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New Research Into Causes of ADD/ADHD May Mean Earlier Intervention

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The attention span of most eleven-year olds is decent, at best. But Richie Ramirez, who was diagnosed at age nine with Attention Deficit Hyperactivity Deficit Disorder, was especially challenged. He remembers playing with lighters in his mother's study room, at age 11. The room, filled with teddy bear stuffing (the highly flammable kind) turned into a fire hazard. "My mother called me so I left the room with the lighter and the whole room caught on fire," Ramirez recalls.

Fortunately, his house in Mexico City still stands today. But Ramirez says his journey from his hometown to a sophomore student at BYU has brought challenging highs and lows. Living with ADHD is something he manages every day. "If you have ADHD and you are in a competitive place like BYU where it's so academically challenging and demanding, it can take a toll on your emotional health," Ramirez says.

Soon after he was diagnosed, Ramirez says his mother enrolled him in several extracurricular activities, including tae kwon do, which initially kept him busy. Doctors later prescribed him with methylphenidate but it made him physically numb. At that point, his mother took him out of tae kwon do and enrolled him in physical therapy sessions. He eventually quit all forms of treatment and left for a proselyting mission for the Church of Jesus Christ of Latter-day Saints. During this period, he says he didn't feel inhibited by his ADHD.

After his mission, Ramirez accomplished his goal of earning admission to BYU, but experienced a rude wake-up call. "My first year, I was

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put on probation because I failed a few classes,” Ramirez says. “I felt stupid because testing at BYU is crazy challenging. I got so depressed big time so the doctors put me on meds.”

He reached out to different resources on campus. The University Accessibility Center ran some tests and confirmed that he had ADHD. They recommended that he take Aderol. Ramirez said his GPA went up significantly and that he was able to stay on top of things. “The world became 100% different that semester,” Ramirez says. “But second semester I noticed it was making me edgy with my anxiety and my grades went down.”

This sequence of events led Ramirez to quit taking ADHD medication again for several months. Eventually, he met with a psychiatrist who issued him a prescription for Citaloprom. He still uses this medicine to combat anxiety and hyperactivity.

Many people struggle, like Richie, with attention problems. These kinds of problems occur in common disorders like depression, anxiety, and autism. Rebecca Lundwall, professor of psychology at Brigham Young University and faculty member in the neuroscience program, researches reflexive attention, genetics and development, among other areas. Her research interests include disorders that have an attentional component. She said that there is a potential to determine genetic-based factors for attention-deficit disorders that will make earlier intervention possible. Such intervention might have made the difference for young people like Ramirez.

“If we can identify significantly increased risk for a disorder via genetics, then we could do so at birth,” Lundwall says. “This wouldn’t really be a diagnosis but it might be a compelling indication to act to avoid problems. It would be a little bit similar to testing for Phenylketonuria



(PKU) in that we can get a blood test at birth. If the test comes back positive, then we know that putting the infant on a special diet will prevent serious mental retardation. It could render parents more prepared and offer a higher chance of disorder prevention.”

According to Lundwall, there are two common types of attention styles: sustained attention and reflexive attention. Sustained attention is the ability to ignore stimuli in the environment and focus on the task at hand (e.g., reading a passage of text). “Teachers and parents have commonly noted that children with ADHD struggle to do these type of tasks and methylphenidate, which is associated with the neurotransmitter dopamine, helps,” Lundwall explains.

Reflexive attention is the ability to benefit from cues out of the area of current focus. Both attention styles, reflexive and sustained, appear to be relatively independent. “Many people have assumed that reflexive attention stops developing soon after birth, that there are few differences between individuals in terms of reflexive attention, and/or that ADHD is only associated with sustained attention,” Lundwall says. “I think reflexive attention does develop after infancy, that there are individual differences, and that it is associated with disorders such as ADHD.”

Results from Lundwall’s research mean that earlier detection of ADHD and similar disorders is possible so that children who may need or benefit from intervention can be identified. “The child may not yet meet the criteria and by intervening we can alleviate symptoms [or help them manage them better] so that they never meet the criteria for a diagnosis,” Lundwall says. “Diagnosis is often based on impaired functioning in school or home life. In many cases it would be best not to wait until the child qualifies for a diagnosis but to intervene before things get that bad.”

Richie Ramirez is now 26 and studies information technology. He says that the past years have taught him that living with ADHD is something he has to manage. “It won’t go away when I enter the work force. Everyone has a challenge. This one is mine.”

Challenges don’t necessarily remain permanent. Looking towards the next decade or two, Lundwall anticipates research studies that answer the following questions:

- Is there an adjunctive medication that can be given that will improve performance with a specific aspect of attention that current medications are not helping with?
- What is it that the children with ADHD who are doing relatively better are doing that helps them manage their symptoms?
- If we train children at risk for ADHD in different ways of responding to stimuli (perhaps via a game-like computer task) or different ways of recognizing and responding to their challenges (perhaps with more macro-level training), will they benefit from this training in day-to-day functioning?

“Maybe my research will help treat the attentional symptoms of these disorders and, thereby, make these children’s lives better now and in the future and give their parents more hope and peace about the future,” Lundwall says. ●