

## **“ADHD, Overweight and Obesity: The chicken or the egg?” ... asks Tampa Bay Dr. Nelson Mane.**

Attention-deficit/hyperactivity disorder is associated with overweight and obesity. This relationship has been established in the scientific literature yet not well understood. We see from the studies below that children and adults with ADHD are more likely to be overweight when not medicated. We also see that ADHD children who are medicated are more likely to be underweight. This is expected as the most common medication for ADHD is methylphenidate a drug known to have side effects indicated decrease appetite and weight loss. So much so that methylphenidate has potential and reputation for abuse. Here are two recent studies regarding to the relationship between ADHD and weight.

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**OBJECTIVE:** As the prevalence of childhood obesity increases, identifying groups of children who are at increased risk of overweight is important. The current study estimated the prevalence of overweight in children and adolescents in relation to attention-deficit/hyperactivity disorder and medication use. **PATIENTS AND METHODS:** This study was a cross-sectional analysis of 62 887 children and adolescents aged 5 to 17 years from the 2003-2004 National Survey of Children's Health, a nationally representative sample of children and adolescents in the United States. Attention-deficit disorder/attention-deficit/hyperactivity disorder was determined by response to the question "Has a doctor or health professional ever told you that your child has attention-deficit disorder or attention-deficit/hyperactive disorder, that is, ADD or ADHD?" Children and adolescents were classified as underweight, normal weight, at risk of overweight, or overweight according to BMI for age and gender. **RESULTS:** After adjustment for age, gender, race/ethnicity, socioeconomic status, and depression/anxiety, children and adolescents with attention-deficit disorder/attention-deficit/hyperactivity disorder not currently using medication had approximately 1.5 times the odds of being overweight, and children and adolescents currently medicated for attention-deficit disorder/attention-deficit/hyperactivity disorder had approximately 1.6 times the odds of being underweight compared with children and adolescents without either diagnosis. **CONCLUSIONS:** This study provides heightened awareness for pediatric providers about the relationship between attention-deficit disorder/attention-deficit/hyperactivity disorder, medication use, and weight status. Future work is needed to better understand the longitudinal and pharmacologic factors that influence the relationship between attention-deficit disorder/attention-deficit/hyperactivity disorder and weight status in children and adolescents.

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Attention deficit hyperactivity disorder (ADHD) is a neurobehavioral disorder that affects ~2.9-4.7% of US adults. Studies have revealed high rates of ADHD (26-61%) in patients seeking weight loss treatment suggesting an association between ADHD and obesity. The objective of the present study was to test the association between ADHD and overweight and obesity in the US population. Cross-sectional data from the Collaborative Psychiatric Epidemiology Surveys were used. Participants were 6,735 US residents (63.9% white; 51.6% female) aged 18-44 years. A retrospective assessment of childhood ADHD and a self-report assessment of adult ADHD were administered. Diagnosis was defined by three

categories: never met diagnostic criteria, met full childhood criteria with no current symptoms, and met full childhood criteria with current symptoms. The prevalence of overweight and obesity was 33.9 and 29.4%, respectively, among adults with ADHD, and 28.8 and 21.6%, respectively, among persons with no history of ADHD. Adult ADHD was associated with greater likelihood of overweight, (odds ratio (OR) = 1.58; 95% confidence interval (CI) = 1.05, 2.38) and obesity (OR = 1.81; 95% CI = 1.14, 2.64). Results were similar when adjusting for demographic characteristics and depression. Mediation analyses suggest that binge eating disorder (BED), but not depression, partially mediates the associations between ADHD and both overweight and obesity. Results suggest that adult ADHD is associated with overweight and obesity. Obesity (2008) doi:10.1038/oby.2008.587.

The question remains: Does having ADHD predispose you to being overweight or does being overweight predispose you to ADHD? Our model proposes that it is the thing associated with being overweight predisposes you to ADHD. That is modern society's lack of exercise and increase screen time (T.V., video games, internet). If we look at the last 2 decades when Attention-deficit/hyperactivity disorder and Autism Spectrum Disorder have increase drastically we find that during this time in western cultures, fast food, video games and computers also have increased. Our model proposes that it is the lack of exercise (kids playing video games instead of being outside playing) which disturbs motor development as well as input from the postural and antigravity muscles to the brain which is a factor in the under connectivity and functional disconnect syndrome associated with ADHD and ASD.

At a recent lecture I attended regarding childhood neurobehavioral disorders a clever cartoon was put up on the screen to make a point. The cartoon showed an overweight boy drinking a coke and eating a bag of chips while sitting in a chair playing a video game. This child's mother tells the child that it's time to take his medication. The boy's response "not now Mom I'm playing football." Exercise has been shown to not only reduce weight and improve health but also improve cognitive function.

This is not to say that enrolling the child in soccer is going to be the magic pill that solves everything. It is simply a suggestion that in a condition with many associated possible causes this may be a contributing factor or at least an aggravator. Let's face it these kids are picky eaters and at times letting them play video games is the only thing that calms them down and helps mom and dad not pull their hair out. But it seems at times as if they may be locked into things that can hurt them long term and all of us involved with these children need to be aware.

Dr. Mane offers one on one consultation as well as Group Seminars for parents and children who suffer from Attention-deficit/hyperactivity disorder and Autism Spectrum Disorders. If you are interested in scheduling a consultation or to attend a seminar please call 813-935-4744.

For more information about Dr. Nelson Mane, D.C. and his treatment approach for ASD go to <http://www.manecenter.com/ADHD.htm>.