

ADHD 360

Optimizing our Understanding of ADHD & its Complex Nature

Success with ADHD Learning Series #1

Dr. Caroline Buzanko
caroline@koruppsychology.ca
drcarolinebuzanko.com

1

Overview

- Myths
- Understanding the ADHD brain
 - Teenage Brain Considerations
- ADHD & Executive Functions
- Assets of ADHD

2



Myths

3

Myths about ADHD

Sits attentively

Boys diagnosis

Not a real diagnosis

Lazy and unmotivated

Medication confusion

Stimulants stunts growth

Childhood disorder

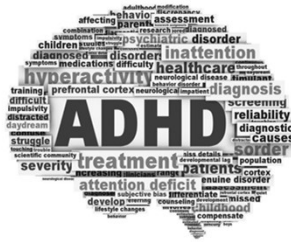
Stand alone

Bad parenting

Ultimate failure

Overdiagnosed

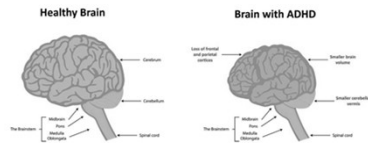
Diet



4

ADHD

ADHD slows brain development



5

5

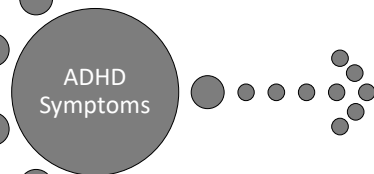
ADHD Brain: Structural, Functional, and Chemical Differences

ADHD brain smaller

Smaller volume in key areas

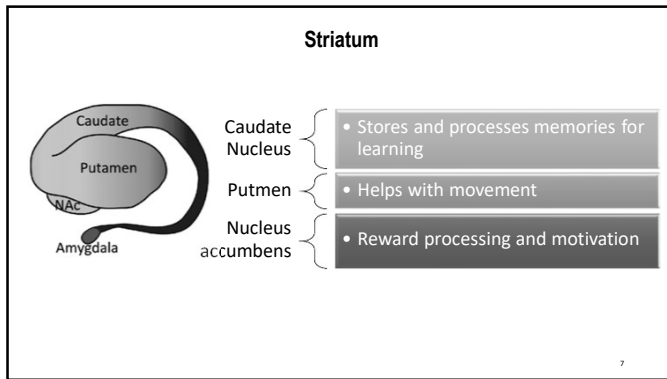
Less grey matter in outer layer

Abnormalities in white matter

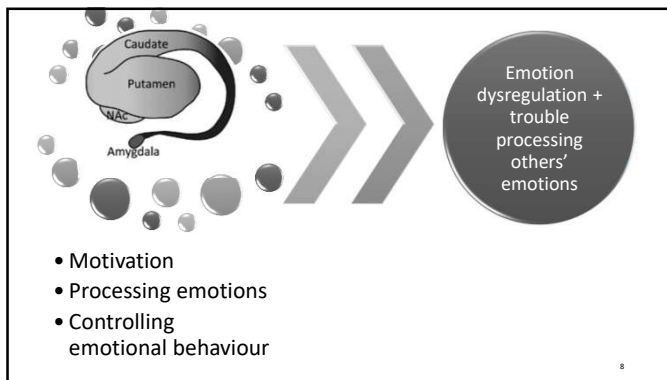


Hoogman M, Bralten J, Hibar DP, et al. (2017)

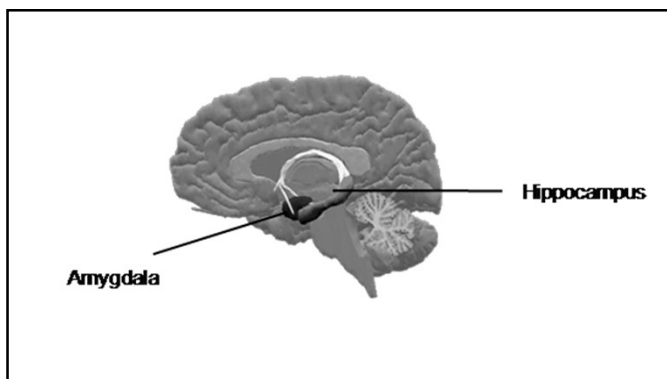
6



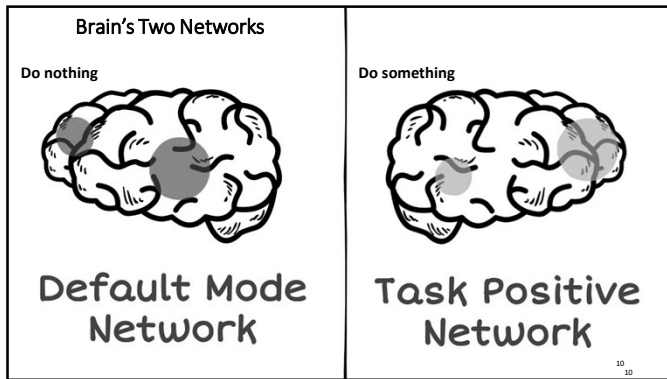
7



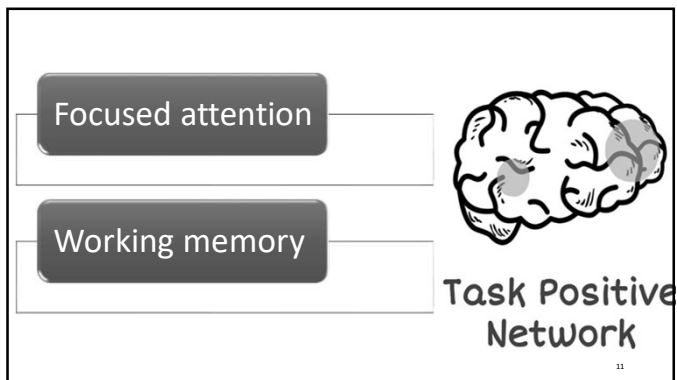
8



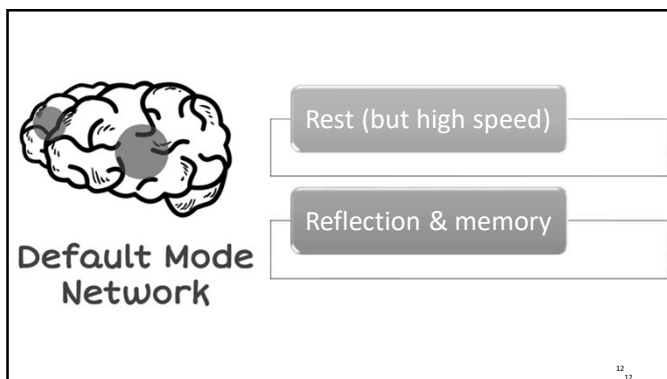
9



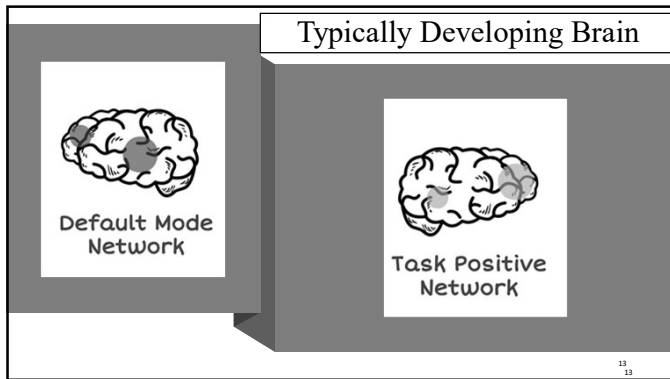
10



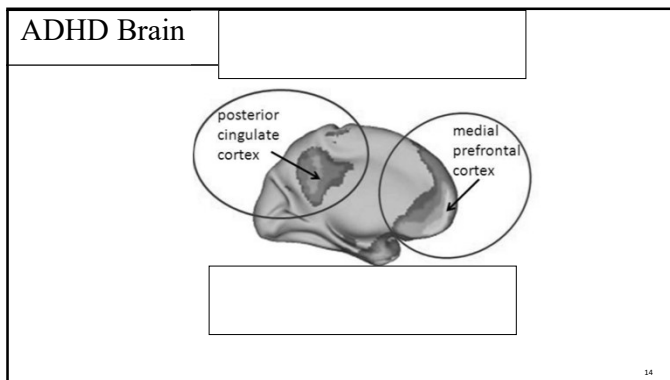
11



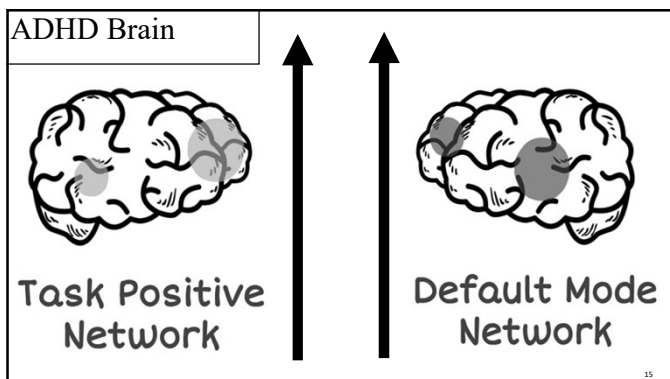
12



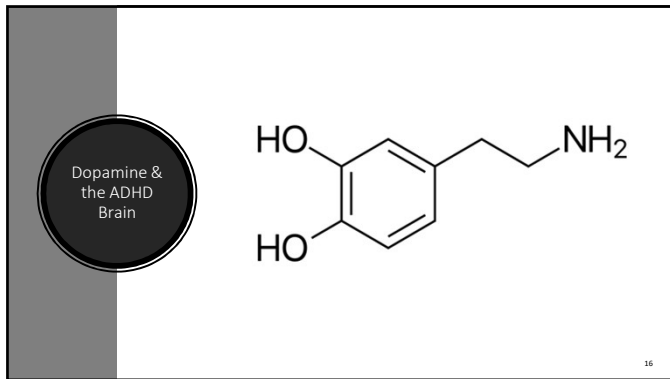
13



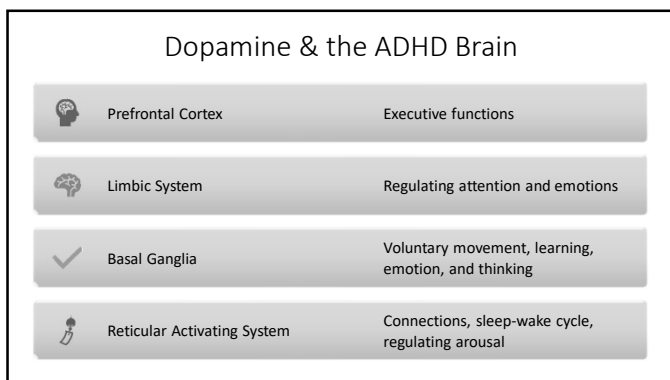
14



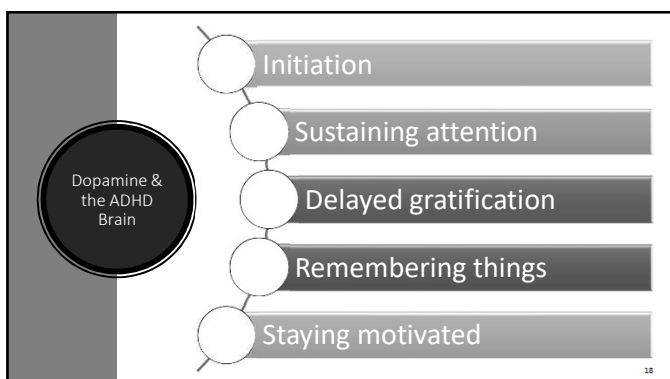
15



16



17



18



ADHD: A Disorder of Executive Functions

19

Inattention

Intention vs. inattention

Difficulty with repetitive, effortful, uninteresting, neutral/non-preferred

Unable to inhibit impulse to move off task
(= overactivity, dazing, or emotional arousal)

20

Impulsivity

Limited self-control; **overwhelming** *immediate* need to act that they cannot resist (e.g., TV vs. homework)

Driven toward: *immediate*, predictable, frequent, ongoing, and meaningful consequences (not long-term goals)


Point of performance impaired

- Need lots of practice because of difficulty self-cueing to do what they need to do when they need to do it

Repeat offenders, fail to learn from past mistakes

Difficult to think about actions/consequences

21



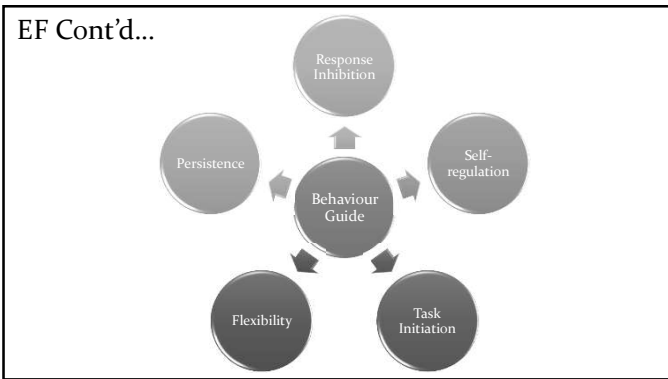
Executive Functions (EF)

- Brain-based skills important for everyday functioning
 - Help us to decide what tasks we will pay attention to and which ones we will choose to do
- Help us to:
 - Plan and organize tasks
 - Sustain attention/mental effort
 - Persist at a task
 - Manage emotions and thoughts
 - Regulate our behavior
 - Maintenance

22



23



24

Executive Functions (EF)

- Consider **now** with **future** anticipation and **past** experience to develop a plan to choose what to do **next**



25

Task initiation

- Beginning tasks (quickly and easily)
- Stopping fun to start work

Focus

- Sustaining until task completion
- Internal and external distractions

Time mgmt

- Have to do vs. want to do
- Passage of time; late or run out of time

Working memory

- Miss: conversations, instructions
- Lose things, forget what they have to do
- Remembering information while doing a task

26

Self-regulation

- Think about learning and making a plan
- Know how others react to their behaviours

Emotion self-control

- Manage emotions to control behaviour
- Manage emotions to complete tasks

Persistence

- Finishing tasks (and cleaning up)
- Affects all learning

27



Organization

28

28

Flexibility

- Making transitions smoothly
- New ways to solve problems
- Tolerating strong feelings
- Accepting other's ideas
- Changing behaviour as needed

Impulsivity

- Thinking about consequences of actions
- Controlling actions/attention
- Waiting our turn

Planning

- Preparing for work or school
- Developing, implementing, and modifying a plan
- Doing things in the right order

29

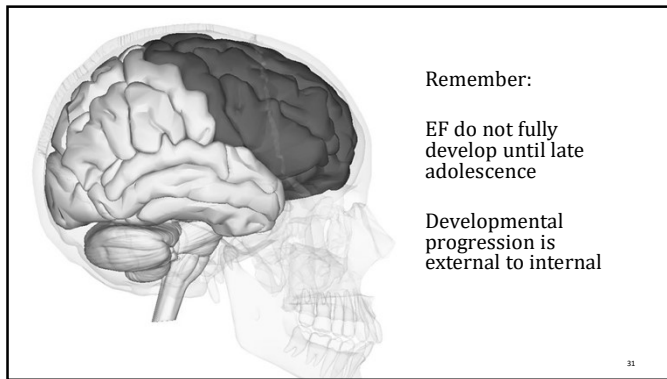
29

Know ADHD...
& EF impairments...
how it affects kids &
reasonable
expectations

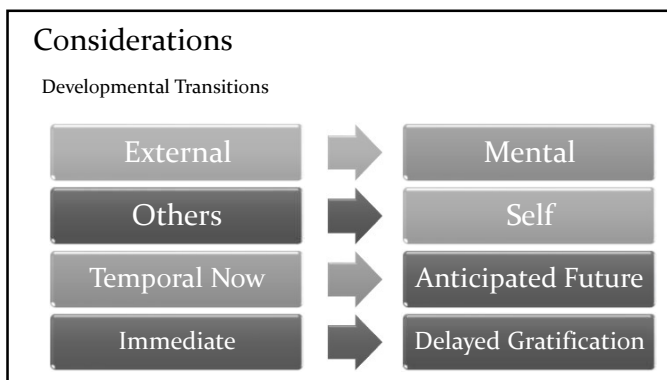


30

30



31



32

Kindergarten

- Run errands
- Two-to-three step directions

Grade 2

- Tidy space
- Self-help tasks
- Bring papers to and from school
- 20 min. max. homework
- Follow rules

33

33

Grades 3-5

- Run errands (with time delay &/or distance)
- Bring papers, books, materials to and from school
- Keep track of belongings
- Up to 1 hour homework
- Plan simple school projects
- Follow (changing) daily schedules
- Follow rules when teacher out of the class

Grades 6-8

- Use system to organize schoolwork, including agenda books
- Follow complex school schedules
- Plan and carry out long-term school projects
- Plan time
- Follow rules with no adult supervision

34

34

High school

- Manage schoolwork daily
 - Long-term projects & studying
 - Use corrective feedback to improve performance
- Establish and fine-tune long-term goals
 - Maintain grades for university acceptance
 - Completes university applications/SATs
- Uses leisure time effectively
- Pursues recreational activities
- Gets a job
- Inhibits reckless behaviours

35

35

Developmental Progression for Future Thinking



K-2nd grade:
A few hours

50/50 if you remind them in the morning to do something after school



3-6th grade
8-12 hours

Can see themselves doing their homework.
Cannot see themselves handing it in tomorrow.



6th-12th grade: 2-3 days

Can see themselves doing short-term assignments and studying for tomorrow's test

Cannot see themselves studying or doing long-term assignments, even due at the end of the week.


36

36

Developmental Progression for Future Thinking

30% Delayed

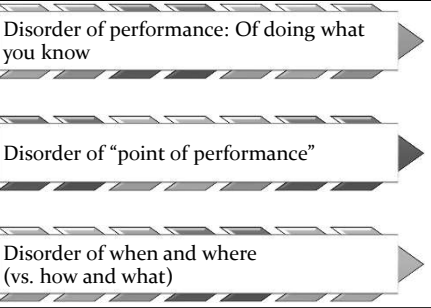
37



EF & Attention Difficulties

- Difficulty with *executive control of attention*
 - Difficulty resisting more tempting impulses (TV vs. homework)
- Difficulty controlling focus

38



Disorder of performance: Of doing what you know

Disorder of "point of performance"

Disorder of when and where (vs. how and what)

ADHD: A DISORDER OF EF

39

Executive Functions (EF)

- Consider **now** with **future** anticipation and **past** experience to develop a plan to choose what to do **next**



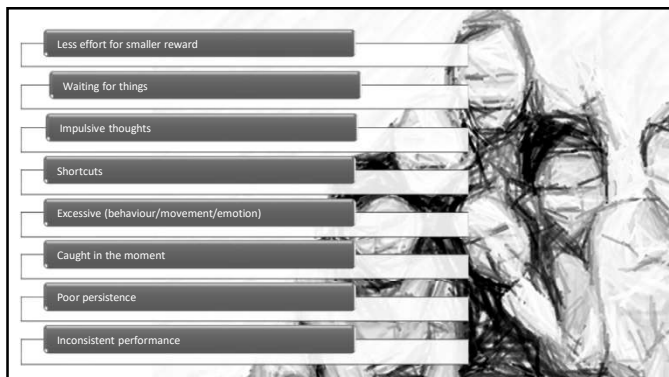
40



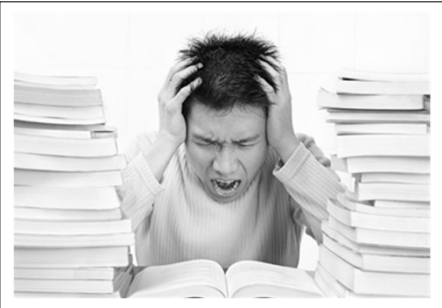
Know how EF difficulties affect the student!

41

41




42



EF deficits
affect
learning

43


43



EF deficits affect behaviour & emotions

44

44



EF deficits
affect
relationships

45

45

Executive Functions

- * Adaptive functioning
- * Communication
- * Social functioning
- * Learning difficulties
- * Vocational difficulties
- * Independence



46

Self-assessment



Self-understanding

Hurry tasks just to get them done
Dislike tasks that require problem solving
Directions have to be repeated
Unaware of how my behaviour affects others



Organization

Forget items at school to do assignments
Forget where I put completed assignments
Room, backpack and locker are messy
Never know where anything is



Time management

Procrastinate
Difficult to add new events to my schedule
Don't know how long something takes to finish
Miss due dates for assignments

47

Self-assessment



Emotional Control

Lose my temper often
More nervous than others
Hard time controlling my anger
Upset easily



Behaviour Control

Interrupt conversations
Inappropriate comments
Start things without reading all the instructions
Blurt out answers in class



Flexibility

Don't like unplanned changes
Difficulty moving class to class or school to home
Give up easily if not successful on the first try
Don't ask for help when not clear

48

48

Self-assessment



Initiative

Difficult starting tasks on my own
Need reminders to finish tasks
Need reminders to follow rules
Difficulty moving from one task to another



Attention

Hard time completing tasks especially if hard
Overwhelmed by large projects
Easily distracted
Socialize instead of work



Persistence

Hard time returning to work if interrupted
Hard time staying on a boring task
Easily distracted
Hard time setting goals



Working Memory

Hard time remembering three things to do
Forget to hand in homework
Forget to bring home things I need for work
Answer only the first part of multiple-choice questions

49

49

EF difficulties for ALL teens (Worsened by ADHD)

Wake-sleep clock is different

Crammed days

More expectations & EF demands, less structure and supports

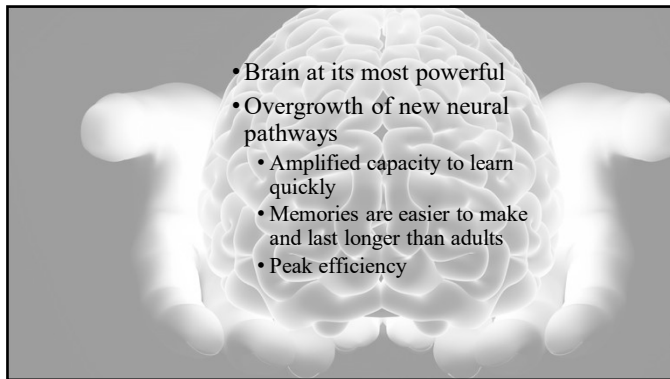
Need for exploration, novelty, and autonomy

50

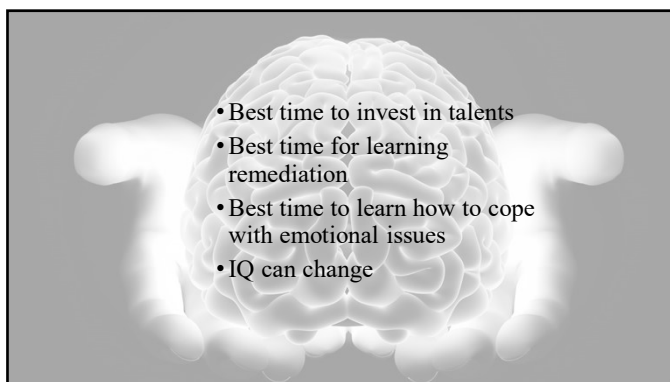
UNDER CONSTRUCTION

51

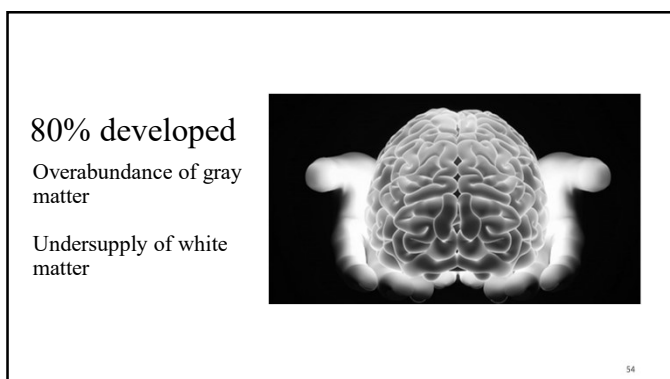
51



52



53



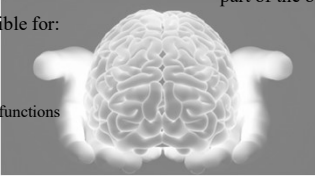
54

Gray matter

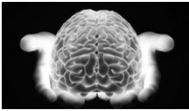
- Basic building blocks of the brain
- Neurons responsible for:
 - Thought
 - Perception
 - Motion
 - Control of body functions

White matter

- Moves information from one part of the brain to the other

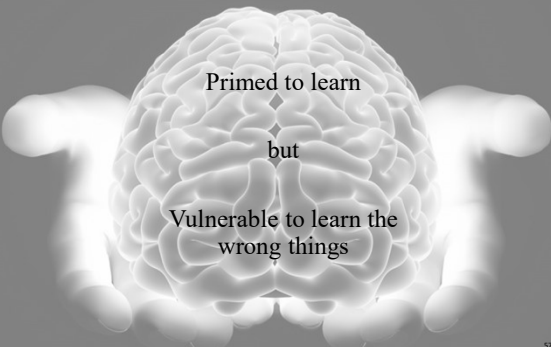


55



- 20% gap = wiring is thinnest
 - Mood swings
 - Irritability
 - Impulsiveness
 - Explosiveness
 - Inability to focus
 - Poor connection with adults
 - Poor follow through
 - Temptation for drugs and alcohol
 - Risky behaviour
 - Poor attention
 - Poor self-discipline

56

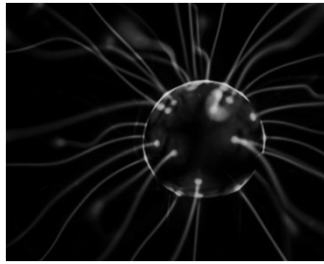


Primed to learn
 but
 Vulnerable to learn the wrong things

57

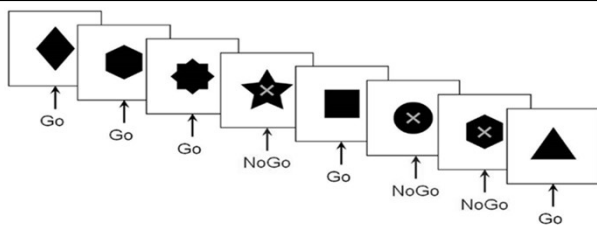
- Judgment is the last to develop!
 - **Respond to the world differently than adults**

- Adults can evaluate situations using different parts of the brain
 - Automatic
 - Obvious
 - Risky situations are not obvious for teens



58

58



Takes longer for teens to figure out when
NOT
to do something than adults

59

59

Teens unable to process negative information as well as adults

- Cannot readily see risks
- Reward drives behaviour



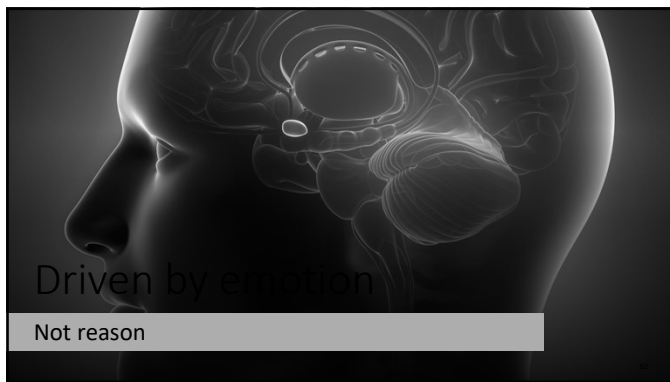
60

Context Dependent



61

61

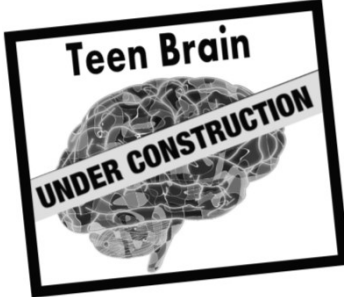


62

Teen Brain

- Act impulsively
- Misread social cues
- Engage in risky behaviour
- Mood swings
- Lack of insight
- Poor judgment
- Irrational decisions
- Explosive
- Seek intense relationships
- Seek **novelty**

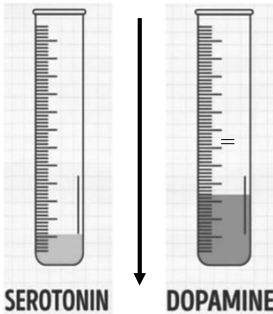
63



- Forget to bring books home
- Crumpled notes
- Misunderstand homework
- Poorly organized
- Don't pay attention to details
 - Don't know how to do homework
- Forget to do things
- Confused about their behaviour
 - Can't be self-critical

64

64



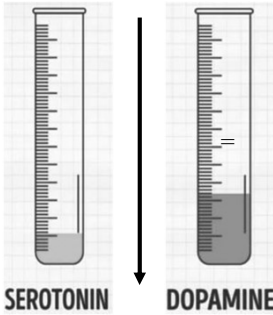
=

Mood changes &
poor emotional
control

Seek intense
stimulation & poor
impulse control

65

65



=

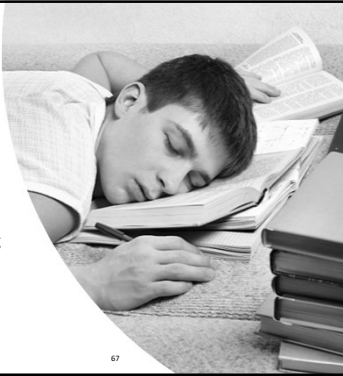
Jacked-up,
stimulus-seeking
brain that is not
fully able to make
mature decisions

66

66

Learning so quickly; need more sleep

- Critical for learning: glue for remembering
 - Need good night sleep before exam
 - Need good sleep after studying for exam!
- Helps manage stress
- Helps eat better

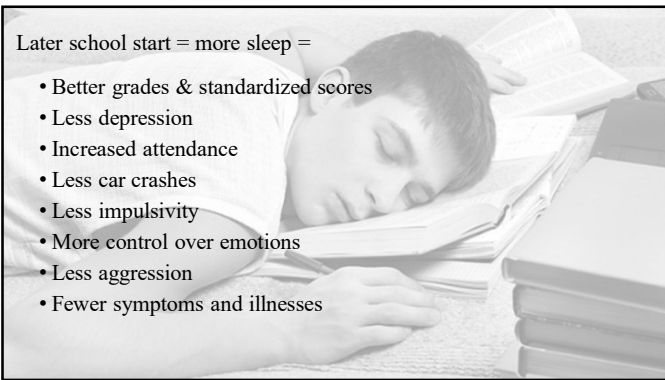


67

67

Later school start = more sleep =

- Better grades & standardized scores
- Less depression
- Increased attendance
- Less car crashes
- Less impulsivity
- More control over emotions
- Less aggression
- Fewer symptoms and illnesses



68

THINGS TO REMEMBER

Teens do good
when they can

Teens need direct
teaching of skills

Teens want
mastery and
control

Balance between
independence
(i.e., risk) and
complete failure


Provide just
enough support &
adjust as needed

Collaborate

Give reasonable
expectations &
break tasks down

69

69



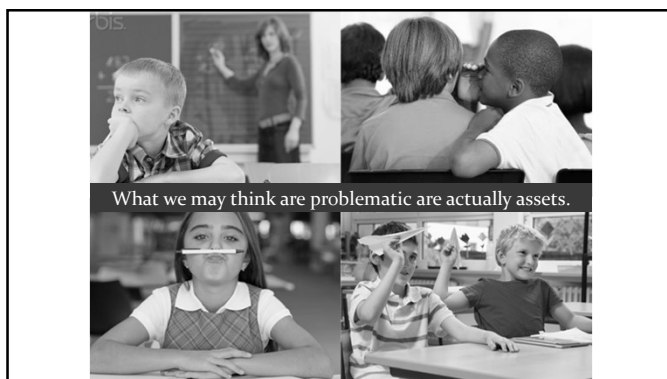
Focusing on what is wrong can be very impairing for children and their families.
It's hard believing the positives when entrenched in the deficits.

ADHD is a neurological condition that is usually genetically transmitted.	Characterized by distractibility, impulsivity and restlessness or hyperactivity	Symptoms are present from childhood on, and with a much greater intensity than in the everyday person	Interfere with everyday functioning socially, academically, and at home	Associated with comorbid disorders
Talks excessively, disrupting class.	Impulsive behaviours causing peer conflict.	Rushing ahead and doing work incorrectly even when models provided.	Low frustration tolerance – explosive outbursts over minor incidents.	Poor social awareness. Limited conflict resolution skills.

70



71



72

Consider symptoms as traits

- Not good or bad. Balanced.
- Ignoring strengths will extinguish them. Not develop them.
- Therefore, critical to think about the...

ELIPSIDE



73





Energy!
Hyperactive

74






Magnetic!
Hyperactive

75

Adventurous!
 ʌɪsɪndwɪ

- Willing to take risks and face challenges they are motivated by
- Dive into opportunities others miss out on
- Most successful business owners have ADHD

They had a vision and
went for it.



76

Brilliant!
 ɪnəˈtɛntɪv

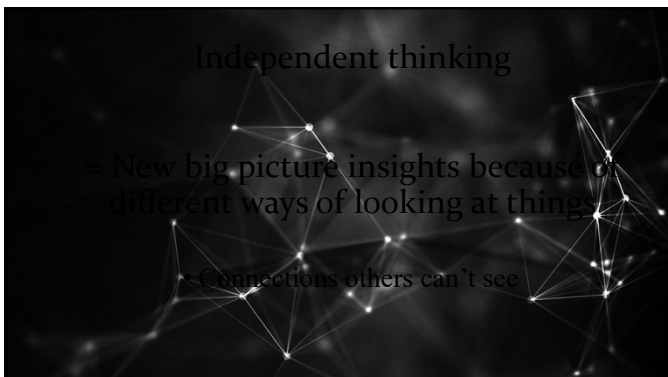


77

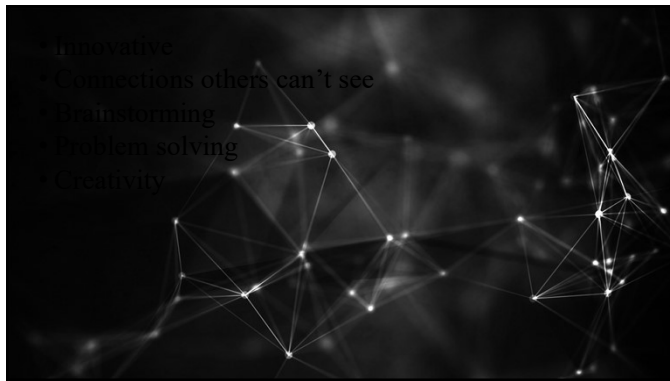
Independent thinking

= New big picture insights because of
 different ways of looking at things

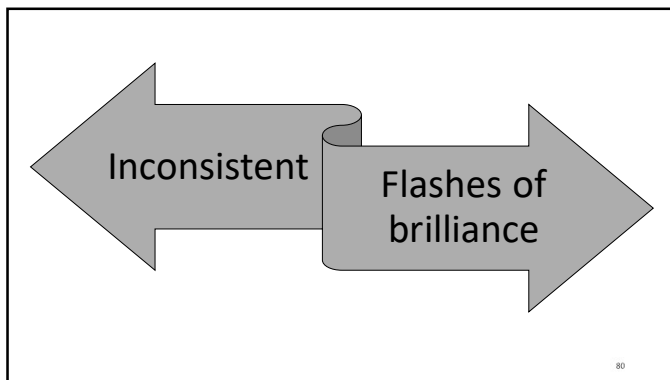
• Connections others can't see



78



79



80

Motivated!
Lazy

- Just harder for their brain to turn on to things WE want them to do

81

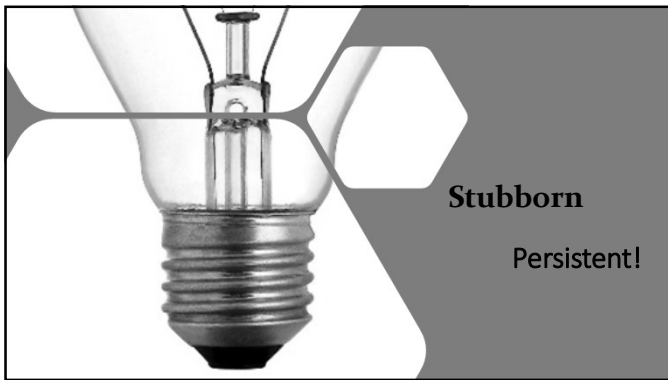
Motivated!

Lazy

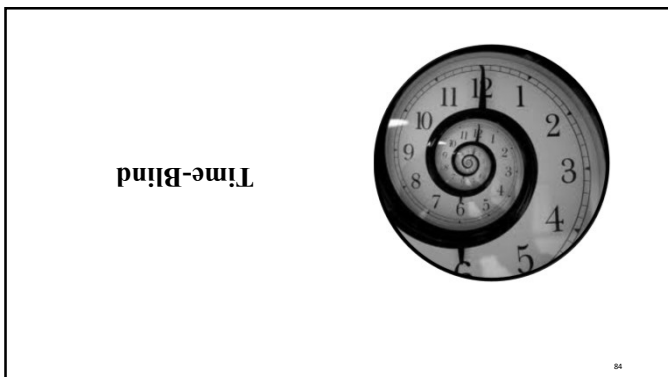
- Drawn to novelty: an important characteristic of motivation
- Kids are motivated to learn and to do



82



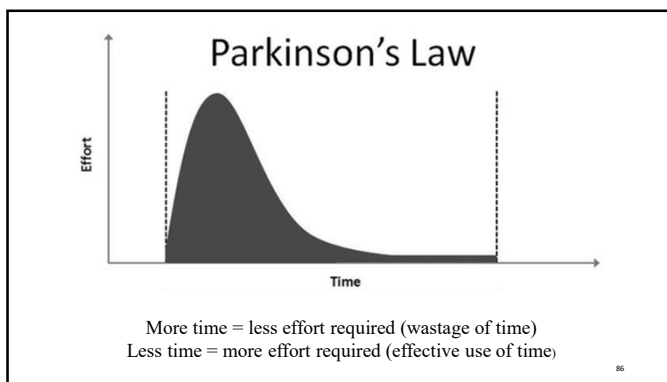
83




84



85



86



- Talking and asking lots of questions: important characteristic of learning
- The more we talk about a subject, the more we learn
- The more we ask, the more we learn
- The more we talk, the more connections and new ideas we make

87



88

Abides Law	Direct	Honest
Rigid	Rude	Offensive
Sensitive	Defending needs	Nonjudgmental listening
Moody	Aggressive	Unempathetic
Loyal	Assertive	Confident
Difficulty making friends	Defiant	Narcissistic

89

A B C Flipsides of ADHD	
Ability to find alternate paths to overcome obstacles Able to take on large situations Adaptive/collaborative Adventurous, courageous Always lives outside of boundaries Always finding alternate routes to any location. Always willing to help others Ambitious – you want to be everything when “you grow up” Artistic Attractive personality Being able to see the big picture Being able to see the patterns in the chaos. Being intuitive towards others’ difficulties Broad focus – can see more, notice things more	Can create order from chaos Can create amazing projects of interest Can make people feel they are heard Can see the big picture Can think on their feet Career variety Centre of attention Comfortable talking in front of groups Comfortable with change and chaos Compassion for others and for themselves Conceptualizes well Confidence Constantly evolving Courageous Creates connections easily Creative Creative writing Creative – musical, artistic, “dramatic”

90

Dedicated	Good at problem solving
Detail-oriented	Good delegator
Determined to gain more control	Good in emergency situations
	Good listener
Energetic	Good people skills
Eager to make friends	Good self-esteem, energetic
Eager to try new things	Great brain-stormer
Empathetic, sensitive	Great multitasker
Entrepreneurial	Great self-company
Excellent organizers using journals and reminders	Great sense of humour
	Great storyteller
Flexible – changes as the situation requires	Hands-on workers
Fun to be around	Hard worker
Forgiving	Has friendly relations with their family
	Has the gift of gab
Good in a crisis	Helpful
Goal-oriented	Helps others who are also in trouble
Good at conceptualizing	High energy – go, go, go
Good at motivating self and others	Holistic thinking
	Humour, very healthy, quick picking up ideas
	Hyper focus !!
	Hypersensitive – very empathetic

91

91

Idea generator	Magnetic
Imaginative	Master idea generator
Impulsive (in a good way) not afraid to act	Modesty
Initiator	Move on fast – never hold a grudge
Intelligent	Never bored and rarely boring
Intuitive	Never intimidated to try new things
It's ok to not finish everything	Non-linear, multi-dimensional/edge of chaos
	Not afraid to speak mind
Jovial	Not contained by boundaries.
Jester	Optimistic
Joyful and jubilant	Outgoing
Joins in on fun	Passionate
Love to learn new things	Persistent
Less sleep is good (can get lot's done!)	Philosophical
Like to talk a lot	Playful
Look at multidimensional sides to a situation	Pragmatic
Lots of interests	Problem solver
Loves to cook and be creative	Profound
Loyal	Quick thinking
	Quick witted

92

92

Resourceful	Unlimited energy
Resistant	Unconventional
Relates to people easily	Unorthodox
See details – recount them later	Very creative, able to generate a lot of ideas
Sees the big picture	Very hard working to compensate – workaholic
Socially adaptive and flexible	Very intuitive
Spontaneous	Very resourceful
Stabilizer during difficult situations	Very successful
Stable	Versatile
Successful	Visionary
Takes initiative with things love	Visual learner
Tenacious	Willing to take risks
Theoretical	Willingness to help others
Think outside the box	Witty
Thinks two meters ahead of the world	Won't tolerate boredom
Thinks big, dreams big	Works well under pressure
Tolerant	Worldly
Trailblazer	Youthful
	Zany
	Zealious
	Zippy
	Won't tolerate boredom
	Works well under pressure
	Worldly

93

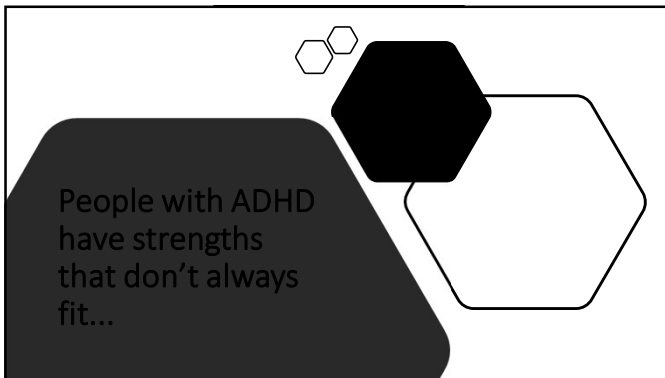
93



Perhaps kids do things that forever annoy you.

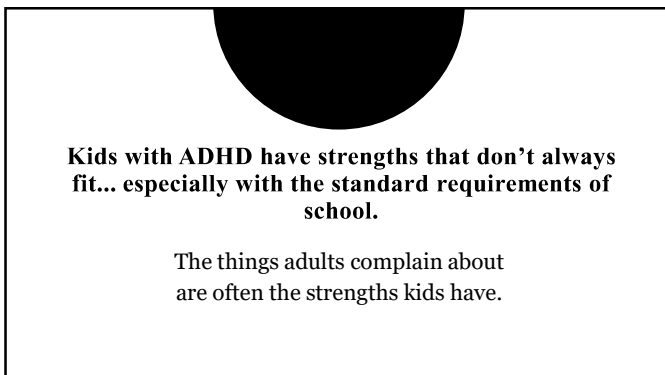
But you realize the child is actually **funny**; there is **humour and surprise** in every interaction. Perhaps you see the child's **resourcefulness and tenacity**. Perhaps the child even **inspires** you.

94



People with ADHD have strengths that don't always fit...

95





Kids with ADHD have strengths that don't always fit... especially with the standard requirements of school.

The things adults complain about are often the strengths kids have.

96

Consider skills to develop vs problem






Instead of:	Might be difficulties:
Oppositional Only if wants to Narcissistic No empathy Lazy Sloppy Loner Doesn't prioritize	Flexibility Know what is important Theory of mind Subtle social cues Initiation Fine motor skills Social understanding Seeing big picture

97


Capitalize on strengths (vs. symptom relief)

- Focus on achievements, strengths, and successes
- Realistic and attainable expectations
 - But CHALLENGING with the knowledge that they can do it
- Create opportunities for responsibility and choice
 - Give feeling of control



98

Caroline Buzanko, PhD, R. Psych.
caroline@korupsychology.ca
drcarolinebuzanko.com



99
