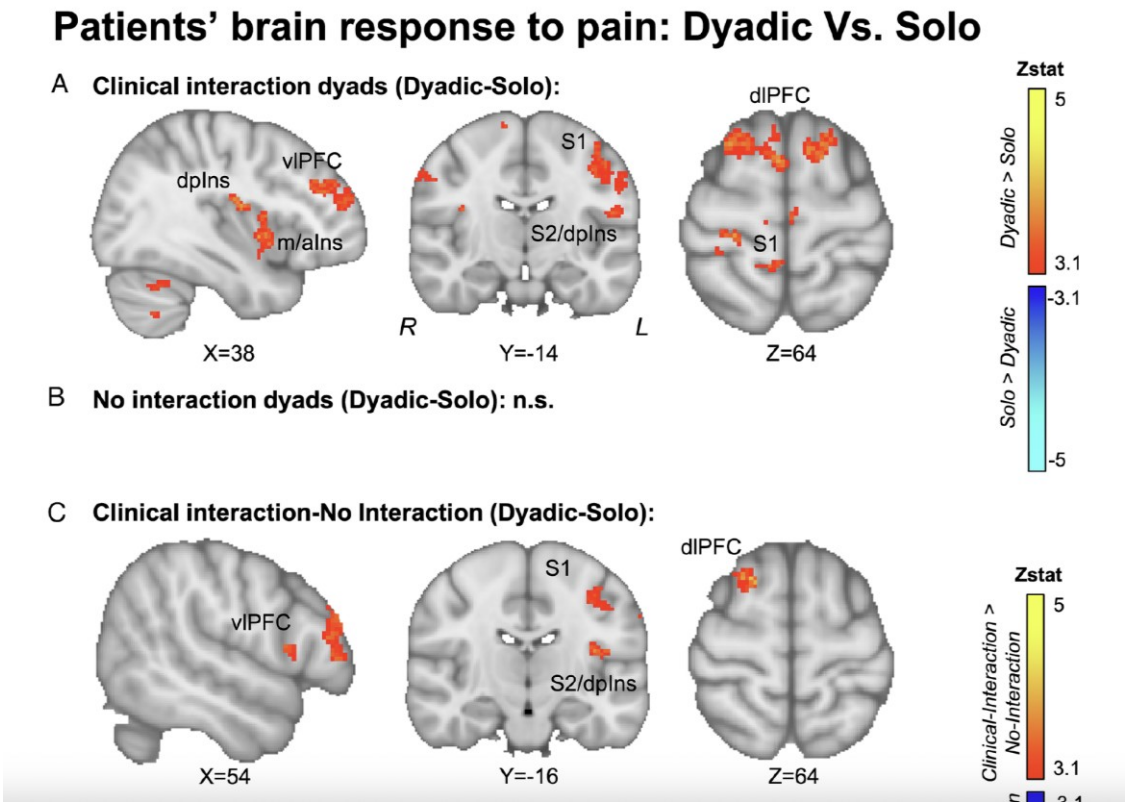






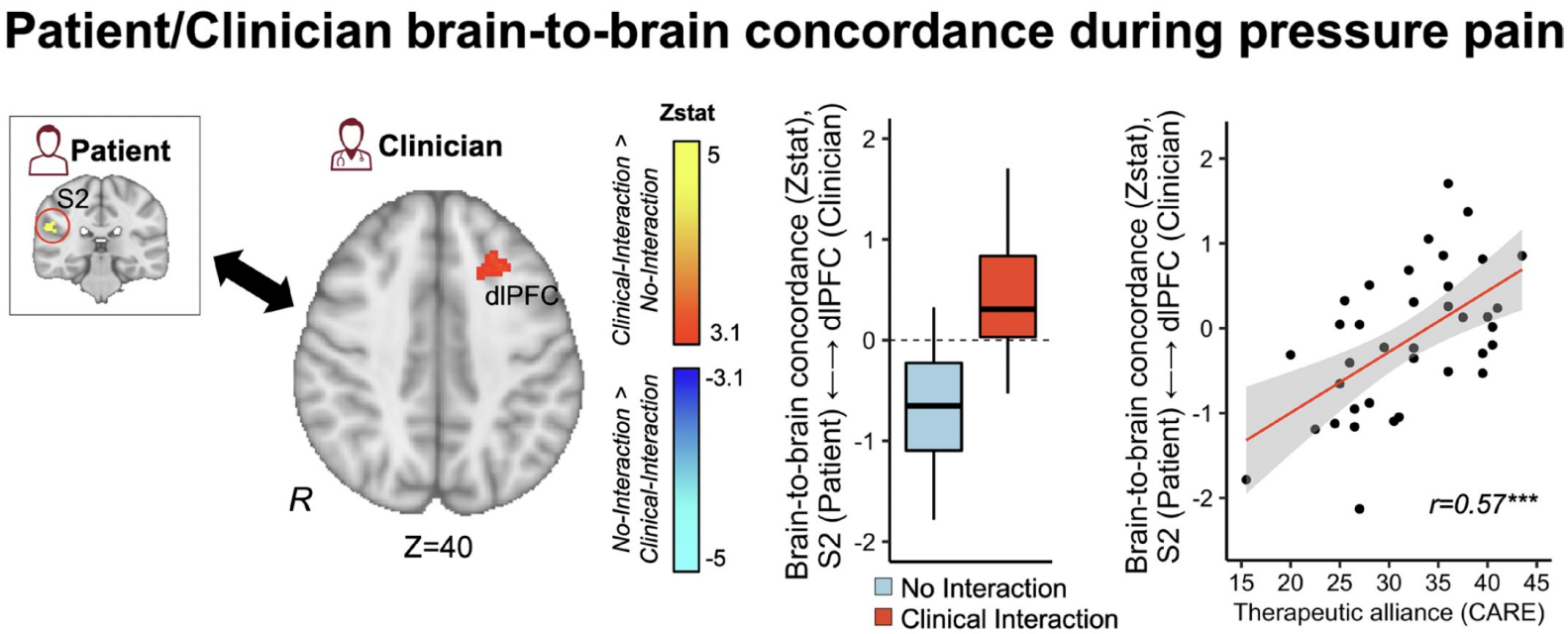
Ellingsen D-M, et al Proc Natl Acad Sci U S A. 2023

La présence est elle antalgique ?



Ellingsen D-M, et al Proc Natl Acad Sci U S A. 2023

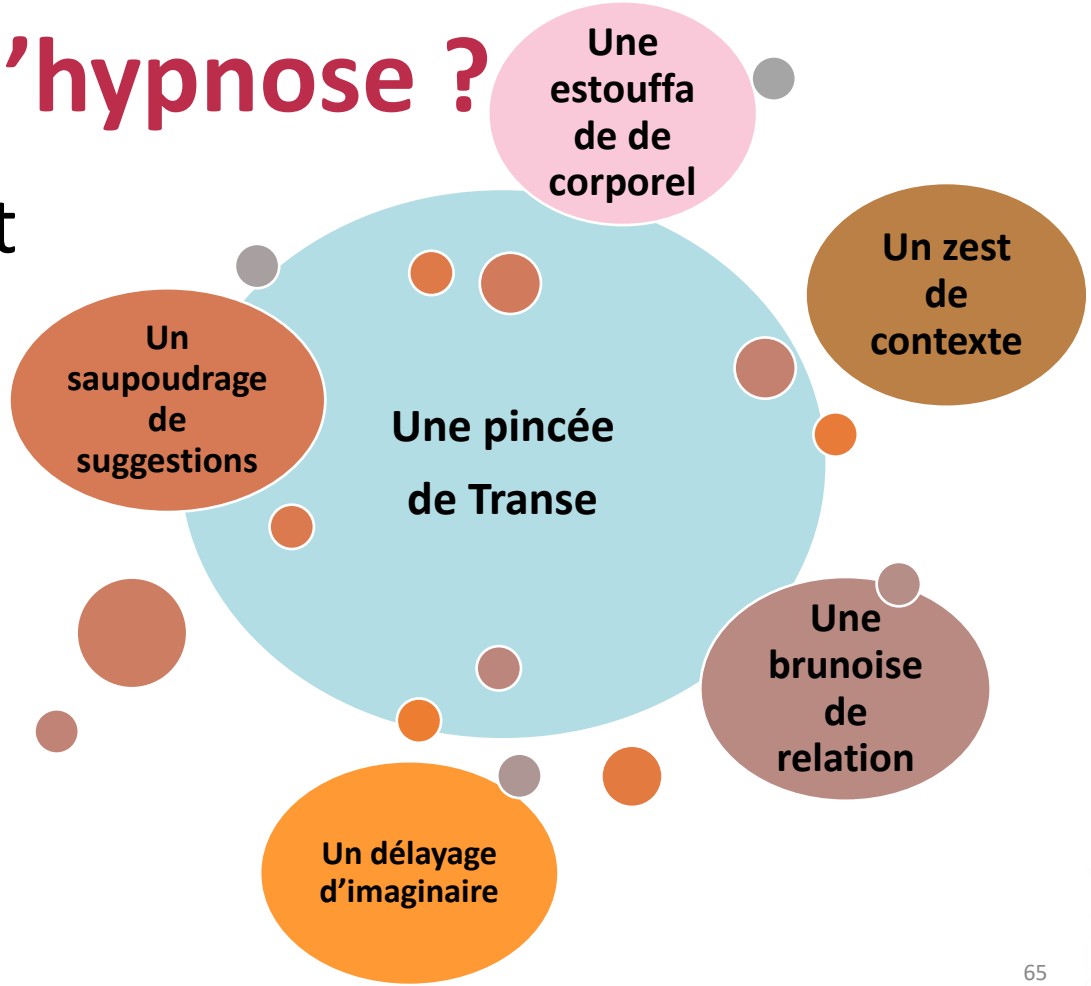
La présence est elle antalgique ?



Ellingsen D-M, et al Proc Natl Acad Sci U S A. 2023

Qu’est-ce que l’hypnose ?

Et si l’hypnose était une recette de cuisine …



Merci de votre attention

David Hockney, 26th November 2020, N°2

vdescroix@gmail.com