

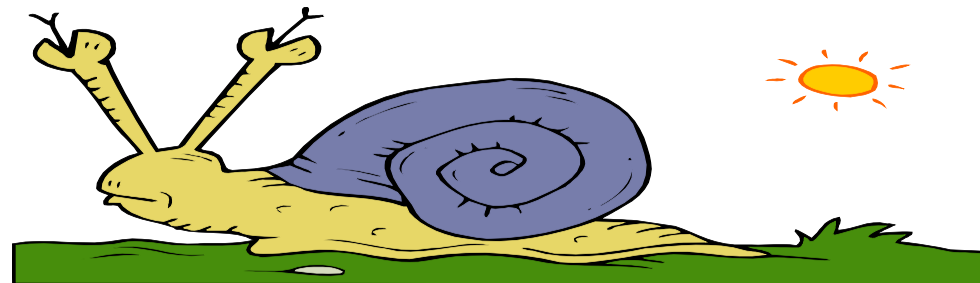
***2016
AD/HD,
Inattentive
Type
&
Sluggish
Cognitive
Tempo
(SCT)***

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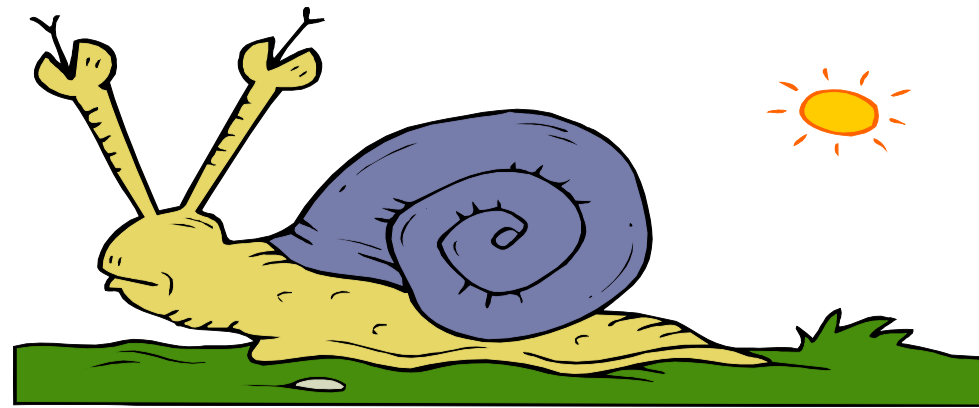
The Four Types of AD/HD in DSM-IV, TR

- **Attention-Deficit/Hyperactivity Disorder, Combined Type**
- **Attention-Deficit/Hyperactivity Disorder, Predominately Inattentive Type**
- **Attention-Deficit/Hyperactivity Disorder, Predominately Hyperactive/Impulsive Type**



DSM-IV, TR ADHD Subtypes (Continued)

➤ Attention-Deficit/Hyperactivity Disorder, Not Otherwise Specified



American Psychiatric Association (2000). Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition-Text Revision. Washington, DC: American Psychiatric Association.

2011 DSM-5 AD/HD Changes

- **Attention-Deficit/Hyperactivity Disorder:**
- **Specify based on current presentation-**
 - **Combined Presentation**
 - **Predominately Inattentive Presentation**
 - **Predominately Hyperactive/Impulsive Presentation**
 - **Inattentive Presentation (Restrictive)**
- **Other Specified Attention-Deficit/Hyperactivity Disorder**

2011 DSM-5 ADHD Changes

- **Need to have symptoms of AD/HD prior to age 12**
- **22 symptoms (age relevant); up from 18 child based**
- **9 symptoms of Inattention: Need 6 up to age 17; need 4 over age 17**
- **13 symptoms of Hyperactivity/Impulsivity: Need 6 prior to age 17; need 4 over age 17**
- **Inattentive Presentation (Restrictive): Must meet Inattentive criteria and have no more than 2 Hyperactive/Impulsive symptoms**

Author (2010). Attention-Deficit/Hyperactivity Disorder. Washington, DC: American Psychiatric Association:

<http://www.dsm5.org/ProposedRevisions/Pages/proposedrevision.aspx?rid=383>.

DSM-5 AD/HD as of May 1, 2012

- **Attention-Deficit/Hyperactivity Disorder:**
- **Specify based on current presentation-**
 - **Combined Presentation**
 - **Predominately Inattentive Presentation**
 - **Predominately Hyperactive/Impulsive Presentation**
 - **Inattentive Presentation (Restrictive)**
 - **Other Specified Attention-Deficit Hyperactivity Disorder**

DSM-5 AD/HD as of May 1, 2012

- **Need to have symptoms prior to age 12**
- **22 symptoms; Up from 18**
- **9 symptoms Inattention: Need 6; May need only 4 over age 17**
- **13 symptoms of Hyperactivity/Impulsivity: Need 6; May need only 4 over age 17**
- **Inattentive Presentation (Restrictive): Must meet Inattentive criteria and have no more than 2 Hyperactive/Impulsive Symptoms**

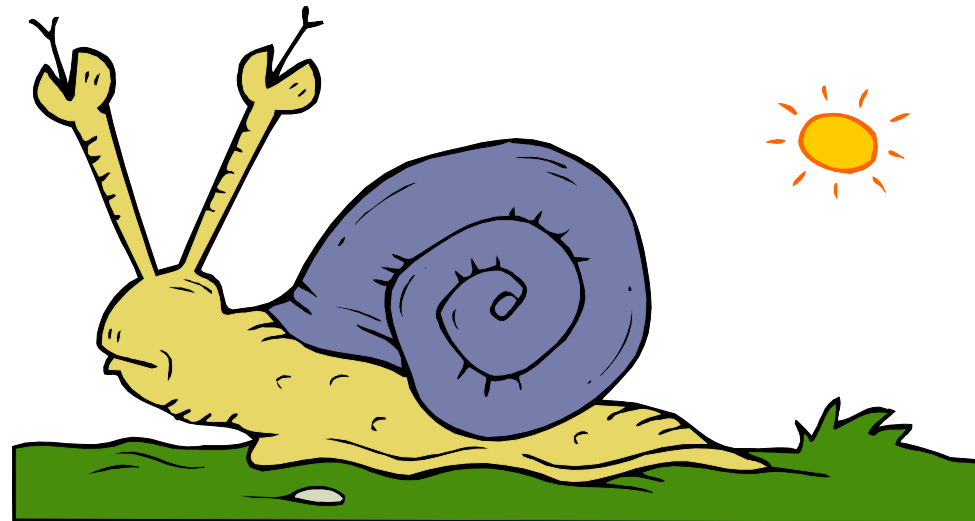
Inattentive AD/HD?

What about Attention-Deficit/Hyperactivity Disorder, Inattentive Type? It is a separate and distinct disorder behaviorally, neurobiologically and genetically from AD/HD. It will not be included in the DSM-5. In research it may be referred to as AD/HD, Inattentive (Restrictive) Presentation, Sluggish Cognitive Tempo, and/or Crichton Syndrome.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD— Impairment, and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Attention-Deficit/Hyperactivity Disorder, Predominately Inattentive Type (WEBSITE: 129)

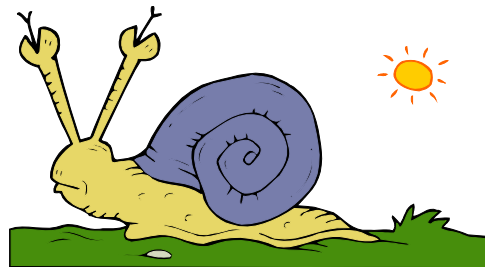
Brown believed the Inattentive Type has all the symptoms of the Combined Type except Hyperactivity-Impulsivity



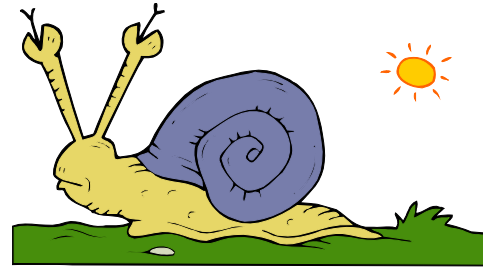
Inattentive AD/HD (Continued)

Brown believed the following are the areas of difficulty in the Inattentive Type:

- 1. Difficulty organizing and activating for work**
- 2. Problems sustaining attention and concentration**
- 3. Problems sustaining energy and effort**



Brown and Inattentive AD/HD (Continued)



4. Problems managing affective interference
5. Problems utilizing working memory and accessing recall

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in adults. In K.G. Nadeau (Ed.), Attention-Deficit Disorder in Adults. New York, NY: Bruner/Mazel, 93-108.

Inattentive AD/HD (Continued)

Brown (2005) continued the only difference between Inattentive AD/HD and Combined Type AD/HD was “ACTION”. Those with Combined Type AD/HD have significant impairment with ACTION, which is being able to predict with reasonable accuracy how their personal actions could negatively effect others and how that could come back to haunt them in the future. They have time blindness. Those with Inattentive AD/HD do not have time blindness.

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in Adults. In K.G. Nadeau (Ed.), Attention-Deficit Disorder in Adults. New York, NY: Bruner/Mazel, 93-108.

Brown Appears to Change his Opinion on SCT

In 2013 Brown wrote he did not see any difference between what he sees as AD/HD and Barkley sees as SCT, because brown includes the symptoms of SCT along with the executive function symptoms of AD/HD.

Brown, T.E. (2013). A New Understanding of AD/HD in Children and Adults: Executive Function Impairments. New York, NY: Routledge.

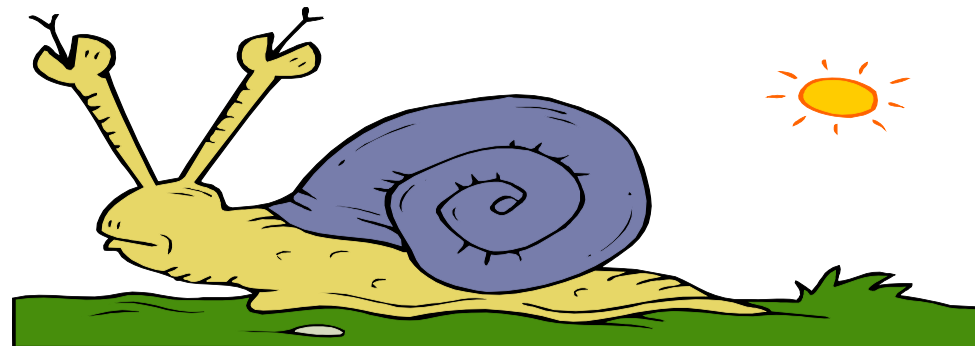
Inattentive Type AD/HD= “Sluggish Cognitive Tempo”.

➤ Barkley wrote that this should be called ***Focused*** or ***Selective Attention Disorder***.

➤ (Barkley, R.A. (1998B). Attention Deficit Hyperactivity Disorder, Second Edition. New York, NY: Guilford.)

➤ Willcutt, Chhabildas, and Pennington Stated that Inattentives significantly slower processing speed than do those without AD/HD or those with the Combined Type.

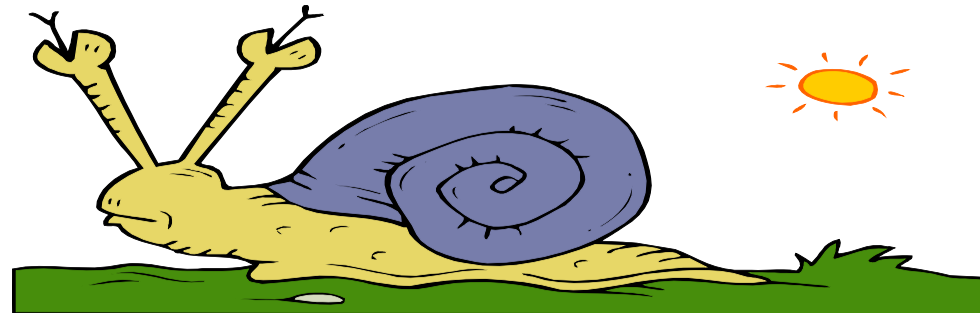
Willcutt, E.G., Chhabildas, N. ,and Pennington, B.F. (2001). Validity of the DSM-IV Subtypes of ADHD. ADHD Report, 9 (1), 2-5.)



Sluggish Cognitive Tempo (Continued)

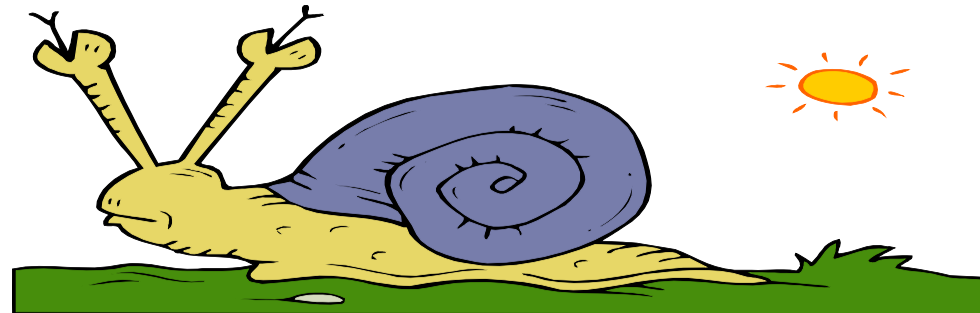
- Willcutt, Chhabildas, and Pennington said that those with the Inattentive Type have: **“Sluggish Cognitive Tempo”**
- **“Sluggish Cognitive Tempo” (SCT) :**
 - Hypoactive, Slow to Respond, Easily Confused

Willcutt, E.G., Chhabildas, N. ,and Pennington, B.F. (2001). Validity of the DSM-IV Subtypes of ADHD. ADHD Report, 9 (1), 2-5.



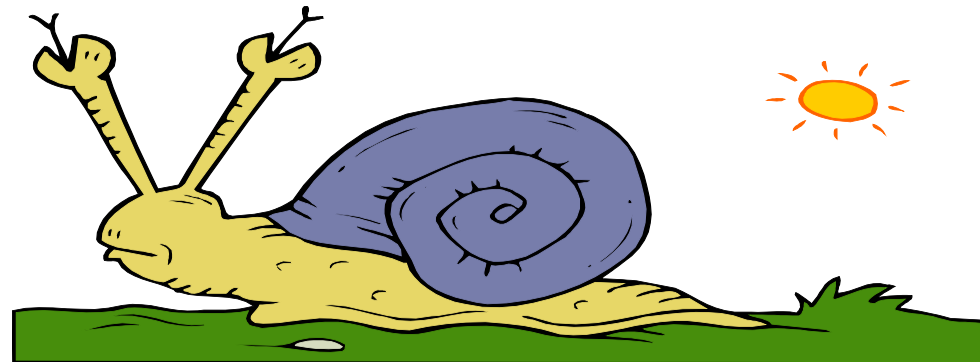
Sluggish Cognitive Tempo (Continued)

McBurnett wrote Inattentive AD/HD is, “...characterized by slow retrieval and information processing, low levels of alertness, and mild problems with memory and orientation...”



McBurnett (Continued)

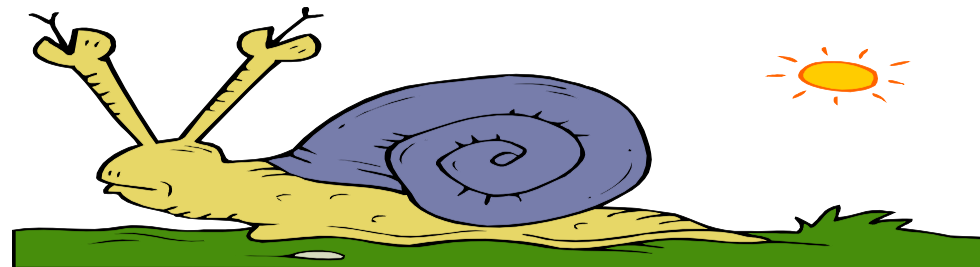
...These features of inconsistent alertness and orientation (sluggishness, drowsiness, apparent daydreaming) were statistically extracted as a distinct factor termed 'sluggish cognitive tempo' (SCT)...



McBurnett (Continued)

“...The sluggish cognitive tempo factor was found to be associated with the inattention factor, but only when hyperactivity was not present.” (p. 6)

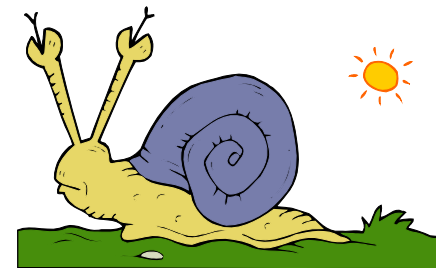
McBurnett, K. (2001). Sluggish Cognitive Tempo: Left Behind on the way to DSM-IV. ADHD Report, 9 (10), 6-7.



Willcutt, Chhabildas and Pennington's Sluggish Cognitive Tempo Symptoms

- **More problems with math achievement than Combined Type and 'Normals'.**
- **More Internalizing Problems than Combined Type/Few, if any Externalizing Problems**
- **Significant Processing Speed Problems**

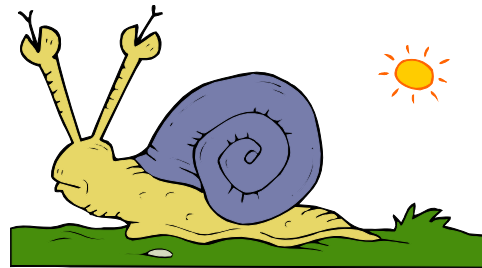
Willcutt, E.G., Chhabildas, N. and Pennington, B.F. (2001). Validity of the DSM-IV Subtypes of ADHD. ADHD Report, 9 (1), pp. 2-5.



Barkley On Sluggish Cognitive Tempo (SCT)

- Sluggish
- Passive
- Hypoactive
- Day Dreamy
- Slow Moving
- Staring
- Confused
- In a Fog
- Few Externalizing Problems (ODD/CD)
- More Internalizing Problems (Anxiety & Depression)
- Socially Withdrawn
- Information Processing Deficits

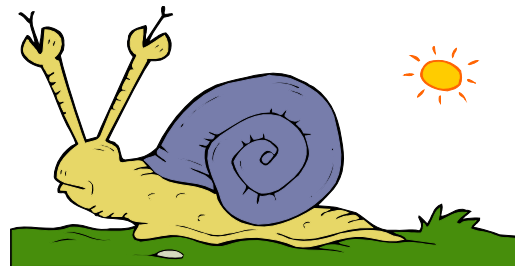
Barkley, R. A. (2006). Attention-Deficit Hyperactivity Disorder, 3rd Edition. New York, Guilford, PP. 79-80.



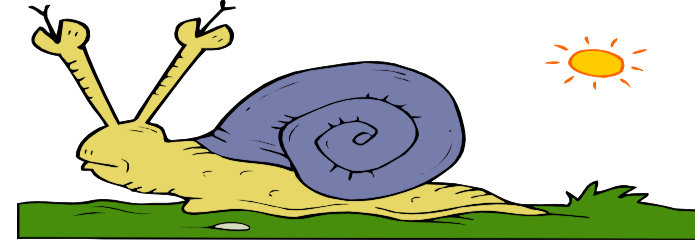
Barkley On Sluggish Cognitive Tempo (SCT)

- **Low Levels of Curiosity**
- **Low Interest**
- **Lack Enjoyment of Learning**
- **Prefer Less Challenging Tasks**
- **Prefer Cooperative Situations**
- **Relies on External Reward for Determining Success**
- **Trouble Determining Relevant Information**

Barkley, R. A. (2006). Attention-Deficit Hyperactivity Disorder, 3rd Edition. New York, Guilford, PP. 79-80, 413.



Barkley On SCT



- **SCT children are more likely to have Mathematics Disorder/Dyscalculia.**
- **SCT children are passive, shy and withdrawn socially and not socially rejected.**
- **They appear to have deficits in social skills.**
- **SCT children do not respond to stimulants.**
- **SCT = Processing Problem/Selective Attention**
- **SCT finish school work...accuracy problem**

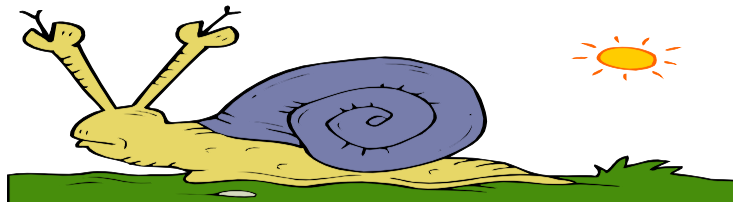
Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford, p. 202.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wickersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.

Differing Age of Onset with Inattentive Type

- **Inattentives are referred for treatment later than Combined Types.**
- **In the DSM-IV field trial 100% of the Inattentives first manifested the disorder between ages 12 and 14.**
- **This suggests a different age of onset than the Combined Type.**

**Barkley, R.A. (1998A). ADHD In Children, Adolescents, and Adults: Diagnosis, Assessment and Treatment.
New England Educational Institute, Cape Cod Symposium, August, Pittsfield, MA.**



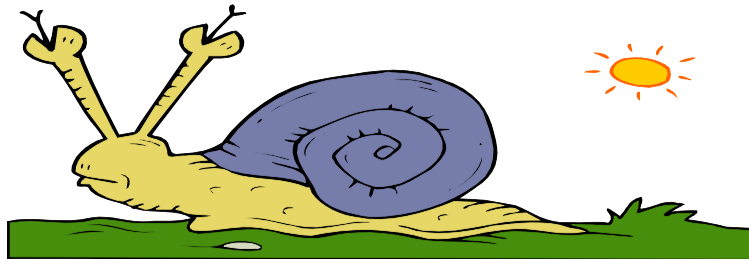
Prevalence of the Inattentive Type

- **Barkley indicated 4.5% of the adult population has the Inattentive Type.**

Barkley, R.A. (1998). ADHD in Children, Adolescents, and Adults: Diagnosis, Assessment, and Treatment.
New England Educational Institute, Cape Cod Symposium, August, Pittsfield, MA.

- **However, he said 1.3% meet DSM-IV Criteria**

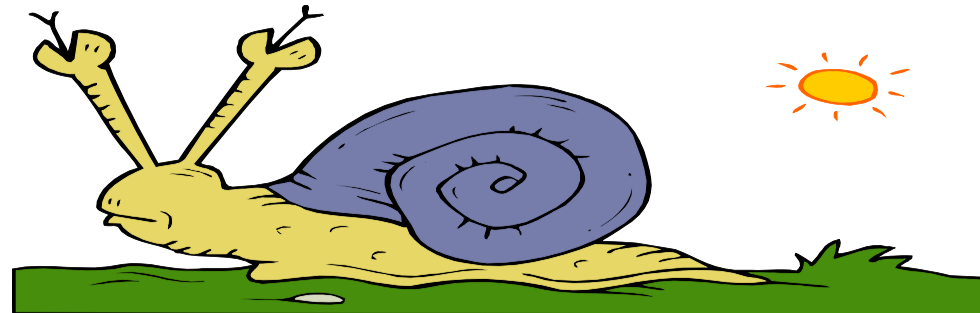
Barkley, R.A. (1998). ADHD in Children ,Adolescents, and Adults: Diagnosis, Assessment, and Treatment.
New England Educational Institute, Cape Cod Symposium, August, Pittsfield, MA.



Gender Ratio and the Inattentive Type

- **Solanto indicated the ratio is 2:1 in favor of males.**
- **She also stated it is more likely for females to have the Inattentive Type.**

Solanto, M.V. (2002). Overlooked and Undertreated? Inattentive AD/HD. Attention!, 9 (1), pp. 28-31.



Causes of SCT

- **Currently the causes of SCT are not known. However, we do know:**
 - **SCT is more common in children with low SES parents who have less education and lower levels of employment.**
 - **SCT may be caused in some children who have been treated for childhood leukemia. It is due to the chemotherapy and radiation, not the leukemia.**

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

The Two Dimensions of SCT

- **Sluggishness/Lethargy**
- **Daydreaming**
 - **These are correlated to each other .40 to .50**
- **SCT is as common in males as in females**
- **Symptoms and severity are stable throughout life. Prevalence in children 4.7%; in adults 5.1%**

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD— Impairment, and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

SCT Age of Onset

The average age of onset for SCT is 8 to 10 years old. Two to 3 years older than those with AD/HD.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Processing Speed: SCT Vs ADHD

- **The processing speed difficulties for those with SCT is related to slow response time and processing. They are prone to error on speeded tasks.**
- **The processing speed difficulties for those with AD/HD is related to variability in reaction time which is 3 times more than those without AD/HD.**

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Executive Function and SCT

- **Barkley (2012) found those with SCT have no problems with Executive Functions whereas those with AD/HD have it in all areas.**
- **The only area of impairment SCT children have that is more severe than those with AD/HD is in sports. AD/HD children are more impaired in all other areas.**
- **Those with ADHD and comorbid SCT are the most impaired overall.**
- **About 50% with AD/HD have comorbid SCT**

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD— Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Adults with SCT & Impairment

- **Adults with SCT are more significantly impaired in the following areas than are those with AD/HD and the non-disabled:**
 - **Work**
 - **Education**
 - **Sexual behavior**

Barkley, R. A. (2011, May 23). Distinguishing Sluggish Cognitive Tempo From Attention-Deficit/Hyperactivity Disorder in Adults. Journal of Abnormal Psychology. Advance. online publication. doi: 10.1037/a0023961.

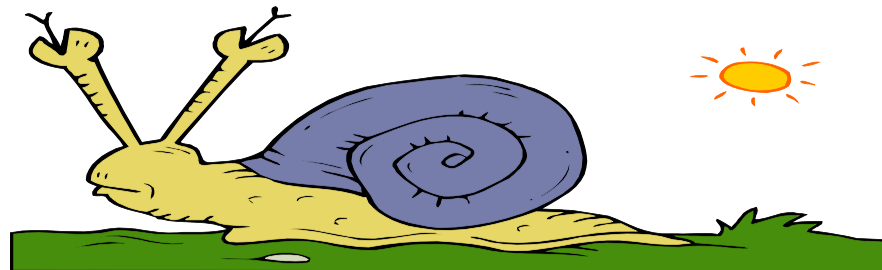
Conclusion for Prevalence

➤ The Inattentive Type may be undertreated.

Solanto, M.V. (2002) Overlooked and Undertreated? Inattentive AD/HD. Attention!, 9 (1), 28-31.

➤ McBurnett indicated the increase in prevalence of Inattentive Type is one reason AD/HD prevalence has risen since DSM-IV.

McBurnett, K. (2001). Sluggish Cognitive Tempo: Left Behind On the Way to DSM-IV. ADHD Report, 9 (10), 6-7.



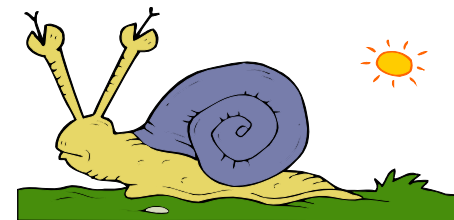
Attention-Deficit/Hyperactivity Disorder, Predominately Hyperactive-Impulsive Type

- **Tzelepis stated she has only seen Combined Type adults in her work and doubts the Predominately Hyperactive-Impulsive Type exists in adults.**

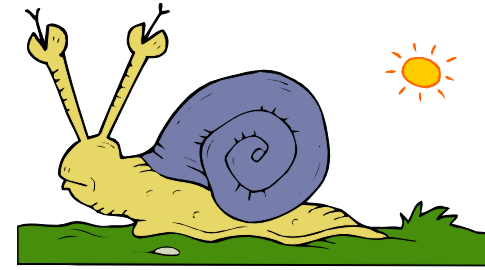
Tzelepis, A. and Mapou, R. (1997, May). Assessment. Paper presented at the Pre-Conference Professional ADD Institute of the 3rd Annual National ADDA Adult ADD Conference, St. Louis, MO.

- **Barkley, Murphy and Fischer make similar observations.**

Barkley, R.A., Murphy, K.R., & Fischer, M. (2008). ADHD in Adults: What The Science Says. New York, NY: Guilford, p. 37-38.



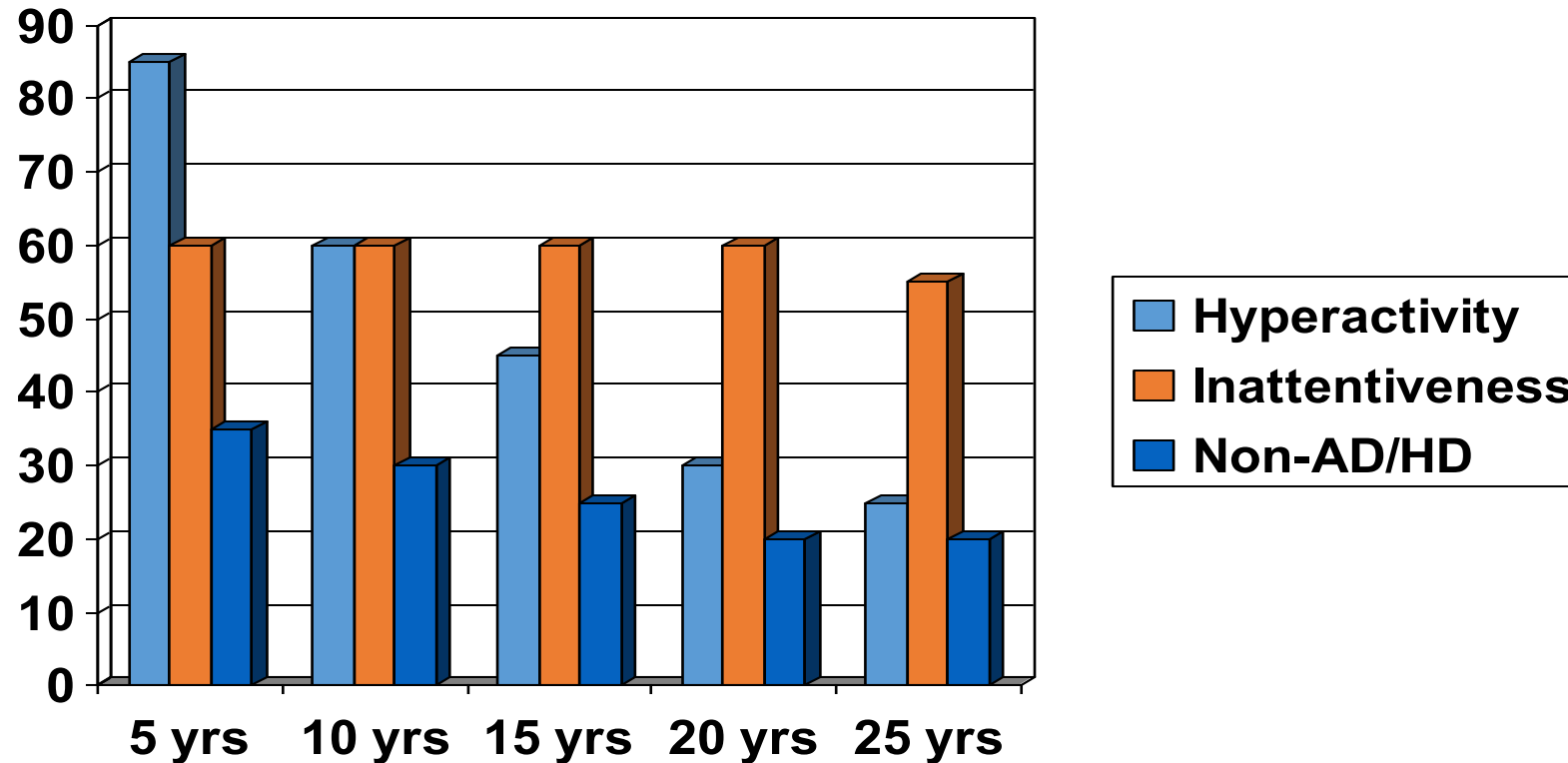
Brown



Brown called those who met DSM criteria for Hyperactive-Impulsive Type or Combined Type in Childhood, but only met criteria for Inattentive Type in Adulthood, 'CROSSOVERS'.

Brown, T.E. (1995). Differential Diagnosis of ADD Versus ADHD in Adults. In K.G. Nadeau (Ed.), A Comprehensive Guide to Attention-Deficit Disorder in Adults. New York: Bruner/Mazel, pp. 93-108.

Crossovers?



Barkley, R.A., Murphy, K.R., & Fischer, M. (2008). ADHD in Adults: What The Science Says. New York, NY: Guilford.

Weiss, G., & Hechtman, L. (1993). Hyperactive Children Grown Up. New York, NY: Guilford.

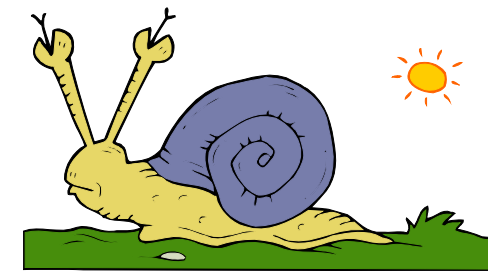
Crossovers (Continued)

Barkley wrote when the Combined Type changes to the Inattentive Type by adolescence or adulthood then the person should be thought of as having the Combined Type.

Barkley, R.A. (2002). ADHD and Oppositional Defiant Children. Seminar presented, February 19-20, Phoenix, AZ., The Institute for Continuing Education, Fairhope, AL.

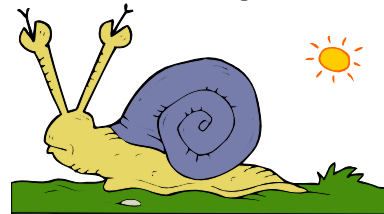
Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford.

Barkley, R.A., Murphy, K.R., & Fischer, M. (2008). ADHD in Adults: What The Science Says. New York, NY: Guilford, p. 37-38.



Mild Combined Type vs. Inattentive Type/SCT

30% to 50% of those with Inattentive AD/HD have the Sluggish Cognitive Tempo (SCT) subtype. The remainder are Shadow Syndrome (Mild) Combined Type.



Barkley, R.A. (2002) Mental and Medical Outcomes of AD/HD. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14th Annual CHADD International Conference, Miami Beach, FL.

Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford, p. 37.

CHADD Conference November, 2012

Barkley (November 9, 2012) stated the ADHD and Disruptive Behavior Disorders Workgroup of the DSM-5 had decided in October not to include Attention-Deficit/Hyperactivity Disorder, Inattentive Presentation (Restrictive) in the manual's revision. He also mentioned the committee will probably not have adult norms and cutoffs for AD/HD...

CHADD Conference 2012

Barkley (November 9, 2012) continued that the DSM-5 committees had been told by a large group of health insurance companies, the Administration, the Department of Health, Education and Welfare as well as the Social Security Administration not to add new disorders or do anything that would increase the prevalence of disorders. Hence, the decisions of the previous slide.

CHADD Conference, 2012

At the end of Barkley's SCT seminar there was a lively discussion about what to call SCT. Focused Attention Disorder (FAD) was suggested. But people did not like the acronym FAD, implying the disorder is a passing fad. Sluggish Cognitive Tempo, Developmental Concentration Disorder, Atypical AD/HD, Pathological Mind Wandering among others were considered, but none of these were thought to convey the true nature of the disorder and/or to be pejorative. Hence, they did not arrive at a name.

CHADD Conference, 2012

Barkley, R. A. (November 9, 2012) The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment, and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Author (May 1, 2012) Attention Deficit/Hyperactivity Disorder- Rationale: Rationale for Changes in ADHD in DSM-5 From the ADHD and Disruptive Behavior Disorders Workgroup. From website: <http://www.dsm5.org/ProposedRevision/Pages/proposedrevision.aspx?rid=383#>.

Joel Nigg on the Inattentive Type

- **Those with Inattentive ADHD have more problems with response inhibition than controls, but less than those with Combined Type ADHD.**
- **Those with Inattentive ADHD have an abnormal attentional blink that indicates they have a neurologically different frontal-parietal system than those with Combined Type ADHD.**
- **However, ADHD subtypes are unstable over time and this applies somewhat to the Inattentive Type.**

Nigg, J. (November 11, 2010). Mechanisms and Causes of ADHD. Paper presented at the 22nd Annual CHADD International Conference, Atlanta, GA, November 11-13, Session TA-1.

Nigg, J., et al (November 11, 2010). Through The Looking Glass: Gaze Into The Future of DSM-5. Paper presented at 22nd Annual CHADD International Conference, Atlanta, GA November 11-13, Session TB-1.

Subtyping AD/HD

Joel Nigg, who was involved in the creation of the AD/HD diagnostic criterion for the DSM-5[®]. He said the field trial study group found there was a group of “purely inattentive type” children who had slower attentional blink, slower processing speed, and significantly fewer symptoms of hyperactive-impulsive symptoms of AD/HD than did AD/HD children and non-impaired children. It was implied that future editions of the DSM will be able to better address this group. Similar observations were made about a subgroup of AD/HD children with “callous-unemotional” symptoms without conduct disorder. These children were seen as having somewhat psychopathic personalities.

Nigg, J. (March, 2015). ADHD: New Approaches to Subtyping and Nosology. ADHD Report, 23(2), 6-9,12.

The NIH and NIMH Reject the DSM-5

That is why NIMH will be re-orienting its research away from DSM categories.

Insel, T. (April 29, 2013). Director's Blog: Transforming Diagnosis. Washington, DC: National Institutes of Health, National Institute of Mental Health. From website:
<http://www.nimh.nih.gov/about/director/2013/transforming-diagnosis.shtml>.

NIMH-Research Domain Criteria (RDoC)

“However, in antedating contemporary neuroscience research, the current diagnostic system is not informed by recent breakthroughs in genetics; and molecular, cellular and systems neuroscience. Indeed, it would have been surprising if the clusters of complex behaviors identified clinically were to map on a one-to-one basis onto specific genes or neurobiological systems. As it turns out, most genetic findings and neural circuit maps appear either to link to many different currently recognized syndromes or to distinct subgroups within syndromes. If we assume that the clinical syndromes based on subjective symptoms are unique and unitary disorders, we undercut the power of biology to identify illnesses linked to pathophysiology and we limit the development of more specific treatments...”

NIMH-Research Domain Criteria (RDoC)

“...Imagine treating all chest pain as a single syndrome without the advantage of EKG, imaging, and plasma enzymes. In the diagnosis of mental disorders when all we had were subjective complaints (cf. chest pain), a diagnostic system limited to clinical presentation could confer reliability and consistency but not validity. To date, there has been general consensus that the science is not yet well enough developed to permit neuroscience-based classification. However, at some point, it is necessary to instantiate such approaches if the field is ever to reach the point where advances in genomics, pathophysiology, and behavioral science can inform diagnosis in a meaningful way. RDoC represents the beginning of such a long-term project.”

Reference

Author (June, 2011). NIMH-Research Domain Criteria (RDoC), Draft 3.1. Washington, DC: National Institute of Mental Health. From website:

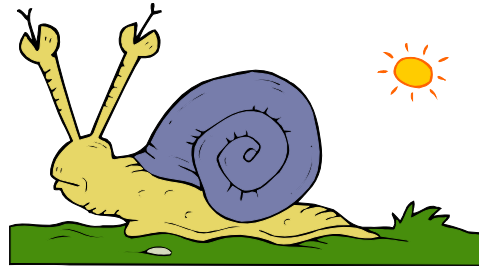
<http://www.nimh.nih.gov/research-priorities/rdoc/nimh-research-domain-criteria-rdoc.shtml>

Comorbidities



Major Depression and AD/HD

Hynd indicated 4% of those with Inattentive AD/HD will meet criteria for Major Depression.



Hynd, G. (2002). ADHD and Its Association with Dyslexia: Diagnostic and Treatment Challenges. Paper presented at the 53rd Annual International Dyslexia Association Conference, Atlanta, GA, November 16.

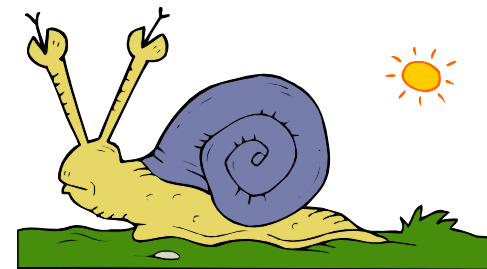
Generalized Anxiety Disorder

Roffman wrote, “Adults with LD/ADHD often experience pressure as they work to cope with their symptoms. Anxiety develops out of such day-to-day occurrences as the loss of yet another set of keys...” (p. 49).

Roffman, A.L. (2000). Meeting the Challenge of Learning Disabilities in Adulthood. Baltimore, MD: Paul H. Brookes.

Brown indicated anxiety is a common symptom experienced by adults with Inattentive AD/HD.

Brown, T.E. (1996). Brown Attention-Deficit Disorder Scales. San Antonio, TX. The Psychological Corporation.



SCT Vs. Inattentive Presentation AD/HD in Chilean Children

Research done with Chilean children with AD/HD found that those children with the inattentive presentation had a significantly stronger relationship with hyperactive-impulsive presentation and oppositional defiant disorder than did children with sluggish cognitive tempo (SCT). The SCT children were found to have significantly more anxiety and depression than those with the inattentive presentation.

Those with the inattentive presentation predicted problems with academics and social interaction whereas those with SCT did not. This shows the validity of SCT as a diagnosis

Belmar, M., et al. (August 5, 2015). Validity of Sluggish Cognitive Tempo in South America An Initial Examination Using Mother and Teacher Ratings of Chilean Children. Journal of Attention Disorders. DOI: 10.1177/1087054715597470.

SCT in College Students

American researchers screened 458 college students for Sluggish Cognitive Tempo (SCT) and found 13% of them have the disorder. They found some have AD/HD comorbidly and some do not. SCT was found to be related to significant relations to anxiety and depression as well as executive function difficulties. SCT, they found was a separate and distinct disorder from AD/HD.

Wood, W.L.M. et al. (December 17, 2014). Executive Dysfunction and Functional Impairment Associated With Sluggish Cognitive Tempo in Emerging Adulthood. Journal of Attention Disorders. DOI: 10.1177/1087054714560822.

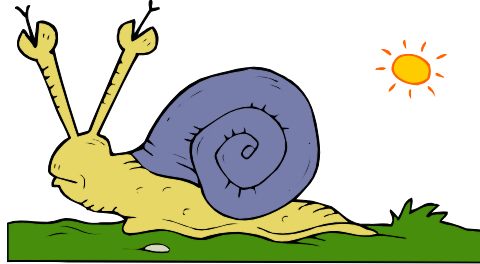
Barkley Responds to the Research in The Previous Slide

He wrote he believes sluggish cognitive Tempo is not primarily a disorder of executive function, is primarily associated with internalizing disorders, and cognitive sleepiness and motor sluggishness are its primary dimensions. He believes that Cognitive Behavioral Therapy may be the best treatment modality for sluggish cognitive tempo.

Barkley, R.A. (February, 2016). Update on Sluggish Cognitive Tempo and Commentary on “Sluggish Cognitive Tempo in College Students” by Lewandowski et al. The ADHD Report, 24(1), 6-7,13.

Avoidant Disorder

Hynd indicated 4% of those with Inattentive AD/HD will meet criteria for Avoidant Disorder.



Hynd, G. (2002). ADHD and Its Association with Dyslexia: Diagnostic and Treatment Challenges. Paper presented at the 53rd Annual International Dyslexia Association Conference, Atlanta, GA November 16.

AD/HD & Social Anxiety Disorder

Turkish scientist found that children with Sluggish Cognitive Tempo (SCT) have significantly more difficulty with social anxiety disorder than those with AD/HD, Combined Presentation. They concluded that social anxiety disorder may be more a part of SCT.

Koyuncu, A. et al (December 4, 2015). Clinical Effects of ADHD Subtypes in Patients With Social Anxiety Disorder. [Journal of Attention Disorders](https://doi.org/10.1177/1087054715617533). DOI: 10.1177/1087054715617533.

AD/HD and Learning Disorders

- **Barkley stated 35% to 50% of adults with AD/HD have Learning Disorders.**
- **Hynd reported that 60% of those with Inattentive AD/HD have Learning Disorders.**
- **AD/HD is not a Learning Disorder. It is an “Attention-Deficit and Disruptive Behavior Disorder” (DSM-IV, TR, p. 85).**

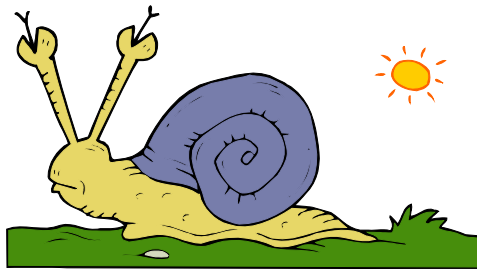
Barkley, R.A. (1996). ADHD in Children, Adolescents, and Adults: Diagnosis, Assessment, and Treatment. Cape Cod Symposia, August, Pittsfield, MA.

Hynd, G. (2002). ADHD and Its Association with Dyslexia: Diagnostic and Treatment Challenges. Paper presented at the 53rd Annual International Dyslexia Association Conference, Atlanta, GA, November 16.

AD/HD and Learning Disorders

Hynd indicated of those with Inattentive AD/HD:

- **21% have Reading Disorder**
- **33% have Mathematics Disorder**
- **4% have Spelling/Disorder of Written Expression**



Hynd, G. (2002). ADHD and Its Association with Dyslexia: Diagnostic and Treatment Challenges. Paper presented at the 53rd Annual International Dyslexia Association Conference, Atlanta, GA, November 16.

AD/HD and Learning Disorders

- **Barkley stated 35% to 50% of adults with AD/HD have Learning Disorders.**
- **Hynd reported that 60% of those with Inattentive AD/HD have Learning Disorders.**
- **AD/HD and Specific Learning Disorder are separate and distinct neurodevelopmental disorders in the DSM-5.**

Barkley, R.A. (1996). ADHD in Children, Adolescents, and Adults: Diagnosis, Assessment, and Treatment. Cape Cod Symposia, August, Pittsfield, MA.

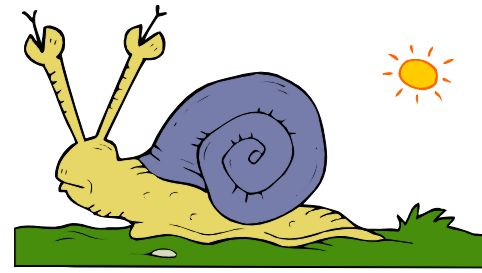
Hynd, G. (2002). ADHD and Its Association with Dyslexia: Diagnostic and Treatment Challenges. Paper presented at the 53rd Annual International Dyslexia Association Conference, Atlanta, GA, November 16.

SCT and Facial Expressions

- **Brazilian researchers discovered that children with SCT were worse at recognizing facial expressions of surprise, fear, and facial expressions overall than their non-disabled peers. This was linked to white matter anomalies in the SCT children.**

Rossi, A., et al. (May 29, 2015). Emotional recognition and white matter abnormalities in ADHD-I. Poster presented at the 5th Annual World Congress on AD/HD, Glasgow, Scotland, May 28-31.

Inattentive ADHD and Dyslexia

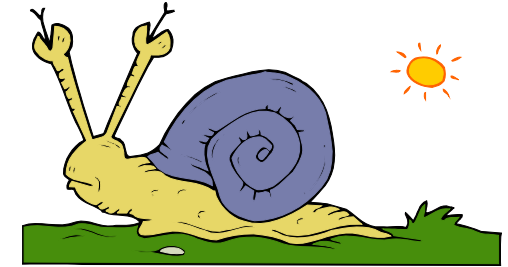


- **“Using an unselected general population sample, we confirmed previous reports that reading difficulties show higher phenotypic and genetic correlations with ADHD inattention symptoms, compared to hyperactivity-impulsivity symptoms”.**
- **There maybe a disrupted neurocognitive process specific to cases with inattentive ADHD and cormorbid reading disorder.**

Paloyelis, Y., Rijdsdijk, F., Wood, A.C., Asherson, P., and Kuntsi, J. (2010). The Genetic Association Between ADHD Symptoms and Reading Difficulties: The Role of Inattentivenss and IQ. Journal of Abnormal Child Psychology **38** (8), 1083-1095.

AD/HD and Central Auditory Processing Disorder

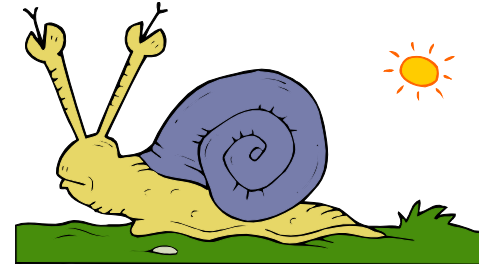
- **What appears to be comorbid CAPD in those with AD/HD may be a problem with inhibition and subsequent distraction leading to uncertainty of what was heard.**
- **There may only be a symptom overlap with CAPD.**



(February, 2003). Performance of ADHD Children on Auditory Tasks Related to Behavioral Inhibition, Not CAPD. ADHD Report, 11, p. 11/ Summary of: Brier, J.I., et. al. (2002). Dissociation of Sensitivity and Response Bias in Children with Attention Deficit/Hyperactivity Disorder During Central Auditory Masking. Neurology, 16, pp. 28-34.

Inattentive AD/HD and LD

- **Inattentive AD/HD is often confused with LD.**
- **Barkley, R.A. (1998). ADHD In Children, Adolescents, and Adults: Diagnosis, Assessment and Treatment, New England Educational Institute, Cape Cod Symposium, August, Pittsfield, MA.**
- **Inattentive Type MAY be related to Central Auditory Processing Disorder (CAPD)**



Barkley, R.A. (2002B). ADHD and Oppositional Defiant Children. Seminar presented, February 19-20, Phoenix, AZ.

Sleepiness, SCT, & ADHD

Recently researchers discovered that sluggish cognitive tempo (SCT) and sleepiness have significant overlap with AD/HD, but are distinct conditions unto themselves. They also found that students with AD/HD and Comorbid SCT and sleepiness were significantly more impaired than students with just AD/HD.

Langberg, J.M., et al. (June, 2014). Are sluggish cognitive tempo and daytime sleepiness distinct constructs? Psychological Assessment, 26(2), 586-597.

Sleep and Sluggish Cognitive Tempo

US researchers found that 17% of children with sluggish cognitive tempo have diminished sleep and many need to catch up on their sleep on weekends. This may cause sleepiness and anxiety in such children.

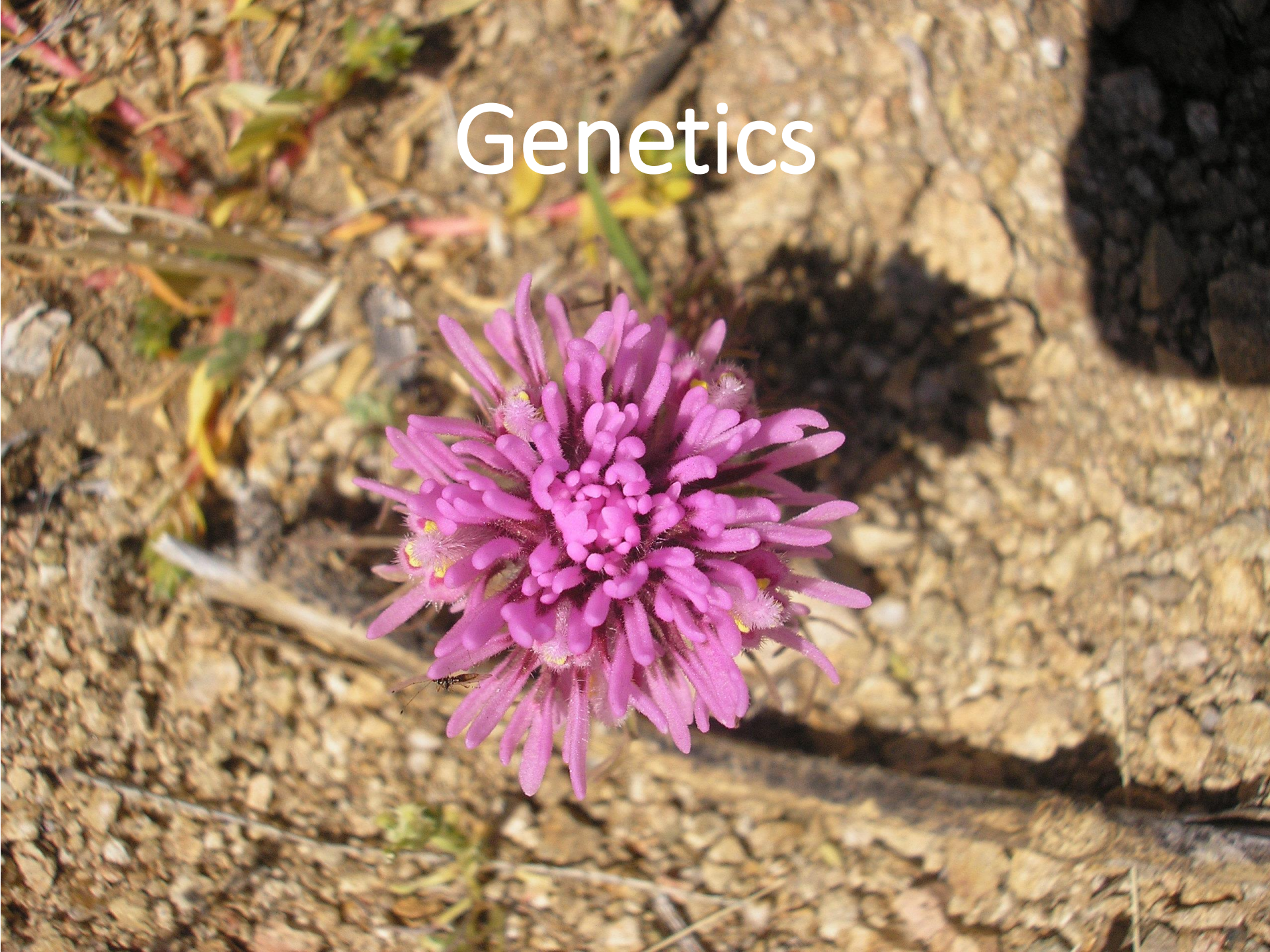
Becker, S., et al. (May 29, 2015). Sleep functioning in children with ADHD predominantly inattentive type and associations with internalizing, oppositional, and sluggish cognitive tempo symptoms. Poster presented at the 5th Annual World Congress on AD/HD, Glasgow, Scotland, May 28-31.

Seasonal Variations of AD/HD Symptoms

Dutch researchers found seasonal variation in the symptoms of AD/HD adults. Hyperactivity appeared to be significantly higher in the spring and inattention was significantly higher in the fall.

Vogel, S.W.N. et al. (May 19, 2016). Seasonal Variations in the Severity of ADHD Symptoms in the Dutch General Population. Journal of Attention Disorders. DOI: 10.1177/1087054716649663.

Genetics



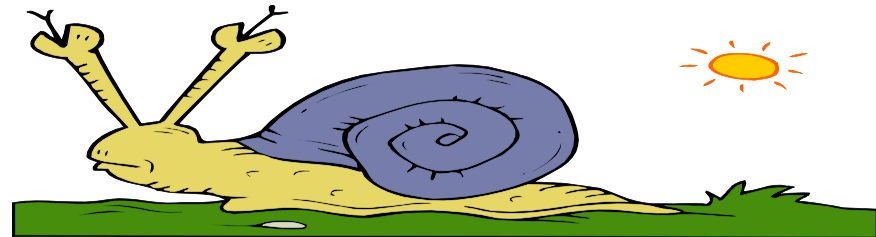
The Genetics of the Inattentive Type

- **At one time Brown believed it is a genetically separate and distinct disorder form the Combined Type**

Brown, T. E. (1997). Impairments of Memory In ADD and Learning Disorders. Paper presented at the 3rd Annual National ADDA Adult ADD Conference, St. Louis, Mo.

- **Barkley still believes it is a separate and distinct disorder.**

Barkley, R.A. (2015). Concentration Deficit Disorder (Sluggish Cognitive Tempo. In R.A. Barkley (Ed.), Attention-Deficit Hyperactivity Disorder: A Handbook for Diagnosis and Treatment. New York, NY, Guilford, 435-452.



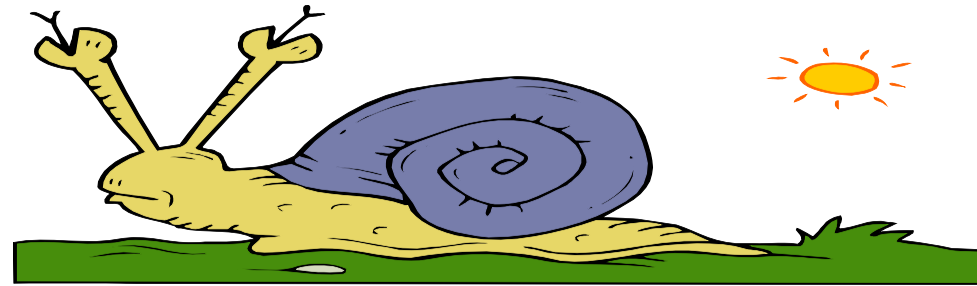
Causes of SCT (Continued)

SCT appears to be highly heritable.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Inattentive Genetics (Continued)

Willcutt, Chhabildas, and Pennington stated twin studies indicate the vigilance and processing speed problems are highly inheritable.



Willcutt, E.G., Chhabildas, N., and, Pennington, B.F. (2001). Validity of the DSM-IV Subtypes of ADHD. ADHD Report, 9 (1), pp. 2-5.)

Neurology



Etiology of SCT



Amen said that SPECT scans on adults with the Inattentive Type have an under-activity only in the prefrontal cortex and not also in the motor cortex, as the Combined Types do.

Amen, D. (1997). Personal Communication. 3rd Annual National ADDA ADD Conference, St. Louis, MO.

Etiology of SCT



Barkley said the Inattentive Type involves the posterior cortex, especially the parietal-occipital-thalamus complex. Abnormal evoked potentials have been found in the initial phase, but not the P-300 like in the Combined Type. BEAM scans suggest the anterior lobes.

**Barkley, R.A. (1998A). ADHD in Children, Adolescents, and Adults: Diagnosis, Assessment, and Treatment.
New England Educational Institute, Cape Cod Symposium, August, Pittsfield, MA.**

Possible Etiology of SCT



ADHD, Combined Type..., “may be a problem in the functional level of prefrontal-limbic pathways, particularly the striatum...whereas ADHD-PI (SCT, sic.) may involve more posterior associative cortical areas and/or cortical-subcortical feedback loops, perhaps including the hippocampal system.” (p. 204)

Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. Ney York, NY: Guilford, p. 204

Possible Etiology of SCT



AD/HD appears to involve the neurotransmitter dopamine and SCT appears to involve norepinephrine. Epinephrine urine excretion may be significantly correlated with inattention in SCT children.

Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford, p. 204.

Neuropsychological Symptoms of SCT



“Lab studies suggest that children with SCT may manifest significantly more errors with information processing, set shifting, focused attention, and possibly memory retrieval that are not evident in ADHD-C.” (sic., ADHD, Combined Type) (p. 80)

Barkley, R.A., (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford, p. 80.

Neuropsychological Symptoms of SCT



“These findings intimate that children with ADHD-PI (sic., SCT) may have more of a problem with memory, perceptual-motor speed, or even central cognitive processing speed, whereas children with ADHD-C (sic., Combined Type) manifest more problems with behavioral disinhibition and poor attention to tasks, in addition to their over activity.” (p. 203)

Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder. New York, NY: Guilford, p. 203.

CHADD Conference, Martha Denckla, and Sluggish Cognitive Tempo

- **During the question and answers portion of her keynote address I asked Dr. Denckla for her insights into SCT.**
- **She said she believes SCT exists and it is a form of extremely slow processing that is often found to be associated with AD/HD. These people have extremely slow response times. They are starting to perform electrophysiology studies of SCT because fMRI is too slow.**

Denckla, M.B. (November 10, 2012). Closing Keynote: Understanding the Neurobiological Basis of ADHD: 25 Years of Innovation in Research. Paper presented at the 24th Annual CHADD international Conference, Burlingame, CA; November 8-10, 2012.

First Brain Imagery Study Of Sluggish Cognitive Tempo

Researchers from the University of California Davis compared 13 typically developing adolescents and compared them to 7 AD/HD and 9 inattentive AD/HD adolescents using fMRI. They found those subjects with AD/HD had a hypoactivation of the right superior parietal lobe, and altered processing in the supplemental motor area and thalamus in those with AD/HD only. Those with higher levels of Sluggish Cognitive Tempo were found to have hypoactivity left superior parietal lobe. The authors believed this difference may be connected to impaired reorienting, or attention shifting in those with Sluggish Cognitive Tempo. Those with Inattentive AD/HD had differences in their supplemental motor area and thalamus which may cause deficits in preparing to respond to stimuli. The scientists said these results demonstrated the difference between AD/HD and Sluggish Cognitive Tempo.

Fassbender, C. et al. (May 1, 2015). Differentiating SCT and inattentive symptoms in ADHD using fMRI measures of cognitive control. NeuroImage: Clinical. DOI: [10.1016/j.nicl.2015.05.007](https://doi.org/10.1016/j.nicl.2015.05.007).

Other Possible Causes



Low Birth Weight and Sluggish Cognitive Tempo

American researchers found that a subgroup of low birth weight children who were evaluated at ages 6, 9, and 16 met criteria for persistent sluggish cognitive tempo and had more difficulty with psychiatric comorbidity, motor coordination problems and social interaction difficulties than those with combined presentation AD/HD.

Krasner, A.J. et al. (December 23, 2015). ADHD Symptoms in a Non-Referred Low Birthweight/Preterm Cohort: Longitudinal Profiles, Outcomes, and Associated Features. [Journal of Attention Disorders](#). DOI: 10.1177/1087054715617532.

Causes of SCT(Continued)

- **In some SCT may be related to Fetal Alcohol Effects/Syndrome**

“Alcohol-exposed children exhibited elevated SCT scores. Elevations were related to increased parent ratings of internalizing and externalizing behaviors and attention. These findings are observed in alcohol-exposed children regardless of ADHD symptoms and specific SCT items proved useful in distinguishing exposed children, suggesting clinical utility for this measure in further defining the neurobehavioral profile related to prenatal alcohol exposure.”

Graham, D.M., Crocker, N., Deweese, B.N., Roesch, S.C., Coles, C.D., Kable, J.A., May, P.A., Kalberg, W.O., Sowell, E.R., Jones, K.L., Riley, E.P. and Mattson, S.N. (July 20, 2011). Prenatal Alcohol Exposure, Attention-Deficit/Hyperactivity Disorder and Sluggish Cognitive Tempo. Alcoholism, Clinical and Experimental Research. doi: 10.1111/j.1530-0277.2012.01886.x.

SCT

Spanish researchers found higher levels of sluggish cognitive tempo (SCT) than expected in children of lower socioeconomic status, where their mother's smoked during pregnancy, and they were exposed to second hand smoke. Boys had more symptoms of SCT than girls. Having dyslexia and/or having inattention symptoms also put them more at risk of SCT.

Camprodon-Rosanas, E. et al. June 5, 2016). Sluggish Cognitive Tempo Sociodemographic, Behavioral, and Clinical Characteristics in a Population of Catalan School Children. Journal of Attention Disorders. DOI: 10.1177/1087054716652477.

Causes of SCT(Continued)

- **SCT may be a form of hypoarousal almost like narcolepsy.**
- **It may be a dysfunction of the orientation-action attention network at the back of the brain.**
- **It may be related to an anxiety disorder. Anxiety Disorders are highly comorbid with SCT.**

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Sleepiness, SCT, & ADHD

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Sleep and Sluggish Cognitive Tempo

US researchers found that 17% of children with sluggish cognitive tempo have diminished sleep and many need to catch up on their sleep on weekends. This may cause sleepiness and anxiety in such children.

Becker, S., et al. (May 29, 2015). Sleep functioning in children with ADHD predominantly inattentive type and associations with internalizing, oppositional, and sluggish cognitive tempo symptoms. Poster presented at the 5th Annual World Congress on AD/HD, Glasgow, Scotland, May 28-31.

SCT and Anxiety

Tzelepis (Tzelepis and Maypou, 1997) stated that Inattentive AD/HD may in reality be an anxiety disorder. She observed there was an extraordinarily high rate of anxiety disorders among those with Inattentive AD/HD.

Tzelepis, A., and Mapou, R. (May, 1997). Assessment. Paper presented at the Pre-Conference Professional ADD Institute of the 3rd Annual National ADDA Adult ADD Conference, St. Louis, MO.

Causes of SCT (Continued)

- **SCT may be related to Pathological Mind Wandering. The following may be the cause of the mind wandering:**
 - They cannot inhibit their mind from wandering.
 - They are trying to avoid boredom.
 - They are trying to avoid anxiety.
 - They have some obsessive component of Obsessive Compulsive Disorder.

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Pathological Mind Wandering

“Mind wandering (i.e. engaging in cognitions unrelated to the current demands of the external environment) reflects the cyclic activity of two core processes: the capacity to disengage attention from perception (known as perceptual decoupling) and the ability to take explicit note of the current contents of consciousness (known as meta-awareness). Research on perceptual decoupling demonstrates that mental events that arise without any external precedent (known as stimulus independent thoughts) often interfere with the online processing of sensory information...”

Pathological Mind Wandering (Continued)

“...Findings regarding meta-awareness reveal that the mind is only intermittently aware of engaging in mind wandering. These basic aspects of mind wandering are considered with respect to the activity of the default network, the role of executive processes, the contributions of meta-awareness and the functionality of mind wandering.” (p. 319)

Schooler, J.W., Smallwood, J., Christoff, K., Handy, T.C., Reichle, E.D. and Sayette, M.A. (June, 2011). Meta-Awareness, Perceptual Decoupling and The Wandering Mind. Trends In Cognitive Science, 15(7), 319-326. From website: <http://www.cell.com/trends/cognitive-sciences//retrieve/pii/S1364661311000878?returnURL=http://linkinghub.elsevier.com/retrieve/pii/S1364661311000878?showall=true>.

Experienced Meditators, Mind Wandering and Neurophysiology

“Many philosophical and contemplative traditions teach that “living in the moment” increases happiness. However, the default mode of humans appears to be that of mind-wandering, which correlates with unhappiness, and with activation in a network of brain areas associated with self-referential processing. We investigated brain activity in experienced meditators and matched meditation-naive controls as they performed several different meditations (Concentration, Loving-Kindness, Choiceless Awareness). We found that the main nodes of the default-mode network (medial prefrontal and posterior cingulate cortices) were relatively deactivated in experienced meditators across all meditation types...”

Experienced Meditators, Mind Wandering and Neurophysiology (Continued)

“...Furthermore, functional connectivity analysis revealed stronger coupling in experienced meditators between the posterior cingulate, dorsal anterior cingulate, and dorsolateral prefrontal cortices (regions previously implicated in self-monitoring and cognitive control), both at baseline and during meditation. Our findings demonstrate differences in the default-mode network that are consistent with decreased mind-wandering. As such, these provide a unique understanding of possible neural mechanisms of meditation” (p. 20254).

Brewer, J.A., Worhunsky, P.D., Gray, J.R., Yi-Yuan, T., Weber, J, and Kober, H. (October, 2011). Meditation Experience is Associated with Differences in Default Mode Network Activity and Connectivity. Proceedings of the National Academies of Sciences of the United States of America, 108(50), 20254-20259. From website: <http://www.pnas.org/content/108/50/20254.full>.

Mind Wandering & AD/HD

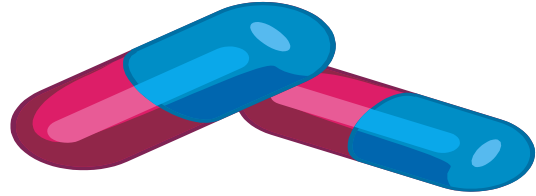
British researchers found that excessive mind wandering is a component of adult AD/HD. The scientist defined mind wandering as, “...as periods in time when attention and the contents of thoughts shift away from external sources and/or ongoing tasks to unrelated internal thoughts or feelings”. They even developed the Mind Excessively Wandering Scale to measure this.

Mowlen, F.D. et al. (July 1, 2016). Validation of the Mind Excessively Wandering Scale and the Relationship of Mind Wandering to impairment in Adult ADHD. Journal of Attention Disorders. DOI: 0.1177/1087054716651927.

Treatments



Medication and Inattentive AD/HD



- **Only about 20% of those with Inattentive AD/HD respond to Stimulant Medication.**
- **Those with Sluggish Cognitive Tempo probably do not respond.**

Barkley, R.A. (2002) Mental and Medical Outcomes of AD/HD. Pre-Conference Institute, # TPA1, Thursday October 17, 2002, 14th Annual CHADD International Conference, Miami Beach, FL.

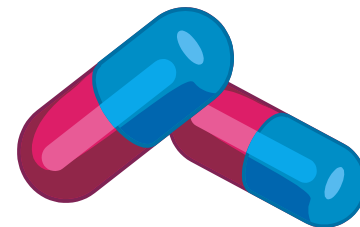
Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder, Third Edition. New York, NY: Guilford, p. 202.

Ramsay, R. (2010). Nonmedication Treatments for Adult ADHD. Washington, DC: American Psychological Association Press, p. 15.

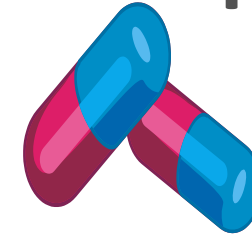
AD/HD Response Rate to Stimulant Titration

“If methylphenidate (sic., ritalin) is not effective or if there are side effects then the next alternative is dextroamphetamine (sic., dexedrine)...If the diagnosis has been appropriately made, the response rate is about 80% to 96%.”

Mahoney, W. (2002). The Use of Stimulant Medication in the Treatment of Attention Deficit Hyperactivity Disorder. *Pediatrics & Child Health*, 7 (10), pp. 693-696; From website: www.ncbi.nlm.nih.gov/pmc/articles/PMC2796531.



Medication and Sluggish Cognitive Tempo AD/HD

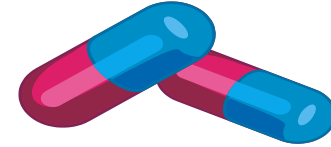


Strattera (Atomoxetine):

- **Selective Norepinehrine Reuptake Inhibitor**
Good for depression & anxiety too
- **Schedule II: Not Controlled – Call in Scripts**
- **Side Effects: insomnia, nausea, dry mouth, constipation, dizziness, decreased appetite, urinary difficulty, erectile disturbance, decreased libido, slight increase in blood pressure and pulse, liver problems (rare)**

Author (2004). Managing Medication for Adults with AD/HD. National Resource Center on AD/HD (A Program of CHADD), p. 1-12; From Website: www.helpforadhd.org/documents/wwk10.pdf.

Medications and Sluggish Cognitive Tempo AD/HD



Provigil (Modafinal)

- Will be marketed as “*Sparlon*” as an AD/HD medication
- Significantly reduces inattention, hyperactivity and impulsivity in home and school, no withdrawal rebound
- Few side effects: Insomnia (28%), Headache (22%), Decreased Appetite (18%), Abdominal Pain; Insomnia and Appetite problems decrease with time
- Low abuse potential/Not a controlled substance- Schedule IV Medication
- May increase right frontal lobe wakefulness, alerting and executive functioning

Medication and Sluggish Cognitive Tempo AD/HD (Continued)

The FDA recently rejected approving Modafinil as an AD/HD medication.

Author (February/March, 2006) Two New Medications Promise Greater Convenience, Smaller Potential for Abuse. ADDitude, 6 (4), p. 11.

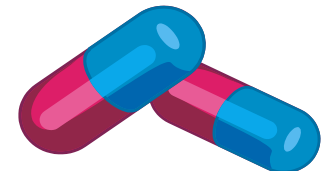
www.fda.gov/ohrms/dockets/ac/06/briefing/2006-4212b1-01-09-fda-tab9.pdf

Mechcatie, E. (September, 2006). FDA Cites Stevens-Johnson in Modafinil's ADHD Rejection. Clinical Psychiatry News, 1-2. From website:

www.Findarticles.com/p/articles/mi_hb4345/is_9_34/ai_n29293254/

Other Reference of Interest

Biederman, J., Swanson, J., Wigal, S.B., Kratochvil, C.J., Boellner, S.W., Earl, C.Q., Jiang, J. and Geenhill, L. (December, 2005). Efficacy and Safety of Modafinil Film-Coated Tablets In Children and Adolescents with Attention-Deficit/Hyperactivity Disorder: Results of a Randomized, Double-Blind, Placebo-Controlled Flexible-Dose Study. Pediatrics, 116 (6), pp. e-777-e-784; From Website: <http://pediatrics.aappublications.org/cgi/content/full/116/6/e777> .



Modafinil Side Effects

“Headache, nausea, nervousness, anxiety, dizziness, and difficulty sleeping may occur. If any of these effects persist or worsen, notify your doctor or pharmacist promptly.”

From website:

<http://www.rxlist.com/provigil-drug/consumer-side-effects-precautions.htm>

“A very serious allergic reaction to this drug is rare. However, stop taking this medication and seek immediate medical attention if you notice any of the following symptoms of a serious allergic reaction: rash, itching/swelling (especially of the face/tongue/throat), skin blisters/peeling, severe dizziness, trouble breathing.”

(Stephens Johnson Syndrome)

Possible Alternative Medicine Treatment for Working Memory Problems



- **Working Memory Training:**
 - Torkel Klingberg, M.D., Ph.D.
 - Karolinska Institute- Stockholm, Sweden
 - CogMed software company (RM Program)
 - AD/HD deficient in visual spatial working memory (WM). Gets worse with age.
 - **MAY** help relieve visual spatial WM difficulties and inattentive symptoms of AD/HD.
 - ***More Research is needed!***
- www.cogmed.com

Klingberg, T. (February, 2006). Training Working Memory. AD/HD Report, 14 (1), pp. 6-8.

Barkley, R. (February, 2006). Editorial Commentary Issues in Working Memory Training in ADHD. ADHD Report, 14 (1), pp. 9-11.

Ingersoll, B. (October 26, 2006). Complementary Treatments for AD/HD. Paper Presented at the 18th Annual CHADD International Conference, Chicago, IL.

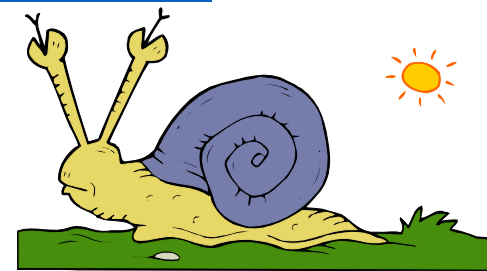
Klingberg, T. and Andersson, M. (October 28, 2006). Computerized Training of Working Memory in Children with AD/HD. Paper presented at the 18th Annual CHADD International Conference, Chicago, IL.

Accommodating SCT in School

- Behavioral interventions that focus on noncompetitive external rewards for meeting specific goals.
- Extended time to address slow processing speed.
- Social skills training in groups without conduct disordered kids. SCT kids benefit from social training.
- About 1/3 have comorbid LD. Treat comorbidities.

Barkley, R.A. (2006). Attention-Deficit Hyperactivity Disorder. New York, NY: Guilford, p. 552.

Barkley, R.A. (2008). Advances in ADHD: Theory, Diagnosis and Management. J & K Seminars, L.L.C., 1861 Wichersham Lane, Lancaster, PA 17603; 800-801-5415; www.jkseminars.com.



Accommodating SCT in School

SCT children experience significantly more anxiety than children with other types of AD/HD. They may respond better to behavioral treatments that focus on reducing their anxiety.

Ramsay, R. (2010). Nonmedication Treatments for Adult ADHD. Washington, DC: American Psychological Association Press, p. 15.

New Treatments for SCT

“Behavioral psychosocial treatment, when specifically adapted for ADHD-I and coordinated among parents, teachers and children, appears efficacious in reducing symptoms and impairment associated with ADHD-I.” (p. 1041)

Pfiffner, L.J., Mikami, A.Y., Huang-Polloock, C., Easterlin, B., Zalecki, C. and MCBurnett, K. (August, 2007). A Randomized Controlled Trial of Integrated Home-School Behavioral Treatment for ADHD, Predominately Inattentive Type. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(8), 1041-1050. From website: [http://www.jaacap.com/article/S0890-8567\(09\)61554-9/abstract](http://www.jaacap.com/article/S0890-8567(09)61554-9/abstract).

Barkley Responds to the Research in The Previous Slide

He wrote he believes sluggish cognitive Tempo is not primarily a disorder of executive function, is primarily associated with internalizing disorders, and cognitive sleepiness and motor sluggishness are its primary dimensions. He believes that Cognitive Behavioral Therapy may be the best treatment modality for sluggish cognitive tempo.

Barkley, R.A. (February, 2016). Update on Sluggish Cognitive Tempo and Commentary on “Sluggish Cognitive Tempo in College Students” by Lewandowski et al. The ADHD Report, 24(1), 6-7,13.

SCT is NOT new!

**Alexander
Crichton may have
written about
what we call SCT
in 1798!**



Crichton, A. (2008). An inquiry into the nature and origin of mental derangement: On attention and its diseases. Journal of Attention Disorders, 12, 200-204 (Original work published 1798).

Barkley, R. A. (November 9, 2012). The Other Attention Disorder: Sluggish Cognitive Tempo (ADD/SCT) Vs. ADHD– Impairment and Management. Paper presented at the 24th Annual CHADD International Conference on ADHD, Burlingame, CA, November 8 – 10, 2012.

Crichton Syndrome

I wrote Barkley on Monday (November 12, 2012) and suggested the name, “Crichton Syndrome” for SCT. The name does not suggest the cause, because we currently do not know it, it gives Andrew Crichton credit for first observing it and it demonstrates how long we have known about it. In addition it is not pejorative and by using the word syndrome it indicates we don’t know much about it, but it merits more study.

Crichton Syndrome

Barkley (November 13, 2012) responded he liked the name and would re-examine Crichton's work to make absolutely sure he merits credit for the "discovery." So stay tuned Sluggish Cognitive Tempo MAY become "Crichton Syndrome."

New Articles on “*Crichton Syndrome*”

Bauermeister, J.J., Barkley, R.A., Bauermeister, J.A., Martinez, J.V. and McBurnett (December 17, 2011-Published online). Validity of the Sluggish Cognitive Tempo, Inattention, and Hyperactivity Symptom Dimensions: Neuropsychological and Psychosocial Correlates. Journal of Abnormal Child Psychology, DOI 10.1007/s10802-011-9602-7.

Barkley, R. A. (2011, May 23). Distinguishing Sluggish Cognitive Tempo From Attention-Deficit/Hyperactivity Disorder in Adults. Journal of Abnormal Psychology. Advance online publication. DOI: 10.1037/a0023961.

Russell A. Barkley (October 24, 2012): Distinguishing Sluggish Cognitive Tempo From ADHD in Children and Adolescents: Executive Functioning, Impairment and Comorbidity, Journal of Clinical Child & Adolescent Psychology, DOI:10.1080/15374416.2012.734259.

SCT and DSM-5



Adams, Z.W., Milich, R., and Fillmore, M.T. (June, 2010). A Case for the Return of Attention-Deficit Disorder in DSM-5. ADHD Report, 18 (3), pp. 1-6.

In Reality...

Barkley said we don't know much about the Inattentive type because there has only been a handful of studies of it.



Barkley, R. A. (2002C). Mental Health Outcomes of AD/HD. Pre-Conference Institute, 14th Annual CHADD International Conference, October 17, 2002, Miami Beach, FL.