

# autism at-a-glance

March 2015

**Autism at-a-Glance**  
is a publication of the  
Center on  
Secondary Education for  
Students with ASD  
(CSESA)



## Exercise for Adolescents with ASD

*Autism at-a-Glance* is a series of practitioner and family-friendly documents created by the Center on Secondary Education for Students with ASD (CSESA) designed for high school staff members supporting students on the autism spectrum, as well as family members of adolescents with ASD. The purpose of the *Autism at-a-Glance* series is to provide a current summary of topics relevant to high school students with ASD as well as practical tips and resources for school and community personnel and family members.

This *Autism at-a-Glance* was designed to support high school staff and family members in understanding exercise for adolescents on the autism spectrum.

**E**xercise can be an effective way to promote positive behaviors in adolescents with Autism Spectrum Disorder (ASD). Research has demonstrated that an increase in physical exertion can lead to improvements for adolescents with ASD in four areas:

- Behavior (decreasing or eliminating behaviors that interfere with the individual's ability to learn)
- School Readiness (performance during an academic task)
- Academic Engagement (active participation in academic tasks)
- Motor skills (movement or motion, including both fine and gross motor skills, and sensory functioning)

### Why is exercise especially important for those with ASD?

- More than half of adolescents with ASD are either overweight or at risk of being overweight, which is higher than the national average, perhaps due to physical inactivity or unusual dietary patterns.
- Being overweight can increase risks associated with ASD such as depression, anxiety, gastrointestinal problems as well as a whole host of other health problems.
- Adolescents with ASD have been found to be at a higher risk for bone fractures and have a lower bone density than their peers, at least in part due to a lack of sufficient exercise.



**The National Professional Development Center on Autism Spectrum Disorder has determined that exercise is an evidence-based practice.**

### **Tips for Educators: Using Exercise to Improve Academics**

#### **Exercise before a learning activity**

Vigorous activity, even for one minute (jumping in place, running in place, push-ups, and jumping jacks) can reduce disruptive and off-task behaviors of students with ASD in the learning activity that follows. Best results occur when the students get several small exercise breaks throughout the school day.

#### **Incorporating vigorous exercise into school routines**

Add jogging for a short period of time (12-20 minutes followed by a brief cool-down) into a student's day. This can increase correct responding and on-task behavior in adolescents with ASD. Vigorous exercise (jogging, jumping) has more impact than less strenuous activity (playing catch with a ball, slow walking) on desired learning outcomes.

### **Tips for Families: Options for Fitness A school or community program**

Difficulty with social interactions, sensory overstimulation and communication can inhibit adolescents with ASD from joining organized community sports teams and those at school. However, if there is a sports program that appeals to the student, it will be well worth the challenges. An inclusive program will not only build fitness but also the social skills and connections that can have life-long benefits. Cross-country and track are good choices since often these teams do not involve pressured tryouts. Martial arts, dance, or equestrian programs are other great options that can help with following directions and building relationships. YMCAs can be excellent providers of inclusive sports programs that frequently make accommodations for families who need extra support.

Families should talk to coaches ahead of time about their level of experience with athletes with ASD. Parents may need to help coaches break down tasks into smaller sets of directions, provide visual supports, simplify practice routines, or allow a family member or supportive adult to attend practices.



## Tips to initiate and maintain exercise routines:

- Create a weekly calendar with three built-in time slots of at least 30 minutes each for exercise. Build up to four time slots after a few weeks. Plan ahead and make note of activities that require transportation or special clothing or equipment (for example: don't forget to pack a bathing suit and towel!).
- Create a visual "menu" of activities the adolescent can choose from for each of the time slots (suggestions of options listed above).
- Build in a combination of exercise and chores such as mowing the lawn (with a push mower), raking leaves, walking the dog, or washing and vacuuming the car.
- Use an app or other reminder to prompt adolescent when exercise time slot is near, or to track exercise accomplishments.
- Create a positive reward system and be sure to include input from the adolescent in the choice of rewards. They can negotiate a certain reward for each week of exercise routine successfully completed. For added value, a reward such as a visit to an indoor rock climbing wall can count towards the next week's exercise.

### Fitness routines at home

If a student prefers more individual activities that require less attention to directions and social cues, then running, swimming, fast walking, treadmills, elliptical machines, trail hiking, roller skating, stationary bicycles, and jumping rope are excellent choices for fitness. There are also workout videos designed specifically for young adults with autism, and many video game systems have work out "game" programs.



## Need Inspiration? Watch a Video of an Athlete with ASD

Professional surfer Clay Marzo  
[On Youtube watch "Clay Marzo: Just Add Water"](#)



Permission is granted to reprint this Autism at-a-Glance if you acknowledge CSESA and the authors of this document. For more information please visit CSESA at <http://cseesa.fpg.unc.edu/> or <https://www.facebook.com/cseesa.asd>

The work reported here was supported by the Institute of Education Sciences, U.S. Department of Education through Grant R324C120006 awarded to UNC-Chapel Hill. The opinions expressed represent those of the authors and do not represent views of the Institute or the U.S. Department of Education.

Suggested citation: Verstrat, A. & Hedges, S. (2015, March). *Exercise for adolescents with ASD* (Autism at-a-Glance Brief). Chapel Hill: The University of North Carolina, Frank Porter Graham Child Development Institute, CSESA Development Team.



## Need More Inspiration? Athletes with ASD

Swimmer Jessica-Jane Applegate  
<http://www.jessicajaneapplegate.com>

<http://www.telegraph.co.uk/sport/olympics/paralympic-sport/9515467/Paralympics-2012-Jessica-Jane-Applegate-breaks-own-200m-freestyle-record-as-GB-swimmers-start-to-shine.html>

Basketball player and marathon runner Jason "J-Mac" McElwain  
<http://www.cbsnews.com/video/watch?id=1342163n> or read <http://www.huffingtonpost.com/caurie-putnam/>

[http://www.huffingtonpost.com/caurie-putnam/boston-marathon-jason-j-mac-mcelwain\\_b\\_5188636.html](http://www.huffingtonpost.com/caurie-putnam/boston-marathon-jason-j-mac-mcelwain_b_5188636.html)

High School star runner Mike Brannigan  
[http://www.huffingtonpost.com/2014/09/04/mike-brannigan-autism-runner\\_n\\_5761772.html](http://www.huffingtonpost.com/2014/09/04/mike-brannigan-autism-runner_n_5761772.html)

## Resources

Evidence-Based Practices for Children, Youth, and Young Adults with Autism Spectrum Disorder

Exercise (ECE) fact sheet

<http://www.autismpdc.fpg.unc.edu/sites/autismpdc.fpg.unc.edu/files/2014-EBP-Report.pdf>

Sports, Exercise, and the Benefits of Physical Activity for Individuals with Autism

<http://www.autismspeaks.org/science/science-news/sports-exercise-and-benefits-physical-activity-individuals-autism>

A Winning Match: Fitness and Autism

<http://www.autismafter16.com/article/12-09-2011/winning-match-fitness-and-autism>