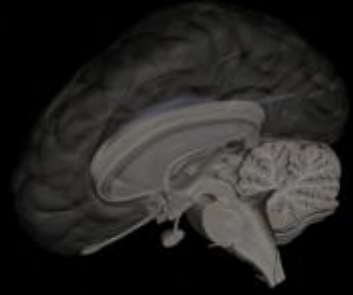


PROBLEMAS DE SALUD EN LA INFANCIA EN LAS SOCIEDADES MODERNAS

ENFOQUE DESDE LAS NEUROCIENCIAS:
HIJOS, Y POSTERIORMENTE ADULTOS, MÁS FELICES Y SANOS, FÍSICA Y MENTALMENTE

DR. PATRICIO GUERRA

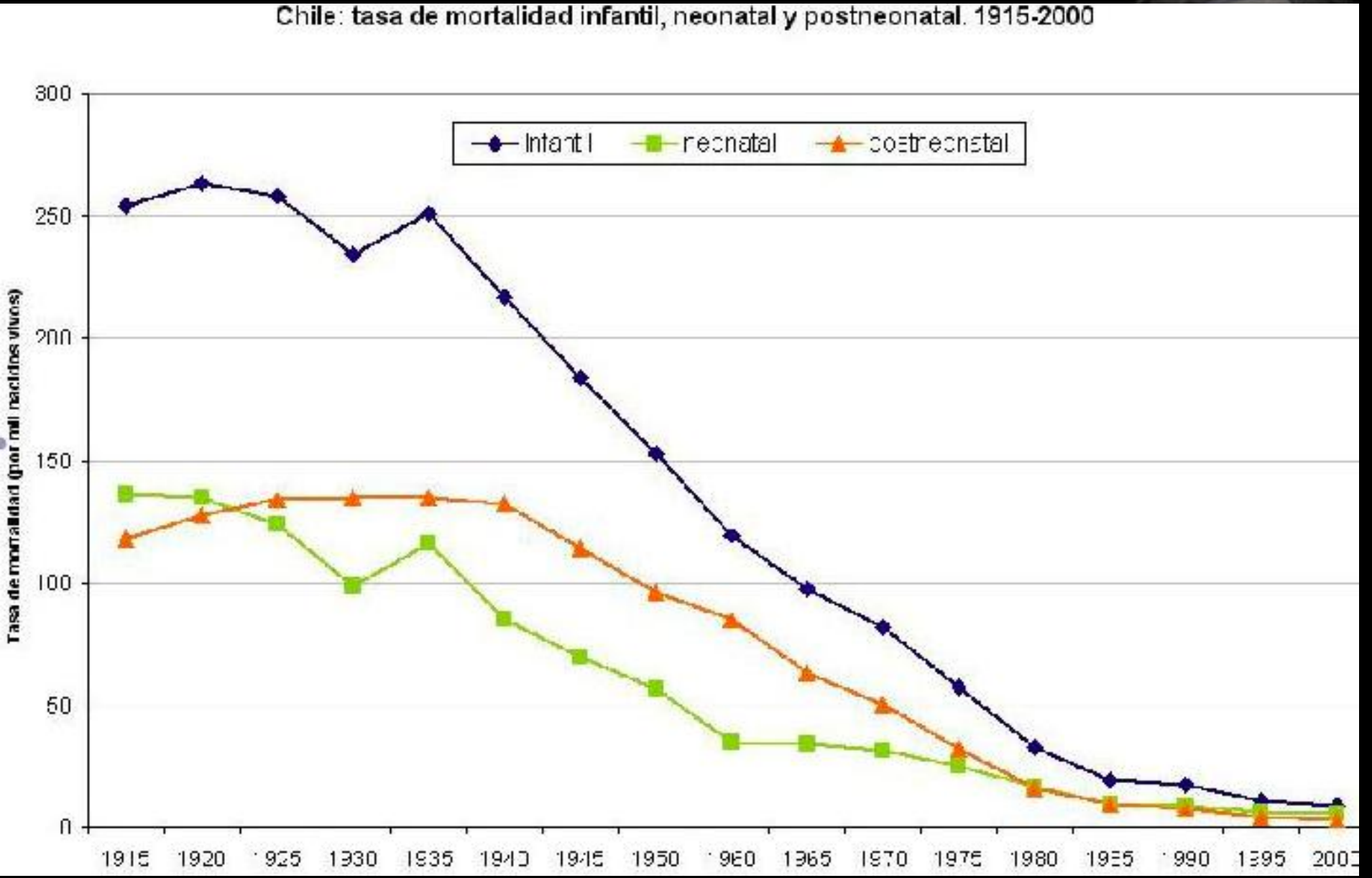
NEURÓLOGO INFANTIL Y ADOLESCENTES

MAGÍSTER NEUROCIENCIAS

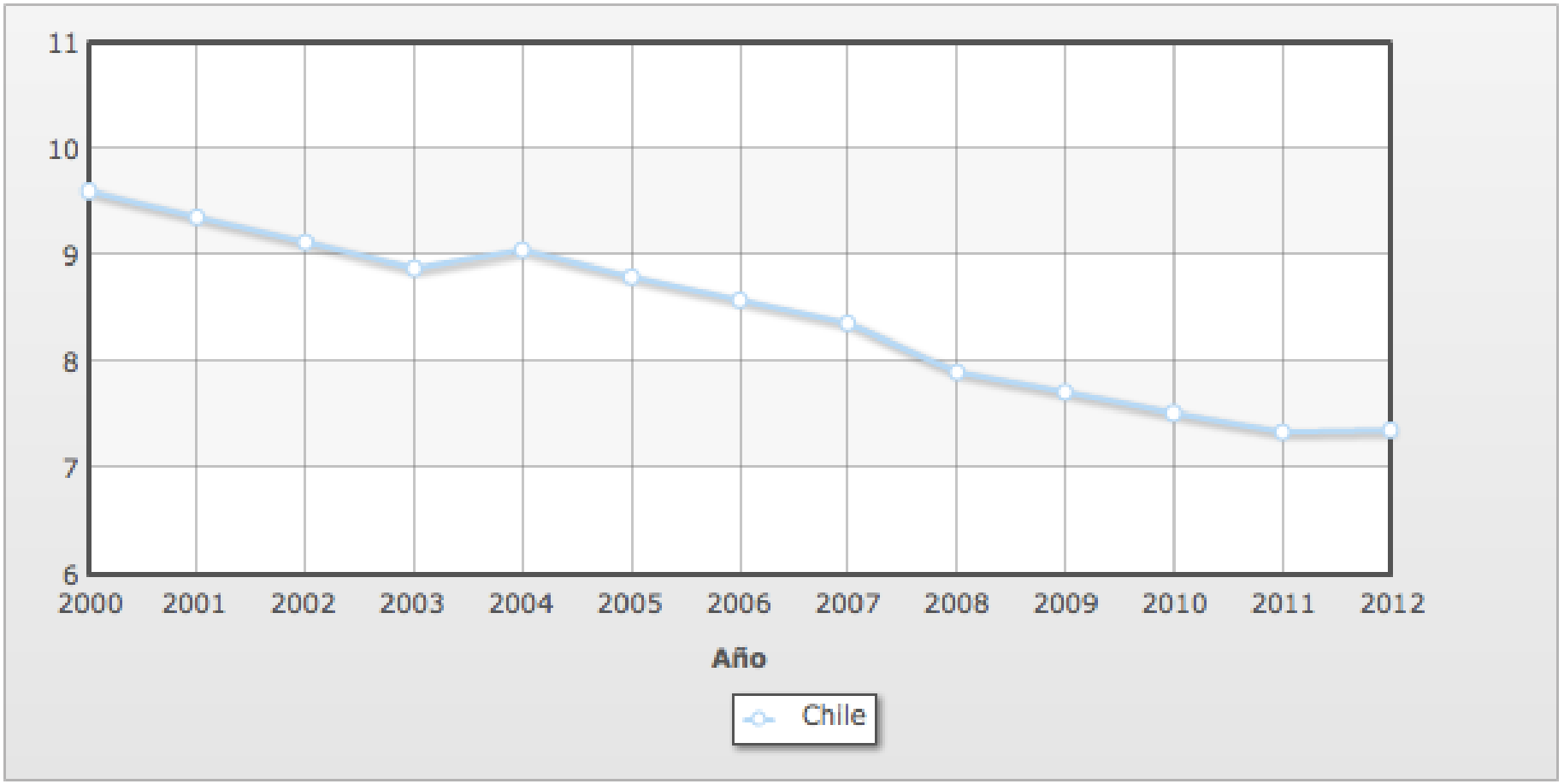
CLÍNICA UNIVERSITARIA PUERTO MONTT - CLÍNICA ALEMANA PUERTO VARAS

ESCUELA DE MEDICINA UNIVERSIDAD SAN SEBASTIÁN PUERTO MONTT

XVII CONGRESO CHILENO DE MEDICINA FAMILIAR PUERTO VARAS OCTUBRE 2015


Chile: tasa de mortalidad infantil, neonatal y postneonatal. 1915-2000
Infantil
Neonatal
Postneonatal
Tasa de mortalidad (por mil nacidos vivos)
300
250
200
150
100
50
0
1915
1920
1925
1930
1935
1940
1945
1950
1960
1965
1970
1975
1980
1985
1990
1995
2000

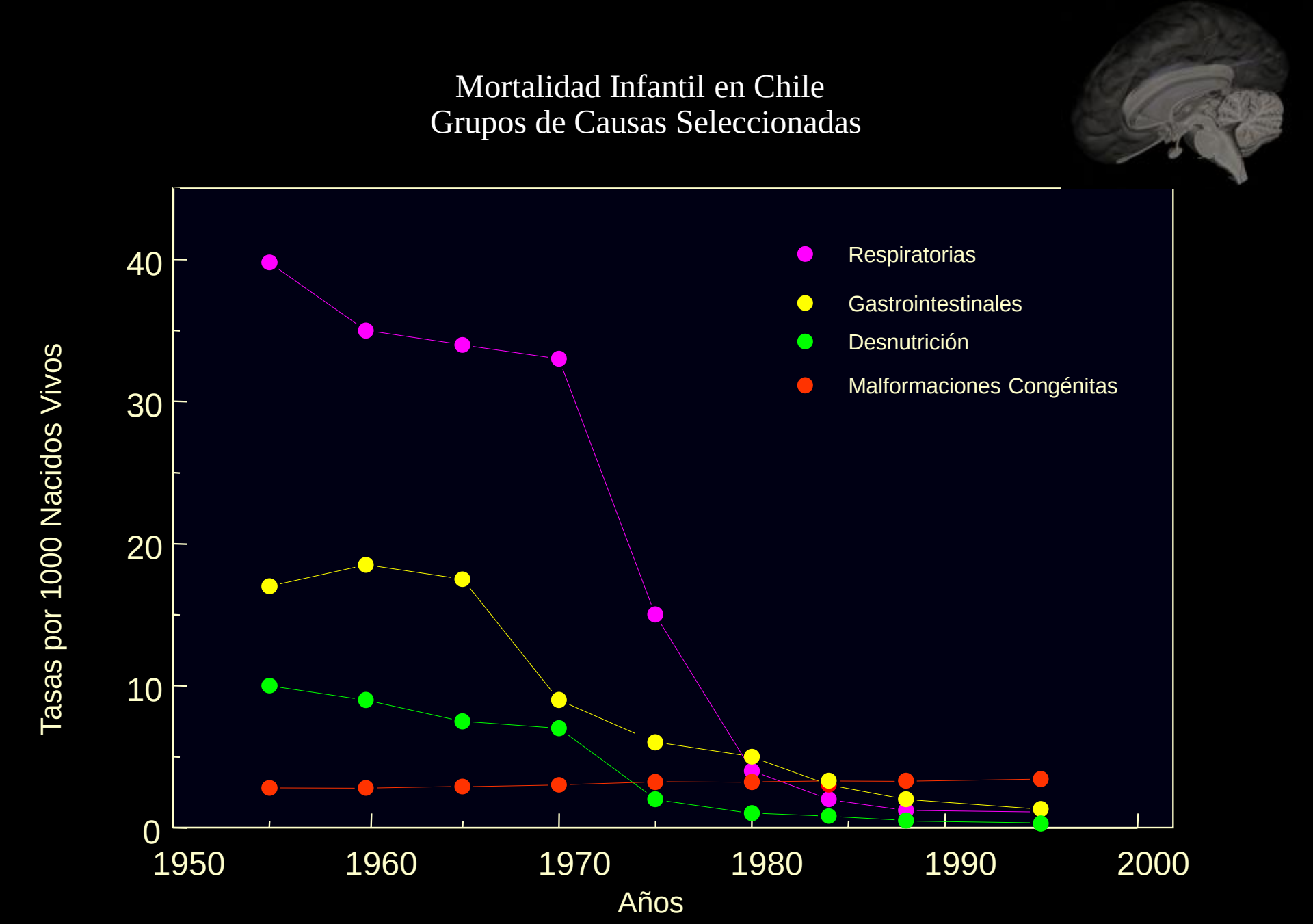
Tasa de mortalidad infantil (muertes/1000 nacimientos normales)

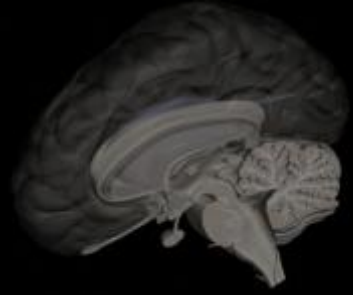


Waiting

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Chile	9,6	9,36	9,12	8,88	9,05	8,8	8,58	8,36	7,9	7,71	7,52	7,34	7,36

Mortalidad Infantil en Chile
Grupos de Causas Seleccionadas





DISMINUCIÓN NACIMIENTOS

DISMINUCIÓN MORTALIDAD INFANTIL

AUMENTO DE SECUELAS DE NIÑOS QUE YA NO MUEREN (PREMATUROS)

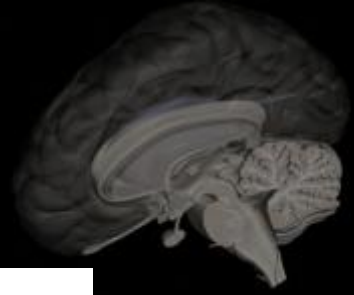
AUMENTO DE CONDICIONES DE SALUD CRÓNICAS (CARDIOPATÍAS, NEUROLOGÍA)

AUMENTO DE CONDICIONES ANTERIORMENTE NO RECONOCIDAS (AUTISMO)

AUMENTO DE CONDICIONES NUEVAS Y CONDICIONADAS SOCIALMENTE (TDAH)

SENSACIÓN DE MAYOR CARGA DE ENFERMEDAD EN LA INFANCIA

¿QUÉ PODEMOS HACER PARA DISMINUIR ESTA SENSACIÓN? (O ESTA REALIDAD)



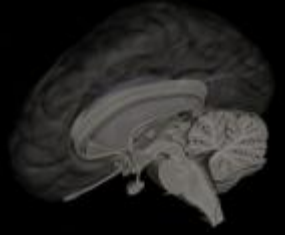
Journal of Personality and Social Psychology
1972, Vol 21, No 2, 204–218

COGNITIVE AND ATTENTIONAL MECHANISMS IN DELAY OF GRATIFICATION[1]

WALTER MISCHEL,[2] EBBE B. EBBESEN, AND ANTONETTE RASKOFF ZEISS

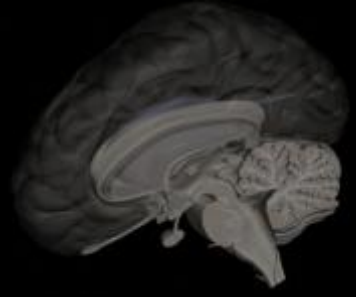
Stanford University

Three experiments investigated attentional and cognitive mechanisms in delay of gratification In each study preschool children could obtain a less preferred reward immediately or continue waiting indefinitely for a more preferred but delayed reward Experiment I compared the effects of external and cognitive distraction from the reward objects on the length of time which preschool children waited for the preferred delayed reward before forfeiting it for the sake of the less preferred immediate one. In accord with predictions from an extension of frustrative nonreward theory, children waited much longer for a preferred reward when they were distracted from the rewards than when they attended to them directly Experiment II demonstrated that only certain cognitive events (thinking "fun things") served as effective ideational distractors Thinking "sad thoughts" produced short delay times, as did thinking about the rewards themselves In Experiment III the delayed rewards were not physically available for direct attention during the delay period, and the children's attention to them cognitively was manipulated by prior instructions While the children waited, cognitions about the rewards significantly reduced, rather than enhanced, the length of their delay of gratification Overall, attentional and cognitive mechanisms which enhanced the salience of the rewards shortened the length of voluntary delay, while distractions from the rewards, overtly or cognitively, facilitated delay The results permit a reinterpretation of basic mechanisms in voluntary delay of gratification and self-control



IMPORTANCIA DEL DESARROLLO DEL AUTOCONTROL

https://www.youtube.com/watch?v=y83qQ3jMRqo



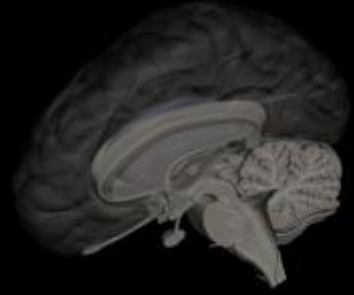
EXPERIENCIA DE AUTOCONTROL PREESCOLARES
EVOLUCIÓN A 30 AÑOS

-70% “SE AGUANTABAN”

-30% “NO SE AGUANTARON”

DIFERENCIAS SIGNIFICATIVAS EN EVOLUCIÓN

-SOCIAL
-ESCOLAR
-EMOCIONAL
-FAMILIAR
-LABORAL



Behavioral and neural correlates of delay of gratification 40 years later

B. J. Casey[a,1], Leah H. Somerville[a], Ian H. Gotlib[b], Ozlem Ayduk[c], Nicholas T. Franklin[a], Mary K. Askren[d], John Jonides[d], Marc G. Berman[d], Nicole L. Wilson[e], Theresa Teslovich[a], Gary Glover[f], Vivian Zayas[g], Walter Mischel[h,1], and Yuichi Shoda[e,1]

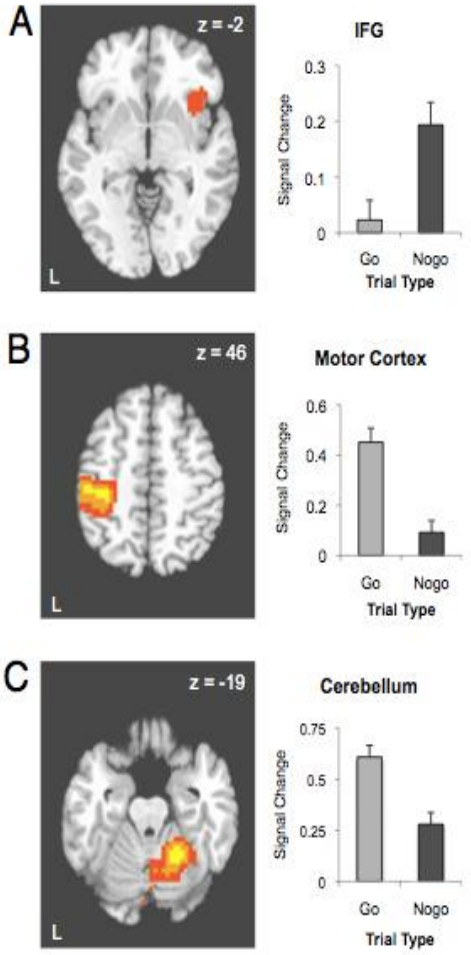
[a]Sackler Institute for Developmental Psychobiology, Weill Cornell Medical College, New York, NY 10065; [b]Department of Psychology, Stanford University, Stanford, CA 94305; [c]Department of Psychology, University of California, Berkeley, CA 94720; [d]Department of Psychology, University of Michigan, Ann Arbor, MI 48109; [e]Department of Psychology, University of Washington, Seattle, WA 98195; [f]Lucas Imaging Center, Department of Radiology, Stanford University School of Medicine, Stanford, CA 94305; [g]Department of Psychology, Cornell University, Ithaca, NY 14853; and [h]Department of Psychology, Columbia University, New York, NY 10027

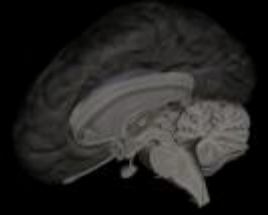
Edited* by Michael Posner, University of Oregon, Eugene, OR, and approved July 26, 2011 (received for review May 27, 2011)

We examined the neural basis of self-regulation in individuals from a cohort of preschoolers who performed the delay-of-gratification task 4 decades ago. Nearly 60 individuals, now in their mid-forties, were tested on "hot" and "cool" versions of a go/nogo task to assess whether delay of gratification in childhood predicts impulse control abilities and sensitivity to alluring cues (happy faces). Individuals who were less able to delay gratification in preschool and consistently showed low self-control abilities in their twenties and thirties performed more poorly than did high delayers when having to suppress a response to a happy face but not to a neutral or fearful face. This finding suggests that sensitivity to environmental hot cues plays a significant role in individuals' ability to suppress actions toward such stimuli. A subset of these participants (n = 26) underwent functional imaging for the first time to test for biased recruitment of frontostriatal circuitry when required to suppress responses to alluring cues. Whereas the prefrontal cortex differentiated between nogo and go trials to a greater extent in high delayers, the ventral striatum showed exaggerated recruitment in low delayers. Thus, resistance to temptation as measured originally by the delay-of-gratification task is a relatively stable individual difference that predicts reliable biases in frontostriatal circuitries that integrate motivational and control processes.

had more difficulty suppressing inappropriate actions than did their low-temptation-focus counterparts, especially for the most difficult trials. Difficulty was manipulated by increasing the number of "go" trials preceding a "nogo" trial, thus making the "go" response more salient and automated. Differences between the high- and low-temptation-focus groups increased as the number of preceding "go" trials increased, with the high-temptation-focus group having more difficulty, reflected in slower response times, suppressing responses. These findings suggest that performance in preschool delay of gratification may predict the capacity, in adulthood, to control thoughts and actions, as reflected in performance on cognitive control tasks, and that the ability to control one's thoughts and actions can vary by the potency of interfering information (12). Likewise, alluring or social contexts can diminish self-control (4, 13, 14).

Early experiments on delay of gratification demonstrated that part of the contextual effect was due to the different cognitive strategies that individuals used. For example, "cooling" the hot, appealing, or appetitive features of tempting stimuli by reappraisal or reframing strategies to focus on their cool, cognitive features (e.g., to envision the marshmallow as a cloud or a little cotton ball, rather than as a sweet, delectable treat) has been shown to be highly effective in enhancing delay of gratification





EXPERIENCIA DE AUTOCONTROL PREESCOLARES
EVOLUCIÓN A 30 AÑOS

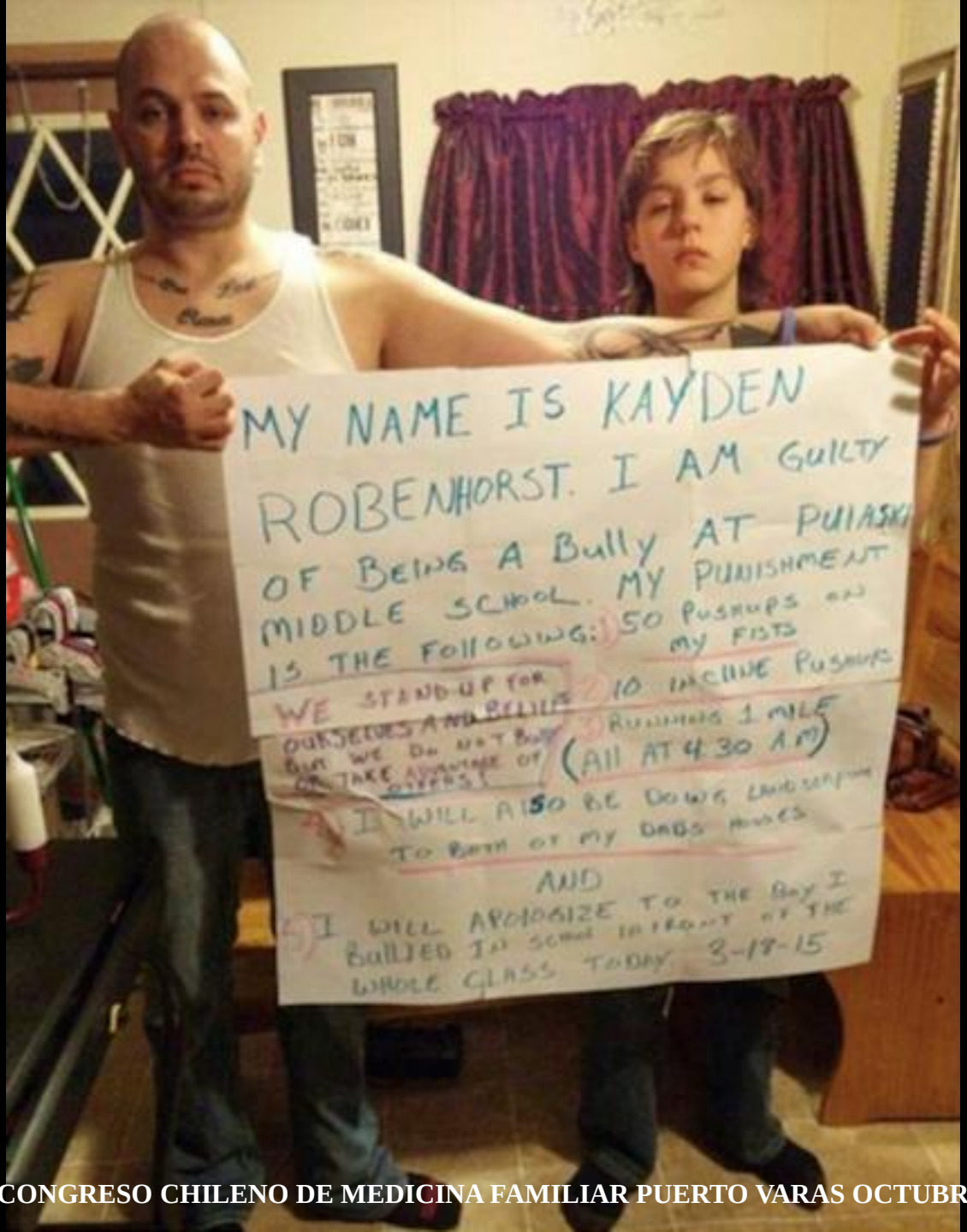
AUTOCONTROL ⟶ CAPACIDAD DE SUPERAR LA GRATIFICACIÓN INMEDIATA EN POS DE ALGO "SUPERIOR"

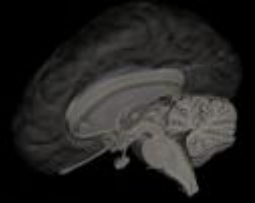
NIÑOS CON CAPACIDAD INNATA

NIÑOS QUE SE LES PUEDE "ENTRENAR"

PRIMER PASO ⟶ CONTROL EXTERNO

LUEGO ⟶ DESARROLLO DE CONTROL INTERNO


MY NAME IS KAYDEN
ROBENHORST. I AM GUILTY
OF BEING A BULLY AT PULASKI
MIDDLE SCHOOL. MY PUNISHMENT
IS THE FOLLOWING:
50 PUSHUPS AND
MY FISTS
WE STAND-UP FOR
OURSELVES AND BELIEVE
BUT WE DO NOT BULLY
OR TAKE ADVANTAGE OF
OTHERS
10 INCLINE PUSHUPS
RUNNING 1 MILE
(ALL AT 4:30 AM)
I WILL ALSO BE DOING LANDSCAPING
TO BOTH OF MY DADS HOUSES
AND
I WILL APOLOGIZE TO THE BOY I
BULLIED IN SCHOOL IN FRONT OF THE
WHOLE GLASS TODAY 3-17-15



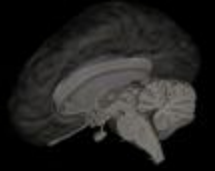
POR LO TANTO, EL PRIMER PASO PARA TENER NIÑOS FELICES

-NO ES EL EFECTO MOZART

-NO ES DARLES TODO LO QUE NECESITAN (NI TODO LO QUE QUIEREN)

-SÍ ES PONERLE LÍMITES (UN NIÑO SABE LO QUE ES EL *NO* DESDE LOS 8 MESES DE VIDA)

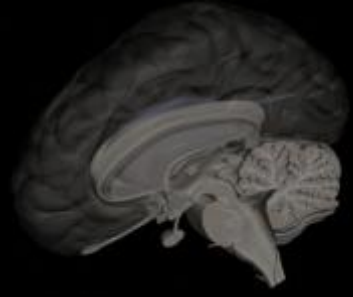
-PONER LÍMITES IMPLICA ASUMIR AUTORIDAD (Y RESPONSABILIDAD) COMO PADRES



POR LO TANTO, EL PRIMER PASO PARA TENER NIÑOS FELICES ES ASUMIR QUE

LOS HIJOS SON NUESTROS, NUESTRA RESPONSABILIDAD

- **NO DE LA ABUELITA**
- **NO DEL COLEGIO**
- **NO DEL ESTADO**
- **NO DE LA SOCIEDAD**



DADO ESTE PRIMER PRINCIPIO BÁSICO

¿QUÉ PODEMOS HACER PARA QUE LOS NIÑOS SEAN MÁS FELICES, SANOS E INTELIGENTES?

(Y QUE ESTÁ EN NOSOTROS, Y NO EN OTROS, LOGRARLO)

ARCHIVAL REPORT

BIOL PSYCHIATRY 2014;75:56–64

Maternal-Preterm Skin-to-Skin Contact Enhances Child Physiologic Organization and Cognitive Control Across the First 10 Years of Life

Ruth Feldman, Zehava Rosenthal, and Arthur I. Eidelman

Background: Maternal–newborn contact enhances organization of the infant's physiological systems, including stress reactivity, autonomic functioning, and sleep patterns, and supports maturation of the prefrontal cortex and its ensuing effects on cognitive and behavioral control. Premature birth disrupts brain development and is associated with maternal separation and disturbances of contact-sensitive systems. However, it is unknown whether the provision of maternal–preterm contact can improve long-term functioning of these systems.

Methods: We used the Kangaroo Care (KC) intervention and provided maternal–newborn skin-to-skin contact to 73 premature infants for 14 consecutive days compared with 73 case-matched control subjects receiving standard incubator care. Children were then followed seven times across the first decade of life and multiple physiologic, cognitive, parental mental health, and mother–child relational measures were assessed.

Results: KC increased autonomic functioning (respiratory sinus arrhythmia, RSA) and maternal attachment behavior in the postpartum period, reduced maternal anxiety, and enhanced child cognitive development and executive functions from 6 months to 10 years. By 10 years of age, children receiving KC showed attenuated stress response, improved RSA, organized sleep, and better cognitive control. RSA and maternal behavior were dynamically interrelated over time, leading to improved physiology, executive functions, and mother–child reciprocity at 10 years.

Conclusions: These findings are the first to demonstrate long-term effects of early touch-based intervention on children's physiologic organization and behavioral control and have salient implications for the care practices of premature infants. Results demonstrate the dynamic cascades of child physiological regulation and parental provisions in shaping developmental outcome and may inform the construction of more targeted early interventions.

OPEN ACCESS Freely available online

PLOS ONE

Family Poverty Affects the Rate of Human Infant Brain Growth

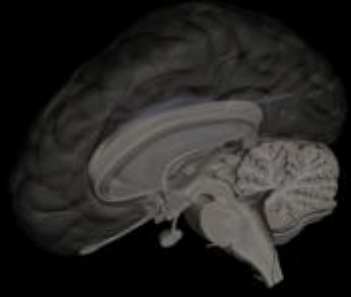
Jamie L. Hanson[1,2]*, Nicole Hair[3,4], Dinggang G. Shen[5,6,7], Feng Shi[5,6,7], John H. Gilmore[8], Barbara L. Wolfe[3,4,9], Seth D. Pollak[1,2]

1 Department of Psychology, University of Wisconsin-Madison, Madison, Wisconsin, United States of America, **2** Waisman Center, University of Wisconsin-Madison, Madison, Wisconsin, United States of America, **3** Department of Population Health Sciences, University of Wisconsin-Madison, Madison, Wisconsin, United States of America, **4** Department of Economics, University of Wisconsin-Madison, Madison, Wisconsin, United States of America, **5** Image Display, Enhancement, and Analysis (IDEA) Lab, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States of America, **6** Department of Radiology, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States of America, **7** Biomedical Research Imaging Center (BRIC), University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States of America, **8** Department of Psychiatry, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina, United States of America, **9** La Follette School of Public Affairs, University of Wisconsin-Madison, Madison, Wisconsin, United States of America

Abstract

Living in poverty places children at very high risk for problems across a variety of domains, including schooling, behavioral regulation, and health. Aspects of cognitive functioning, such as information processing, may underlie these kinds of problems. How might poverty affect the brain functions underlying these cognitive processes? Here, we address this question by observing and analyzing repeated measures of brain development of young children between five months and four years of age from economically diverse backgrounds (n = 77). In doing so, we have the opportunity to observe changes in brain growth as children begin to experience the effects of poverty. These children underwent MRI scanning, with subjects completing between 1 and 7 scans longitudinally. Two hundred and three MRI scans were divided into different tissue types using a novel image processing algorithm specifically designed to analyze brain data from young infants. Total gray, white, and cerebral (summation of total gray and white matter) volumes were examined along with volumes of the frontal, parietal, temporal, and occipital lobes. Infants from low-income families had lower volumes of gray matter, tissue critical for processing of information and execution of actions. These differences were found for both the frontal and parietal lobes. No differences were detected in white matter, temporal lobe volumes, or occipital lobe volumes. In addition, differences in brain growth were found to vary with socioeconomic status (SES), with children from lower-income households having slower trajectories of growth during infancy and early childhood. Volumetric differences were associated with the emergence of disruptive behavioral problems.

Citation: Hanson JL, Hair N, Shen DG, Shi F, Gilmore JH, et al. (2013) Family Poverty Affects the Rate of Human Infant Brain Growth. PLoS ONE 8(12): e80954. doi:10.1371/journal.pone.0080954

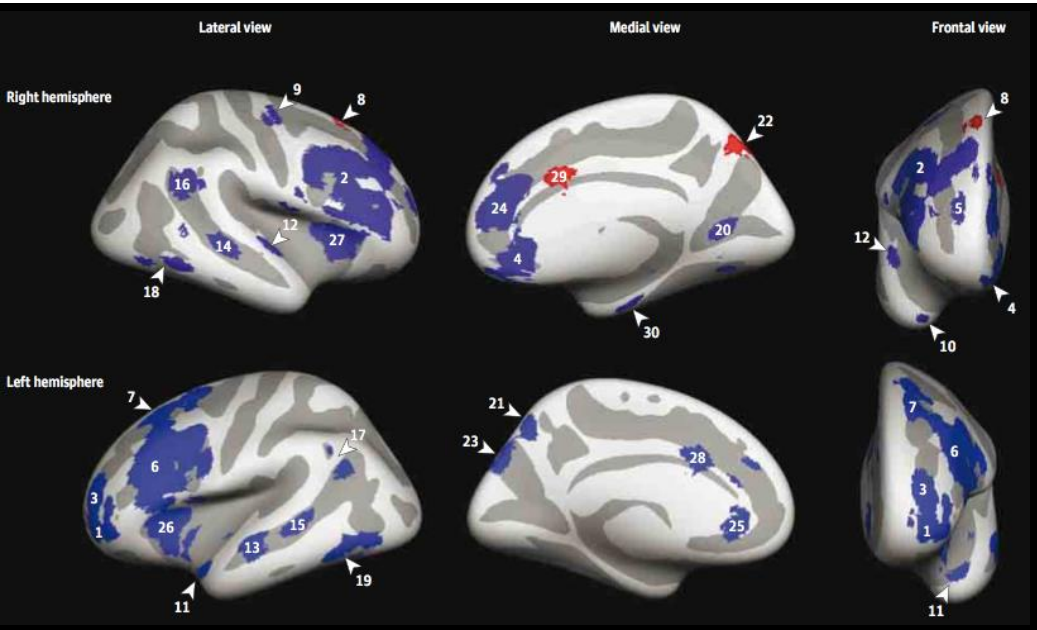


Original Investigation

Effect of Early Adversity and Childhood Internalizing Symptoms on Brain Structure in Young Men

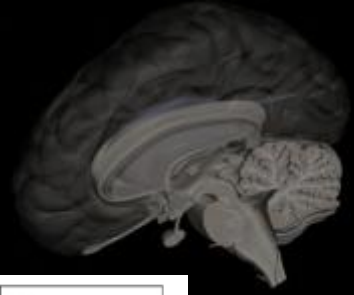
Sarah K. G. Jensen, MSc; Erin W. Dickie, PhD; Deborah H. Schwartz, MA; C. John Evans, PhD; Iroise Dumontheil, PhD; Tomáš Paus, MD, PhD; Edward D. Barker, PhD

JAMA Pediatr. doi:10.1001/jamapediatrics.2015.1486
Published online August 17, 2015.



At a Glance

- The extent to which brain structure variation typically associated with depression may also relate to early experiences of stress was examined within a large (n = 494) longitudinal birth cohort.
- The study found that early adverse experiences predicted lower gray matter volume in the anterior cingulate cortex and greater gray matter volume in the precuneus in adolescence.
- Early adversity was indirectly associated with lower gray matter volume in the superior frontal gyrus via higher levels of internalizing symptoms.
- These results indicate that early childhood adversity is associated with altered brain structure, and the effects of depression on the brain may partly relate to early adversity.



Contents lists available at ScienceDirect

Sleep Medicine Reviews

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

CLINICAL REVIEW

Normal sleep patterns in infants and children: A systematic review of observational studies

Barbara C. Galland [a,*], Barry J. Taylor [a,d], Dawn E. Elder [b,e], Peter Herbison [c,f]

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Sleep diaries
Sleep questionnaires

SUMMARY

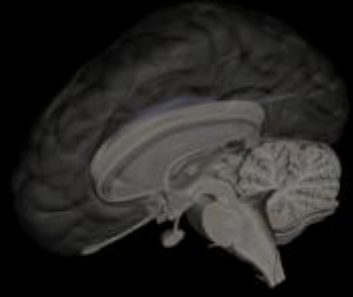
This is a systematic review of the scientific literature with regard to normal sleep patterns in infants and children (0–12 years). The review was conducted according to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Mean and variability data for sleep duration, number of night wakings, sleep latency, longest sleep period overnight, and number of daytime naps were extracted from questionnaire or diary data from 34 eligible studies. Meta-analysis was conducted within age-bands and categories. In addition, fractional polynomial regression models were used to estimate best-fit equations for the sleep variables in relation to age. Reference values (means) and ranges (±1.96 SD) for sleep duration (hours) were: infant, 12.8 (9.7–15.9); toddler/preschool, 11.9 (9.9–13.8); and child, 9.2 (7.6–10.8). The best-fit ($R^2 = 0.89$) equation for hours over the 0–12 year age range was $10.49 - 5.56 \times [(age/10)^{0.5} - 0.71]$. Meta-regression showed predominantly Asian countries had significantly shorter sleep (1 h less over the 0–12 year range) compared to studies from Caucasian/non-Asian countries. Night waking data provided 4 age-bands up to 2 years ranging from 0 to 3.4 wakes per night for infants (0–2 months), to 0–2.5 per night (1–2 year-olds). Sleep latency data were sparse but estimated to be stable across 0–6 years. Because the main data analysis combined data from different countries and cultures, the reference values should be considered as global norms.

Sleep Drives Metabolite Clearance from the Adult Brain

SCIENCE VOL 342 18 OCTOBER 2013

Lulu Xie,[1]* Hongyi Kang,[1]* Qiwu Xu,[1] Michael J. Chen,[1] Yonghong Liao,[1] Meenakshisundaram Thiyagarajan,[1] John O'Donnell,[1] Daniel J. Christensen,[1] Charles Nicholson,[2] Jeffrey J. Iliff,[1] Takahiro Takano,[1] Rashid Deane,[1] Maiken Nedergaard[1]†

The conservation of sleep across all animal species suggests that sleep serves a vital function. We here report that sleep has a critical function in ensuring metabolic homeostasis. Using real-time assessments of tetramethylammonium diffusion and two-photon imaging in live mice, we show that natural sleep or anesthesia are associated with a 60% increase in the interstitial space, resulting in a striking increase in convective exchange of cerebrospinal fluid with interstitial fluid. In turn, convective fluxes of interstitial fluid increased the rate of β-amyloid clearance during sleep. Thus, the restorative function of sleep may be a consequence of the enhanced removal of potentially neurotoxic waste products that accumulate in the awake central nervous



Sleep, clocks, and synaptic plasticity

Marcos G. Frank[1*] and Rafael Cantera[2,3*]

[1] Department of Neuroscience, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104, USA
[2] Zoology Department, Stockholm University, Stockholm, Sweden
[3] Instituto de Investigaciones Biológicas Clemente Estable, Montevideo, Uruguay

ELSEVIER

Sleep Medicine

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

Original Article

The history of sleep apnea is associated with shorter leukocyte telomere length: the Helsinki Birth Cohort Study

Katri Savolainen[a,*], Johan G. Eriksson[b,c,d,e,f], Eero Kajantie[b,g], Marius Lahti[a], Katri Räikkönen[a]

Table 3
Summary data for four sleep variables across age-bands and by age category in infants.

Variable	Age-band or category	Reference number	Mean	Lower limit	Upper limit
Night wakings (#)	0–2 months	56, 62, 68, 49, 76, 18	1.7	0	3.4
	3–6 months	56*,62, 69, 49, 76, 19	0.8	0	3.0
	7–11 months	25, 62, 66, 49, 76	1.1	0	3.1
	1–2 years	61, 62, 69*, 74, 49, 76	0.7	0	2.5
	All infants	All above excluding *	0.8	0	2.9
Sleep latency (min)	All infants (0–2 years)	19, 55, 19, 38, 55, 19, 74, 55, 61	19	0	43
Longest sleep period (h)	0–5 months	49, 75, 49, 8	5.7	1.8	9.6
	6–24 months	49, 49, 74, 49, 49, 8*	8.3	3.0	13.7
	All infants	All above	7.1	2.3	11.8
Daytime naps (#)	0–5 months	56, 49, 62, 62, 49	3.1	1.2	5.0
	6–11 months	56*, 62, 49, 62, 49	2.2	0.9	3.5
	1–2 years	62, 62, 49, 62, 49, 63	1.2	0.4	2.1
	All infants	All above excluding *	1.7	0.6	2.8

*Datasets not included in the "All" age category meta-analysis because the data came from longitudinal studies. See text for explanation.

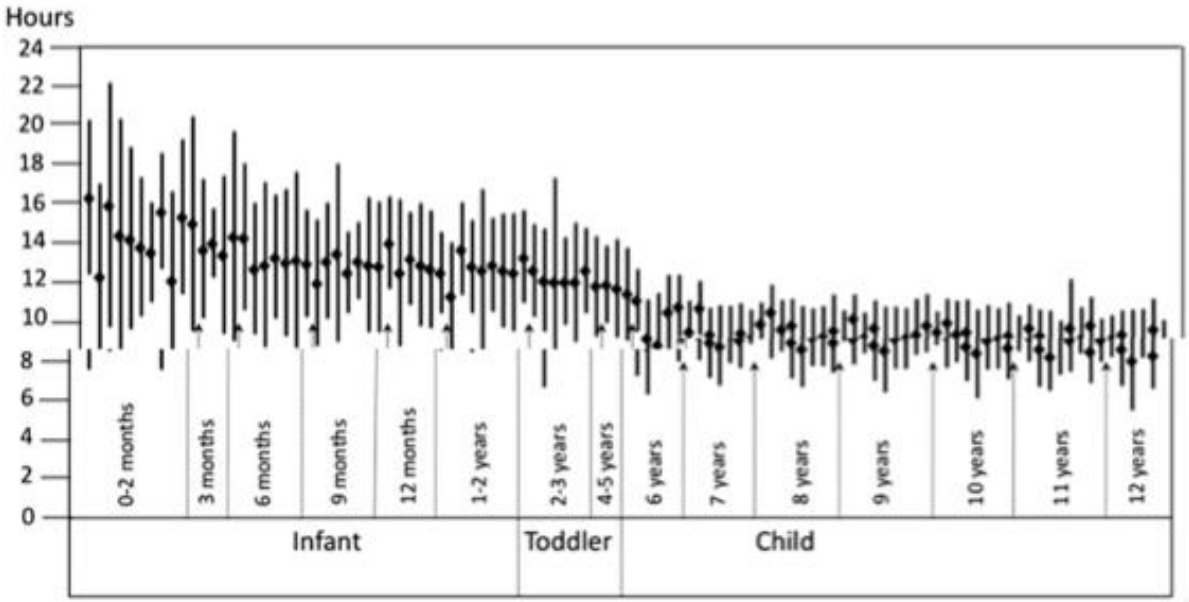


Fig. 3. Plot of the sleep duration data across age categories from all the studies reviewed for this variable. Data are presented as the mean ± 1.96 SD.

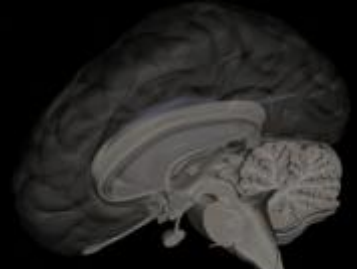
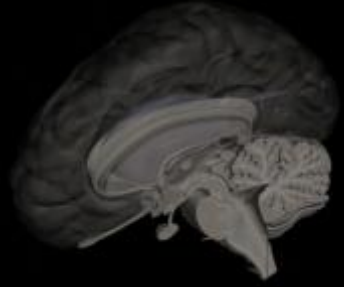


Table 2
Expert panel recommended sleep durations.

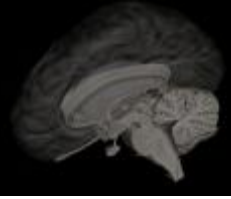
Age	Recommended, h	May be appropriate, h	Not recommended, h
Newborns 0-3 mo	14 to 17	11 to 13 18 to 19	Less than 11 More than 19
Infants 4-11 mo	12 to 15	10 to 11 16 to 18	Less than 10 More than 18
Toddlers 1-2 y	11 to 14	9 to 10 15 to 16	Less than 9 More than 16
Preschoolers 3-5 y	10 to 13	8 to 9 14	Less than 8 More than 14
School-aged children 6-13 y	9 to 11	7 to 8 12	Less than 7 More than 12
Teenagers 14-17 y	8 to 10	7 11	Less than 7 More than 11
Young adults 18-25 y	7 to 9	6 10 to 11	Less than 6 More than 11
Adults 26-64 y	7 to 9	6 10	Less than 6 More than 10
Older adults ≥65 y	7 to 8	5 to 6 9	Less than 5 More than 9

Please cite this article as: Hirshkowitz M, et al, National Sleep Foundation's sleep time duration recommendations: methodology and results summary, Sleep Health (2015), http://dx.doi.org/10.1016/j.sleh.2014.12.010



FALTA DE SUEÑO ASOCIADA A:

-MENOR RENDIMIENTO ESCOLAR
-MAYOR IRRITABILIDAD DIURNA
-MENOR SECRECIÓN HcG
-OBESIDAD
-CEFALEA
-SONAMBULISMO Y PESADILLAS
-TRASTORNOS EMOCIONALES Y CONDUCTUALES TARDÍOS
-IDEACIÓN SUICIDA
-ACCIDENTE CEREBROVASCULAR
-ALZHEIMER
-PARKINSON
-EPILEPSIA
-ESCLEROSIS MÚLTIPLE
-JAQUECAS
-DOLOR CRÓNICO
-TRASTORNOS DEL ÁNIMO



Behaviorally Assessed Sleep and Susceptibility to the Common Cold

Aric A. Prather, PhD[1]; Denise Janicki-Deverts, PhD[2]; Martica H. Hall, PhD[3]; Sheldon Cohen, PhD[2]

[1]Department of Psychiatry, University of California, San Francisco, CA; [2]Department of Psychology, Carnegie Mellon University, Pittsburgh, PA; [3]Department of Psychiatry, University of Pittsburgh Medical Center, Pittsburgh, PA

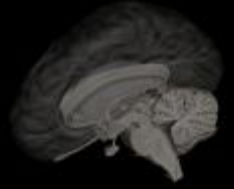
Study Objectives: Short sleep duration and poor sleep continuity have been implicated in the susceptibility to infectious illness. However, prior research has relied on subjective measures of sleep, which are subject to recall bias. The aim of this study was to determine whether sleep, measured behaviorally using wrist actigraphy, predicted cold incidence following experimental viral exposure.

Design, Measurements, and Results: A total of 164 healthy men and women (age range, 18 to 55 y) volunteered for this study. Wrist actigraphy and sleep diaries assessed sleep duration and sleep continuity over 7 consecutive days. Participants were then quarantined and administered nasal drops containing the rhinovirus, and monitored over 5 days for the development of a clinical cold (defined by infection in the presence of objective signs of illness). Logistic regression analysis revealed that actigraphy- assessed shorter sleep duration was associated with an increased likelihood of development of a clinical cold. Specifically, those sleeping < 5 h (odds ratio [OR] = 4.50, 95% confidence interval [CI], 1.08–18.69) or sleeping between 5 to 6 h (OR = 4.24, 95% CI, 1.08–16.71) were at greater risk of developing the cold compared to those sleeping > 7 h per night; those sleeping 6.01 to 7 h were at no greater risk (OR = 1.66; 95% CI 0.40–6.95). This association was independent of prechallenge antibody levels, demographics, season of the year, body mass index, psychological variables, and health practices. Sleep fragmentation was unrelated to cold susceptibility. Other sleep variables obtained using diary and actigraphy were not strong predictors of cold susceptibility.

Conclusions: Shorter sleep duration, measured behaviorally using actigraphy prior to viral exposure, was associated with increased susceptibility to the common cold.

Keywords: common cold, immunity, rhinovirus, sleep continuity, sleep duration

Citation: Prather AA, Janicki-Deverts D, Hall MH, Cohen S. Behaviorally assessed sleep and susceptibility to the common cold. *SLEEP* 2015;38(9):1353–1359.



CURRENT OPINION

The impact of sleep and hypoxia on the brain: potential mechanisms for the effects of obstructive sleep apnea

Ivana Rosenzweig[a,b], *Steve C.R. Williams*[a], *and Mary J. Morrell*[a,c,d]

Purpose of review
Obstructive sleep apnea (OSA) is a chronic, highly prevalent, multisystem disease, which is still largely underdiagnosed. Its most prominent risk factors, obesity and older age, are on the rise, and its prevalence is expected to grow further. The last few years have seen an exponential increase in studies to determine the impact of OSA on the central nervous system. OSA-induced brain injury is now a recognized clinical entity, although its possible dual relationship with several other neuropsychiatric and neurodegenerative disorders is debated. The putative neuromechanisms behind some of the effects of OSA on the central nervous system are discussed in this review, focusing on the nocturnal intermittent hypoxia and sleep fragmentation.

Recent findings
Recent preclinical and clinical findings suggest that neurogenic ischemic preconditioning occurs in some OSA patients, and that it may partly explain variability in clinical findings to date. However, the distinct parameters of the interplay between ischemic preconditioning, neuroinflammation, sleep fragmentation and cerebrovascular changes in OSA-induced brain injury are still largely unclear, and more research is required.

Summary
Early diagnosis and intervention in patients with OSA is of paramount importance. Future clinical studies should utilize multimodal investigative approaches to enable more reliable referencing for the acuity of the pathological process, as well as its reversibility following the treatment.

Keywords
central nervous system, intermittent hypoxia, ischaemic preconditioning, obstructive sleep apnea, sleep fragmentation

Sleep Duration, Restfulness, and Screens in the Sleep Environment

Jennifer Felde, ScD, MPH[a], Kirsten K. Davison, PhD[b,c], Rebecca L. Franckle, MPH[b,c], Claudia Ganter, MPH[b,c], Steven L. Gortmaker, PhD[b,c], Lauren Smith, MD, MPH[d], Thomas Land, PhD[e], Elsie M. Taveras, MD, MPH[b,f]

abstract

BACKGROUND AND OBJECTIVE: Associations of inadequate sleep with numerous health outcomes among youth necessitate identifying its modifiable determinants. Television (TV) has been associated with sleep curtailment, but little is known about small screens (eg, smartphones), which can be used in bed and emit notifications. Therefore, we examined associations of different screens in sleep environments with sleep duration and perceived insufficient rest or sleep.

METHODS: Participants included 2048 fourth- and seventh-graders participating in the Massachusetts Childhood Obesity Research Demonstration Study in 2012 to 2013. Using linear and log binomial regression, we examined cross-sectional associations of small screens and TVs in sleep environments and screen time with weekday sleep duration and perceived insufficient rest or sleep in the past week.

RESULTS: Children who slept near a small screen (compared with never) reported 20.6 fewer minutes of sleep (95% confidence interval [CI], −29.7 to −11.4) and had a higher prevalence of perceived insufficient rest or sleep (prevalence ratio, 1.39; 95% CI, 1.21 to 1.60). Children who slept in a room with a TV (compared with no TV) reported 18.0 fewer minutes of sleep (95% CI, −27.9 to −8.1). TV or DVD viewing and video or computer game playing were associated with both sleep outcomes ($P < .01$). Some associations were stronger among Hispanic, non-Hispanic black, and older children ($P < .05$ for heterogeneity).

CONCLUSIONS: Sleeping near a small screen, sleeping with a TV in the room, and more screen time were associated with shorter sleep durations. Presence of a small screen, but not a TV, in the sleep environment and screen time were associated with perceived insufficient rest or sleep. These findings caution against unrestricted screen access in children's bedrooms.

[a]Division of Community Health and Human Development, School of Public Health, University of California Berkeley, Berkeley, California; Departments of [b]Nutrition and [c]Social and Behavioral Sciences, and [d]Prevention Research Center, Harvard School of Public Health, Boston, Massachusetts; [e]Technische Universität Berlin, Berlin, Germany; [f]National Institute for Children's Health Quality, Boston, Massachusetts; [g]Bureau of Community Health and Prevention, Massachusetts Department of Public Health, Boston, Massachusetts; and [h]Division of General Academic Pediatrics, Department of Pediatrics, Massachusetts General Hospital for Children, Boston, Massachusetts

Dr Felde designed, conceptualized, and carried out the analysis, interpreted the data, and drafted and revised the manuscript; Dr Davison, Ms Franckle, and Drs Gortmaker, Smith, and Land contributed to the analysis and interpretation and reviewed and revised the manuscript; Ms Gahre contributed to acquisition of data and reviewed and revised the manuscript; Dr Taveras contributed to the design, concept, analysis, and interpretation and reviewed and revised the manuscript; and all authors approved the final manuscript as submitted.

www.pediatrics.org/cgi/doi/10.1542/peds.2014-2306

DOI: 10.1542/peds.2014-2306

Accepted for publication Nov 10, 2014

WHAT'S KNOWN ON THIS SUBJECT: Inadequate sleep has been identified as a risk factor for obesity and other outcomes. Screen time and the presence of a television in the bedroom have been associated with inadequate sleep, but little is known about small screens (eg, smartphones).

WHAT THIS STUDY ADDS: Among 2048 fourth- and seventh-graders, children who slept near a small screen reported shorter sleep durations and perceived insufficient rest or sleep. Presence of a television in the bedroom and more screen time were also associated with poorer sleep.

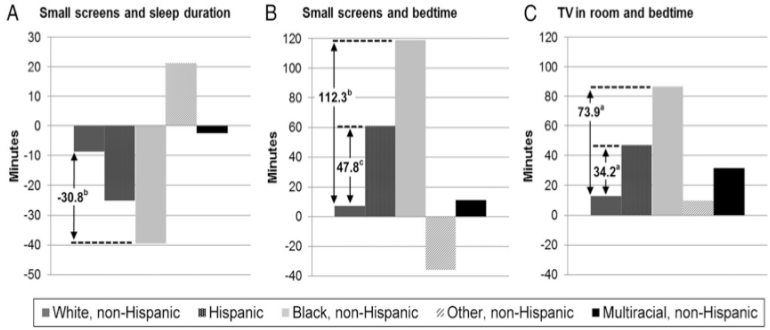


FIGURE 1

Differences by race or ethnicity in the associations between screens in the sleep environment and weekday sleep duration and bedtime estimated from fully adjusted models (model 2). A, Minutes of sleep duration associated with sleeping near a small screen. B, Bedtime (minutes) associated with sleeping near a small screen. C, Bedtime (minutes) associated with sleeping in a room with a TV. P values for differences in associations compared with non-Hispanic white youth: [a]$P < .05$, [b]$P < .01$, [c]$P < .001$.

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(/) > Early Edition (/content/early/recent)

> Anne-Marie Chang, doi: 10.1073/pnas.1418490112, doi: 10.1073/pnas.1418490112

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Evening use of light-emitting eReaders negatively affects sleep, circadian timing, and next-morning alertness

Anne-Marie Chang (/search?author1=Anne-Marie+Chang&sortspec=date&submit=Submit)[a,b,1,2],

Daniel Aeschbach (/search?author1=Daniel+Aeschbach&sortspec=date&submit=Submit)[a,b,c],

Jeanne F. Duffy (/search?author1=Jeanne+F.+Duffy&sortspec=date&submit=Submit)[a,b], and

Charles A. Czeisler (/search?author1=Charles+A.+Czeisler&sortspec=date&submit=Submit)[a,b]

Sleep Medicine 11 (2010) 735–742

Contents lists available at ScienceDirect

Sleep Medicine

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

Review Article

Electronic media use and sleep in school-aged children and adolescents: A review

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School of Psychology, Flinders University, Adelaide, SA, Australia

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Sleep
Media
Technology
Television
Computer

ABSTRACT

Electronic media have often been considered to have a negative impact on the sleep of children and adolescents, but there are no comprehensive reviews of research in this area. The present study identified 36 papers that have investigated the relationship between sleep and electronic media in school-aged children and adolescents, including television viewing, use of computers, electronic gaming, and/or the internet, mobile telephones, and music. Many variables have been investigated across these studies, although delayed bedtime and shorter total sleep time have been found to be most consistently related to media use. A model of the mechanisms by which media use may affect sleep is presented and discussed as a vehicle for future research.

SUEÑO EN LA INFANCIA

RECOMENDACIONES

* ESCOLARES PEQUEÑOS: 11 HORAS

* ESCOLARES GRANDES: 10 HORAS

* ADOLESCENTES: 9 HORAS

IMPORTANCIA DE DORMIR TEMPRANO AUNQUE SEA LA MISMA CANTIDAD DE HORAS

"HIGIENE DEL SUEÑO": EVITAR TV-PC-PANTALLAS 2 HRS ANTES DE DORMIR
EVITAR COMER MUY TARDE
FAVORECER LUCES BAJAS Y SILENCIO AMBIENTAL
BAJA TEMPERATURA
EVITAR LEDS-CELULARES EN HABITACIÓN
NIÑOS NO DEBEN TENER TV EN EL DORMITORIO
NO DORMIR CON AUDÍFONOS O MÚSICA

EL SUEÑO ES UN HÁBITO

REPERCUSIÓN A LARGO PLAZO

Impact of Delaying School Start Time on Adolescent Sleep, Mood, and Behavior

Judith A. Owens, MD, MPH; Katherine Belon, BA; Patricia Moss, PhD

Objective: To examine the impact of a 30-minute delay in school start time on adolescents' sleep, mood, and behavior.

Design: Participants completed the online retrospective Sleep Habits Survey before and after a change in school start time.

Setting: An independent high school in Rhode Island.

Participants: Students (n=201) in grades 9 through 12.

Intervention: Institution of a delay in school start time from 8 to 8:30 AM.

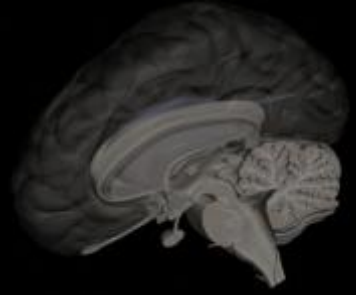
Main Outcome Measures: Sleep patterns and behavior, daytime sleepiness, mood, data from the Health Center, and absences/tardies.

Results: After the start time delay, mean school night sleep duration increased by 45 minutes, and average bedtime advanced by 18 minutes (95% confidence interval, 7-29 minutes [t_{423}=3.36; $P<.001$]); the percentage of students getting less than 7 hours of sleep decreased by 79.4%, and those reporting at least 8 hours of sleep increased from 16.4% to 54.7%. Students reported significantly more satisfaction with sleep and experienced improved motivation. Daytime sleepiness, fatigue, and depressed mood were all reduced. Most health-related variables, including Health Center visits for fatigue-related complaints, and class attendance also improved.

Conclusions: A modest delay in school start time was associated with significant improvements in measures of adolescent alertness, mood, and health. The results of this study support the potential benefits of adjusting school schedules to adolescents' sleep needs, circadian rhythm, and developmental stage.

Arch Pediatr Adolesc Med. 2010;164(7):608-614

COMER BIEN



- **OMEGA 3**
- **PROBIÓTICOS**
- **DESAYUNAR ABUNDANTEMENTE**
- **EVITAR AYUNO PROLONGADO**
- **ESTUDIAR OLIGOELEMENTOS EN DIETAS RESTRICTIVAS**
- **EVITAR COMIDA CHATARRA**

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PLOS ONE

Low Blood Long Chain Omega-3 Fatty Acids in UK Children Are Associated with Poor Cognitive Performance and Behavior: A Cross-Sectional Analysis from the DOLAB Study

Paul Montgomery*, Jennifer R. Burton, Richard P. Sewell, Thees F. Spreckelsen, Alexandra J. Richardson

Centre for Evidence-Based Intervention, University of Oxford, Oxford, United Kingdom

Consumption of Fermented Milk Product With Probiotic Modulates Brain Activity

KIRSTEN TILLISCH,[1] JENNIFER LABUS,[1] LISA KILPATRICK,[1] ZHIGUO JIANG,[1] JEAN STAINS,[1] BAHAR EBRAT,[1] DENIS GUYONNET,[2] SOPHIE LEGRAIN-RASPAUD,[2] BEATRICE TROTIN,[2] BRUCE NALIBOFF,[1] and EMERAN A. MAYER[1]

[1]Oppenheimer Family Center for Neurobiology of Stress, Division of Digestive Diseases, Department of Medicine, David Geffen School of Medicine at UCLA, Los Angeles, California; and [2]Danone Research, Palaiseau, France

BACKGROUND & AIMS: Changes in gut microbiota have been reported to alter signaling mechanisms, emotional behavior, and visceral nociceptive reflexes in rodents. However, alteration of the intestinal microbiota with antibiotics or probiotics has not been shown to produce these changes in humans. We investigated whether consumption of a fermented milk product with probiotic (FMPP) for 4 weeks by healthy women altered brain intrinsic connectivity or responses to emotional attention tasks. **METHODS:** Healthy women with no gastrointestinal or psychiatric symptoms were randomly assigned to groups given FMPP (n = 12), a nonfermented milk product (n = 11, controls), or no intervention (n = 13) twice daily for 4 weeks. The FMPP contained *Bifidobacterium animalis* subsp *Lactis*, *Streptococcus thermophiles*, *Lactobacillus bulgaricus, and Lactococcus lactis* subsp *Lactis*. Participants underwent functional magnetic resonance imaging before and after the intervention to measure brain response to an emotional faces attention task and resting brain activity. Multivariate and region of interest analyses were performed. **RESULTS:** FMPP intake was associated with reduced task-related response of a distributed functional network (49% cross-block covariance; P = .004) containing affective, viscerosensory, and somatosensory cortices. Alterations in intrinsic activity of resting brain indicated that ingestion of FMPP was associated with changes in midbrain connectivity, which could explain the observed differences in activity during the task. **CONCLUSIONS: Four-week intake of an FMPP by healthy women affected activity of brain regions that control central processing of emotion and sensation.**

might have a homologous effect on normal human behavior and that alterations in their composition, or in their metabolic products can play a role in the pathophysiology of psychiatric disease or in chronic abdominal pain syndromes, such as irritable bowel syndrome (IBS).[11–14] However, in contrast to the strong preclinical evidence linking alterations in gut microbiota to emotional behavior, there is only suggestive evidence that a similar relationship might exist in humans.[3,15–17]

Many reports have provided evidence for effects of probiotics on gut function and visceral sensitivity.[18,19] For example, various strains of probiotics have been demonstrated to reduce visceral nociceptive reflex responses in rodents and human symptoms of abdominal discomfort; however, the mechanism(s) underlying these effects remain poorly understood.[8,20–27] In addition to various suggested peripheral mechanisms, alteration in central modulation of interoceptive signals, including the engagement of descending bulbospinal pain modulation systems, or ascending monoaminergic modulation of sensory brain regions, can also play a role.[28,29] Alterations in such endogenous pain-modulation systems have been implicated in the pathophysiology of persistent pain syndromes, such as IBS and fibromyalgia.[30–32]

There are many potential signaling mechanisms by which gut microbiota and probiotics could influence brain activity, including changes in microbiota-produced signaling molecules (including amino acid metabolites, short chain fatty acids, and neuroactive substances), mucosal immune mechanisms, and enterochromaffin cell–mediated vagal activation.[12,33–37] In rodent studies, altered

Fish consumption and risk of depression: a meta-analysis

Fang Li, Xiaoqin Liu, Dongfeng Zhang

Li F, *et al*. *J Epidemiol Community Health* 2015;**0**:1–6. doi:10.1136/jech-2015-206278

ABSTRACT

Background The association between fish consumption and risk of depression is controversial. We performed a meta-analysis to evaluate the association.

Methods A literature search was performed in PubMed, EMBASE and Web of Science database for all relevant studies up to March 2015. We pooled the relative risks (RRs) with 95% CIs from individual studies with random effects model, and conducted meta-regression to explore potential sources of heterogeneity. Publication bias was estimated by Egger's test and the funnel plot.

Results A total of 26 studies involving 150 278 participants were included in the present meta-analysis. The pooled RR of depression for the highest versus lowest consumption of fish was 0.83 (95% CI 0.74 to 0.93). The findings remained significant in the cohort studies (RR=0.84, 95% CI 0.75 to 0.94, n=10) as well as in the cross-sectional studies (RR=0.82, 95% CI 0.68 to 1.00, n=16). When men and women were analysed separately, a significant inverse association was also observed. There was no evidence of publication bias.

Conclusions This meta-analysis indicates that high-fish consumption can reduce the risk of depression.

structure and function,[9 10] has been reported to be associated with depression in several studies.[11–14] However, others did not find an association between fish consumption and depression risk.[15–19]

Considering the inconsistent and inconclusive findings of the epidemiology studies, we conducted a meta-analysis to summarise the results of observational studies on the association between fish consumption and depression risk.

MATERIALS AND METHODS

We consulted Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines for reporting of meta-analyses in this analysis.[20]

Search strategy

We performed a literature search up to March 2015 in the databases of PubMed, EMBASE and Web of Science, with the following search terms, 'depression' or 'depressive disorder' or 'depressive symptoms' and 'fish'. All searches were limited to studies conducted in humans and published in English. Furthermore, the reference lists of

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ORIGINAL ARTICLES

Soft Drinks Consumption Is Associated with Behavior Problems in 5-Year-Olds

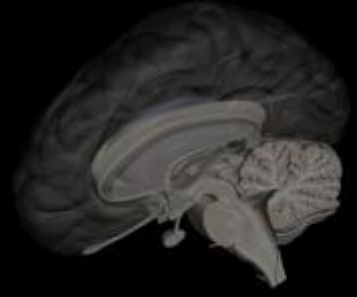
Shakira F. Suglia, ScD[1], Sara Solnick, PhD[2], and David Hemenway, PhD[3]

Objective To examine soda consumption and aggressive behaviors, attention problems, and withdrawal behavior among 5-year-old children.

Study design The Fragile Families and Child Wellbeing Study is a prospective birth cohort study that follows a sample of mother-child pairs from 20 large US cities. Mothers reported children's behaviors using the Child Behavior Checklist at age 5 years and were asked to report how many servings of soda the child drinks on a typical day.

Results In the sample of 2929 children, 52% were boys, 51% were African-American, 43% consumed at least one serving of soda per day, and 4% consumed 4 or more servings per day. In analyses adjusted for sociodemographic factors, consuming one (beta, 0.7; 95% CI, 0.1-1.4), 2 (beta, 1.8; 95% CI, 0.8-2.7), 3 (beta, 2.0; 95% CI, 0.6-3.4), or 4 or more (beta, 4.7; 95% CI, 3.2-6.2) servings was associated with a higher aggressive behavior score compared with consuming no soda. Furthermore, those who consumed 4 or more (beta, 1.7; 95% CI, 1.0-2.4) soda servings had higher scores on the attention problems subscale. Higher withdrawn behavior scores were noted among those consuming 2 (beta, 1.0; 95% CI, 0.3-1.8) or 4 or more (beta, 2.0; 95% CI, 0.8-3.1) soda servings compared with those who consumed no soda.

Conclusion We note an association between soda consumption and negative behavior among very young children; future studies should explore potential mechanisms that could explain this association. *(J Pediatr 2013;■:■-■).*



Effects of the FITKids Randomized Controlled Trial on Executive Control and Brain Function

AUTHORS: Charles H. Hillman, PhD,[a] Matthew B. Pontifex, PhD,[b] Darla M. Castelli, PhD,[c] Naiman A. Khan, PhD, RD,[a] Lauren B. Raine, BS,[a] Mark R. Scudder, BS,[a] Eric S. Drollette, BS,[a] Robert D. Moore, MS,[a] Chien-Ting Wu, PhD,[d] and Keita Kamijo, PhD[e]

[a]Department of Kinesiology and Community Health, University of Illinois at Urbana-Champaign, Urbana-Champaign, Illinois; [b]Department of Kinesiology, Michigan State University, East Lansing, Michigan; [c]Department of Kinesiology and Health Education, University of Texas at Austin, Austin, Texas; [d]Department of Exercise Science, Schreiner College, Kerrville, Texas; and [e]School of Sport Sciences, Waseda University, Tokorozawa, Saitama, Japan

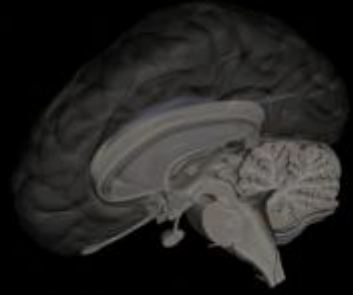
KEY WORDS
cognition, physical activity, aerobic fitness, randomized controlled trial

WHAT'S KNOWN ON THIS SUBJECT: Physical activity programs have been shown to have positive implications for children's cognitive performance and brain structure and function. However, additional randomized controlled trials are needed to determine whether daily physical activity influences executive control and its neural underpinnings.

WHAT THIS STUDY ADDS: The randomized controlled trial, designed to meet daily physical activity recommendations, used behavioral and electrophysiological measures of brain function to demonstrate enhanced attentional inhibition and cognitive flexibility among prepubertal children.

Pediatrics 2014;134:e1063–e1071

NIÑOS MÁS SANOS, INTELIGENTES Y FELICES:



DEPORTES

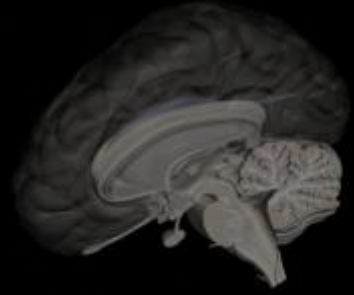
- ✓ **RECOMENDACIONES:** 5 HORAS DE PRÁCTICA DEPORTIVA INTENSA

FAVORECER DEPORTES QUE FORMEN DISCIPLINA

ARTES MARCIALES: AUTOCONTROL, NO LUCHA

NATACIÓN, YOGA: EFECTOS PROBADOS

MEJORÍA SUEÑO, CONDUCTA, APRENDIZAJE



The Journal of Neuroscience, November 6, 2013 • 33(45):17667–17674 • 17667

Systems/Circuits

Older Adults Benefit from Music Training Early in Life: Biological Evidence for Long-Term Training-Driven Plasticity

Travis White-Schwoch,[1,2] Kali Woodruff Carr,[1,2] Samira Anderson,[1,2] Dana L. Strait,[1,3] and Nina Kraus[1,2,3,4,5]

[1]Auditory Neuroscience Laboratory, [2]Department of Communication Sciences, [3]Institute for Neuroscience, [4]Department of Neurobiology & Physiology, [5]Department of Otolaryngology, Northwestern University, Evanston, Illinois 60208

Aging results in pervasive declines in nervous system function. In the auditory system, these declines include neural timing delays in response to fast-changing speech elements; this causes older adults to experience difficulty understanding speech, especially in challenging listening environments. These age-related declines are not inevitable, however: older adults with a lifetime of music training do not exhibit neural timing delays. Yet many people play an instrument for a few years without making a lifelong commitment. Here, we examined neural timing in a group of human older adults who had nominal amounts of music training early in life, but who had not played an instrument for decades. We found that a moderate amount (4–14 years) of music training early in life is associated with faster neural timing in response to speech later in life, long after training stopped (>40 years). We suggest that early music training sets the stage for subsequent interactions with sound. These experiences may interact over time to sustain sharpened neural processing in central auditory nuclei well into older age.

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PLOS ONE

Behavioral and Neural Correlates of Executive Functioning in Musicians and Non-Musicians

Jennifer Zuk[1,2], Christopher Benjamin[1,2,3], Arnold Kenyon[1], Nadine Gaab[1,2,4]*

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Abstract

Executive functions (EF) are cognitive capacities that allow for planned, controlled behavior and strongly correlate with academic abilities. Several extracurricular activities have been shown to improve EF, however, the relationship between musical training and EF remains unclear due to methodological limitations in previous studies. To explore this further, two experiments were performed; one with 30 adults with and without musical training and one with 27 musically trained and untrained children (matched for general cognitive abilities and socioeconomic variables) with a standardized EF battery. Furthermore, the neural correlates of EF skills in musically trained and untrained children were investigated using fMRI. Adult musicians compared to non-musicians showed enhanced performance on measures of cognitive flexibility, working memory, and verbal fluency. Musically trained children showed enhanced performance on measures of verbal fluency and processing speed, and significantly greater activation in pre-SMA/SMA and right VLPFC during rule representation and task-switching compared to musically untrained children. Overall, musicians show enhanced performance on several constructs of EF, and musically trained children further show heightened brain activation in traditional EF regions during task-switching. These results support the working hypothesis that musical training may promote the development and maintenance of certain EF skills, which could mediate the previously reported links between musical training and enhanced cognitive skills and academic achievement.

Citation: Zuk J, Benjamin C, Kenyon A, Gaab N (2014) Behavioral and Neural Correlates of Executive Functioning in Musicians and Non-Musicians. PLoS ONE 9(6): e99868. doi:10.1371/journal.pone.0099868

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Taming a wandering attention: Short-form mindfulness training in student cohorts

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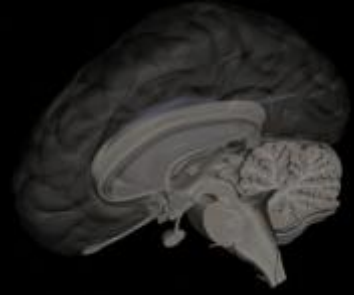
Mindfulness training (MT) is a form of mental training in which individuals engage in exercises to cultivate an attentive, present centered, and non-reactive mental mode. The present study examines the putative benefits of MT in University students for whom mind wandering can interfere with learning and academic success. We tested the hypothesis that short-form MT (7 h over 7 weeks) contextualized for the challenges and concerns of University students may reduce mind wandering and improve working memory. Performance on the sustained attention to response task (SART) and two working memory tasks (operation span, delayed-recognition with distracters) was indexed in participants assigned to a waitlist control group or the MT course. Results demonstrated MT-related benefits in SART performance. Relative to the control group, MT participants had higher task accuracy and self-reported being more "on-task" after the 7-week training period. MT did not significantly benefit the operation span task or accuracy on the delayed-recognition task. Together these results suggest that while short-form MT did not bolster working memory task performance, it may help curb mind wandering and should, therefore, be further investigated for its use in academic contexts.



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Organizational Principles to Guide and Define the Child Health Care System and/or Improve the Health of all Children

POLICY STATEMENT

Literacy Promotion: An Essential Component of Primary Care Pediatric Practice

COUNCIL ON EARLY CHILDHOOD

KEY WORDS
literacy promotion, reading aloud, early brain development, language development, child development, school readiness

ABBREVIATIONS
AAP—American Academy of Pediatrics
ROR—Reach Out and Read

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abstract

FREE

Reading regularly with young children stimulates optimal patterns of brain development and strengthens parent-child relationships at a critical time in child development, which, in turn, builds language, literacy, and social-emotional skills that last a lifetime. Pediatric providers have a unique opportunity to encourage parents to engage in this important and enjoyable activity with their children beginning in infancy. Research has revealed that parents listen and children learn as a result of literacy promotion by pediatricians, which provides a practical and evidence-based opportunity to support early brain development in primary care practice. The American Academy of Pediatrics (AAP) recommends that pediatric providers promote early literacy development for children beginning in infancy and continuing at least until the age of kindergarten entry by (1) advising all parents that reading aloud with young children can enhance parent-child relationships and prepare young minds to learn language and early literacy skills; (2) counseling all parents about developmentally appropriate shared-reading activities that are enjoyable for children and their parents and offer language-rich exposure to books, pictures, and the written word; (3) providing developmentally appropriate books given at health supervision visits for all high-risk, low-income young children; (4) using a robust spectrum of options to support and promote these efforts; and (5) partnering with other child advocates to influence national messaging and policies that support and promote these key early shared-reading experiences. The AAP supports federal and state funding for children's books to be provided at pediatric health supervision visits to children at high risk living at or near the poverty threshold and the integration of literacy promotion, an essential component of pediatric primary care, into pediatric resident education. This policy statement is supported by the AAP technical report "School Readiness" and supports the AAP policy statement "Early Childhood Adversity, Toxic Stress, and the Role of the Pediatrician: Translating Developmental Science Into Lifelong Health." *Pediatrics* 2014;134:1–6

Contents lists available at SciVerse ScienceDirect

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International Journal of Educational Research

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Reading linear texts on paper versus computer screen: Effects on reading comprehension

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Keywords:
Reading comprehension
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ABSTRACT

Objective: To explore effects of the technological interface on reading comprehension in a Norwegian school context.
Participants: 72 tenth graders from two different primary schools in Norway.
Method: The students were randomized into two groups, where the first group read two texts (1400–2000 words) in print, and the other group read the same texts as PDF on a computer screen. In addition pretests in reading comprehension, word reading and vocabulary were administered. A multiple regression analysis was carried out to investigate to what extent reading modality would influence the students' scores on the reading comprehension measure.
Conclusion: Main findings show that students who read texts in print scored significantly better on the reading comprehension test than students who read the texts digitally. Implications of these findings for policymaking and test development are discussed.

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Gray matter and white matter abnormalities in online game addiction

Chuan-Bo Weng[a,b], Ruo-Bing Qian[a,c,*], Xian-Ming Fu[a,c], Bin Lin[b], Xiao-Peng Han[d], Chao-Shi Niu[a,c], Ye-Han Wang[a,c]

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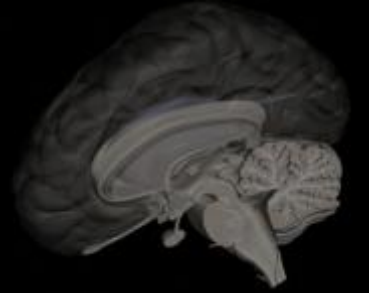
ABSTRACT

Online game addiction (OGA) has attracted greater attention as a serious public mental health issue. However, there are only a few brain magnetic resonance imaging studies on brain structure about OGA. In the current study, we used voxel-based morphometry (VBM) analysis and tract-based spatial statistics (TBSS) to investigate the microstructural changes in OGA and assessed the relationship between these morphology changes and the Young's Internet Addiction Scale (YIAS) scores within the OGA group. Compared with healthy subjects, OGA individuals showed significant gray matter atrophy in the right orbitofrontal cortex, bilateral insula, and right supplementary motor area. According to TBSS analysis, OGA subjects had significantly reduced FA in the right genu of corpus callosum, bilateral frontal lobe white matter, and right external capsule. Gray matter volumes (GMV) of the right orbitofrontal cortex, bilateral insula and FA values of the right external capsule were significantly positively correlated with the YIAS scores in the OGA subjects. Our findings suggested that microstructure abnormalities of gray and white matter were present in OGA subjects. This finding may provide more insights into the understanding of the underlying neural mechanisms of OGA.



Contents lists available at SciVerse ScienceDirect

Journal of Experimental Social Psychology

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

FlashReport

The more you play, the more aggressive you become: A long-term experimental study of cumulative violent video game effects on hostile expectations and aggressive behavior

Youssef Hasan [a,*], Laurent Bègue [a], Michael Scharkow [b], Brad J. Bushman [c,d]

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[b] University of Hohenheim, Germany
[c] The Ohio State University, USA
[d] VU University, Amsterdam, the Netherlands

HIGHLIGHTS

- A 3-day experiment tested the cumulative effects of violent video games.
- Hostile expectations increased over 3 days for violent video game players.
- Aggression increased over 3 days for violent video game players.
- Hostile expectations mediated the effect of violent video games on aggression.
- Nonviolent video games did not influence hostile expectations or aggression.

Brain Abnormalities Linked to 'Internet Addiction'

Pauline Anderson | May 05, 2014

NEW YORK — Mounting research points to the potentially devastating effects of Internet addiction, especially in adolescents.

A new literature review of 13 published articles showed that people with Internet addiction disorder (IAD), especially those addicted to Internet gaming, tend to have certain brain abnormalities.

The results were presented here at the American Psychiatric Association's 2014 Annual Meeting.

Changes in Brain Blood Flow

Internet addiction is also associated with changes in blood flow.

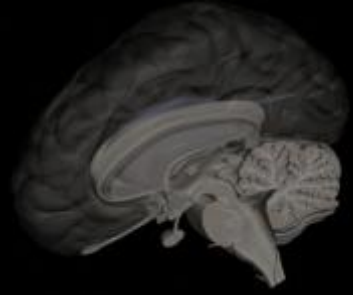
"Increased blood flow is actually seen in the areas of the brain involving reward and pleasure centers, and decreased blood flow is observed in areas involved in hearing and visual processing," Sree Jadapalle, MD, a second-year psychiatry resident at Morehouse School of Medicine in Atlanta, Georgia, told reporters attending a press briefing.

The prevalence of IAD among American youth is about 26.3%, "which is huge," said Dr. Jadapalle. "That's actually more than alcohol and illicit drug use disorders."

Dr. Sree Jadapalle

IAD is not currently an established mental disorder. However, proposed criteria for this condition include the loss of control over Internet use, resulting in marked distress, preoccupation, mood changes, tolerance, withdrawal, and functional impairments of social, occupational, and academic performance. Another proposed criterion is spending more than 6 hours a day on nonacademic, nonbusiness Internet use for more than 6 months.

The research shows a significant correlation between IAD and mental health problems, including depression, suicidal behavior, obsessive-compulsive disorder, eating disorders, attention deficit/hyperactivity disorder, as well as alcohol and illicit drug use disorders, said Dr. Jadapalle. Some studies show that IAD may increase suicide attempts in the presence of depression, she added.



NIÑOS MÁS SANOS, INTELIGENTES Y FELICES:

MENOS TIEMPO FRENTE A TV Y PANTALLAS

RECOMENDACIONES:

NIÑOS ANTES DE LOS DOS AÑOS DE VIDA, NO DEBEN VER TV (NI SIQUIERA *PROGRAMAS INFANTILES*)

NUNCA ESTAR MÁS DE DOS HORAS AL DÍA FRENTE A PANTALLAS ELECTRÓNICAS (SUMANDO TV-PC-CELULAR-TABLET-CONSOLAS DE JUEGOS)

RESTRINGIR JUEGOS ELECTRÓNICOS, ESPECIALMENTE DE CONTENIDO VIOLENTO

EVITAR CELULARES CON JUEGOS-INTERNET (NIÑOS: ESCASA CAPACIDAD DE AUTOREGULACIÓN)

SABER QUÉ VEN EN LA TV

USO DE COMPUTADOR EN LUGAR PÚBLICO

Original Investigation

Direct Effect of Sunshine on Suicide

Supplemental content at jamapsychiatry.com

Benjamin Vyssoki, MD; Nestor D. Kapusta, MD, PhD; Nicole Praschak-Rieder, MD, PhD; Georg Dorffner, PhD; Matthaeus Willeit, MD, PhD

IMPORTANCE It has been observed that suicidal behavior is influenced by sunshine and follows a seasonal pattern. However, seasons bring about changes in several other meteorological factors and a seasonal rhythm in social behavior may also contribute to fluctuations in suicide rates.

OBJECTIVE To investigate the effects of sunshine on suicide incidence that are independent of seasonal variation.

DESIGN, SETTING, AND PARTICIPANTS Retrospective analysis of data on all officially confirmed suicides in Austria between January 1, 1970, and May 6, 2010 (n = 69 462). Data on the average duration of sunshine per day (in hours) were calculated from 86 representative meteorological stations. Daily number of suicides and daily duration of sunshine were differentiated to remove variation in sunshine and variation in suicide incidence introduced by season. Thereafter, several models based on Pearson correlation coefficients were calculated.

MAIN OUTCOMES AND MEASURES Correlation of daily number of suicides and daily duration of sunshine after mathematically removing the effects of season.

RESULTS Sunshine hours and number of suicides on every day from January 1, 1970, to May 6, 2010, were highly correlated ($r = 0.4870$; $P < 10^{-9}$). After differencing for the effects of season, a mathematical procedure that removes most of the variance from the data, a positive correlation between number of suicides and hours of daily sunshine remained for the day of suicide and up to 10 days prior to suicide ($r_{maximum} = 0.0370$; $P < 10^{-5}$). There was a negative correlation between the number of suicides and daily hours of sunshine for the 14 to 60 days prior to the suicide event ($r_{minimum} = -0.0383$; $P < 10^{-5}$). These effects were found in the entire sample and in violent suicides.

CONCLUSIONS AND RELEVANCE Duration of daily sunshine was significantly correlated with suicide frequency independent of season, but effect sizes were low. Our data support the hypothesis that sunshine on the day of suicide and up to 10 days prior to suicide may facilitate suicide. More daily sunshine 14 to 60 days previously is associated with low rates of suicide. Our study also suggests that sunshine during this period may protect against suicide.

Original Investigation

Effect of Time Spent Outdoors at School on the Development of Myopia Among Children in China
A Randomized Clinical Trial

Mingguang He, MD, PhD; Fan Xiang, MD, PhD; Yangfa Zeng, MD; Jincheng Mai, BSc; Qianyun Chen, MSc; Jian Zhang, MSc; Wayne Smith, MD, PhD; Kathryn Rose, PhD; Ian G. Morgan, PhD

Editorial page 1137

Supplemental content at jama.com

CME Quiz at jamanetworkcme.com and CME Questions page 1173

IMPORTANCE Myopia has reached epidemic levels in parts of East and Southeast Asia. However, there is no effective intervention to prevent the development of myopia.

OBJECTIVE To assess the efficacy of increasing time spent outdoors at school in preventing incident myopia.

DESIGN, SETTING, AND PARTICIPANTS Cluster randomized trial of children in grade 1 from 12 primary schools in Guangzhou, China, conducted between October 2010 and October 2013.

INTERVENTIONS For 6 intervention schools (n = 952 students), 1 additional 40-minute class of outdoor activities was added to each school day, and parents were encouraged to engage their children in outdoor activities after school hours, especially during weekends and holidays. Children and parents in the 6 control schools (n = 951 students) continued their usual pattern of activity.

MAIN OUTCOMES AND MEASURES The primary outcome measure was the 3-year cumulative incidence rate of myopia (defined using the Refractive Error Study in Children spherical equivalent refractive error standard of ≤−0.5 diopters [D]) among the students without established myopia at baseline. Secondary outcome measures were changes in spherical equivalent refraction and axial length among all students, analyzed using mixed linear models and intention-to-treat principles. Data from the right eyes were used for the analysis.

RESULTS There were 952 children in the intervention group and 951 in the control group with a mean (SD) age of 6.6 (0.34) years. The cumulative incidence rate of myopia was 30.4% in the intervention group (259 incident cases among 853 eligible participants) and 39.5% (287 incident cases among 726 eligible participants) in the control group (difference of −9.1% [95% CI, −14.1% to −4.1%]; $P < .001$). There was also a significant difference in the 3-year change in spherical equivalent refraction for the intervention group (−1.42 D) compared with the control group (−1.59 D) (difference of 0.17 D [95% CI, 0.01 to 0.33 D]; $P = .04$). Elongation of axial length was not significantly different between the intervention group (0.95 mm) and the control group (0.98 mm) (difference of −0.03 mm [95% CI, −0.07 to 0.003 mm]; $P = .07$).

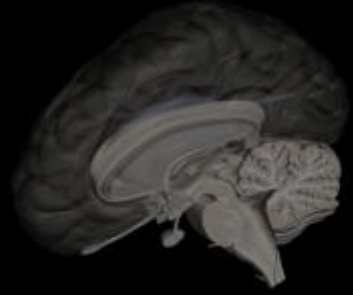
CONCLUSIONS AND RELEVANCE Among 6-year-old children in Guangzhou, China, the addition of 40 minutes of outdoor activity at school compared with usual activity resulted in a reduced incidence rate of myopia over the next 3 years. Further studies are needed to assess long-term follow-up of these children and the generalizability of these findings.

TRIAL REGISTRATION clinicaltrials.gov Identifier: NCT00848900

JAMA. 2015;314(11):1142-1148. doi:10.1001/jama.2015.10803

Author Affiliations: Author affiliations are listed at the end of this article.

Corresponding Author: Mingguang He, MD, PhD, Zhongshan Ophthalmic Center, Guangzhou 510060, China (mingguang_he@yahoo.com).



Risk of depression and self-harm in teenagers identifying with goth subculture: a longitudinal cohort study

Lucy Bowes, Rebecca Carnegie, Rebecca Pearson, Becky Mars, Lucy Biddle, Barbara Maughan, Glyn Lewis, Charles Fernyhough, Jon Heron

Summary

Background Previous research has suggested that deliberate self-harm is associated with contemporary goth subculture in young people; however, whether this association is confounded by characteristics of young people, their families, and their circumstances is unclear. We aimed to test whether self-identification as a goth is prospectively associated with emergence of clinical depression and self-harm in early adulthood.

Methods We used data from the Avon Longitudinal Study of Parents and Children, a UK community-based birth cohort of 14 541 pregnant women with expected delivery between April 1, 1991, and Dec 31, 1992. All children in the study were invited to attend yearly follow-up visits at the research clinic from age 7 years. At 15 years of age, participants reported the extent to which they self-identified as a goth. We assessed depressive mood and self-harm at 15 years with the Development and Wellbeing Assessment (DAWBA) questionnaire, and depression and self-harm at 18 years using the Clinical Interview Schedule-Revised. We calculated the prospective association between goth identification at 15 years and depression and self-harm at 18 years using logistic regression analyses.

Findings Of 5357 participants who had data available for goth self-identification, 3694 individuals also had data for depression and self-harm outcomes at 18 years. 105 (6%) of 1841 adolescents who did not self-identify as goths met criteria for depression compared with 28 (18%) of 154 who identified as goths very much; for self-harm, the figures were 189 (10%) of 1841 versus 57 (37%) of 154. We noted a dose–response association with goth self-identification both for depression and for self-harm. Compared with young people who did not identify as a goth, those who somewhat identified as being a goth were 1·6 times more likely (unadjusted odds ratio [OR] 1·63, 95% CI 1·14–2·34, p<0·001), and those who very much identified as being a goth were more than three times more likely (unadjusted OR 3·67, 2·33–4·79, p<0·001) to have scores in the clinical range for depression at 18 years; findings were similar for self-harm. Associations were not attenuated after adjustment for a range of individual, family, and social confounders.

Interpretation Our findings suggest that young people identifying with goth subculture might be at an increased risk for depression and self-harm. Although our results suggest that some peer contagion operates within the goth community, our observational findings cannot be used to claim that becoming a goth increases risk of self-harm or depression. Working with young people in the goth community to identify those at increased risk of depression and self-harm and provide support might be effective.

Lancet Psychiatry 2015

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PROCEEDINGS B

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Research

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Subject Areas:
health and disease and epidemiology

Spreading of healthy mood in adolescent social networks

E. M. Hill[1], F. E. Griffiths[2] and T. House[1,3]

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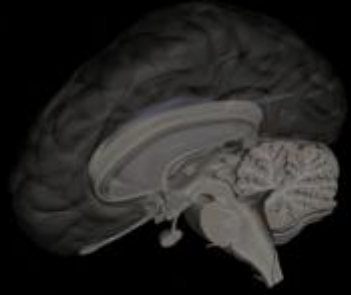
[3]School of Mathematics, University of Manchester, Manchester M13 9PL, UK

Depression is a major public health concern worldwide. There is evidence that social support and befriending influence mental health, and an improved understanding of the social processes that drive depression has the potential to bring significant public health benefits. We investigate transmission of mood on a social network of adolescents, allowing flexibility in our model by making no prior assumption as to whether it is low mood or healthy mood that spreads. Here, we show that while depression does not spread, healthy mood among friends is associated with significantly reduced risk of developing and increased chance of recovering from depression. We found that this spreading of healthy mood can be captured using a non-linear complex contagion model. Having sufficient friends with healthy mood can halve the probability of developing, or double the probability of recovering from, depression over a 6–12-month period on an adolescent social network. Our results suggest that promotion of friendship between adolescents can reduce both incidence and prevalence of depression.

ESTIMULACIÓN PSICOSOCIAL Y AFECTIVA



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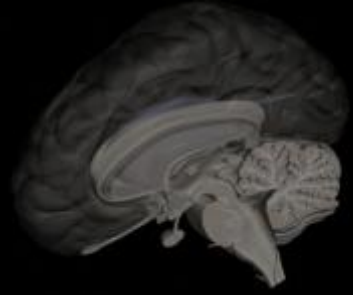
CONCLUSIONES



FOMENTAR EL AUTOCONTROL TEMPRANO: AFECTIVIDAD Y DISCIPLINA

FOMENTAR UN SUEÑO DE CALIDAD Y TIEMPO ADECUADO

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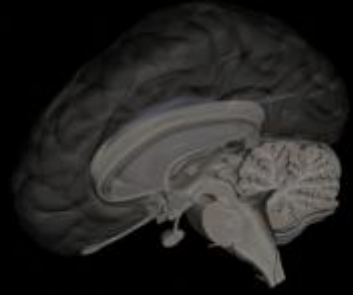
LEERLE A LOS HIJOS-CREAR INSTANCIAS PARA QUE LEAN

EVITAR PANTALLAS ELECTRÓNICAS

FOMENTAR LA MÚSICA EN LOS NIÑOS

BENEFICIOS DE TÉCNICAS DE MEDITACIÓN

IMPULSAR INTEGRACIÓN SOCIAL POSITIVA



PROBLEMAS DE SALUD EN LA INFANCIA EN LAS SOCIEDADES MODERNAS

ENFOQUE DESDE LAS NEUROCIENCIAS: HIJOS, Y POSTERIORMENTE ADULTOS, MÁS FELICES Y SANOS, FÍSICA Y MENTALMENTE

DR. PATRICIO GUERRA

NEURÓLOGO INFANTIL Y ADOLESCENTES

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