What do ADHD and cancer have in common? Variety

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According to new research conducted at Oregon Health & Science University, Attention Deficit Hyperactivity Disorder (ADHD) is more than one disorder. It's an entire family of disorders, much like the multiple subtypes of cancer.

The research, which highlights various versions of the disease, each with differing impacts, demonstrates that there is likely not going to be a "one-size-fits-all" approach to treating patients. It also suggests new methods for characterizing any given individual are going to be required for improved diagnosis, prognosis and treatment of the disease. The research also indicates that scientists need to shift their thinking when it comes to conducting research aimed at understanding the cause and impacts of ADHD, and consider the vast variety of human behavior in non-affected children as well.

OHSU scientists Damien Fair, Ph.D., assistant professor of behavioral neuroscience, psychiatry, and the Advanced Imaging Research Center; and Joel Nigg, Ph.D., professor of psychiatry, behavioral neuroscience and pediatrics, led the research. The study will be published online this week in the Proceedings of the National Academy of Sciences.

"Traditionally, physicians and psychologists have diagnosed patients through the use of the Diagnostic and Statistical Manual of Mental Disorders, commonly known as the DSM," explained Fair.

"The problem with this approach is that it often relies on secondary

observations of parents or teachers, where even if the descriptions are accurate, any given child may be behaving similarly, but for different reasons. Just as if there might be many reasons why someone might have chest pain, there might be many reasons why a child presents with ADHD. However, unlike diagnosing countless other well-understood diseases, there is no one test that can differentiate individuals when it comes to psychiatric and developmental conditions like ADHD. The data here highlights ways to recognize such individual variability and shows promise that we might be able to identify why any given child presents with ADHD, thus allowing for future examinations of more personalized treatments."

To better understand ADHD's variations, Fair, Nigg and colleagues compared test results for several cognitive skills among a large sampling of ADHD patients and a control group. The testing focused on memory, inhibition, attention, comprehension, and several other categories.

"We have known for some time that there is wide performance variation in both the ADHD group and the control group," explained Nigg, "but this has never been formally described."

Although, overall, the ADHD group did more poorly than the control group on all the measures, they noted that in some areas, certain control group patients outperformed the ADHD patients. However, in those same areas, other ADHD patients outperformed the control group. Simply put, not all study participants – ADHD and control - consistently showed the same strengths and weakness. Furthermore, they found that ADHD patients can be subcategorized depending on their deficits and relative strengths, showing unique subgroups among all children with ADHD.

Using some of these testing methods, the researchers believe they may have found a more precise way to subcategorize and perhaps in the

future diagnose children with ADHD. Psychologists and physicians could provide patients with a series of cognitive tests, determine their strengths and weaknesses, and subcategorize them based on these traits.

Future research is required to better categorize the sub-types of ADHD, match patients to therapy and continue the quest to find the cause of ADHD, a question that has eluded researchers for many years.

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