The Science of ADHD: Navigating Neurodiversity in a Neurotypical World Dr. James Brown

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Today's Talk – a shambles in 7-parts...

- 1. What's in a name?
- 2. What ADHD isn't.
- 3. What ADHD is.
- 4. The ADHD Brain.
- 5. Reward.
- 6. The burden of ADHD.
- 7. Navigating the 'neurotypical world'



1. What's in a name?



Worst name... EVER!

- ADHD is *not* an attention-'deficit'* it is an inability to choose what we pay attention to
- ADHD is often *not* external hyperactivity.
- Arguably the name should be changed but there is no consensus at the moment.

* In the traditional use of the word deficit





2. What ADHD isn't.



Some persistent ADHD myths... All untrue!

- 1. ADHD isn't real.
- 2. ADHD was invented by pharma companies.
- 3. ADHD is a disorder of young boys.
- 4. You can't have ADHD if you're well educated/successful.
- 5. ADHD is a 'trendy bandwagon'.
- 6. But we're all a little ADHD?
- 7. ADHD is caused by bad parenting.
- 8. ADHD is caused by sugar/food additives.





3. What ADHD is.



ADHD is a lifelong neurodevelopmental disorder







A lifelong neurodevelopmental disorder, where the brain develops differently Largely genetic, with 'heritability'* of between 80-90-%

Very prevalent, with at least 2.5% of adults living with ADHD



*If one of a pair of identical twins, even if separated, has ADHD, there is an 80-90% chance the other will

How does ADHD present?

There are three ADHD presentations based on the three main diagnostic characteristics:



Diagnostic Symptoms of ADHD (inattention)

- 1. Making careless mistakes/lacking attention to detail
- 2. Difficulty sustaining attention
- 3. Inability sometimes to listen when spoken to directly
- 4. Failure to follow through on tasks and instructions
- 5. Exhibiting poor organisation
- 6. Avoiding/disliking tasks requiring sustained mental effort
- 7. Losing things necessary for tasks/activities
- 8. Being easily distracted (including unrelated thoughts)
- 9. Being forgetful in daily activities





Diagnostic Symptoms of ADHD (hyperactivity/impulsivity)

- 1. Fidgeting with or tapping hands or feet, squirming in seat
- 2. Leaving seat in situations when remaining seated is expected
- 3. Experiencing feelings of restlessness
- 4. Having difficulty engaging in quiet, leisurely activities
- 5. Being "on-the-go" or acting as if "driven by a motor"
- 6. Talking excessively
- 7. Blurting out answers
- 8. Having difficulty waiting for your turn
- 9. Interrupting or intruding on others





But....

You also need to meet the following criteria:

- 1. The symptoms must have been present since childhood.
- 2. You must have had the symptoms for at least six months as an adult.
- 3. Symptoms must have a *moderate* impact on at least two areas of your life (such as work, relationships, finances).
- 4. Symptoms must not be easily explained by another, different psychiatric disorder.



Stigma and myth: Aren't we all a bit ADHD?





Yes... but ADHD is the extreme of a 'mental continuum, Just as being tall is the extreme of a 'physical continuum' and no one says "We're all a bit tall, aren't we?"

Non-diagnostic symptoms of ADHD

- Rejection-sensitive dysphoria (RSD) extreme reactions to real, perceived or future rejection.
- Executive function deficits lack of ability for higher level thinking skills like planning and organizing.
- Emotional dysregulation often over- or under-reacting.
- Time blindness being unaware of how time passes, leads to often being early or late.



4. The ADHD Brain





A brain is like a city; well connected with key areas playing key parts in how it runs. Lose these connections or lose large parts of a city and the city won't work the same way.



The ADHD brain (structure)

There is good evidence that ADHD brains are different anatomically in areas involved in attention, inhibiting behaviours (stopping your self doing things) and emotional control, as below.



The ADHD brain (function)

ADHD brains are also different 'functionally'; brains use chemicals called neurotransmitters to communicate, and in ADHD brains these don't work as well (neurotransmitters such as dopamine)



Executive functions and ADHD

ADHD brains can struggle with...







Default Mode (DFN) and Task Positive Networks (TPN)



DFN is 'daydreaming' brain network, allows us to think of past, future etc

TPN is the parts of the brain which switch on when we have to do a task, such as driving a car

The DFN does not 'switch off' properly in ADHD, leading to daydreaming and mind wandering







5. Reward



ADHD and reward

- The neurotransmitter dopamine is central to the feeling of 'reward'.
- Dopamine doesn't work 'normally' in ADHD brains, meaning we don't have the same sense of reward..
- The ADHD brain will usually seek out <u>smaller</u>, <u>immediate rewards</u> than larger, long-term rewards.
- Most common genetic mutations are in dopamine transporters.





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As someone who finds paperwork 'unrewarding', I struggle to engage with it

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6. The burden of ADHD



The Burden of ADHD

- Increased likelihood of reduced quality of life
- Increased risk of substance use issues, gambling and debt
- Increased unemployment or underemployment
- Increased risk of criminality (25-33% of male prisoners have ADHD symptoms)
- Increased accidental injuries
- Increased suicide risk
- Increased risk of premature death
- Economic burden of £18k/year (average, untreated)





7. Navigating the 'neurotypical world'



We are square pegs, trying to bash ourselves into round holes that 'society' has created. It is time we started to make more square holes.







ADHD brains are anatomically and functionally different from non-ADHD brains

ADHD makes simple things very complicated

Having ADHD can lead to significantly worse outcomes in life

We are often square pegs being forced into round holes by the society around us





Whoops... the difficult 8th section: Is ADHD a strength?

- Many people with ADHD see their ADHD as a 'strength' or 'superpower'
- But not everyone does!
- No one can challenge how you view *your* ADHD, but ADHD encompasses a broad range of experiences
- If it were sunny where you are, would you tell people where it rains that it is also sunny there?





Resources

- Website ADHDadult.uk
- Social media @theadhdadults
- Online magazine Focusmag.uk
- Podcast The ADHD Adults



with James Brown and Alex Conner





