



## FORE! Autism Podcast Show Notes

Nate: My name is Dr. Nate Shanok

Merrick: And my name is Merrick Egber

Merrick: This is the official podcast of the Els for Autism Foundation, Fore Autism!

Nate: We call our Podcast this because it's a play on our foundation's name and Merrick and I are terrible golfers

Merrick: But we love how golf has become such a transformative tool to helping people with autism.

Nate: When I'm not part of the podcast, I am part of our growing research team and a tennis coach.

Merrick: When I'm not part of the podcast, I'm an administrative assistant, filling in the gaps of each department, like glue. I am also autistic.

This is our second episode, Episode 2: Researching the State of Autism Part I

What we hope to do is to present news and updates about our Foundation, interviews, or feature stories that play a big role with us, and with the community as a whole, speaking of which we also have our "Today in the World of Autism" segment where we posit the news and current events reflective of the world we live in today.

Nate can you give us any news and updates about the Foundation?

Nate:

The Foundation has continued to provide services to clients, remotely, and is also offering a number of virtual classes and social meetings related to job coaching, cooking, and mental health. Also, the foundation will reopen in limited capacity on June 1<sup>st</sup> which is very exciting as we miss seeing all of our friends. We'd like to give a special thank you to Julie Lobdell and Dr. Marlene Sotelo for providing masks to all Foundation workers which are printed with our very sharp Els For Autism logo. We can't wait to be seeing everyone's attractive faces in the 3-dimensional world.

Time to present!

Today in the world of autism!

Starting with Dr. Shanok and his very important research!

Nate:

### 1. Vasopressin Article



A study from Karen Parker and colleagues at Stanford University (Go Cardinals) found that depleted vasopressin levels in infants aged 3 months and younger could serve as a useful hormonal indicator of autism

Vasopressin is a super important naturally occurring hormone that helps control various bodily functions and has most importantly been linked to close-bonding social behaviors in humans and other mammalian species. Vasopressin like oxytocin is known as a love promoting hormone.

Vasopressin also allows for the proper functioning of bodily cells by maintaining the appropriate volume of water in the space that surrounds cells within the body. This powerful hormone plays a role in regulating our circadian rhythm — the periods of sleepiness and wakefulness in a 24-hour cycle. It also helps maintain the body's internal temperature, its blood volume, and the proper flow of urine from the kidneys.

Prior studies had shown that autistic children have nearly 66 percent less vasopressin in their cerebrospinal fluid compared to neurotypical peers, and a pattern of lower levels corresponding to decreased social skills.

The authors commented that this was the earliest age to date that this relationship had been explored.

Using an interesting methodology, Ms. Parker and her colleagues obtained cerebrospinal fluid collected from children to check for meningitis after those infants had experienced fever in the first three months of life. Admittedly the presence of fever in the first 3 months of life was a confounding factor of these results.

The team identified samples from 9 children later diagnosed with autism, and compared their vasopressin levels with those of 17 control subjects who were matched for sex, ethnicity and age.

On average, the autistic children had about 20 percent lower concentrations of the hormone than the neurotypical children did. Follow up analyses showed that early vasopressin levels correctly predicted an autism diagnosis in 7 of the 9 autistic children, and its absence in 15 of the 17 control subjects.

Although this study utilized a small sample, it is promising work and the authors hope to develop this line of research further and into a potential early screening method.

\*Some preliminary evidence for beneficial effects of oxytocin and vasopressin nasal spray have been highlighted which we may discuss more in a subsequent show

Nice work on the west coast there Dr. Parker.

We'll link to the publication in our shownotes: <https://pubmed.ncbi.nlm.nih.gov/32341146/>

**Merrick: How does vasopressin control social behavior? What is cerebrospinal fluid and how does it regulate brain activity?**

Nate: Well the primary function of cerebrospinal fluid or csf is to cushion the brain within the skull and serve as sort of a shock absorber for the central nervous system, CSF tests for infections look at white blood cells, bacteria, and other substances in the cerebrospinal fluid which may indicate meningitis



Vasopressin is both a hormone and neurotransmitter. Its release often coincides with a social behavior such as hugging a friend or romantic partner, or spending time with friends. Vasopressin as an NT ALSO has a downstream effect in the brain causing dopamine to be released which makes the social behavior being conducted more rewarding.

## 2. Transportation Article

Dr. Caroline Rodier of the U.C. Davis Mineta Institute of Transportation Studies recently published a fascinating meta-analysis article to study the existing literature on the magnitude and types of challenges faced by individuals with autism related to driving and transportation.

This could be seen as a major barrier to obtaining employment for individuals with autism, as prior research has shown that adults with autism face significantly more challenges with becoming employed and living independently in comparison to both typically developing adults and adults with other types of disabilities

Through their analyses the researchers were able to reach several interesting conclusions and policy recommendations.

- 1) Certified occupational therapists in the field of driving rehabilitation should be used to evaluate the driving abilities of individuals with autism and provide driving training in both autonomous and non-autonomous vehicles (steering, acceleration, warning systems, brakes)  
Autonomous vehicles are self-controlled cars (and I officially feel like I'm living in an episode of the Jetsons or Futurama)
- 2) For individuals who require autonomous vehicle technology, public funding should be made for helping individuals with autism to purchase these vehicles. Funding is currently made available for those with physical disabilities to modify vehicles with necessary adaptive equipment.
- 3) More testing of vehicles with high levels of automation should be conducted; but in the meantime, public funding should be made available to subsidize ride-hailing services when barriers to transit exist.
- 4) Additional research is needed to evaluate the efficacy and safety of autonomous vehicles for regular and long-term use

Dr. Rodier passed the checkered flag with some of those arguments: A well-constructed examination of existing evidence for guiding future policy. Well done.

We'll link to the article in the shownotes: [https://transweb.sjsu.edu/research/1706-AV-Address-  
Barriers-Driving-Individuals-Autism](https://transweb.sjsu.edu/research/1706-AV-Address-Barriers-Driving-Individuals-Autism)

**Merrick, can you speak a little about your experience with transit issues as a barrier to employment? Also, how do you feel about the use of automated cars?**

And now onto Merrick's inspirational articles:

Merrick:



1. According to this link, that will appear in our shownotes:  
<https://www.wbez.org/stories/valedictorian-set-out-to-prove-people-with-autism-can-do-anything/feaf20a5-da5d-4df5-ae13-38783d0e42e9>, during this time of uncertainty, especially for students seeking an education, this should be an inspirational story. It is about Eileen Limon, who became the Valedictorian at “Our Lady of Tepeyac High School, an all-girls Catholic school in Little Village on Chicago’s Southwest Side”. Unable to speak at around 4 years of age, Eileen ended up encountering adversity in Elementary and Middle School due to her difficulties communicating with others as an individual with autism. As a tip of the hat to my colleague, Dr. Shanok, Ms. Limon is going to go to Lawrence University in Wisconsin to either take up Psychology or Engineering as her major. The staff at her school will have a drive-through ceremony later in the month in the parking lot, maybe another one in July, but at least her speech will be on the school’s web site.

**Merrick: If you look up “Valedictorian and autism” on a search engine, many stories pop up about different valedictorians with autism what do you think are traits found in individuals with autism that makes them able to excel so much in their studies?**

2. Besides education, employment is another form of uncertainty for those with autism, to transition from a normal work environment to either unemployment or remote work should be extremely stressful and a struggle, and that seems to be the story for many people today, I’ve heard of people who have had difficulties acclimating, whether neurotypical or otherwise to the general work climate today. I should feel the same way, but I actually find remote work to be a pleasant experience, and I’m not the only person with autism who feels that way. In fact, I’ve had two jobs, one is my second job currently, that were/are both remote.

One story is about Ultronauts, an engineering firm who already had a remote set-up in place before Covid-19 had made such an impact on the way we do things jobwise, and how their 75% autistic staff has led the company to be a Fortune 500 company, what is meaningful about this story is how they’ve used the full spectrum (no pun intended) of technology in order to reduce any of the downsides of working remotely, like expressing work-related difficulties and challenges, and how they are willing to share these tips, and others, for anyone else who is considering what it is like for remote work.

The second story is about Auticon, a “Global IT Consulting Firm”, whose 200 of 300 employees are autistic and who have transitioned, at least temporarily, to a remote work model. What David Aspinall, CEO of Auticon US, has found shocked him. Beyond the efficiency levels, and cost savings, communication skills have greatly improved and there is a great deal of trust, already, for we are considered to be very direct and honest, I can tell you all that I’m a terrible liar.

You can find links to both stories in the shownotes:

<https://www.forbes.com/sites/morgansimon/2020/03/30/thriving-during-covid-wfh-lessons-from-a-team-thats-75-autistic-100-remote-and-2x-less-lonely/#67d2441851cc>



<https://www.cnn.com/2020/04/16/our-it-team-is-autistic-thats-helping-us-survive-the-coronavirus.html>

Merrick Egber: My hope is to mainstream remote work as a proper option for those with autism. Not everybody can handle the stimuli of constant socialization and having to use whatever commuting skills they have to work onsite everyday they have to. It can be quite exhausting for many people, and so if there is a way to spotlight it, I'd like to do so.

Nate: What disadvantages do you see from Remote work for those with autism, Merrick?

Merrick:

Merrick Egber:

Before we go, we want to thank the Foundation for believing in us to be able to do a podcast for any willing listeners, and because of that we will be seeing you again, in June, to celebrate Autistic Pride Day (June 18<sup>th</sup>) and my birthday (June 19<sup>th</sup>) with an interview with me, Merrick Egber, and two feature stories on two members of our Advisory Board for our "Today in the World of Autism" segment. Hope you enjoyed your time with us. Catch you all later!

Fooooorrrreeeeeeee!!!!

