

# Welche Rolle spielen Medien und Vertrauenspersonen bei der Verstärkung des Nocebo-Effekts ?

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# Nocebo-Verursacher

- Arzt

Intention: Schutz des Patienten

- Krankenkassen
- Pharmaindustrie
- Medien, Internet
- Meinungsbildner, VIPs
- Gesellschaft, Kultur
- Mit-Studienteilnehmer, Mitpatienten
- Angehörige und Freunde

Generika

Kontazeptiva

Hormonsubstitution

Impfreaktionen

Nahrungsmittel-Unverträglichkeiten

Elektrosmog

Windkraftwerk

Verkehrs-, Flugzeuglärm

# Nichterwiesene Nebenwirkungen

β-Blocker	Erektionsstörung	(Silvestri 2003)
Kontrazeptiva	Kopfschmerz, Übelkeit, Brustschmerz	(Grimes 2011)
Elektromagn.Feld		(Ofstedal 2007, Rubin 2006, Witthöft 2013)
Nahrungsmittel	Intoleranz	
Windräder (Infraschall)	Schlafstörungen	(Crichton 2013)
Verkehrs-, Flugzeuglärm		(Jonsson 1970)
Lärm	KHK	(Babisch 2003)
Impfungen		(Dobson 2003)

# Kontazeptiva



## Contraception

Contraception 83 (2011) 5–9

### Commentary

## Nonspecific side effects of oral contraceptives: nocebo or noise?

David A. Grimes\*, Kenneth F. Schulz

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Received 16 June 2010; accepted 21 June 2010

Table 1

Reported side effects with oral contraceptives and placebos in recent randomized controlled trials

Author and year	Oral contraceptive	No. of participants	Outcomes	Findings
Redmond et al., 1999 [20]	Triphasic pill with ethinyl estradiol 35 mcg plus norgestimate 0.18 mg, 0.215 mg, then 0.250 mg	462 (two trials combined) with moderate acne studied for six cycles	Headache, nausea, dysmenorrhea, breast pain, abdominal pain, back pain, vomiting, breast enlargement, emotional lability, weight gain, decreased libido	<u>No statistically significant differences</u>
Coney et al., 2001 [21]	Combination pill with ethinyl estradiol 20 mcg plus levonorgestrel 100 mcg	704 (two trials combined) with moderate acne studied for six cycles	Any adverse event	<u>No statistically significant differences:</u> headache, nausea, breast pain, weight gain, migraine headache, vomiting. Statistically significantly more: metrorrhagia, menstrual disorder, "allergic reaction," menorrhagia, and urticaria
O'Connell et al., 2007 [23]	Combination pill with ethinyl estradiol 20 mcg plus levonorgestrel 100 mcg	76 adolescents with dysmenorrhea studied for three cycles	Depressive symptoms; headache, nausea, acne, abdominal pain, back pain, vomiting, breast tenderness, breast enlargement, mood swings, weight gain, premenstrual syndrome and irregular bleeding	<u>No statistically significant differences</u>

## Mobile phone headache: a double blind, sham-controlled provocation study

G Oftedal<sup>1</sup>, A Straume<sup>2</sup>, A Johnsson<sup>2</sup> & LJ Stovner<sup>3</sup>

<sup>1</sup>Faculty of Technology, Sør-Trøndelag University College (HiST), <sup>2</sup>Department of Physics, Norwegian University of Science and Technology (NTNU), <sup>3</sup>Norwegian National Headache Centre, St Olav's Hospital and Department of Neuroscience, Norwegian University of Science and Technology (NTNU), Trondheim, Norway

*Cephalalgia*

Oftedal G, Straume A, Johnsson A & Stovner L J. Mobile phone headache: a double blind, sham-controlled provocation study. *Cephalalgia* 2007; 27:447-455. London. ISSN 0333-1024

17 pat., cross-over exposure to radio frequency or sham

Table 1 Maximal degree of symptom in RF and sham sessions and n

	Mean		P (paired t-test)
	RF	Sham	
Pain/discomfort	10.1	12.6	0.30
Headache	7.4	10.3	0.22
Other symptoms	8.1	11.6	0.19

No difference in symptoms severity between RF and sham  
No specific effect of RF  
Nocebo effect



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<sup>a,b,\*</sup>, G. James Rubin<sup>a</sup>

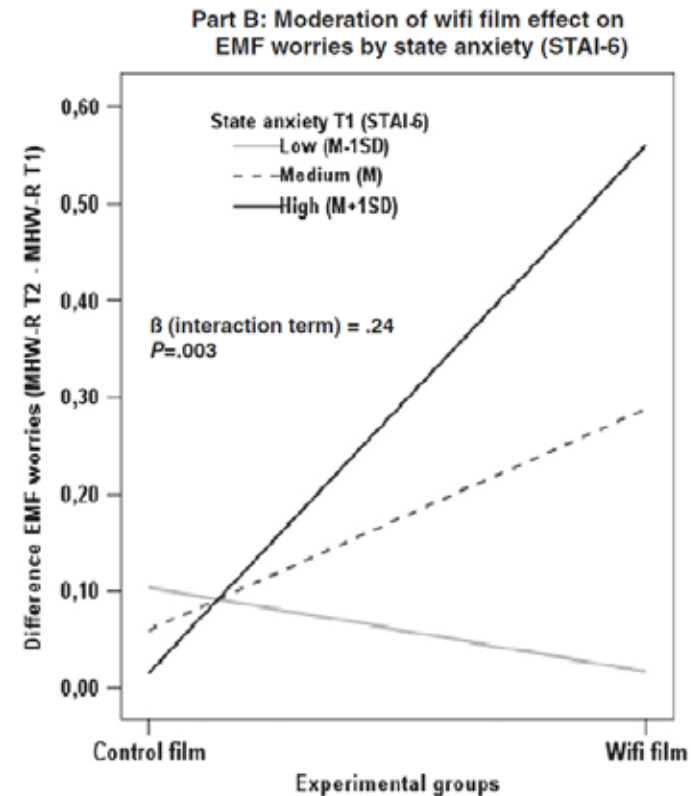
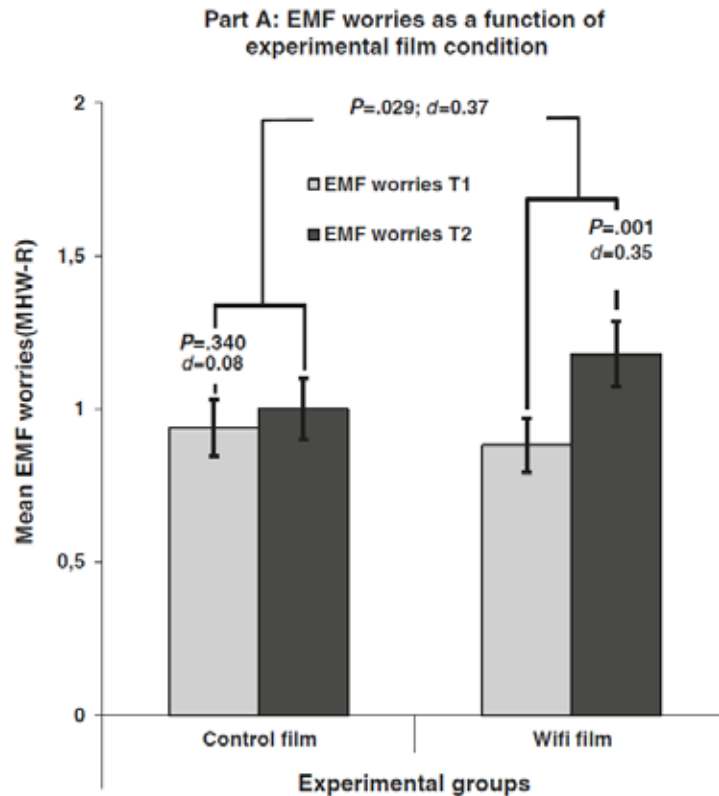
<sup>a</sup> King's College London, Department of Psychological Medicine, Weston Education Centre, United Kingdom

<sup>b</sup> Division of Clinical Psychology and Psychotherapy, Johannes Gutenberg University of Mainz, Germany

Film (television reports):

- Adverse WiFi effects (n=76)
- Safety of data transmission (n=71)

○ sham WiFi exposure





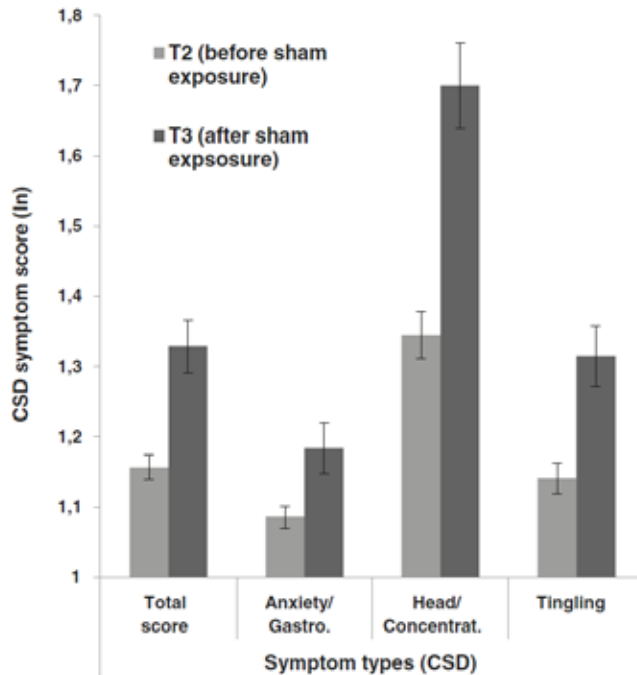
# Are media warnings about the adverse health effects of modern life self-fulfilling? An experimental study on idiopathic environmental intolerance attributed to electromagnetic fields (IEI-EMF)

Michael Witthöft <sup>a,b,\*</sup>, G. James Rubin <sup>a</sup>

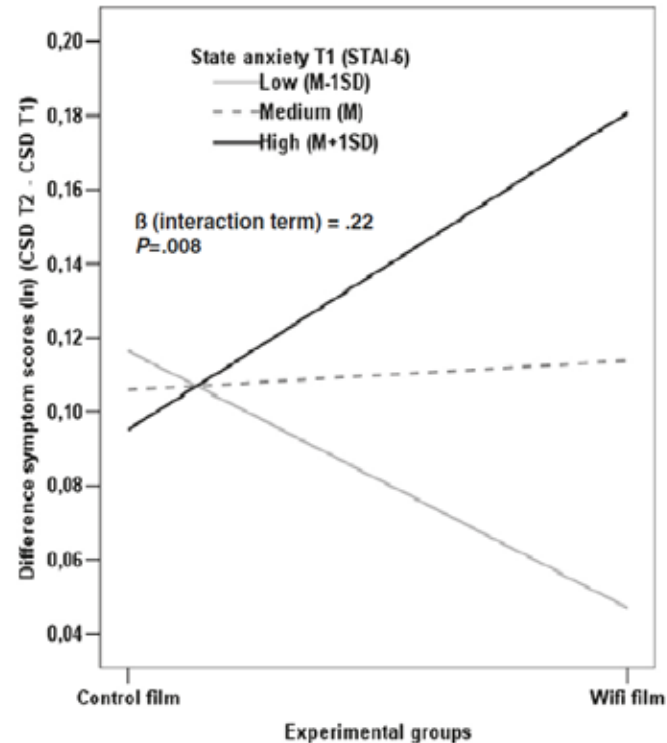
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86.4% believed the exposure, 3% not

Part A: Self-reported symptom scores before (T2) and after the sham exposure(T3)



Part B: Moderation of total symptom reports after the EMF sham exposure by state anxiety (T1) as a function of the film condition (wifilm vs. control film)







## 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<sup>a,b,\*</sup>, G. James Rubin<sup>a</sup>

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### Conclusion:

#### Mass media reports

- elevate levels of concern
- increase likelihood of symptoms
- increase likelihood of attribution of symptoms to that substance
- generates belief to be sensitive, with future symptomatic reactions
- contribute to the development of IEI-EMF

(„idiopathic environmental intolerance to electromagnetic fields“)

Health Psychol. 2013 Mar 11. [Epub ahead of print]

## **Can Expectations Produce Symptoms From Infrasound Associated With Wind Turbines?**

Crichton F, Dodd G, Schmid G, Gamble G, Petrie KJ.

54 participants  
audiovisual information (from internet)  
exposure to 10min infrasound and sham  
infrasound

### Results:

Number and intensity of symptoms increased in high-expectancy participants under both conditions

# TV Reportagen

Japan	cancer vaccine trial	anxiety, enquiries	(Juyi 2011)
Taiwan	influenza A vaccination (H1N1)	symptom clusters	(Huang 2010)
West Bank	gas poisoning	symptoms, 900 pat.	(Hefez 1985)
England	MMR vaccination	vacc.rate ↓	(Dobson 2003)
	hormone replacement therapy	discontinuation	(Majumdar 2004)
	Suicide report (M.M)	suicides, car accidents	

# Eltroxin formulation change

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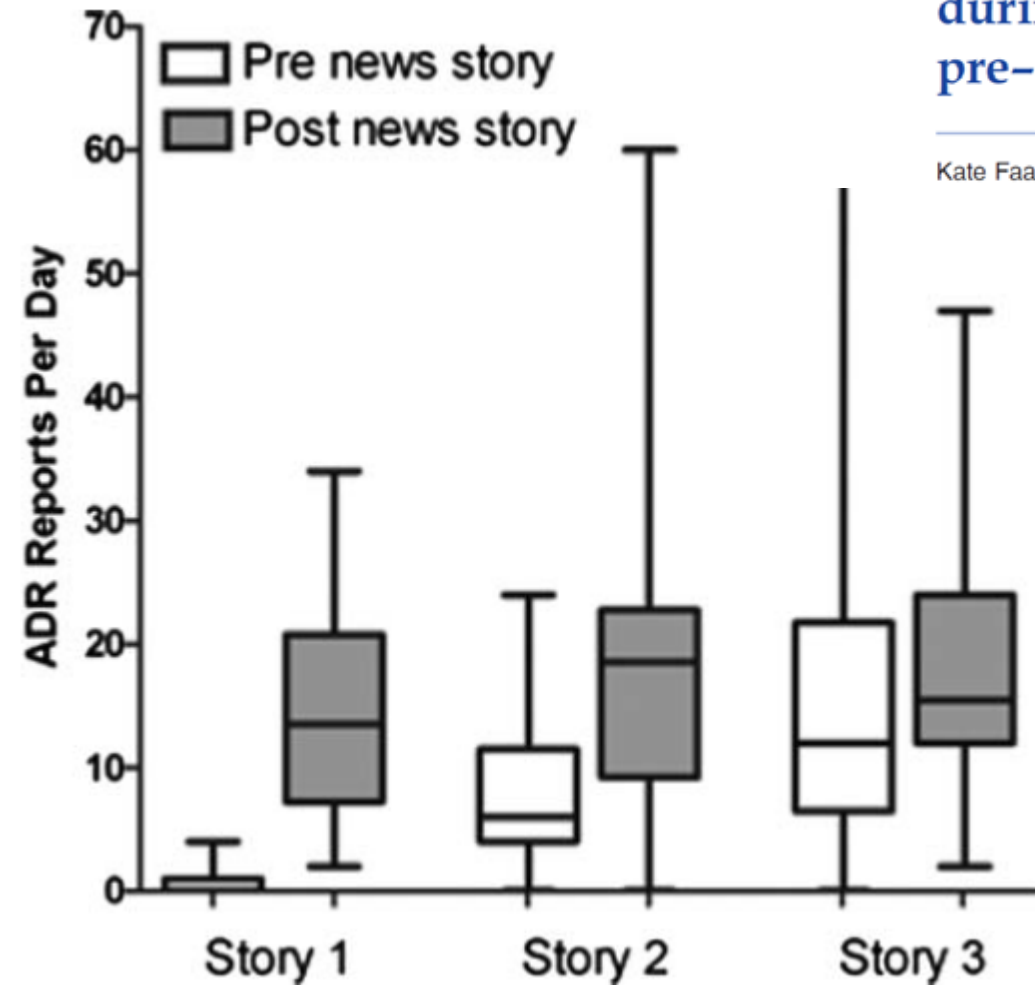
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Research

BMJ  
open  
access to medical research

## Impact of television coverage on the number and type of symptoms reported during a health scare: a retrospective pre-post observational study

Kate Faasse,<sup>1</sup> Greg Gamble,<sup>2</sup> Tim Cundy,<sup>2</sup> Keith J Petrie<sup>1</sup>



# Eltroxin formulation change

## Television coverage and health scare symptoms

**Table 2** Mann-Whitney U test analyses of reporting rates of television-mentioned symptoms in the month before and after television media coverage

Symptom	Television report	Television mention	Median pre (IQR)	Median post (IQR)	U	p Value	r
Headache	1	Yes	0 (0)	5 (5)	22.0	<0.001	-0.82
	2	Yes	2 (2)	7 (7.5)	76	0.001	-0.53
	3	No	4.5 (7.25)	5.5 (6)	180.5	0.597	-0.08
Itching	1	No	0 (0)	0 (1)	129.5	0.009	-0.42
	2	Yes	0 (0.75)	2 (2.75)	77	<0.001	-0.56
	3	No	1.5 (3)	3 (4)	151	0.175	-0.21
Memory Problems	1	No	0 (0)	0 (1)	126	0.011	-0.40
	2	Yes	0 (1)	2 (3)	48.5	<0.001	-0.68
	3	No	1 (2)	2 (4.75)	185	0.679	-0.07
Nausea	1	Yes	0 (0)	2 (2)	38	<0.001	-0.75
	2	No	1 (1.75)	1 (1.75)	141	0.097	-0.26
	3	No	1 (2.75)	2 (2)	155.5	0.217	-0.20
Tiredness	1	No	0 (0)	1 (2)	86.5	<0.001	-0.59
	2	Yes	1 (1)	3 (1.75)	73	<0.001	-0.56
	3	No	2.5 (2)	2 (2.75)	187	0.721	-0.07
Unsteadiness	1	No	0 (0)	0 (1.75)	120	0.002	-0.49
	2	No	0 (1)	1 (1.75)	160.5	0.240	-0.19
	3	Yes	0.5 (1)	2 (2.75)	119	0.023	-0.36
Vision Problems	1	Yes	0 (0)	2 (3.5)	27.5	<0.001	-0.78
	2	Yes	1 (1)	3 (4.5)	120.5	0.028	-0.35
	3	Yes	2 (2.75)	4.5 (4)	143	0.120	-0.25

# Eltroxin formulation change

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Research



## Impact of television coverage on the number and type of symptoms reported during a health scare: a retrospective pre-post observational study

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TV Reportage hat Einfluss auf Anzahl und Inhalt von NW-Meldungen

- |  |             |
|--|-------------|
| 1) erhöht Ängste zu eigener Gesundheit                       | alle        |
| 2) erhöht Aufmerksamkeit und Auftreten spezifischer Symptome | Betroffene  |
| 3) erhöht Meldebereitschaft                                  | Pat., Ärzte |

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Voodoo, Sustu, Malqui, Komo

Massen-Hysterie

Contagion by observation

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- Angehörige und Freunde



# Social observational learning



Hyperalgesie, nach Berichten von anderen Studienteilnehmern

Beobachtung unwirksamer Therapie

Beobachtung von Beurteilungen von Schmerzreizen, Unsicherheit über die Schmerzstärke => Hyperalgesie (Yoshida 2013)

# Social observational learning



PAIN® 154 (2013) 1427–1433

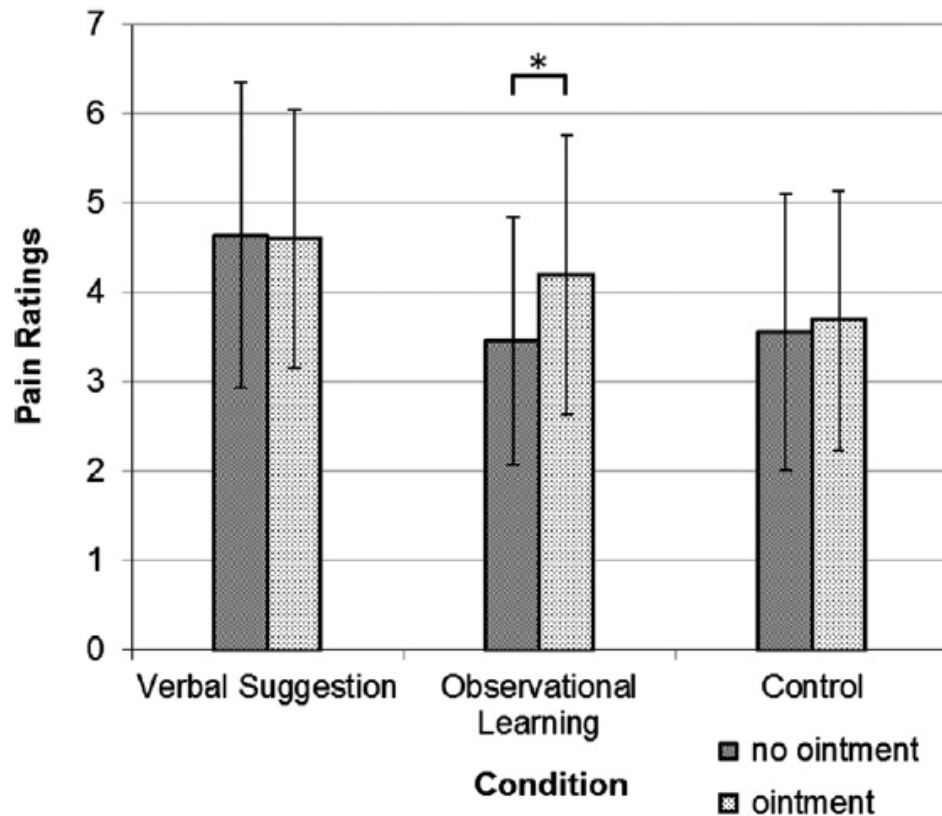
PAIN®

[www.elsevier.com/locate/pain](http://www.elsevier.com/locate/pain)

## Nocebo hyperalgesia induced by social observational learning

Elisabeth Vögtle\*, Antonia Barke, Birgit Kröner-Herwig

*Georg-Elias-Müller-Institute for Psychology, Department of Clinical Psychology and Psychotherapy, University of Göttingen, Göttingen, Germany*



85 Studentinnen

CC: Salbe ohne Einfluss auf  
Schmerzwahrnehmung

VS: Salbe erhöht Hautempfindung

OL: Video, in dem Teilnehmer stärker  
mit gesalbter Hand reagiert

=> Druckalgometer

# Social observational learning



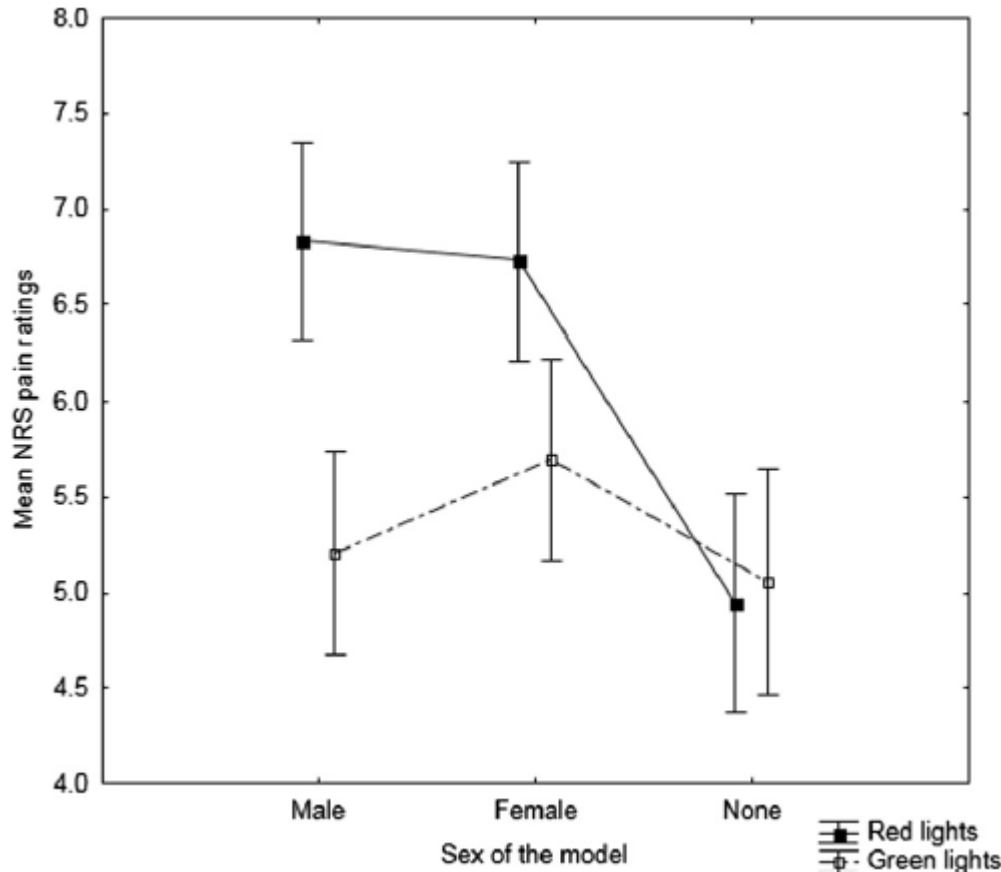
PAIN® 154 (2013) 1312–1317

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The effect of the sex of a model on placebo hyperalgesia induced by social observational learning

Karolina Świder, Przemysław Babel\*



84 Freiwillige, 6 Gruppen

- 1) Beobachtung eines Modells mit größerer Schmerzreaktion bei rotem Licht  
(nonverbales Signal)
- 2) Elektr. Schmerzreiz

# Mitpatienten

Im Wartezimmer für Injektionstherapie bei Rückenschmerz:

„Hoffen Sie nur, dass Sie nicht **Pech** haben  
und **abgeschossen** werden !“

Das **Ziel** ist, mit den injizierten Medikamenten  
möglichst **nahe** an den Nerv heran zu kommen.  
Wenn Sie das merken, ist es also ein **gutes Zeichen**.  
Sie sollen es nur gleich sagen  
und sitzen bleiben, sich **helfen** lassen und dann liegen,  
bis Sie wieder **sicher** stehen und gehen können.

# Negativsuggestionen der Wohlwollenden

What should we say?

J Savulescu, B Foddy, J Rogers

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*J Med Ethics* 2006;**32**:7–12. doi: 10.1136/jme.2005.0

Dr.S., komplizierte Fraktur eines Beines bei Ski-Unfall

“Das war deine eigene Schuld.”

“Du hättest es nicht wieder übertreiben sollen.”

“Du solltest froh sein, dass du das Bein nicht verloren hast.”

“Du musst dich jetzt damit abfinden.”

“Es gibt eine Menge Dinge, die du immer noch machen kannst.”

# Negativsuggestionen der Wohlwollenden

What should we say?

J Savulescu, B Foddy, J Rogers

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*J Med Ethics* 2006;32:7–12. doi: 10.1136/jme.2005.0

Dr. R.: - malignes Lymphom mit Chemotherapie,  
Knochentransplantation

Knochenmarksbiopsie

(Arzt:) *“Das tut nicht weh.”*

Lymphomdiagnose

(Mutter:) *“Wie kannst du mir das antun!”*

nach Chemotherapie, blass und kahl

(Freund:) *“Gut schaust du aus !”*

# Negativsuggestionen der Wohlwollenden

What should we say?

J Savulescu, B Foddy, J Rogers

---

*J Med Ethics* 2006;**32**:7–12. doi: 10.1136/jme.2005.0

Dr. R.: - Sepsis nach Streptokokkeninfektion bei  
Auslandsaufenthalt

“Wenn du in solche Länder fährst ...”

-Tod der nach Meningitis behinderten Tochter

“Ein behindertes Kind kann eine wundervolle Erfahrung sein.”

“Zumindest hast du noch eine zweite Tochter.”

# Positivsuggestionen der Wohlwollenden

What should we say?

J Savulescu, B Foddy, J Rogers

---

*J Med Ethics* 2006;**32**:7–12. doi: 10.1136/jme.2005.0

Positiv:

Das ist ja furchtbar.

Da hattest du wirklich Pech.

Nur wenige hätten das so gut verkraftet wie du.

**Was kann ich für dich tun ?**

Du hast offensichtlich beste medizinische Versorgung.”



## Herzinfarkt

“Da hast du sicher wieder zu viel gearbeitet.”

“Ich habe dir ja gesagt, hör auf mit dem Rauchen.”

Einen Grund für das Unglück der Krankheit zu finden hilft uns in der Überzeugung, dass es uns nicht befallen kann, es macht das Leid vermeidbar.

# Negativsuggestionen der Wohlwollenden

Distanzierung, Notwendigkeit zur Hilfe verringern,  
Verantwortung vermeiden

”Es geht dir schon wieder besser, nicht wahr.”

“Kann ich was für dich tun”

lädt ein zur Entlastung:

“Nein danke, es geht schon.”

Besser: “Ich fahre anschließend Einkaufen. Kann ich  
Dir was besorgen?”

# Negativsuggestionen der Wohlwollenden

“Mitleid” lässt uns leiden.

Um dem zu entfliehen:

- Flucht, Abwehr
- den Leidenden zwingen, glücklicher zu sein  
Stimmung-heben kann leicht abwehrend und aggressiv machen
- Erwartung: leide still und geduldig, lass dir helfen, werde passiv

Normative Rolle des Kranken (Parsons 1950)

Wir sollten diesem Zwang uns zu entlasten  
nicht nachgeben !!

## REVIEW

### The Nocebo Phenomenon: Concept, Evidence, and Implications for Public Health

Robert A. Hahn, Ph.D., M.P.H.<sup>1</sup>

*Division of Prevention Research and Analytic Methods, Epidemiology Program Office, Mailstop D-01, Centers for Disease Control and Prevention, Atlanta, Georgia 30333*

- Nocebo hypothesis: Expectation of sickness cause sickness in the expectant.
- Communication about pathological conditions not only describe, but also foster sickness. => caution !!
- Expectations are largely learned from cultural environment.
- Symptoms may spread in communities by being witnessed.
- Nocebo specific or generic (diffusely pessimistic), generates symptoms, attention and avoidance.

## REVIEW

### The Nocebo Phenomenon: Concept, Evidence, and Implications for Public Health

Robert A. Hahn, Ph.D., M.P.H.<sup>1</sup>

*Division of Prevention Research and Analytic Methods, Epidemiology Program Office, Mailstop D-01, Centers for Disease Control and Prevention, Atlanta, Georgia 30333*

- Nocebo is a facet of culture that may be responsible for a substantial variety of pathology throughout the world.
- A society's ethnomedicine tells societal members what sicknesses there are, how they are acquired, how manifested, how treated.
- The society and culture defines what is sickness.
- A cultural system commonly thought to serve a healing function may also have a contrary outcome, fostering the same pathologies intended to be healed by establishing expectations that they may occur.
- Nocebo is a side effect of human culture.