

## *Do athletes have more of a cognitive profile with ADHD criteria than non-athletes?*

**Elizabeth Ekman**

Karlstad University, Sweden

### Biography



Elizabeth Ekman, Phd, Licensed Psychotherapist and Supervisor in CBT, was born in Gothenburg Sweden. She Started out in education for Chemical Engineering for some years. Bachelor of Science, Psychology - 1979 Hahnemann Medical College, Philadelphia, U.S.A. (Drexel University) Social work -1983 Gothenburg University, Sweden Psychotherapist program - 1994, and authorizing as Supervisor, 1997: Uppsala University and the Swedish association for Behavioral therapy - BTF, Uppsala, Sweden Karlstad University, Phd in psychology. Over 10 years of psychotherapeutic work in hospitals, with inpatients and outpatients, treating various disorders such as anxiety, eating disorders, depression, psychosis, autism /ADHD with CBT. Private Practice since - 1993. Worked with athletes and worked as a consultant to National sports federation and Swedish Olympic Committee.

### Abstract

The current study investigates the possibility that athletes have more parallel ADHD symptoms than non-athletes. High-level youth sport athletes were compared with non-athletes in leisure time (i.e., sport) and in the school in ADHD symptoms. Athletes and students were evaluated by a trained psychotherapist using Adult ADHD Self-Report Scale (ASRS) on activities at school and during activities in leisure/sports time. They also filled in the Autism Spectrum Questionnaire (AQ) as a self-report assessment. Results showed significant differences in ASRS-scores for athletes in school and in their sport, with high scores in school and low scores in sport. No differences were found in AQ between the groups. The findings indicate that many athletes might display a cognitive profile of

parallel of ADHD criteria. Future research needs to further investigate potential benefits of the cognitive profile in athletes and how they handle different contexts including sport and school settings.

Attention deficit hyperactivity disorder (ADHD) is considered a disorder that can cause behavioral and emotional problems.

Studies have shown how the environment and physical activity, can influence ADHD in a positive direction and prevent its negative effects. Most ADHD studies focus on the problems the individual has developed due to the disorder. Less focus has been on how ADHD can be used to advantage for the individual, with this cognitive profile, in leisure time and at school or work. ADHD symptoms are part of a spectrum, which ranges from hyperactivity/impulsivity to attentional difficulties, and genetic studies have proposed

that ADHD should be regarded as a set of behavioral traits that are also present in the general population but in a less extreme way. In addition to the core symptoms of inattention and hyperactivity one of the main deficits in ADHD, is “selective attention,” i.e., selecting a target item while attenuating irrelevant stimuli in the presence of conflicting, distracting information. This extreme form of attention or “hyper focusing” is however, not discussed in current conceptions of ADHD symptoms. Rather the emphasis is on problems involving symptoms like inattention. Hyper focusing is most likely to occur in situations where the individual is goal-oriented and receives immediate feedback from the activity in progress, i.e., the individual finds the activity stimulating and shuts out irrelevant information.

**Conclusion:** In conclusion, in this study, we report that ADHD criteria are highly presented in the athlete group in the school environment and very low during leisure time compared to the non-athlete group. This supports the suggestion that ADHD symptoms might be more prevalent in an athlete population but importantly, it varies with contexts. Potentially these athletes are able to inhibit the symptoms and learned to show

appropriate behavior with the right training To better understand the cognitive profile and its strengths and weaknesses, in order to prevent emotional and behavioral problems.

### Importance of Research

Research in ADHD in athletes has mainly focused on the negative effects of ADHD. This includes studies reporting an increased risk of injury and higher levels of aggression and emotional reactivity. As mentioned, there might be several positive aspects of ADHD symptoms in the sport context.

### Corresponding Author:

**Elizabeth Ekman**, Licensed Psychotherapist and Supervisor in CBT, Karlstad University, Sweden.  
E: elizabeth.ekman@gmail.com

### About University



Karlstad University – we challenge the known and explore the unknown. Our students and staff develop knowledge and skills for individual enrichment and to contribute to a sustainable society. Our creative academic environments are characterised by curiosity, courage and persistence. By taking a critical approach, we safeguard the scholarly and artistic foundations of our operations.

Karlstad University is characterised by welcoming proximity and trust. We always promote democratic values, equality and diversity. Research and education are of a high academic standard and hold great significance for society. A good, inclusive work environment strengthens the university. The university is characterised by its openness to the local community as well as the close connection between research and teaching. Operations are based on accountability, participation and commitment. Our work and study environments are characterised by accessibility and flexibility. Management, support services and core operations are interdependent and strengthen one another. International perspectives and collaboration are promoted throughout the organisation.

### References

1. Nazeer, A.; Mansour, M.; Gross, K.A. ADHD and adolescent athletes. *Front. Public Health* 2014, 2, 1–7. [CrossRef]
2. Archer, T.; Kostrzewa, R.M. Physical exercise alleviates ADHD symptoms: Regional deficits and development trajectory. *Neurotoxicity Res.* 2012, 21, 95–209. [CrossRef]
3. Goulardins, J.B.; Marques, J.C.; De Oliveira, J.A. Attention deficit hyperactivity disorder and motor impairment: A critical review. *Percept. Motor Skills* 2017, 124, 425–440. [CrossRef]

4. Mahone, E.M.; Denckla, M.B. Attention-Deficit/Hyperactivity Disorder: A historical neuropsychological perspective. *J. Int. Neuropsychol. Soc.* 2017, 23, 916–929. [CrossRef] [PubMed]
5. Safren, S.A.; Otto, M.W.; Sprich, S.; Winett, C.L.; Wilens, T.E.; Biederman, J. Cognitive-behavioral therapy for ADHD in medication-treated adults with continued symptoms. *Behav. Res. Ther.* 2005, 43, 831–842. [CrossRef] [PubMed]
6. Alonso, M.L.; Fedor, A.F.; Gunstad, J. Attention deficit hyperactivity disorder as a risk factor for concussions in NCAA division-I athletes. *Brain Injury* 2014, 28, 472–474.
7. Johnson, R.C.; Rosen, L.A. Sports behavior of ADHD children. *J. Atten. Disord.* 2000, 4, 150–160. [CrossRef]
8. Nelson, L.D.; Guskiewicz, K.M.; Marshall, S.W.; Hammeke, T.; Barr, W.; Randolph, C.; McCrea, M.A. Multiple self-reported concussions are more prevalent in athletes with ADHD and learning disability. *Clin. J. Sport Med.* 2016, 26, 120–127. [CrossRef]
9. Bush, G. Attention-deficit/hyperactivity disorder and attention networks. *Neuropsychopharmacol. Rev.* 2010, 35, 278–300. [CrossRef] [PubMed]

**NOTE:** This is a sample proceedings abstract template. The content will be changed while publishing respective abstract in supporting journal website.