

A decorative graphic on the left side of the slide, consisting of white lines and small circles on a blue background, resembling a circuit board or neural network.

FETAL ALCOHOL SPECTRUM DISORDERS

WHAT WE ALL NEED TO KNOW



MARY SCHALK FASD PROGRAM DIRECTOR PARTNERS IN PREVENTION

MARY@NEMCPI.ORG

989-356-2880 OR 800-354-2880

SERVING ALCONA, ALPENA, MONTMORENCY AND PRESQUE ISLE COUNTIES



ETHANOL CROSSES THE PLACENTA FREELY



A "Standard" Drink

12 fl oz of
regular beer

=

8–9 fl oz of
malt liquor
(shown in a
12-oz glass)

=

5 fl oz of
table wine

=

3–4 fl oz of
fortified wine
(such as sherry
or port; 3.5 oz
shown)

=

2–3 fl oz of
cordial, liqueur,
or aperitif
(2.5 oz shown)

=

1.5 fl oz of
brandy or
cognac (a
single jigger
or shot)

=

1.5 fl oz shot
of 80-proof
distilled spirits



About 5%
Alcohol



About 7%
Alcohol



About 12%
Alcohol



About 17%
Alcohol



About 24%
Alcohol



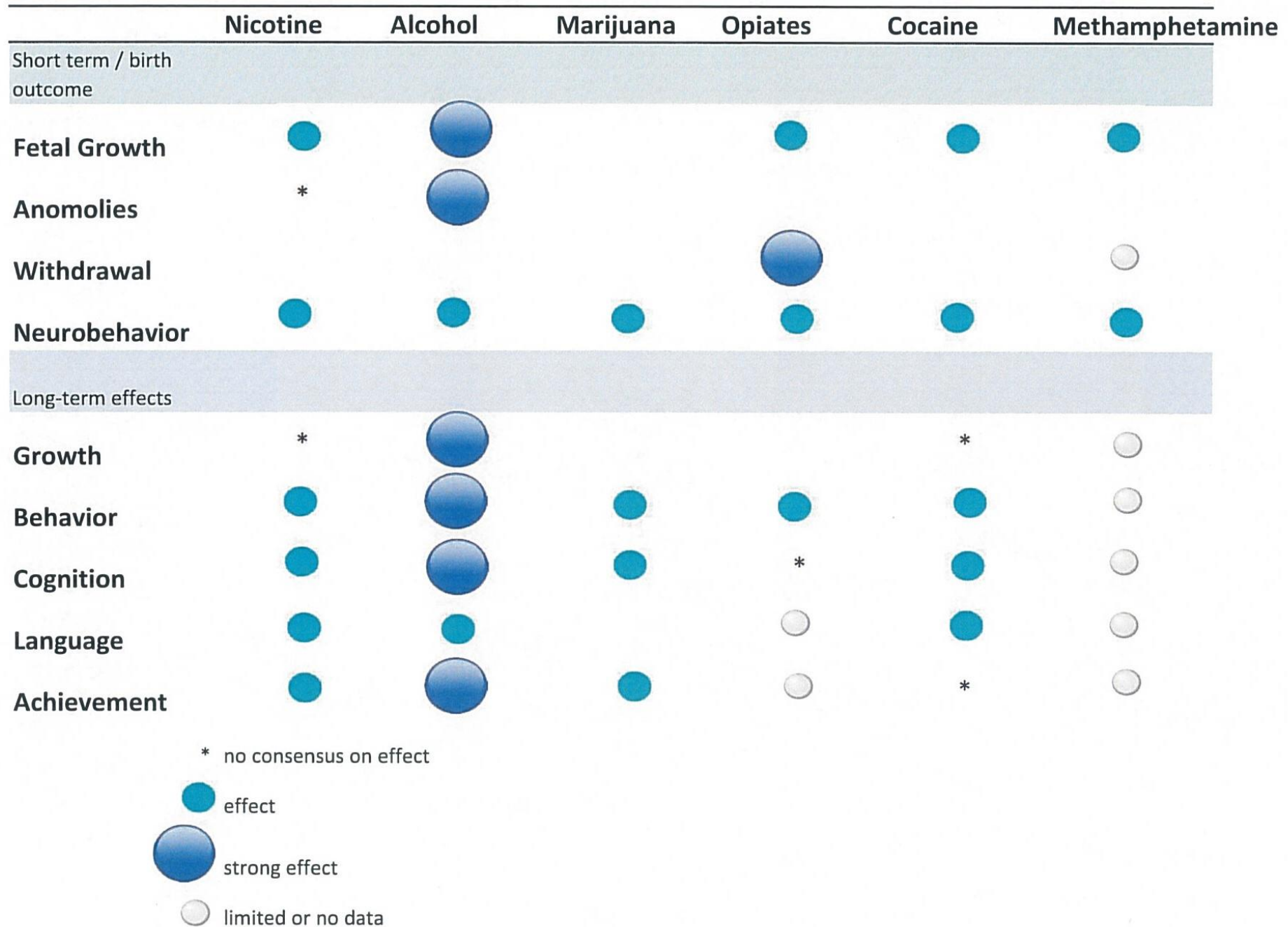
About 40%
Alcohol



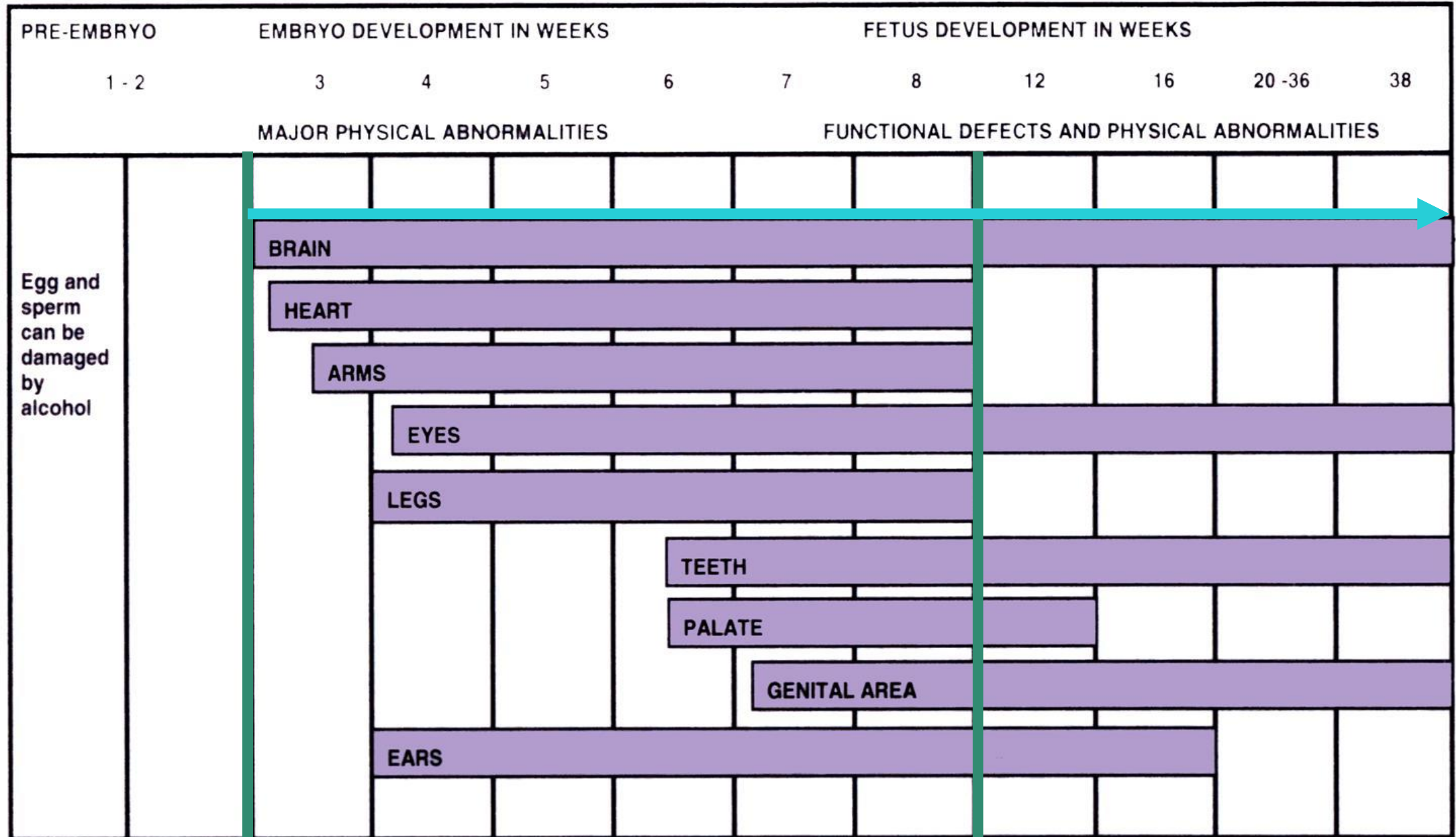
About 40%
Alcohol

“Of all the substances of abuse (including cocaine, heroin, and marijuana), alcohol produces by far the most serious neurobehavioral effects in the fetus.”

—IOM Report to Congress, 1996



Impact of Alcohol Use on the Developing Fetus

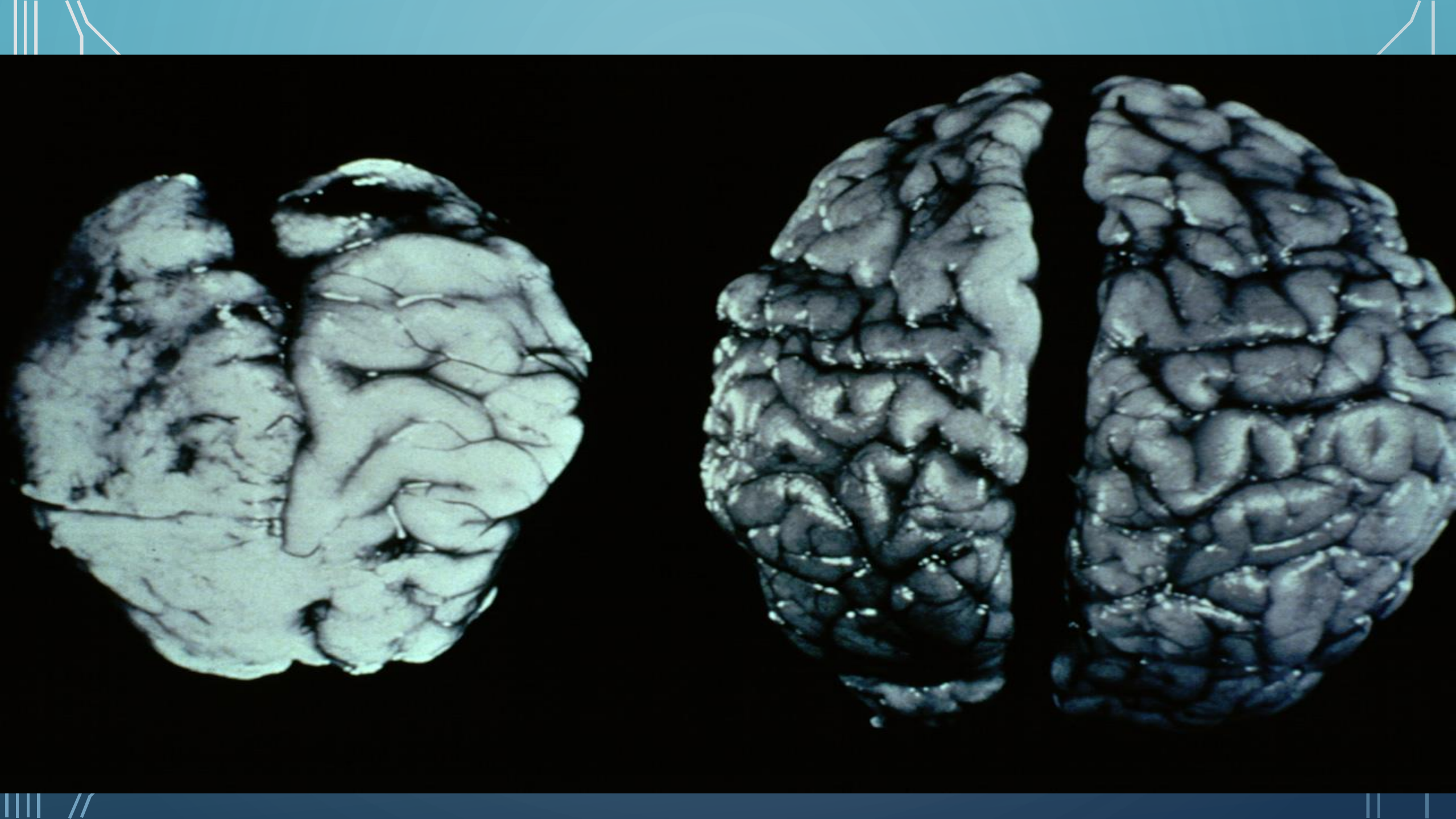




NO KNOWN SAFE

- Type
- Time
- Quantity
- Frequency



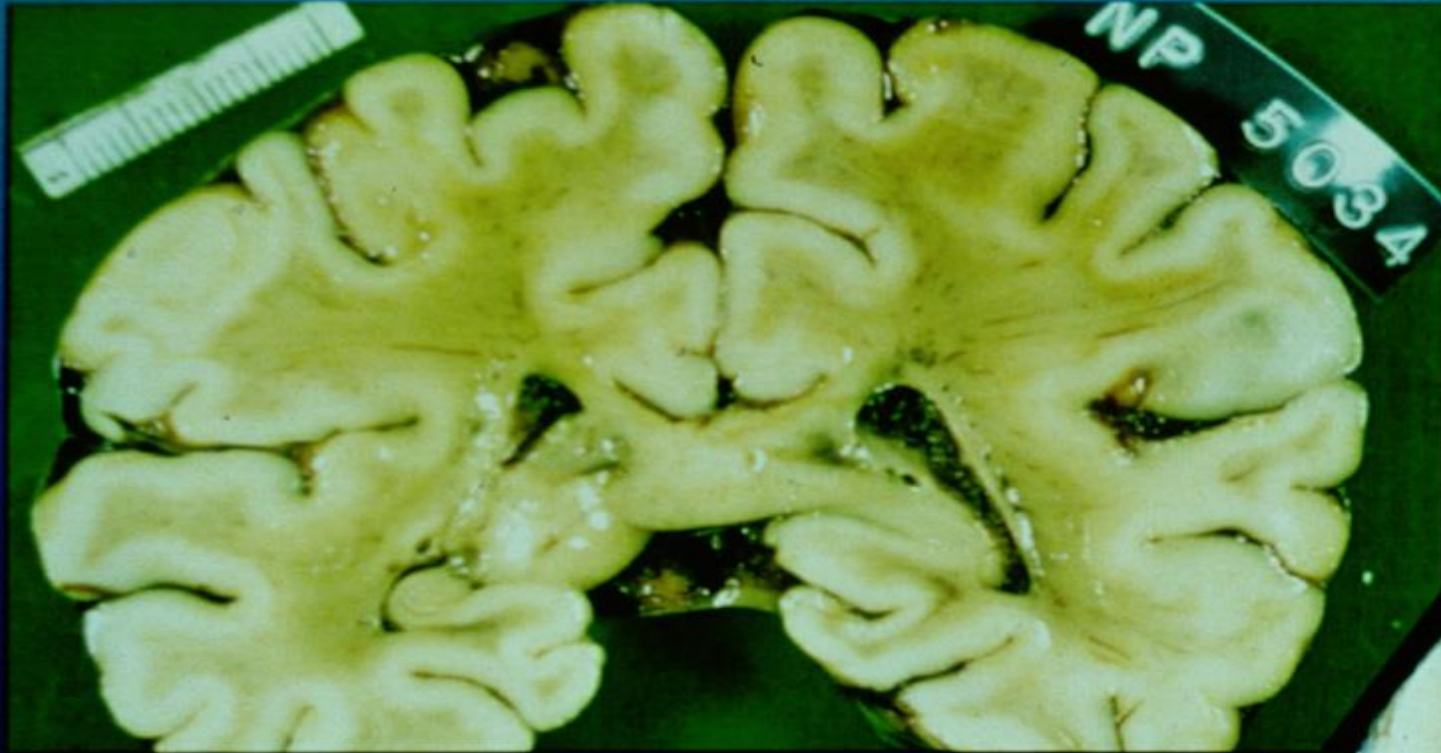


DIFFERENTIATION AND MIGRATION

- Cell proliferation
- Determination
- Differentiation
- Migration

- Cell death
- Who am I?
- What am I doing here?

Coronal Sections of Brain



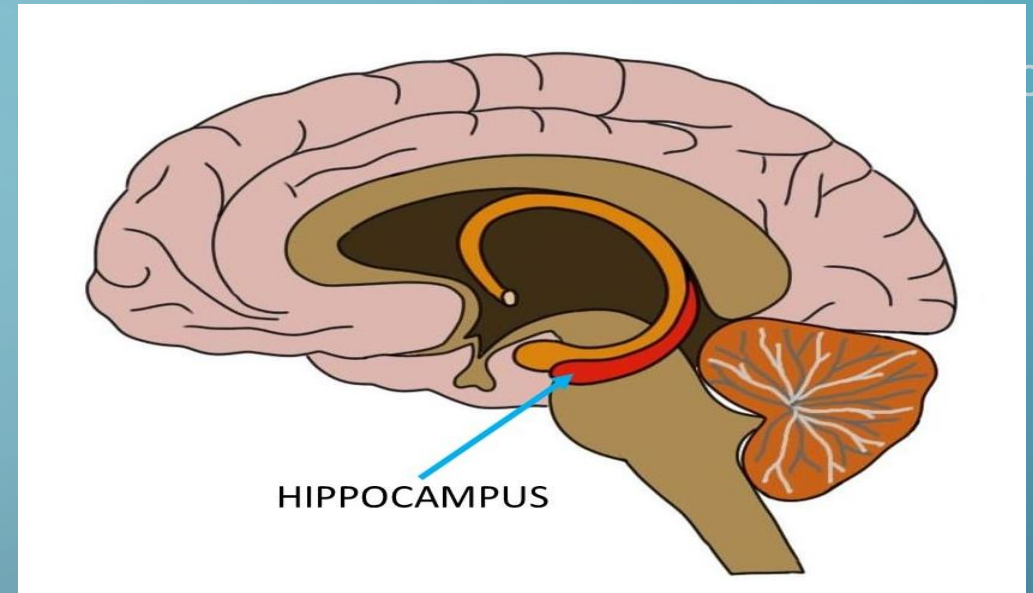
Normal

FAS



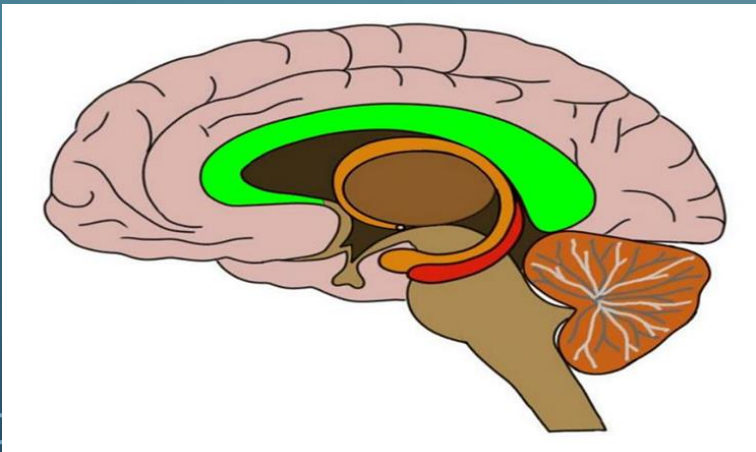
HIPPOCAMPUS

- Learning
- Memory



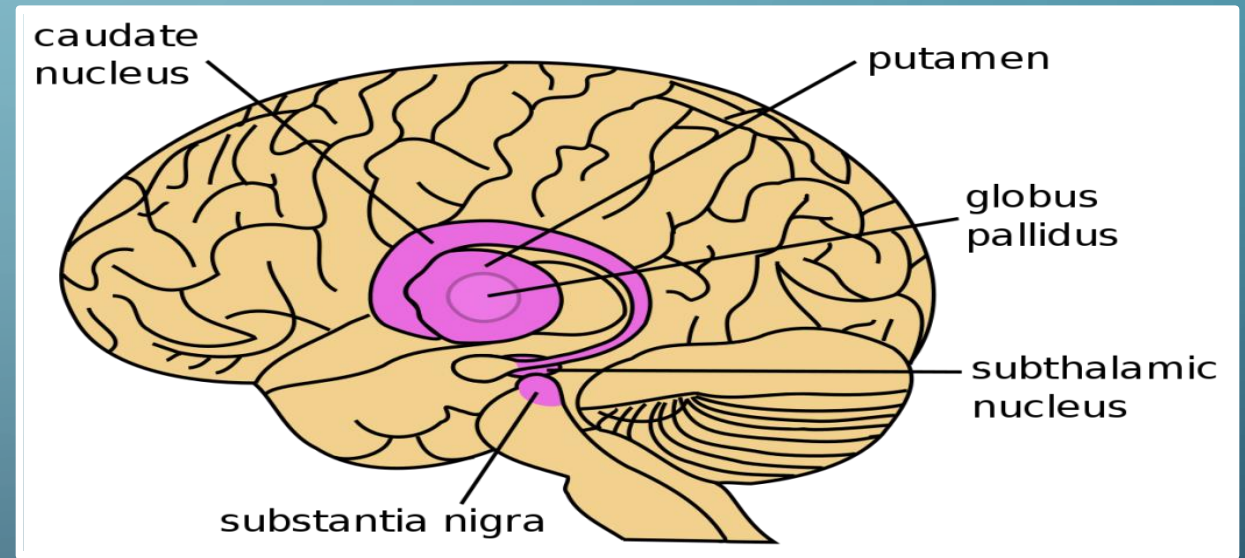
CORPUS CALLOSUM

- Processes information between the Right and Left brain

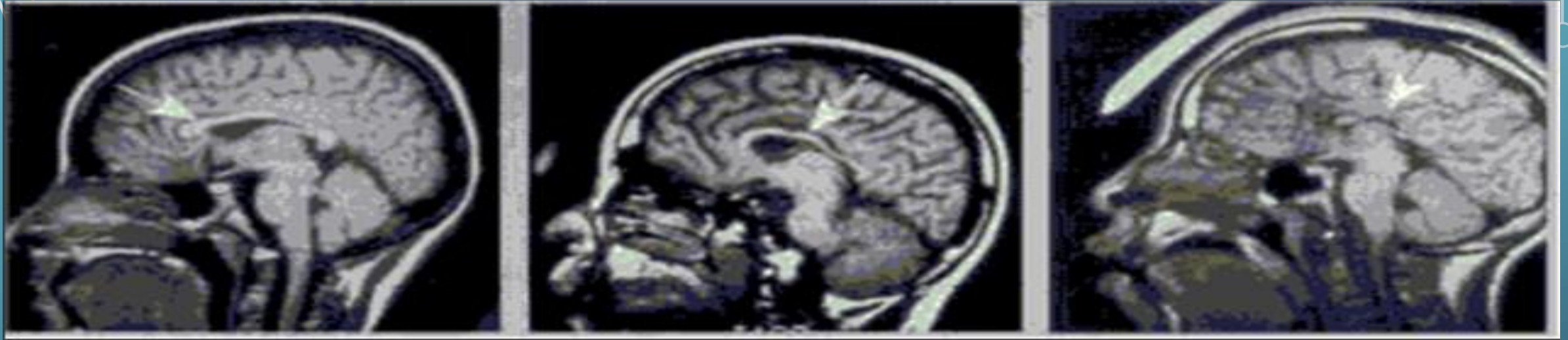


BASAL GANGLIA

- Processes memory
- Predicting outcomes
- Time perception
- Setting goals



CORPUS CALLOSUM DAMAGE



Left: 14 year old control subject: normal

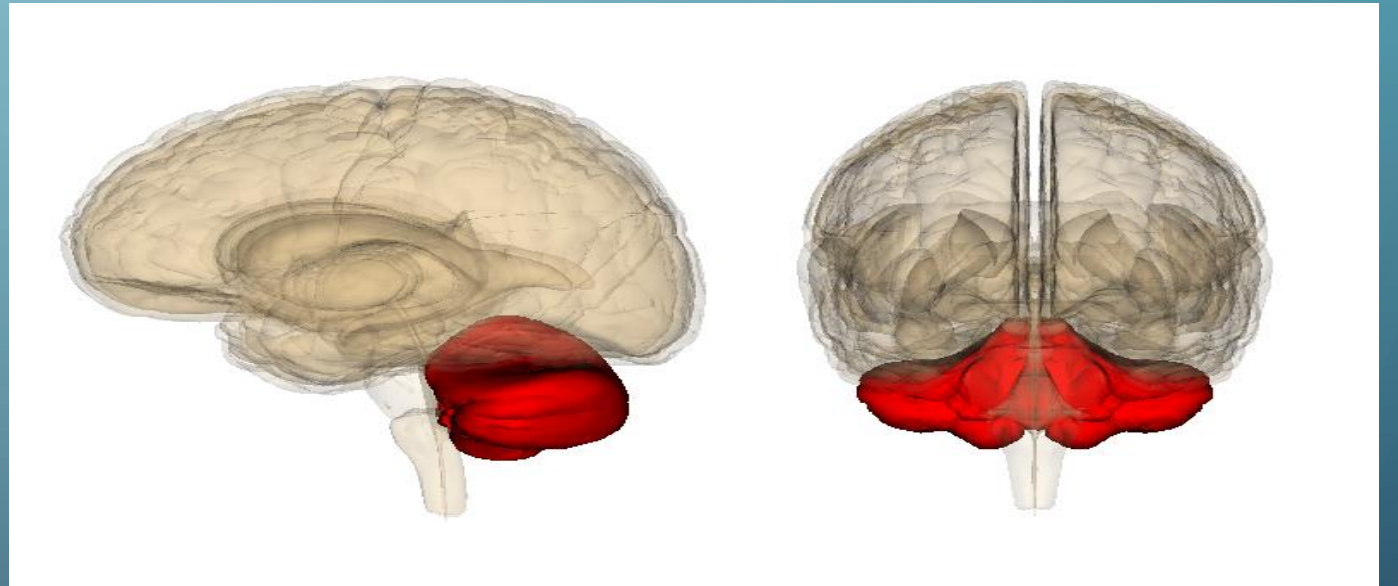
Center: 12 year old with FAS: thin

Right: 14 year old with FAS: agenesis

Mattson, Jernigan and Riley, 1994

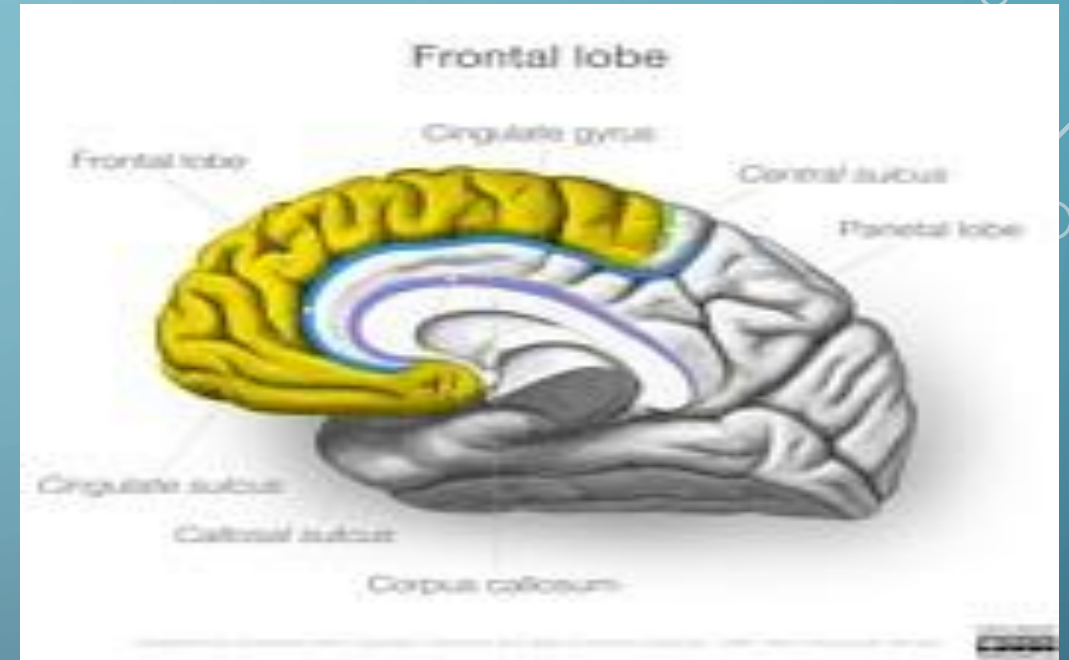
CEREBELLUM

- Coordination
- Movement
- Behavior
- Memory



FRONTAL LOBES

- Executive functions
- Impulse control
- Judgment



“By the time I figure out
what I’m gonna do ...



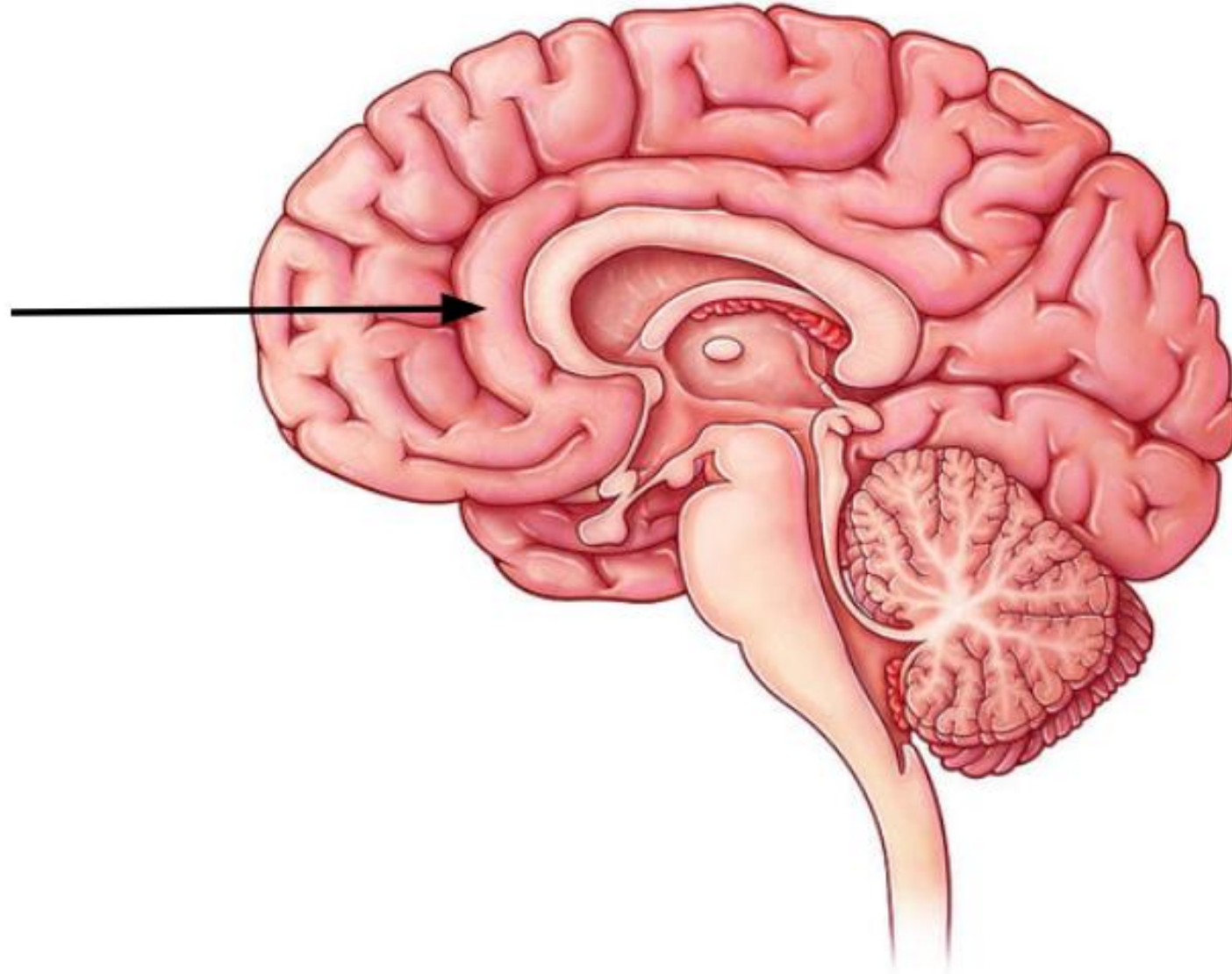
I’ve already done it!”



INSULA

Located deep within the cerebral cortex, under the many folds in the brain.

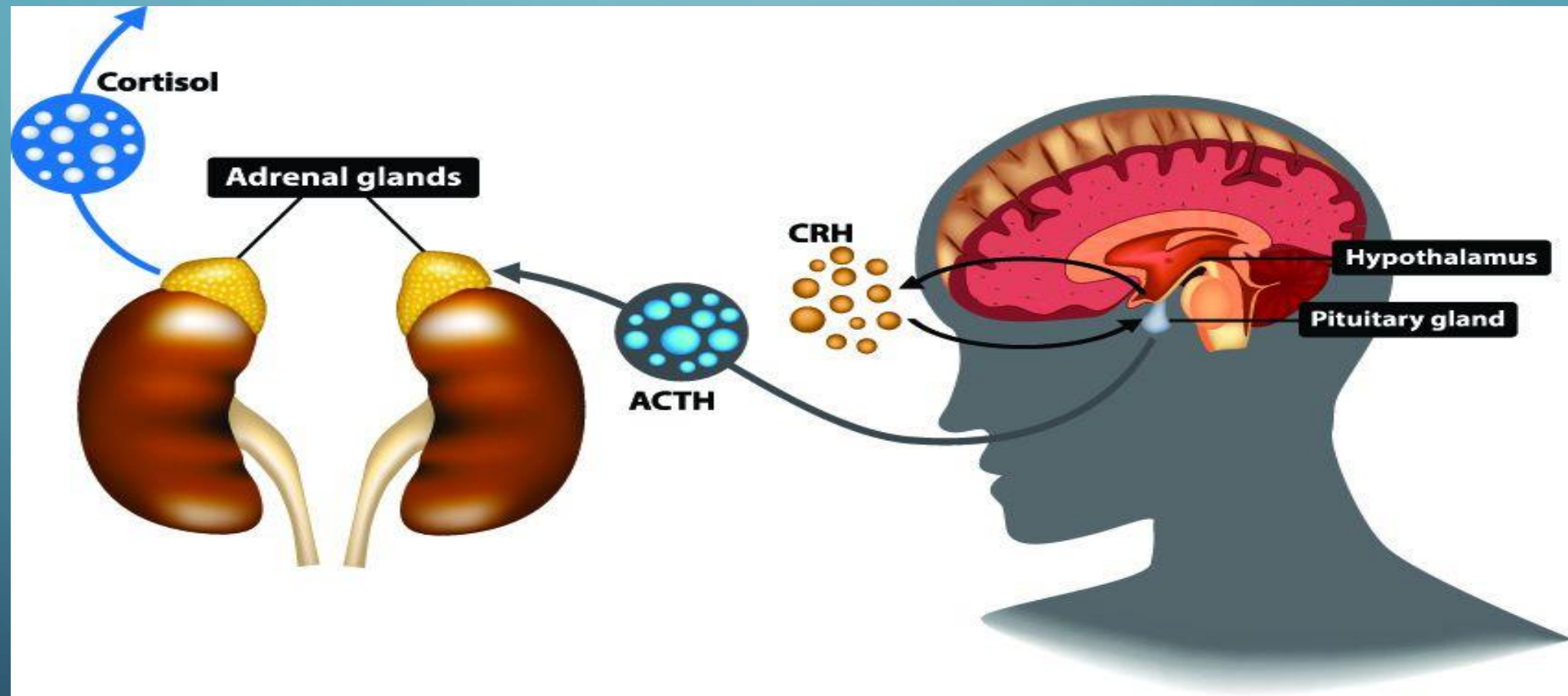
Receives and decodes interoceptive input from sensory receptors in our body - tissue, organs, bones, etc.

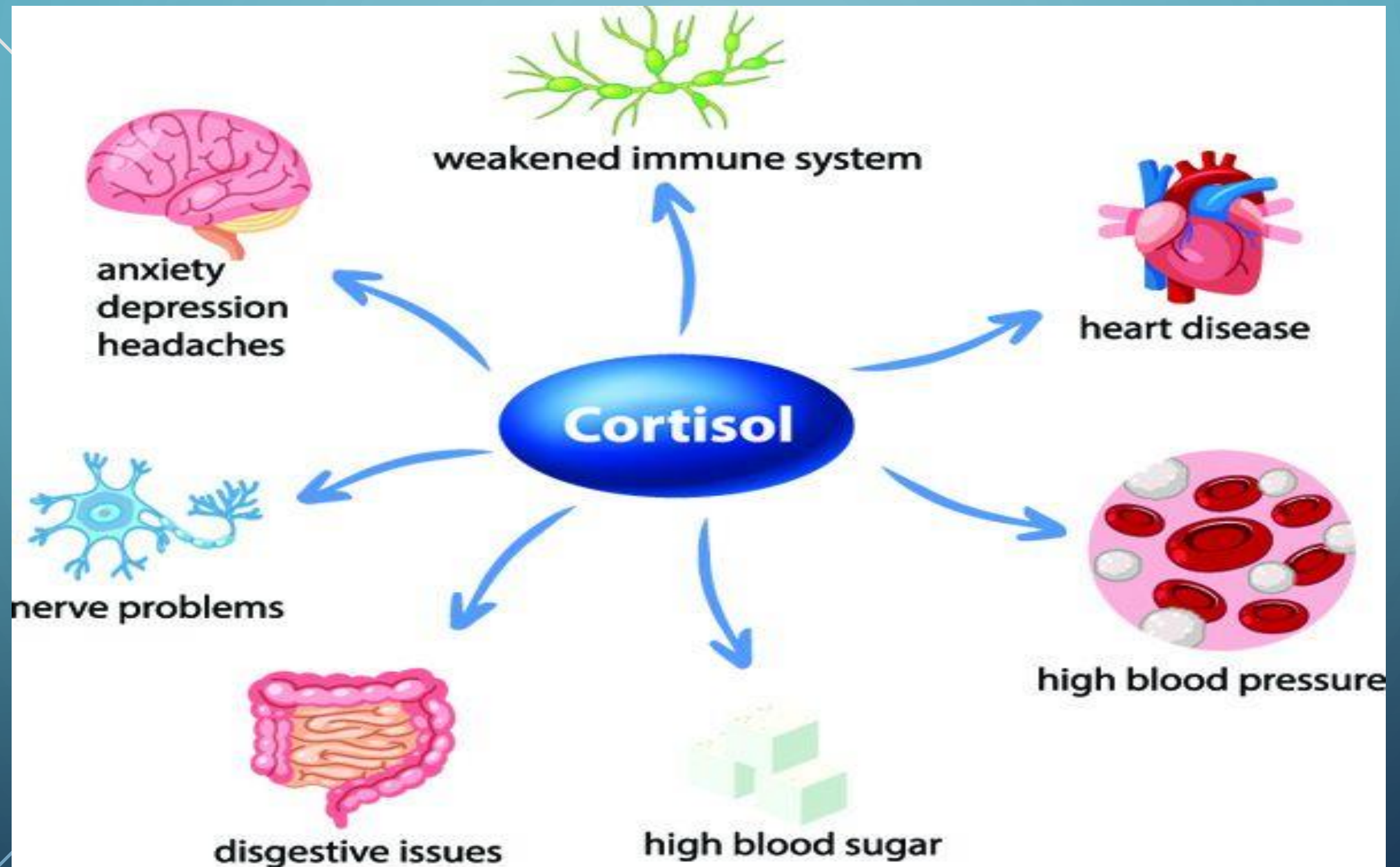


NEUROCHEMICALS

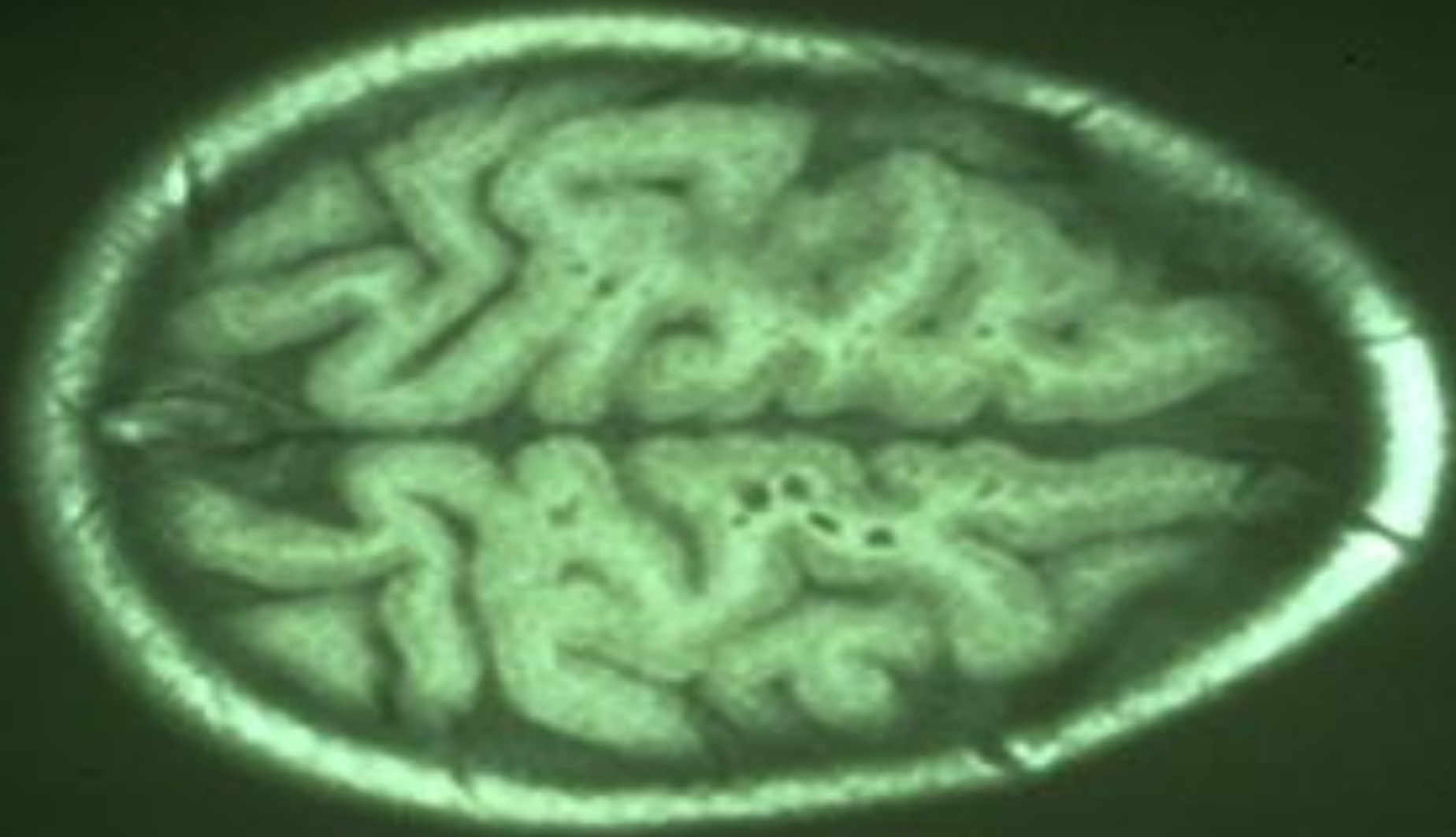
- Oxytocin production
- Dopamine
- Glutamate

HPA AXIS





MULTIPLE LESIONS OF THE BRAIN



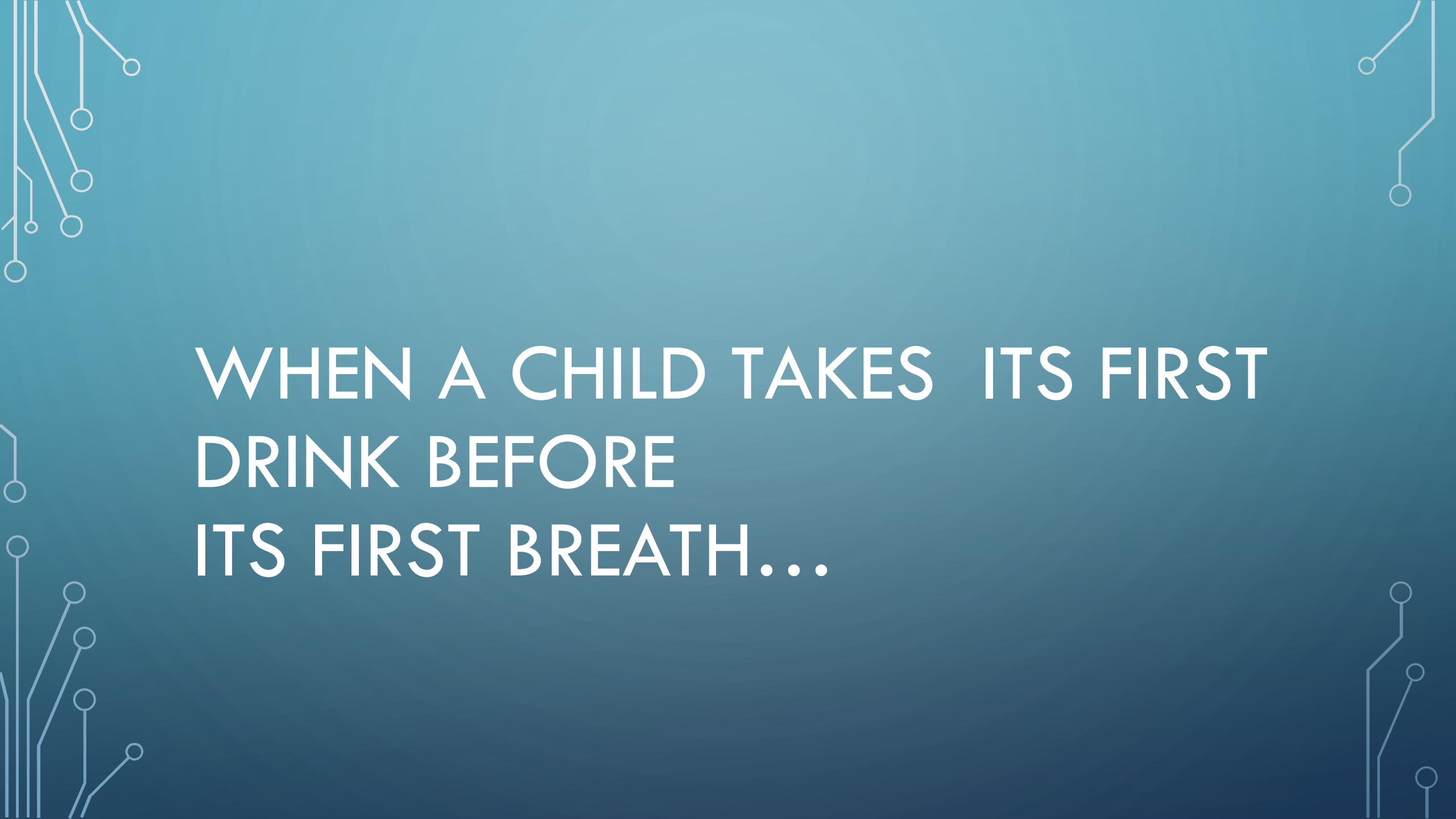
IQ

- Generally in the borderline to low average range
- Large range from very high to very low
- Strength or deficit in verbal or visual domains
- More difficulty giving non-verbal responses
- More difficulty with social behaviors and thoughts, attention, delinquency, and aggression

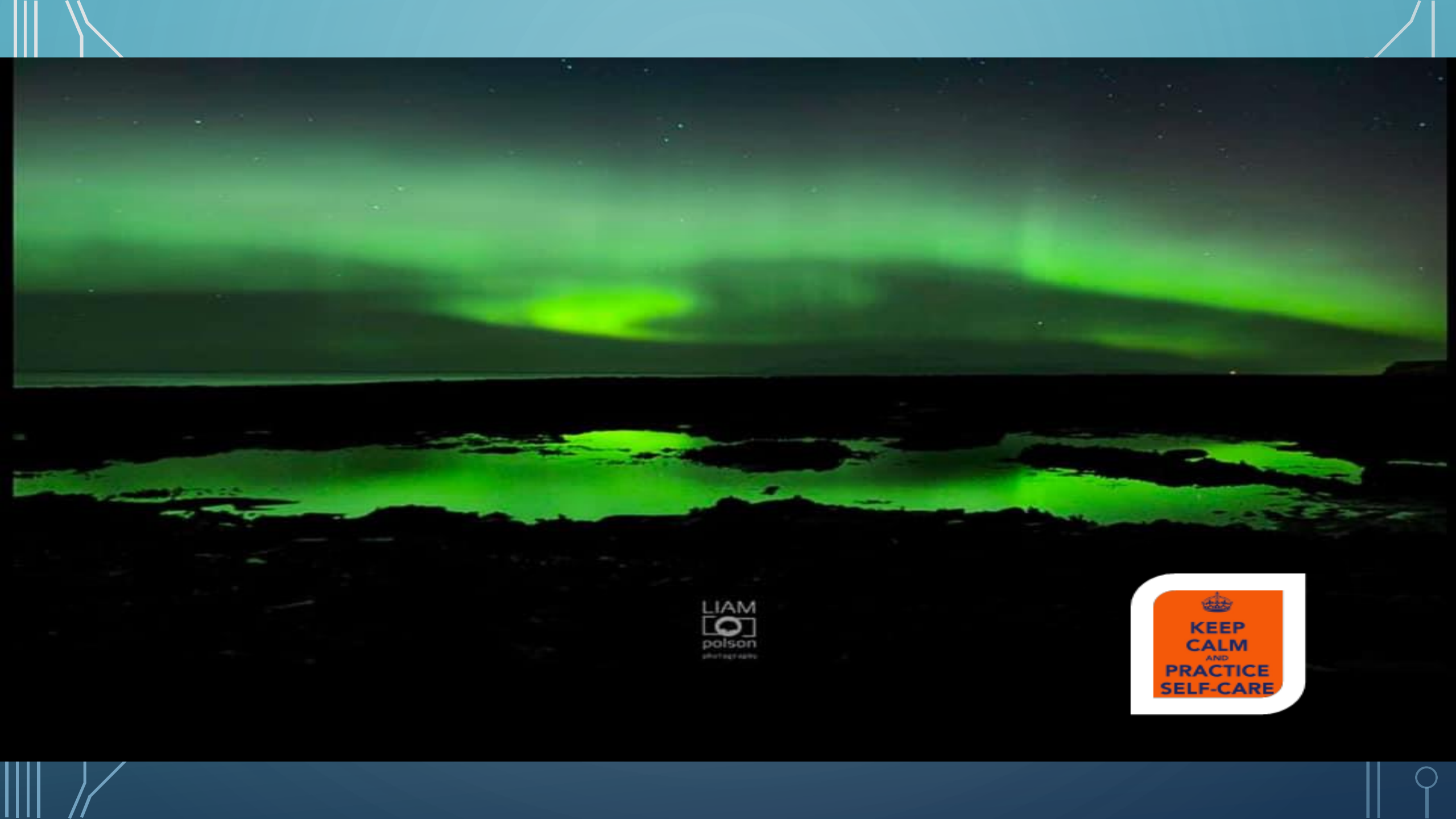
EXECUTIVE FUNCTION

- Planning
- Problem solving
- Monitoring own thought processes
- Cognitive flexibility
- Rapidly producing responses
- Controlling responses & impulses
- Use of feedback



The background is a solid blue gradient. In the corners, there are white, stylized line art elements that resemble circuit boards or neural network connections, with lines and small circles.

WHEN A CHILD TAKES ITS FIRST
DRINK BEFORE
ITS FIRST BREATH...



LIAM
polson
photography





Consequences of Prenatal Alcohol Exposure

Variability of consequences

- ▶ Tremendous range of potential impacts
- ▶ Variability in severity
- ▶ No person has all the impacts we will describe
- ▶ Impact is responsive to dose and timing of exposure
- ▶ What if?

Primary Performance Domains

Categories described by Diane Malbin as a means to group the myriad consequences of prenatal alcohol exposure

Additional physical details

Executive Functioning

Planning

Organizing

Prioritizing

Sequencing

Initiating

Following through

Executive Functioning continued



PREDICTING



SETTING GOALS



COMPLYING WITH
EXPECTATIONS



BEING ON TIME



ADHERING TO A
SCHEDULE

Impaired Judgement

- ▶ Unable to make decisions
- ▶ Difficulty recognizing safety or danger
- ▶ Differentiating reality from fantasy
- ▶ Recognizing friend or stranger

Impulsivity

- ▶ Ready, fire, aim!
- ▶ Words, actions, decisions
- ▶ May be able to see the problem after the fact



Memory

Information input

Integration

Forming associations

Retrieval

Output

Memory continued

- ▶ Difficulty learning from past experiences
- ▶ Repeats same mistakes over and over
- ▶ Confabulation
- ▶ Suggestibility



Inconsistent Performance

- ▶ Here today, gone tomorrow
- ▶ But then it is back again
- ▶ Or not
- ▶ “I am consistently inconsistent” - RJ Formanek

Abstract Concepts

- ▶ Time
- ▶ Money
- ▶ Ownership
- ▶ Math

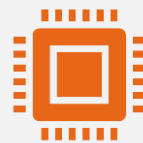
Math



Deficits in math typically more pronounced than other academic areas

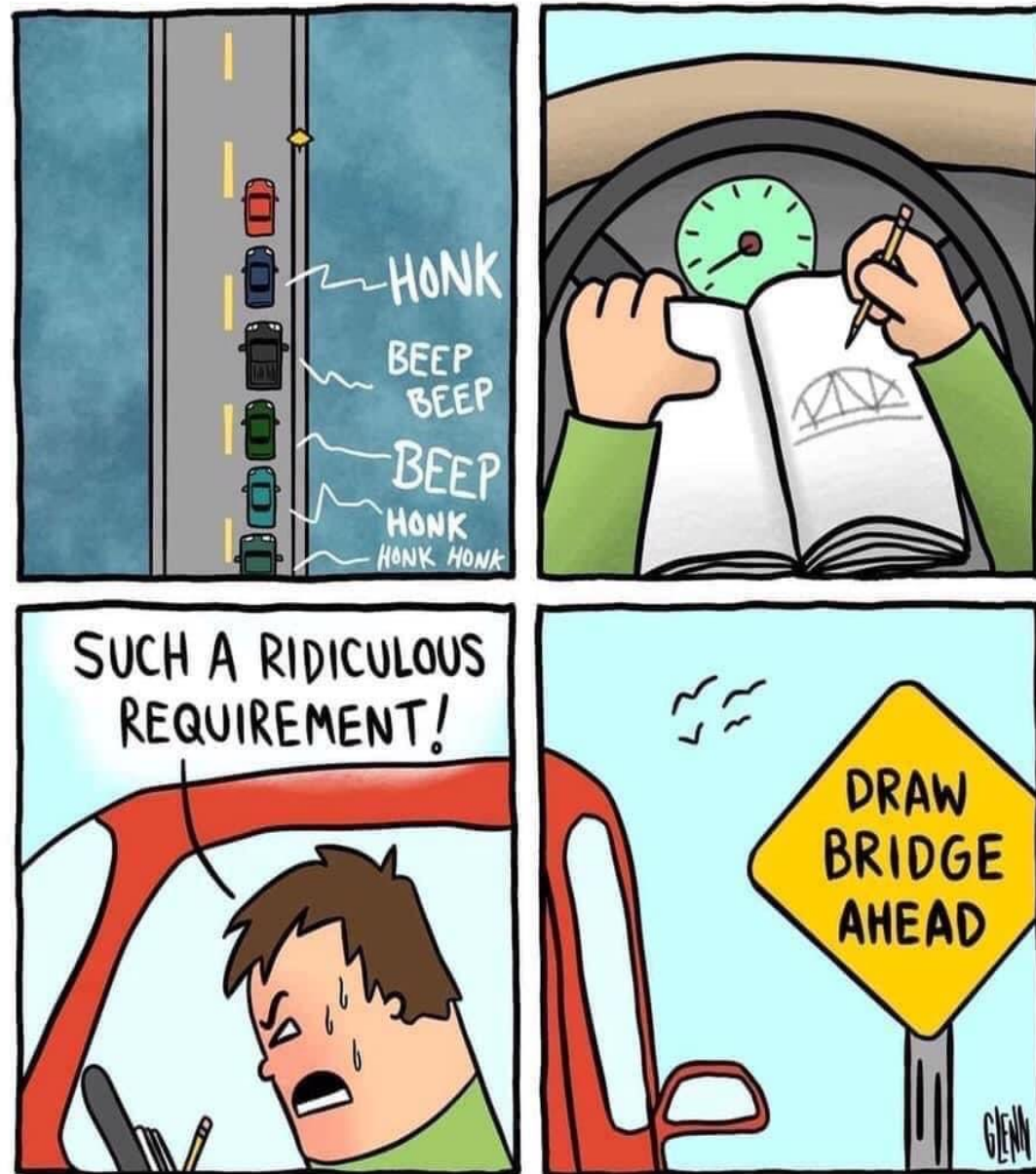


Occur even with normal IQ



Related to processing speed and efficiency, executive functions, and working memory

Concrete thinkers



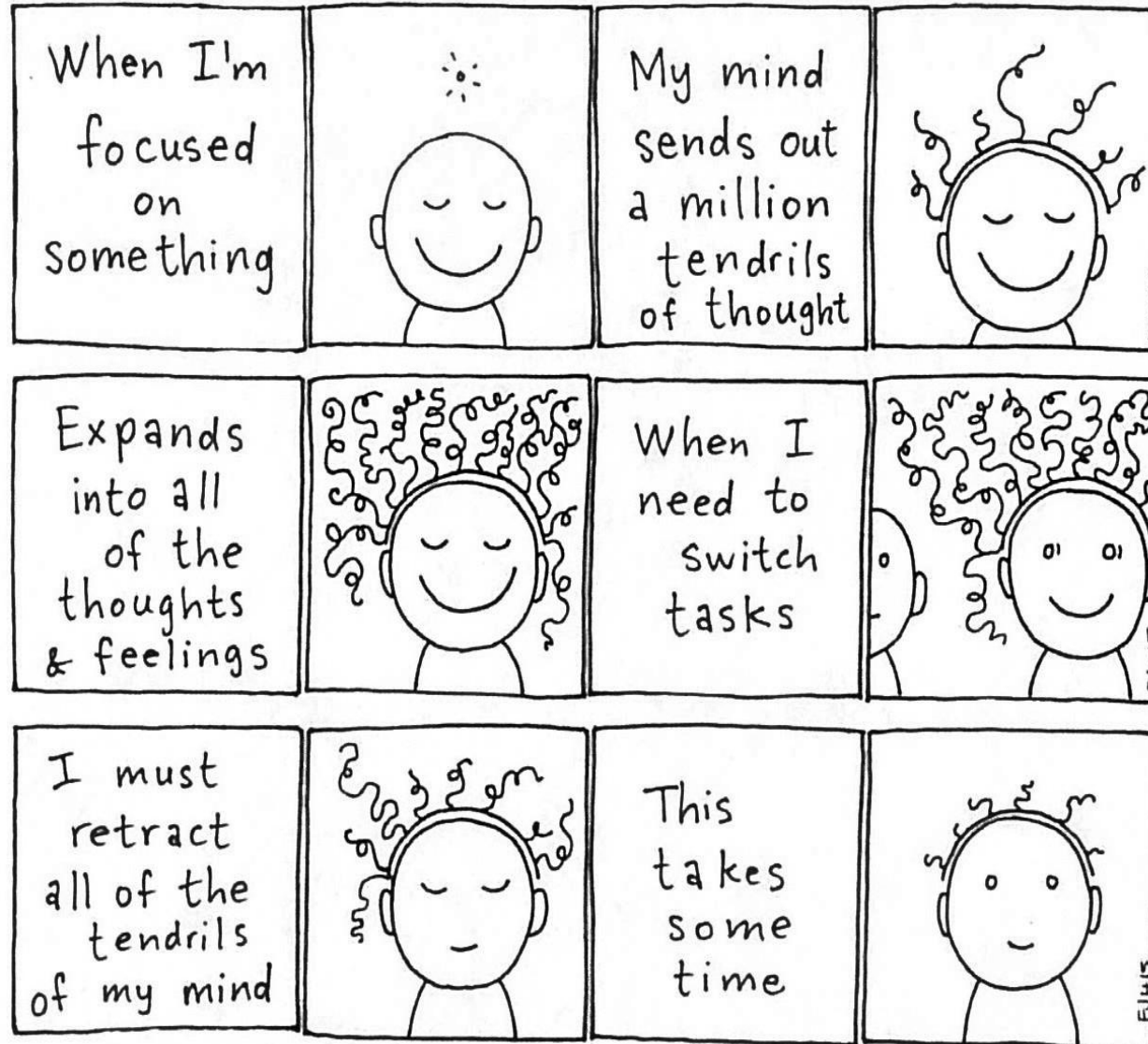
Perseveration

- ▶ Rigid
- ▶ Get stuck
- ▶ Difficulty switching gears
- ▶ Difficulty transitioning
- ▶ Difficulty stopping



Why it's hard to switch tasks

(Let's call it Tendril Theory)



Inability to Generalize

- ▶ Difficulty forming links and associations
- ▶ Unable to apply a rule in a new setting
- ▶ Difficulty applying learning to new application

Communication Challenges

Appears to understand more than they truly comprehend

Repeats (rules, instructions) verbatim, but fails to apply them

Verbal skills much better than comprehension, appear competent

Language Problems

- ▶ Difficulty comprehending meaning
- ▶ Confabulation
- ▶ May agree inappropriately
- ▶ May talk excessively, yet unable to engage in meaningful way

Slow Cognitive Pace



May think more slowly



Make require time to generate a response



“ten second people in a one second world”

Slow Auditory Pace

- ▶ Language processed more slowly
- ▶ Needs more time to comprehend
- ▶ May only grasp every second or third word in normally-paced speech



Dysmaturity



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Sensory Integration Dysfunction

- ▶ May overreact or underreact to sensory stimulation
- ▶ May be easily overwhelmed
- ▶ Unable to filter out extraneous stimuli
- ▶ 5 senses?

7 ? 8

Proper Sensory Integration



Helps us organize



Provides a foundation for behavior



Helps maintain attention



Supports positive relationships



Occurs naturally through play

Vestibular System

- ▶ Sense of balance and movement
- ▶ First system to develop in utero
- ▶ Close relationship to gravity, safety, survival, arousal and attention
- ▶ Awareness of yourself in relation to space around you (with input from eyes and ears)

Proprioceptive System



Sensory input from muscles and joints



Position, weight/pressure, stretch, movement



Detects body parts in relation to each other



Detects relation to objects in environment

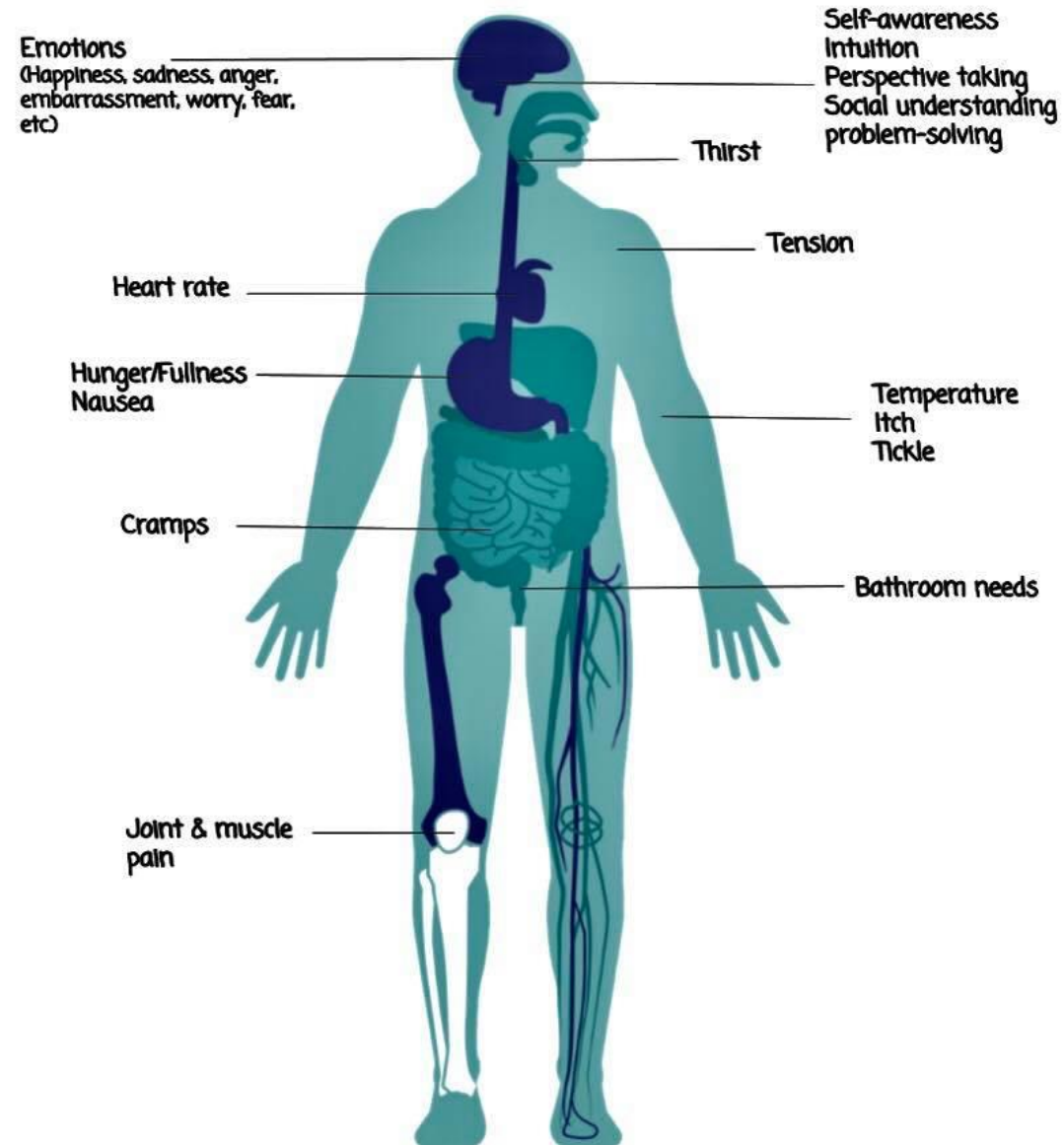
Interoceptive System

- ▶ Tells what is happening inside the body
- ▶ Hunger or thirst
- ▶ Cold or warm
- ▶ Tired or alert
- ▶ Urinate, defecate
- ▶ Seeks homeostasis



INTEROCEPTIVE AWARENESS

HOW WE KNOW WHAT'S HAPPENING, AND HOW WE FEEL INSIDE OUR BODIES



Hypersensitive

- ▶ Overreacts
- ▶ Attempts to block out stimulation
- ▶ Orients to anything new in environment
- ▶ Notices things others don't notice
- ▶ Easily distracted
- ▶ Picky eater

Hyposensitive

- ▶ Rough behavior
- ▶ Chews or mouths non-edible items
- ▶ Touches things excessively
- ▶ Poor safety awareness
- ▶ Seeks opportunities for deep pressure
- ▶ Grinds teeth
- ▶ Self-harming behaviors

Touch

>50% of people with FASD report a high pain tolerance

30% report low pain tolerance

Includes oral tactile

Avoids being close to others

Eating

- ▶ Lack of coordination between sucking (chewing) and swallowing
- ▶ Easily distracted
- ▶ May not feel hungry, may not feel full
- ▶ Sensory overload

Social Challenges

- ▶ Inability to read non verbal cues
- ▶ Improperly recognize emotion in others
- ▶ Trouble with problem solving in social situations
- ▶ Difficulty showing empathy
- ▶ Poor understanding of others' mental states

IM IN A VERY CRABBY
MOOD, SO EVERYBODY
JUST LEAVE ME
ALONE! I HATE
EVERYONE!!



NOBODY RECOGNIZES MY
HINTS TO SMOTHER ME
WITH AFFECTION.



Social Challenges continued

- ▶ Poor understanding of boundaries
- ▶ Dysmaturity
- ▶ Moral chameleon
- ▶ Vulnerable to manipulation
- ▶ May easily make friends, but can't maintain

Motor Skills

- ▶ Poor muscle tone - rigid or flaccid
- ▶ Both fine and gross impacted
- ▶ Unstable posture
- ▶ Delayed reaction time
- ▶ Poor hand eye coordination
- ▶ Trouble coordinating two hands together

Affect and Emotional Regulation

- ▶ Less ability to maintain focus
- ▶ Mood swings, unpredictable mood
- ▶ Trouble recognizing, understanding and responding to emotions of others
- ▶ Increased mood and anxiety disorders

Sleep

- ▶ Difficulty getting to sleep, staying asleep or waking up
- ▶ Circadian rhythms disrupted

Dysgraphia

- ▶ Trouble forming letters or shapes
- ▶ Awkward pencil grip
- ▶ Trouble with sentence structure
- ▶ Difficulty organizing or articulating thoughts on paper
- ▶ Impacted by motor skills, special perception and language processing

Inappropriate Sexual Behavior

- ▶ Sexual development not delayed
- ▶ Misunderstanding of personal space
- ▶ Desire to fit in and be accepted
- ▶ Impulsivity
- ▶ Perpetrator or victim of inappropriate behavior

The background of the slide features a blurred ECG (heart rate) monitor strip on the left side, showing a black line on a grid of orange dots. The right side of the slide has a dark blue background with green geometric shapes.

Metabolic Disorders

- ▶ Type 2 Diabetes
- ▶ Lower HDL
- ▶ Elevated triglyceride levels
- ▶ Increased risk of stroke and heart attack

Secondary Disabilities

- ▶ Early school dropout
- ▶ Alcohol and other drug problems
- ▶ Having children they can't care for
- ▶ Joblessness
- ▶ Homelessness
- ▶ Trouble with the Law
- ▶ Mental Health problems
- ▶ Premature death

Mental Health Concerns



- ▶ 83% - 94% of people with FASD across the age span
- ▶ ADHD
- ▶ Depression and mood disorders
- ▶ Anxiety disorders and Obsessive Compulsive Disorder
- ▶ Conduct Disorder
- ▶ Higher suicide rates
- ▶ Alcohol and other drug dependence

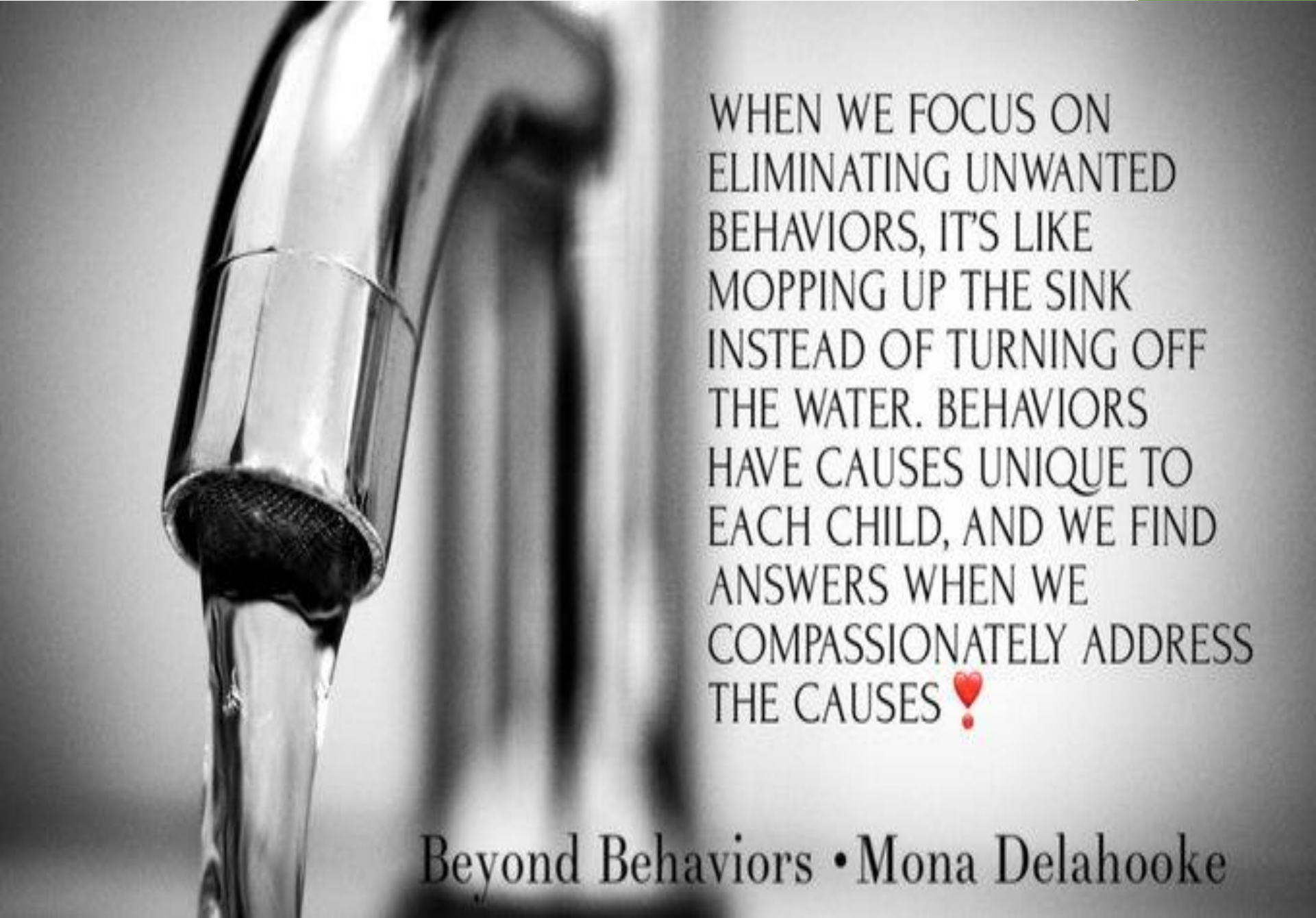
Adaptive Functioning / Daily Living

- ▶ Personal hygiene
- ▶ Personal finances
- ▶ Navigating social interactions
- ▶ Employment
- ▶ Safety

Prevalence of
12 ACEs
among
children with
FASD
compared to
non-FASD
controls.

In FASD, ACEs
are often
underway
before birth.

| ACE | FASD % | Non-FASD % |
|---|--------|------------|
| Parents Divorced/Separated | 72.5 | 45.7 |
| Drinking/Drugs in Home | 84.7 | 22.9 |
| In Foster Care  | 90.8 | 16.2 |
| Neglect | 86.7 | 14.3 |
| Unloving Family | 68.4 | 11.4 |
| Parental Depression | 32.7 | 35.2 |
| Physical Abuse | 50.0 | 9.5 |
| Verbal Abuse | 46.9 | 7.6 |
| Parent in Prison | 35.7 | 7.6 |
| Mother Abused | 32.7 | 8.6 |
| Sexual Abuse | 23.5 | 5.7 |
| In Residential Care  | 19.4 | 2.9 |
| None or One Year | 6.1 | 58.1 |
| Two to six Years | 39.8 | 35.2 |
| Seven to Twelve Years | 54.1 | 6.7 |



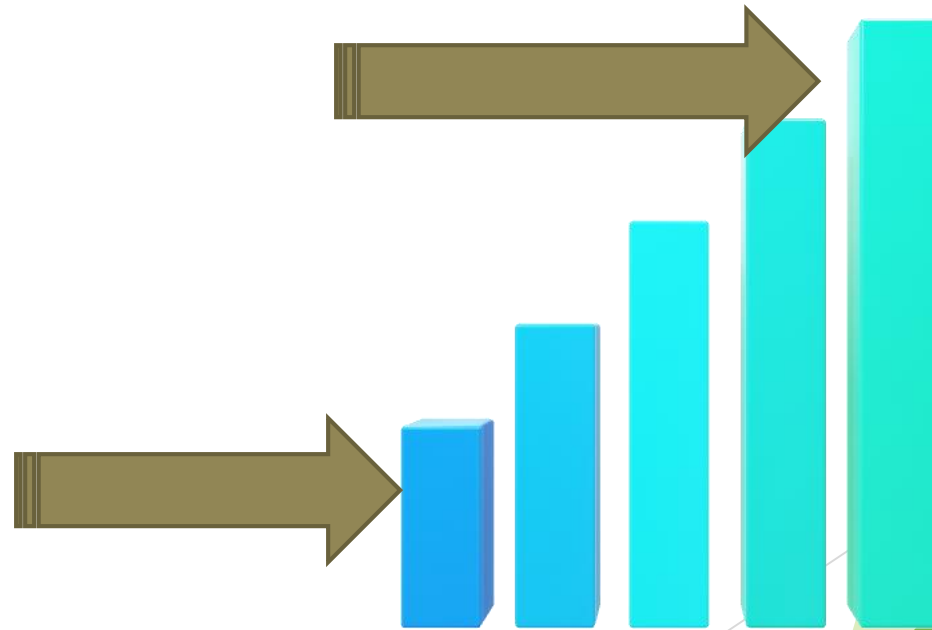
WHEN WE FOCUS ON
ELIMINATING UNWANTED
BEHAVIORS, IT'S LIKE
MOPPING UP THE SINK
INSTEAD OF TURNING OFF
THE WATER. BEHAVIORS
HAVE CAUSES UNIQUE TO
EACH CHILD, AND WE FIND
ANSWERS WHEN WE
COMPASSIONATELY ADDRESS
THE CAUSES 💖

Beyond Behaviors • Mona Delahooke

Invisible Gap

Expectation is here

Ability is here



The person has limited ability to change



**EXPECTATIONS
MUST CHANGE**



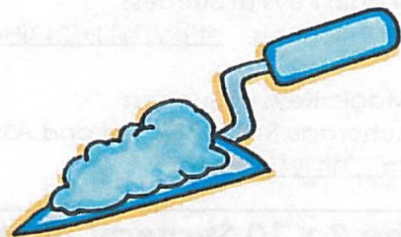
**ENVIRONMENT
MUST CHANGE**

DEB EVENSON AND JAN LUTKE'S

EIGHT MAGIC KEYS

@Kwien562

PLANNING FOR STUDENTS WITH FETAL ALCOHOL SPECTRUM DISORDER



CONCRETE

TALK IN CONCRETE TERMS
AVOID ABSTRACT LANGUAGE



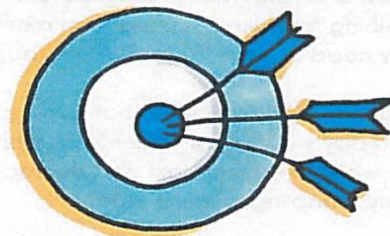
ROUTINE

HELP REDUCE ANXIETY



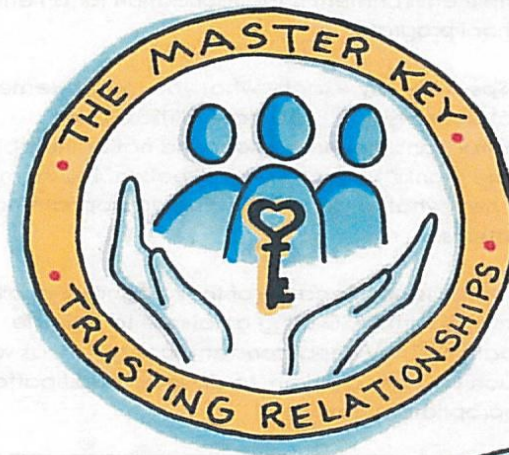
SPECIFIC

SAY EXACTLY WHAT YOU MEAN
GIVE STEP BY STEP DIRECTIONS



CONSISTENCY

PARENTS & EDUCATORS USE
THE SAME WORDS & STRATEGIES



STRUCTURE

THE GLUE THAT MAKES THE WORLD
MAKE SENSE... THEIR FOUNDATION



REPETITION

RE-TEACH MANY TIMES TO RETAIN
IN LONG-TERM MEMORY

Keep
It
Short &
Sweet



SIMPLICITY



SUPERVISION

SCAFFOLD INDEPENDENCE

Kristin Wiens 2017



Concrete

- ▶ Concrete terms
- ▶ No double meanings
- ▶ No idioms
- ▶ It helps to think younger

Abstract to Concrete



I'm going to run to the store.



**You need to get your act
together.**

Structure

- ▶ This is the glue that holds everything together!
- ▶ Make expectations clear
- ▶ Provide written (pictorial) guides, checklists and schedules

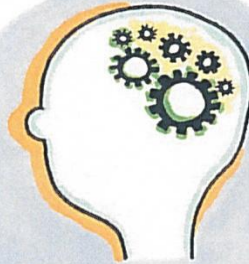
9 REASONS TO USE VISUALS

www.northstarpaths.com

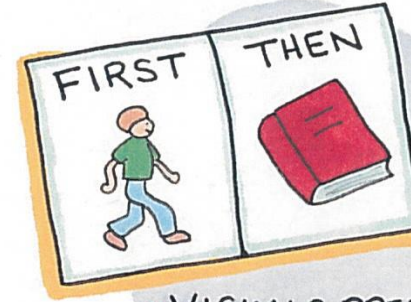
@kwiens62



- VISUALS ARE PERMANENT
(SPOKEN WORDS DISAPPEAR)



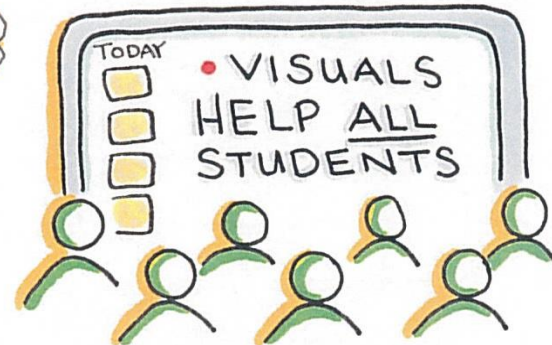
- VISUALS ALLOW TIME
FOR LANGUAGE PROCESSING



- VISUALS PREPARE
STUDENTS FOR TRANSITIONS



- VISUALS HELP KIDS
SEE WHAT YOU MEAN



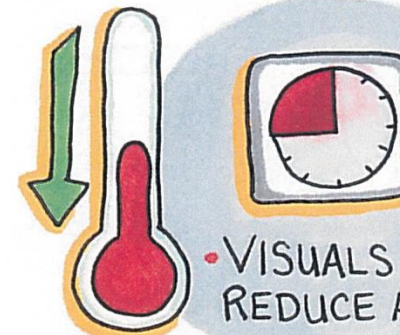
- VISUALS HELP
BUILD INDEPENDENCE



- VISUALS ARE TRANSFERABLE
BETWEEN ENVIRONMENTS
AND PEOPLE



- VISUALS HAVE NO ATTITUDE
 - NO TONE
 - NO FRUSTRATION
 - NO DISAPPROVAL



- VISUALS HELP
REDUCE ANXIETY

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WHY IS **REPETITION** IMPORTANT?

MEMORY DEFICITS

Individuals with FASD may live with short-term and long-term memory deficits which means, without reminders and repetition they may be unable to recall information.

PROCESSING TIME

FASD may also impact processing speed which means it may take longer to take in and respond to information. When things are repeated it provides another chance to process the information.

GENERALIZING

Difficulties generalizing means information learned in one setting is not readily transferred to another which is why it can be helpful to repeat instructions and expectations, especially in new settings.

INCONSISTENCY

An individual may have varying learning abilities or personal changes from day-to-day, so something they could easily do yesterday may have to be repeated or retaught today

COMMUNICATION PROBLEMS

Individuals may struggle with speech and language problems or issues with comprehension so repeating the communication can provide multiple opportunities for them to understand what is being said

SENSORY DISTRACTIONS

Sensory issues can impact every one of an individual's senses which can be very overwhelming. It is difficult to focus on instructions when your senses are overloaded so being given the instructions again can be very helpful.

Routine

- ▶ Know what to expect
- ▶ Decreases anxiety
- ▶ Allows for learning
- ▶ You may find it boring - get over it and do it!



Routines and Transitions

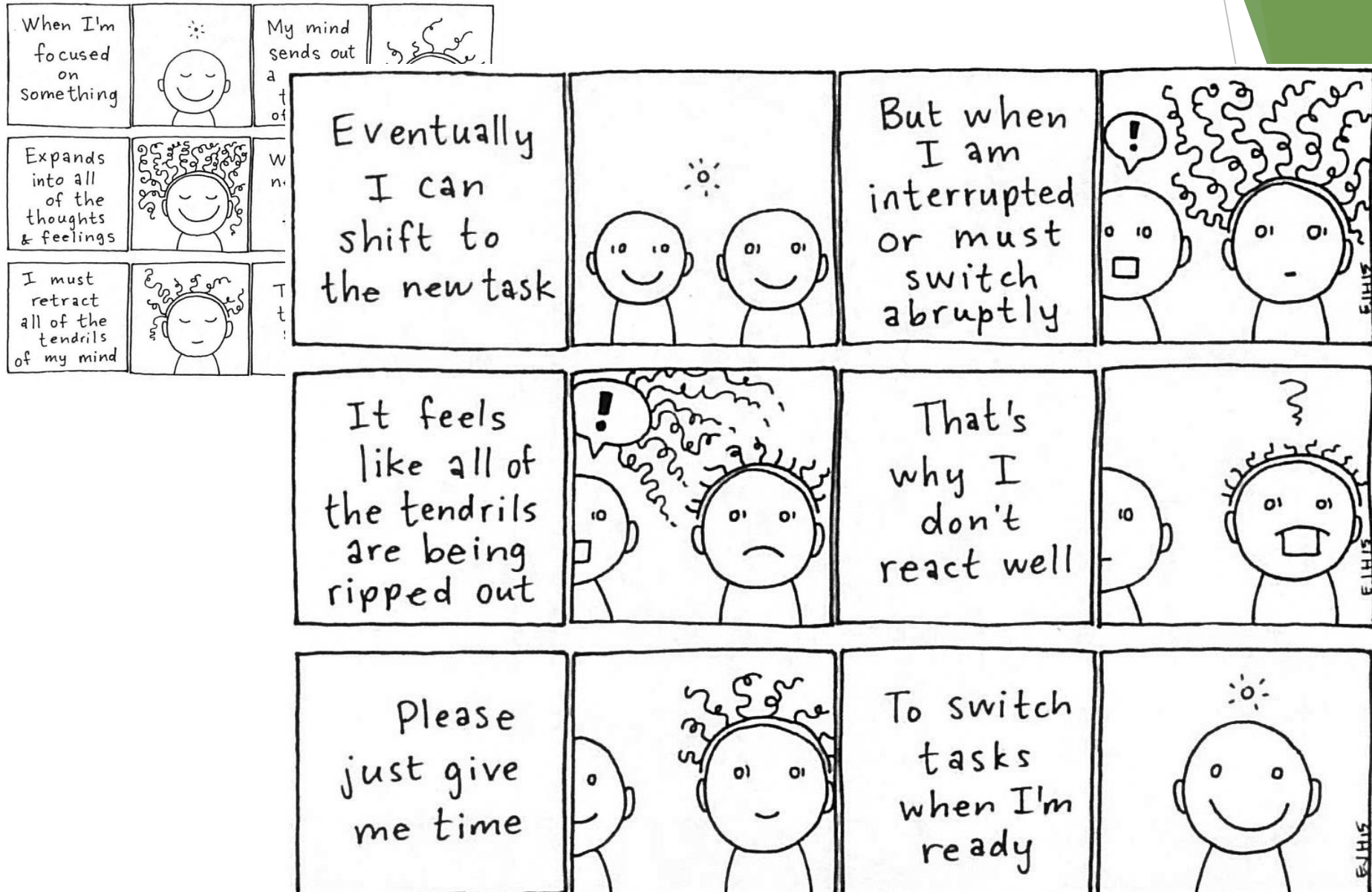
- ▶ Keep the same schedule
- ▶ Use visuals to reinforce the schedule
- ▶ Develop rituals
- ▶ Give alerts in advance of changes
- ▶ Make clear how much longer

Transitions

- ▶ Explain what is coming next
- ▶ Use an auditory signal for changes
- ▶ Use tool to signal time for change
- ▶ Don't rush
- ▶ Take a sensory break
- ▶ Reduce “wait” time

Why it's hard to switch tasks

(Let's call it Tendril Theory)



Consistency

- ▶ **Same expectations/routines over time**
- ▶ **Same language at home, school, work and elsewhere**

Simplicity

- ▶ Keep it Short and Simple
- ▶ As few words as possible
- ▶ Simple environment



Specific

- ▶ Say exactly what you mean
- ▶ Step by step instructions - one at a time
- ▶ Can't generalize

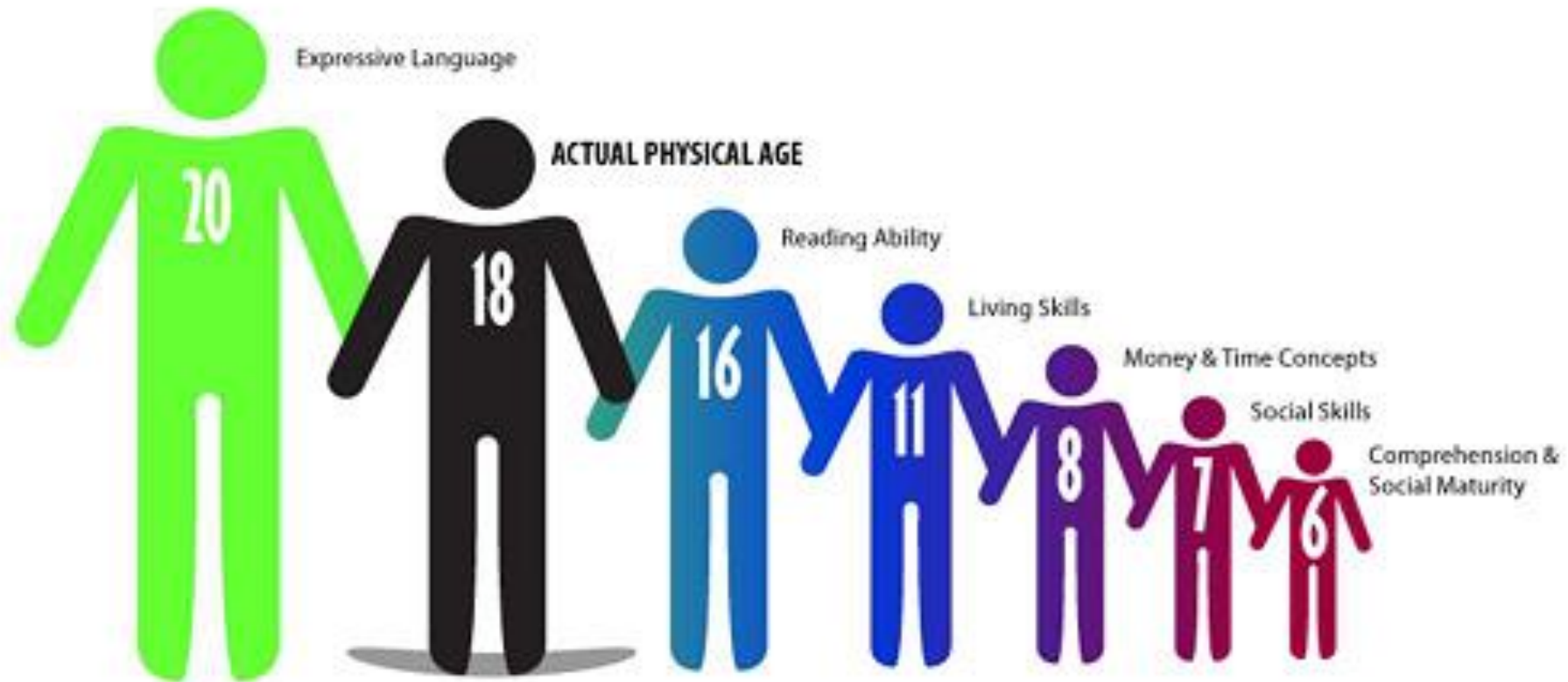
Supervision

- ▶ Yes, even adults
- ▶ Think younger
- ▶ Naïve
- ▶ Poor judgement



► Think younger

What you see is NOT what you get...



Organizing the Physical Space

- ▶ Reduce visual and auditory distractions
- ▶ “calm corner” or “quiet place”
- ▶ Define boundaries - rug, tape, etc.
- ▶ Lights low, voice calm
- ▶ Furniture that fits
- ▶ Consistency and predictability

Improve Behavior

- ▶ Give a fidgety child a job that requires movement
- ▶ Learn the signs of building frustration & teach strategies to diffuse
- ▶ Use visual cues of good behavior
- ▶ Use visual cues to signal deteriorating behavior
- ▶ Immediate rewards for good behavior
- ▶ Reduce opportunities for frustration

Sensory Integration / Overload

- ▶ Sensory behaviors serve a purpose
- ▶ Be a detective - watch for signs of overload - note environmental factors
- ▶ Accumulation factor
- ▶ Plan for sensory breaks
- ▶ Food and drink to moderate arousal - water bottles, pretzels, jerky, gum

Sensory Integration / Overload

- ▶ Replace inappropriate sensory behavior with an acceptable behavior
- ▶ Appropriate seating
- ▶ Quiet retreat
- ▶ Large muscle stimulation - heavy work - weighted tools
- ▶ Occupational Therapy is fabulous!

Walk
Nature
Tear paper
Time away
Blow up balloon
Play dough
Cold drink
Swing
Spin
Hum



Stress and Rage

- ▶ Stop fighting, step back, observe
- ▶ Don't hug or try to contain
- ▶ Spinning / tickling - at the beginning
- ▶ Movement, music, dance
- ▶ Self-soothing behaviors - rocking, drumming, singing
- ▶ Angry area
- ▶ Manage your own reactions, Cover face when stressed
- ▶ Praise for regaining control

Stress and Rage

- ▶ Tactile objects to play with
- ▶ Warm bath after a stressful time
- ▶ Lots of exercise, periods of calm
- ▶ Monitor environment for over stimulation
- ▶ Monitor for low blood sugar
- ▶ Needs lots of rest
- ▶ Don't paint him or her into a corner

If someone with FASD is **aggressive**,
it's usually because they are in
over their heads.

*When you match your
expectations with their ability,
you'll see less aggression.*

You would be aggressive to if you
constantly could not understand things.

Ever try putting something together from IKEA?

facebook.com/FASDSuccess

FASDCAREGIVER
SUCCESS





Teach Self-Regulation

- ▶ Help identify emotional state
- ▶ Stop and breathe
- ▶ Stop and think
- ▶ Rehearsal and self-talk

Teach Social Skills

- ▶ Teach personal space
- ▶ Teach specifically who to touch/hug
- ▶ Role play appropriate skills
- ▶ Use a timer as a reminder to take turns
- ▶ Model proper skills in various settings
- ▶ Clearly define unacceptable behavior

Teach Social Skills

- ▶ **Public and private behavior**
- ▶ **Inability to meet social expectations increases risky behaviors**
- ▶ **Practice appropriate behavior - never demonstrate improper behavior**

Support Memory

- ▶ Use all the senses in learning
- ▶ Use picture reminders
- ▶ Encourage use of checklists
- ▶ Have the child repeat back in their own words
- ▶ One thing at a time

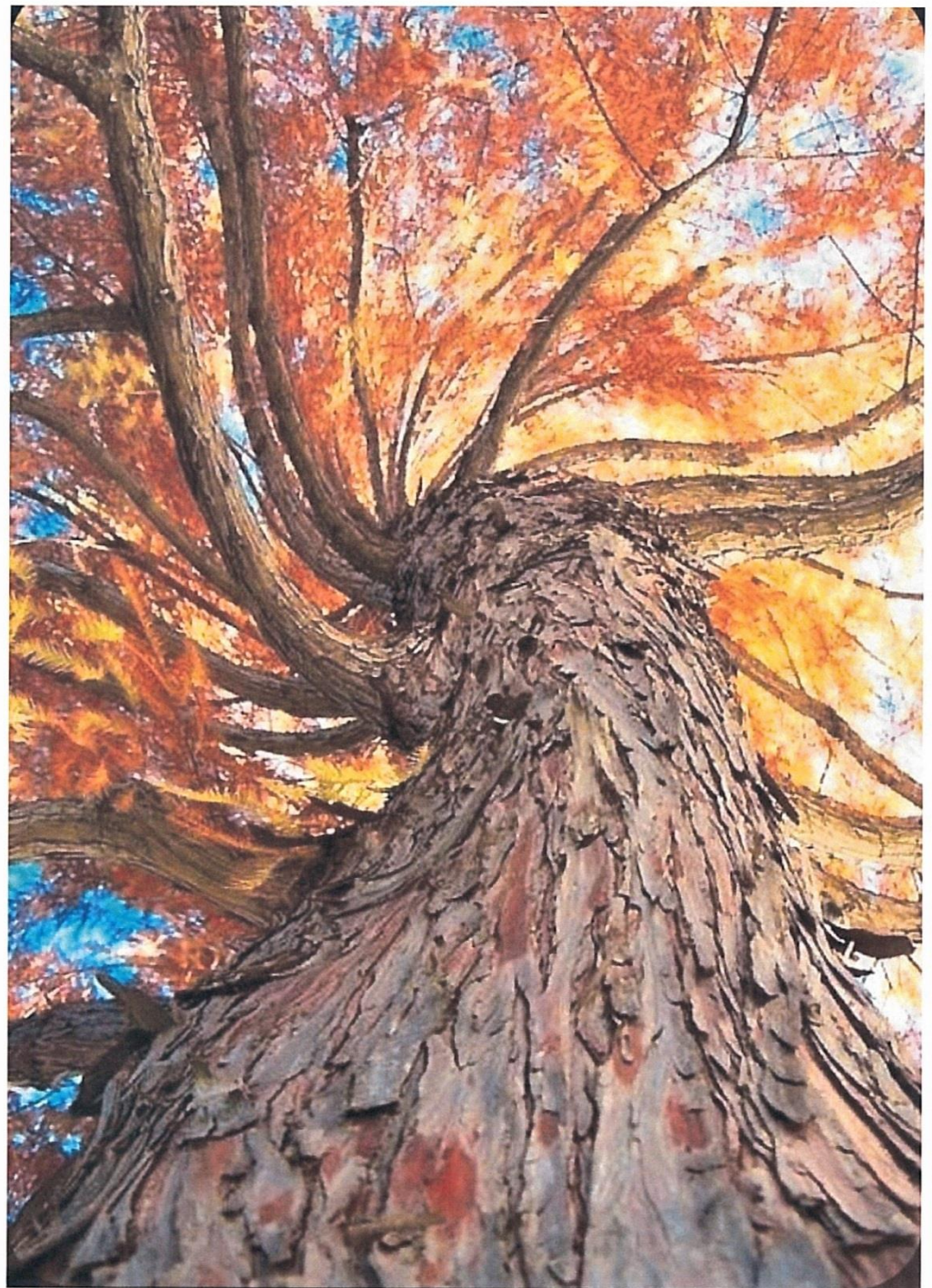


Good judgment
comes from
bad experience,
and a lot of that
comes from
bad judgment

...but people with an FASD often do not
learn from their mistakes

**Take a new
perspective**

Understand it is can't,
not won't



Strengths of Persons With an FASD

- ▶ Friendly
- ▶ Likable
- ▶ Desire to be liked
- ▶ Helpful
- ▶ Loving, caring, kind, sensitive, loyal, and compassionate
- ▶ Determined
- ▶ Have points of insight
- ▶ Not malicious
- ▶ Energetic and hard working
- ▶ Spontaneous, curious, and involved

Identify Strengths to Build On

- ▶ **Music**
- ▶ **Arts**
- ▶ **Reading**
- ▶ **Computers**
- ▶ **Mechanics**
- ▶ **Writing & Poetry**
- ▶ **Creative**

Questions to ask ourselves

- ▶ What is their developmental age?
- ▶ What are their challenges?
- ▶ What is it they don't understand?
- ▶ What strengths can we draw on?
- ▶ Who are their supports?
- ▶ How can we help develop appropriate habits or learned patterns of behavior?