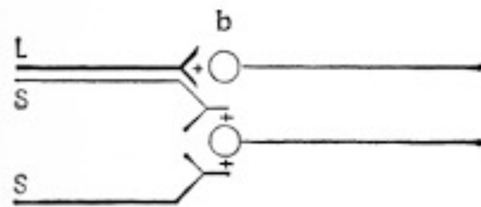
SMERTE I ET BIOPSYKOSOSIALT PERSPEKTIV

Borrik Schjødt

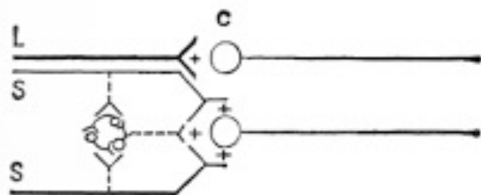
Psykologspesialist

Hva er smerte

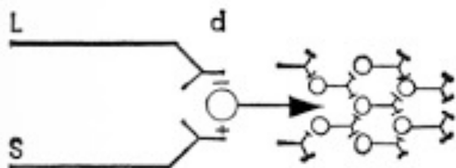
19thC: Von Frey's specificity theory: large and small fibres transmit touch and pain specifically, to specific touch or pain centres in the brain



19thC: Goldscheider's Summation theory: small fibres converge onto a dorsal horn cell, and touch is carried on large fibres



1943: Livingston's reverberatory circuit model: dorsal horn cell bombarded by self-exciting neuron circuit transmits abnormally patterned volleys to brain



1959: Noordenbos' sensory interaction theory: large fibres inhibit, small ones excite central transmission neurons; comprises multi-synaptic afferent system.

Image: adapted from p. 163, Melzack & Wall, Challenge of Pain, 1996 ed.

That there is something basically at fault about the nervous systems of certain of the individuals affected, is probable. Some are insurance problems. Others have grudges against the world, or are perhaps stupid, or even criminal.

MINOR CAUSALGIA: A HYPERESTHETIC NEUROVASCULAR SYNDROME*

JOHN HOMANS, M.D.

BOSTON

THERE is a very peculiar circulatory disease or symptom-complex which affects the extremities and which is marked especially by exaggerated sensitiveness of the skin. This hyperesthesia is such that any touch excites a sort of pain which the patient very much dreads. There often is but need not be spontaneous pain. Nevertheless it is so difficult to carry on everyday affairs without some contact of the part that in many a case the patient is made uncontrollably nervous, depressed and apprehensive. There are serious cases and mild ones, and it is the serious ones which have made the mild ones understandable.

Many years ago, S. Weir Mitchell[1] described the bad sort as causalgia, that is, burning pain. Those of you to whom this term means anything at all will recall that the word referred to a state of glossy redness of a hand or foot, atrophied soft parts, tapered digits, and nails much curved transversely. The burning pain, always present, was comparatively bearable until a touch or even a sound, a draft or a jar caused an agonizing increase. The patients, who were always wounded soldiers, soon became invalids, carrying about a

basis of the lesion, have an abundant arterial supply.

It is now well known that arteries are well furnished with sensitory filaments, and it has been established (Moore[4]) that these filaments travel into the spinal cord with the posterior, or sensory, roots. How such fibers make reflex arcs with outgoing vasomotor nerves, the classical sympathetic system is, for the moment, unimportant. There probably are reflexes traveling by way of the spinal cord and there may even be local reflexes through plexuses upon the walls of the larger vessels. In any case, signs of sympathetic irritation, that is, sweating and peripheral vascular spasm, can be brought on by central-going impulses originating in and about the walls of the arteries and, for that matter, the veins. This is not the place to discuss the problem of why some of these reflex sympathetic disorders are painful and others not; why some leave the skin hot and others cold; why some are attended by edema and others by bone atrophy; why some appear to represent, in addition to everything else, paralyses of great mixed nerves. All are dysfunctions, into which the sympathetic system, primarily a vasomotor mechanism, enters in a very mysterious

Homans J, Minor Causalgia: A hyperesthetic neurovascular syndrome, N Engl J Med; 1940; 222 (21): 870-874

8 April 1977, Volume 196, Number 4286 SCIENCE

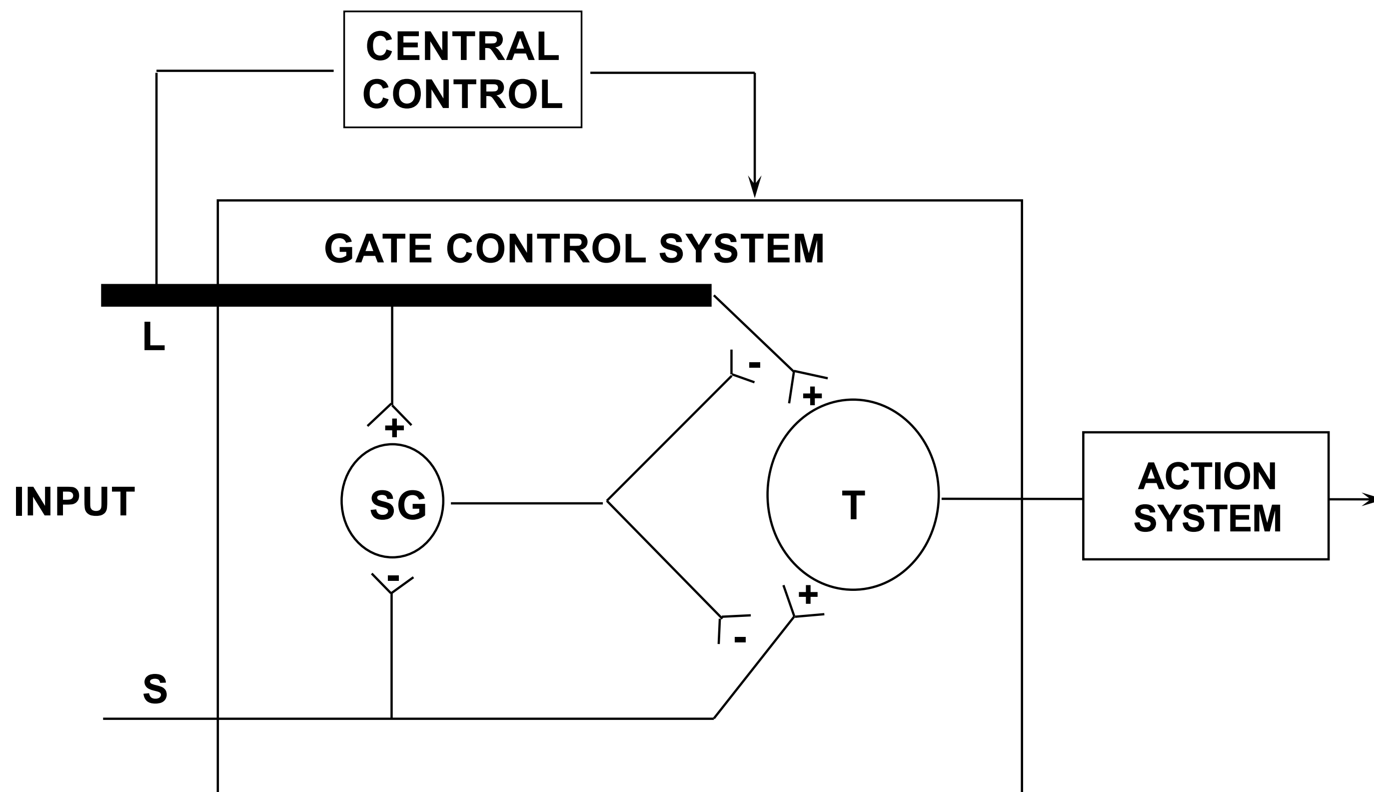
The Need for a New Medical Model: A Challenge for Biomedicine

George L. Engel

At a recent conference on psychiatric education, many psychiatrists seemed to

the physician is appropriate for their helping functions. Medicine's crisis

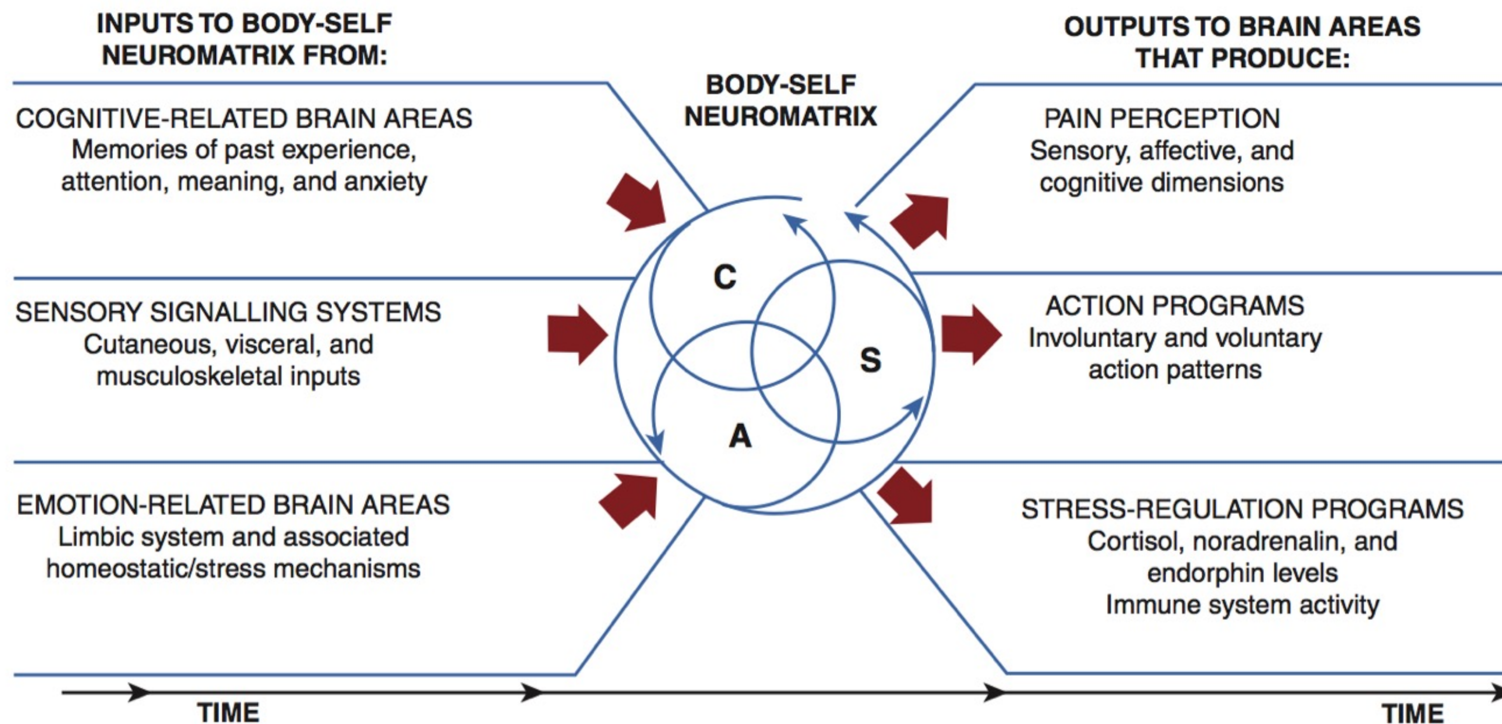
new discipline based on behavioral science. Henceforth medicine would be responsible for the treatment and cure of disease, while the new discipline would be concerned with the reeducation of people with "problems of living." Implicit in this argument is the premise that while the medical model constitutes a sound framework within which to understand and treat disease, it is not relevant to the behavioral and psychological problems classically deemed the domain of psychiatry. Disorders directly ascribable to brain disorder would be taken care of by neurologists, while psychiatry as such would disappear as a medical discipline.



L - Large-diameter (Aβ-fibre)
S - Small-diameter(Aδ- og C-fibre)
SG - Substansia gelatinosa

T - Transmission cells
+ - Excitation
- - Inhibition

Meltzack R & Wall P, Pain Mechanisms: A New Theory, Science: 1965; 150(3699): 971-979

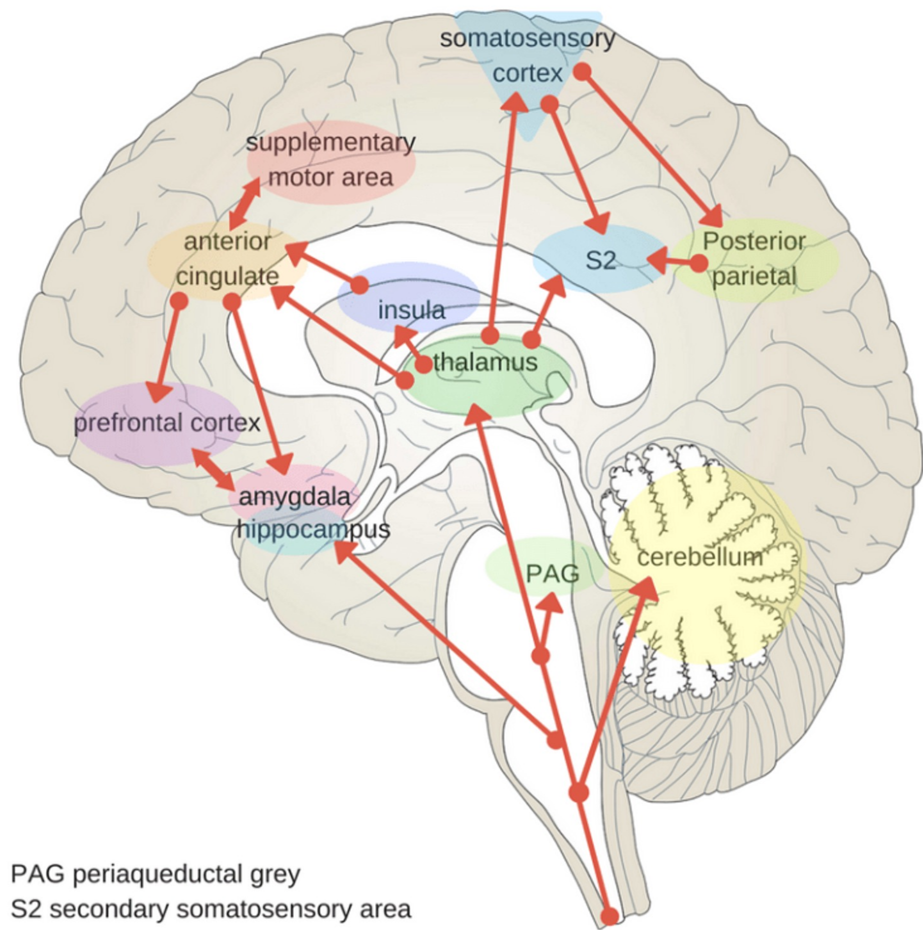


Neuromatrix – beskrevet i Melzack 1990 (Trends in Neuroscience, 1990, 13(3), 88-92), utdypet i Melzack, 1999 (From the gate to the neuromatrix. Pain, Suppl 6, S121-s126).

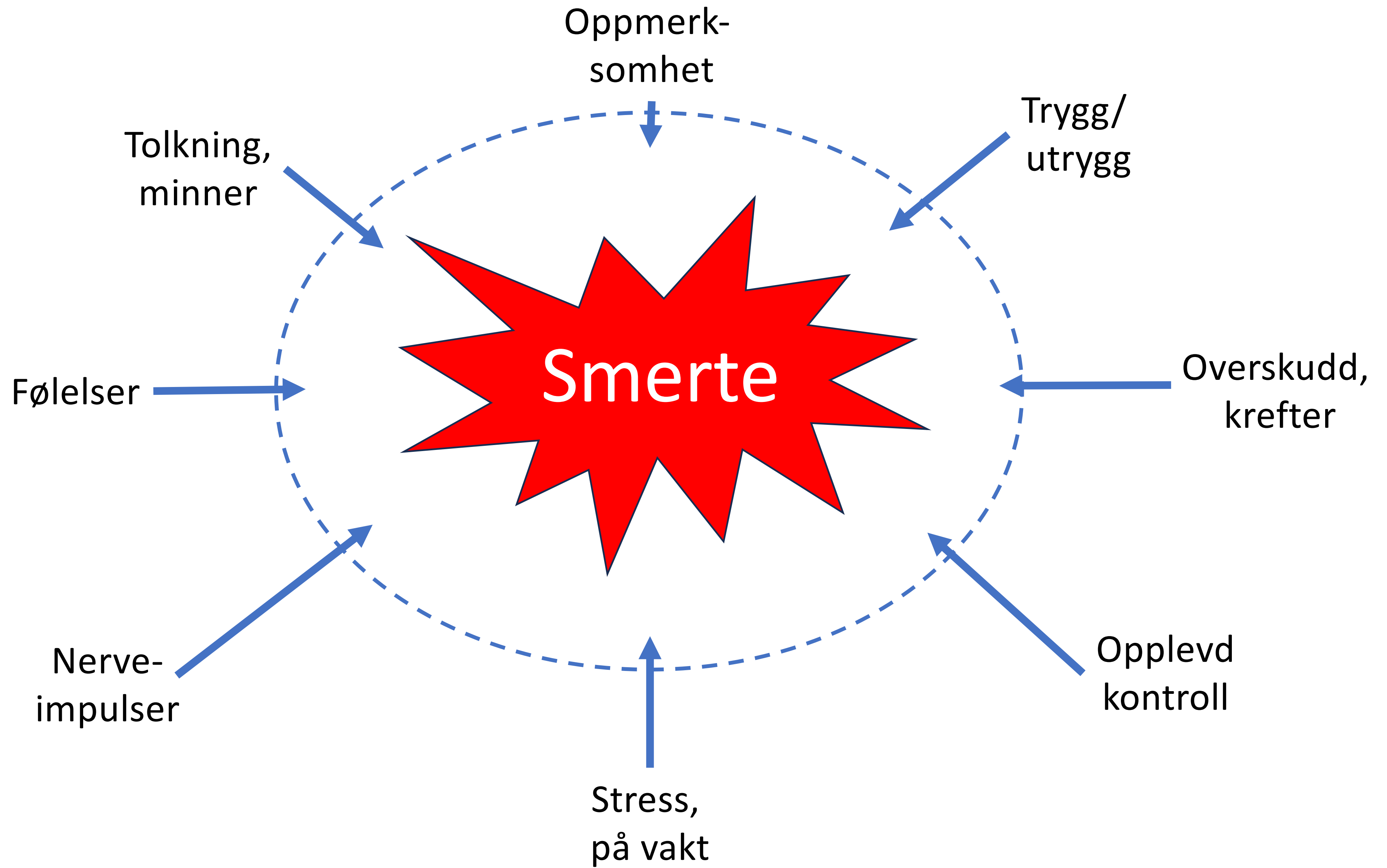
Figuren hentet fra: Katz & Melzack (2011)

SMERTE-NETTVERK

Ikke ett smertesenter – men –
flere områder som er forbundet
med hverandre, og som utgjør et
smerte-nettverk/pain matrix



Illustrasjon hentet fra Bright Brain Centre, London


Oppmerk-
somhet
Trygg/
utrygg
Tolkning,
minner
Smerte
Følelser
Overskudd,
krefter
Nerve-
impulser
Opplevd
kontroll
Stress,
på vakt

smerte er ...

... en ubehagelig sensorisk og emosjonell opplevelse som er forbundet med, eller likner opplevelsen forbundet med, faktisk eller potensiell vevsskade. (IASP 2020/NOSF 2022)

IASP
INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN

IASP Revises Its Definition of Pain for the First Time Since 1979

The International Association for the Study of Pain has revised the definition of pain, a standard that has been respected globally since it was first written in 1979.

"The revised definition was a true collaborative effort, written by a multi-national, multidisciplinary task force that received input from numerous stakeholders, including persons in pain and their caregivers," said Srinivasa N. Raja, MD, Chair of the IASP Task Force and Director of Pain Research, Professor of Anesthesiology & Critical Care Medicine, Professor of Neurology, Johns Hopkins University School of Medicine.

The new definition states that pain is:

"An unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage," and is expanded upon by the addition of six key Notes and the etymology of the word pain for further valuable context:

- Pain is always a personal experience that is influenced to varying degrees by biological, psychological, and social factors
- Pain and nociception are different phenomena. Pain cannot be inferred solely from activity in sensory neurons.
- Through their life experiences, individuals learn the concept of pain.
- A person's report of an experience as pain should be respected.
- Although pain usually serves an adaptive role, it may have adverse effects on function and social and psychological well-being.
- Verbal description is only one of several behaviors to express pain; inability to communicate does not negate the possibility that a human or a nonhuman animal experiences pain.

The etymology was also included in the revised definition: Middle English, from Anglo-French peine (pain, suffering), from Latin poena (penalty, punishment), in turn from Greek poinē (payment, penalty, recompense).

The revised definition was published in July in the association's official journal, *PAIN*, along with the associated commentary by President Lars Arendt-Nielsen and Immediate Past President, Judith Turner.

"IASP and the Task Force that wrote the revised definition and notes did so to better convey the nuances and the complexity of pain and hoped that it would lead to improved assessment and management of those with pain," said Dr. Raja.

"Pain is not merely a sensation, or limited to signals that travel through the nervous system as a result of tissue damage," he said. "With a better understanding of an individual's pain experience, we may be able to, through an interdisciplinary approach, add a variety of therapies to personalize their treatment of pain," he added.

IASP® • 1510 H Street N.W., Suite 600 • Washington D.C., USA 20005-1020 • T +1 202.856.7400 • F +1 202.856.7401 • iasp-pain.org

smerte er ...

- Smerte er alltid en personlig opplevelse som i varierende grad er påvirket av biologiske, psykologiske og sosiale faktorer.
- Smerte og nocisepsjon er forskjellige fenomener. Smerte skyldes ikke utelukkende aktivitet i nociseptorer.
- Individer blir kjent med hva smerte er gjennom sine livserfaringer.
- En persons uttrykk for smerte skal respekteres.
- Selv om smerte ofte fører til hensiktsmessig tilpasning, kan den ha negativ effekt på fysisk, sosial og psykologisk funksjon og livskvalitet.
- Verbal beskrivelse er bare én av mange måter å uttrykke smerte på. Manglende evne til å kommunisere utelukker ikke muligheten for at et menneske eller dyr opplever smerte.

SMERTE OG PSYKOLOGI

Borrik Schjødt
Psykologspesialist

HELSE BERGEN
Haukeland universitetssjukehus

Psykologiske tiltak
-
lindre smerte

– Forventninger
– Avledning/fokus
– Kontroll/trygghet
– Avspenning

HELSE BERGEN
Haukeland universitetssjukehus

FORVENTNINGER

NORSK
PSYKOLOG
FORENING

HELSE **BERGEN**
Haukeland universitetssjukehus

PLACEBO

Endring i symptomer eller en tilstand etter administrering av en i utgangspunktet uvirksom behandling.

FORVENTNINGER

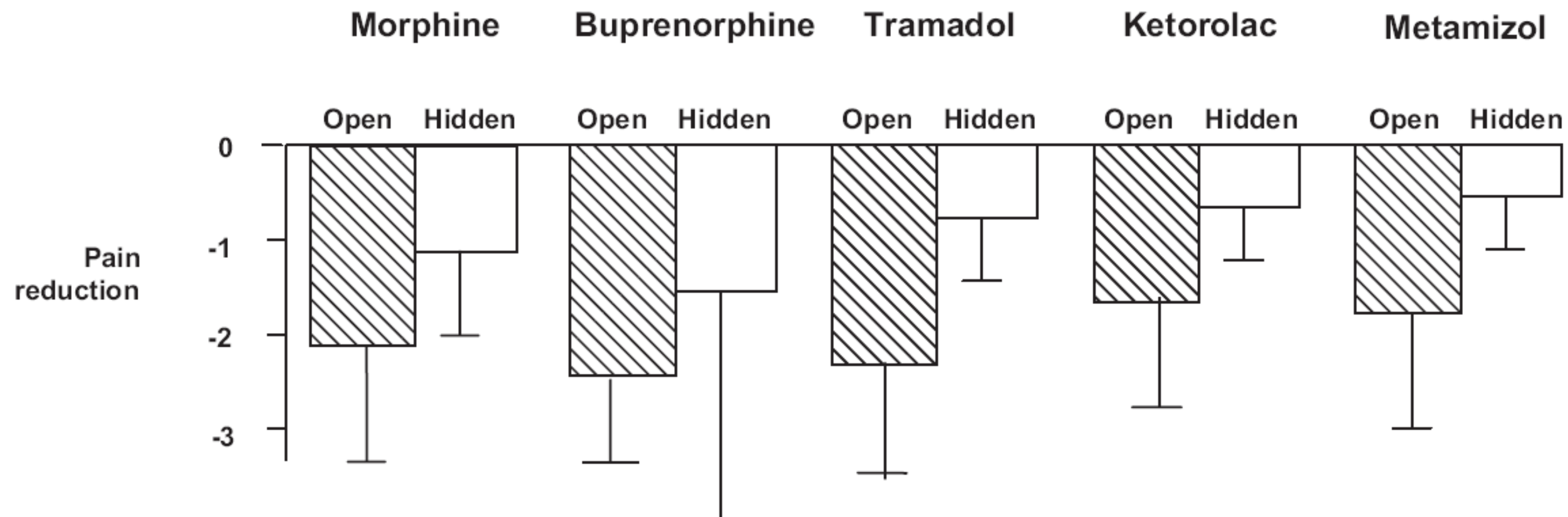


Figure 1

Comparison of analgesic effects of opioid (morphine, tramadol, buprenorphine) and nonopioid (ketorolac, metamizol) medications across hidden versus open intravenous injections in patients with postoperative pain. (Data are from Amanzio et al. 2001.)

Gordon Levine 1978

- Etter trekking av visdomstenner:

  Naloxone medfører økt smerte hos placebo-respondere, men ikke hos ikke-respondere.

This study supports the hypothesis that endorphin activity accounts for placebo analgesia, first because naloxone causes a significantly greater increase in pain ratings in placebo responders than in nonresponders, and second because prior administration of naloxone reduces the probability of a positive placebo response.

Levine, Gordon, Fields. The mechanism of placebo analgesia. *Lancet* 1978; 312 (8091) 654-657

FORVENTNINGER

PLACEBO: KOGNITIVE FAKTORER

- Forventninger
  - Tro på og ønske om effekt → større effekt
  - Positive forventninger → endogene opioider + cannabinoider
- Somatisk fokus
  - Fokus på bedring → bedring
  - Fokus på bivirkninger → bivirkninger

NOCEBO – kliniske studier

Howick *et al. Trials* (2018) 19:674
https://doi.org/10.1186/s13063-018-3042-4

Trials

REVIEW Open Access

Rapid overview of systematic reviews of nocebo effects reported by patients taking placebos in clinical trials

Jeremy Howick[1], Rebecca Webster[2], Nigel Kirby[3] and Kerry Hood[3*]

Oversikt - systematic reviews:

- 20 syst. reviews, 1 271 randomiserte trials, 250 726 pasienter
- AE snitt 49,1%. Median dropouts 5%
- AEs: Abdominal pain, Burning, Chest discomfort/pain, Chills, Diarrhea, Dry mouth, Dyspepsia, Fatigue, Insomnia, Paresthesia, Somnolence, Taste disturbance, Vomiting/nausea, Headache, Dizziness, Eye disorders, Constipation,

NOCEBO – smertefull diabetes-nevropati

Systematic review:

- 21 randomiserte trials, 2 425
- AE snitt 53,3%. Gjennomsnitt dropouts 5,1%
- Pooled placebo 50% response rate 25%
  - Påpeker betydning av «Contextual factors such as confidence in PDN treatments, patients' previous negative experiences, intervention duration, and information provided to patients before enrollment»,

FORVENT-NINGER

tiltak

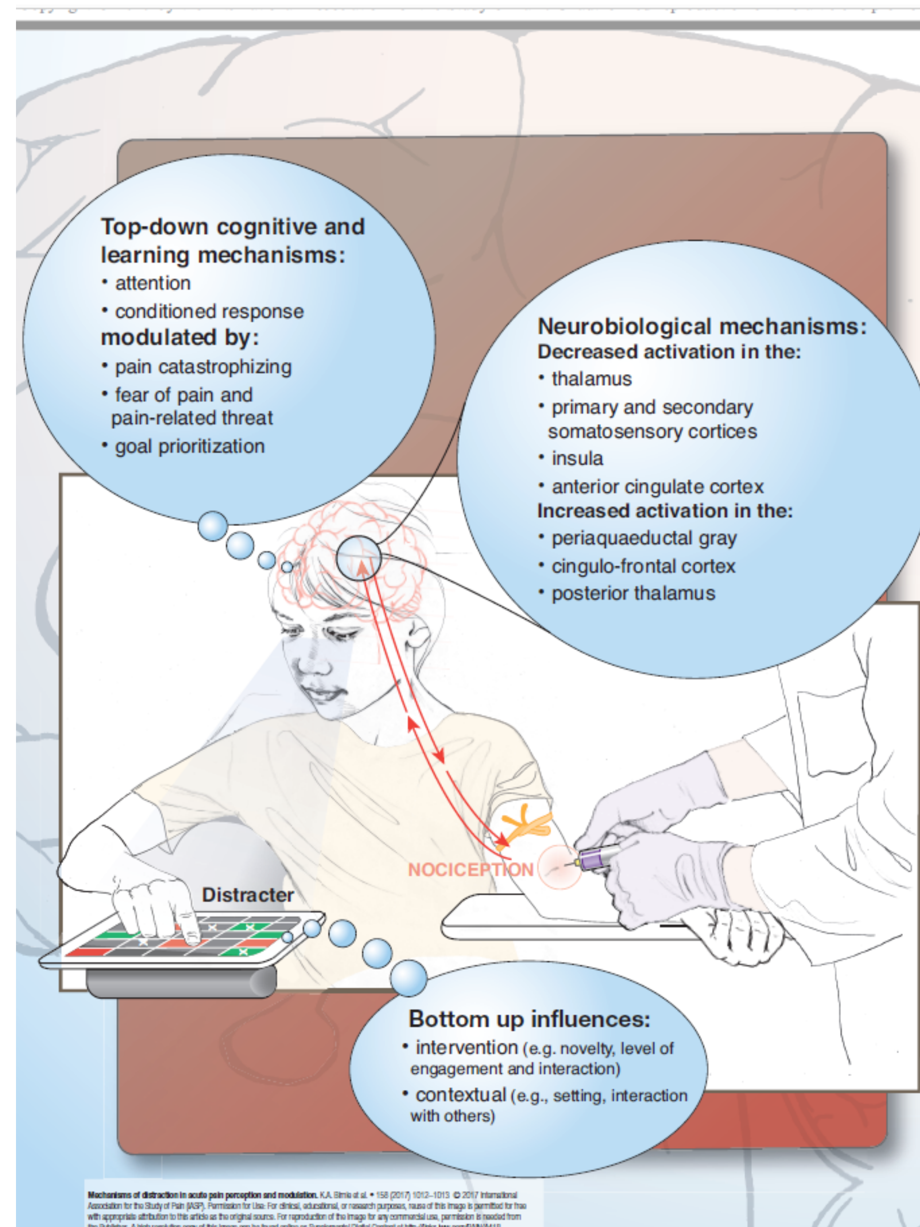
- Gi pasienten forventninger om positivt utbytte av behandling
- Tidligere positive erfaringer
- Indusere tro og tillit
- Allianse, kommunikasjon
- Forebygg nocebo-instruksjoner

Avledning

AVLEDNING

- Økt bearbeiding av det vi fokuserer på
- Fokus smerte → økt prosessering
- Evt. forsterket av psykologiske prosesser

K.A. Birnie et al. Mechanisms of distraction in acute pain perception and modulation. Pain 2017. 158(6): 1012–1013



AVLEDNING - tiltak

- Stimulere pasientens nysgjerrighet
- Styre pasientens oppmerksomhet mot noe interessant
- Lyd, visuelle stimuli, kommunikasjon .....
- Gode kroppslige opplevelser?

Kontroll/ Trygghet

The Clinical Journal of Pain
17:52–64 © 2001 Lippincott Williams & Wilkins, Inc., Philadelphia

Theoretical Perspectives on the Relation Between Catastrophizing and Pain

*Michael J. L. Sullivan, Ph.D., †Beverly Thorn, Ph.D., ‡Jennifer A. Haythornthwaite, Ph.D., §Francis Keefe, Ph.D., ||Michelle Martin, Ph.D., ||Laurence A. Bradley, Ph.D., and ||¶John C. Lefebvre, Ph.D.

**Dalhousie University, Halifax, Nova Scotia; †University of Alabama at Tuscaloosa, Tuscaloosa, Alabama; ‡Johns Hopkins University, Baltimore, Maryland; §Duke University, Durham, North Carolina; ||University of Alabama at Birmingham, Birmingham, Alabama; ¶Wofford College, Spartanburg, South Carolina*

VERSTEFALLSTENKING

Catastrophizing ”during painful stimulation contributes to more intense pain and increased emotional distress”

KONTROLL

Verstefallstenking

Review Article

Preoperative Anxiety and Catastrophizing

A Systematic Review and Meta-analysis of the Association With Chronic Postsurgical Pain

Maurice Theunissen, MSc, Madelon L. Peters, PhD,† Julie Bruce, PhD,‡ Hans-Fritz Gramke, MD, PhD,* and Marco A. Marcus, MD, PhD**

Objectives: Anxiety and pain catastrophizing predict acute postoperative pain. However, it is not well established whether they also predict chronic postsurgical pain (CPSP). The aim of this systematic review and meta-analysis was to investigate whether high levels of preoperative anxiety or pain catastrophizing are associated with an increased risk of CPSP.

Methods: Electronic search databases included PubMed and Psy-

Postoperative pain is of major concern after surgery because of the impact on postoperative recovery, quality of life, and the risk of acute postoperative pain (APP) in the first postoperative days progressing to become chronic postsurgical pain (CPSP).[1] Many studies report unacceptably high levels of APP after surgery.[2–5] Predictive factors for APP include factors such as younger age and prior pain experience, in addition to psychological factors.[2,6,7] In particular, the influence of

Pain, catastrophizing, and depression in the rheumatic diseases

Robert R. Edwards, Christine Cahalan, George Mensing, Michael Smith and Jennifer A. Haythornthwaite

Abstract | Persistent and disabling pain is the hallmark of osteoarthritis, rheumatoid arthritis, fibromyalgia, and various other rheumatologic conditions. However, disease severity (as measured by 'objective' indices such as those that employ radiography or serology) is only marginally related to patients' reports of pain severity, and pain-related presentation can differ widely between individuals with ostensibly similar conditions (for example, grade 4 osteoarthritis of the knee). Increasing evidence in support of the biopsychosocial model of pain suggests that cognitive and emotional processes are crucial contributors to inter-individual differences in the perception and impact of pain. This Review describes the growing body of literature relating depression and catastrophizing to the experience of pain and pain-related sequelae across a number of rheumatic diseases. Depression and catastrophizing are consistently associated with the reported severity of pain, sensitivity to pain, physical disability, poor treatment outcomes, and inflammatory disease activity, and potentially with early mortality.

Journal of Pain Research

Dovepress
open access to scientific and medical research

Open Access Full Text Article

REVIEW

Pain catastrophizing as a risk factor for chronic pain after total knee arthroplasty: a systematic review

This article was published in the following Dove Press journal:
Journal of Pain Research
5 January 2015
Number of times this article has been viewed

Lindsay C Burns[1–3]
Sarah E Ritvo[1]
Meaghan K Ferguson[1]
Hance Clarke[3–5]

Background: Total knee arthroplasty (TKA) is a common and costly surgical procedure. Despite high success rates, many TKA patients develop chronic pain in the months and years following surgery, constituting a public health burden. Pain catastrophizing is a construct that reflects anxious preoccupation with pain, inability to inhibit pain-related fears, amplification of

The Spine Journal 14 (2014) 2639–2657

THE SPINE JOURNAL

Clinical Study

Catastrophizing—a prognostic factor for outcome in patients with low back pain: a systematic review

Maria M. Wertli, MD[a,b,*], Rebekka Eugster, MD[a], Ulrike Held, PhD[a], Johann Steurer, MD[a], Reto Kofmehl, BSc[a], Sherri Weiser, PhD[b]

[a]*Department of Internal Medicine, Horten Centre for Patient-Oriented Research and Knowledge Transfer, University of Zurich, Pestalozzistrasse 24, 8032 Zurich, Switzerland*

[b]*NYU Hospital for Joint Diseases, Occupational and Industrial Orthopedic Center (OIOC), New York University, 63 Downing St, New York, NY 10014, USA*

Received 9 June 2013; revised 11 February 2014; accepted 1 March 2014

Abstract

BACKGROUND CONTEXT: Psychological factors including catastrophizing thoughts are believed to influence the development of chronic low back pain (LBP).

PURPOSE: To assess the prognostic importance of catastrophizing as a coping strategy in patients

Mann, 62 år

”Legen har sagt at bryst-smertene skyldes en alvorlig betennelse, som sprer seg over hele kroppen, og nå er jeg redd for å miste førligheten i beina.”

VG Nett ▶ Helse ▶ Artikkel

Hjørdis (58) spist av sykehusbakterie

100 angrepet siste fem år

Publisert 04.06.09 - 16:49, endret 04.06.09 - 16:49 (VG)

Av Katrine Lia

0

0

2

VESTFOLD (VG) Rutineoperasjonen førte til at kjøttetende bakterier spiste opp deler av låret til Hjørdis Nilsen (58). Nå krever

Helse

Vil s
Overle
nåvær
nordm
Les he

Kjell
Ble h
(VG N
beskje
kan fo

Bergeien34a

Kontroll/ trygghet: Tiltak

- Trygge rammer, god kommunikasjon
- God informasjon tilpasset den enkelte pasient
- Gi praksis som bygger trygghet
- Beskriv hvor sterk en rygg er, og alt som beskytter ryggraden

Avspenning

- Dyp pust
- Progressiv muskelavspenning
- Mindfulness
- Forestillingsbilder
- Hypnose
- Autogen trening
- Meditasjon
- Yoga
- Aromaterapi
- Bønn
- ...

NORSK PSYKOLOG FORENING

AVSPENNING - sansebilder

VISUELL Blått hav, gul sol, trygge fjell, myke skyer ....

AUDITIV Havet bruser, måkene skriker, vinden suser

TAKTIL Kjenner solid grunn under føttene, sitter på mose, varmen på kroppen ....

LUKT Salt hav, mose, tang, fisk, ...

HYPNOSE

- Induksjon
  - Hjelpe pasienten inn i trance = avspent og konsentrert tilstand

- Suggesjon
  - Foreslå endringer – sansing, tenking, …

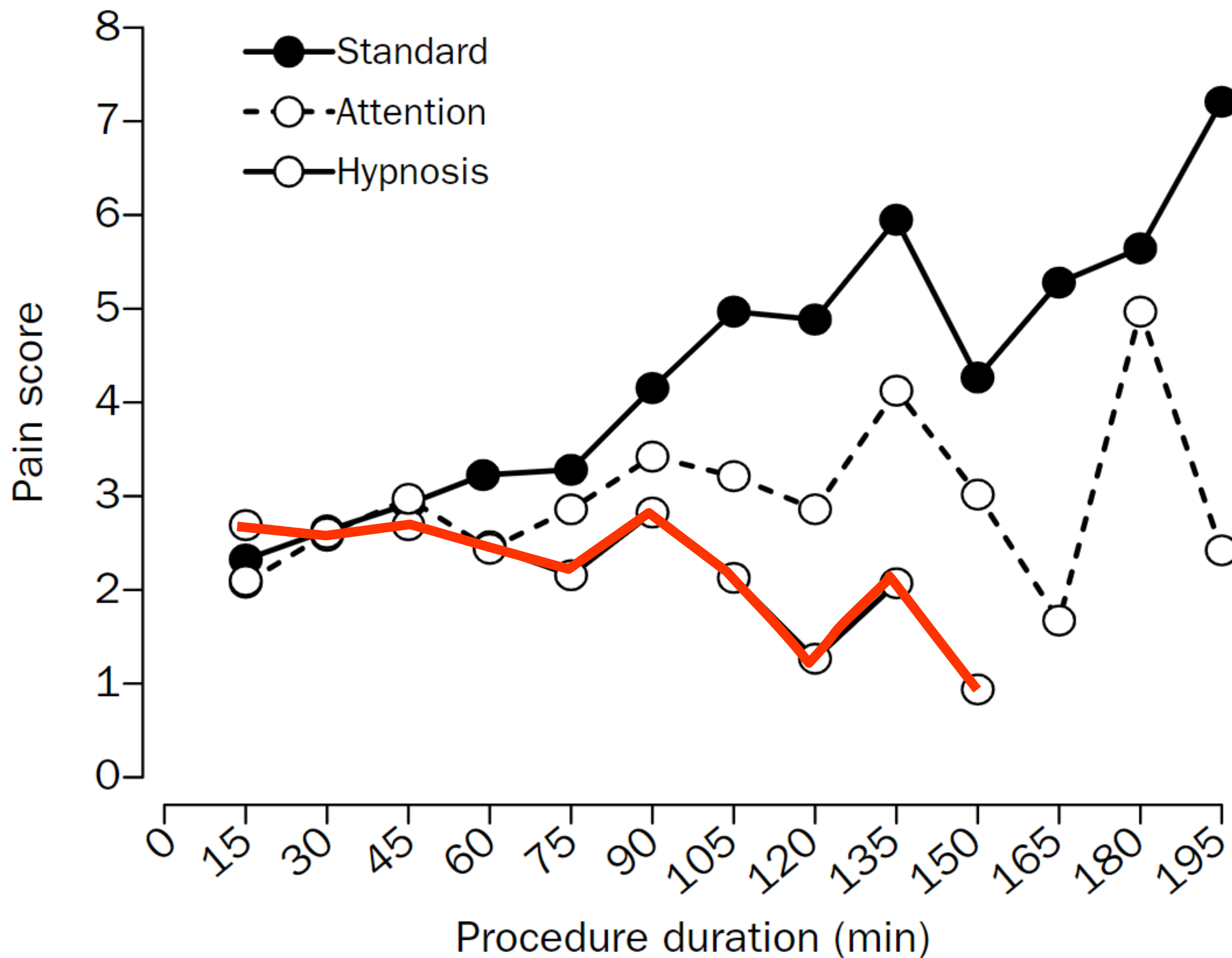


Figure 3: **Average pain score as a function of procedure-time interval for each group**

Lang EV et al, Adjunctive non-pharmalogical analgesia for invasive medical procedures: a randomised trial. *Lancet* 2000; *355:*1486-90

….adults referred for percutaneous transcatheter diagnostic and therapeutic peripheral vascular and renal interventions, …

Psykologiske tiltak ved langvarige smerter

Langvarige smerter

- Smerte**atferd** og belønning
- Forståelse som gir opphav til god mestring. **Kognitivt.**
- Akseptering av en plagsom situasjon. **ACT.**
- Andre psykiske vansker og utfordringer. **Emosjonsfokusert mv**
- **PRT –** nevroplastisk smerte

Direkte på smerter

1. Forventninger.
2. Avledning/fokus.
3. Kontroll/trygghet
4. Avspenning.

Atferd←→ smerte

ATFERD

Skinner,
Pavlov

Fordyce

Vlaeyen
m.fl.

Kinesofobi
Smerteatferd

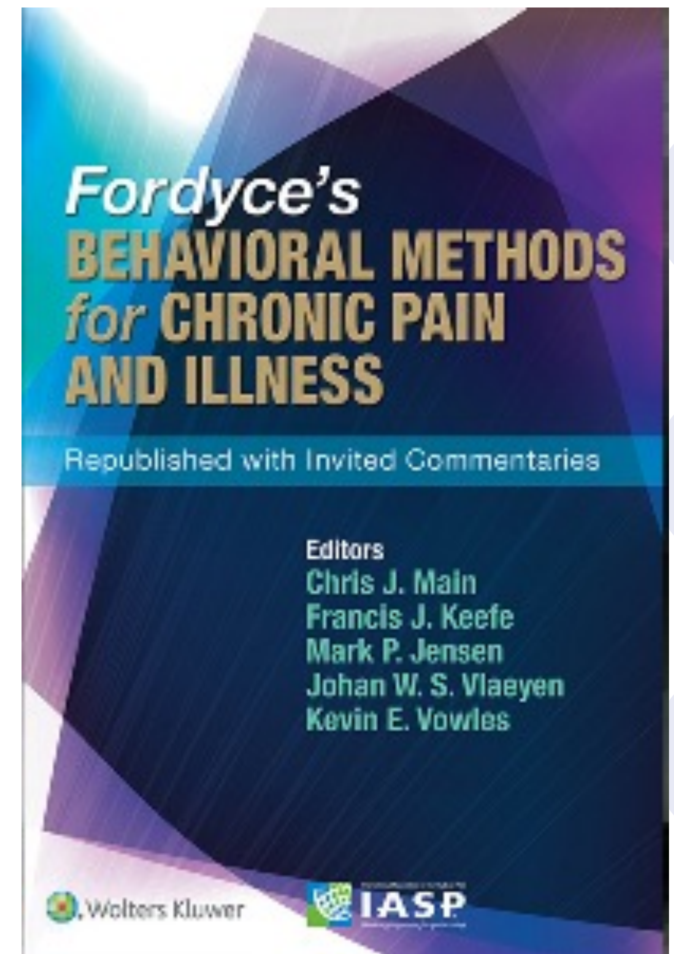
Bill Fordyce

«All chronic pain has a behavioral component»

Fra personlighet, psykodynamikk og vevsskader – til observerbar atferd og samhandling.

«People are complicated»

Smerteatferd - Operant betinging.



Smerteatferd

Konsekvenser

Fig. 1. Pain thresholds determined in the cold pressor test with or without the spouse present. Spouse solicitousness was assessed by the West Haven–Yale Multidimensional Pain Inventory

H. Flor, Basic issues in the psychobiology of pain, i Gebhart, Hammond & Jensen (eds.) *Proceedings of the 7th World Congress on Pain*, Seattle: IASP press, 1994

Haukeland universitetssjukehus

Tanke ←→ smerte

KOGNITIVT

Beck,
Ellis

Turk osv.

CBT
v/smerte

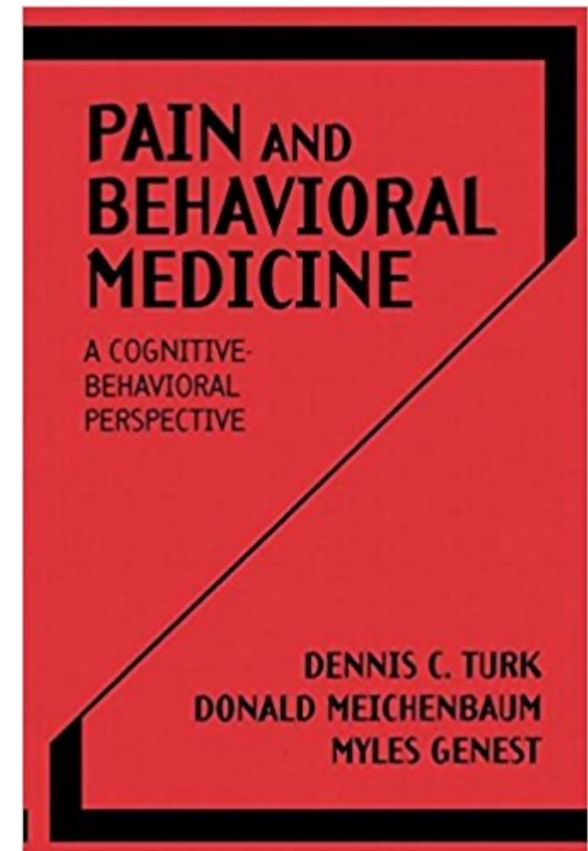
Mestring
Verstefall
Stress

CBT/KAT

Dennis C Turk

«affect and behavior are largely determined by the way in which the individual construes the world»

«therapy is designed to help the patient identify, reality-test, and correct maladaptive, distorted coceptualizations and dysfunctional beliefs» (s. 4).

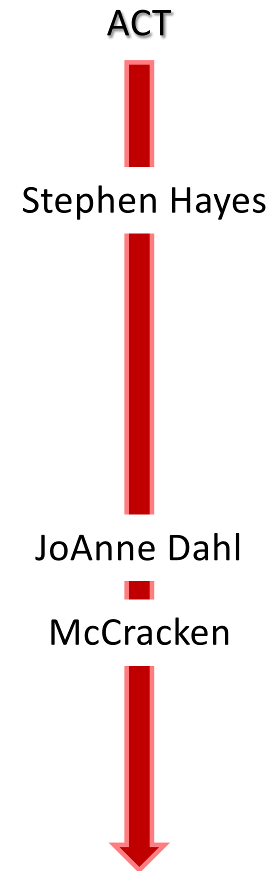


Turk, D. C., Meichenbaum D., & Genest M. (1983). Pain and behavioral medicine: a cognitive-behavioral perspective. New York, Guilford Press.

Turk: Kognitiv-atferds-tiltak

- Kartlegge og vurdere pasienten.

- Reformulere pasientens problemer.
- Tilegning og konsolidering av ferdigheter.
- Generalisering, vedlikehold og forebygging av tilbakefall.
- Oppfølging.

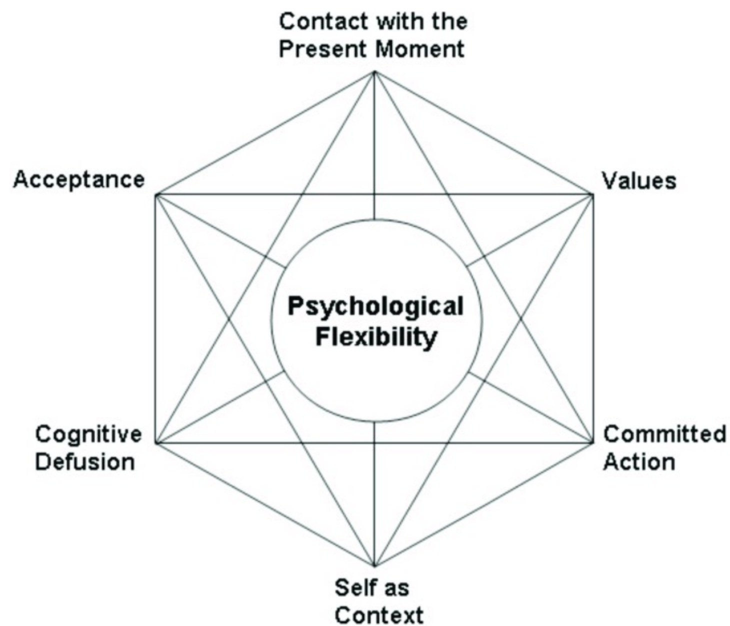


Verdi, aksept←→ smerte

Akseptering
Verdier
Psyk. fleksibilitet

Akseptering - ACT

«Mens du venter på at du skal bli bedre, hva kan du gjøre for å få et best mulig liv akkurat nå?»



Steven Hayes. Lance McCracken. JoAnn Dahl

Mindfulness, akseptering, verdibasert valg.

Ikke kontroller tanker, følelser, minner osv – men forhold deg til dem som de er – og forhold deg til viktige verdier og mål.

Fremme psykologisk fleksibilitet

Aksepter situasjonen

Etabler viktige mål

Handling for å nå målene

Fokus vekk fra plage, og

Mot viktige verdier eller mål

PSYKO-
DYNAMISK

Freud

Alexander,
Engel

ISTDP
EFT

Emosjoner,
Historie,
konflikter

Emosjoner → smerte

Emosjonsfokuserte og psykodynamisk orienterte tilnærminger

- Kognitive eller atferdsrettede tiltak treffer ikke alle.
- Emosjonelt rettede teorier og tiltak
- F.eks. ISTDP, EFT
- ofte over lengre tid, og krever spesialkompetanse

Allan Abbass
Intensive Short-Term
Dynamic Psychotherapy (ISTDP)

Leslie Greenberg
Emotion-Focused Therapy (EFT)

Pain Reprocessing Therapy

nevroplastisk smerte

- most chronic pain results from the brain misinterpreting safe messages from the body as if they were dangerous.
- a system of psychological techniques that retrains the brain to accurately interpret and respond to signals from the body, breaking the cycle of chronic pain.
- an evidence-based treatment to *eliminate* pain

evidence sheets
somatic tracking
using avoidance behaviors
sending messages of safety
reducing overstimulation
avoid feeling trapped
handling uncertainty
catching your fears
embracing positive sensations

FØR ← → NÅ

Spesifisitetsteori/dualisme ← → Biopsykososialt perspektiv

«Objektive funn» ← → Subjektiv plage

Hvile ← → Aktivitet

Smertefrihet ← → Funksjon og livskvalitet

Passiv pasient ← → Aktiv, samarbeidende

Tverrfaglig innsats, normalisering, aktivitet, funksjon

Takk for oppmerksomheten!