Music, imagery, touch, and prayer as adjuncts to interventional cardiac care: the Monitoring and Actualisation of Noetic Trainings (MANTRA) II randomised study

Mitchell W Krucoff, Suzanne W Crater, Dianne Gallup, James C Blankenship, Michael Cuffe, Mimi Guarneri, Richard A Krieger, Vib R Kshettry, Kenneth Morris, Mehmet Oz, Augusto Pichard, Michael H Sketch Jr, Harold G Koenig, Daniel Mark, Kerry L Lee

Summary

Background Data from a pilot study suggested that noetic therapies—healing practices that are not mediated by tangible elements—can reduce preprocedural distress and might affect outcomes in patients undergoing percutaneous coronary intervention. We undertook a multicentre, prospective trial of two such practices: intercessory prayer and music, imagery, and touch (MIT) therapy.

Methods 748 patients undergoing percutaneous coronary intervention or elective catheterisation in nine USA centres were assigned in a 2×2 factorial randomisation either off-site prayer by established congregations of various religions or no off-site prayer (double-blinded) and MIT therapy or none (unmasked). The primary endpoint was combined in-hospital major adverse cardiovascular events and 6-month readmission or death. Prespecified secondary endpoints were 6-month major adverse cardiovascular events, 6-month death or readmission, and 6-month mortality.

Lancet 2005; 366: 211–17

See Editorial page 178

Duke Clinical Research Institute, Durham, NC, USA (M W Krucoff MD, S W Crater RN, D Gallup MS, D Mark MD, K L Lee PhD); Geisinger Medical Center, Danville, PA, USA (J C Blankenship MD); Duke University Medical Center, Durham, NC, USA (M Cuffe MD, M H Sketch Jr MD); Scripps Center for Integrative Medicine, San Diego, CA, USA

Findings 371 patients were assigned prayer and 377 no prayer; 374 were assigned MIT therapy and 374 no MIT therapy. The factorial distribution was: standard care only, 192; prayer only, 182; MIT therapy only, 185; and both prayer and MIT therapy, 189. No significant difference was found for the primary composite endpoint in any treatment comparison. Mortality at 6 months was lower with MIT therapy than with no MIT therapy (hazard ratio 0·35 (95% CI 0·15–0·82, p=0·016).

Können Gebete heilen?

Amerikanische Studie mit 750 Herzpatienten belegt die Wirksamkeit von Gebeten

Von Sabine Heinrich

Hamburg – Es gibt viele Arten, zu beten: Stoß- und Bittgebete, aber auch Formen der Versenkung, die der Meditation ähneln. Daß Gebete die seelische und körperliche Gesundheit fördern können, davon sind manche Ärzte, Psychotherapeuten und Religionswissenschaftler überzeugt. Den positiven Effekt von Fürbitten auf die Heilung will jetzt der US-Herzspezialist Mitchell Krucoff von der Duke University in Durham beweisen.

Seit 15 Jahren erforscht der Kardiologe die Wirkung alternativer, auf Geist und Seele bezogener Heilmethoden auf Herzinfarktpatienten. An seiner neuesten Studie, die im renommierten Medizinjournal „Lancet" veröffentlicht wurde, beteiligten sich 750 Patienten in neun amerikanischen Herzzentren.

Das Ergebnis: Den Patienten, für die mit großer Intensität gebetet wurde, ging es besser als solchen, für die nur wenig oder gar nicht gebetet wurde. Seine Zahlen gewann Krucoff nach eigenen Angaben mit Hilfe einer wissenschaftlich abgesicherten Untersuchungsmethode.

Krucoff hatte zuvor in einer kleineren Studie keinen nennenswerten Zusammenhang zwischen Heilung und Gebet feststellen können. Daher steigerte er nun die „Dosis": Christen, Juden und Buddhisten an zwölf Orten der Welt beteten für die Patienten. Zusätzlich ließ er zwölf weitere Gemeinden für die Beter beten.

Doch mit seiner Studie will Krucoff nicht etwa beweisen, daß Beten wie ein Mechanismus funktioniert oder es einen Gott gibt. „Wir wollten herausfinden, wie der menschliche Geist zur Heilung beitragen kann. Wir haben unser Ziel erreicht, wenn Beten Mitgefühl fördert, sich dadurch das Herz der Patienten öffnet, und es schneller heilt", sagt er. Mindestens einmal wöchentlich treffen sich Therapeuten und Mitarbeiter der Caduceus Klinik für psychotherapeutische Medizin in Bad Bevensen in Niedersachsen zu einem Fürbittengebet für Patienten. „Ihr eigener Wunsch nach Heilung ist wichtig", weiß Klinikleiter Peter Findeisen. Doch wer das Gebet nur als eine Form der Selbsthilfe sieht, beraubt es einer entscheidenden Dimension: „Das Gebet verbindet uns mit einer Realität, die größer ist als wir", sagt der englische Theologe Marcus Braybrooke, der zusammen mit dem Dalai Lama und anderen Vertretern der großen Weltreligionen dem 1995 gegründeten weltweiten „Peace Council" angehört. Beate Selmert erlebt solche Momente, wenn sie sich Kunstwerke anschaut: „Dann werde ich berührt von einer Freude, die über mich hinausgeht." Vor acht Jahren erkrankte sie an Brustkrebs. Auch wenn die akute Gefahr vorerst gebannt ist, weiß sie um die Kostbarkeit jedes Augenblicks. „Ich dachte immer, ich könnte nicht beten", sagt sie. „Aber jetzt merke ich, daß mein Alltag von Gebet durchdrungen ist."

Es gibt eine Kraft im Menschen, die mit dem Verstand nicht zu fassen ist, davon sind Ärzte und Therapeuten überzeugt, die Gebet oder Meditation praktizieren. Daher halten viele die Behandlung körperlicher Krankheiten nur mit High-Tech-Medizin für überholt. „Geistige Einstellungen können das physische Wohlgefühl beeinflussen und Heilung bewirken", ist auch von Brück überzeugt. Dabei bezieht er sich auf neuere Erkenntnisse der Hirnforschung. „Die geistige und die körperliche Ebene sind zwei Aspekte derselben Wirklichkeit. Alles, was wir tun, ist im Bewußtsein vorgebildet", sagt er.

Die Welt 2005


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2005
Lieber Herr
Professor! Eigentlich
ja nicht verwunderlich,
daß Beten und Heilung zu-
sammenhängen (ohne Ausschließ-
lichkeit!) Ich Ihnen einen
guten Sommer - mit
herzl. Grüßen aus Rom!
Ihr + Christoph
Kard. Schönborn

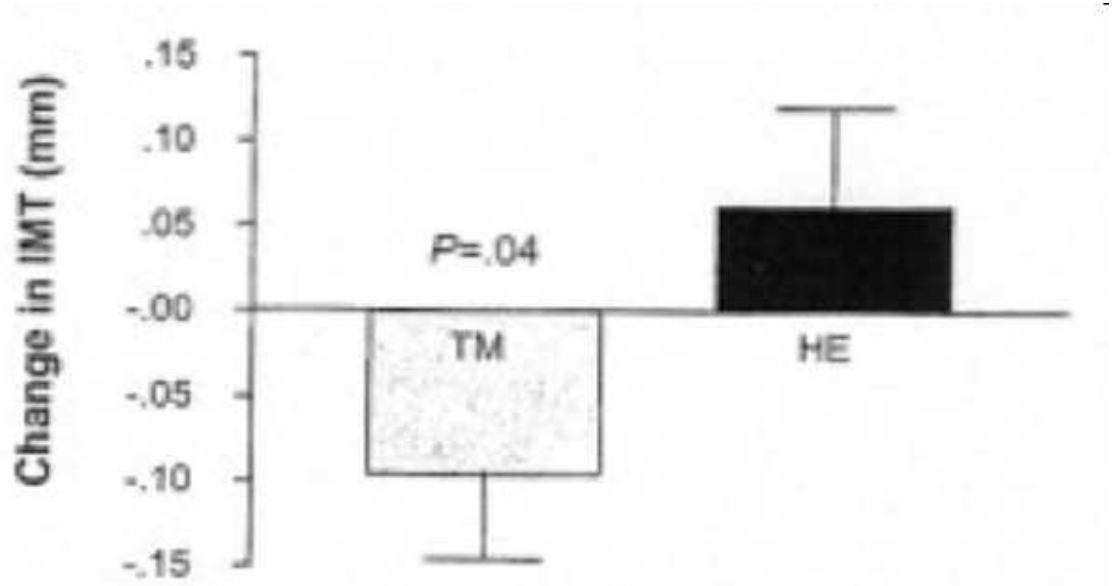
Cardiovascular Disease Prevention and Health Promotion with the Transcendental Meditation Program and Maharishi Consciousness-Based Health Care

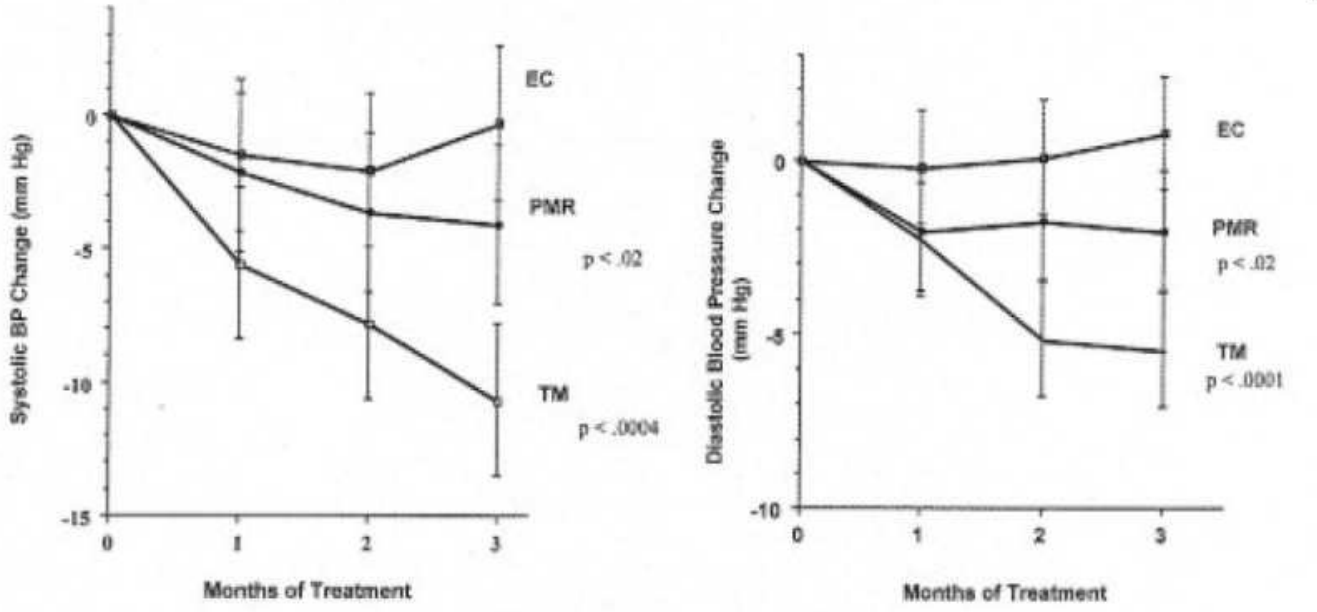
Robert H. Schneider, MD, **Kenneth G. Walton, PhD**, **John W. Salerno, PhD**, and **Sanford I. Nidich, EdD**
Institute for Natural Medicine and Prevention, Maharishi University of Management, Fairfield, Iowa

Abstract

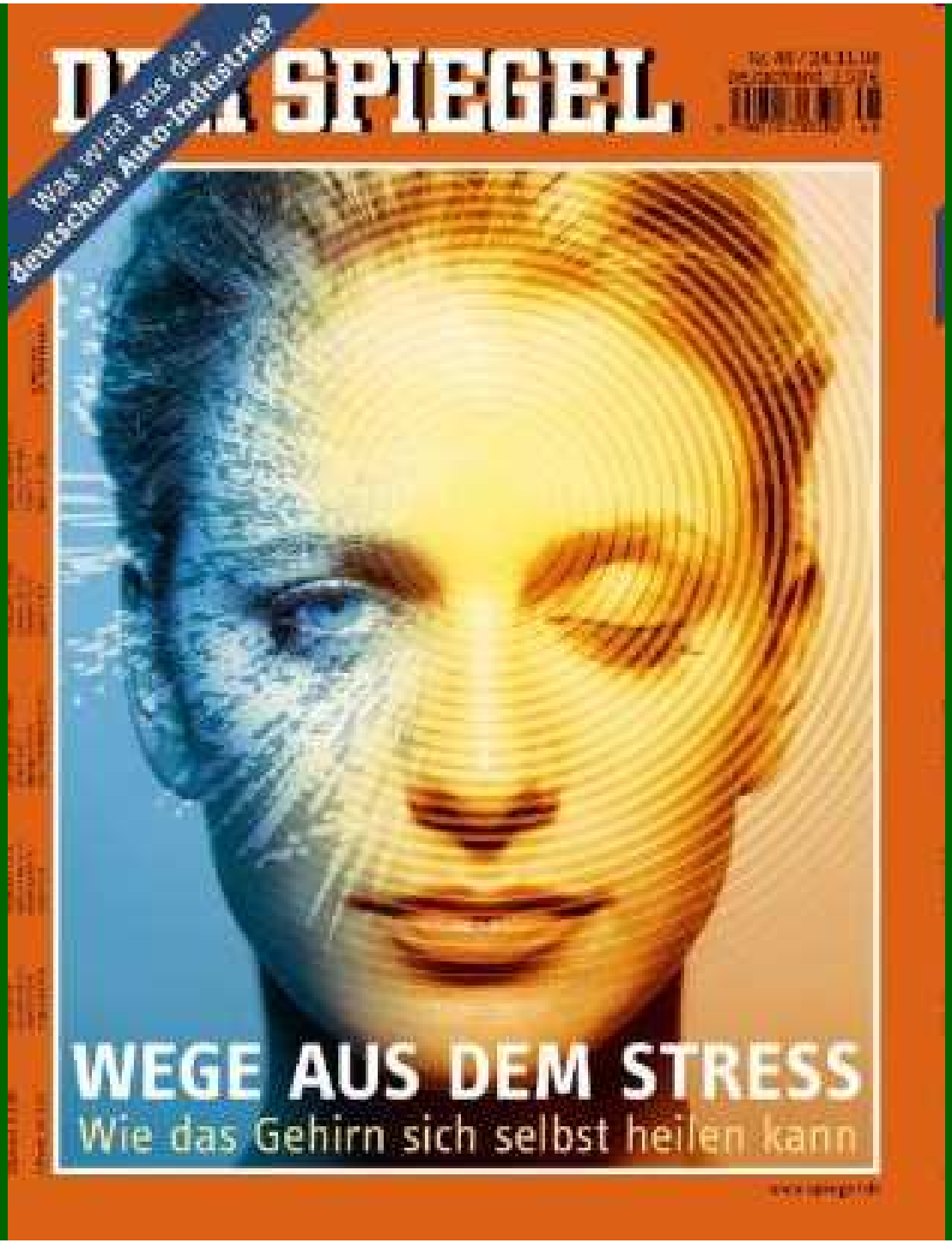
This article summarizes the background, rationale, and clinical research on a traditional system of natural health care that may be useful in the prevention of cardiovascular disease (CVD) and promotion of health. Results recently reported indude reductions in blood pressure, psychosocial stress, surrogate markers for atherosclerotic CVD, and mortality. The randomized clinical trials conducted so far have involved applications to both primary and secondary prevention as well as to health promotion more generally. The results support the applicability of this approach for reducing ethnic health disparities associated with environmental and psychosocial stress. Proposed mechanisms for the effects of this traditional system include enhanced resistance to physiological and psychological stress and improvements in homeostatic and self-repair processes. This system may offer clinical and cost effectiveness advantages for health care, particularly in preventive cardiology.

Ethn Dis. 2006; 16(3 Suppl 4): S4–15-26





Ethn Dis. 2006; 16(3 Suppl 4): S4–15-26


DER SPIEGEL
Was wird aus der deutschen Auto-Industrie?
WEGE AUS DEM STRESS
Wie das Gehirn sich selbst heilen kann

Die Heilkraft der Mönche

Stress richtet mehr seelische und körperliche Schäden an als bekannt. Neurowissenschaftler haben jetzt im Detail entschlüsselt, wie das Massenleiden des 21. Jahrhunderts das menschliche Gehirn verwüstet. Die gute Nachricht: Bewegung und wohl auch Meditation sorgen dafür, dass neue Nervenzellen sprießen.

Nachdenken über ein Problem, welches dadurch in seiner Belastung relativiert wird

Science NOW UP TO THE MINUTE NEWS FROM SCIENCE

Meditation Halves Risk of Heart Attack

by Jue Wang on November 16, 2009 12:00 AM | Permanent Link | 0 Comments

Increased telomerase activity and comprehensive lifestyle changes: a pilot study

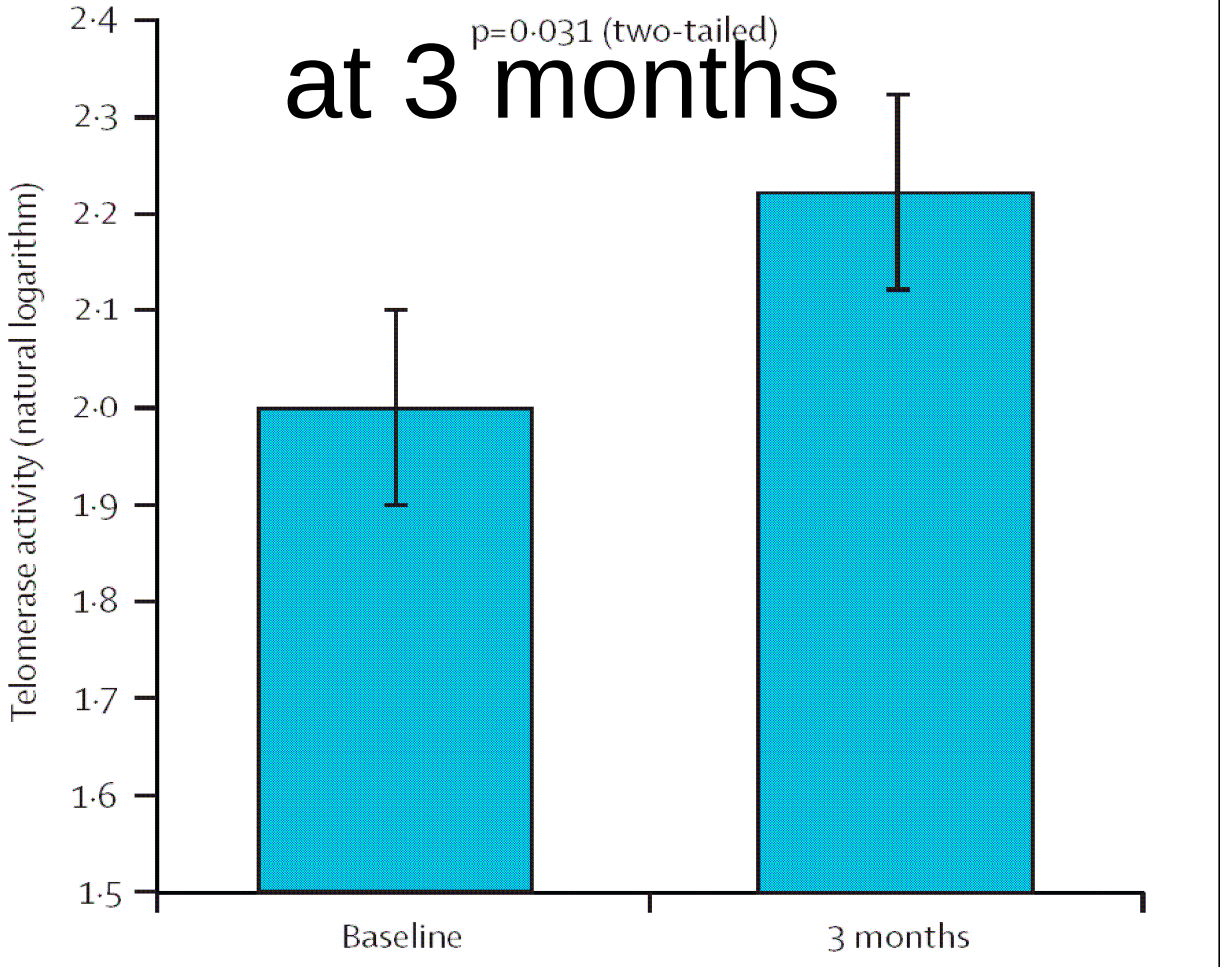
Dean Ornish, Jue Lin, Jennifer Daubenmier*, Gerdi Weidner, Elissa Epel, Colleen Kemp, Mark Jesus M Magbanua, Ruth Marlin, Loren Yglecias, Peter R Carroll, Elizabeth H Blackburn*

Summary

Background Telomeres are protective DNA–protein complexes at the end of linear chromosomes that promote chromosomal stability. Telomere shortness in human beings is emerging as a prognostic marker of disease risk, progression, and premature mortality in many types of cancer, including breast, prostate, colorectal, bladder, head and neck, lung, and renal cell. Telomere shortening is counteracted by the cellular enzyme telomerase. Lifestyle factors known to promote cancer and cardiovascular disease might also adversely affect telomerase function. However,

Lancet Oncol. 2008 Sep 15. [Epub ahead of print]

Mean telomerase activity in peripheral-blood mononuclear cells at baseline and at 3 months



Ornish D et al. Lancet Oncol. 2008 Sep 15. [Epub ahead of print]

Life style intervention

- Kalorienreduktion um 20%
- Gemüse und Obst mit niedrigen Glucoseindex
- 30 min Walking/Day
- Meditation Stressmanagement (60 min /day)

Increased telomerase activity and comprehensive lifestyle changes: a pilot study

Dean Ornish, Jue Lin, Jennifer Daubenmier*, Gerdi Weidner, Elissa Epel, Colleen Kemp, Mark Jesus M Magbanua, Ruth Marlin, Loren Yglecias, Peter R Carroll, Elizabeth H Blackburn*

Summary

Background Telomeres are protective DNA–protein complexes at the end of linear chromosomes that promote chromosomal stability. Telomere shortness in human beings is emerging as a prognostic marker of disease risk, progression, and premature mortality in many types of cancer, including breast, prostate, colorectal, bladder, head and neck, lung, and renal cell. Telomere shortening is counteracted by the cellular enzyme telomerase. Lifestyle factors known to promote cancer and cardiovascular disease might also adversely affect telomerase function. However,

Lancet Oncology, 16. Sept. 2008

PNAS

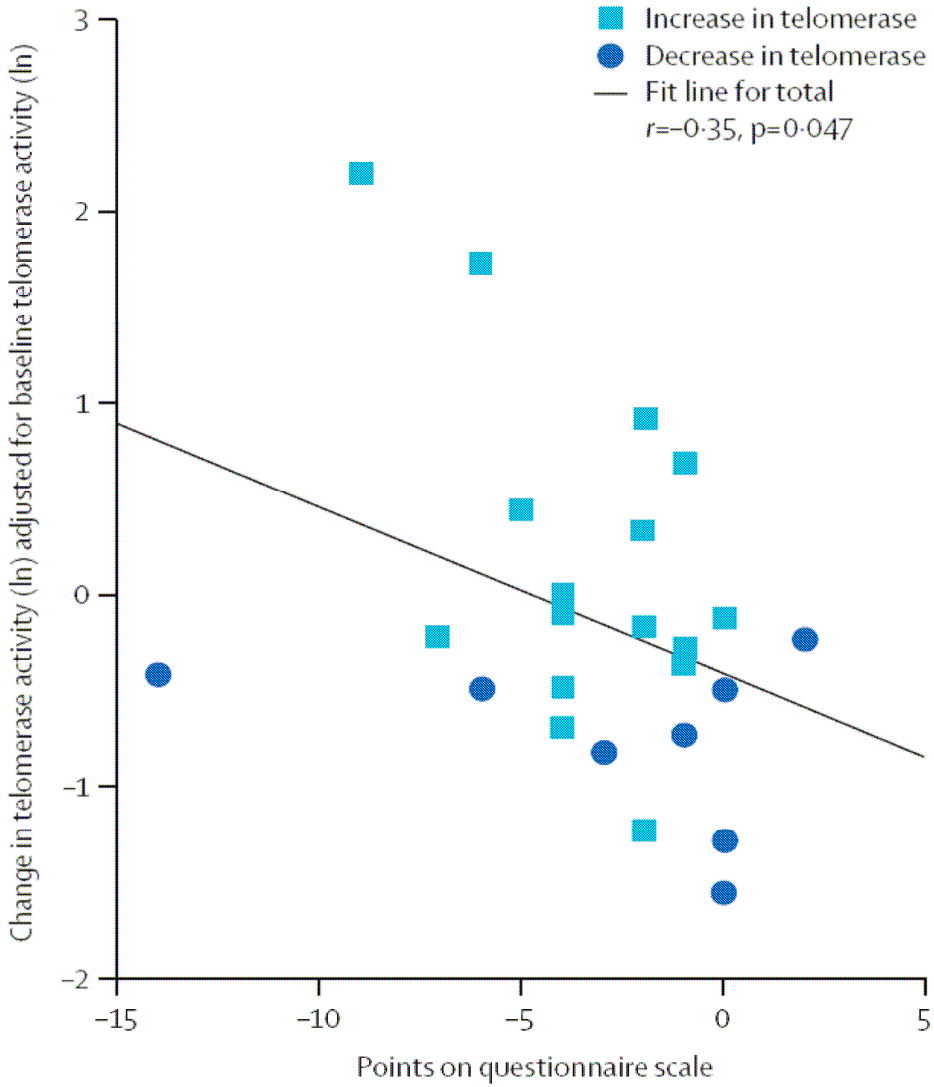
Changes in prostate gene expression in men undergoing an intensive nutrition and lifestyle intervention

Dean Ornish*†‡, Mark Jesus M. Magbanua§, Gerdi Weidner*, Vivian Weinberg¶, Colleen Kemp*, Christopher Green§, Michael D. Mattie§, Ruth Marlin*, Jeff Simko‖, Katsuto Shinohara§, Christopher M. Haqq§ and Peter R. Carroll§

§Department of Urology, The Helen Diller Family Comprehensive Cancer Center, and ‖Department of Pathology, University of California, 2340 Sutter Street, San Francisco, CA 94115; *Preventive Medicine Research Institute, 900 Bridgeway, Sausalito, CA 94965; †Department of Medicine, School of Medicine, University of California, 505 Parnassus Avenue, San Francisco, CA 94143; and ¶Biostatistics Core, The Helen Diller Family Comprehensive Cancer Center, University of California, 513 Parnassus Avenue, Box 0127, San Francisco, CA 94143

Communicated by J. Craig Venter, The J. Craig Venter Institute, Rockville, MD, April 2, 2008 (received for review February 13, 2008)

Association of 3 month changes in telomerase activity (adjusted for baseline telomerase activity) in intrusi cancer



Ornish D et al. Lancet Oncol. 2008 Sep 15. [Epub ahead of print]

Telomeren verkürzt bei

Erhöhtes Metastasierungsrisiko bei Brustkrebs.

Griffith JK et al. Breast Cancer Res Treat 1999;54:59-64.

Risikoerhöhung für Blasen – Nieren - Lungenkarzinom

Wu X et al. J Natl Cancer Inst 2003;95:1211-18.

Risikoerhöhung für Prostatakarzinom

Gertler R et al. J Clin Oncol 2004;22:1807-14.

PSA Anstieg nach Prostataektomie

Fordyce CA et al. J Urol 2005;173:610-14.

Lancet Oncology, 16. Sept. 2008

Accelerated telomere shortening in response to life stress

Elissa S. Epel*†, Elizabeth H. Blackburn‡, Jue Lin‡, Firdaus S. Dhabhar§, Nancy E. Adler*, Jason D. Morrow¶, and Richard M. Cawthon‖

17312–17315 | PNAS | December 7, 2004 | vol. 101 | no. 49 www.pnas.org/cgi/doi/10.1073/pnas.0407162101

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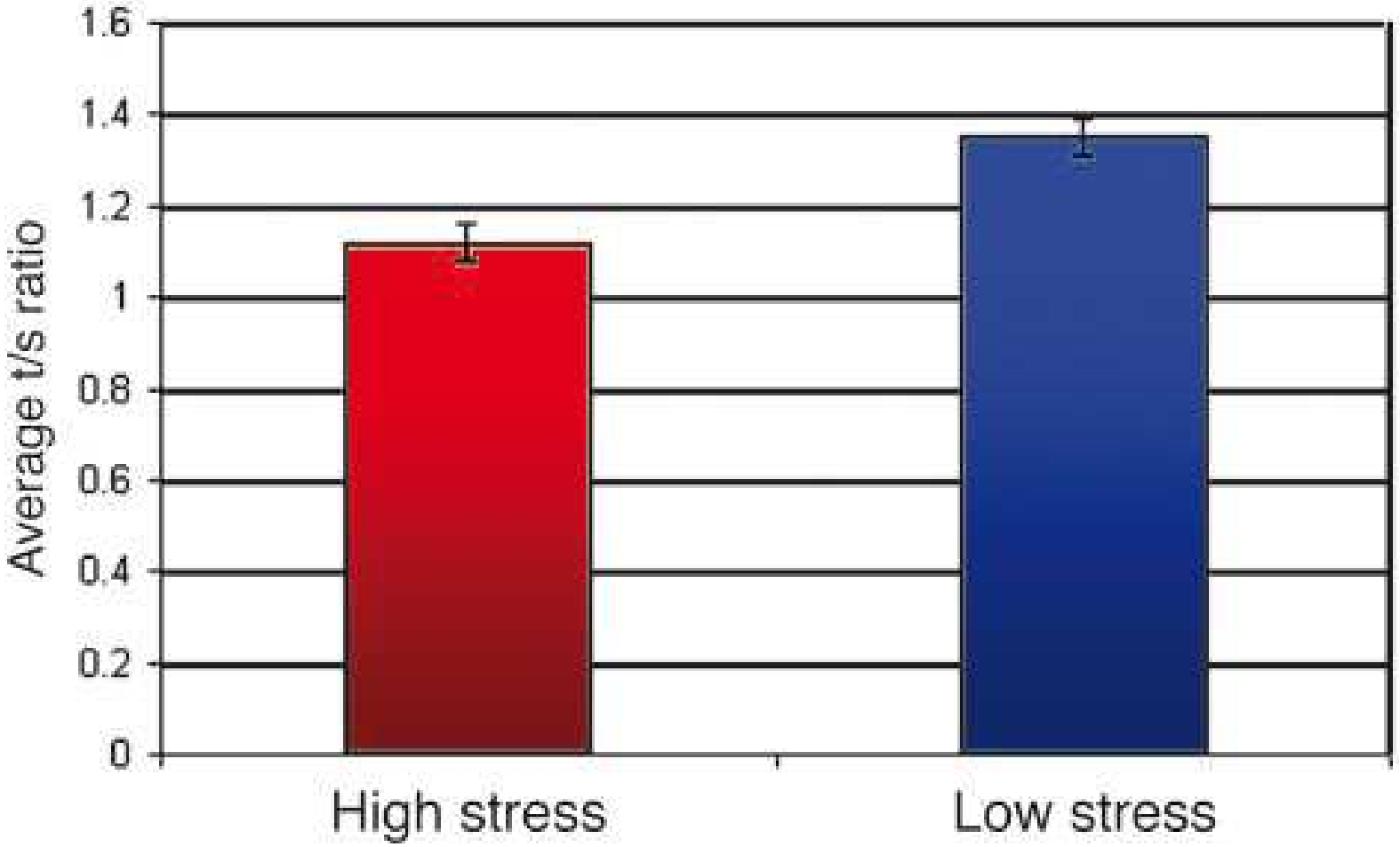
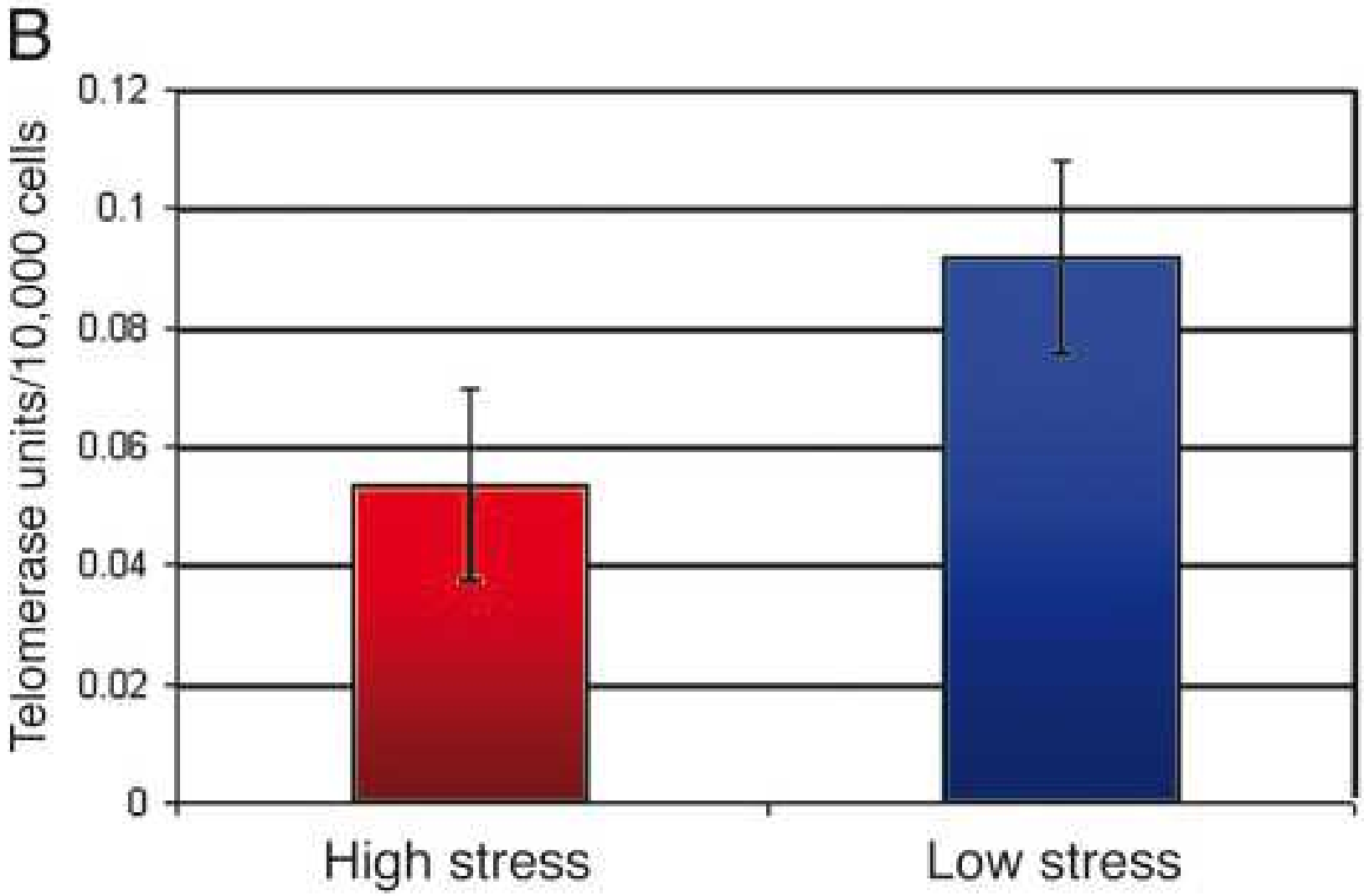



B
Telomerase units/10,000 cells
0.12
0.1
0.08
0.06
0.04
0.02
0
High stress
Low stress

Telomere Shortening and Mood Disorders: Preliminary Support for a Chronic Stress Model of Accelerated Aging

Naomi M. Simon, Jordan W. Smoller, Kate L. McNamara, Richard S. Maser, Alyson K. Zalta, Mark H. Pollack, Andrew A. Nierenberg, Maurizio Fava, and Kwok-Kin Wong

BIOL PSYCHIATRY 2006;60:432–435

Does the vagus nerve inform the brain about preclinical tumours and modulate them?

Yori Gidron, Hugh Perry, Martin Glennie

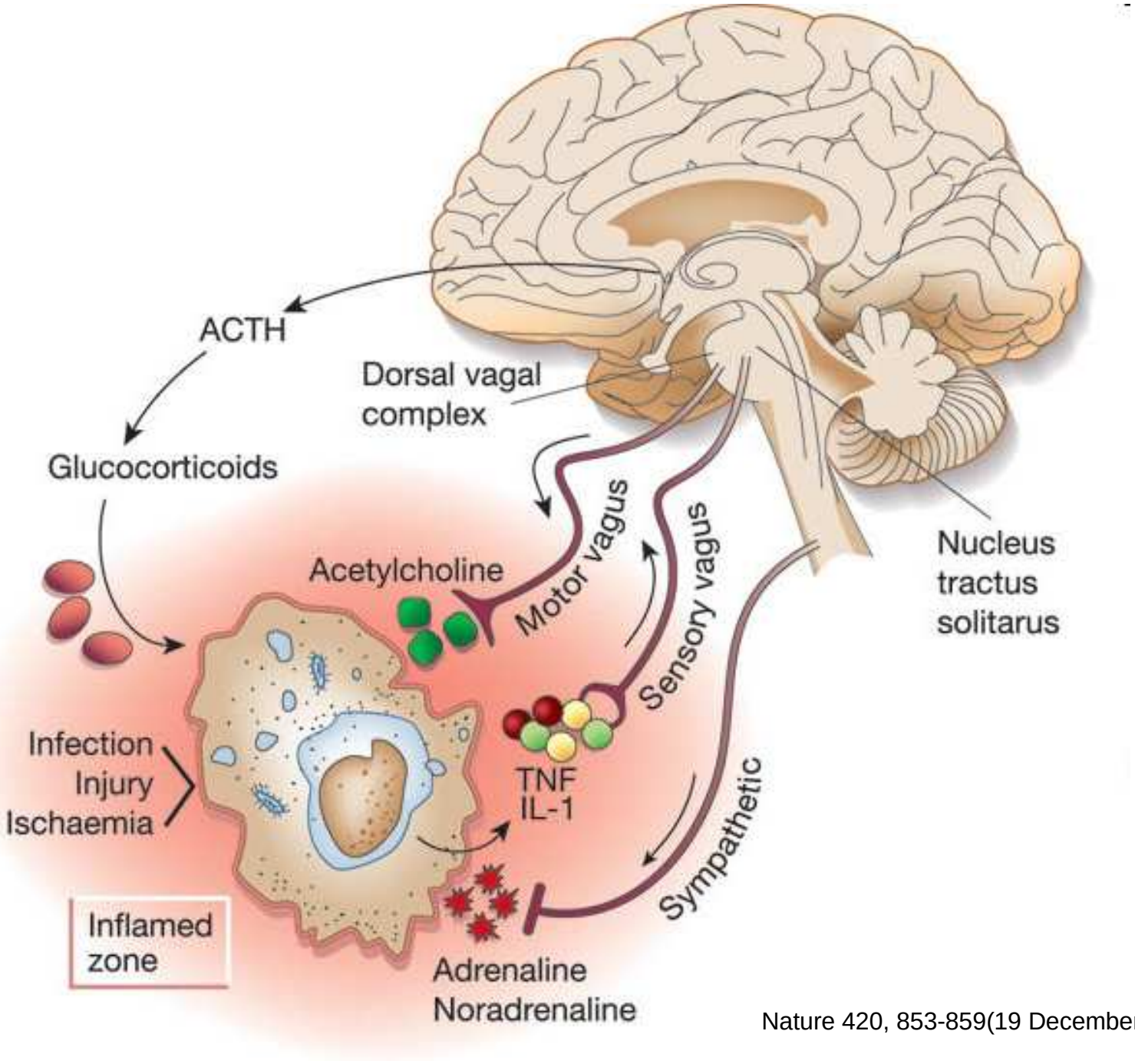
Lancet Oncol 2005; 6: 245–48

School of Psychology (Y Gidron PhD), School of Biomedical Sciences (Prof H Perry DPhil), and Department of Immunochemistry, School of Medicine (Prof M Glennie PhD), University of Southampton, UK

Correspondence to:
Dr Yori Gidron,
School of Psychology,

The inflammatory microenvironment is thought to play a pivotal part in tumorigenesis. But, can the brain be informed about peripheral preclinical cancer cells? Can it modulate tumour development? One of the key routes for information to reach the brain from visceral regions is through the vagus nerve. Yet, patients with ulcers who have had a vagotomy have been shown to die from cancer more frequently than do those who have not had this procedure, and surgical and chemical vagotomy attenuates tumour-induced anorexia and leads to enhanced tumour progression. We therefore postulate that the vagus nerve participates in informing the brain about tumorigenesis by transmiting information to the brain about tumour-associated proinflammatory cytokines. Furthermore, activation of the vagus could slow tumorigenesis by suppression of peripheral proinflammatory cytokines.

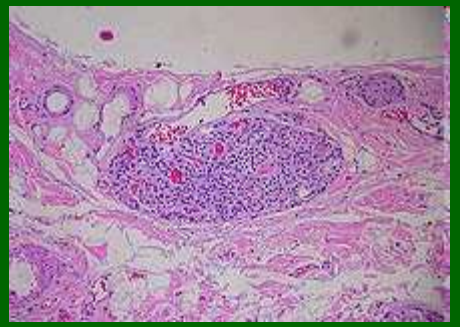
Figure 1: Immune-to-nerve conversion of information
The vagus nerve might play a part in alerting the brain to a neoplastic inflammatory response.



Nature 420, 853-859(19 December 2002)

INTERLEUKIN 1

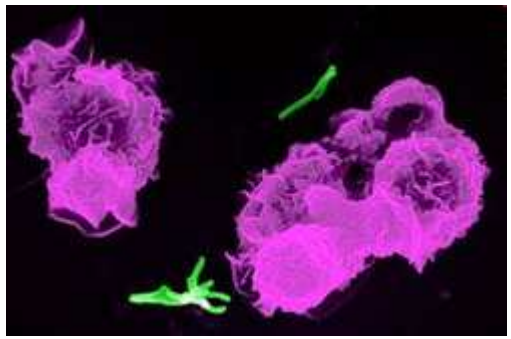
PARAGANGLION
(via REZEPTOREN)
↓
NUCLEUS TRACTATUS
SOLITARIUS
↓
CORTEX



↘
EFFERENTE BAHNEN

In conclusion, these results demonstrate that somata and/or fibers of sensory neurons of the vagus nerve express receptors to IL-1 and prostaglandin E2 and that circulating IL-1 stimulates vagal sensory activity via both prostaglandin-dependent and -independent mechanisms. J. Neurosci 18, 9471

Cholinerge Reaktion



TNF alpha

c jun

P 53

Efferent vagal fibres transmit neuronal information via acetylcholine and activate cholinergic receptors on peripheral tissue macrophages.
This rapid cholinergic route then suppresses cytokine synthesis (eg, TNF) in peripheral macrophages, the distribution of which corresponds with TNF-synthesis in tumour cells.

VAGALE INFORMATION

NUCLEUS TRATUS SOLITARIUS

HYPOTHALAMISCH HYPOPHYSÄR ACHSE

↓

CORTICOSTEROIDE

↓

ANTIINFLAMMATORISCH

CHOLINERGE REAKTIONEN

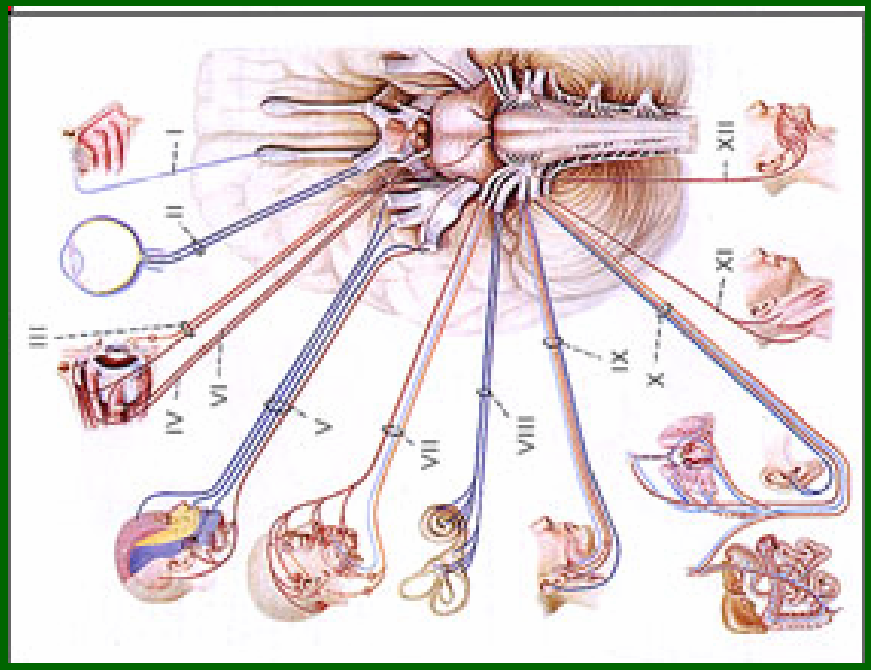
↓

SUPPRESSION PERIPHERER MAKROPHAGEN

CANCER RES. 50, 4436

NERVUS VAGUS

HERZ,ÖSOPHAGUS, LEBER, PANKREAS, COLON



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Seminars in Cancer Biology 18 (2008) 150–163

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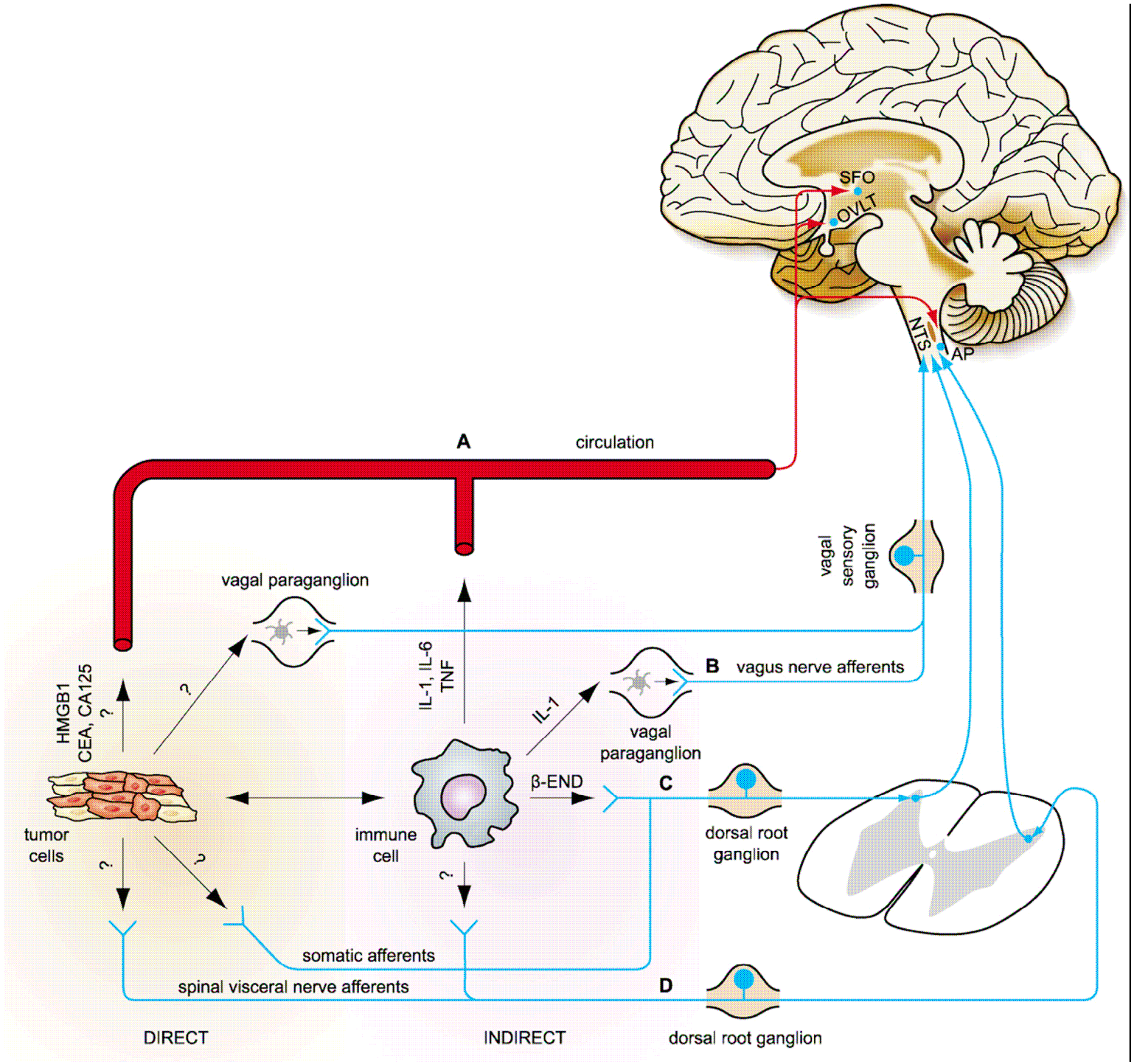
Review

Neurobiology of cancer: Interactions between nervous, endocrine and immune systems as a base for monitoring and modulating the tumorigenesis by the brain

Boris Mravec[a,b,*], Yori Gidron[c], Ivan Hulin[a]

[a] *Institute of Pathophysiology, Faculty of Medicine, Comenius University, Sasinkova 4, 811 08 Bratislava, Slovak Republic*
[b] *Institute of Experimental Endocrinology, Slovak Academy of Sciences, Vlarska 3, 833 06 Bratislava, Slovak Republic*
[c] *Department of Psychology and Health, University of Tilburg, 5000 LE Tilburg, The Netherlands*


SFO
OVLT
NTS
AP
A
circulation
vagal sensory ganglion
vagal paraganglion
B
vagus nerve afferents
HMGB1
CEA, CA125
?
IL-1, IL-6
TNF
IL-1
vagal paraganglion
β-END
C
tumor cells
immune cell
dorsal root ganglion
somatic afferents
spinal visceral nerve afferents
D
DIRECT
INDIRECT
dorsal root ganglion

Peripheral nerves could receive information directly from specialized immune cells or from sentinel cells, e.g. dendritic cells and subpopulations of tissue fibroblasts. Sentinel cells process information about the immune status of surrounding tissue and may consequently transmit these signals to the peripheral nervous system via production of cytokines.

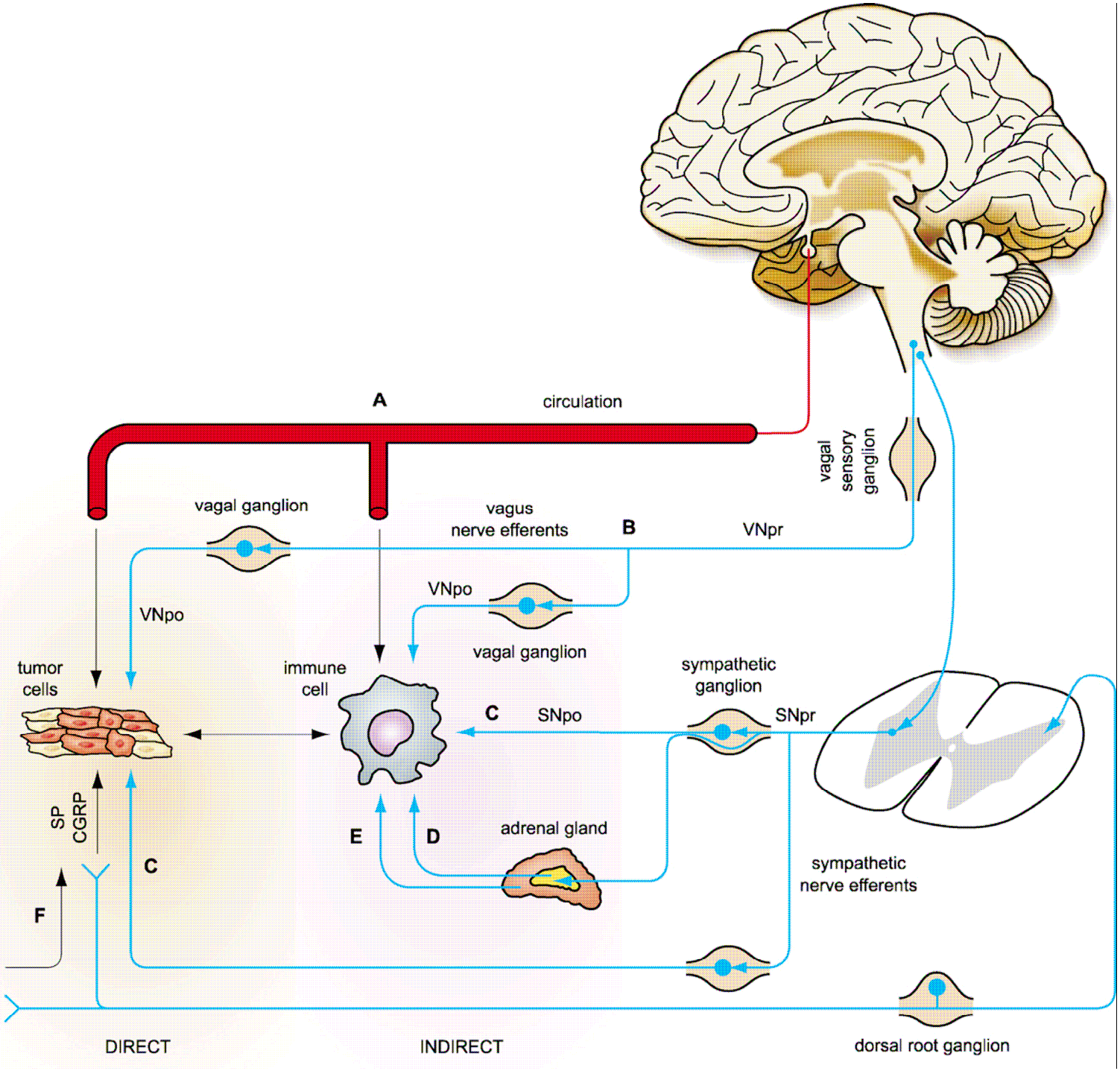
Smith RS, Smith TJ, Blieden TM, Phipps RP. Fibroblasts as sentinel cells. Synthesis of chemokines and regulation of inflammation. Am J Pathol 1997;151:317–22.
Buckley CD, Pilling D, Lord JM, Akbar AN, Scheel-Toellner D, Salmon M. Fibroblasts regulate the switch from acute resolving to chronic persistent inflammation. Trends Immunol 2001;22:199–204.
Kaufman J, Graf BA, Leung EC, Pollock SJ, Koumas L, Reddy SY, et al. Fibroblasts as sentinel cells: role of the CDcd40–CDcd40 ligand system in fibroblast activation and lung inflammation and fibrosis. Chest 2001;120:S53–5.

Visceral afferent fibers and cutaneous sensory fibers might also transmit certain immune-related information from the vagus innervationfree visceral regions of the body. Experiments using bacterial lipopolysaccharide-induced inflammation and local anesthesia indicate that cutaneous sensory nerves can modestly participate in the transmission of inflammatory information to CNS.

Tactile hypersensitivity during inflammatory diseases and observations in patients with leprosies also suggest a possible role of cutaneous sensory afferent fibers in the transmission of signals from the immune system to CNS.

Roth J, De Souza GE. Fever induction pathways: evidence from responses to systemic or local cytokine formation.
Braz J Med Biol Res 2001;34:301–14.

Hermann GE, Holmes GM, Rogers RC. TNF(alpha) modulation of visceral and spinal sensory processing. Curr Pharm 2005;11:1391–409.

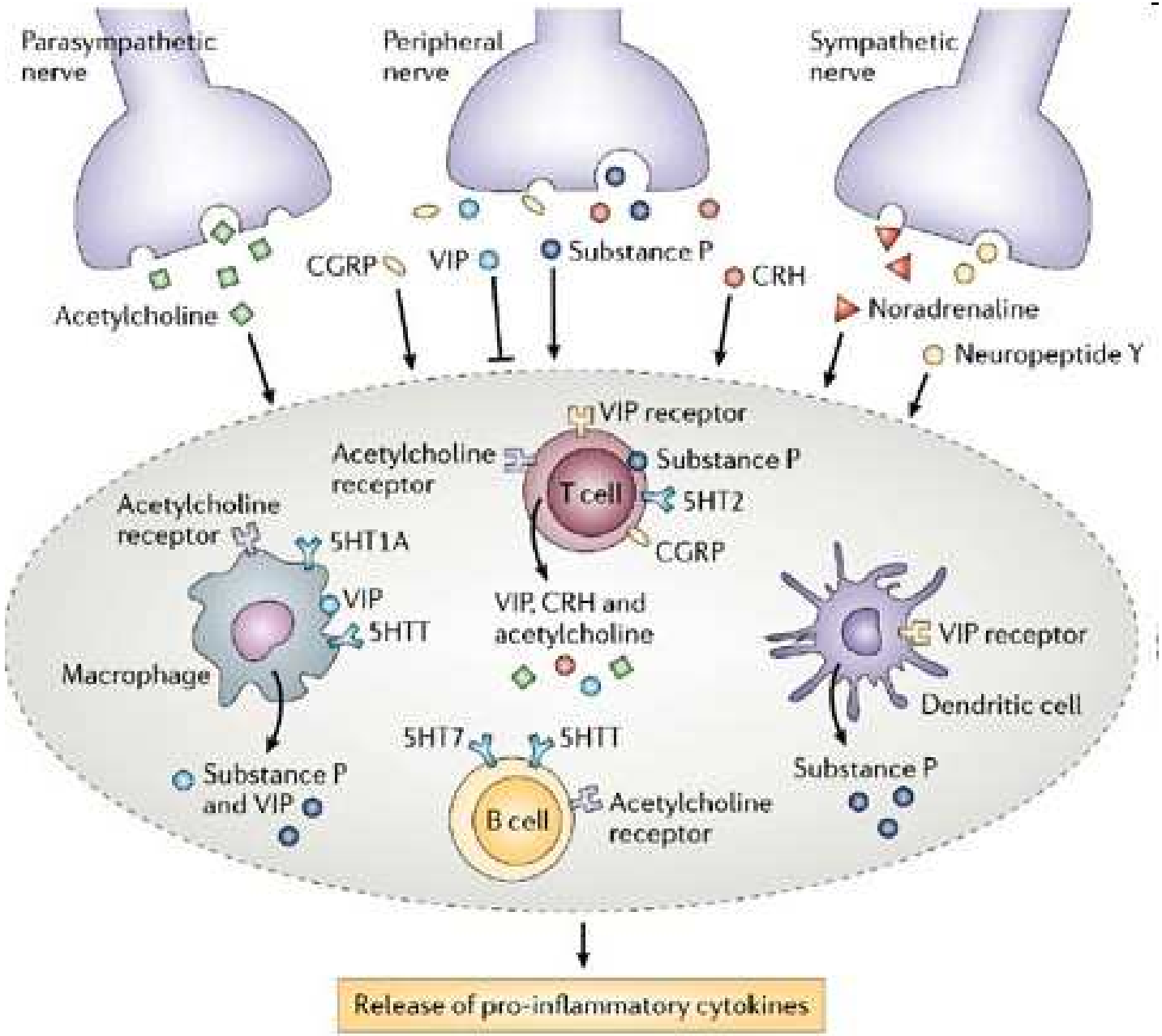

A
circulation
vagal sensory ganglion
vagal ganglion
vagus nerve efferents
B
VNpr
VNpo
VNpo
vagal ganglion
tumor cells
immune cell
sympathetic ganglion
C
SNpo
SNpr
SP
CGRP
E
D
adrenal gland
C
sympathetic nerve efferents
F
DIRECT
INDIRECT
dorsal root ganglion

Stress is associated with enhanced secretion of norepinephrine that may alter the NK cells availability and their function

Spiegel D, Kato PM. Psychosocial influences on cancer incidence and progression. Harv Rev Psychiatry 1996;4:10–26.

Ben-Eliyahu et al showed that the effects of stress on tumor growth were mediated by suppression of NK cell activity caused by catecholamines.

Ben-Eliyahu S, Shakhar G, Page GG, Stefanski V, Shakhar K. Suppression of NK cell activity and of resistance to metastasis by stress: a role for adrenal catecholamines and beta-adrenoceptors. Neuroimmunomodulation 2000;8:154–64



Nature Reviews | Immunology

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Journal of Neuroimmunology 164 (2005) 66 – 75

Journal of
Neuroimmunology

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Regulation of $CD8^+$ cytolytic T lymphocyte differentiation by a cholinergic pathway

James C. Zimring[a,*], Linda M. Kapp[b], Masahisa Yamada[c], Jürgen Wess[c], Judith A. Kapp[b]

[a]*Department of Pathology, Emory University School of Medicine, Woodruff Memorial Research Building, Room 7301, 101 Woodruff Circle, Atlanta GA 30322, USA*

[b]*Department of Ophthalmology, University of Alabama at Birmingham, Birmingham AB 35233, USA*

[c]*Laboratory of Bioorganic Chemistry, NIH-NIDDK, DHHS, 8 Center Drive MSC 0810, Bethesda, Maryland, MD 20892-0810, USA*

Received 19 February 2005; accepted 18 March 2005

PROSPEKTIVE STUDIEN

VAGOTOMIE ERHÖHT INZIDENS COLOREKTALER- UND LUNGENKARZINOME

BMJ, 316, 518

EUR. J. CANC. 1, 135

BMJ 288, 1335

nature International weekly journal of science

Letters to Nature

Nature **405**, 458-462 (25 May 2000) | doi:10.1038/35013070; Received 12 January 2000; Accepted 3 March 2000

Vagus nerve stimulation attenuates the systemic inflammatory response to endotoxin

Lyudmila V. Borovikova[1], Svetlana Ivanova[1], Minghuang Zhang[1], Huan Yang[1], Galina I. Botchkina[1], Linda R. Watkins[2], Haichao Wang[3], Naji Abumrad[4], John W. Eaton[6] & Kevin J. Tracey[4]

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Journal of Neuroimmunology 172 (2006) 38 – 58

Journal of
Neuroimmunology

www.elsevier.com/locate/jneuroim

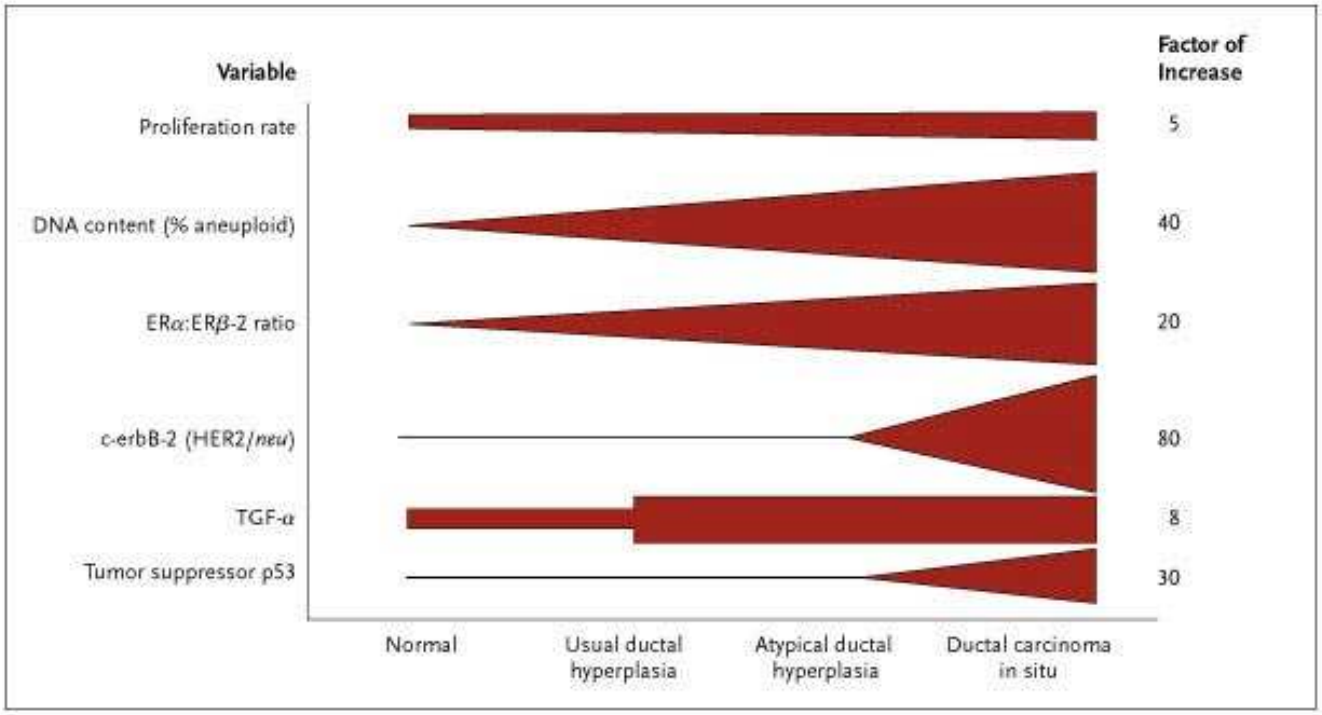
Neural–immune interactions: An integrative view of the bidirectional relationship between the brain and immune systems

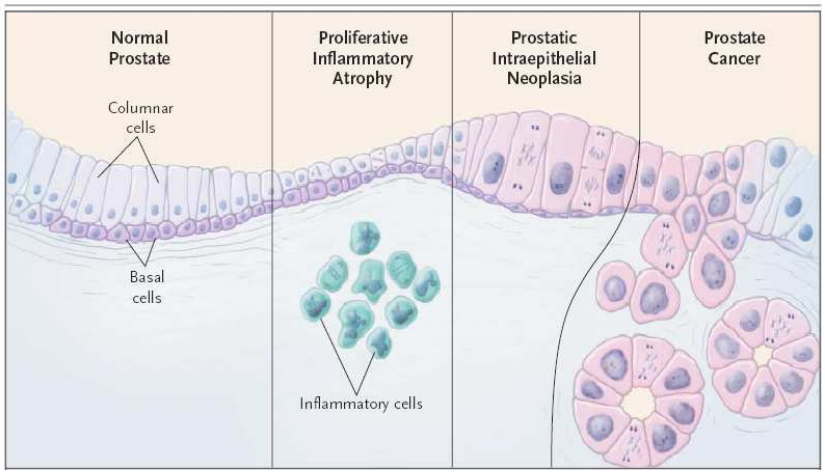
Danuta Wrona *

Department of Animal Physiology, University of Gdansk, Poland

Received 18 April 2005; received in revised form 12 October 2005; accepted 31 October 2005

Neocortical-dependent functions, such as attitudes, hopes, spiritual resources, may neutralize the effects of extreme stress and thereby shape the immunologic mechanisms involved in maintenance of health





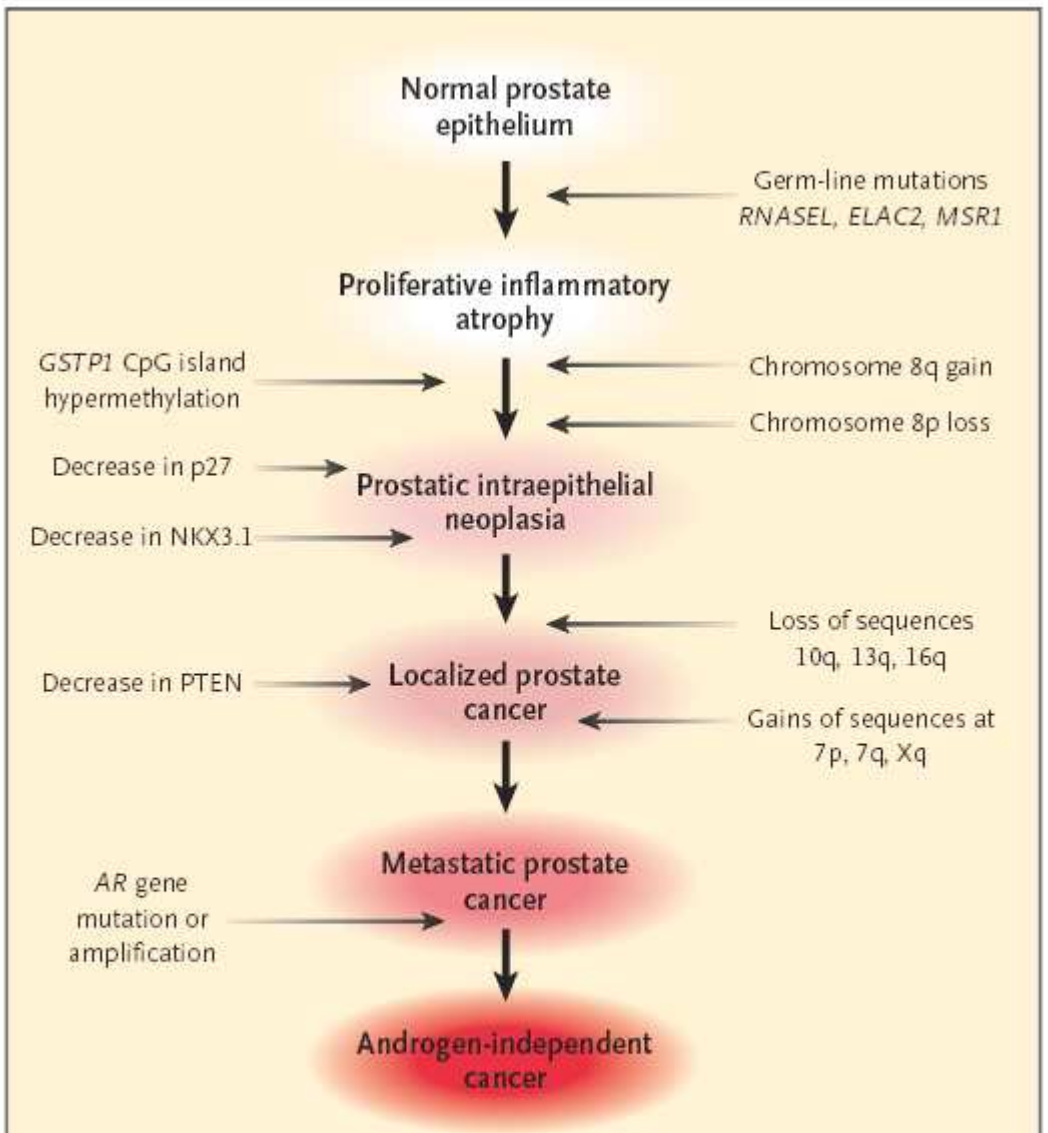
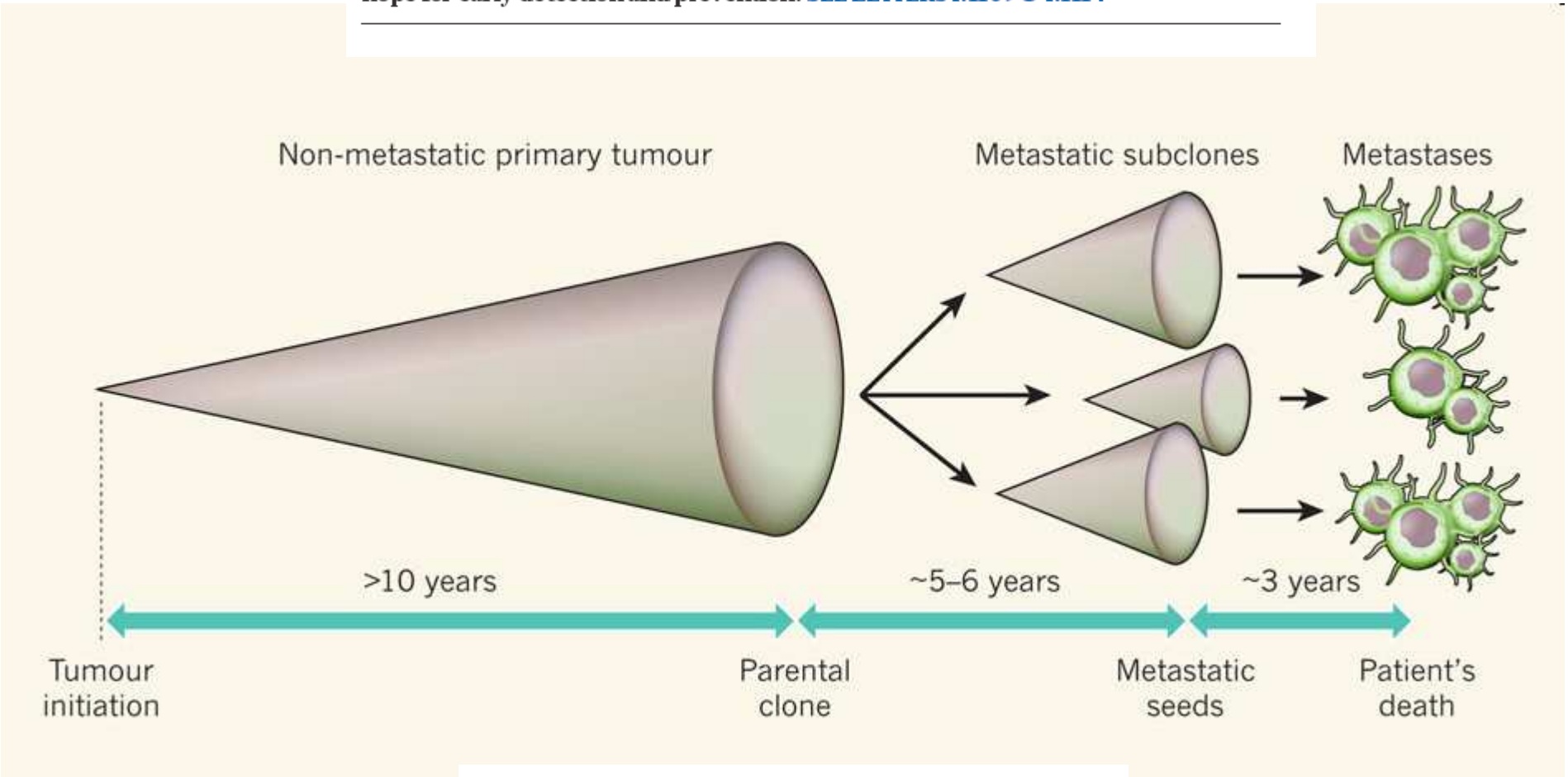


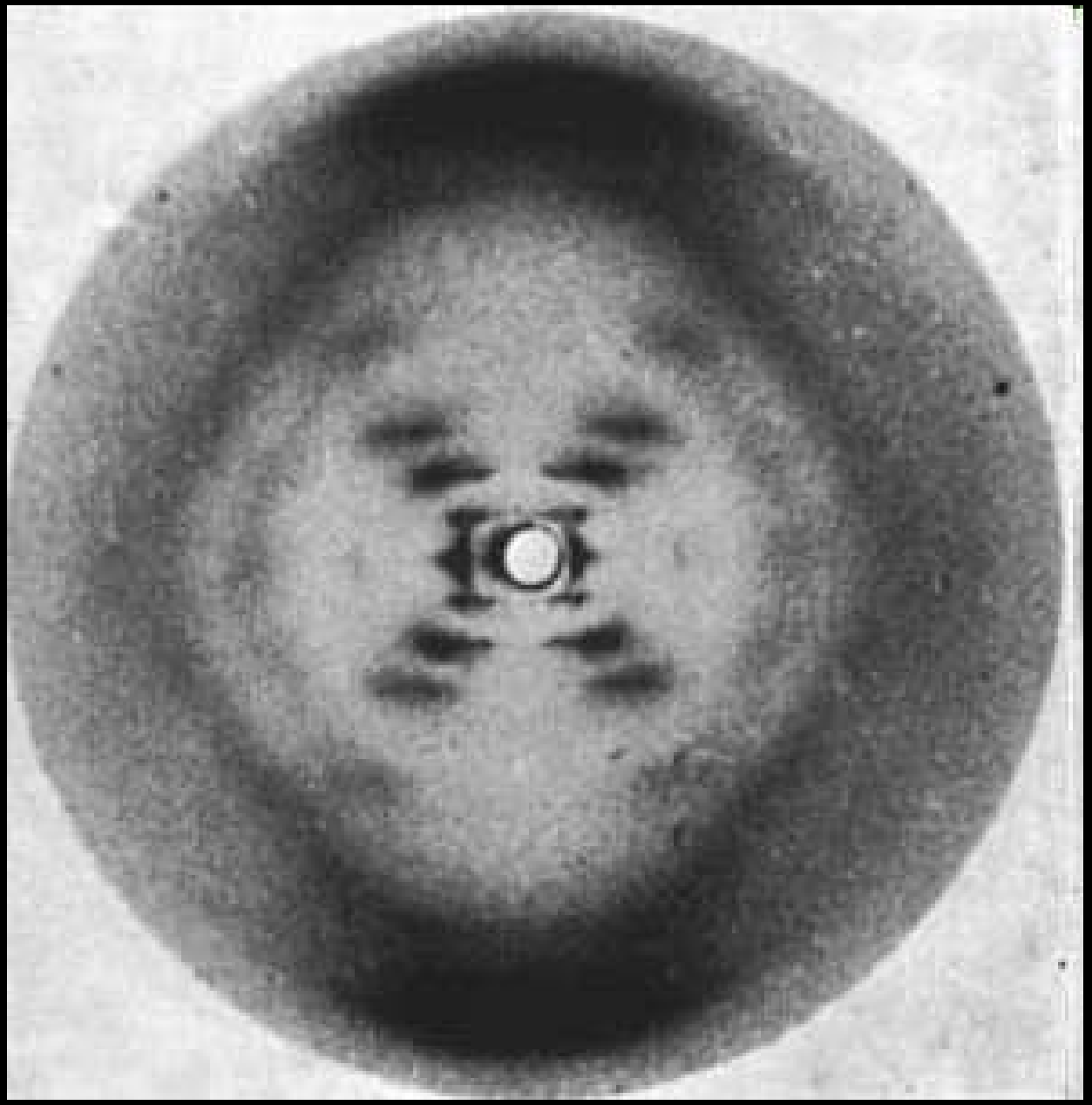
Figure 2. The Molecular Pathogenesis of Prostate Cancer.

CANCER

Genomic evolution of metastasis

Prognosis for patients with pancreatic cancer is bleak, often owing to late diagnosis. The estimate that at least 15 years pass from tumour initiation to malignancy offers hope for early detection and prevention. **SEE LETTERS P.1109 & P.1114**





6. Oktober 2010, Neue Zürcher Zeitung

Verschollene Briefe eines Nobelpreisträgers aufgetaucht

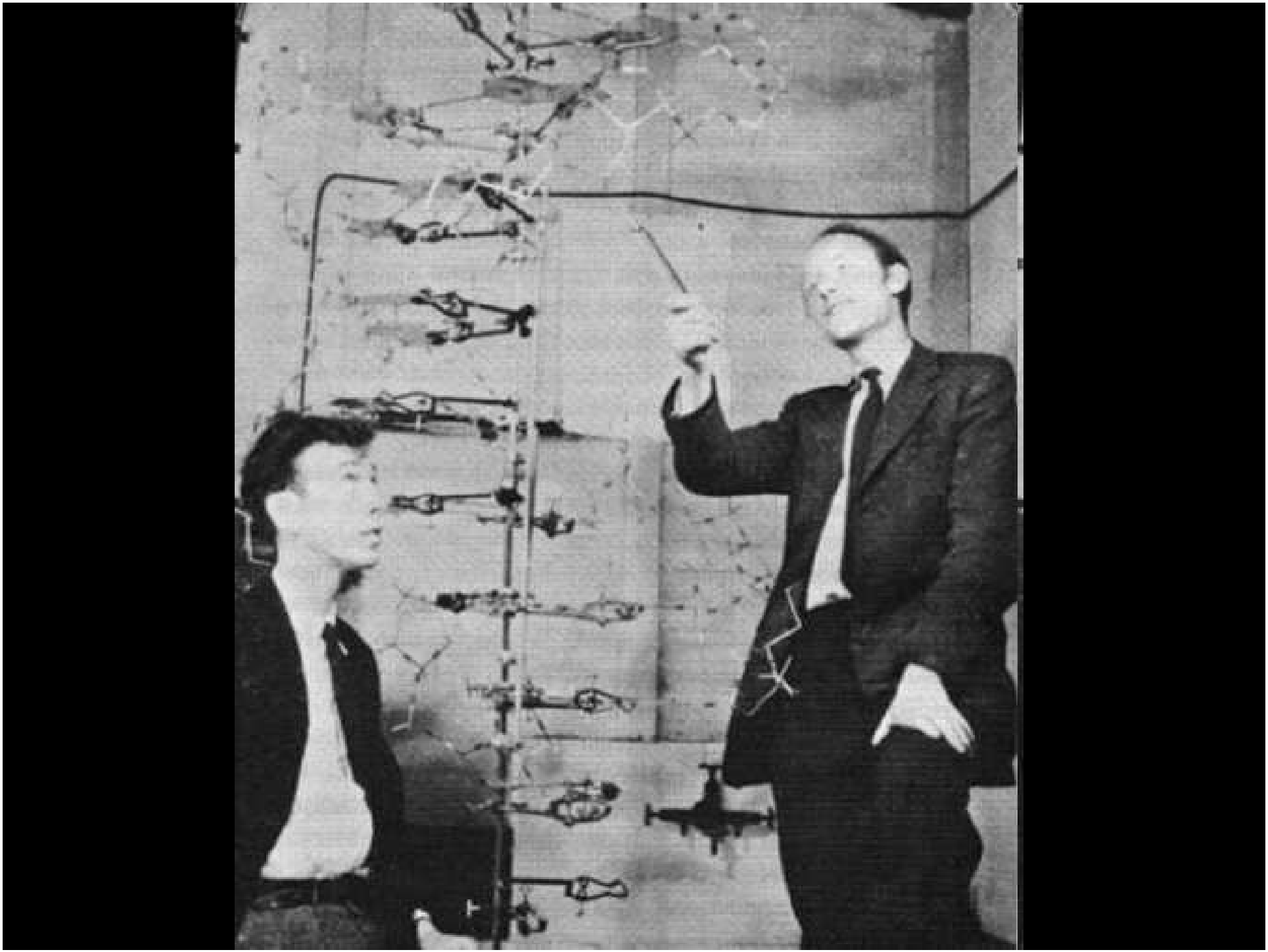
Der Briefwechsel zwischen den Entdeckern der DNA-Struktur gibt Einblick in die Rivalitäten zweier Forschergruppen

«Sei mal wieder lockerer» schrieb Francis Crick (Bild) seinem Rivalen Maurice Wilkins. (Bild: Marc Lieberman (CC 2.5))

Der verschollen geglaubte Briefwechsel zwischen Francis Crick und seinem Rivalen und zugleich Verbündeten Maurice Wilkins ist wieder aufgetaucht. Er war in die falsche Sammlung geraten.

Ronald Gerste

Der Verfasser des Briefes war erkennbar emotional angeschlagen: «Wir befinden uns alle zwischen Kräften, die uns in kleine Stücke zermalmen können.» Die Antwort, die er erhielt, verströmte Aufmunterung, die nicht ganz frei von Schuldgefühlen war: «Sei mal wieder lockerer, und lass es dir gesagt sein, selbst wenn wir euch in den Hintern getreten haben, geschah es unter Freunden. Wir hoffen, dass unser kleiner Diebstahl zumindest einen Zusammenhalt in eurer Gruppe bewirkt hat.» Dieser Wunsch war vom Verfasser des Briefes Francis Crick im Dezember 1951 zu Papier gebracht und schien dringend notwendig. Denn der Empfänger seiner launigen Worte, Maurice Wilkins, arbeitete nicht nur in Konkurrenz zu Crick und seinem Kollegen, James Watson, sondern auch in einer nervenzermürbenden Rivalität zu seiner engsten Mitarbeiterin, Rosalind Franklin.




IN MEMORY OF
ROSALIND ELSIE FRANKLIN
מ רחל בת ר׳ יהודה
DEARLY LOVED ELDER DAUGHTER OF
ELLIS AND MURIEL FRANKLIN
25TH JULY 1920 - 16TH APRIL 1958
SCIENTIST
HER RESEARCH AND DISCOVERIES ON
VIRUSES REMAIN OF LASTING BENEFIT
TO MANKIND
ת נ צ ב ה

Psychosocial factors, biological mediators, and cancer prognosis: a new look at an old story

Yori Gidron[a] and Alain Ronson[b]

[a]Brunel University, Uxbridge, Middlesex, UK and [b]Institute of Jules Bordet, The Free University of Brussels, Brussels, Belgium

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Current Opinion in Oncology 2008, 20:386–392

Purpose of review

The present article briefly reviews the prognostic role of psychosocial factors in cancer and concentrates on biological markers that may mediate such relationships. We focus on specific markers that show promising mediating roles.

Recent findings

The article reviews the prognostic role of psychosocial factors as shown in longitudinal studies and in previous reviews. We present the general stress response and its relevance to cancer progression. The main focus of the article is on the prognostic roles of specific biomarkers that had to meet three criteria for being accepted as

.In a review of 70 longitudinal studies, Garssen concluded cautiously that repression and hopelessness predict worse prognosis whereas denial and minimizing predict a good prognosis.

Garssen B. Psychological factors and cancer development: evidence after 30 years of research. Clin Psychol Rev 2004; 24:315–338.

Biological factors potentially mediating psychosocial factors with cancer prognosis, and therapeutic implications

Biological mediator	Psychological correlate	Therapeutic implication
NE	Hopelessness	β-Blockers
Cortisol	Hopelessness, depression	Oxytocin[a]
Oxytocin (OT)	Social support, loneliness	Intra-nasal OT
IL-1	Hopelessness	Ach-esterase inhibitors, IL-1Ra
DNA damage	Depression, chronic stress	Antioxidants

Current Opinion in Oncology 2008, 20:386–392

Another humoral “effector” of immunity is oxytocin, a hormone synthesized in the hypothalamus and secreted from the pituitary gland. Oxytocin has immunomodulatory roles and is relevant to tumorigenesis since it may have a role in suppressing the tumor cell proliferation . As immune cells might synthesize some neurotransmitters, the interplay between hormones released from CNS and immune cells might participate in the modulation of immune functions.

Yang H, Wang L, Ju G. Evidence for hypothalamic paraventricular nucleus as an integrative center of neuroimmunomodulation. Neuroimmunomodulation 1997;4:120–7.
Cassoni P, Sapino A, Marrocco T, Chini B, Bussolati G. Oxytocin and oxytocin receptors in cancer cells and proliferation. J Neuroendocrinol 2004;16:362–4.

Inhibitory role for GABA in autoimmune inflammation

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[a]Department of Neurology and Neurological Sciences and [b]Department of Molecular and Cellular Physiology, Beckman Center for Molecular Medicine, Stanford University, Stanford, CA 94305

Contributed by Richard W. Tsien, December 31, 2009 (sent for review November 30, 2009)

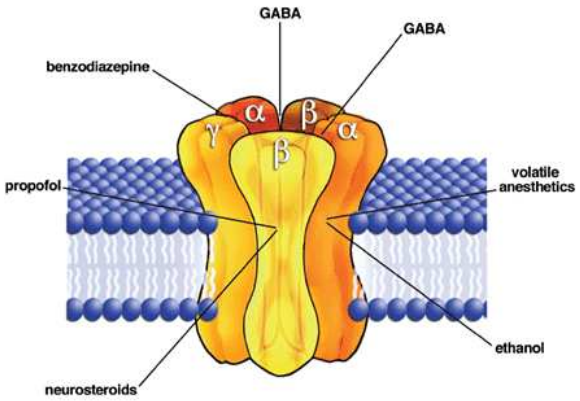
GABA, the principal inhibitory neurotransmitter in the adult brain, has a parallel inhibitory role in the immune system. We demonstrate that immune cells synthesize GABA and have the machinery for GABA catabolism. Antigen-presenting cells (APCs) express functional GABA receptors and respond electrophysiologically to GABA. Thus, the immune system harbors all of the necessary

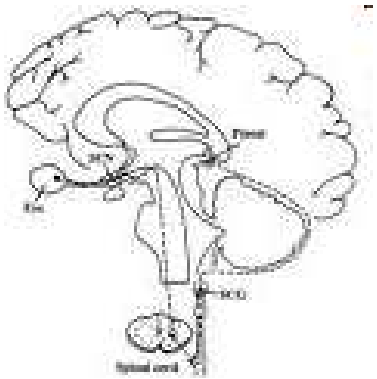
serum (13). Because actions of exogenous GABA on inflammation and of endogenous GABA on phasic synaptic inhibition both occur at millimolar concentrations (5, 8, 9), we hypothesized that local mechanisms may also operate in the peripheral immune system to enhance GABA levels near the inflammatory focus. We first asked whether immune cells have synthetic machinery to

While the majority of neurotransmitters have a stimulatory effect on cell migration, an endogenous substance amantadine and GABA exhibit an inhibitory effect .

The pineal gland and ist principal hormone melatonin are known to influence the initiation and progression of cancer It is suggested that melatonin may have an anti-tumor activity.

Joseph J, Niggemann B, Zaenker KS, Entschladen F. The neurotransmitter gamma-aminobutyric acid is an inhibitory regulator for the migration of SW 480 colon carcinoma cells. Cancer Res 2002;62:6467–9.





REVIEW

nature immunology

//www.nature.com/natureimmunology

Elaborate interactions between the immune and nervous systems

Lawrence Steinman

The immune system and the nervous system maintain extensive communication, including 'hardwiring' of sympathetic and parasympathetic nerves to lymphoid organs. Neurotransmitters such as acetylcholine, norepinephrine, vasoactive intestinal peptide, substance P and histamine modulate immune activity. Neuroendocrine hormones such as corticotropin-releasing factor, leptin and α-melanocyte stimulating hormone regulate cytokine balance. The immune system modulates brain activity, including

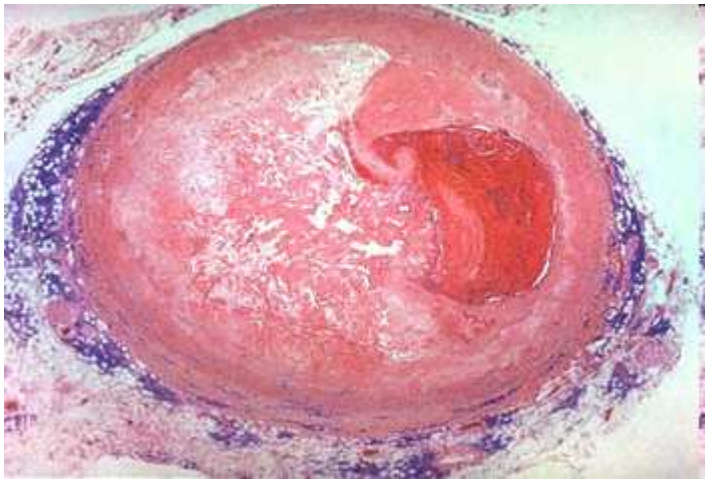
Personality Traits, Health Behavior, and Risk for Cancer

A Prospective Study of a Swedish Twin Cohort

Pernille Envold Hansen, M.A.[1]
Birgitta Floderus, Ph.D.[2]
Kirsten Frederiksen, Ph.D.[3]
Christoffer Johansen, M.D., D.M.Sc. Ph.D.[1]

BACKGROUND. The authors conducted a prospective investigation into the relation between personality traits and the risk for cancer.

METHODS. The study cohort consisted of 29,595 Swedish twins from the national Swedish Twin Registry who were ages 15–48 years at time of entry. In 1973, the twins completed a questionnaire eliciting information on personality traits and



Pro-inflammatory cytokines (e.g., IL-1, IL-6, tumour-necrosis factor alpha, TNF-), chemokines (e.g., IL-8), adhesion molecules (VCAM-1) and the ligation pair CD40-CD40L (co-stimulatory molecules between T-cells, monocytes and platelets) also increase the chances of plaque rupture via several mechanisms including
the extra-plaque haemodynamic factors

Ora et cura

Von Norbert Lossau

Noch vor einigen Jahren hätte es eine seriöse und renommierte Medizinfachzeitschrift rundweg abgelehnt, eine Studie über die Heilung von Patienten durch Beten abzudrucken. Offenbar hat sich das Klima aber deutlich verändert und immer mehr Menschen sind (wieder) bereit zuzugestehen, daß es möglicherweise auch in der Welt der Medizin mehr Dimensionen gibt, als sie unsere Schulmedizin erfassen kann. Auch das wachsende Interesse an alternativen Therapiekonzepten paßt zu diesem Trend. Niemand sollte dies belächeln, sondern jeder als oberste Maxime anerkennen: Alles, was heilen kann, ist erlaubt und willkommen – auch wenn es ein Gebet ist.

Den Autor erreichen Sie unter:

norbert.lossau@welt.de

ICH HABE DAS GESTERN GESEHEN – ICH KENNE DAS MORGEN


WISSENSCHAFT AUF REISEN
EIN VAGUSAGONIST ?