

Woorden als medicijn

Hoe het placebo effect kan
bijdragen aan betere zorg

Andrea Evers





No conflicts of interest

Fundings obtained by NWO, ERC
and Health Charity Funds





De rol van de context in je behandeling...

Artsen die een **warme, vriendelijke** en **geruststellende houding** aannemen, zijn effectiever dan degenen die het consult formeel houden

Influence of context effects on health outcomes: a systematic review

[Z Di Blasi](#)¹, [E Harkness](#), [E Ernst](#), [A Georgiou](#), [J Kleijnen](#)

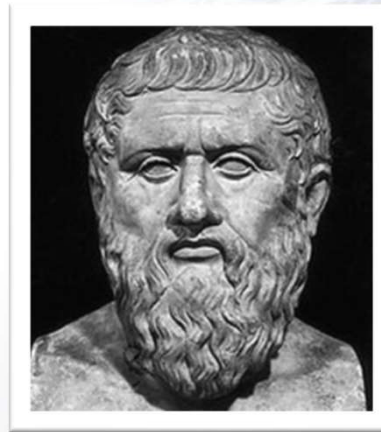
Affiliations + expand

PMID: 11253970 DOI: [10.1016/s0140-6736\(00\)04169-6](https://doi.org/10.1016/s0140-6736(00)04169-6)



De rol van de context in je behandeling...

Placebo mechanismen =
hoe contextfactoren invloed hebben
op behandelresultaat



Plato 428 - 347 v. Chr.



Descartes 1596-1656



De rol van de context in je behandeling...

Placebo effecten even groot als
effecten antidepressiva...

Placebos as Effective Antidepressants

Administration of placebos can result in physiological and biochemical changes that are indistinguishable from a drug with an active ingredient. Placebos have been shown to have significant antidepressant effects when tested against active drugs. In addition, administration of a placebo results in activation of areas of the brain similar to that of the active selective serotonin reuptake inhibitor (SSRI) drug fluoxetine. Placebos therefore not only are effective antidepressants, but are also able to somehow activate similar parts of the brain as active drugs. But no one knows how.

Activation of glucose metabolism in response to placebo (top) and the SSRI fluoxetine (bottom). Activated areas are coloured.

See: Mayberg, H. S., Silva, J. A., Brannan, S. K., Tekell, J. L., Mahurin, R. K., McGinnis, S. and Jerabek, P. A. 2002. The functional neuroanatomy of the placebo effect. *American Journal of Psychiatry*. 159: 728-733





De rol van de context in je behandeling...

Placebo effecten even groot als
effecten pijnstillers...

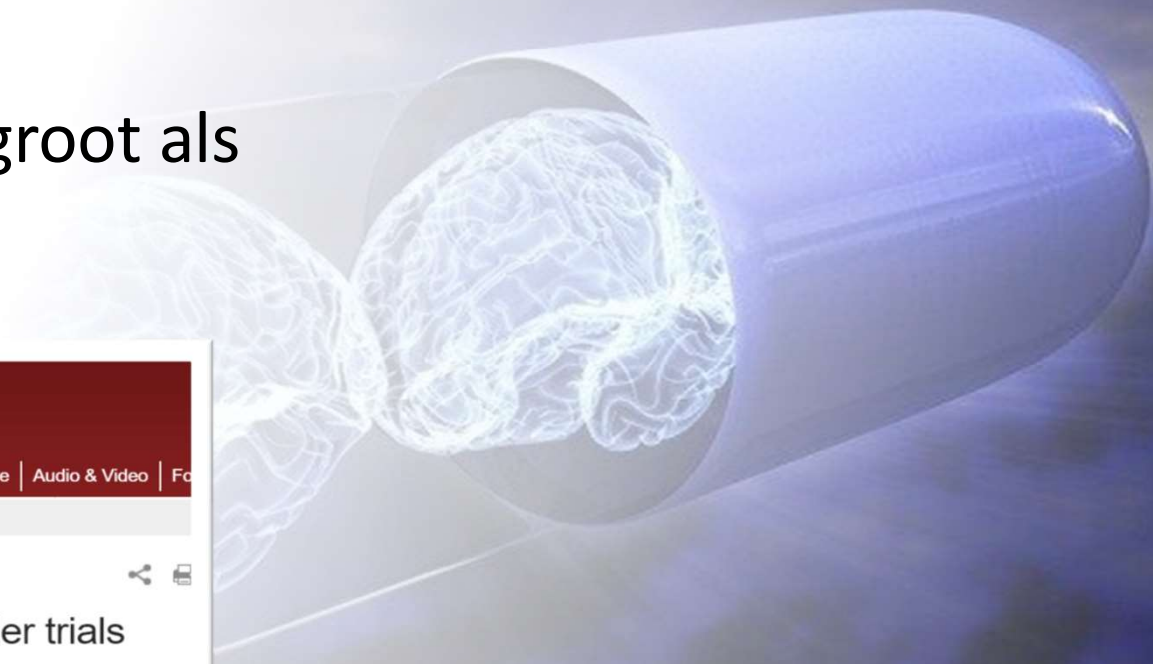
nature International weekly journal of science
Home | News & Comment | Research | Careers & Jobs | Current Issue | Archive | Audio & Video | For Authors

News & Comment > News > 2018 > September > Article

NATURE | NEWS

Strong placebo response thwarts painkiller trials

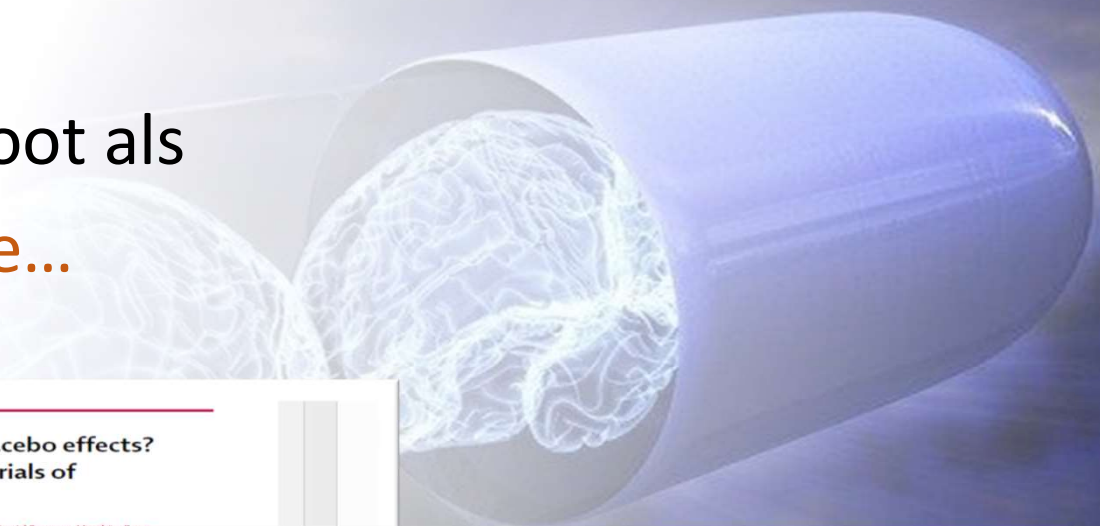
Potential pain treatments are struggling to prove their worth over a rising placebo effect seen in US trials.





De rol van de context in je behandeling...

Placebo effecten even groot als
effecten operaties artrose...



the clinical effects of homeopathy placebo effects? Comparative study of placebo-controlled trials of homeopathy and allopathy

Methods

Literature search and data sources

Study selection

Procedures

Graphical and statistical analysis

Role of the funding

Are the clinical effects of homeopathy placebo effects? Comparative study of placebo-controlled trials of homeopathy and allopathy

Aijing Shang, Karin Huwiler-Muntener, Linda Nartey, Peter Juni, Stephan Dörig, Jonathan A C Sterne, Daniel Pewsner, Matthias Egger

Summary
Background Homeopathy is widely used, but specific effects of homeopathic remedies seem implausible. We analysed trials of homeopathy and conventional medicine and estimated effects in trials least likely to be affected by bias.

Methods Placebo-controlled trials of homeopathy were identified by a comprehensive literature search covering 19 electronic databases, reference lists of relevant papers, and contacts with experts. Trials in conventional medicine matched to homeopathy trials for disorder and type of outcome were randomly selected from the Cochrane Controlled Trials Register (issue 1, 2003). Data were extracted in duplicate and outcomes compared. Odds ratios below 1 indicated benefit. Trials described as double-blind, with adequate randomisation, were considered to be of higher methodological quality. Bias effects were examined in funnel plots and meta-regression.

Findings 110 homeopathy trials and 110 matched conventional-medicine trials were analysed. The median size was 65 participants (range ten to 1573). 21 homeopathy trials (19%) and nine (8%) conventional-medicine trials were of higher quality. In both groups, smaller trials and those of lower quality showed more beneficial effects than larger and higher-quality trials. When the analysis was restricted to large trials of higher quality, the odds ratio was 0.88 (95% CI 0.65–1.19) for homeopathy (eight trials) and 0.58 (0.39–0.85) for conventional medicine (four trials).

Annals of Internal Medicine

EDITORIAL

Relative Efficacy of Knee Osteoarthritis Treatments: Are All Placebos Created Equal?

Almost 40% of the U.S. population older than 45 years has some degree of knee osteoarthritis (OA), and the estimated lifetime risk for knee OA is 14% (1). This number is likely to rise even further. Obesity is skyrocketing, with an estimated 65 million more obese U.S. adults by 2030 (2). Greater participation in sports has led to high rates of anterior cruciate ligament rupture, and up to half of persons with this injury will develop symptomatic knee OA (3). Most important, the

to be \$2.5 billion by 2017, and the market for glucosamine is estimated to be \$12 billion by 2020 (8, 9). Why this dichotomy? Perhaps despite our best efforts, patients with knee OA who enroll in randomized controlled trials are simply not representative of real-world patients. Perhaps comparing interventions for OA pain with placebo—the gold standard for proving efficacy—fails to fully incorporate effects on central-mediated pain, which may be similar between stu

Arthritis is a chronic disease, and results from short-term studies, particularly when large trials comparing multiple treatments, are often inconclusive.



De rol van de context in je behandeling...

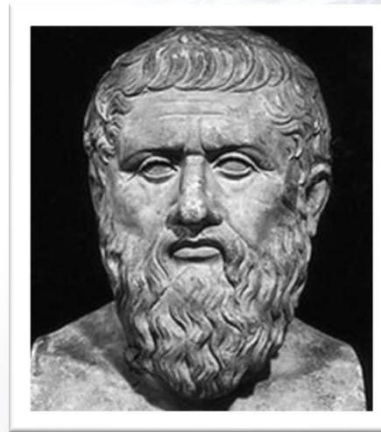
Placebo effecten in de behandeling van
systeemziekten ?





De rol van de context in je behandeling...

Placebo mechanismen =
hoe verwachtingsfactoren invloed
hebben op behandelresultaat



Plato 428 - 347 v. Chr.

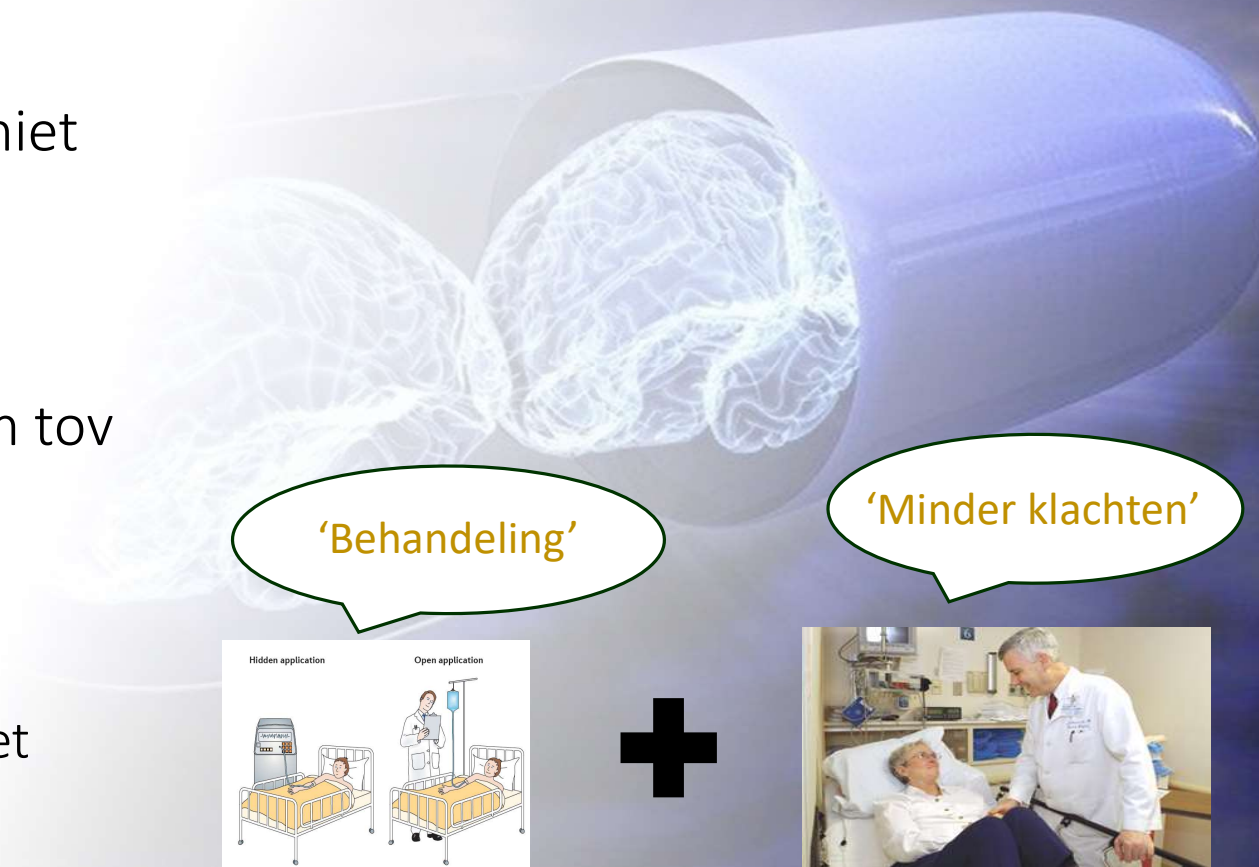


Descartes 1596-1656

Placebo effect = gunstige verwachting tav behandeluitkomst

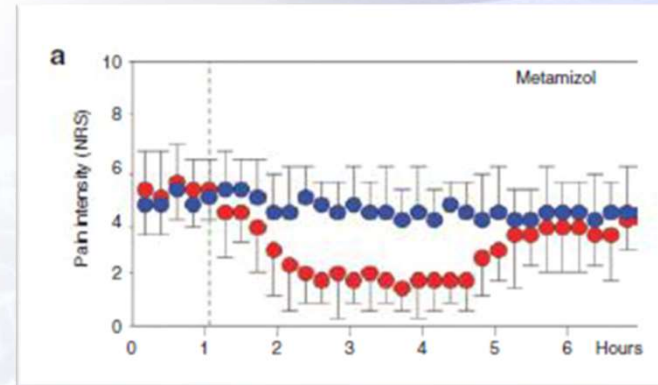
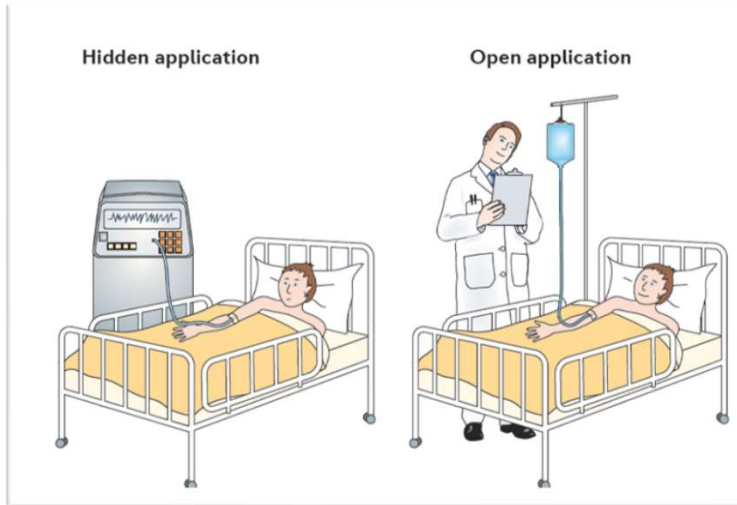
- Gunstige behandelresultaten, niet toegeschreven aan het behandelmechanisme
- Ontstaan door verwachtingen tov de gunstige effecten

Bijv. minder pijn alleen maar bij het zien van de pijnstiller



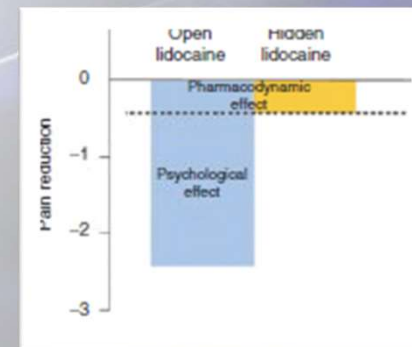


Placebo effect



Hidden Administration of Drugs

F Benedetti^{1,2}, E Carlino^{1,2} and A Pollo^{1,2}





Quiz

Placebo effecten zijn doorgaans groter bij kinderen dan bij volwassenen ?



Placebo effecten **groter** bij kinderen dan bij volwassenen

Placebo effects in children

“...placebo effects in medicine in children do follow similar rules than in adults and may – even if not larger in effect size – be easier to elicit and may have long-lasting effects throughout life.”

The **Journal of Pain**
OFFICIAL JOURNAL OF THE AMERICAN PAIN SOCIETY

The Journal of Pain, Vol 15, No 12 (December), 2014; pp 1282-1293

Expectancy-Induced Placebo Analgesia in Children and the Role of Magical Thinking

Peter Krummenacher,^{*,†,‡} Joe Kossowsky,^{*,§,||} Caroline Schwarz,^{*} Peter Brugger,[¶] John M. Kelley,^{||,**,††} Andrea Meyer,^{‡‡} and Jens Gaab^{*}

The **Journal of Pain**
OFFICIAL JOURNAL OF THE AMERICAN PAIN SOCIETY

Are Children the Better Placebo Analgesia Responders? An Experimental Approach

Nathalie Wrobel,^{*,†} Tahmine Fadai,[‡] Christian Sprenger,^{†,‡} Johannes Hebebrand,[§] Katja Wiech,^{¶,||} and Ulrike Bingel^{*}



Quiz

Placebo effecten werken ook
bij dieren ?



Placebo effecten ook bij dieren



The Placebo Effect Might Work for Your Pet, Too

By Cari Romm



Is There a Placebo Effect for Animals?

David Ramey on October 25, 2008



Placebo effecten ook bij dieren

“Ratten kunnen beter tegen pijn met een placeboprik”

Blootstelling aan pijn aan 2 groepen met en zonder pijnstiller, gevolgd door placebo behandeling:

Minder pijngedrag bij de groep die eerder pijnstiller kreeg



NIH Public Access

Author Manuscript

Pain. Author manuscript; available in PMC 2013 October 01.

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Pain. 2012 October ; 153(10): 2009–2016. doi:10.1016/j.pain.2012.04.026.

Placebo-induced analgesia in an operant pain model in rats

Todd A. Nolan¹, Donald D. Price², Robert Caudle², Niall P. Murphy³, and John K. Neubert^{1,*}

¹ College of Dentistry, Department of Orthodontics, University of Florida, Gainesville, FL

² Department of Oral Surgery, University of Florida, Gainesville, FL

³ Department of Psychiatry and Biobehavioral Sciences, UCLA, Los Angeles, CA



Quiz

Kan het placebo effect ook negatief werken?

Nocebo effect = ongunstige verwachting tav behandeluitkomst

- Ongunstige behandel-effecten, niet toegeschreven aan het behandelmechanisme
- Ontstaan door verwachtingen tov de ongunstige effecten

Bijv. “ik reageer altijd overgevoelig op alle medicijnen”





Nocebo effect Voorbeeld

Bijwerkingen in 73 klinische trials migraine (bv. NSAIDs)

- Vergelijkbaar *aantal* bijwerkingen in behandel- en placebocondities
- Vergelijkbaar *type* bijwerkingen in behandel- en placebo condities bv. misselijkheid





Nocebo effect Vaccinaties

Rapportage van ziekte-specifieke bijwerkingen
bij actieve en niet-actieve vaccins

Vaccine 29 (2011) 6321–6326



ELSEVIER

Contents lists available at ScienceDirect

Vaccine

journal homepage: www.elsevier.com/locate/vaccine



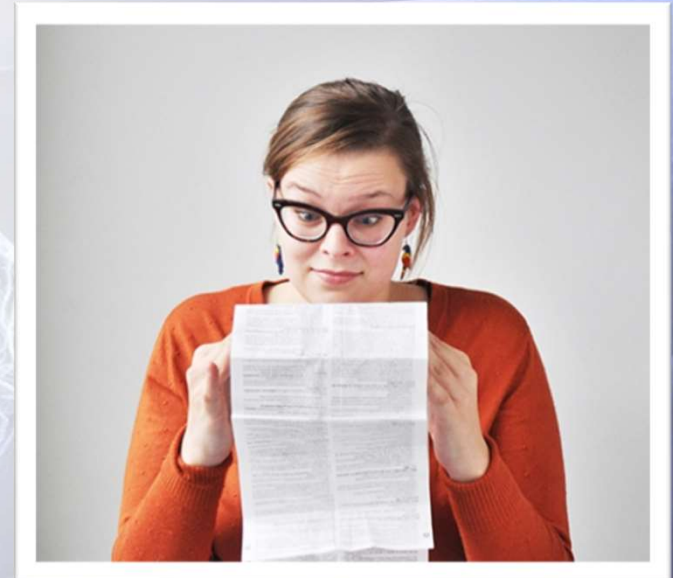
Disease-specific adverse events following nonlive vaccines: A paradoxical placebo effect or a nocebo phenomenon?

Claire Okais. Constance Gav. Fabrice Seon. Lvdie Buchaille. Emilie Charv. Benoît Soubeyrand*



Nocebo effect Voorbeeld

Lezen van bijsluiter vermindert
de bereidwilligheid om
pijnmedicatie in te nemen



Psychology
Research Paper

OPEN

PAIN
REPORTS®

Impact of patient information leaflets on pain medication intake behavior: a pilot study

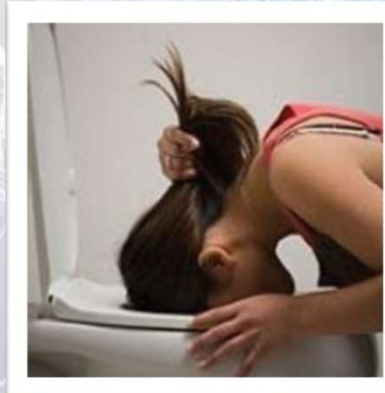
Julia Schmitz^a, Sandra Kamping^a, Janine Wiegatz^a, Maike Müller^b, Jan Stork^c, Luana Colocaci^d, Herta Flor^d, Regine Klinger^e**



Nocebo effect Voorbeeld

Sterke lichamelijke reacties op
chemotherapie

25-30% misselijkheid of braken
voor de behandeling of het
innemen medicatie



Jordan, Kasper & Schmoll, 2005



Nocebo effect Media en internet

Verband tussen aandacht in de media of internet
en het rapporteren van meer klachten

Media Warnings About Environmental Pollution Facilitate the Acquisition of Symptoms in Response to Chemical Substances

WINNIE WINTERS, PhD, STEPHAN DEVRIESE, PhD, ILSE VAN DIEST, MA, BENOIT NEMERY, MD,
HENDRIK VEULEMANS, PhD, PAUL EELLEN, PhD, KAREL VAN DE WOESTIJNE, MD, AND OMER VAN DEN BERGH, PhD



Vaccine

journal homepage: www.elsevier.com/locate/vaccine

Bad news: The influence of news coverage and Google searches on Gardasil adverse event reporting

Kate Faasse^{a,*}, Jarry T. Porsius^{b,c,d}, Jonathan Faasse, Leslie R. Martin^e

Are media warnings about the adverse health effects of modern life self-fulfilling? An experimental study on idiopathic environmental intolerance attributed to electromagnetic fields (IEI-EMF)

Michael Witthöft^{a,b,*}, G. James Rubin^a



Placebo and Nocebo effecten hebben een significante impact

Therapietrouw
medicatie



Rapportage van
bijwerkingen



Herstel na
operaties



Mortaliteit en
morbiditeit





Neurobiologische basis

Placebo effecten



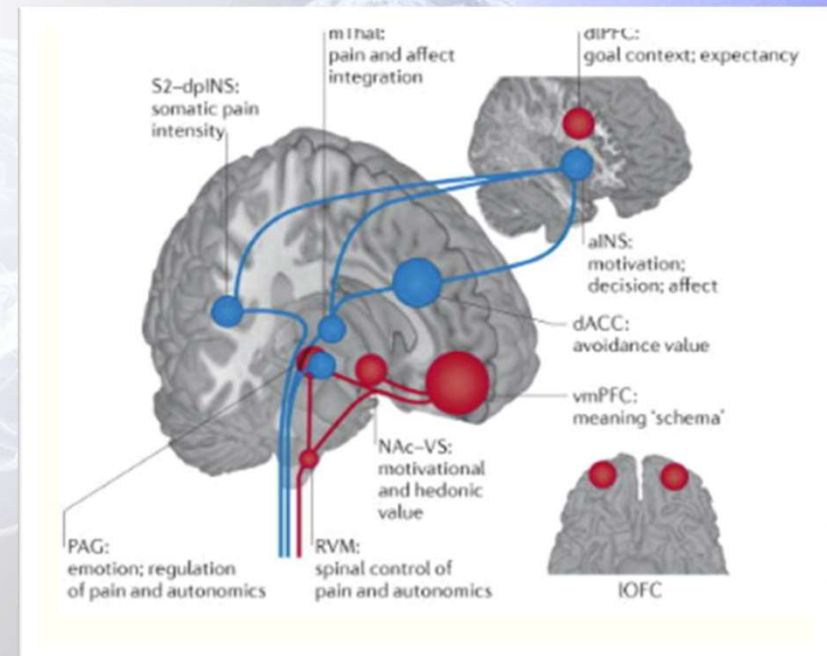
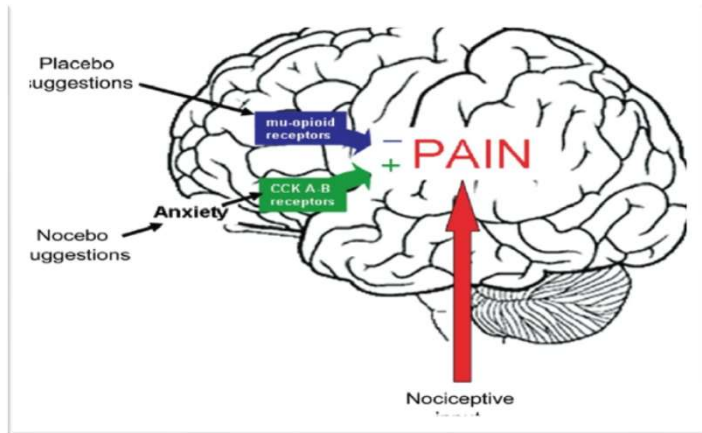
Quiz

Placebo effecten hebben vooral effecten op subjectieve klachten (bv. pijn), maar niet op neurobiologische markers, zoals het immuunsysteem ?



Neurobiologische basis Placebo and Nocebo effecten

Neurobiologie deels verschillend
voor placebo en nocebo effecten



Wager & Atlas, 2015, Thomaidou et al, 2021

Pacheco-Lopez et al, Brain Beh Immun 2006

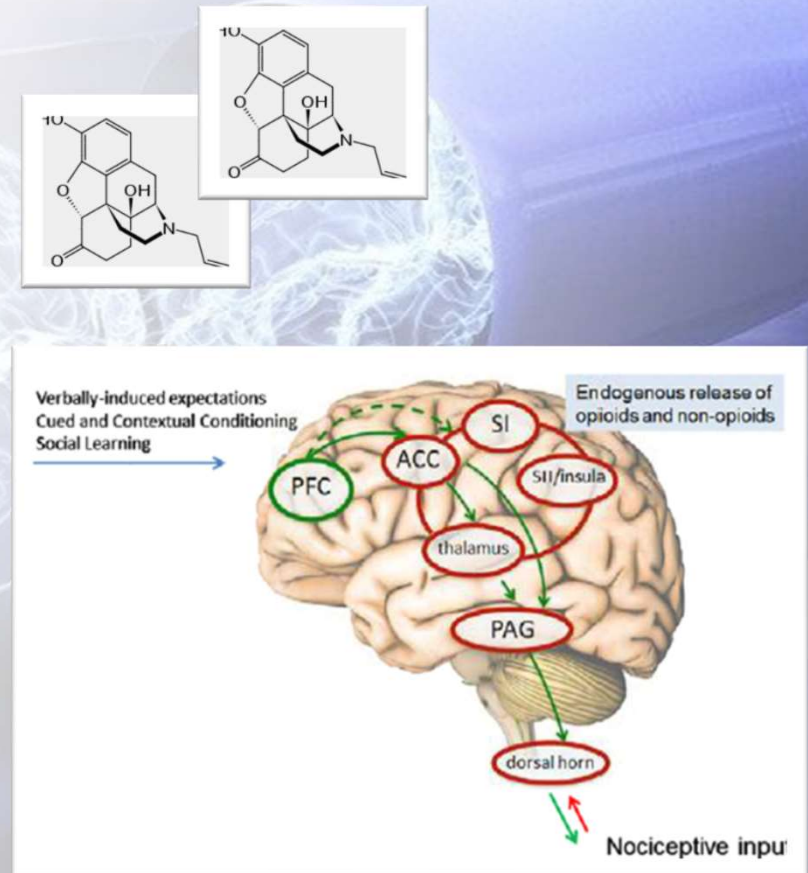


Neurobiologische basis Placebo effecten bij pijn

Vrijkomen van endogene opioïden
(morfine-achtige pijnstillers)

→ Placebo effect bij pijn kan
geblokkeerd worden door opioïde
antagonisten

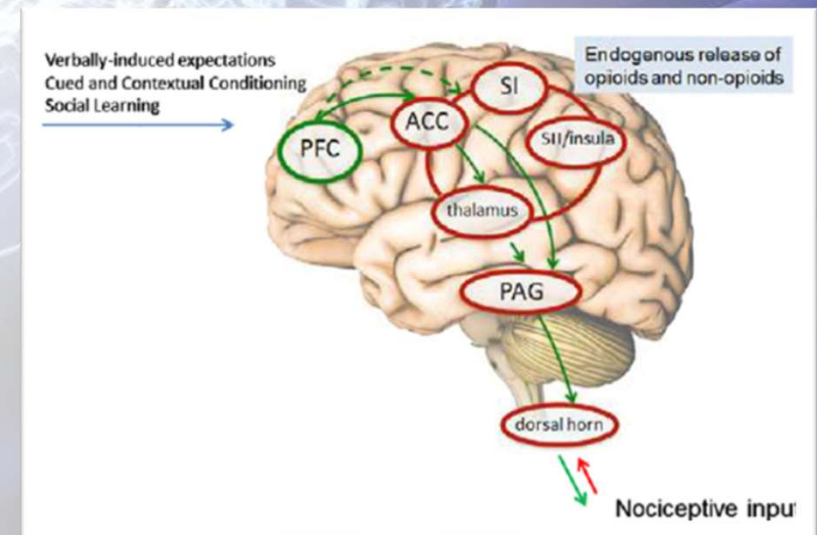
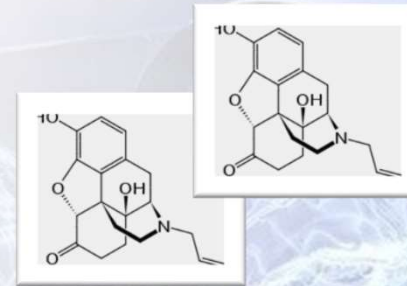
Zie voor review, bv. Colloca et al., Pain 2013





Neurobiologische basis Placebo effecten bij pijn

- Naloxone
(opioïde antagonist)
remt placebo effecten
- Proglumide
(CCK- Cholecystokinin antagonist)
faciliteert placebo effecten
remt nocebo effecten





Neurobiologische basis Placebo effecten

Table 1 Summary of the mechanisms of placebo and placebo-related effects across diseases/systems and treatments

Disease/System	Treatment	Mechanism
Pain	Placebo administration Nocebo administration Verbal suggestions Open versus hidden administration	Expectation-induced activation of endogenous opioids and cholecystokinin as well as of several brain regions
Parkinson's disease	Placebo administration Nocebo administration Verbal suggestions Open versus hidden administration	Expectation-induced release of dopamine in the striatum and changes of firing pattern of subthalamic nucleus neurons
Depression	Placebo administration	Changes of metabolic responses in different brain regions (inhibition of serotonin reuptake?)
Anxiety	Placebo administration Open versus hidden diazepam	Change of activity of some brain regions
Addiction	Expected versus unexpected methylphenidate	Changes of metabolic activity in different brain regions
Autonomic responses to deep brain stimulation	Open versus hidden deep brain stimulation	Change of neuronal excitability in associative/limbic regions
Cardiovascular system	Placebo administration	Reduction of β -adrenergic activity of the heart
Respiratory system	Pharmacological preconditioning with buprenorphine	Conditioning of opioid receptors in the respiratory centers
Immune system	Pharmacological preconditioning with immunosuppressive drugs (e.g., cyclophosphamide and cyclosporin A)	Conditioning of some immune mediators (e.g., IL-2, IFN- γ , lymphocytes)
Endocrine system	Pharmacological preconditioning with 5-HT _{1B-1D} receptor agonists (sumatriptan)	Conditioning of some hormones (e.g., growth hormone, cortisol)



Placebo effect

Het lerende lichaam

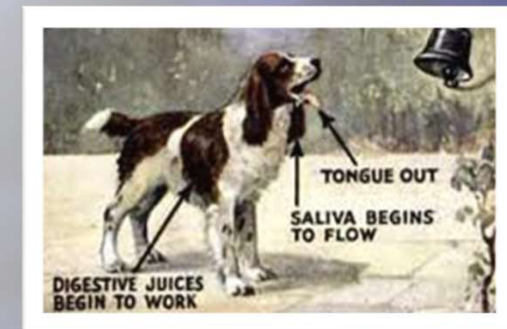
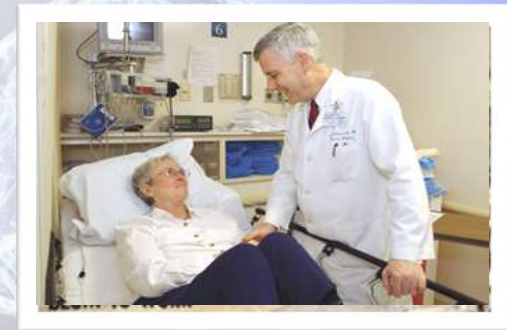


Placebo effect

Het lerende lichaam

Leerprincipes

- Verbale suggesties
 - Korte-termijn effecten, vooral in nocebo
- Conditionering
 - Meer stabiele, lange-termijn effecten
 - Effecten op het fysiologische responsysteem



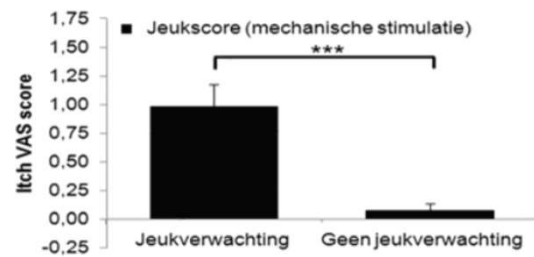


Rol van verbale suggesties Placebo effecten

Hoge verwachting



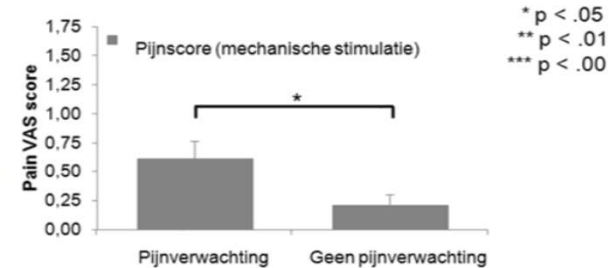
95% ervaart jeuk
(pijn) bij deze stimuli



Lage verwachting



5% ervaart jeuk
(pijn) bij deze stimuli





Combinatie van verbale suggesties en conditionering meest effectief

Role of Conditioning and Verbal Suggestion in Placebo and Nocebo Effects on Itch

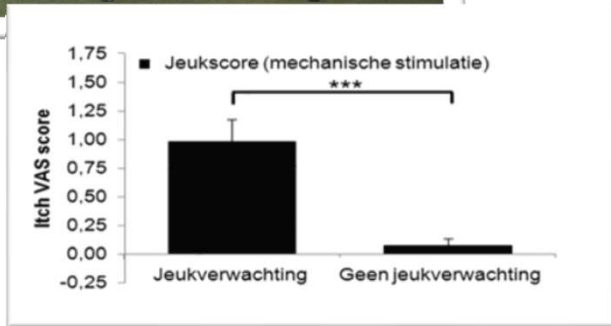
Abstract

Placebo and nocebo effects are known to play a key role in treatment effect in a wide variety of conditions. These effects have frequently been investigated with regard to pain and other physical sensations, but have hardly been investigated with regard to itch. In addition, neither of them nor any other physical sensation has been investigated in terms of the underlying mechanisms. Conditioning and verbal suggestion have been investigated in both placebo and nocebo effects within one design for the first time. We used a verbal suggestion and conditioning in placebo and nocebo effects on itch via experimentally manipulated expectations about itch. In each group, verbal suggestion to either significantly under- or overestimate the intensity of itch was combined with either placebo or nocebo conditioning. We also included a control group of quantitative sensory testing. Significant placebo and nocebo effects were observed in both groups in terms of subjective itch intensity. Verbal suggestion and conditioning significantly modulated the placebo and nocebo effects on itch. The combination of verbal suggestion and placebo significantly modulated the placebo effect on itch. The combination of verbal suggestion and nocebo significantly modulated the nocebo effect on itch. The combination of verbal suggestion and conditioning significantly modulated the placebo and nocebo effects on itch. The combination of verbal suggestion and conditioning significantly modulated the placebo and nocebo effects on itch. The combination of verbal suggestion and conditioning significantly modulated the placebo and nocebo effects on itch.

Hoge verwachting



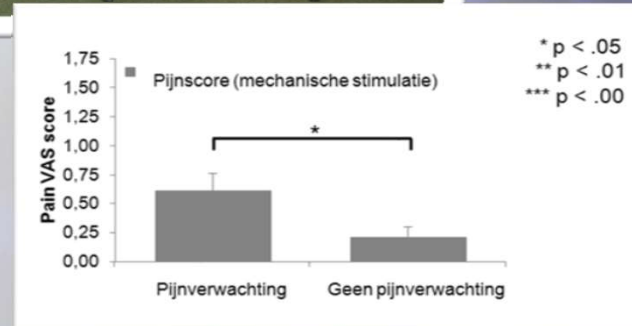
95% ervaart jeuk (pijn) bij deze stimuli



Lage verwachting

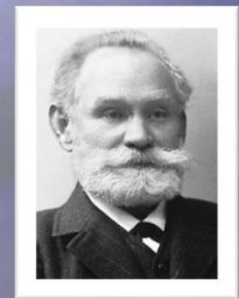
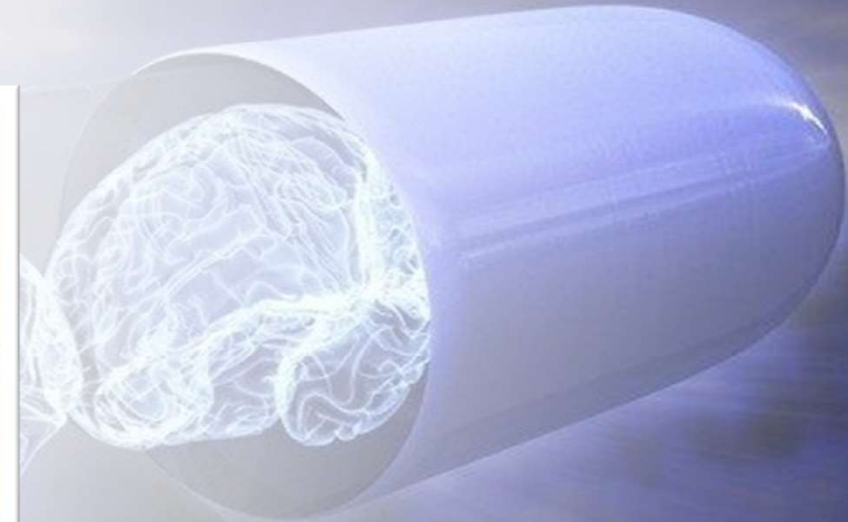
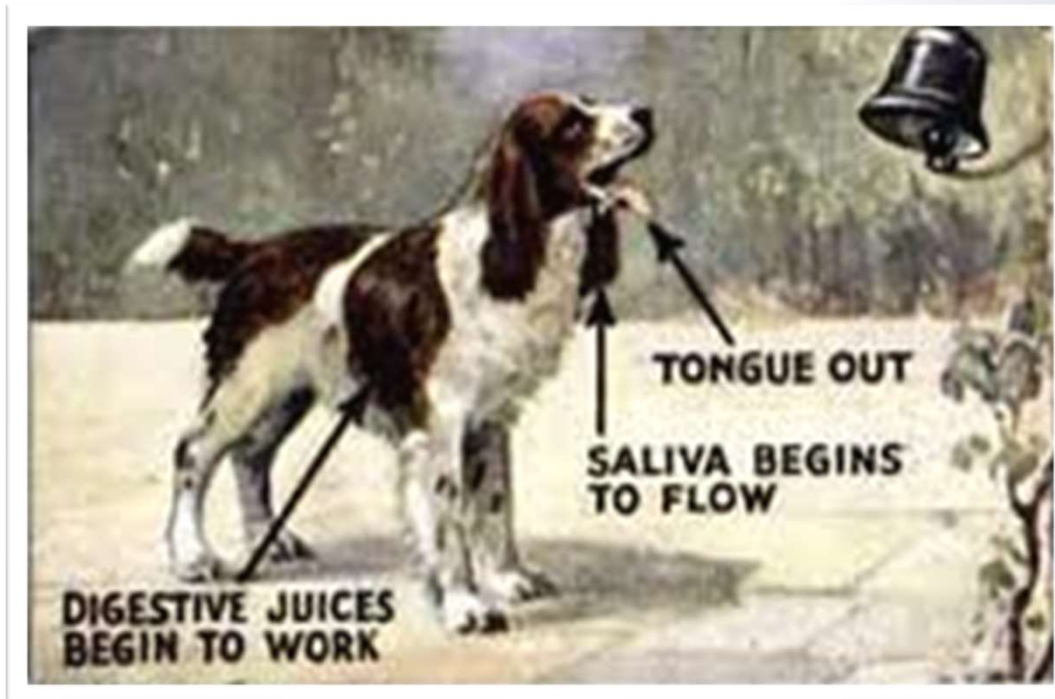


5% ervaart jeuk (pijn) bij deze stimuli





Rol van conditionering Placebo effecten



Pavlov 1849-1936

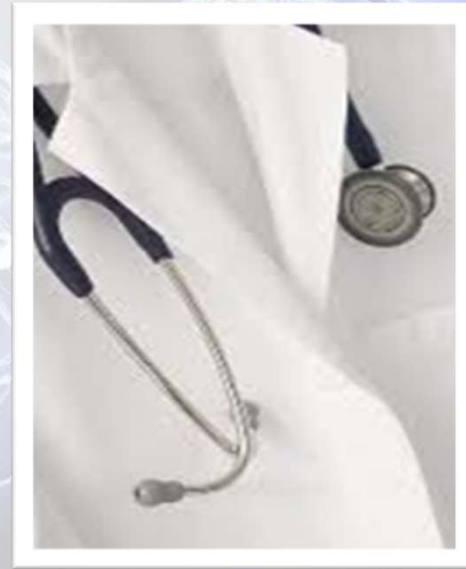


Rol van conditionering





Rol van conditionering





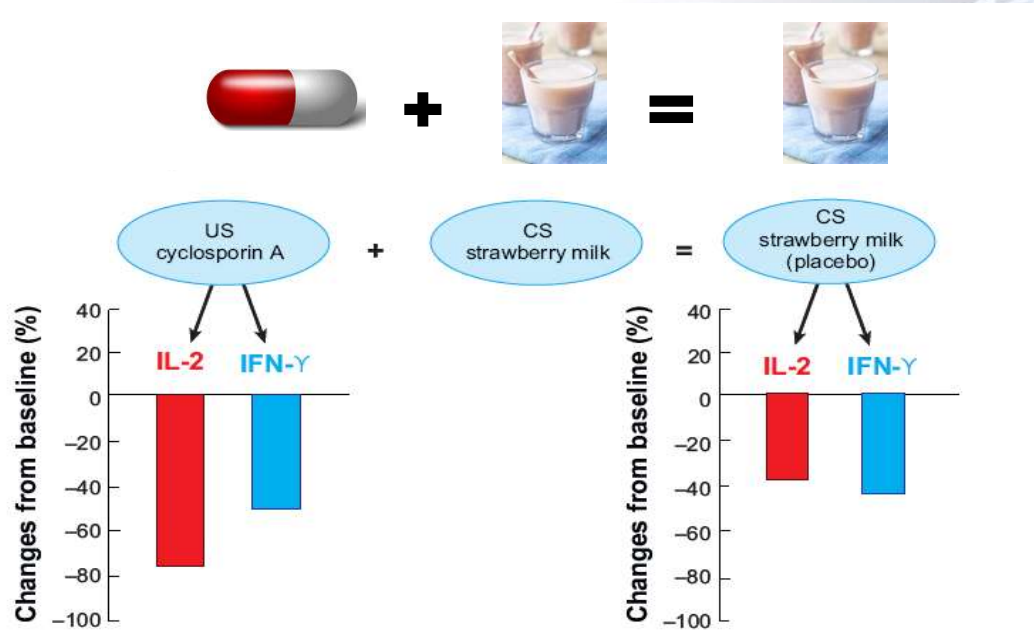
Placebo effect

Het lerende lichaam



Het lerende lichaam

Immuun conditionering





Het lerende lichaam

Immuun conditionering



Immunosuppressie



- Interleukin-2
- Interferon gamma

Immunostimulatie



- Natural killer cell activity
- Quinolinic acid
- CD14
- CD64

Allergieën



- Histamine release
- Allergic symptoms



Het lerende lichaam

Endocriene conditionering



Frontiers in Neuroendocrinology
Volume 52, January 2019, Pages 206-218



Conditioned hormonal responses: A systematic review in animals and humans

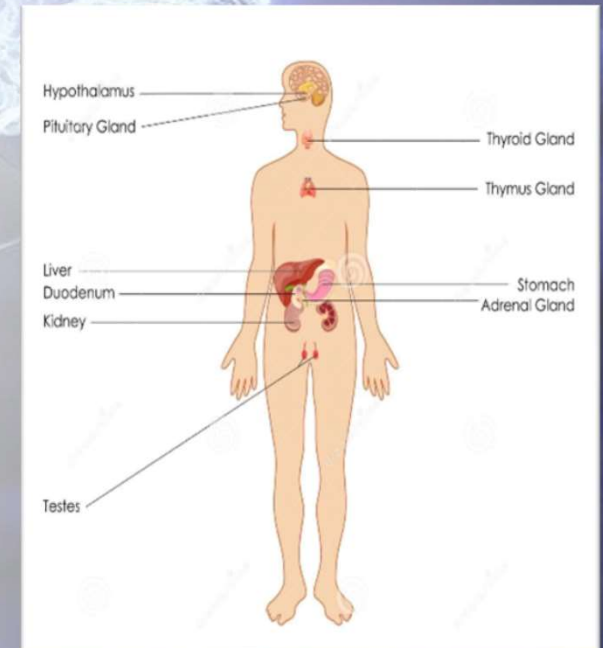
Dieronderzoek: Aleksandrina Skvortsova ^{a, b, d, e}, Dieuwke S. Veldhuijzen ^{a, b}, Iris E.M. Kloosterman ^a, Onno C. Meijer ^c, Henriët van Middendorp ^{a, b}, Gustavo Pacheco-Lopez ^{a, d}, Andrea W.M. Evers ^{a, b, e}

- Corticosterone
- Luteinizing hormone
- Testosterone
- Insulin
- Melatonin
- Oxytocin



Humane studies:

- Growth hormone
- Cortisol
- Insulin
- Oxytocin





Het lerende lichaam

Insuline conditionering

Dag 1 (leerfase)



Dag 2 (testfase)

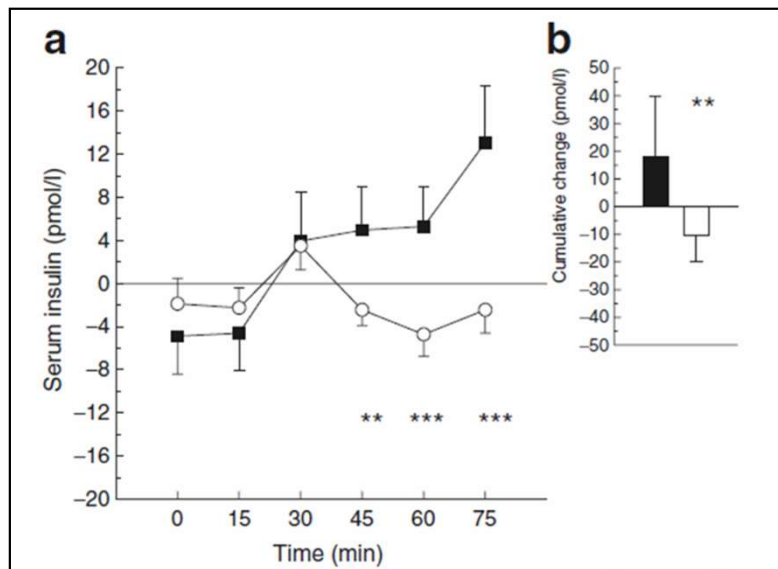




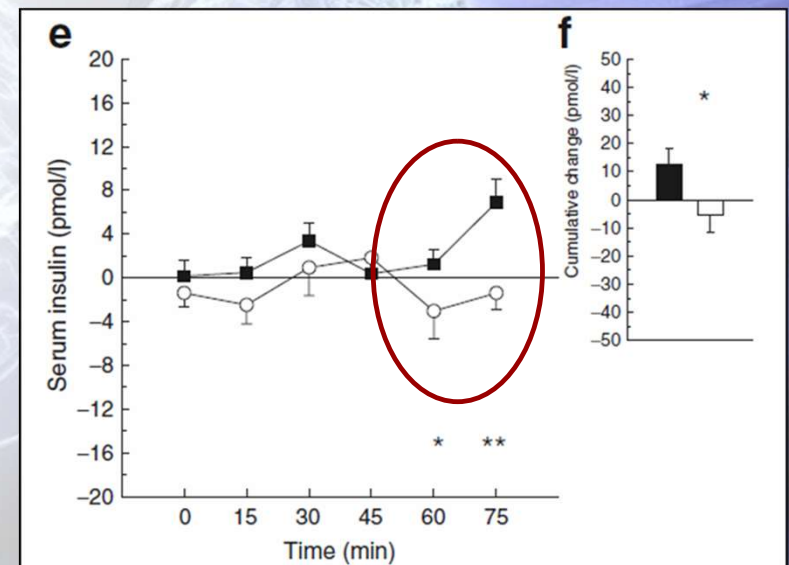
Het lerende lichaam

Insuline conditionering

Dag 1 (leerfase)



Dag 2 (testfase)



■ Insuline-conditionering groep
□ Placebo groep

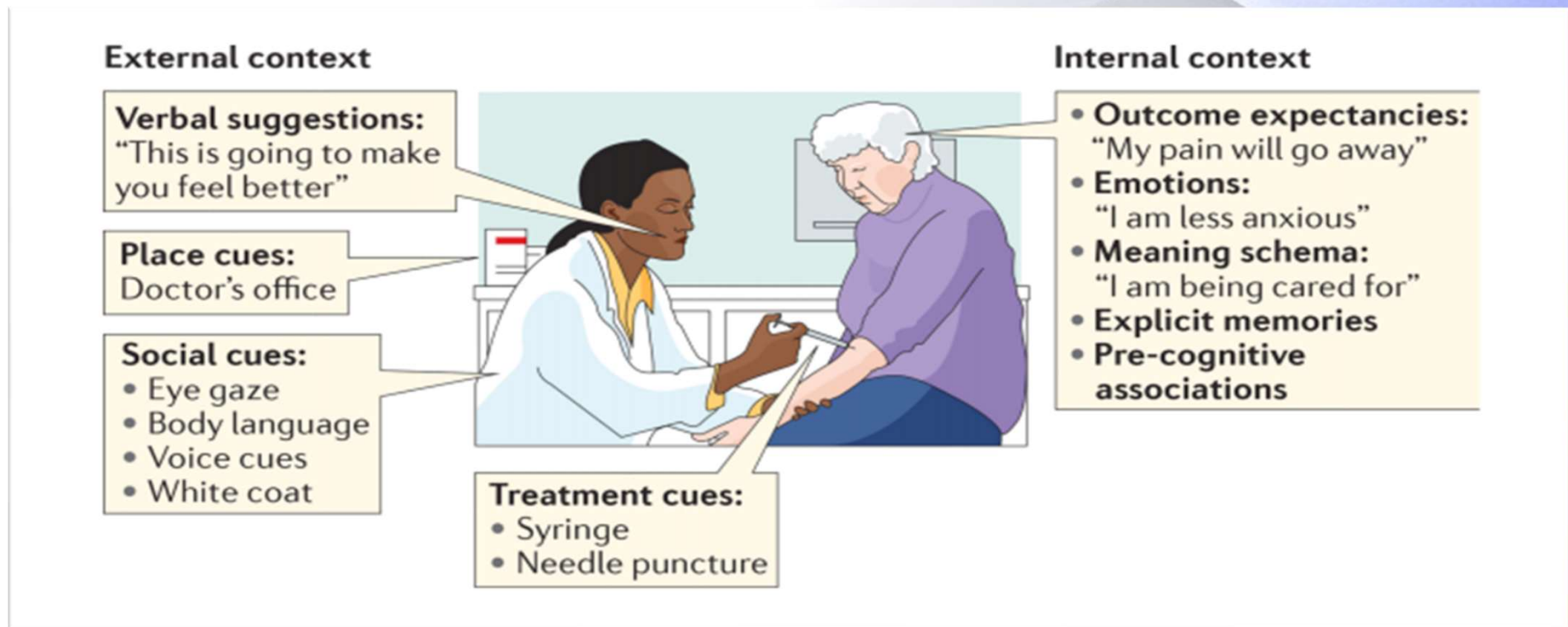


Klinische implicaties

De rol van de
behandelcontext



Klinische implicaties Behandelcontext





De rol van de behandelcontext

Patiënt

Expectation behandelingen

Professional

Arts-patiënt communicatie

Medicatie

Farmacotherapeutische conditionering





Quiz

Openheid over placebo effecten
vermindert het therapeutisch
effect ?

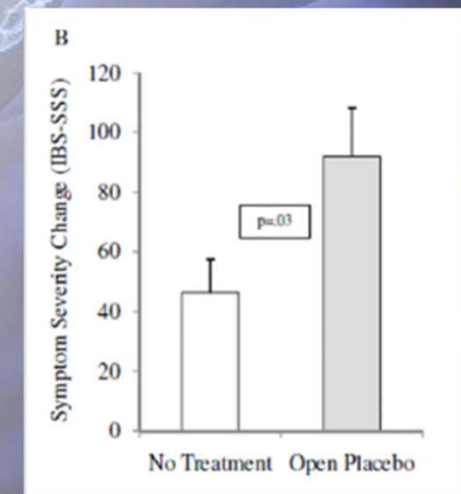
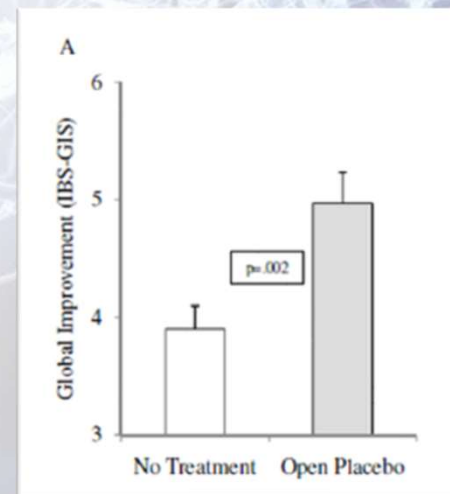


Klinische implicaties

Open label placebo

Voorschrijven placebo's na gedetailleerde informatie over placebo effect bij patiënten met prikkelbaar darmsyndroom

Verbeterde prikkelbare darm-symptomen (bijv. buikpijn) in vergelijking met geen behandeling



Kaptchuk et al., 2010

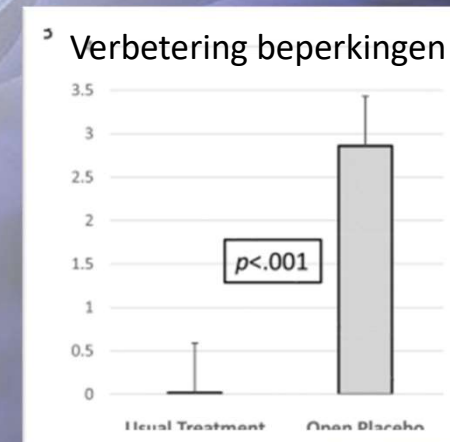
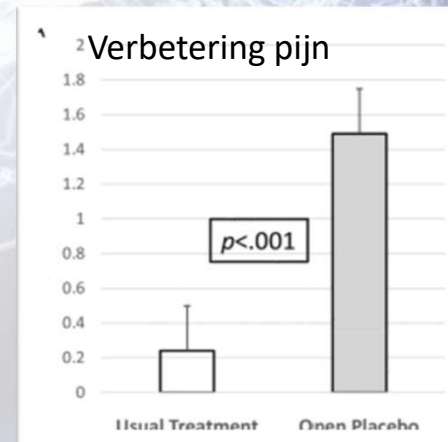


Klinische implicaties

Open label placebo

Voorschrijven placebo's aan patiënten met chronische lage rugpijn

Minder pijn en dagelijkse beperkingen in vergelijking met patiënten met enkel de reguliere behandeling



Kaptchuk et al., 2010



Quiz

Patiënten moeten voor de start van een behandeling geïnformeerd worden over mogelijke placebo- en nocebo-effecten.

In de arts opleiding hoort daarom scholing over deze effecten.



Expert consensus SIPS Conference 2017 en 2019

Consensus paper: Klinische aanbevelingen

1st and 2nd official SIPS conferences

- Informeer patiënten over placebo en nocebo effecten
- Train professionals in de communicatie over placebo en nocebo effecten



Evers et al, 2018 and 2020





De rol van de behandelcontext

Patiënt

Werken met verwachtingen

Professional

Arts-patiënt communicatie

Medicatie

Farmacotherapeutische conditionering

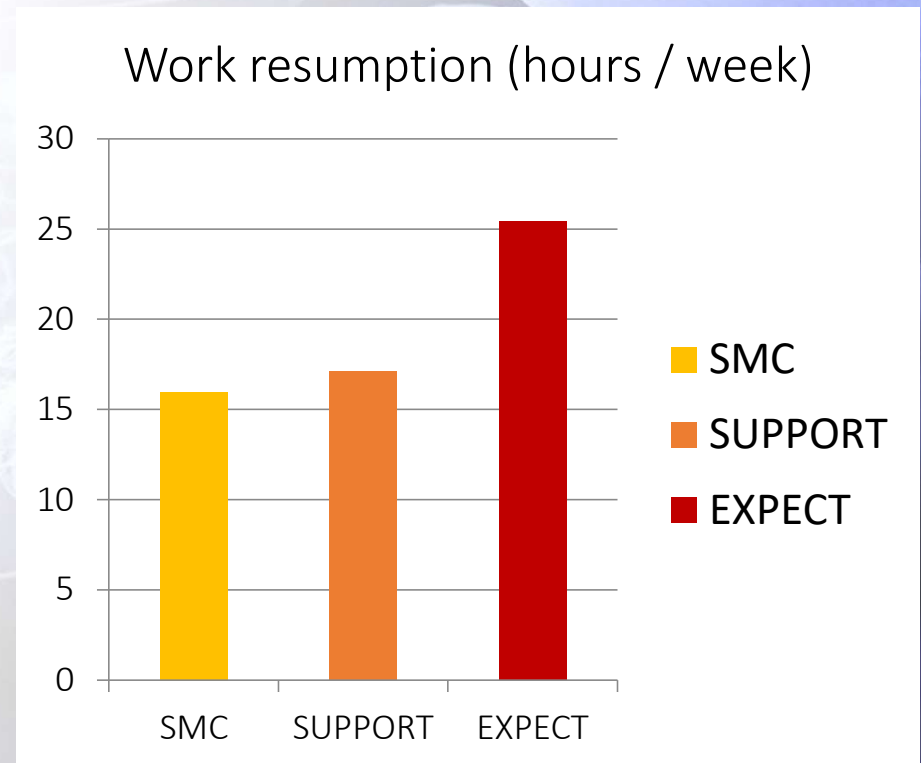




De rol van de behandelcontext

Optimaliseren verwachtingen

Gunstige effecten op herstel na **expectation-focused therapie** (5 sessies) in patiënten die een hartoperatie ondergaan





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De rol van de context in je behandeling...

Artsen die een **warme, vriendelijke** en **geruststellende houding** aannemen, zijn effectiever dan degenen die het consult formeel houden

Influence of context effects on health outcomes: a systematic review

[Z Di Blasi](#)¹, [E Harkness](#), [E Ernst](#), [A Georgiou](#), [J Kleijnen](#)

Affiliations + expand

PMID: 11253970 DOI: [10.1016/s0140-6736\(00\)04169-6](https://doi.org/10.1016/s0140-6736(00)04169-6)



Quiz

Hoe communiceer je over risico's en bijwerkingen om nocebo effecten te voorkomen?



De rol van de behandelcontext Informatie over procedures

Groep 1 (nocebo):

"Je zult een **harde steek** voelen; dit is de **ergste pijn** gedurende de ingreep."

Groep 2 (placebo):

"We zullen je een **lokale pijnstiller** geven die het gebied zal verdoven en die je **comfortabel** laat voelen gedurende de hele ingreep."

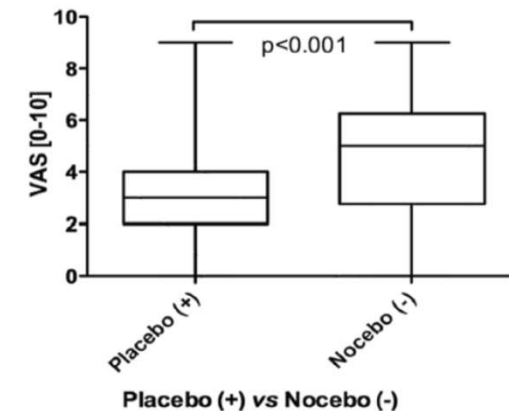


Figure 1. Pain on verbal analog scale (VAS) during injection of local anesthetic before administration of neuraxial anesthesia/analgesia in the placebo or nocebo group. Box plots represent median, interquartile range (upper and lower borders of the boxes) and minimal and maximal values (whiskers).

Nocebo-Induced Hyperalgesia During Local Anesthetic Injection

Dirk Varelmann, MD, DESA,* Carlo Pancaro, MD,† Eric C. Cappiello, MD,* and William R. Camann, MD*

(Anesth Analg 2010;110:868-70)



De rol van de behandelcontext Informatie over nocebo

Waarschuwen voor specifieke
bijwerkingen verhoogt juist de kans op
het krijgen van deze bijwerkingen

Original Paper

**Warning about side effects can increase their
occurrence: an experimental model using
placebo treatment for sleep difficulty**

**Ben Colagiuri^{1,2}, Kari McGuinness², Robert A Boakes¹
and Phyllis N Butow^{1,3}**

Psychopharm


Journal of Psychopharmacology
26(12) 1540–1547
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DOI: 10.1177/0269881112458730
jop.sagepub.com

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De rol van de behandelcontext Informatie over nocebo

Klachten die mensen toeschreven aan
windmolen-syndroom verminderden
na uitleg over nocebo-effecten





Environmental Research 140 (2015) 449–455

Contents lists available at ScienceDirect

Environmental Research


journal homepage: www.elsevier.com/locate/envres

Health complaints and wind turbines: The efficacy of explaining the nocebo response to reduce symptom reporting

Fiona Crichton, Keith J. Petrie*

University of Auckland, New Zealand

 CrossMark



De rol van de behandelcontext

Informatie over nocebo

1. **Informeer** patiënten over nocebo effecten (in je eigen woorden) bij een verhoogd risico op bijwerkingen
2. Vraag naar **voorkeur** om geïnformeerd te worden over risico's en bijwerkingen
3. Screening van patiënten met **hoog risico op nocebo effecten** met zorg op maat voor patiënten at risk

Tell Me the Truth and I Will Not Be Harmed: Informed Consents and Nocebo Effects

Luana Colloca¹
University of Maryland, Baltimore

Placebo and Pain Research: From Bench-to-Bedside and Beyond
Review

OPEN

PAIN
REPORTS

How to prevent, minimize, or extinguish nocebo effects in pain: a narrative review on mechanisms, predictors, and interventions

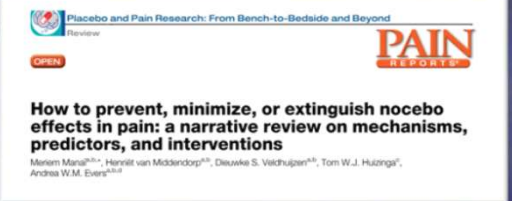
Meriem Maral^{1,2,3}, Hanselt van Middendorp^{1,2}, Dieuwke S. Valkenburg^{1,2}, Tom W.J. Huzinga¹,
Andrea W.M. Evers^{1,2,3}



De rol van de behandelcontext

Gebruik maken van placebo

1. Leg de **werking van het placebo effect** (in je eigen woorden) en **behandelmechanismen** begrijpelijk uit
2. Benadruk de mogelijke **lange-termijn voordelen** van de behandeling
3. Creëer een **open samenwerkende sfeer** gebaseerd op **transparantie**: Placebo effecten werken op basis van vertrouwen



Tell Me the Truth and I Will Not Be Harmed: Informed Consents and Nocebo Effects

Luana Colloca^D
University of Maryland, Baltimore



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Farmacotherapeutische conditionering

Standaard dosering





Farmacotherapeutische conditionering

Standaard dosering



Aangepaste dosering
conditionering schema



Gunstiger behandelbeloop en/of minder bijwerkingen
bij o.m. **depressie, ADHD, psoriasis, nierziekten**

Review Colloca et al., 2017, Smits et al 2020



Reguliere zorg:

Behandelingen effectiever
en doelgerichter inzetten

Patiënt:

Beter resultaat met minder bijwerkingen

Bijna 5 miljard Euro:

Jaarlijkse geneesmiddelen kosten
in Nederland

Taal als Medicijn: It's magic ?

The difference between medicine and magic is that magicians know what they are doing

Rodney J. Hicks

LU Leids Universitair
MC Medisch Centrum

ANBI

Helpt u ons zieke kinderen hun behandeling
beter te laten doorstaan door magie & illusie?

Steun ons onderzoek



**Medicine as performance: what
can magicians teach doctors?**

Daniel K Sokol

Lecturer in Medical Ethics and Law, St George's, University of London, Cranmer Terrace, London SW17 0RE, UK
E-mail: daniel.sokol@talk21.com

Taal als Medicijn: It's the placebo effect ...

The difference between medicine and magic is that magicians know what they are doing

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European Research Council



eLearning voor arts-patiënt communicatie gericht op placebo – nocebo effecten

1. Praten over verwachtingen
2. Uitleg behandel rationale
3. Informeren over risico's en bijwerkingen
4. Arts-patiënt relatie



Zie website IVM

<https://www.medicijngebruik.nl/scholing/e-learning/4942?sec=D2339AC73C5C0FCA96AAB0F1778E2B86>