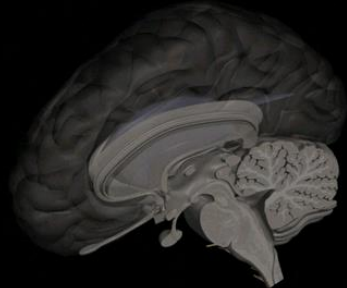


IMPACTO DE LOS MEDIOS TECNOLÓGICOS EN EL DESARROLLO CEREBRAL DE LOS NIÑOS

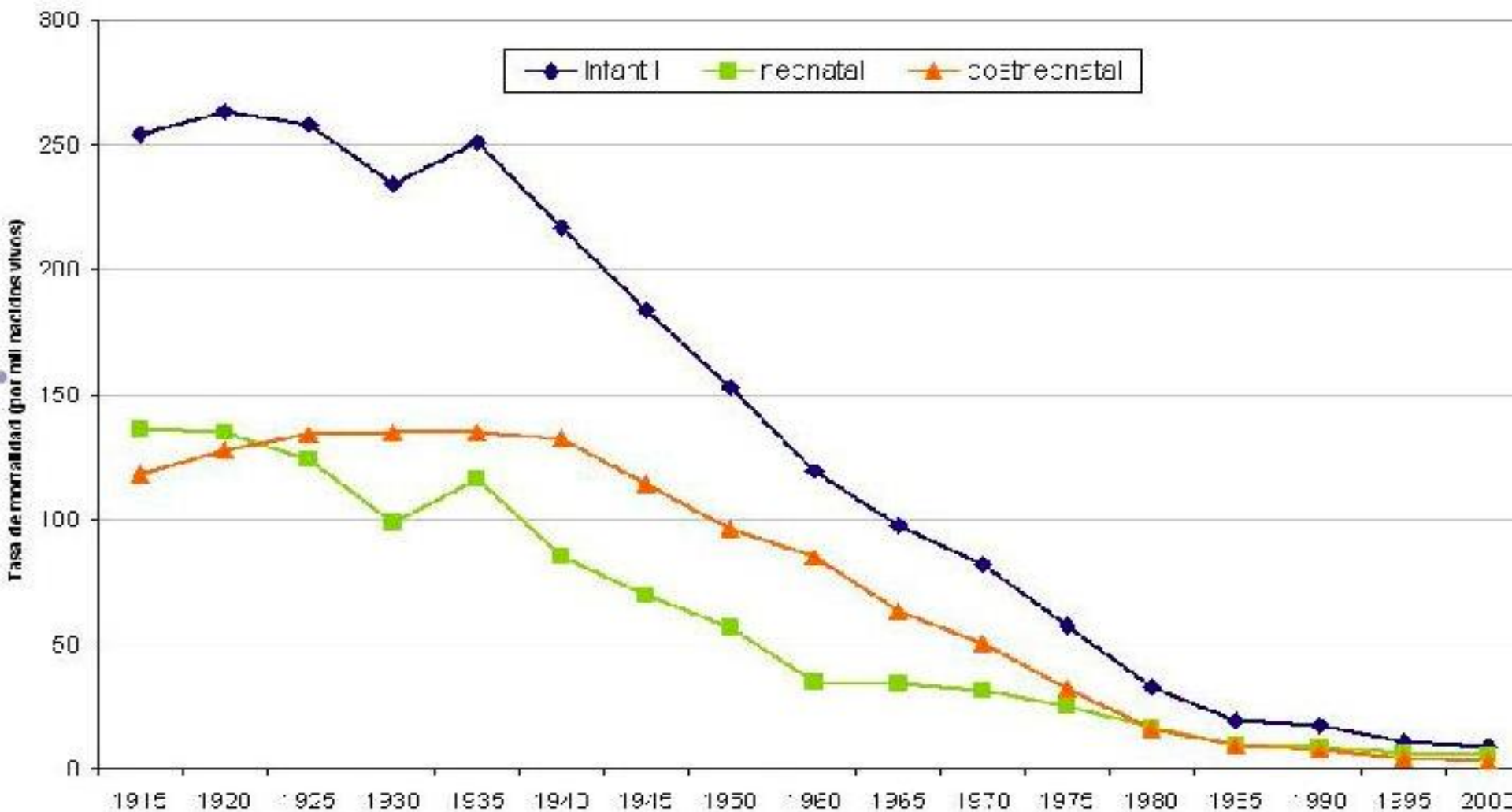
ENFOQUE DESDE LAS NEUROCIENCIAS
Y CÓMO...COMO PADRES...AYUDAR A NUESTROS HIJOS

COLEGIO SANTA MARTA DE OSORNO NOVIEMBRE 2018

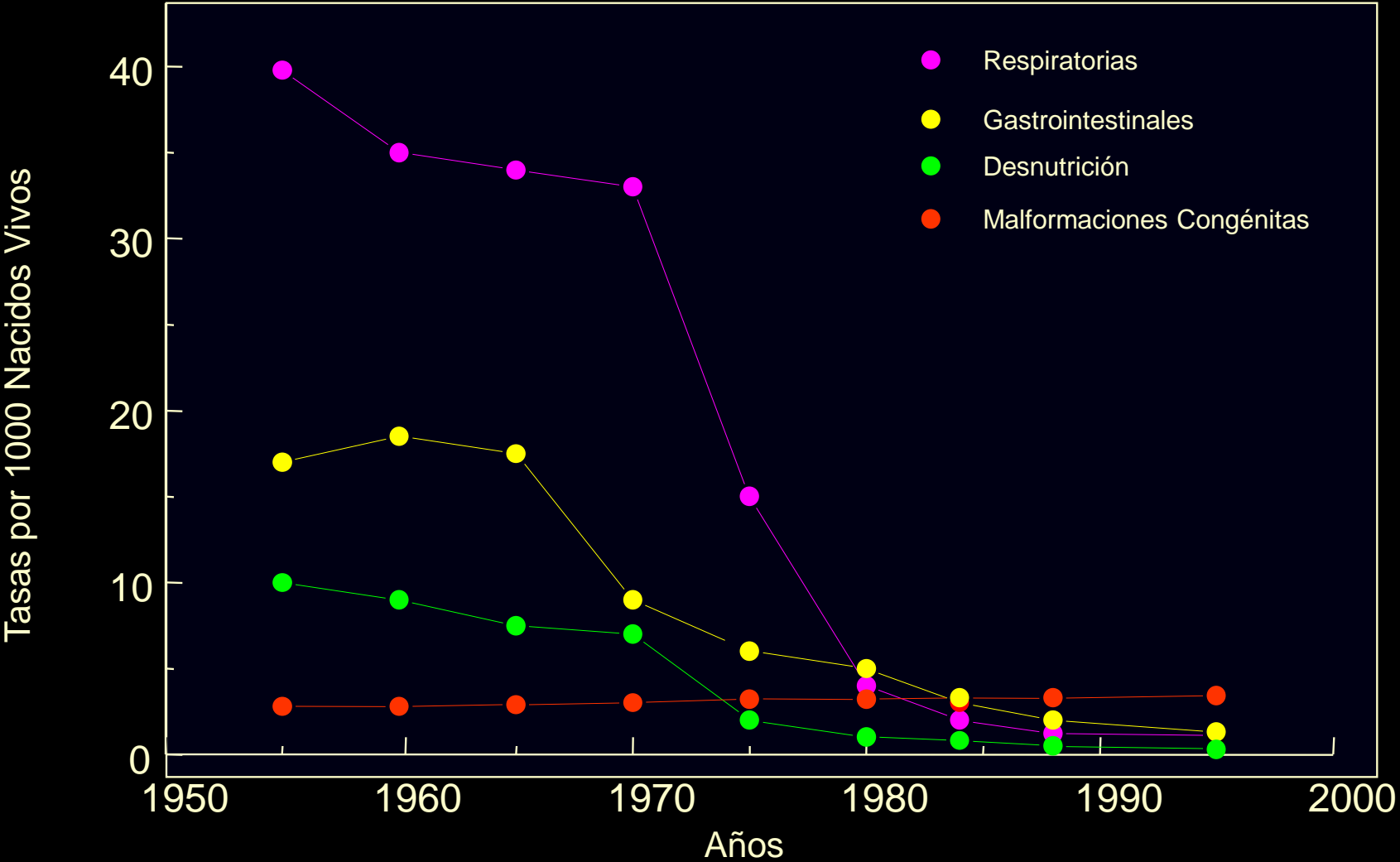
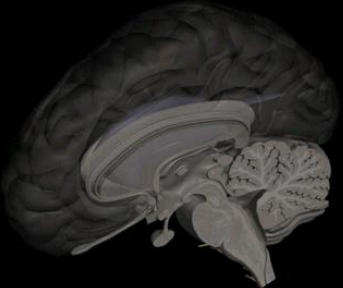
DR. PATRICIO GUERRA
NEURÓLOGO INFANTIL Y ADOLESCENTES
MAGÍSTER NEUROCIENCIAS

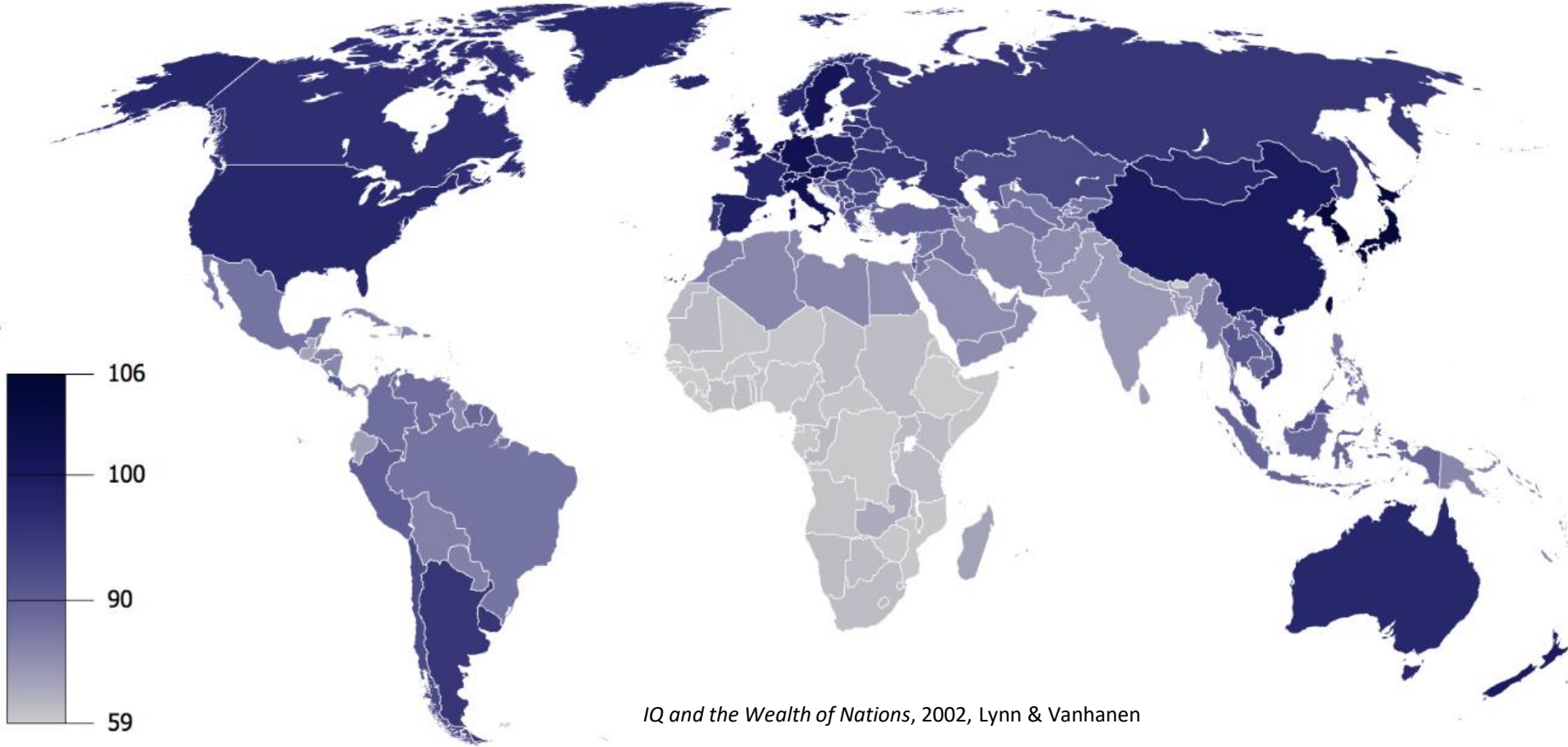


MORTALIDAD INFANTIL EN CHILE PERÍODO 1915-2000



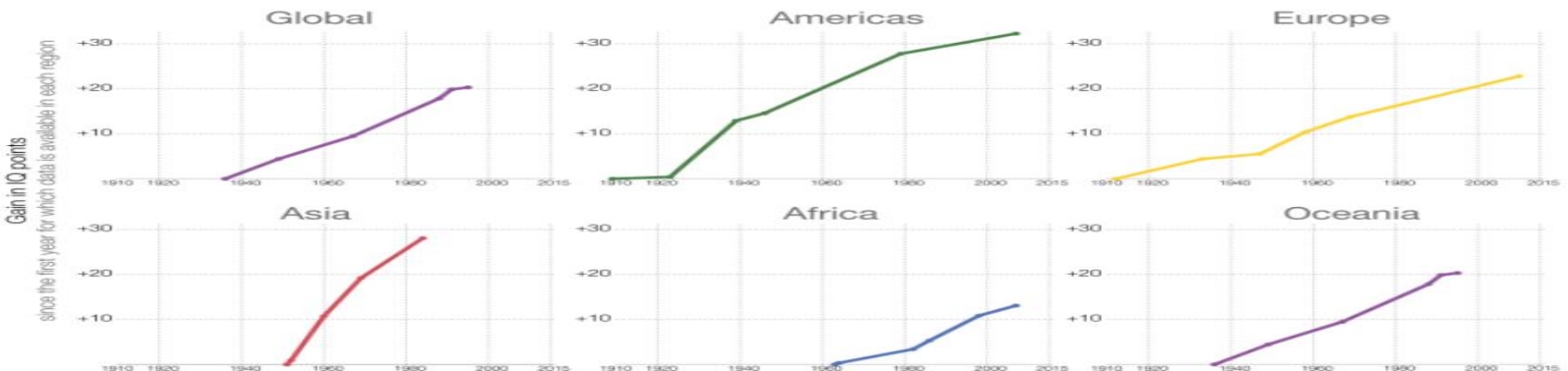
MORTALIDAD INFANTIL EN CHILE GRUPOS DE CAUSAS SELECCIONADAS



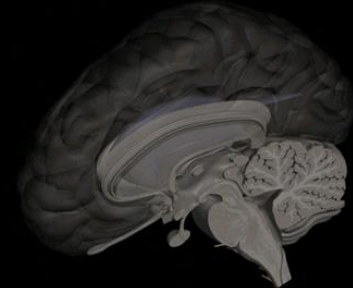


IQ and the Wealth of Nations, 2002, Lynn & Vanhanen

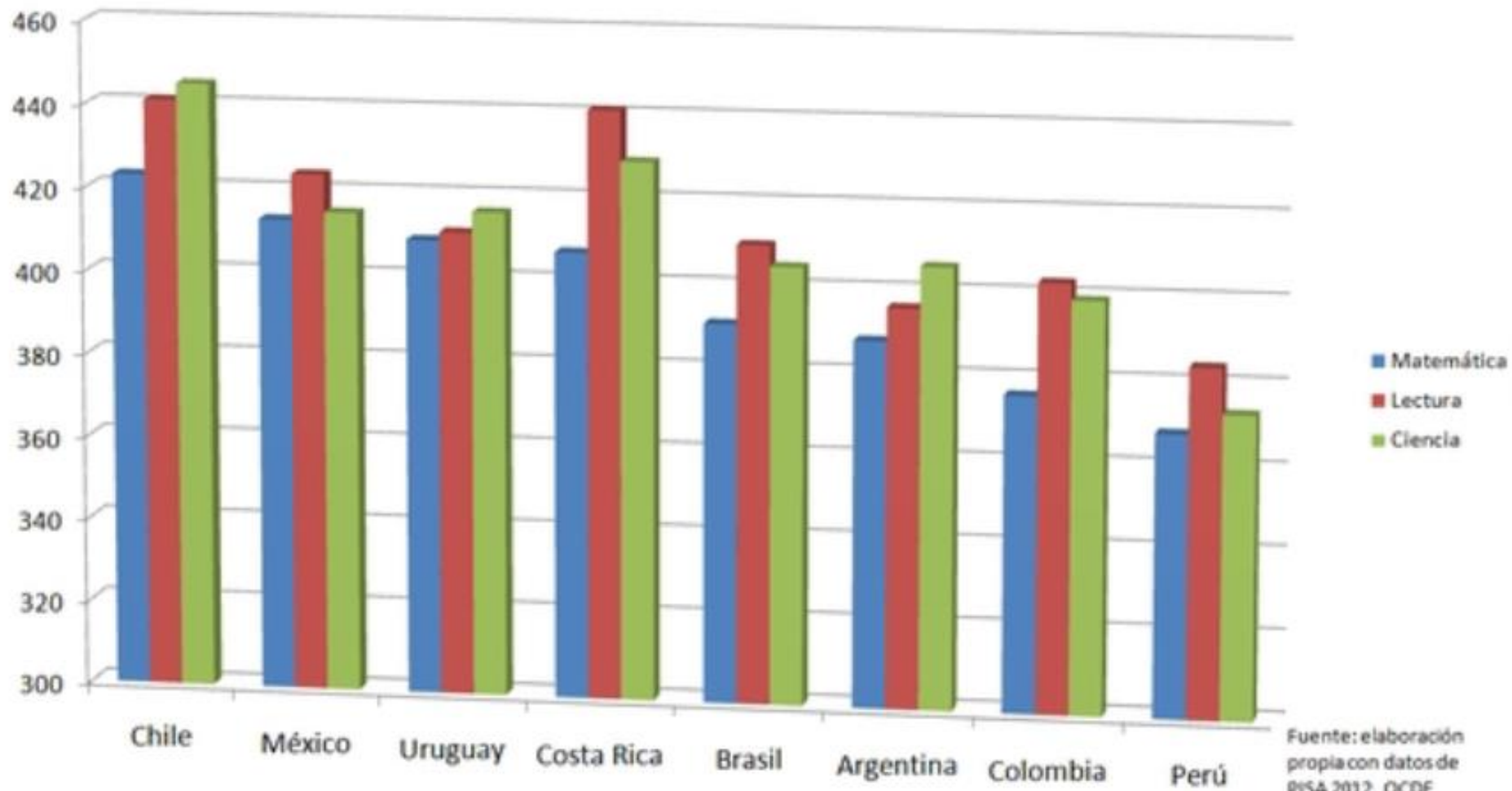
The Flynn Effect: Gains in mean IQ (Intelligence quotient) for world regions, 1909-2013
 Shown is the gain in mean fullscale IQ (Intelligence quotient) for world regions. Changes are relative to the first year for which data is available for a particular region.



Data source: Richardson and Verwey (2018), 'One Century of Global IQ Gains: A Formal Meta-Analysis of the Flynn Effect (1909-2013)', *Research on Evolutionary Science*

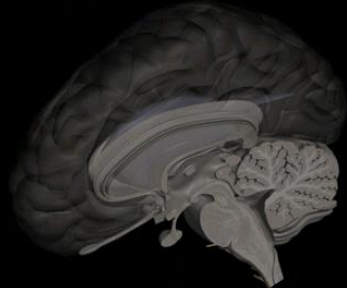


Resultados PISA 2012



Fuente: elaboración propia con datos de PISA 2012, OCDE

RESULTADOS DE LECTURA 2° BÁSICO



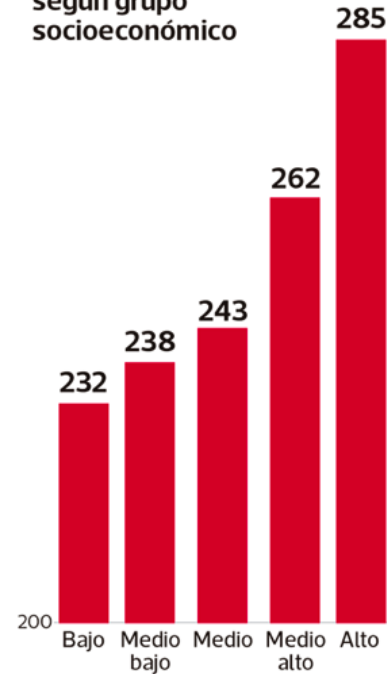
Según el estudio de la Agencia de la Calidad de la Educación, las habilidades de lectura de los niños de 2° básico no han mejorado en los últimos años, manteniendo una fuerte brecha por nivel socioeconómico.

Principales resultados

Evolución puntaje promedio

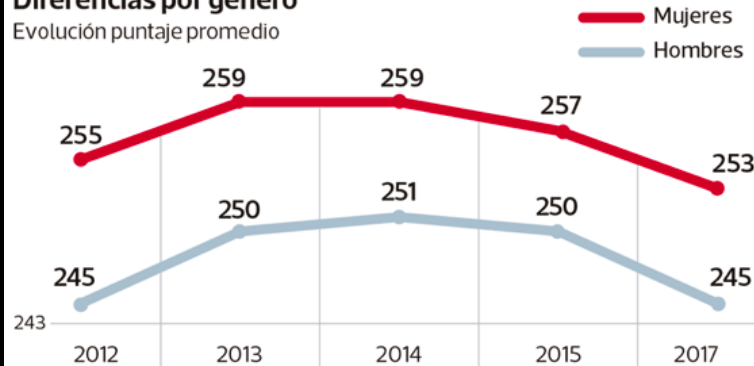


Resultados según grupo socioeconómico



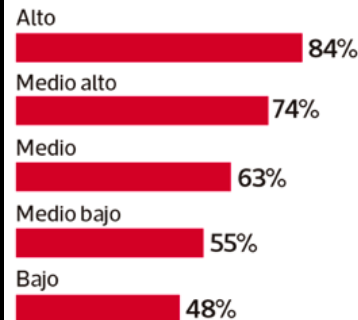
Diferencias por género

Evolución puntaje promedio

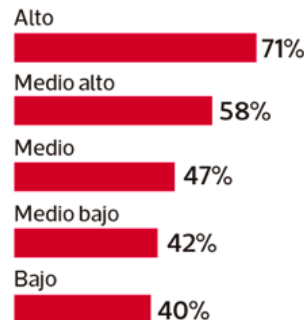


Factores que impactan en las habilidades lectoras (Por grupo socioeconómico)

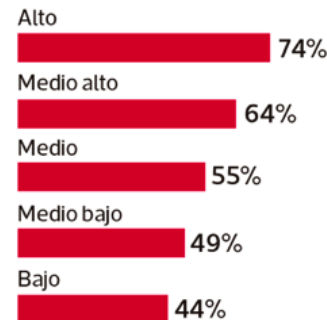
Alumnos que saben contar historias antes de 1° básico

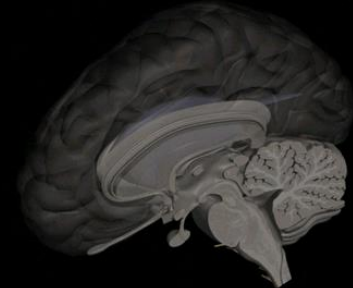


Algún miembro de la familia se dedicaba a leer con él antes de entrar a 1° básico

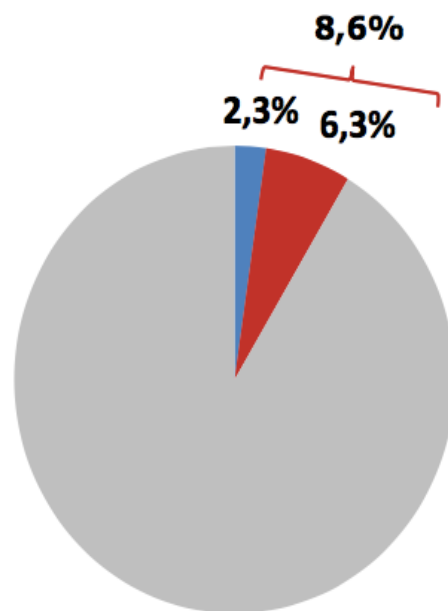


Reconocen letras del abecedario antes de entrar a 1° básico





Distribución de personas según situación de pobreza por ingresos en 2017

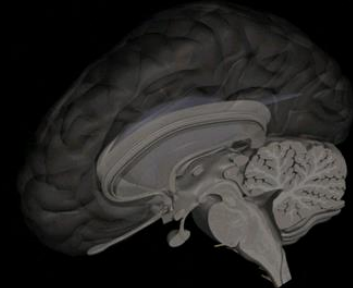


- Pobres extremos: 412.839 personas
- Pobres no extremos: 1.115.445 personas
- No pobres: 16.259.060 personas

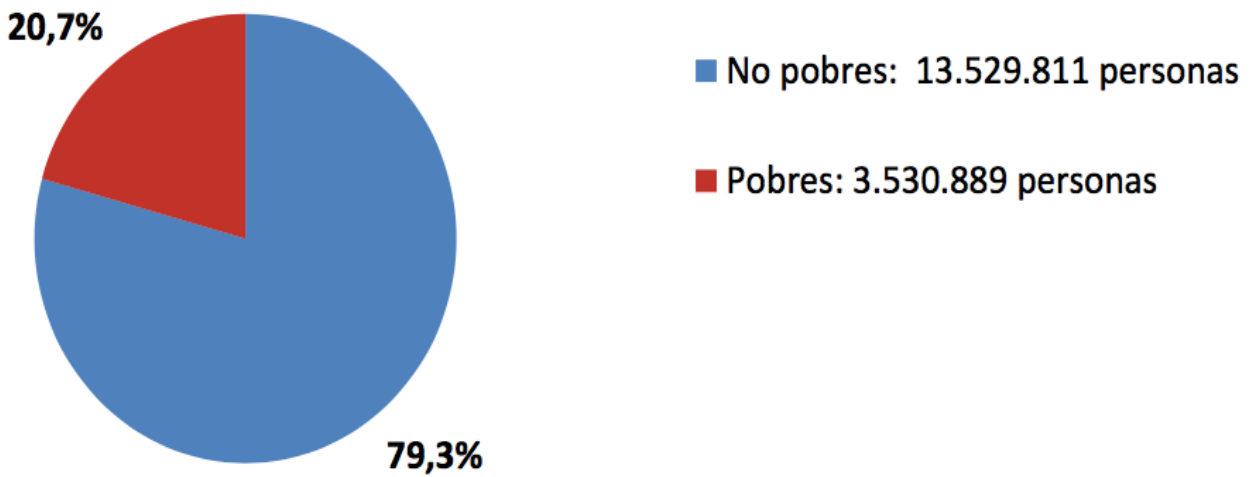
Total de personas en situación de pobreza: 1.528.284

91,4%

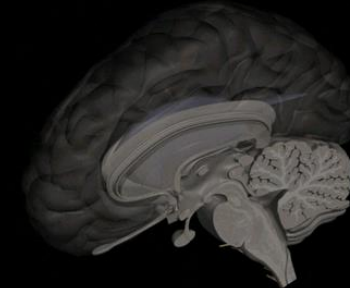
Fuente: Ministerio de Desarrollo Social, Encuesta Casen 2017.



Porcentaje de personas según situación de pobreza multidimensional en 2017



Fuente: Ministerio de Desarrollo Social, Encuesta Casen 2017.



Porcentaje de hogares carentes en indicadores de pobreza multidimensional (2015-2017)

Dimensión	Indicador	2015	2017
Educación	Asistencia	2,3	2,2
	Rezago	2,2	2,0
	Escolaridad	30,2	29,4
Salud	Malnutrición	4,9	4,5
	Adscripción al Sistema de Salud	6,1	5,4
	Atención en Salud	5,1	4,0
Trabajo y seguridad Social	Ocupación	9,3	9,8
	Seguridad Social	32,3	30,7
	Jubilación	9,8	10,7
Vivienda y entorno	Habitabilidad	19,0	18,8
	Servicios Básicos	3,6	6,6
	Entorno	9,9	10,2
Redes y Cohesión Social	Apoyo y participación social	5,3	6,1
	Trato igualitario	14,9	13,7
	Seguridad	11,1	12,0

Fuente: Ministerio de Desarrollo Social, Encuesta Casen 2015-2017.

RESUMEN:



DISMINUCIÓN MORTALIDAD INFANTIL

AUMENTO DE NIVEL INTELECTUAL EN SUCESIVAS GENERACIONES

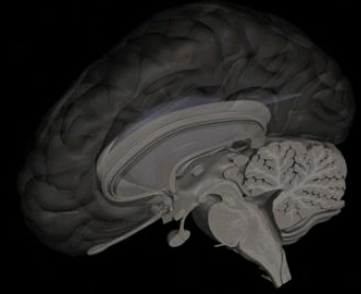
MEJORÍA DE CONDICIONES SOCIO-ECONÓMICAS GLOBALES

SENSACIÓN DE MAYOR CARGA DE ENFERMEDAD EN LA INFANCIA

FÍSICA

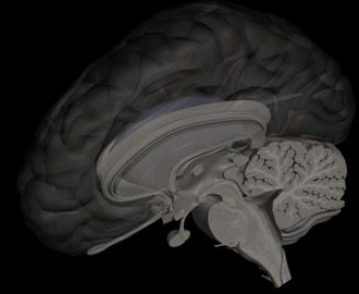
EMOCIONAL

HIPÓTESIS QUE EXPLICARÍAN PROBLEMÁTICA EMOCIONAL-CONDUCTUAL EN LA INFANCIA:



- MAYORES EXIGENCIAS ESCOLARES (ACADÉMICAS-SOCIALES)
- MENOS “TIEMPO LIBRE”
- MENOR TIEMPO DE “JUEGO LIBRE”
- MAYORES EXIGENCIAS DEL ENTORNO FAMILIAR-SOCIAL-ECONÓMICO
- MAYOR HACINAMIENTO
- ALIMENTACIÓN
- MENOS TIEMPO DE DORMIR Y HÁBITOS INADECUADOS DE ÉSTE
- INADECUADAS PAUTAS DE CRIANZA
- USO DE MEDIOS SOCIALES Y ELECTRÓNICOS

TECNOLOGÍA DENTRO DEL HOGAR (MEDIOS ELECTRÓNICOS)



-1937: INICIO DE PROGRAMAS DE TV EN INGLATERRA

-1959: INICIO DE TELEVISIÓN EN CHILE

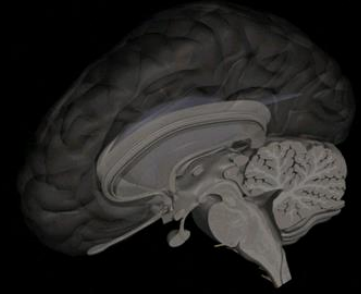
-1979: PRIMERAS REDES COMERCIALES DE TELEFONÍA MÓVIL

-1980: PRIMEROS VIDEOJUEGOS (PAC-MAN)

-1990: CREACIÓN DE PROTOCOLO WWW DE INTERNET

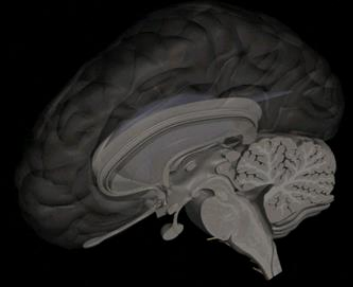
-2015: ADICCIÓN A LOS VIDEO-JUEGOS (DSM V)

*DIFERENCIACIÓN ENTRE TECNOLOGÍAS “AUDITIVAS” Y “VISUALES”



DIFERENCIACIÓN ENTRE TECNOLOGÍAS “AUDITIVAS” Y “VISUALES”

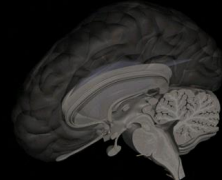




EXPERIENCIAS EN LLEGADA DE TELEVISIÓN A COMUNIDADES VÍRGENES

- AMPLIACIÓN DE VOCABULARIO
- MAYOR AMPLITUD DE CONOCIMIENTOS
- MENOR AUTOESTIMA
- MENOR TIEMPO AL AIRE LIBRE



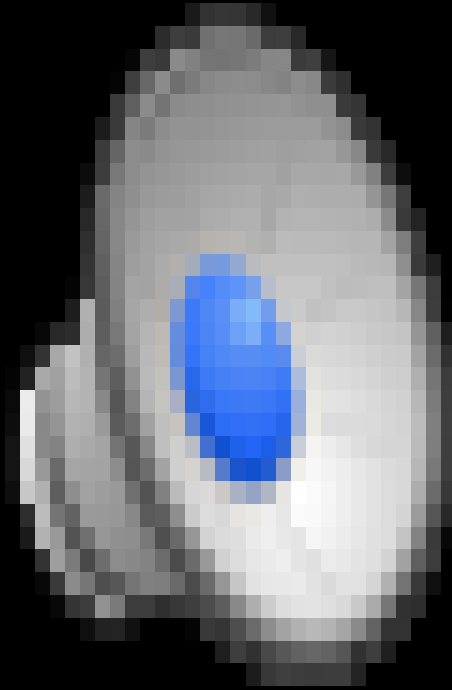
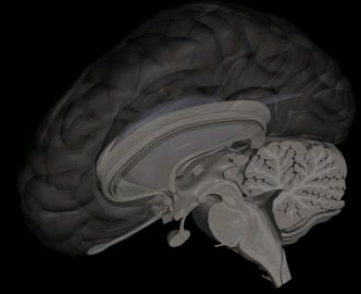


IMITATION OF FILM-MEDIATED AGGRESSIVE MODELS ¹

ALBERT BANDURA, DOROTHEA ROSS,² AND SHEILA A. ROSS

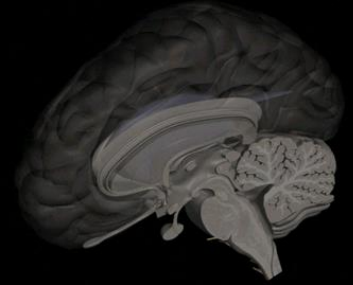
Stanford University

In a test of the hypothesis that exposure of children to film-mediated aggressive models would increase the probability of Ss' aggression to subsequent frustration, 1 group of experimental Ss observed real-life aggressive models, a 2nd observed these same models portraying aggression on film, while a 3rd group viewed a film depicting an aggressive cartoon character. Following the exposure treatment, Ss were mildly frustrated and tested for the amount of imitative and nonimitative aggression in a different experimental setting. The overall results provide evidence for both the facilitating and the modeling influence of film-mediated aggressive stimulation. In addition, the findings reveal that the effects of such exposure are to some extent a function of the sex of the model, sex of the child, and the reality cues of the model.

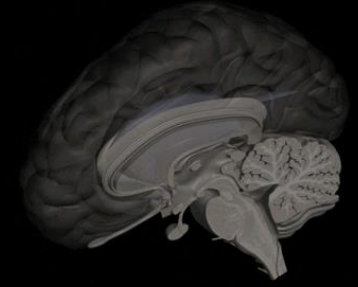


Video disponible en: <https://www.youtube.com/watch?v=dmBqwWlJg8U>

SITUACIÓN ACTUAL



SITUACIÓN ACTUAL

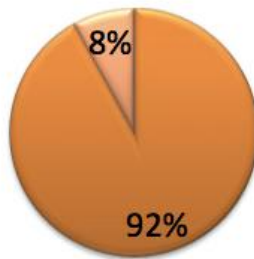


Características del consumo de Tecnologías de Información y Comunicación y control parental en escolares 2014

Universidad de Valparaíso.

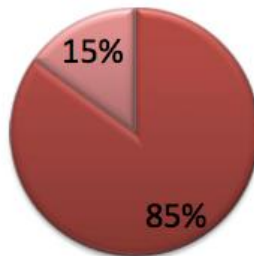
Edad: 13.28 años(DS+/-0.57)

Celular



■ Celular ■ no

Lo lleva a clases



■ Lleva a clases ■ no

El control parental promedio fue 21.51%.

El 60.22% declaró burlar el control parental.



Acceso a Tecnología:

Edad acceso por primera vez

Edad acceso primera vez	Celular	Tablet	PN / NB
1 año	7,9%	12,4%	6,4%
2 años	14,1%	10,7%	9,7%
3 años	13,1%	10,4%	15,5%
4 años	10,1%	11,7%	13,4%
5 años	11,3%	13,6%	15,6%
6 años	8,8%	12,2%	8,5%
7 años	9,7%	8,6%	6,1%
8 años	9,3%	8,5%	5,9%
9 años	3,8%	4,1%	3,9%
10 años	1,3%	6,7%	5,4%
No sabe	,6%	1,1%	9,6%

EVIDENCIA DE EFECTOS DE PANTALLAS EN CEREBRO INFANTIL



-TRASTORNOS DE CONDUCTA

-AUMENTO DE DIFICULTADES ESCOLARES (TDAH)

-RETRASO DE LENGUAJE

-TRASTORNOS DEL SUEÑO

-AUMENTO DEL CONSUMISMO

-ALTERACIONES AUTOIMAGEN

-SEXUALIZACIÓN TEMPRANA

-OBESIDAD

-USO Y ABUSO DE SUSTANCIAS



EVIDENCIA DE EFECTOS DE PANTALLAS EN CEREBRO INFANTIL

POR CADA HORA DE TV QUE LOS PADRES COMPARTEN CON SUS HIJOS



SE HABLAN 770 PALABRAS MENOS QUE ESTAR JUNTOS SIN PANTALLAS

Language Experience in the Second Year of Life and Language Outcomes in Late Childhood

Jill Gilkerson, PhD,^a Jeffrey A. Richards, MA,^a Steven F. Warren, PhD,^b D. Kimbrough Oller, PhD,^{c,d,e} Rosemary Russo, MA,^a Betty Vohr, MD^{f,g}

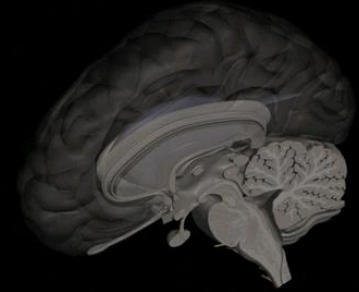
OBJECTIVES: Quantity of talk and interaction in the home during early childhood is correlated with socioeconomic status (SES) and can be used to predict early language and cognitive outcomes. We tested the effectiveness of automated early language environment estimates for children 2 to 36 months old to predict cognitive and language skills 10 years later and examined effects for specific developmental age periods.

METHODS: Daylong audio recordings for 146 infants and toddlers were completed monthly for 6 months, and the total number of daily adult words and adult-child conversational turns were automatically estimated with Language Environment Analysis software. Follow-up evaluations at 9 to 14 years of age included language and cognitive testing. Language exposure for 3 age groups was assessed: 2 to 17 months, 18 to 24 months, and ≥ 25 months. Pearson correlations and multiple linear regression analyses were conducted.

RESULTS: Conversational turn counts at 18 to 24 months of age accounted for 14% to 27% of the variance in IQ, verbal comprehension, and receptive and/or expressive vocabulary scores 10 years later after controlling for SES. Adult word counts between 18 and 24 months were correlated with language outcomes but were considerably weakened after controlling for SES.

CONCLUSIONS: These data support the hypothesis that early talk and interaction, particularly during the relatively narrow developmental window of 18 to 24 months of age, can be used to predict school-age language and cognitive outcomes. With these findings, we underscore the need for effective early intervention programs that support parents in creating an optimal early language learning environment in the home.

abstract



ESTUDIO 146 NIÑOS
18 A 24 MESES EDAD



GRABADOS POR 6 M
CONVERSACIONES
PADRES-HIJOS



SEGUIDOS HASTA LOS
9-14 AÑOS DE EDAD



MÁS CONVERSACIÓN:
MAYOR COEFICIENTE
INTELECTUAL Y
LENGUAJE

Brain Drain: The Mere Presence of One's Own Smartphone Reduces Available Cognitive Capacity

ADRIAN F. WARD, KRISTEN DUKE, AYELET GNEEZY, AND MAARTEN W. BOS

ABSTRACT Our smartphones enable—and encourage—constant connection to information, entertainment, and each other. They put the world at our fingertips, and rarely leave our sides. Although these devices have immense potential to improve welfare, their persistent presence may come at a cognitive cost. In this research, we test the “brain drain” hypothesis that the mere presence of one’s own smartphone may occupy limited-capacity cognitive resources, thereby leaving fewer resources available for other tasks and undercutting cognitive performance. Results from two experiments indicate that even when people are successful at maintaining sustained attention—as when avoiding the temptation to check their phones—the mere presence of these devices reduces available cognitive capacity. Moreover, these cognitive costs are highest for those highest in smartphone dependence. We conclude by discussing the practical implications of this smartphone-induced brain drain for consumer decision-making and consumer welfare.

We all understand the joys of our always-wired world—the connections, the validations, the laughs . . . the info. . . . But we are only beginning to get our minds around the costs.

—Andrew Sullivan (2016)

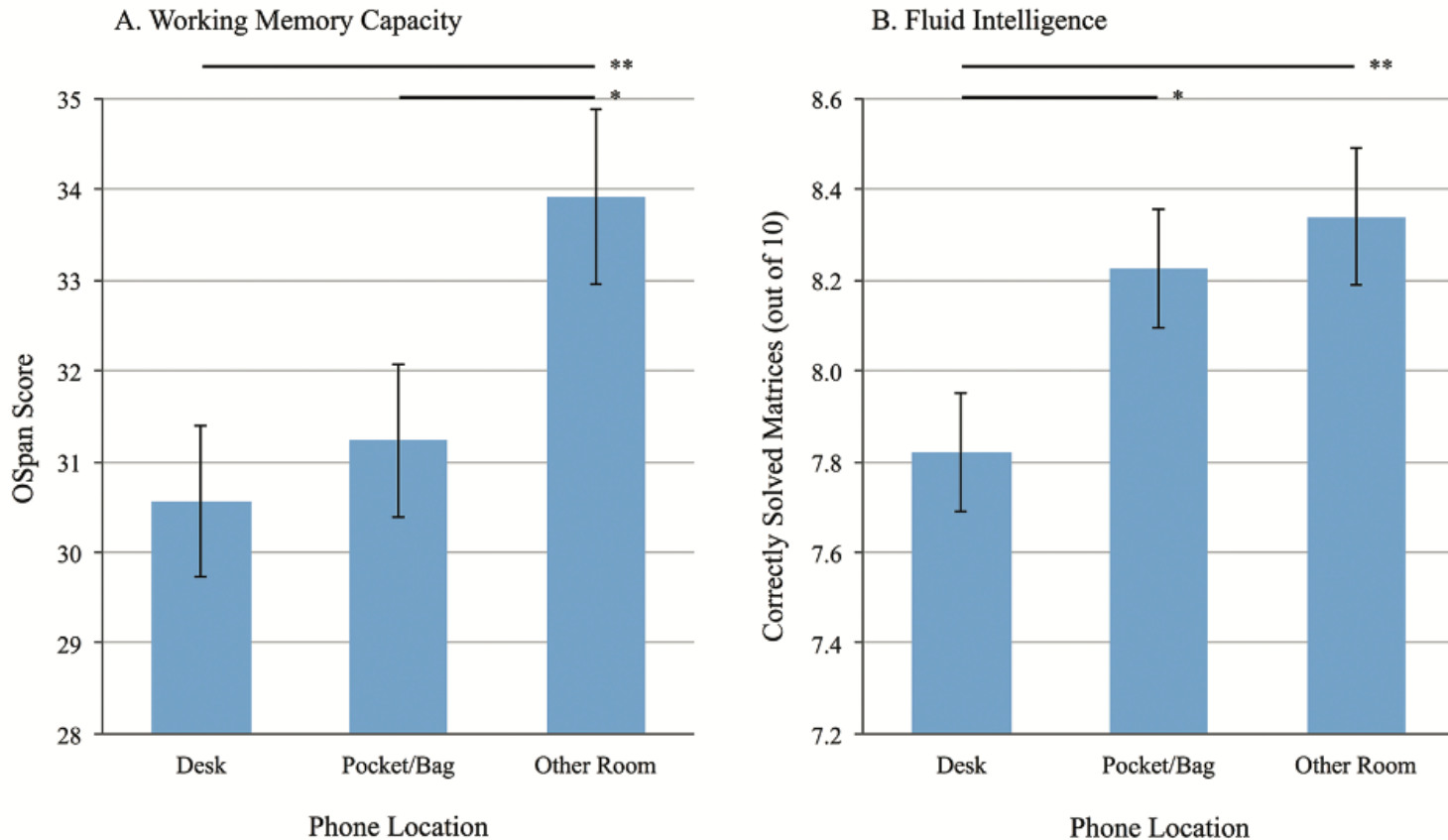
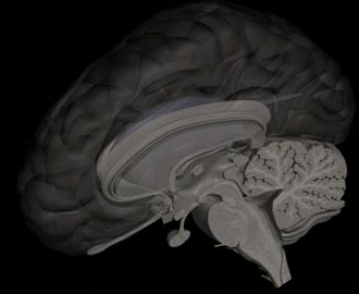
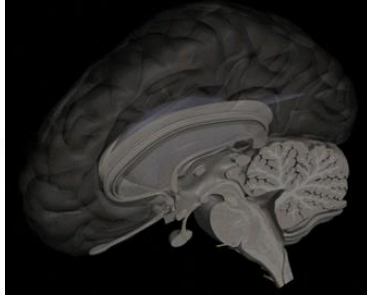


Figure 1. Experiment 1: effect of randomly assigned phone location condition on available WMC (OSpan Score, panel A) and functional Gf (Correctly Solved Raven's Matrices, panel B). Participants in the "desk" condition (high salience) displayed the lowest available cognitive capacity; those in the "other room" condition (low salience) displayed the highest available cognitive capacity. Error bars represent standard errors of the means. Asterisks indicate significant differences between conditions, with * $p < .05$ and ** $p < .01$.



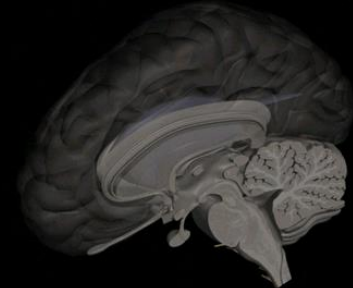
¿Y USTED
CÓMO HACE
PARA QUE EL SUYO
LEA?



SOLO EL 3% ENTENDERÁ Y APLICARÁ ESTA IMAGEN

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Literacy Promotion: An Essential Component of Primary Care Pediatric Practice

COUNCIL ON EARLY CHILDHOOD
Pediatrics; originally published online June 23, 2014;
DOI: 10.1542/peds.2014-1384

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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The guidance in this statement does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

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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

International Journal of Educational Research 58 (2013) 61-68

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International Journal of Educational Research

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



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

Anne Mangen^{a,*}, Bente R. Walgermo^a, Kolbjørn Brønnick^{a,b}

^aThe National Centre for Reading Education and Research, University of Stavanger, NO-4036 Stavanger, Norway

^bRegional Centre for Clinical Research in Psychosis, Division of Psychiatry, Stavanger University Hospital, PO Box 8100, NO-4068 Stavanger, Norway

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Keywords:

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Screen reading

Print reading

Computers in education

ABSTRACT

Objective: To explore effects of the technological interface on reading comprehension in a Norwegian school context.

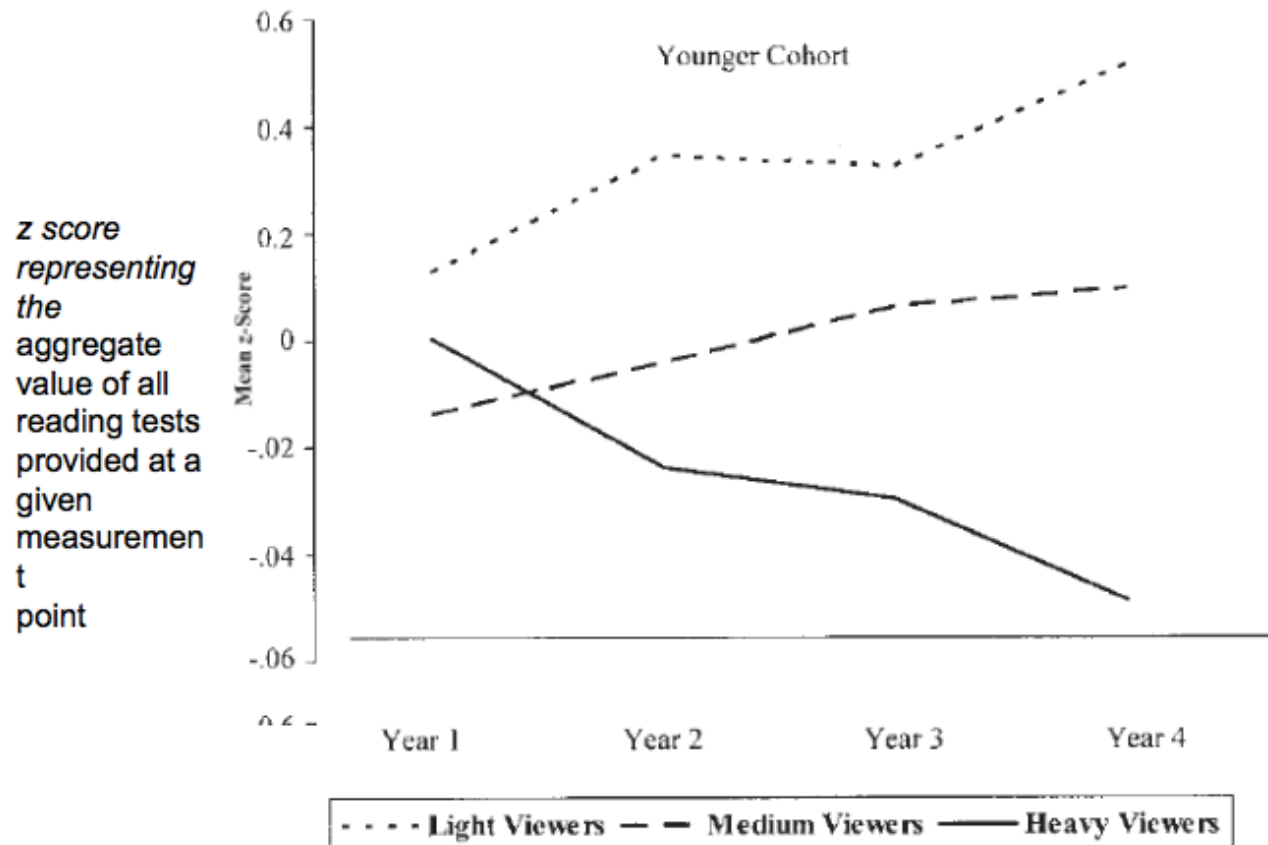
Participants: 72 tenth graders from two different primary schools in Norway.
Method: The students were randomized into two groups, where the first group read two texts (1400–2000 words) in print, and the other group read the same texts as PDF on a computer screen. In addition pretests in reading comprehension, 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.

Relations of Television Viewing and Reading: Findings From a 4-Year Longitudinal Study

Marco Ennemoser and Wolfgang Schneider
University of Würzburg

Journal of Educational Psychology
2007, Vol. 99, No. 2, 349–368



alto : 117 minutos diarios, medio: 69 minutos diarios y bajo 35 minutos diarios

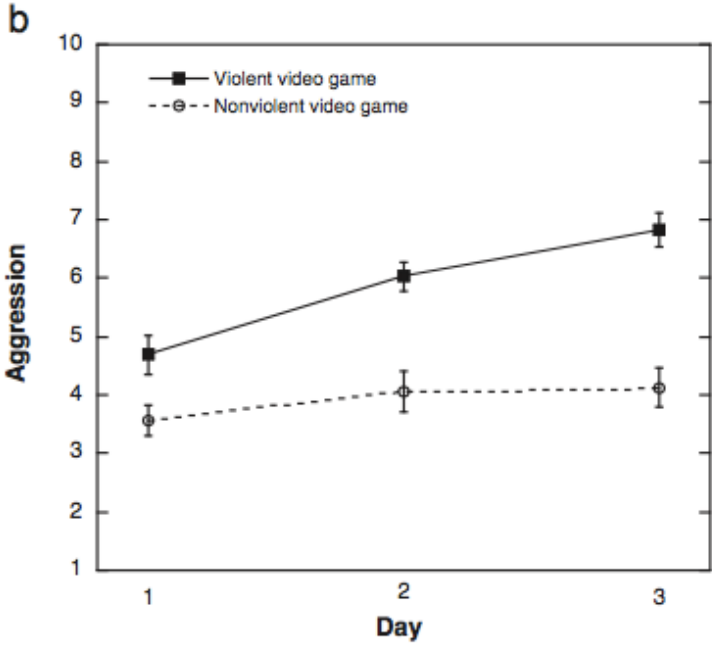
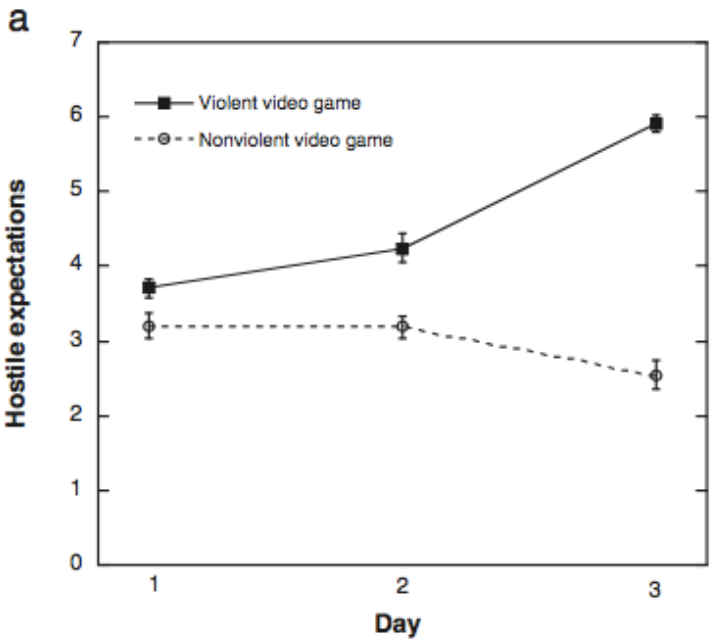


Fig. 1. a. Effect of video game content on hostile expectations over time. Capped vertical bars denote 1 standard error. b. Effect of video game content on aggressive behavior over time. Capped vertical bars denote 1 standard error.



Journal of Experimental Social Psychology 49 (2013) 224–227



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}

^a University Pierre Mendès-France, Grenoble, France
^b University of Hohenheim, Germany
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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.



Gray matter and white matter abnormalities in online game addiction

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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.



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."

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.



Dr. Sree Jadapalle

VIDEOJUEGOS-ADOLESCENCIA Y FUNCIONES CEREBRALES SUPERIORES

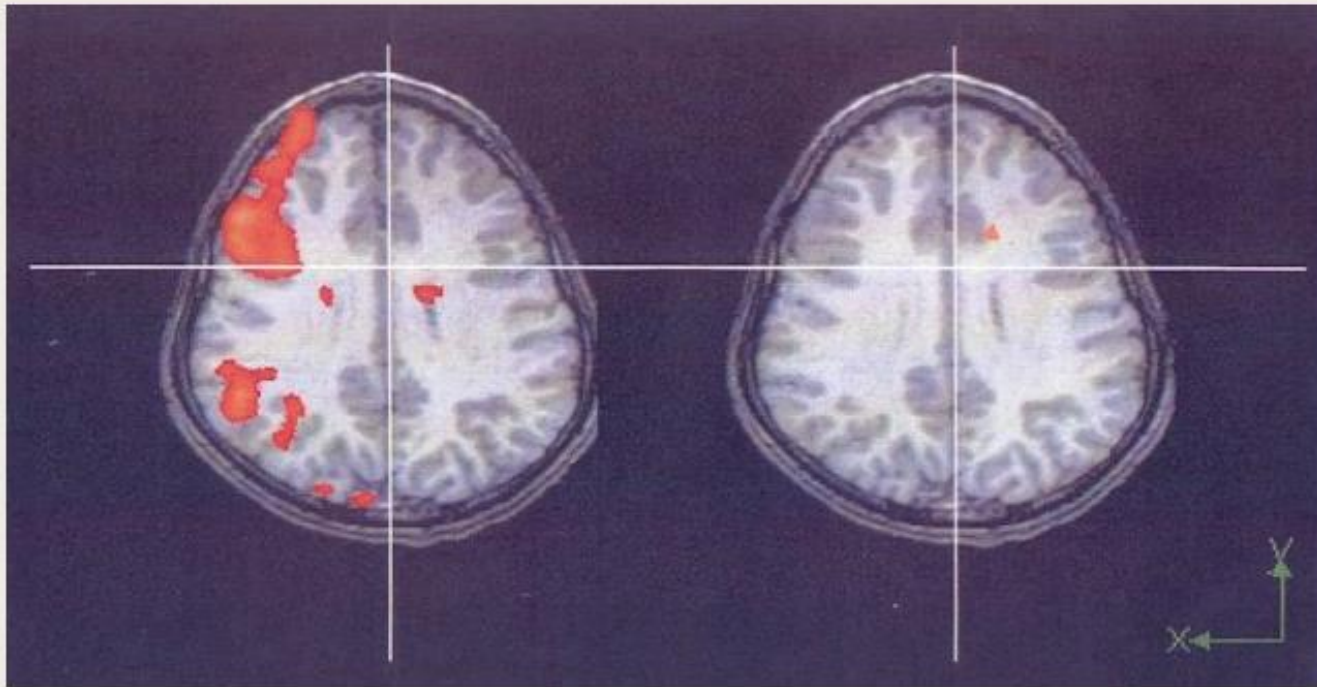


Fig1.-Adolescent's Brain with Low Video Media Exposure is the left image and Adolescent's Brain with High Video Media Exposure is the image on the right.

fMRI Brain Imaging Demonstrates Low Brain Activity in Frontal Lobe of Adolescents (reduced levels of cognitive brain function) with High Video Media Exposure.

Brain Activation and Violent Video Games.

Neuroradiology

Journal of Computer Assisted Tomography. 29(3):287-292, May/June 2005.

Sleep Duration, Restfulness, and Screens in the Sleep Environment

Jennifer Falbe, ScD, MPH^a, Kirsten K. Davison, PhD^b, Rebecca L. Franckle, MPH^c, Claudie Genter, MPH^d, Steven L. Gortmaker, PhD^e, Lauren Smith, MD, MPH^f, Thomas Land, PhD^g, Elsie M. Taveras, MD, MPH^h

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.

abstract



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Dr Falbe 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 Genter 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.

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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.



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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},

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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



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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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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.

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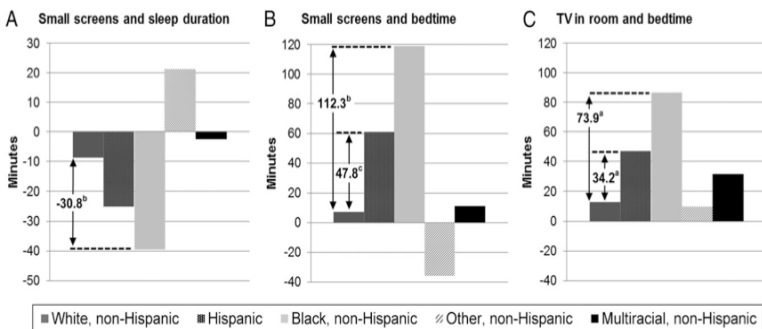


FIGURE 1
Differences by race or ethnicity in the associations between screens in the sleep environment and weekday sleep duration and bedtime estimated from fully adjusted models (model 2). A, Minutes of sleep duration associated with sleeping near a small screen. B, Bedtime (minutes) associated with 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 $P < .001$.

Television Viewing and Risk of Type 2 Diabetes, Cardiovascular Disease, and All-Cause Mortality

A Meta-analysis

Anders Grøntved, MPH, MSc

Frank B. Hu, MD, PhD

TELEVISION (TV) VIEWING IS THE most commonly reported daily activity apart from working and sleeping in many populations around the world.¹⁻³ On average, 40% of daily free time is occupied by TV viewing within several European countries¹ and 50% in Australia.² This corresponds to a daily TV viewing time of about 3.5 to 4.0 hours. In the United States, the average number of daily hours of TV viewing has recently been reported to be 5 hours.³

Beyond altering energy expenditure by displacing time spent on physical activities, TV viewing is associated with unhealthy eating (eg, higher intake of fried foods, processed meat, and sugar-sweetened beverages and lower intake of fruits, vegetables, and whole grains) in both children and adults.⁴⁻⁷ Furthermore, TV viewing may be associated with the intake of foods and beverages that are advertised on TV⁴ and could attract some individuals to begin smoking.⁸

Physical inactivity, various dietary factors, and smoking are well-

Context Prolonged television (TV) viewing is the most prevalent and pervasive sedentary behavior in industrialized countries and has been associated with morbidity and mortality. However, a systematic and quantitative assessment of published studies is not available.

Objective To perform a meta-analysis of all prospective cohort studies to determine the association between TV viewing and risk of type 2 diabetes, fatal or nonfatal cardiovascular disease, and all-cause mortality.

Data Sources and Study Selection Relevant studies were identified by searches of the MEDLINE database from 1970 to March 2011 and the EMBASE database from 1974 to March 2011 without restrictions and by reviewing reference lists from retrieved articles. Cohort studies that reported relative risk estimates with 95% confidence intervals (CIs) for the associations of interest were included.

Data Extraction Data were extracted independently by each author and summary estimates of association were obtained using a random-effects model.

Data Synthesis Of the 8 studies included, 4 reported results on type 2 diabetes (175 938 individuals; 6428 incident cases during 1.1 million person-years of follow-up), 4 reported on fatal or nonfatal cardiovascular disease (34 253 individuals; 1052 incident cases), and 3 reported on all-cause mortality (26 509 individuals; 1879 deaths during 202 353 person-years of follow-up). The pooled relative risks per 2 hours of TV viewing per day were 1.20 (95% CI, 1.14-1.27) for type 2 diabetes, 1.15 (95% CI, 1.06-1.23) for fatal or nonfatal cardiovascular disease, and 1.13 (95% CI, 1.07-1.18) for all-cause mortality. While the associations between time spent viewing TV and risk of type 2 diabetes and cardiovascular disease were linear, the risk of all-cause mortality appeared to increase with TV viewing duration of greater than 3 hours per day. The estimated absolute risk differences per every 2 hours of TV viewing per day were 176 cases of type 2 diabetes per 100 000 individuals per year, 38 cases of fatal cardiovascular disease per 100 000 individuals per year, and 104 deaths for all-cause mortality per 100 000 individuals per year.

Conclusion Prolonged TV viewing was associated with increased risk of type 2 diabetes, cardiovascular disease, and all-cause mortality.



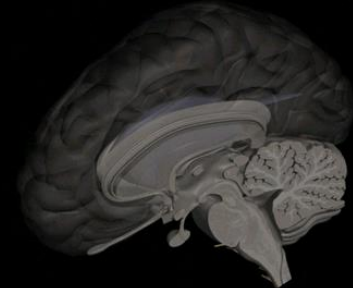
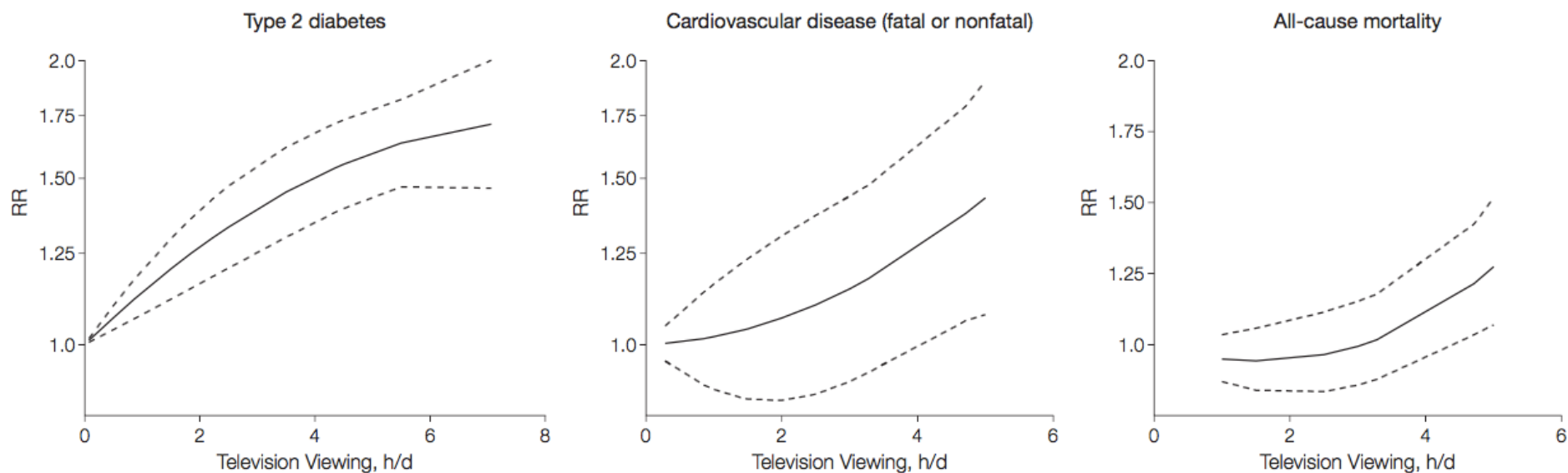


Figure 3. Dose-Response Relationship Between Television Viewing and Risk of Type 2 Diabetes, Cardiovascular Disease, All-Cause Mortality



Dotted lines represent the 95% confidence intervals for the fitted trend. The dose-response relationship plot between television (TV) viewing (hours per day) and risk of type 2 diabetes (4 studies), cardiovascular disease (4 studies), and all-cause mortality (3 studies) was estimated with random-effects meta-regression,¹⁰ which allowed for a nonlinear response by including a quadratic term of TV viewing time. The test for a nonlinear relationship was only significant for all-cause mortality ($P=.007$). In subsequent piecewise regression, the best model fit was obtained at an inflection point of 3 hours of TV viewing per day ($P=.01$ for difference in slopes).



OPEN ACCESS

Time for bed: associations with cognitive performance in 7-year-old children: a longitudinal population-based study

Yvonne Kelly, John Kelly, Amanda Sacker

► Additional material is published online only. To view please visit the journal online (<http://dx.doi.org/10.1136/jech-2012-202024>).

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ABSTRACT

Background Little is known about the links between the time that young children go to bed and their cognitive development. In this paper we seek to examine whether bedtimes in early childhood are related to cognitive test scores in 7-year-olds.

Methods We examined data on bedtimes and cognitive test (z-scores) for reading, maths and spatial abilities for 11 178 7-year-old children from the UK Millennium Cohort Study.

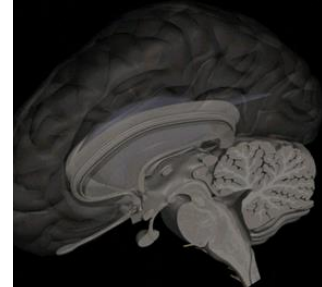
Results At age 7, not having a regular bedtime was related to lower cognitive test scores in girls: reading (β : -0.22), maths (β : -0.26) and spatial (β : -0.15), but not for boys. Non-regular bedtimes at age 3 were independently associated, in girls and boys, with lower reading (β : -0.10, -0.20), maths (β : -0.16, -0.11) and spatial (β : -0.13, -0.16) scores. Cumulative relationships were apparent. Girls who never had regular bedtimes at ages 3, 5 and 7 had significantly lower reading (β : -0.36), maths (β : -0.51) and spatial (β : -0.40) scores, while for boys this was the case for those having non-regular bedtimes at any two ages (3, 5 or 7 years): reading (β : -0.28), maths (β : -0.22) and spatial (β : -0.26) scores. In boys having non-regular bedtimes at all three ages (3, 5 and 7 years) were non-significantly related to lower reading, maths and spatial scores.

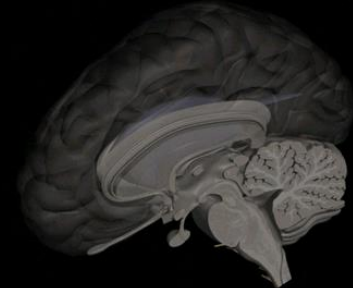
Conclusions The consistent nature of bedtimes during early childhood is related to cognitive performance. Given the importance of early child development, there may be knock on effects for health throughout life.

with their children, and it might be that bedtimes get pushed back or are not routinely in place. This could have important ramifications as when sleep is restricted or disrupted symptoms that reflect a reduced capacity for plastic change and/or disrupted circadian rhythms follow, including cognitive impairment and lack of concentration.^{9–10} Early child development has profound influences on health and well-being across the lifecourse.¹¹ Therefore, reduced or disrupted sleep, especially if it occurs at key times in development, could have important impacts on health throughout life.

Most prior work on sleep and cognitive function has been conducted on adults and adolescents, and recent reviews point to the need for population-based studies, set in early childhood^{12–15} that examine markers of sleep in relation to multiple measures of cognitive performance. Few prior studies^{16–18} have considered these associations longitudinally. In this paper, we examine data from a large nationally representative prospective population-based cohort study to see whether and how reported bedtimes through early childhood relate to markers of cognitive performance at 7 years of age.

First, we look cross-sectionally to assess whether the time children go to bed and the consistency of bedtimes are related to cognitive test scores. Second, we look longitudinally to consider whether there are sensitive period or cumulative effects of markers of bedtimes through early childhood.





Sleep Duration, Restfulness, and Screens in the Sleep Environment

Jennifer Falbe, ScD, MPH^a, Kirsten K. Davison, PhD^{b,c}, Rebecca L. Franckle, MPH^{b,c}, Claudia Ganter, MPH^{b,d}, Steven L. Gortmaker, PhD^{c,e}, Lauren Smith, MD, MPH^f, Thomas Land, PhD^g, Elsie M. Taveras, MD, MPH^{b,h}

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.

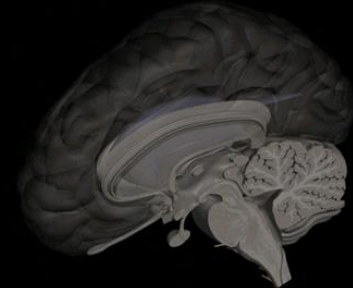
RESULTS: Children who slept near a small screen (compared with never) reported 20.6 fewer minutes of sleep (95% confidence interval [CI], -29.7 to -11.4) and had a higher prevalence of perceived insufficient rest or sleep (prevalence ratio, 1.39; 95% CI, 1.21 to 1.60). Children who slept in a room with 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.

abstract

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.



Según el análisis de la Dirección de Presupuestos, no todos los niños ocupan los *notebooks* con fines educativos:

Informe de la Dipres cuestiona aporte al aprendizaje del programa “Yo elijo mi PC”

El Mineduc anunció que a partir de 2019 habilitarán una nueva plataforma con contenidos de matemáticas y lectura, mientras que Enlaces se transformó en un centro de innovación. Con todo, expertos plantean que se debe guiar a los padres para que estos acompañen a sus hijos en la utilización de los computadores.

S. QUEVEDO Y J. HERRERA

Hace casi una década, el Mineduc entregó por primera vez 30 mil computadores a los escolares de séptimo básico que destacaron por sus buenas notas. De esa forma buscaba, según lo anunció la entonces Presidenta Michelle Bachelet, disminuir la brecha digital de los estudiantes.

A partir de 2009, el programa ha tenido modificaciones acordes a los cambios tecnológicos y las necesidades de los alumnos. También se ha adaptado el beneficio y ahora está destinado a los niños de colegios que reciben subvención y están en los niveles prioritarios, de acuerdo con el nivel de pobreza y riesgo de fracaso escolar determinado por la Junaeb.

Según consigna un informe elaborado por la Dirección de Presupuestos (Dipres), entre

BENEFICIO

Qué reciben los escolares

Los programas “Yo elijo mi PC” y “Me conecto para aprender” entregan los siguientes materiales:

- ▶ **COMPUTADOR PORTÁTIL**: para niños de 7° básico.
- ▶ **ROUTER** con conexión a Internet por 12 meses.
- ▶ **PROGRAMAS**: Licencias de Windows y Office.
- ▶ **SOFTWARE**: Los PC vienen con acceso a recursos digitales y páginas web especializadas.
- ▶ **RASTREO**: Los PC incluyen un software para localizarlo en el caso de pérdida.



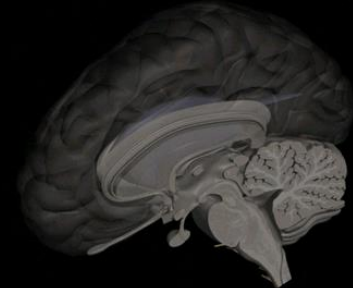
tas herramientas, no saben bien cómo poner límites al uso en las casas o cómo guiar, y eso puede tener muy malas consecuencias en el aprendizaje”.

Los cambios

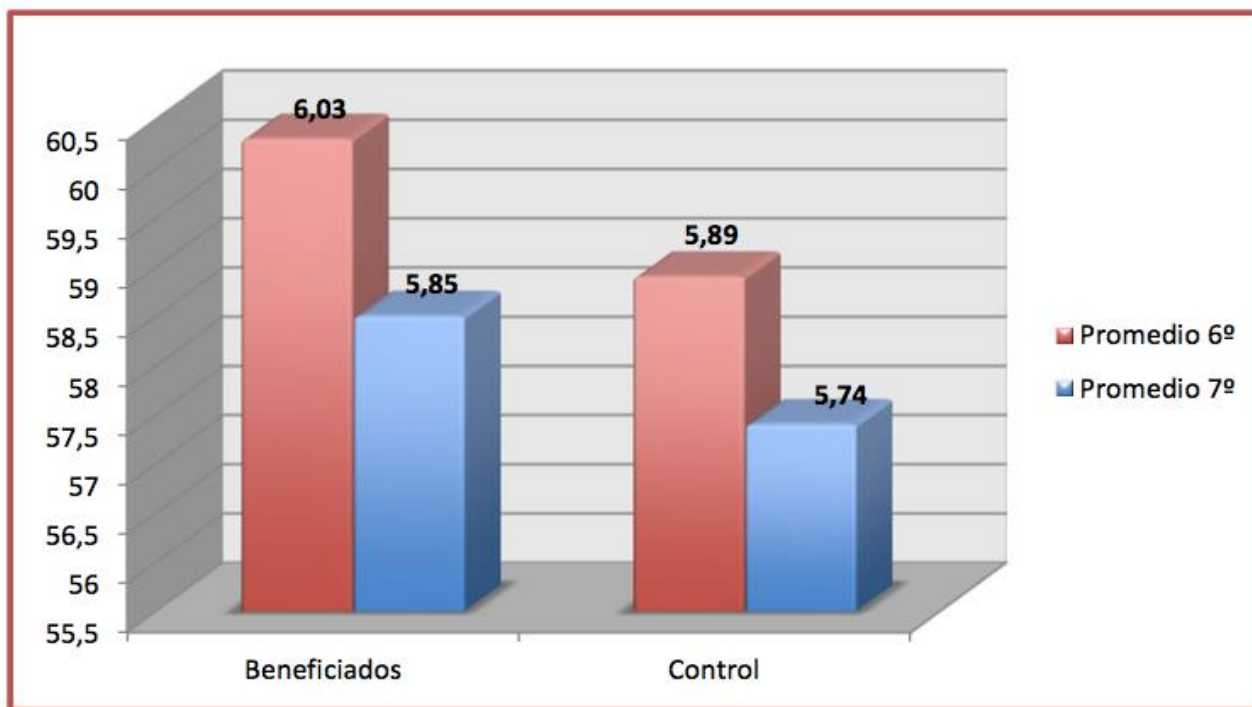
“Queremos que los estudiantes utilicen sus computadores como herramienta para mejorar sus aprendizajes”, asegura el subsecretario de Educación, Raúl Figueroa.

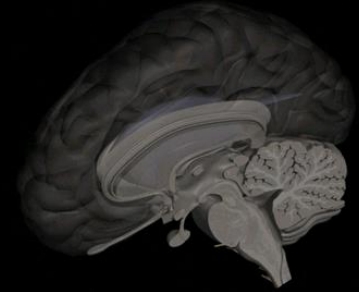
Por eso, adelanta que desde el próximo año los beneficiados “tendrán acceso a una nueva plataforma que les permitirá acceder a Khan Academy, una excelente plataforma gratuita para matemáticas, que estará alineada al currículum chileno. Para aprender programación, todos los estudiantes beneficiarios de Becas TIC estarán automáticamente preinscritos en excelentes cursos de programación *online* (...) y también entregaremos nuevas herramientas para desarrollar las habilidades de lectura”.

Asimismo, la autoridad ase-



Impacto del programa “Yo elijo mi PC” en el rendimiento escolar de un grupo de adolescentes de Viña del Mar.





July 2005

Children's Television Viewing and Cognitive Outcomes

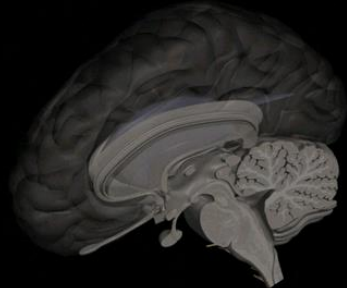
A Longitudinal Analysis of National Data

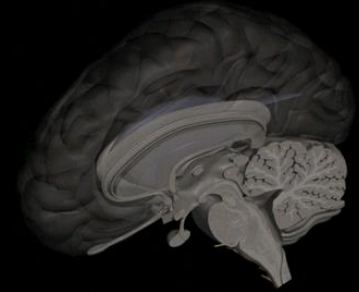
Frederick J. Zimmerman, PhD; Dimitri A. Christakis, MD, MPH

» [Author Affiliations](#) | [Article Information](#)

Arch Pediatr Adolesc Med. 2005;159(7):619-625. doi:10.1001/archpedi.159.7.619

Quienes tenían TV en pieza (70%) obtuvieron peores notas en el colegio y en test de comprensión de lectura.





Associations between Media Viewing and Language Development in Children Under Age 2 Years

[Frederick J. Zimmerman, PhD](#)  , [Dimitri A. Christakis, MD, MPH](#), [Andrew N. Meltzoff, PhD](#)



DOI: <https://doi.org/10.1016/j.jpeds.2007.04.071>

Por cada hora diaria que lactantes de 8 a 16 meses ven videos , comprendieron un promedio de seis a ocho palabras menos que aquellos que no lo hicieron. Los niños más grandes no se vieron ni perjudicados ni beneficiados.

PEDIATRICS®

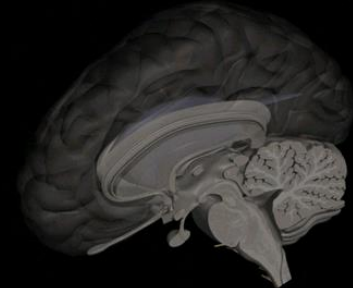
OFFICIAL JOURNAL OF THE AMERICAN ACADEMY OF PEDIATRICS

Television and Video Game Exposure and the Development of Attention Problems

Edward L. Swing, Douglas A. Gentile, Craig A. Anderson and David A. Walsh
Pediatrics published online Jul 5, 2010;

Investigación participaron 1323 escolares de entre 6 a 12 años de 10 colegios de Estados Unidos.

Los investigadores concluyeron que los escolares que estaban más de dos horas frente a TV y VJ tenían un 67% de riesgo de presentar problemas de atención en comparación con los menores que pasaban menos tiempo .



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.



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Research



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Spreading of healthy mood in adolescent social networks

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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.

Modifying Media Content for Preschool Children: A Randomized Controlled Trial

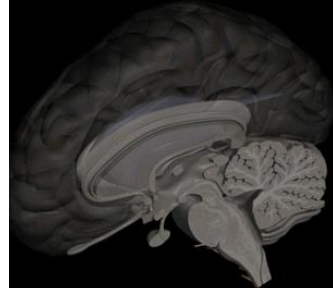
February 2013

600 familias con niños entre tres y cinco años, seguidas por un año

Grupo 1: Seguían viendo programación habitual

Grupo 2: Padres debían escoger la programación para sus hijos basándose en la promoción de valores, como la caridad, la tolerancia y la capacidad para resolver problemas.

A los 6 meses la evaluación de Conducta y Habilidades Sociales fue en promedio 2.11 puntos superior en grupo intervenido (con diferencia estadísticamente significativa).



ARTICLE

Open Access

Brain-computer-interface-based intervention re-normalizes brain functional network topology in children with attention deficit/hyperactivity disorder

Xing Qian¹, Beatrice Rui Yi Loo¹, Francisco Xavier Castellanos², Siwei Liu¹, Hui Li Koh¹, Xue Wei Wendy Poh³, Ranga Krishnan¹, Daniel Fung³, Michael WL Chee¹, Cuntai Guan⁴, Tih-Shih Lee¹, Choon Guan Lim⁴ and Juan Zhou^{1,5}

Abstract

A brain-computer-interface (BCI)-based attention training game system has shown promise for treating attention deficit/hyperactivity disorder (ADHD) children with inattentive symptoms. However, little is known about brain network organizational changes underlying behavior improvement following BCI-based training. To cover this gap, we aimed to examine the topological alterations of large-scale brain functional networks induced by the 8-week BCI-based attention intervention in ADHD boys using resting-state functional magnetic resonance imaging method. Compared to the non-intervention (ADHD-NI) group, the intervention group (ADHD-I) showed greater reduction of inattention symptoms accompanied with differential brain network reorganizations after training. Specifically, the ADHD-NI group had increased functional connectivity (FC) within the salience/ventral attention network (SVN) and increased FC between task-positive networks (including the SVN, dorsal attention (DAN), somatomotor, and executive control network) and subcortical regions; in contrast ADHD-I group did not have this pattern. In parallel, ADHD-I group had reduced degree centrality and clustering coefficient as well as increased closeness in task-positive and the default mode networks (prefrontal regions) after the training. More importantly, these reduced local functional processing mainly in the SVN were associated with less inattentive/internalizing problems after 8-week BCI-based intervention across ADHD patients. Our findings suggest that the BCI-based attention training facilitates behavioral improvement in ADHD children by reorganizing brain functional network from more regular to more random configurations, particularly renormalizing salience network processing. Future long-term longitudinal neuroimaging studies are needed to develop the BCI-based intervention approach to promote brain maturation in ADHD.

Far transfer to language and math of a short software-based gaming intervention

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Edited* by Michael I. Posner, University of Oregon, Eugene, OR, and approved March 12, 2014 (received for review October 28, 2013)

Executive functions (EF) in children can be trained, but it remains unknown whether training-related benefits elicit far transfer to real-life situations. Here, we investigate whether a set of computerized games might yield near and far transfer on an experimental and an active control group of low-SES otherwise typically developing 6-y-olds in a 3-mo pretest–training–posttest design that was ecologically deployed (at school). The intervention elicits transfer to some (but not all) facets of executive function. These changes cascade to real-world measures of school performance. The intervention equalizes academic outcomes across children who regularly attend school and those who do not because of social and familiar circumstances.

cognitive training intervention | school grades | Attention Network Test | school attendance | working memory

The efficacy of cognitive training is controversial and constitutes a current challenge for educational neuroscience research (1–4). Although it has been well documented that directed interventions in children can change specific cognitive functions (5–8), it is unknown whether those translate to broader contexts and real-world situations of educational pertinence. Cognitive training has largely focused on executive functions (EF) (6–8), a class of processes critical for purposeful, goal-directed behavior, including working memory (WM), planning, and cognitive control (6). Research has shown that EF capabilities can be improved with practice and gaming interventions (5–7, 9). These results are particularly promising because EF are critical for educational success (10–12) and for mental and physical health (5, 13); furthermore, early self-regulation is indicative of an individual's health and social behavior as an adult (14, 15).

Because the degree of self-regulation elicited by a child can predict real-life outcomes, it is presumed that an intervention that improves EF should affect a child's educational success. However, this hypothesis has never been explicitly examined based on school grades as real-world measurements of educational achievement (16). Instead, current evidence (7, 9, 17, 18) derives from laboratory measures related to school performance (for instance, the time it takes for a child to read a word). Because school performance results from an intertwined process integrating EF with temperament, socioeconomic status (SES), and cognitive skills (19–22) among other environmental factors, examining the direct outcome of an intervention on school grades is necessary to assure its practical pertinence.

Our main hypothesis is that a gaming intervention in school-age children tuned to improve aspects of EF should transfer to real-world manifestations of school performance indexed by children's grades.

In the educational system of the City of Buenos Aires, first graders devote an important amount of their school time to language and math. Grading for these subjects is largely based on objective tasks and they are examined extensively. Instead, other subjects (such as foreign language or social behavior) where one

may also expect a benefit of EF training, are devoted little school time for first graders and/or graded on much more arbitrary and subjective bases (23). Thus, our hypothesis is that a gaming intervention tuned to EF improvement may result in a specific effect in language and math because: (i) EF individual variability correlates with educational outcomes (16, 21, 24–26); and (ii) compared with other subjects for which one may also predict that EF training may have an effect (e.g., natural and social sciences), language and math are the ones with the most reliable grading system. Here, we set out to examine this hypothesis by conducting an intervention based on computerized games (27) that train EF in a low-SES group of children, initially displaying broad variability in school performance.

We first demonstrate the effect of such intervention on laboratory-based measures of EF and, subsequently, that these effects propagate to an improvement in school performance. This effect is specific to grades in language and mathematics and to the group of children who, because of a low rate of school attendance, have lower than average grades before the intervention.

Results

Intervention. One hundred eleven low-SES typically developing children participated in the intervention over a period of 10 wk (see *S1 Appendix*, Fig. S1 and Table S1 for specific information). Children were divided into two groups. Participants in the experimental trained group played three adaptive computer games aimed at training working memory, planning, and inhibitory control skills [refs. 27 and 28; www.matemate.com.ar (Note

Significance

Executive functions (EF) imply processes critical for purposeful, goal-directed behavior. In children, evidence derived from laboratory measures indicates that training can improve EF. However, this hypothesis has never been explicitly examined based on real-world measures, especially of educational achievement. Here, we investigate whether a set of computerized games might yield transfer on low-socioeconomic status otherwise typically developing 6-y-olds in an intervention deployed at their own school. The games elicit transfer of some EF, which cascades to real-world measures of school performance. More importantly, the intervention equalizes academic outcomes across children who regularly attend school and those who do not because of social and familiar circumstances.

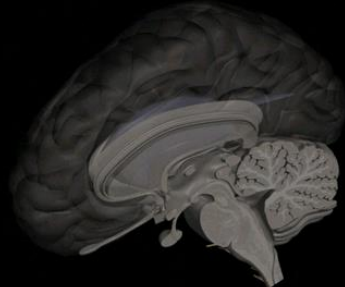
Author contributions: A.P.G., M.J.H., M.E.C., M.S.S., D.F.-S., S.J.L., and M.S. designed research; A.P.G., M.J.H., and M.L.-R. performed research; A.P.G., D.E.S., and M.S. analyzed data; A.P.G., S.J.L., and M.S. wrote the paper; and M.E.C., M.L.-R., and D.F.-S. programmed software.

The authors declare no conflict of interest.

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Plasticity of Attentional Functions in Older Adults after Non-Action Video Game Training: A Randomized Controlled Trial

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2 Neuropsychology and Cognition Group, Department of Psychology and Institute of Health Sciences (iUNICS), University of the Balearic Islands, Mallorca, Spain,

3 Instituto de Investigación Sanitaria de Palma (IdISPa), Mallorca, Spain, **4** School of Psychology, University of Western Australia, Perth, Australia

Abstract

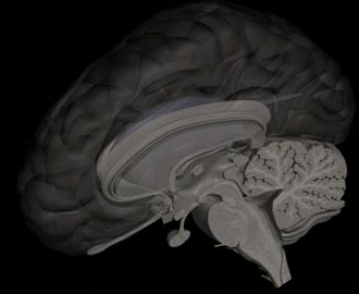
A major goal of recent research in aging has been to examine cognitive plasticity in older adults and its capacity to counteract cognitive decline. The aim of the present study was to investigate whether older adults could benefit from brain training with video games in a cross-modal oddball task designed to assess distraction and alertness. Twenty-seven healthy older adults participated in the study (15 in the experimental group, 12 in the control group). The experimental group received 20 1-hr video game training sessions using a commercially available brain-training package (*Lumosity*) involving problem solving, mental calculation, working memory and attention tasks. The control group did not practice this package and, instead, attended meetings with the other members of the study several times along the course of the study. Both groups were evaluated before and after the intervention using a cross-modal oddball task measuring alertness and distraction. The results showed a significant reduction of distraction and an increase of alertness in the experimental group and no variation in the control group. These results suggest neurocognitive plasticity in the old human brain as training enhanced cognitive performance on attentional functions.

Trial Registration: ClinicalTrials.gov NCT02007616

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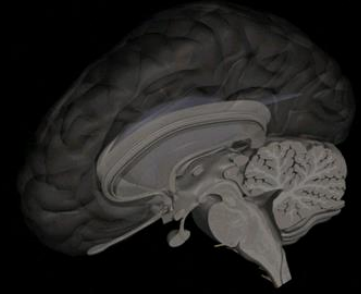


Tren Digital UC 2015:

148 duplas de padres con niños de entre 1-13 años en plazas y patios de comidas.

45% casos en plazas y 44% en patios de comidas , los padres presentaron nivel alto o medio de “ absorción “ en el teléfono, donde su atención sobre el entorno era casi nulo.

CONCLUSIONES



ANTES DE LOS 2-3 AÑOS NO SE DEBE EXPONER A NIÑOS A PANTALLAS

LOS VIDEO-JUEGOS AGRESIVOS ALTERAN LA CONDUCTA

LAS PANTALLAS RETRASAN EL SUEÑO

EL EXCESO DE TV TIENE SECUELAS FÍSICAS Y MENTALES

LOS NIÑOS NO TIENEN CAPACIDAD DE AUTOCONTROL CON PANTALLAS

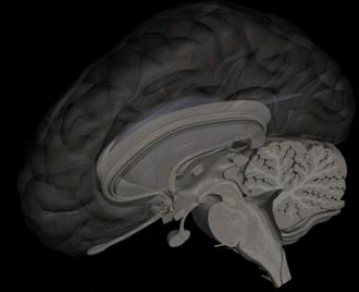
EL USO DE MEDIOS ELECTRÓNICOS REQUIERE **SUPERVISIÓN**

LOS NIÑOS APRENDEN POR **IMITACIÓN**

LAS FAMILIAS HABLAN MENOS ENTRE ELLOS SI HAY PANTALLAS

EL USO EXCESIVO DE PANTALLAS COMPROMETE FUNCIONES INTELECTUALES

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)

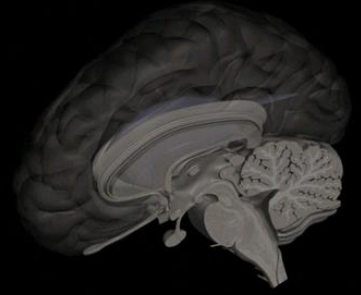
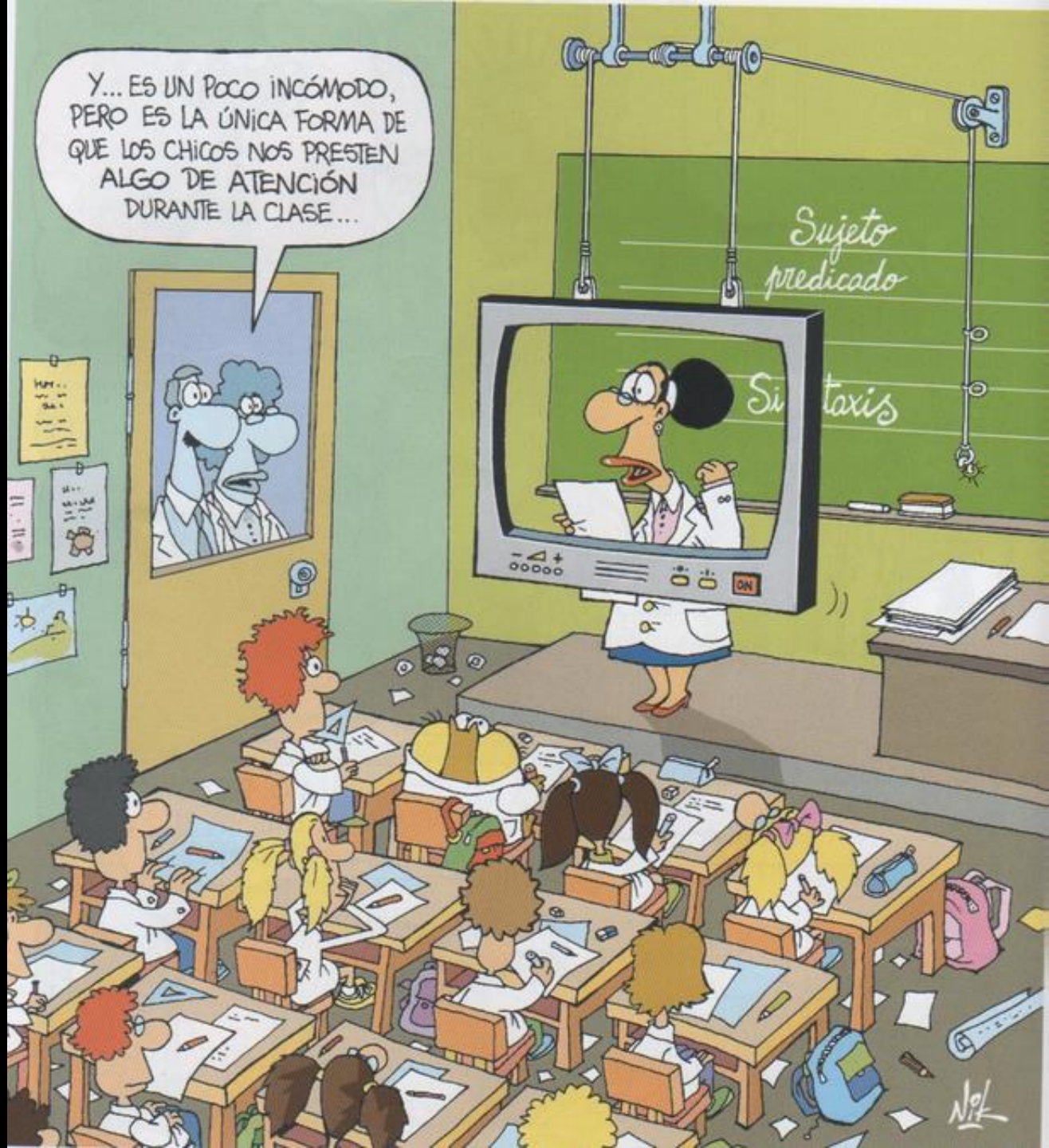
RESTRINGIR JUEGOS ELECTRÓNICOS, ESPECIALMENTE
DE CONTENIDO VIOLENTO

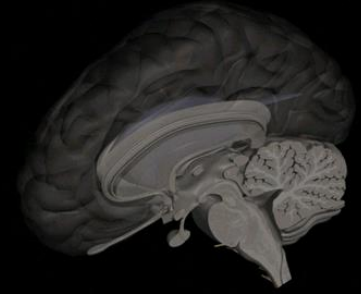
EVITAR CELULARES CON JUEGOS-INTERNET
(NIÑOS: ESCASA CAPACIDAD DE AUTOREGULACIÓN)

SABER QUÉ VEN EN LA TV

USO DE COMPUTADOR EN LUGAR PÚBLICO

Y... ES UN POCO INCÓMODO,
PERO ES LA ÚNICA FORMA DE
QUE LOS CHICOS NOS PRESTEN
ALGO DE ATENCIÓN
DURANTE LA CLASE...





IMPACTO DE LOS MEDIOS TECNOLÓGICOS EN EL DESARROLLO CEREBRAL DE LOS NIÑOS

ENFOQUE DESDE LAS NEUROCIENCIAS
Y CÓMO...COMO PADRES...AYUDAR A NUESTROS HIJOS

COLEGIO SANTA MARTA DE OSORNO NOVIEMBRE 2018

PRESENTACIÓN DISPONIBLE EN WWW.DOCTORPATRICIOGUERRA.CL

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