



TDAH en Preescolares (3 a 6 años): Retos y Oportunidades

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VI Congreso Internacional Multidisciplinar
sobre el Trastorno por Déficit de Atención
y Trastornos de la Conducta

Agradecemos a la Fundación
CONFIAS por su colaboración
en la organización de este congreso





Agenda

Introducción: Biología

Dificultades en el Diagnóstico

Diagnóstico Diferencial

Precursores Temperamentales

Tratamiento

Psicoeducación y Manejo Conductual

Apoyo Escolar

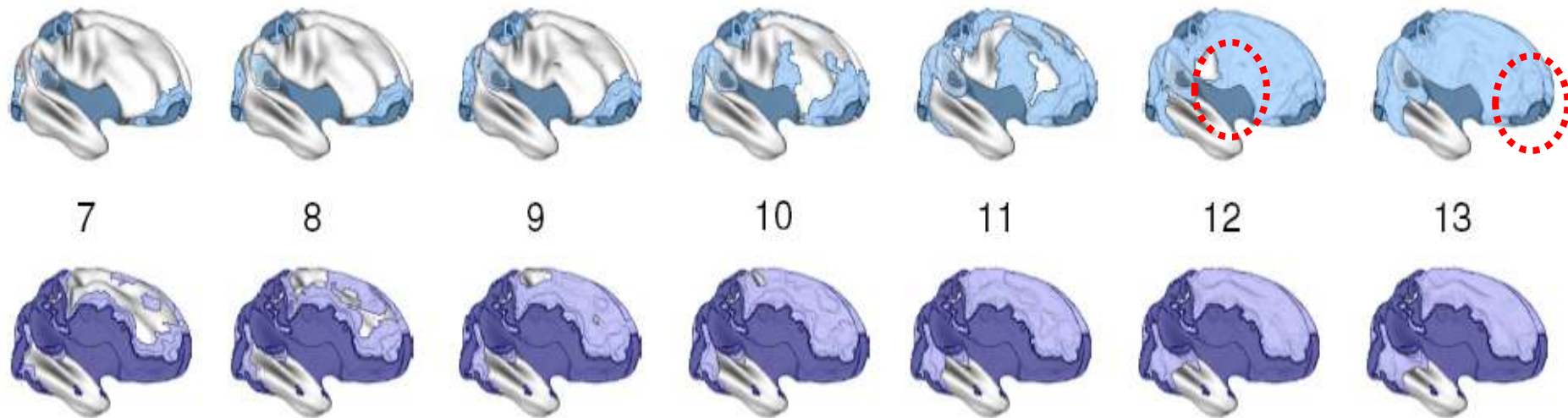
Medicación

Desarrollo cerebral diferencia entre TDAH y controles: Menor grosor cortical (7-13 años)

The New York Times

March 14, 2008

ADHD



Typically developing controls

NIMH, USA,
2008

Figure 1b: right lateral view of the cortical regions where peak thickness was attained at each age (shown age 7 through 13). Again, the delay in ADHD group in attaining peak cortical thickness is apparent.

Desarrollo de conectividad funcional en Redes de Control

14 niños

12 adolescentes

14 adultos

Kelly et al., Cerebral Cortex, 2008

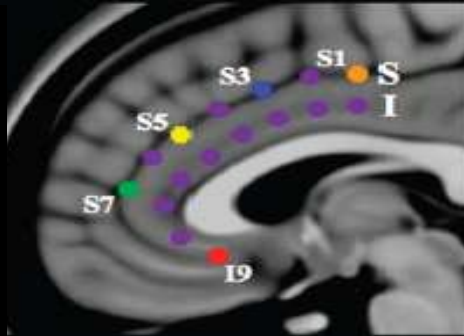
Control Motor

Control Cognitivo

Detección de Conflictos

Procesamiento Social

Regulación Emocional

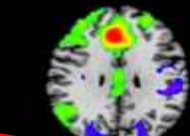
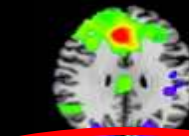
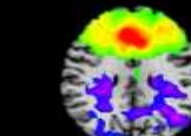
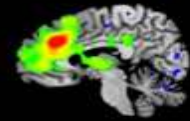
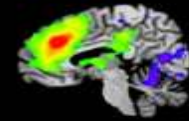
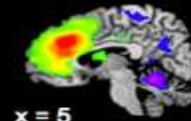


S5: Conflict Detection

CHILD

ADOLESCENT

ADULT



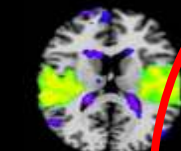
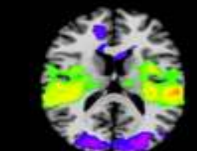
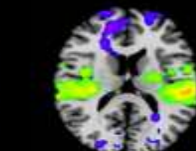
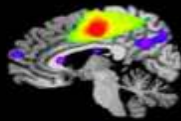
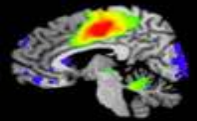
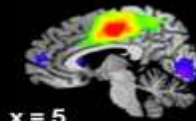
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S1: Motor Control

CHILD

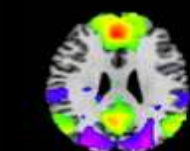
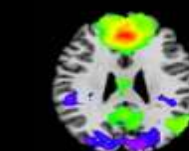
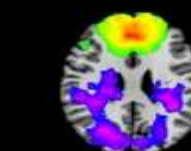
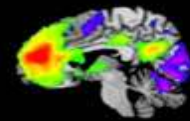
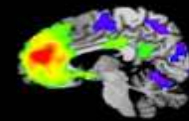
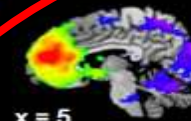
ADOLESCENT

ADULT



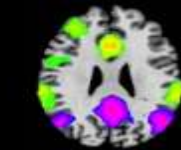
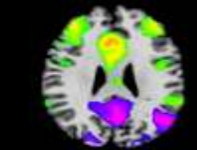
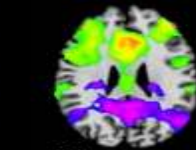
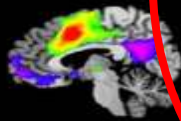
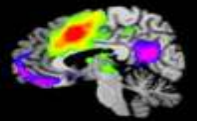
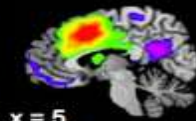
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S7: Social Processing



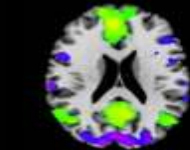
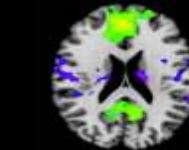
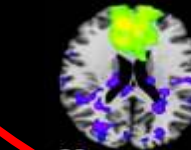
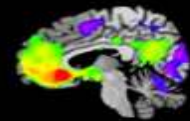
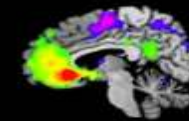
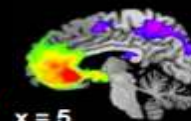
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S3: Cognitive Control



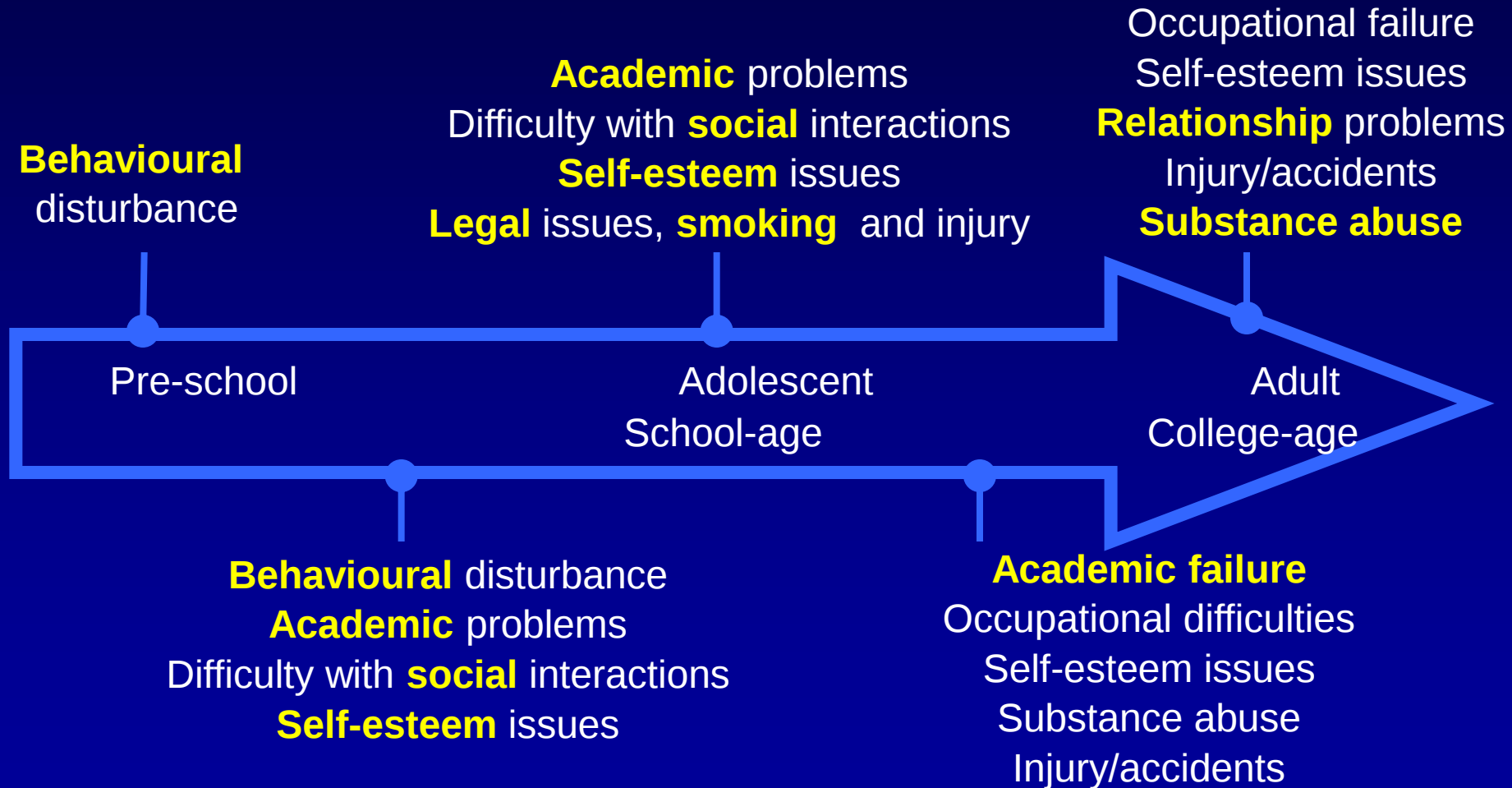
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I9: Emotional Regulation



z = 20

ADHD symptoms manifest in different ways throughout life



Dificultades en el Diagnóstico

ADHD IN PRESCHOOL CHILDREN (3-6 years) Core symptoms

- **Hyperactivity-Impulsivity: most prominent**
 - May be a more sensitive precursor to school-age ODD/ CD than to ADHD
- **Attention problems: reduced sustained attention during play activities**
- **Madre dice: *Ya era hiperactivo en el útero***

ADHD IN PRESCHOOL CHILDREN (3-6 years)

Specific problems in diagnosis/ differential diagnosis

- **A diagnosis is more difficult because**
 - **Some diagnostic criteria are less applicable**
 - **Attentional demands are less** in preschool age
 - Symptoms may be **masked by oppositional behaviour** or **parent-child interaction problems**
- **Behavioural observation is especially helpful**

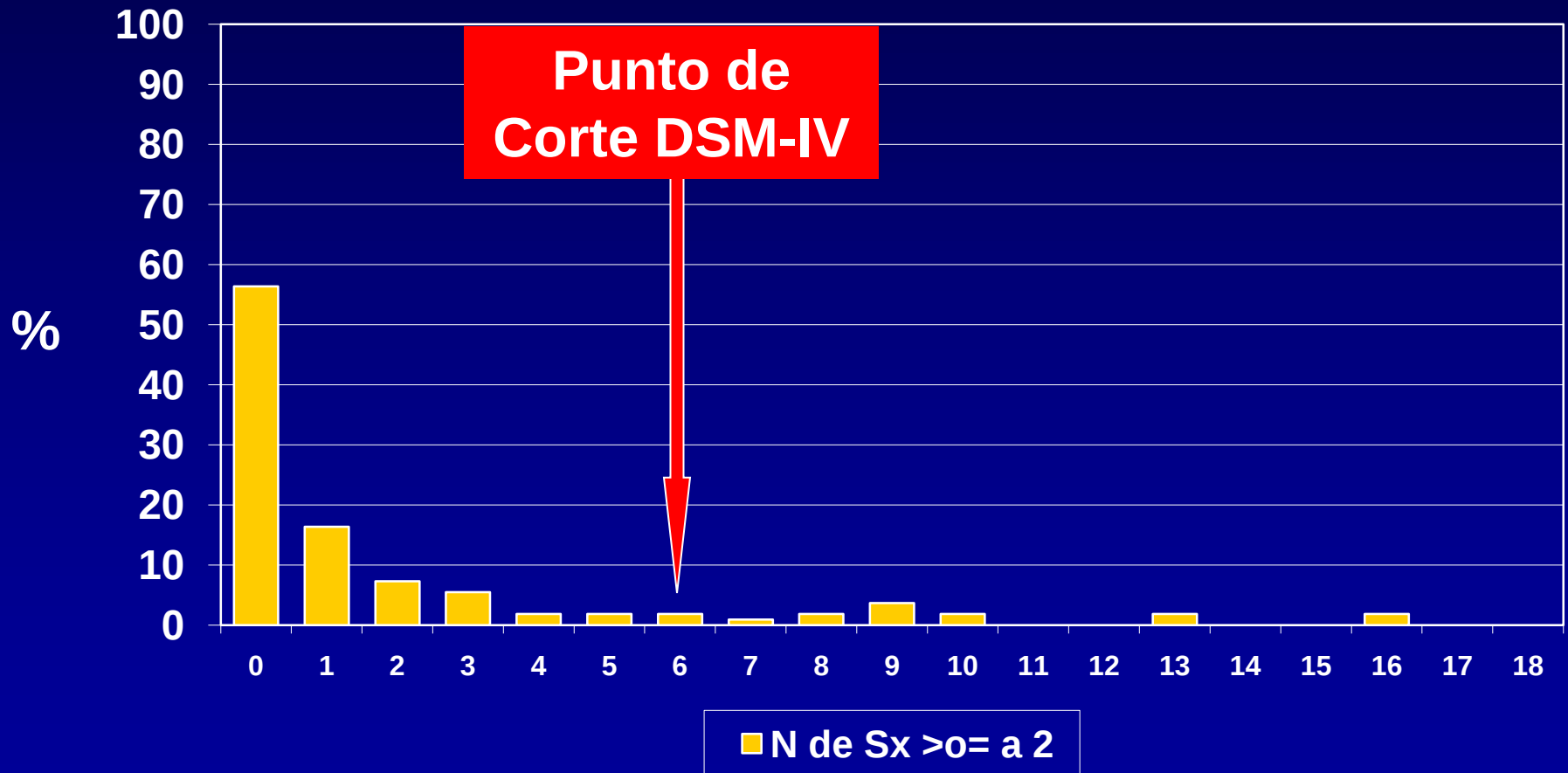
Síntomas / Diagnóstico Diferencial

- **Criterio DSM:**
Los síntomas son desproporcionados para lo esperable a su edad
- **Hiperactividad extrema**
 - Los padres la han tolerado en casa, pero entra en guardería o ed. Infantil (3 años)...y no pueden con él
- **Inatención en el juego y colegio**
 - Sacan los juguetes y no juegan



Número de síntomas de TDAH en 110 niños sanos

(8,82±2,14 años; rango: 4,66-15)



Datos sin publicar Soutullo, Gamazo, Iribarren, 2006

Discrepancias entre informadores

- **Puede haber discrepancias entre:**
 - **Padre-Madre:**
 - Separados, normas no homogéneas,
 - Madre pasa más tiempo con niño, Madre: normas, Padre: ocio
 - **Padres-Profesores, casa-colegio**
 - **Profesores entre sí: dentro del cole y colegio-particular**
- **Si no hay de evidencia de ganancia secundaria**
 - **No dudar de los padres**
 - **Si sólo problemas en el colegio:**
 - Puede ser ansiedad
 - Puede que los padres estén minimizando síntomas en casa

Dificultades en el Diagnóstico Diferencial

ADHD IN PRESCHOOL CHILDREN (3-6 years)

⇨ **Specific problems in diagnosis/
differential diagnosis**

■ **Differential diagnosis**

- **Mental retardation/"learning disability"
(CI<70)**
- **Autism spectrum disorders**
- **Attachment disorder (adoptados)**
- **Sensory impairment
(vision/ hearing deficits)**

Differentiation from age-specific liveliness may be difficult

Síntomas de TDAH en niños pequeños, considerar...

■ Situaciones en el entorno

- Situación ambiental y socioeconómica familiar
 - Cambio de trabajo, mudanza, cambio de colegio
 - Separación reciente
- Enfermedades, Embarazo de la madre...

■ Síntomas de Ansiedad

- Separación al ir al colegio, por la noche...

■ TGD (T. Espectro Autista)

- Interacción social; comunicación / desarrollo lenguaje; intereses estereotípicos

ADHD IN PRESCHOOL CHILDREN (3-6 years)

Associated symptoms and problems

- **Hard to manage preschoolers**
 - **Temper tantrums**
 - **ODD**
- **Specific developmental disorders of**
 - **Speech and language**
 - **Motor function (DCD)**
- **Disturbed parent-child relationship**

N.B. Exhausted parents

Precursores Temperamentales de TDAH y factores tempranos

CUADRO CLÍNICO

Evolución del Trastorno

Desarrollo: Psicopatología Evolutiva

NIÑOS PEQUEÑOS (1-3 años)

- **Variación temperamental**
- **Alteraciones de la regulación**
- **Adaptación social limitada,**
- **Combinado con interacción niño - padre/ madre**



Posible precursor del TDAH

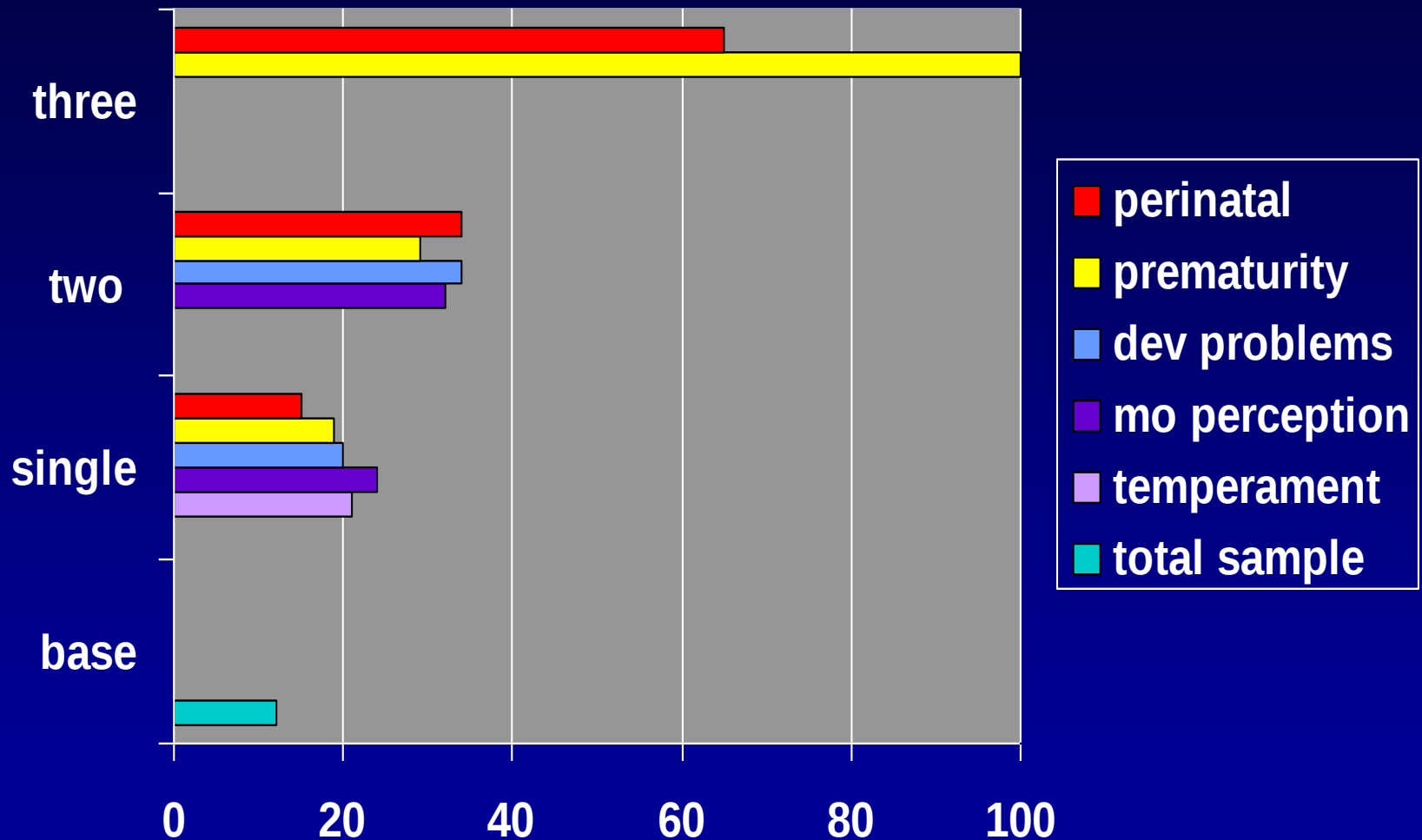
Prediction from factors present in infancy

Australian Temperament Project

- 2,443 4-8 month old infants
- Difficult temperament
- developmental difficulties
- perinatal status
- prematurity
- mother's overall perception
- problem's in mother-baby dyad
- SES, sex

prediction from factors present in infancy

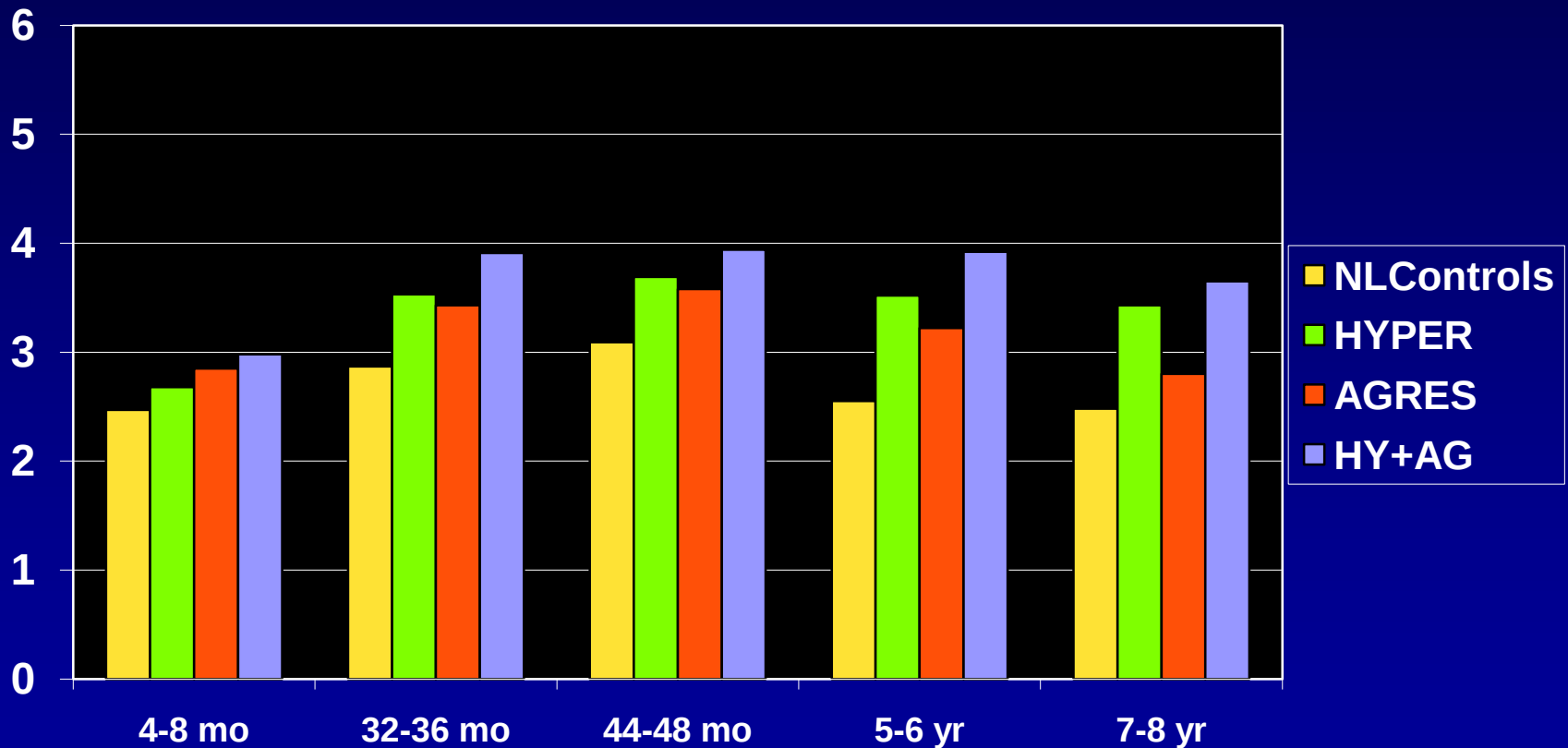
Australian Temperament Project



Niños (%) de 4-5 años >umbral en escala de hiperactividad

Prediction from factors present in infancy Australian Temperament Project

Temperamental scale (manageability / persistence)



Sanson et al., 1993

Prediction from factors present in infancy

Australian Temperament Project

- single risk factors do not predict individual outcome to any useful extent
- **combination** of risk factors was associated with **markedly increased prevalence rates**

Prediction from factors present in infancy

Australian Temperament Project

- aggression ($\pm$ HY) emerges when difficult temperament in infancy interacts with environment risks: developmental difficulties, perinatal status, prematurity, mother's overall perception, problems in mother-baby dyad, SES, sex
- hyperactivity emerges **later** from poor self-regulation when faced with school/task demands

CUADRO CLÍNICO

Evolución del Trastorno

Desarrollo: Psicopatología Evolutiva

PRE-ESCOLARES (3-6 años)

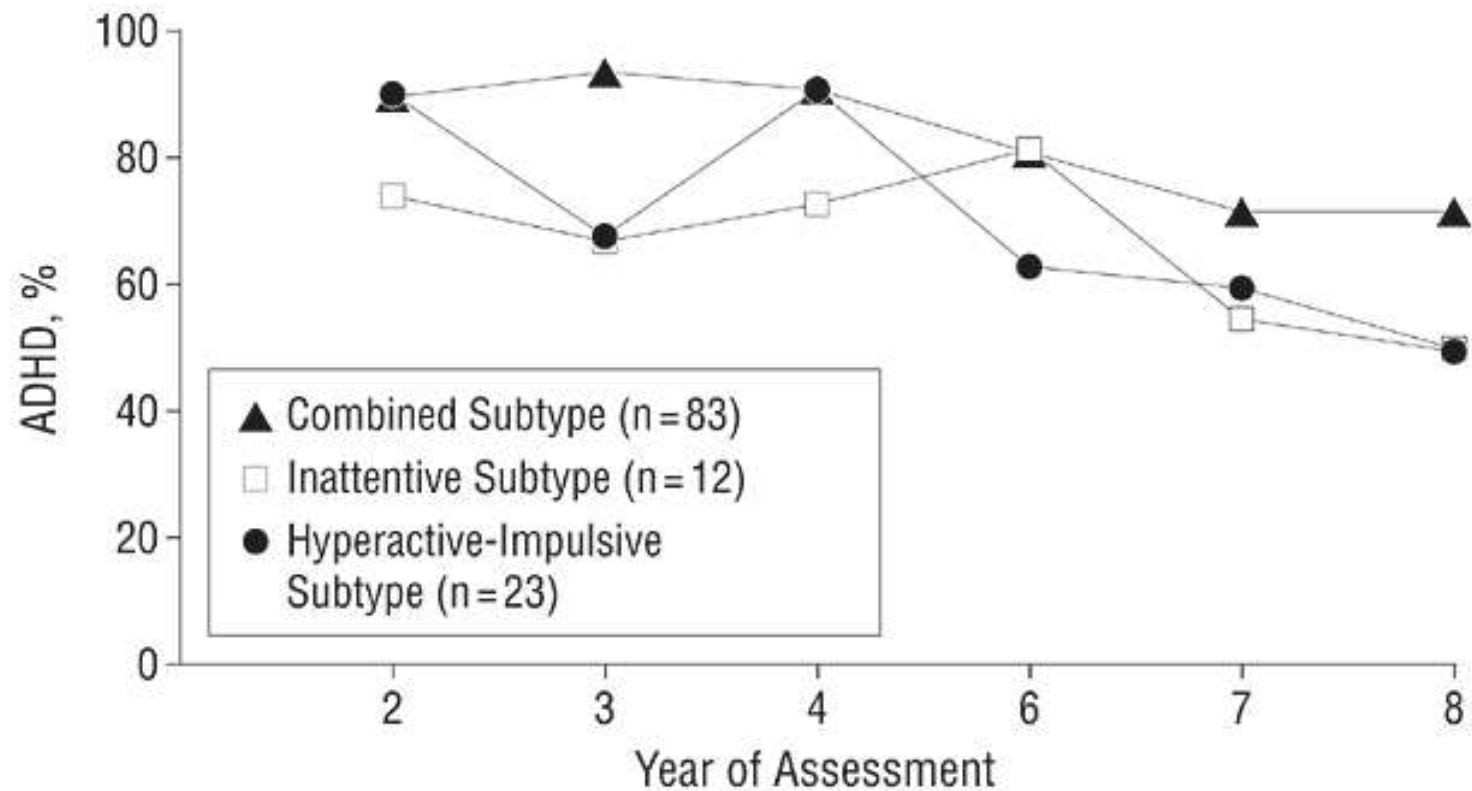
- Menor intensidad y duración en el juego
- Inquietud motriz
- Problemas asociados
 - Desarrollo de déficits
 - Conducta negativista desafiante
 - Problemas de adaptación social



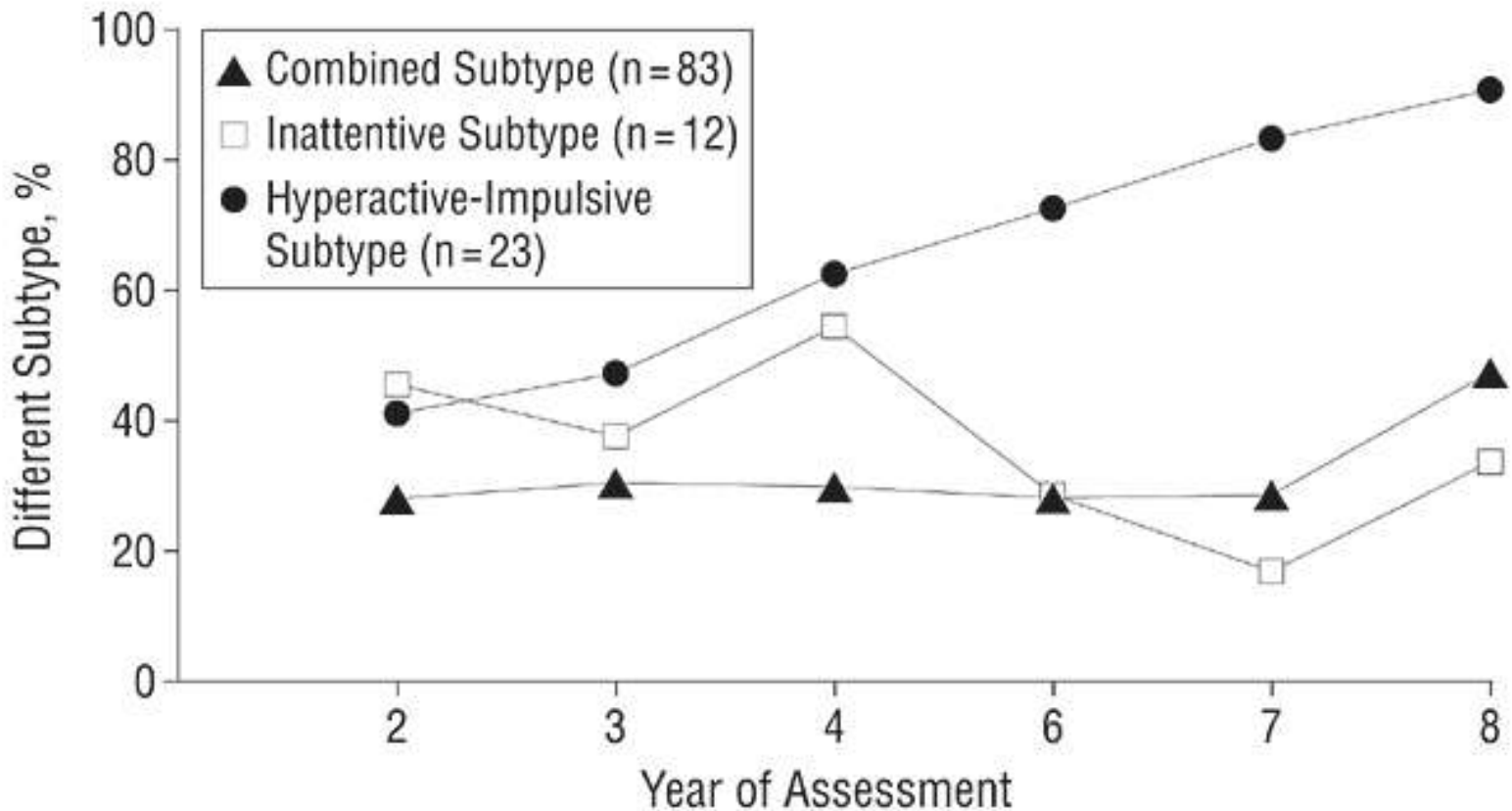
Instability of the *DSM-IV* Subtypes of ADHD From Preschool Through Elementary School

- Longitudinal study with a greater-than 89% retention rate in 7 assessments over 8 years.
- **118 4- to 6-year-olds** who met *DSM-IV* criteria for ADHD, including impairment in 2 settings in at least 1 assessment.
- The number of children who met criteria for ADHD declined over time, but most persisted.

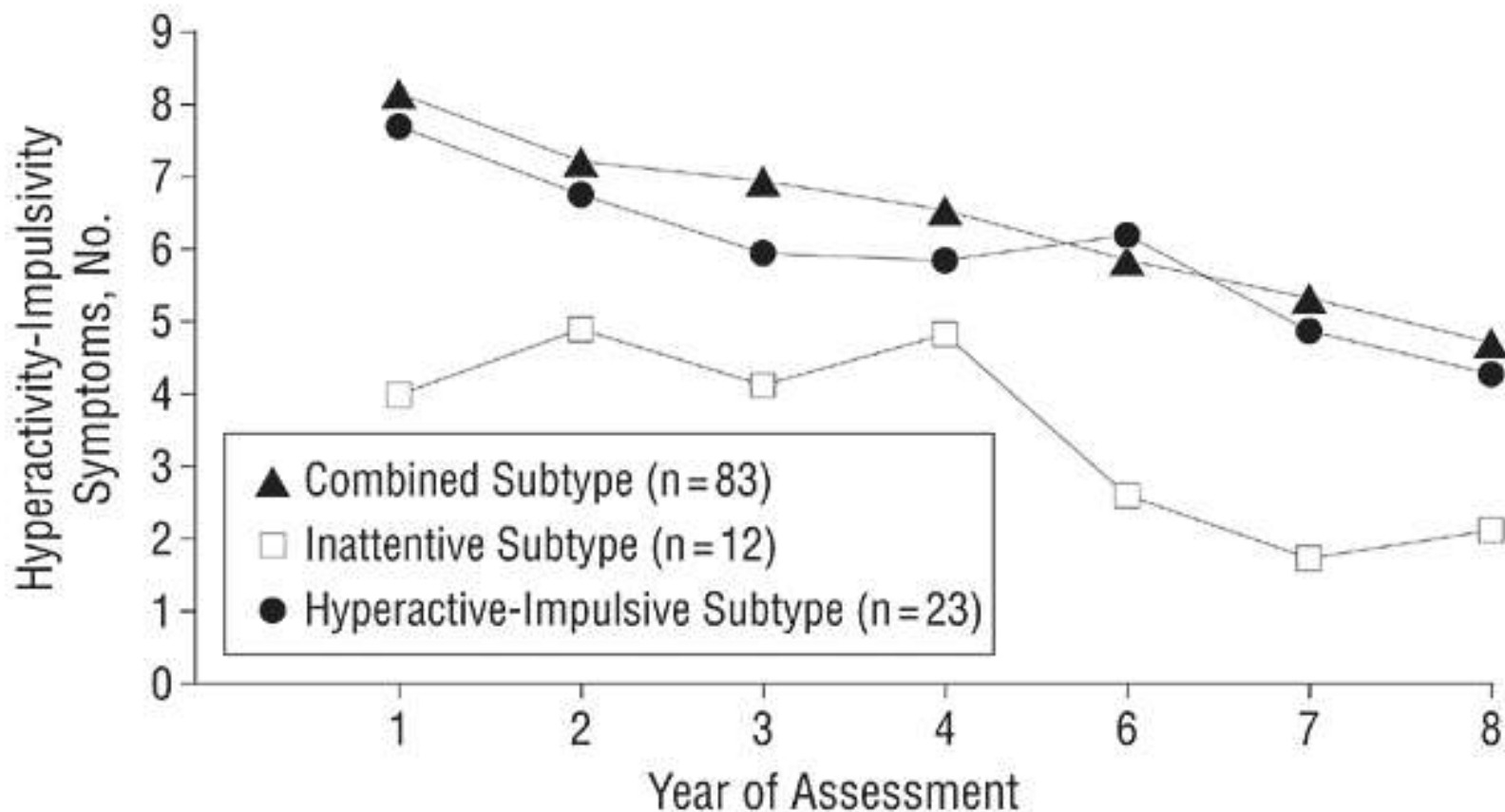
ADHD From Preschool Through Elementary School: Estabilidad Dx



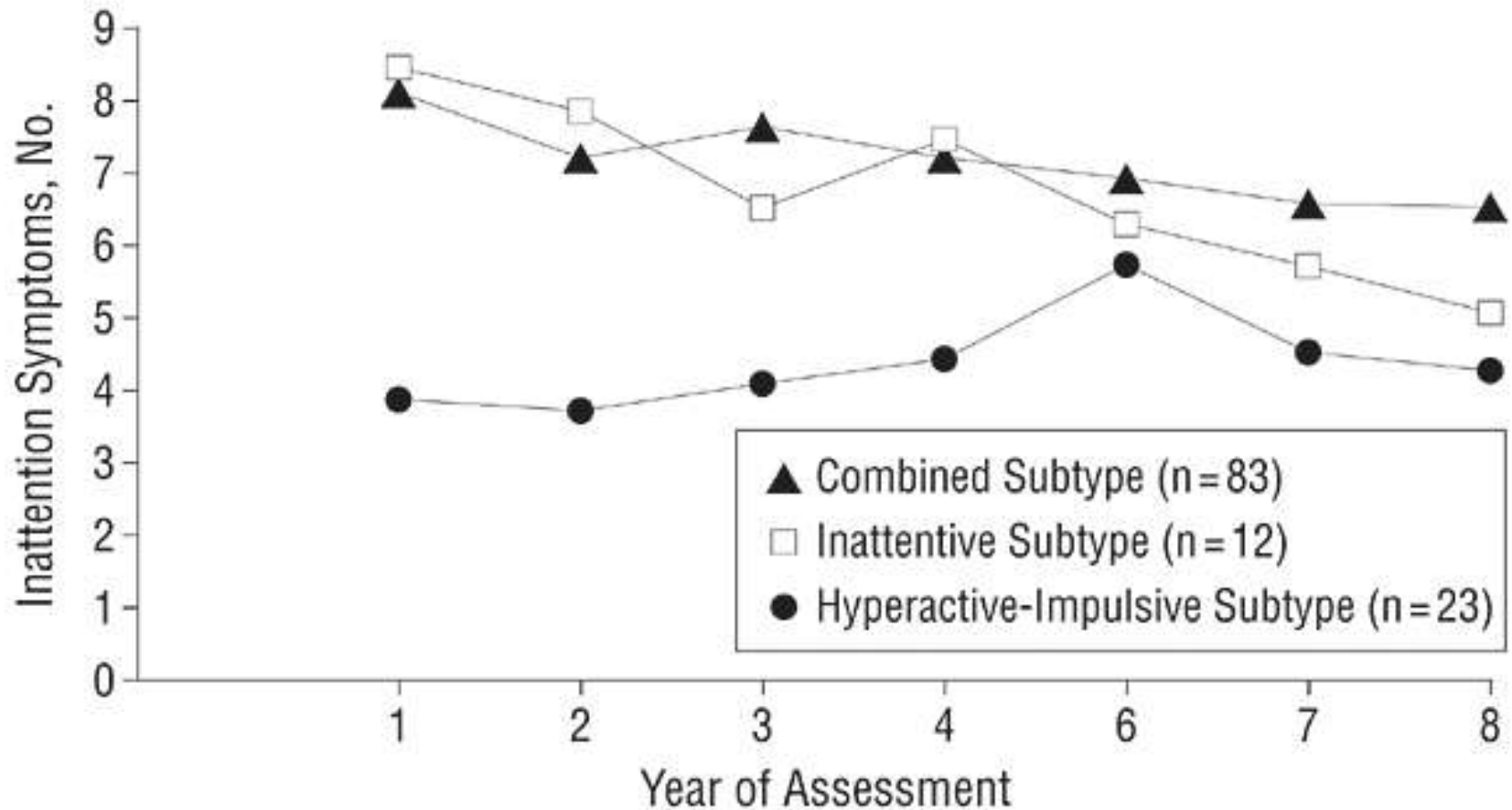
ADHD From Preschool Through Elementary School: Cambio de Dx



ADHD From Preschool Through Elementary School: Hiperact-Imp



ADHD From Preschool Through Elementary School: Inatención



ADHD From Preschool Through Elementary School children

- Conclusiones
- Subtipo Hiperactivo no estable, la mayoría pasan a ser Subtipo Combinado.
- Subtipos Combinado e Inatento razonablemente estables, pero no del todo

Lahey et al., *Arch Gen Psychiatry*. 2005;62:896-902

Dificultades en el Tratamiento

This is what ADHD feels like



ADHD IN PRESCHOOL CHILDREN (3-6 years)

Specific goals in counselling and behavioural interventions

- **Parent empowerment**
- **Development of positive parent-child relations**
- **Development of intensive play behaviour**
- **Reduction of temper tantrums and hyperactive-impulsive behaviour**
- **Reduction of other comorbid behaviour problems (developmental delays!)**
- **Interventions in preschool**



Psicoeducación por Enfermería

1. Calendario: 6 sesiones semanales de 45 minutos.

2. Contenidos:

MÓDULO 1

1ª. Sesión: Evaluación TDAH y Tratamiento.

MÓDULO 2

2ª. Sesión: Definición de conductas y técnicas para incrementar conductas : el refuerzo.

3ª. Sesión: Economía de fichas.

4ª. Sesión: Establecimiento de Límites.

5ª. Sesión: Técnicas para eliminar conductas :extinción, aplicación de consecuencias negativas (time-out).

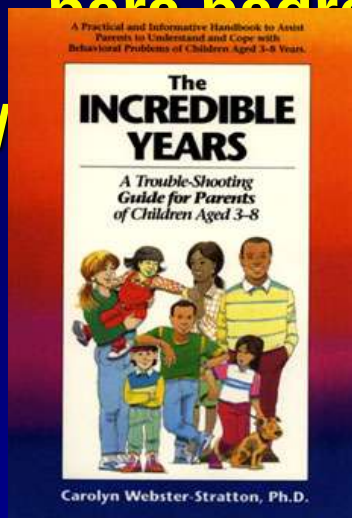
6ª. Sesión: Solución de Problemas. Entrega de material. Bibliografía



The incredible years:

programa de
entrenamiento

para padres
(Webster-Stratton)



Pirámide del
grupo



Programa de “The incredible years”

- **Aumentar comportamientos deseados / positivos**
 - Juego
 - Elogiar con efectividad
 - Motivación a los niños con recompensas
- **Reducir comportamientos no deseados / negativos**
 - Establecer limites efectivos
 - Ignorar, Distracción, Avisos
 - Tiempo-fuera (Time out)
- **Estrategias para resolver conflictos**





Apoyo Escolar

Animar, Motivar

Diariamente: supervisar, organizar

Ayudar, Explicar, Adaptar

Desistir, Aplazar, Ignorar

Déficit de Habilidades Organizativas

Instrucciones paso a paso

Howard Abikoff



Apoyo Escolar: El entrenador personal

Animar, Motivar

Organizar (al detalle, paso a paso)

Ayudar, Explicar: contenido



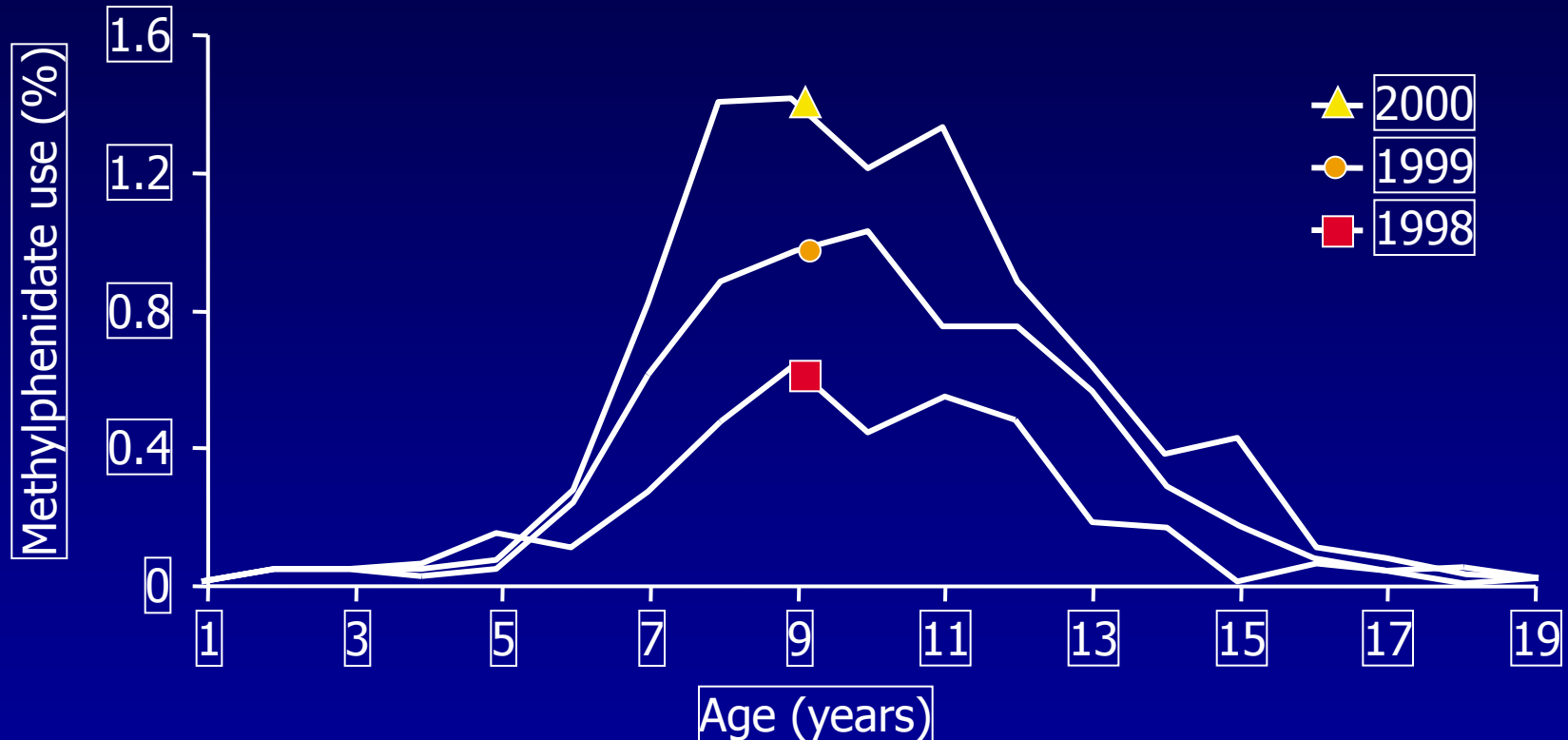
ADHD IN PRESCHOOL CHILDREN (3-6 years)

Specific issues in pharmacological treatment

- No approved ADHD medication for preschoolers except dexamphetamine licensed for <6 year olds in UK
- Methylphenidate might be **less effective/** might have **more side effects** than in school-aged children
- Not recommended as first line treatment with a few exceptions (eg **high-risk behaviour, developmental block, risk of maltreatment**)

ADHD IN PRESCHOOL CHILDREN (3-6 years)

Methylphenidate use in Germany 1998-2000



Little use during preschool and adolescence

Pharmacogenetics of Methylphenidate Response in Preschoolers With ADHD

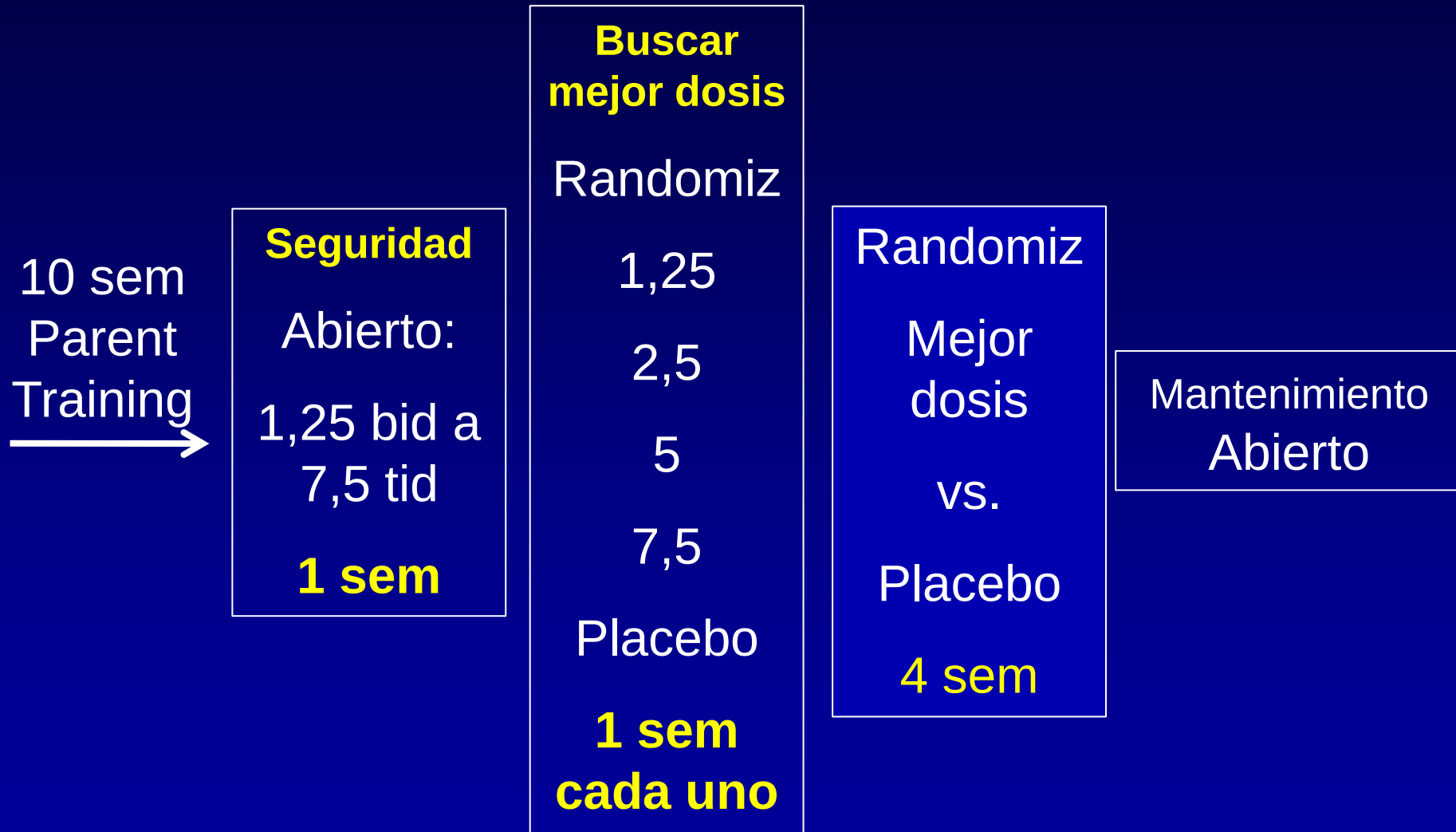
JAMES McGOUGH, M.D., JAMES McCRACKEN, M.D., JAMES SWANSON, Ph.D.,
MARK RIDDLE, M.D., SCOTT KOLLINS, Ph.D., LAURENCE GREENHILL, M.D.,
HOWARD ABIKOFF, Ph.D., MARK DAVIES, M.P.H., SHIRLEY CHUANG, M.S.,
TIM WIGAL, Ph.D., SHARON WIGAL, Ph.D., KELLY POSNER, Ph.D., ANNE SKROBALA, M.A.,
ELIZABETH KASTELIC, M.D., JASWINDER GHUMAN, M.D.,
CHARLES CUNNINGHAM, Ph.D., SHARON SHIGAWA, B.S., ROBERT MOYZIS, Ph.D.,
AND BENEDETTO VITIELLO, M.D.

- **Respuesta a metilfenidato asociada a:**
 - Variantes del promotor del receptor DRD4
 - SNAP25
 - SNAP25 asociado con tics e irritabilidad
 - DRD4 asociado con irritabilidad a dosis + alta

Preschool ADHD Treatment Study (PATs)

- NIMH-funded, 6-center, randomized, controlled trial to determine the efficacy and safety of MPH-IR, t.i.d.
- Children **ages 3 to 5.5 years** with ADHD
- Complicated design. **70 semanas. N=303**
 - 10 week parent-training (303)
 - Open-label safety lead-in (183)
 - Double-blind crossover titration trial (165)
 - **Randomized double-blind placebo-controlled parallel trial (114 → 77)**
 - Open-label maintenance

Preschool ADHD Treatment Study PATS



Efficacy and Safety of Immediate-Release Methylphenidate Treatment for Preschoolers With ADHD

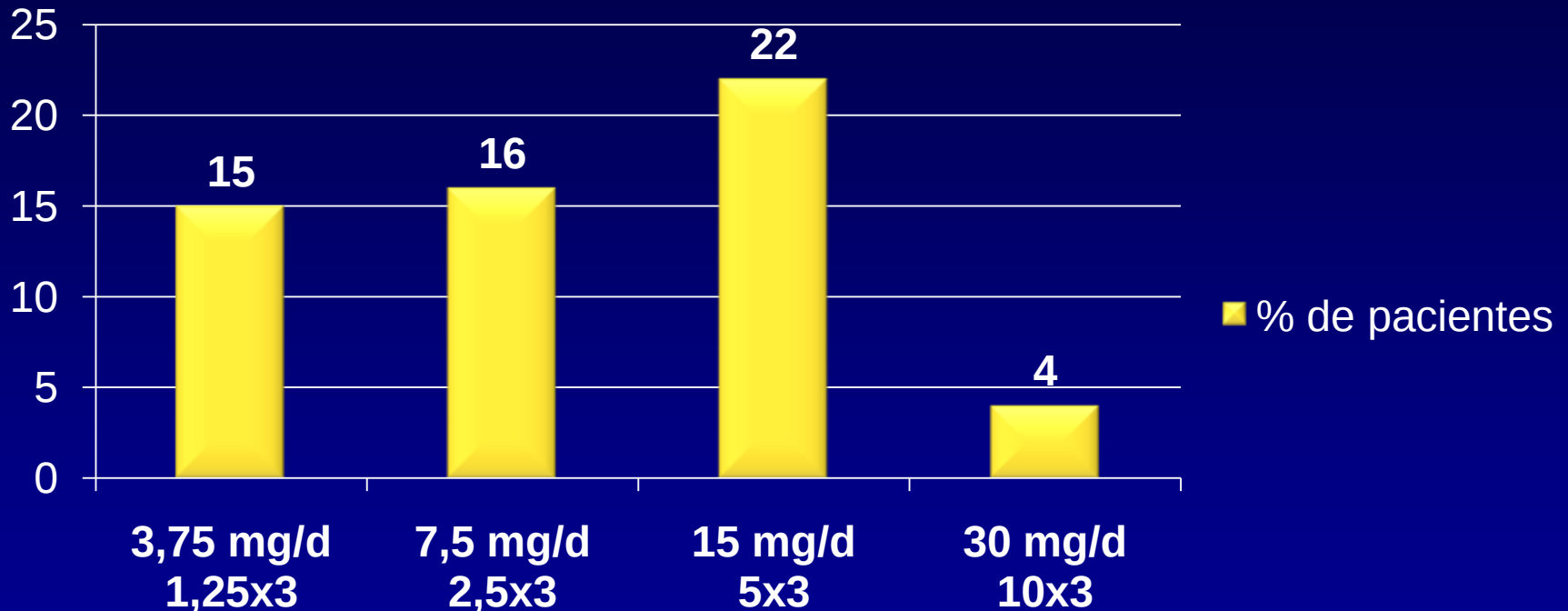
LAURENCE GREENHILL, M.D., SCOTT KOLLINS, Ph.D., HOWARD ABIKOFF, Ph.D.,
JAMES McCracken, M.D., MARK RIDDLE, M.D., JAMES SWANSON, Ph.D.,
JAMES McGOUGH, M.D., SHARON WIGAL, Ph.D., TIM WIGAL, Ph.D.,
BENEDETTO VITIELLO, M.D., ANNE SKROBALA, M.A., KELLY POSNER, Ph.D.,
JASWINDER GHUMAN, M.D., CHARLES CUNNINGHAM, Ph.D., MARK DAVIES, M.P.H.,
SHIRLEY CHUANG, M.S., AND TOM COOPER, M.A.

- **Reducciones significativas en escalas de TDAH comparadas con placebo**
- **Tamaño del Efecto inferior: 0,4-0,8**

% de Pacientes en cada dosis

Niños de 3 a 5,5 años

% de pacientes en cada dosis



La mayoría en dosis relativamente bajas

Curva dosis-respuesta

Puntuaciones en Conners y SKAMP

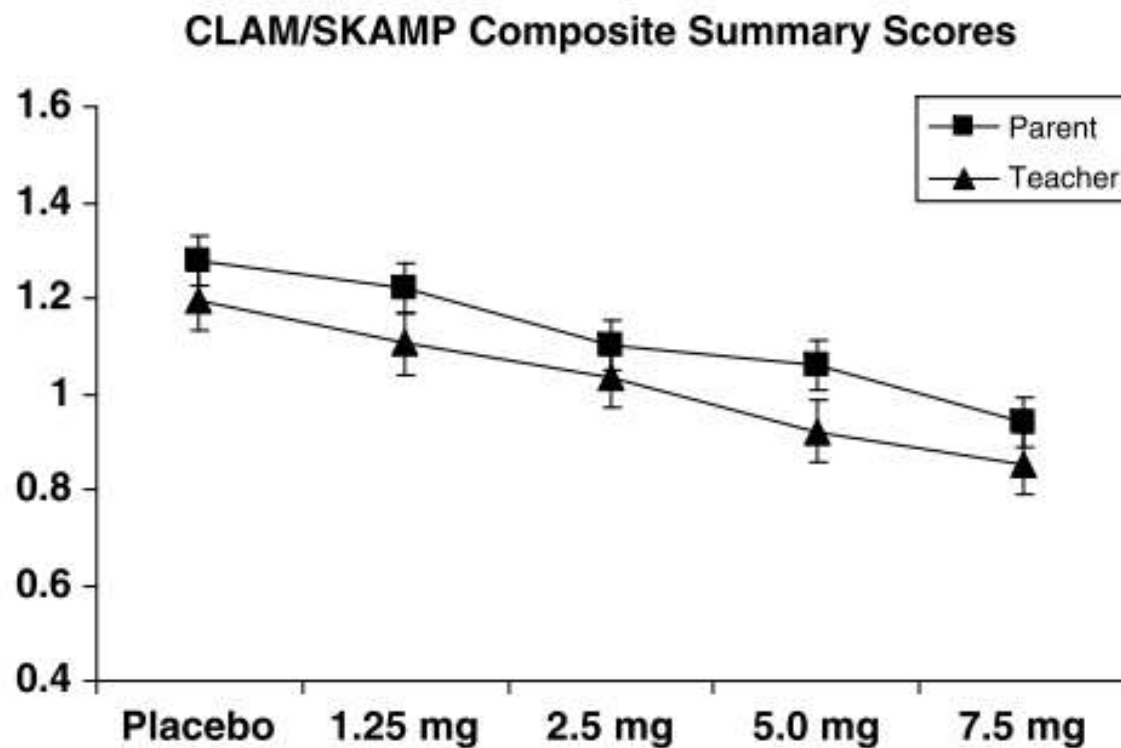
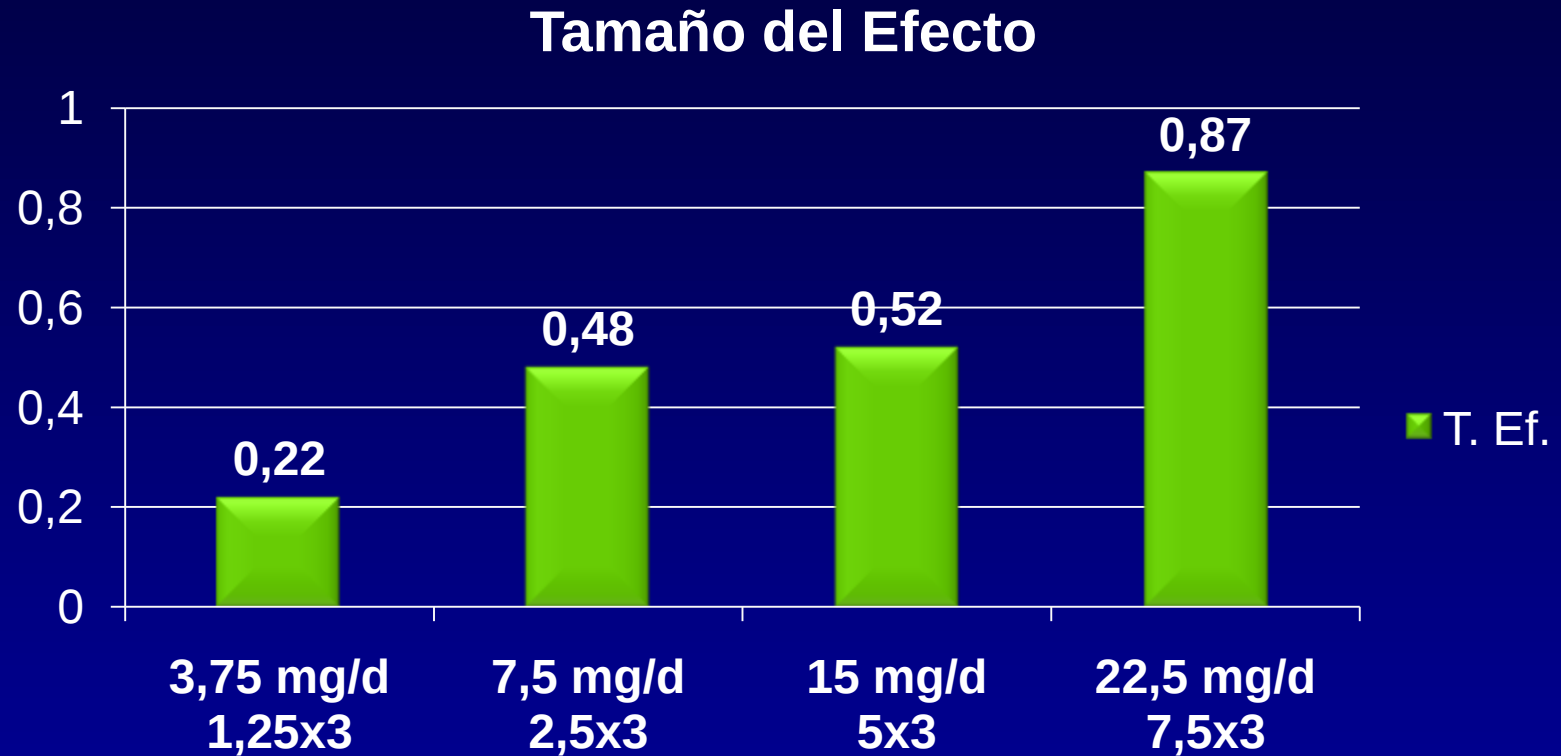


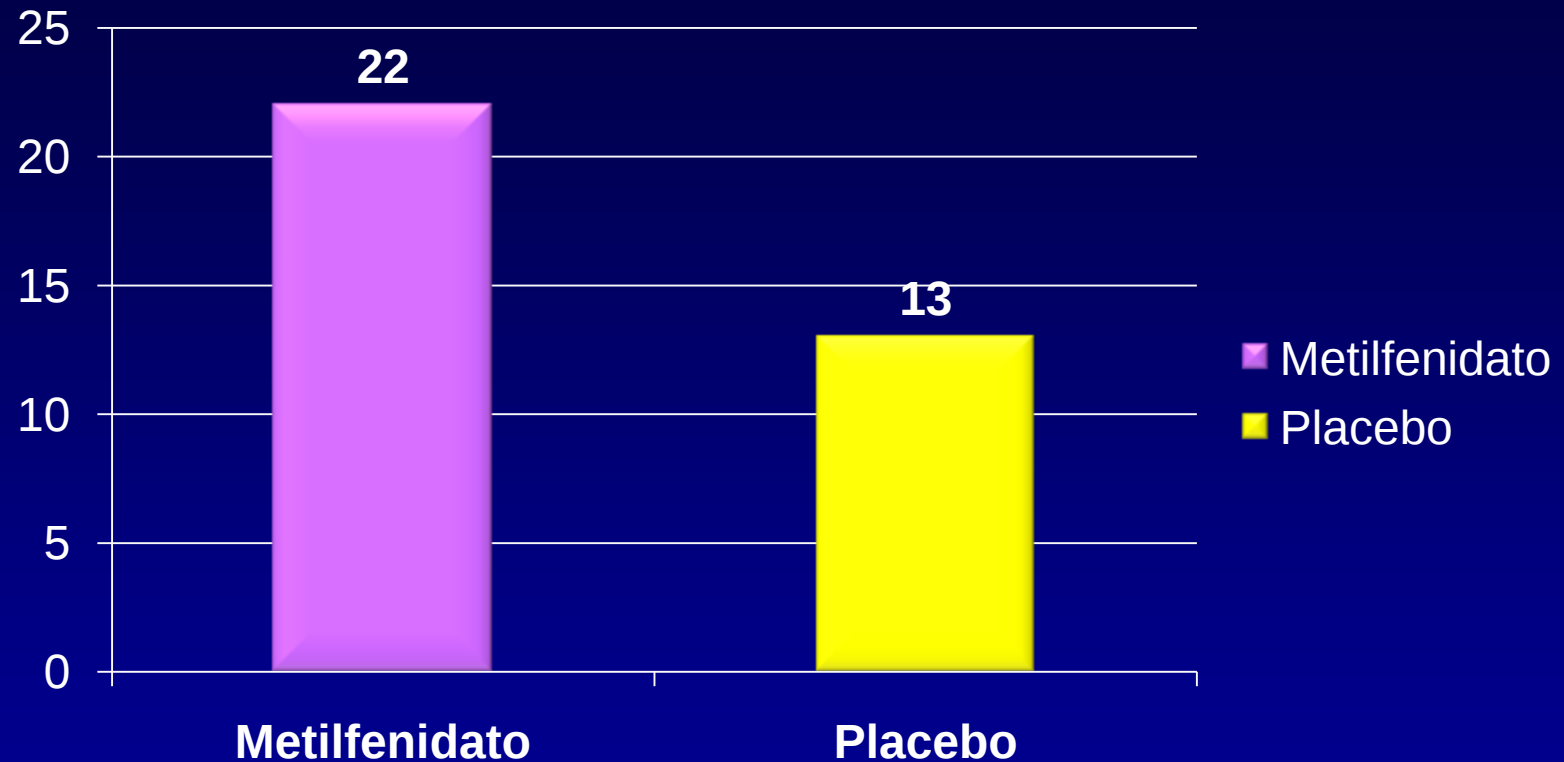
Fig. 2 Methylphenidate dose-response curve in preschool children with attention-deficit/hyperactivity disorder ($N = 165$). CLAM = Conners, Loney, and Milich scale; SKAMP = Swanson, Kotkin, Atkins, M-Flynn, and Pelham scale.

Tamaño del Efecto según dosis



Tamaño del Efecto superior a dosis altas

% Respuesta “Excelente” en SNAP



No significativo

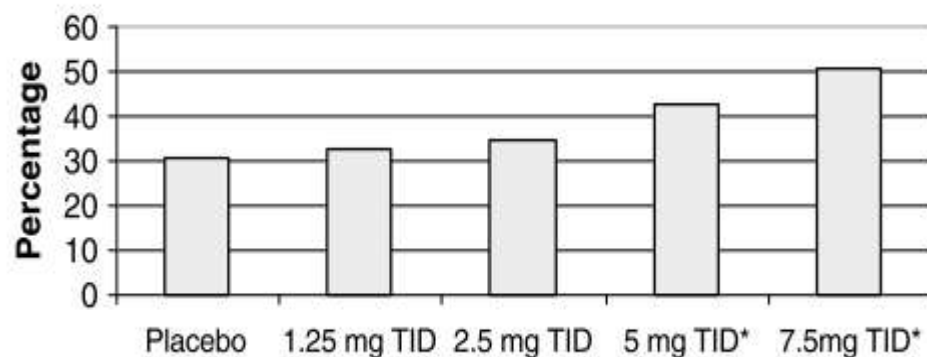
Seguridad

- 30% Efectos adversos

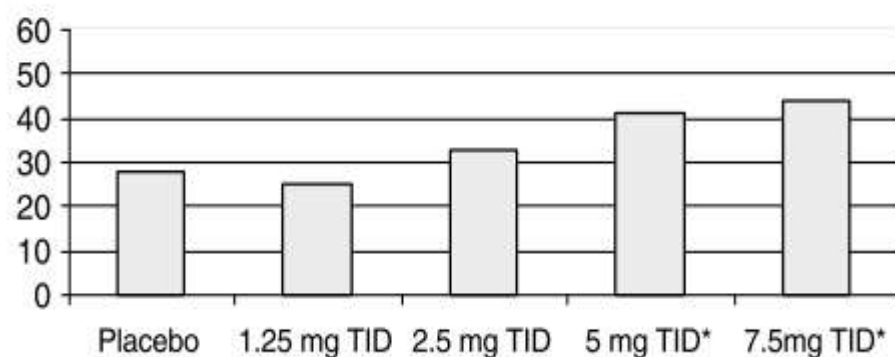
Safety and Tolerability of Methylphenidate in Preschool Children With ADHD

TIM WIGAL, Ph.D., LAURENCE GREENHILL, M.D., SHIRLEY CHUANG, M.S., JAMES McGOUGH, M.D., BENEDETTO VITIELLO, M.D., ANNE SKROBALA, M.A., JAMES SWANSON, Ph.D., SHARON WIGAL, Ph.D., HOWARD ABIKOFF, Ph.D., SCOTT KOLLINS, Ph.D., JAMES McCRACKEN, M.D., MARK RIDDLE, M.D., KELLY POSNER, Ph.D., JASWINDER GHUMAN, M.D., MARK DAVIES, M.P.H., BEN THORP, B.S., AND ANNAMARIE STEHLI, M.P.H.

Trouble Sleeping
Parent Endorsed Side Effect



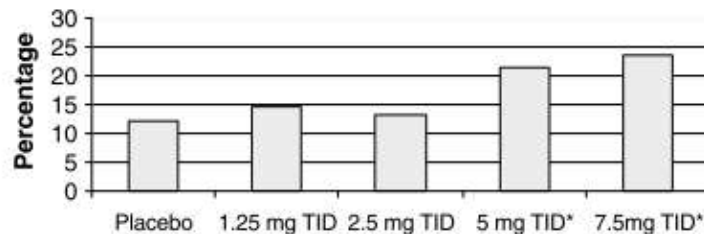
Appetite Loss
Parent Endorsed Side Effect



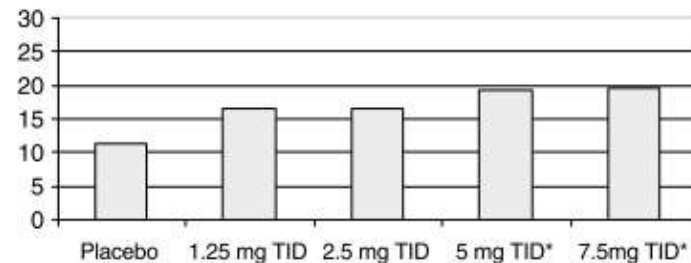
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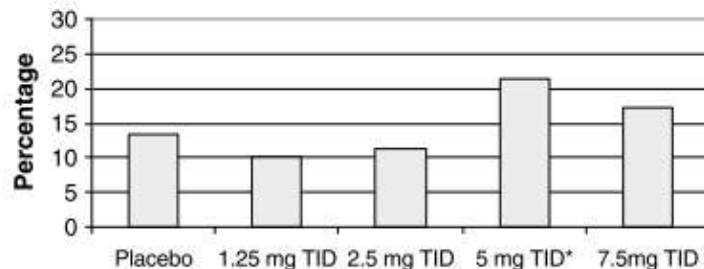
**Dull, Listless, Tired
Parent Endorsed Side Effect**



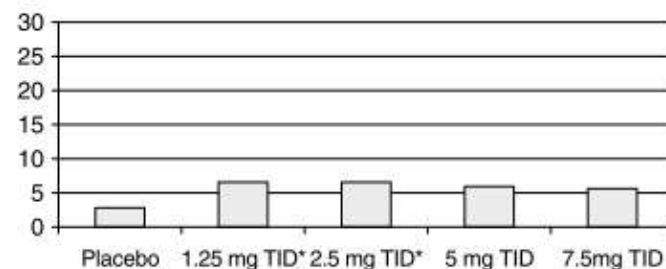
**Stomachache
Parent Endorsed Side Effect**



**Social Withdrawal
Parent Endorsed Side Effect**



**Buccal Lingual Movements
Parent Endorsed Side Effect**



Dose of Methylphenidate

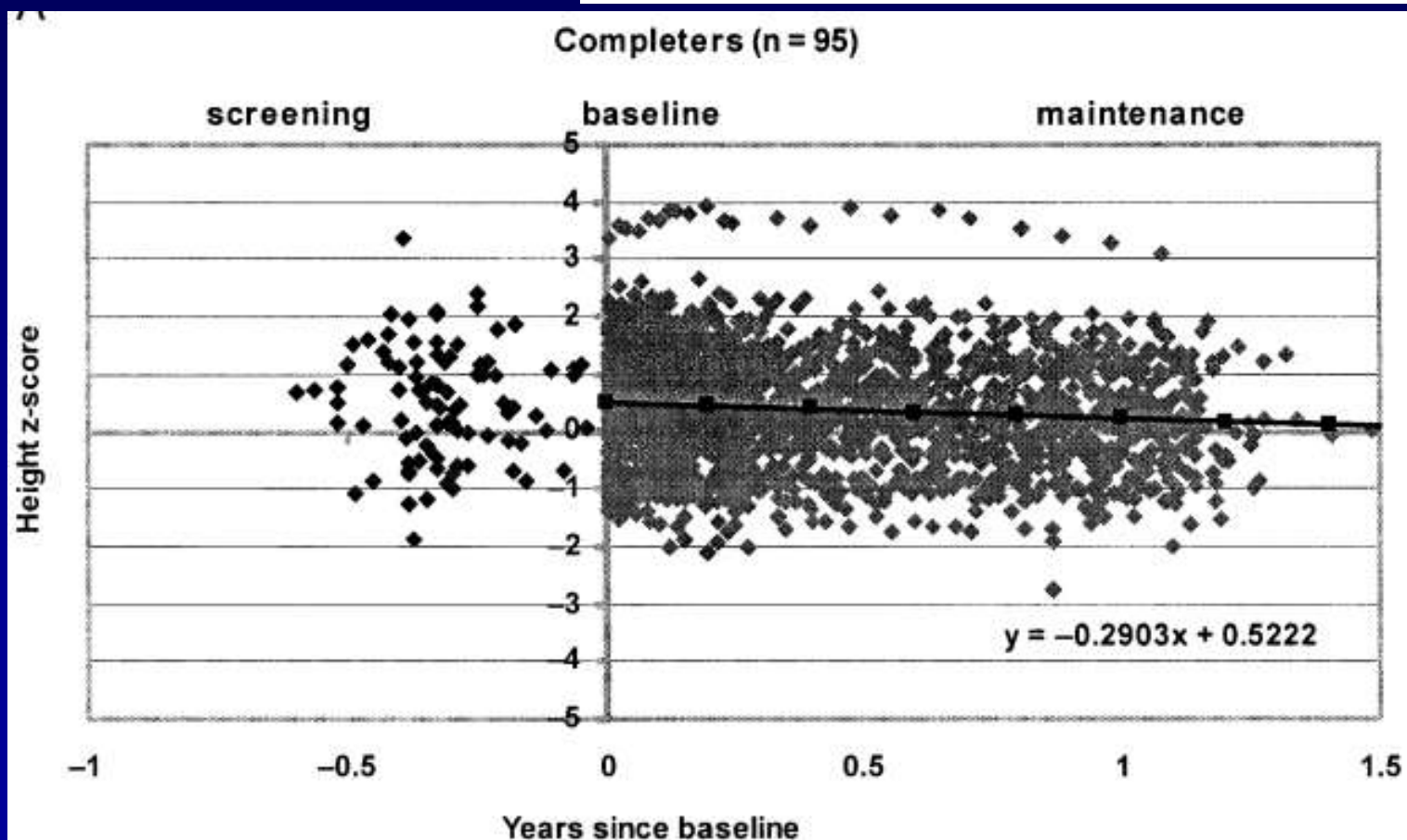
Dose of Methylphenidate

Stimulant-Related Reductions of Growth Rates in the PATS

JAMES SWANSON, Ph.D., LAURENCE GREENHILL, M.D., TIM WIGAL, Ph.D.,
SCOTT KOLLINS, Ph.D., ANNAMARIE STEHLI, M.P.H., MARK DAVIES, M.P.H.,
SHIRLEY CHUANG, M.S., BENEDETTO VITIello, M.D., ANNE SKROBALA, M.A.,
KELLY POSNER, Ph.D., HOWARD ABIKOFF, Ph.D., MELVIN OATIS, M.D.,
JAMES McCracken, M.D., JAMES McGOUGH, M.D., MARK RIDDLE, M.D.,
JASWINDER GHUMAN, M.D., CHARLES CUNNINGHAM, Ph.D.

AND SHARON WIGAL, Ph.D.

J. AM. ACAD. CHILD ADOLESC. PSYCHIATRY, 45:11, NOVEMBER 2006

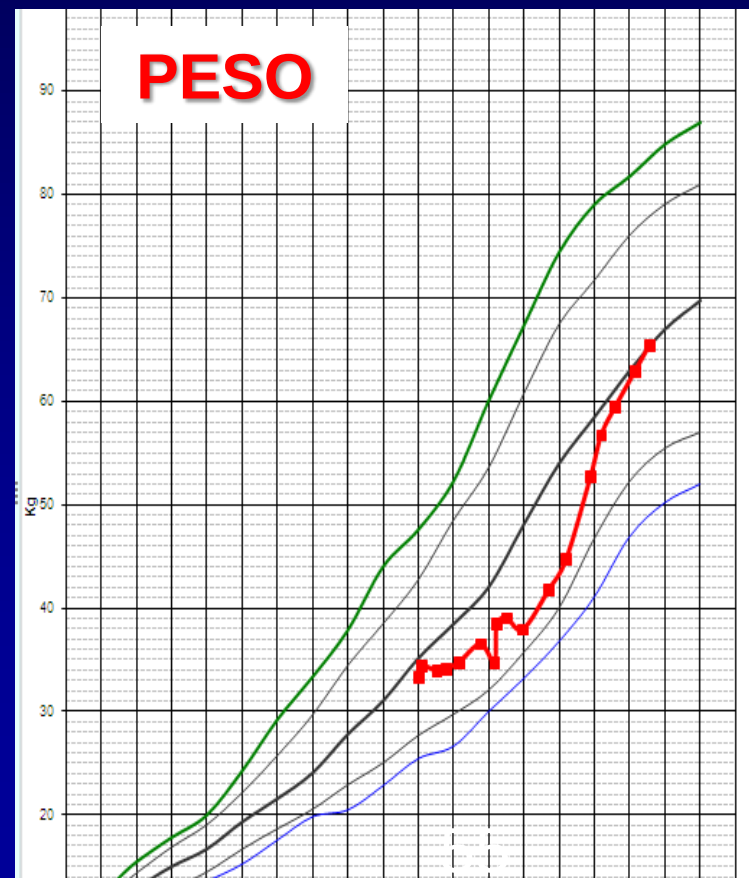
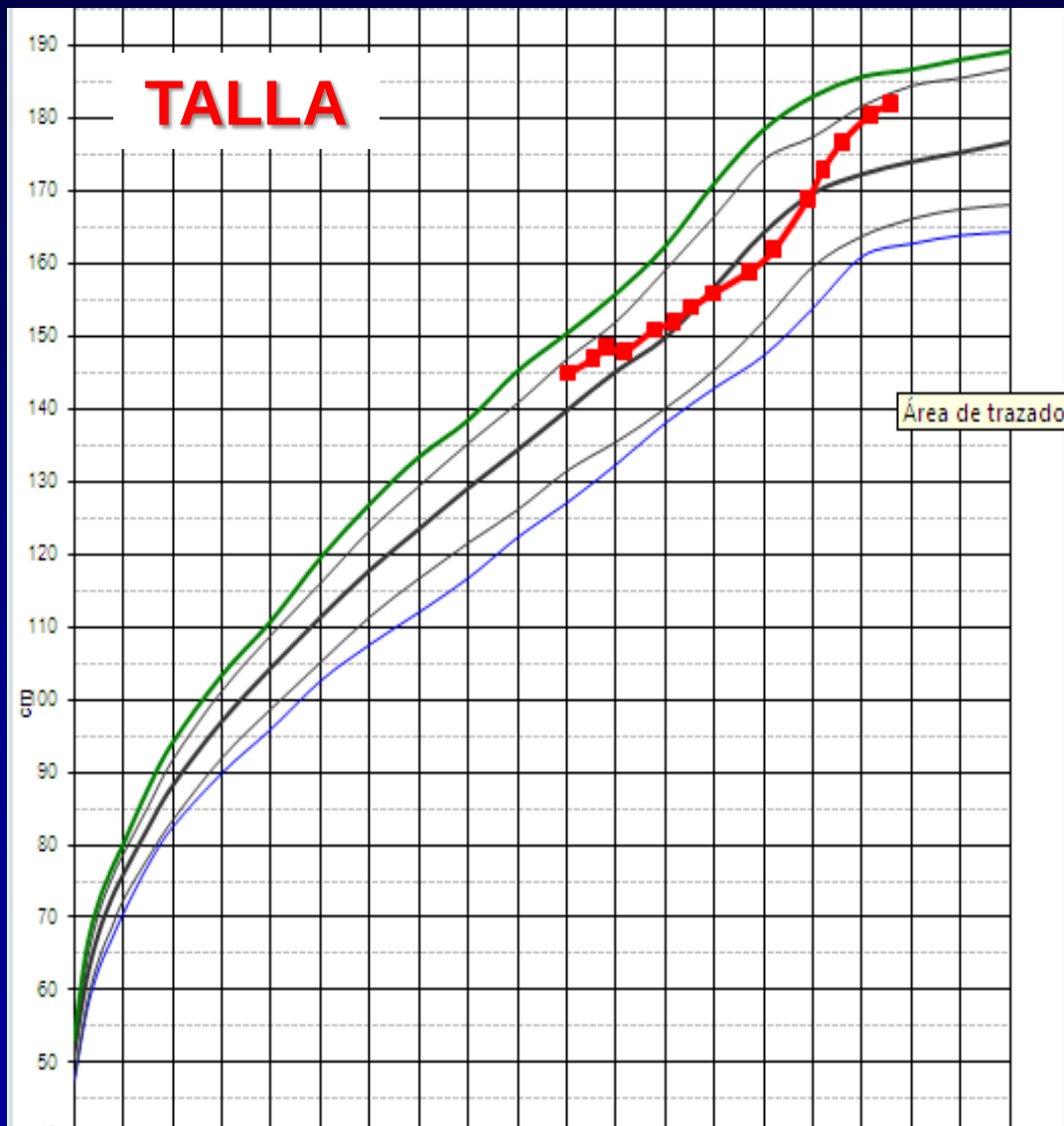


Efecto del tratamiento con estimulantes sobre el crecimiento en altura en preescolares (4,4 años al inicio)

- Reducción de velocidad de crecimiento 20% (1,38 cm/año)
- Enlentecimiento TEMPORAL de velocidad de crecimiento
- No hay efecto a largo plazo en la talla adulta
- Monitorizar. Si cruza 2 líneas de percentil, estudiar de cerca (del 50% al 25% y 10%)

Tratamiento desde 10 a 16 años,

Tto: MPH-OROS 54 mg/día y Atomoxetina 70 mg/día.



Preschool ADHD Treatment Study (PATs)

Conclusions

- MPH-IR is an effective and safe medication in preschoolers with ADHD
- Efficacy, as reflected by **effect sizes (0,4-0,8)** and % **clinical response**, however is **lower than in older children** with ADHD
- **Side-effects are more frequent than in older children** with ADHD
- Medication should be titrated cautiously

Psychopharmacological Treatment for Very Young Children: Contexts and Guidelines

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Guía de Tratamiento TDAH en Preescolares

JCAAP 2007

- 1. Entrenamiento a padres en manejo conductual**
- 2. Metilfenidato (PATs + otros 10 estudios pequeños)**
- 3. D-anfetamina**
- 4. Alfa-Agonistas o Atomoxetina**

**Estudio abierto atomoxetina N=22 5-6 añ, 8 sem,
dosis 1,25 mg/kg/d**

Kratochvil et al., 2007

Conclusiones

- TDAH se puede diagnosticar y tratar en preescolares
- Dificultades diagnósticas
 - Desarrollo Normal
 - Ambiente
 - Diagnóstico Diferencial
- Tratamiento
 - Conductual primero
 - Medicación si no funciona o no es suficiente