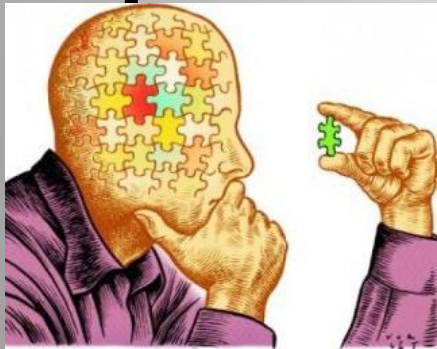


**FOR  
PARENTS OF  
AUTISM  
ONLY**

**28 july  
zoom  
webinar  
3 pm**



**SYMPTOMATOGENESIS  
OF AUTISM  
SPECTRUM DISORDERS  
AND  
NEWER DIAGNOSTIC  
CRITERIA  
FOR THERAPEUTIC USE**

**DR KONDEKAR 9869405747  
[WWW.PEDNEURO.IN](http://WWW.PEDNEURO.IN)**

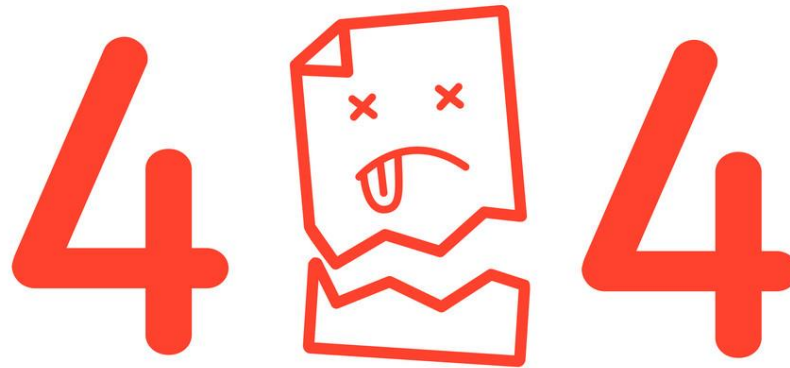
# WHAT DOES THE TOPIC MEAN

- ◉ What is wrong?
- ◉ Where and How?
- ◉ Can there be a Single best way to explain Autism?
- ◉ How are the core symptoms developed?
- ◉ How do they worsen?
- ◉ How to pick and act.
- ◉ Act how?
- ◉ How do we get response?

# WHY WE ALL MAY BE WRONG WHAT WE ASSUME

- ◉ As definition of autism is widened to autism spectrum disorder, many kids will be given this diagnosis - parents have difficult time to accept
- ◉ Previously diagnosed autism kids, may not be autism by new definitions in some cases
- ◉ As most specialists have been following DSM IV ISAA and CARS tool for assessment; sticking to old diagnosis criteria will result in wrong labels and wrong statistics. All needs to be re-done.
- ◉ Autism was considered as a group of different symptoms, now it can be explained as a sequential process.

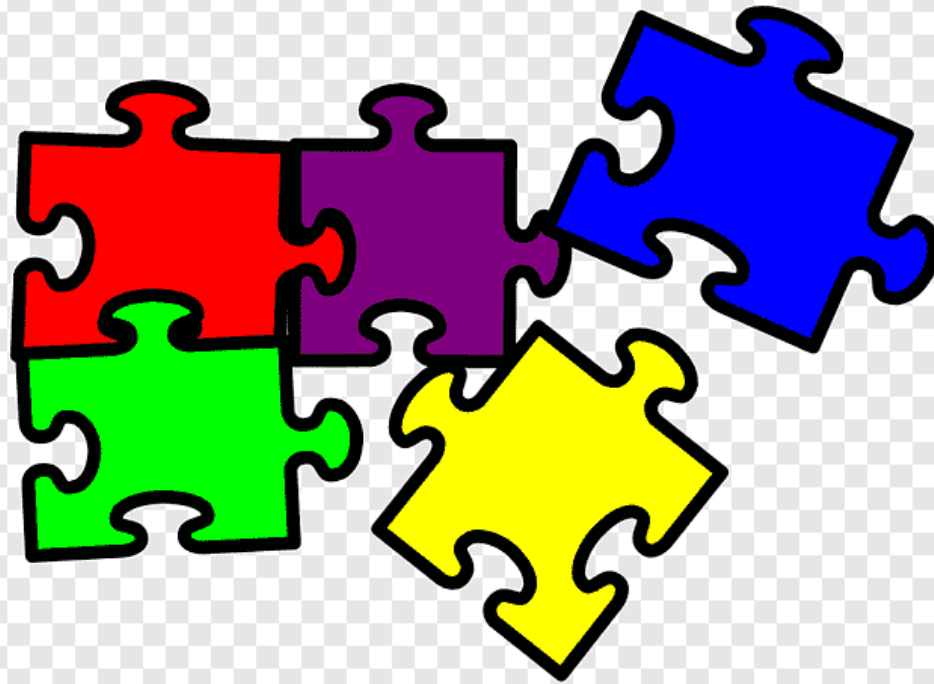
WE ALWAYS THOUGHT SO



**ERROR**

PAGE NOT FOUND

OR FELT LIKE A LOOSE PIECE  
MISSING



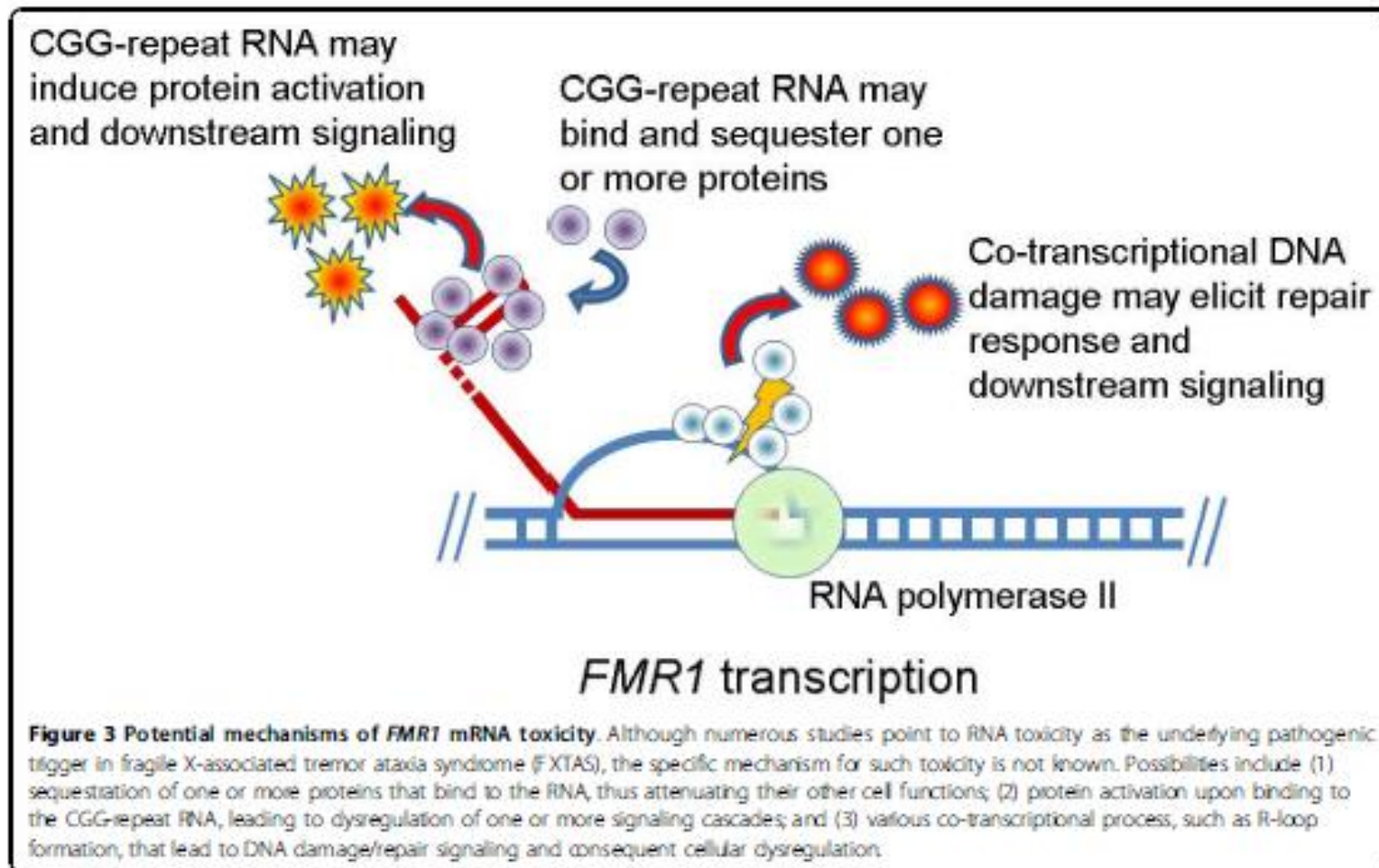
# WE HAD MULTIPLE THEORIES



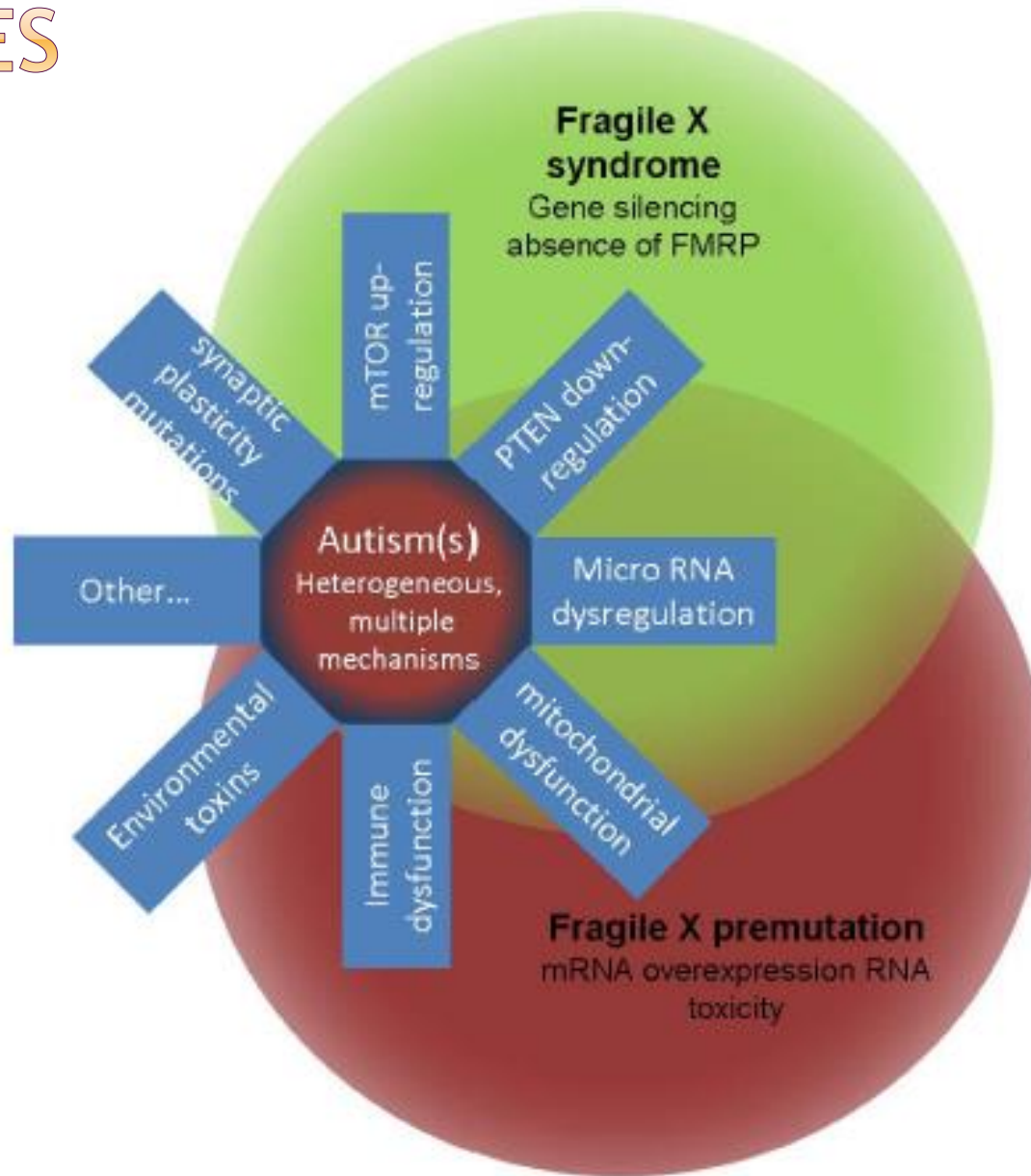
Every one talked about their own, but concluded in ambiguity



# FROM GENETICS- LIKE FRAGILE X



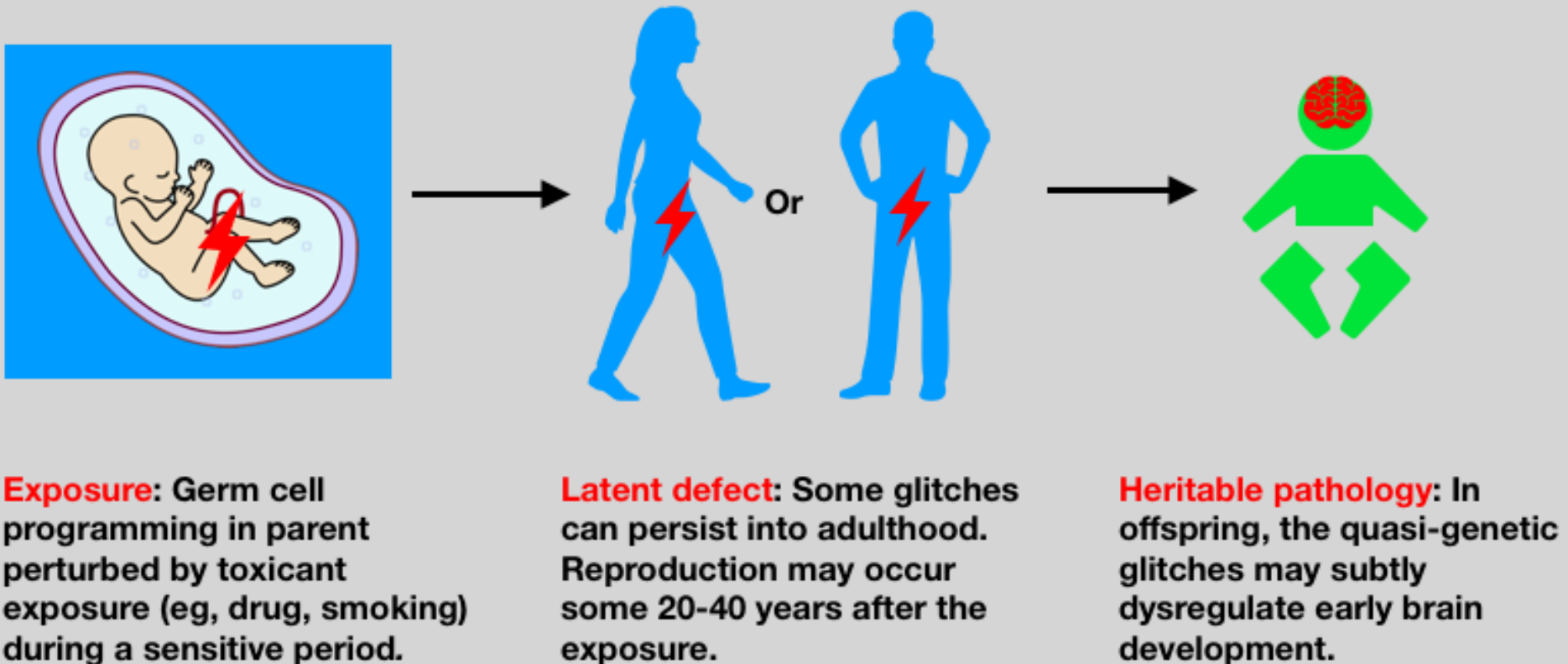
# GENES



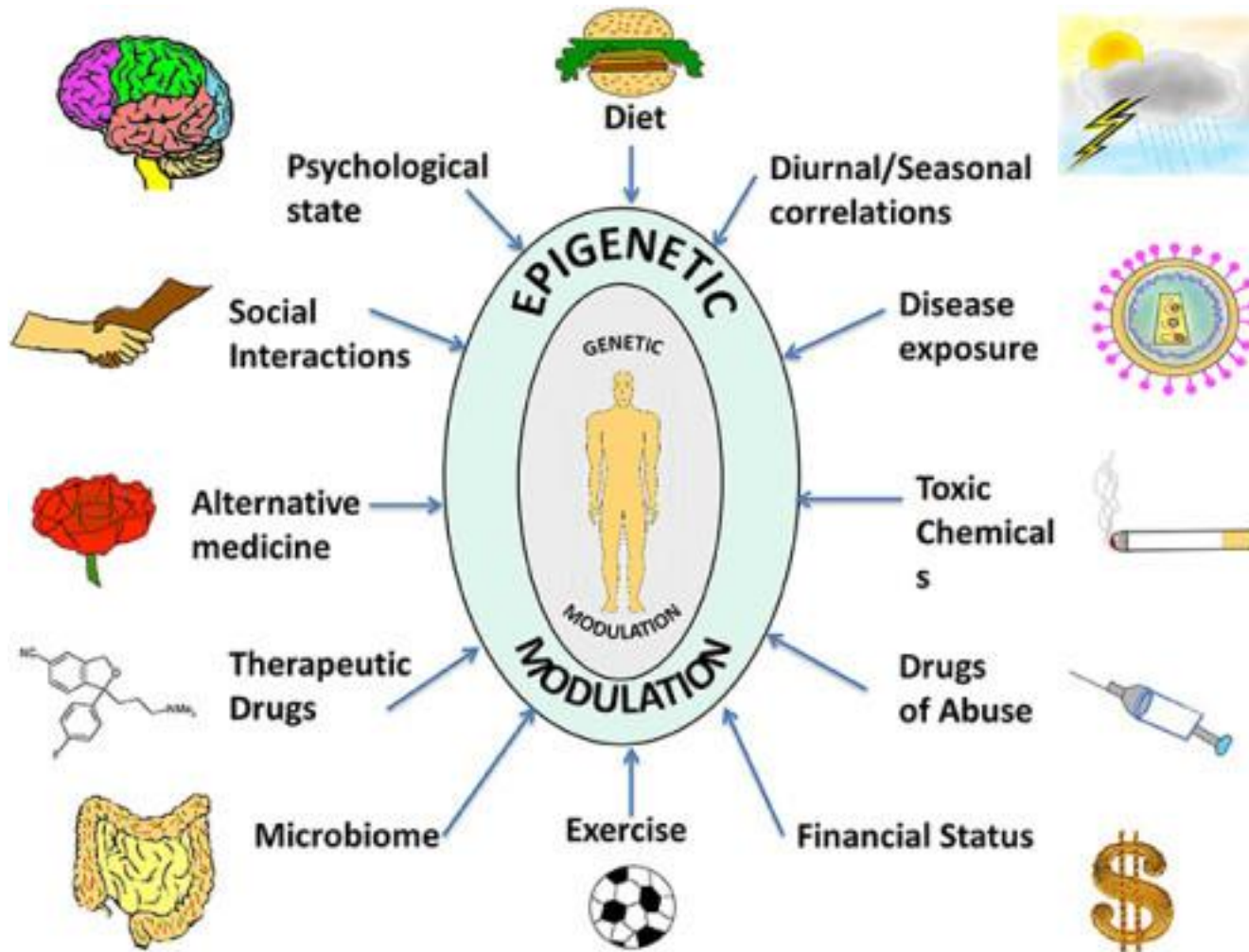


# TO QUASI GENETICS

## Quasi-genetic Inheritance in Autism: Conceptual Overview



# TO EPIGENETICS



# WHATEVER WAY IT HAPPENS, THE RESULT IS FAULTY NEURONAL CONNECTIONS IN DEVELOPING BRAIN



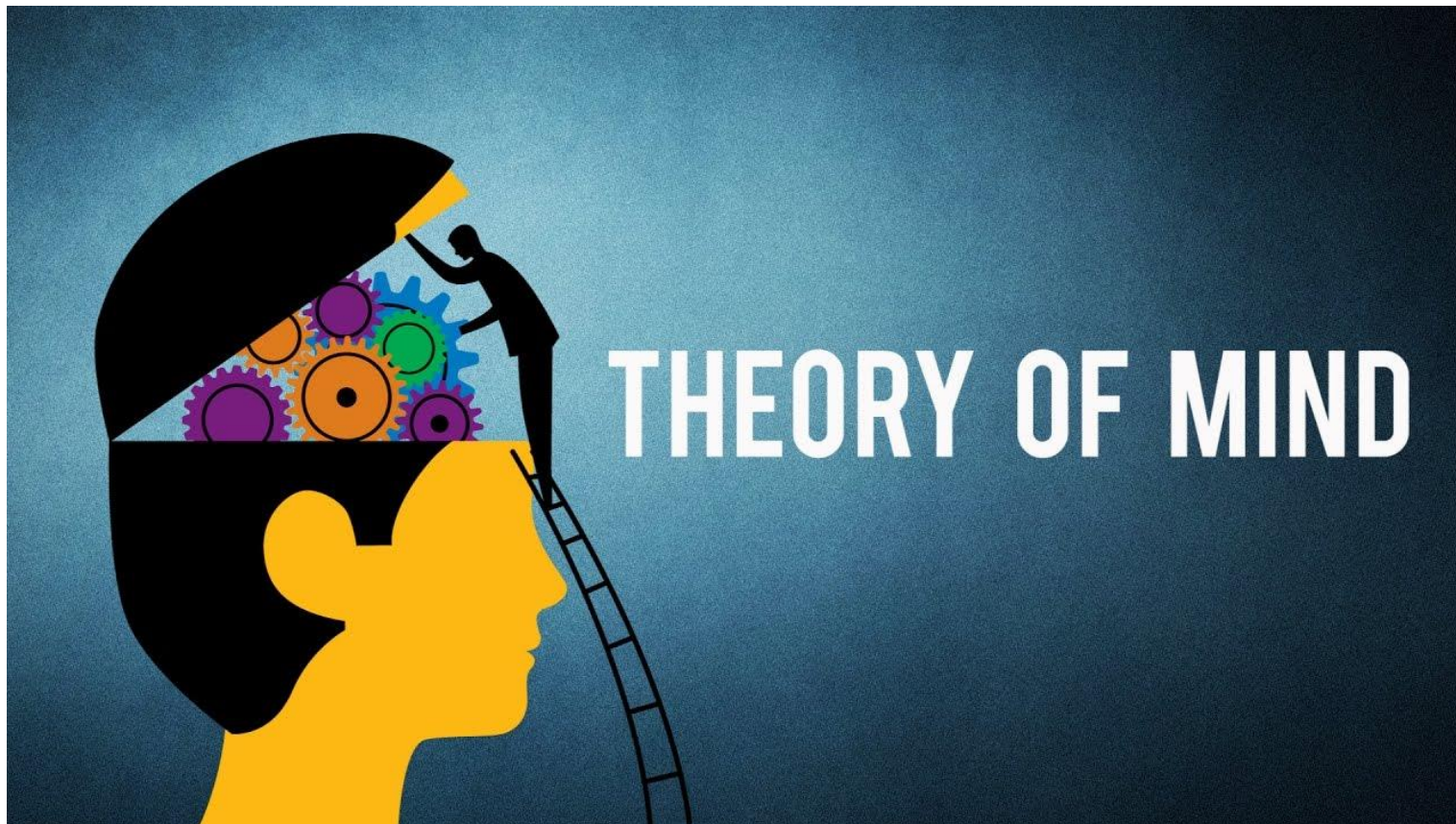
# FAULTY NEURONAL CONNECTIONS

- ◉ Incomplete. Under developed / excess
- ◉ Receiver neurons, central neurons, interneurons
- ◉ Chemical, physical, functional, electrical disconnections, dissociations, disturbances

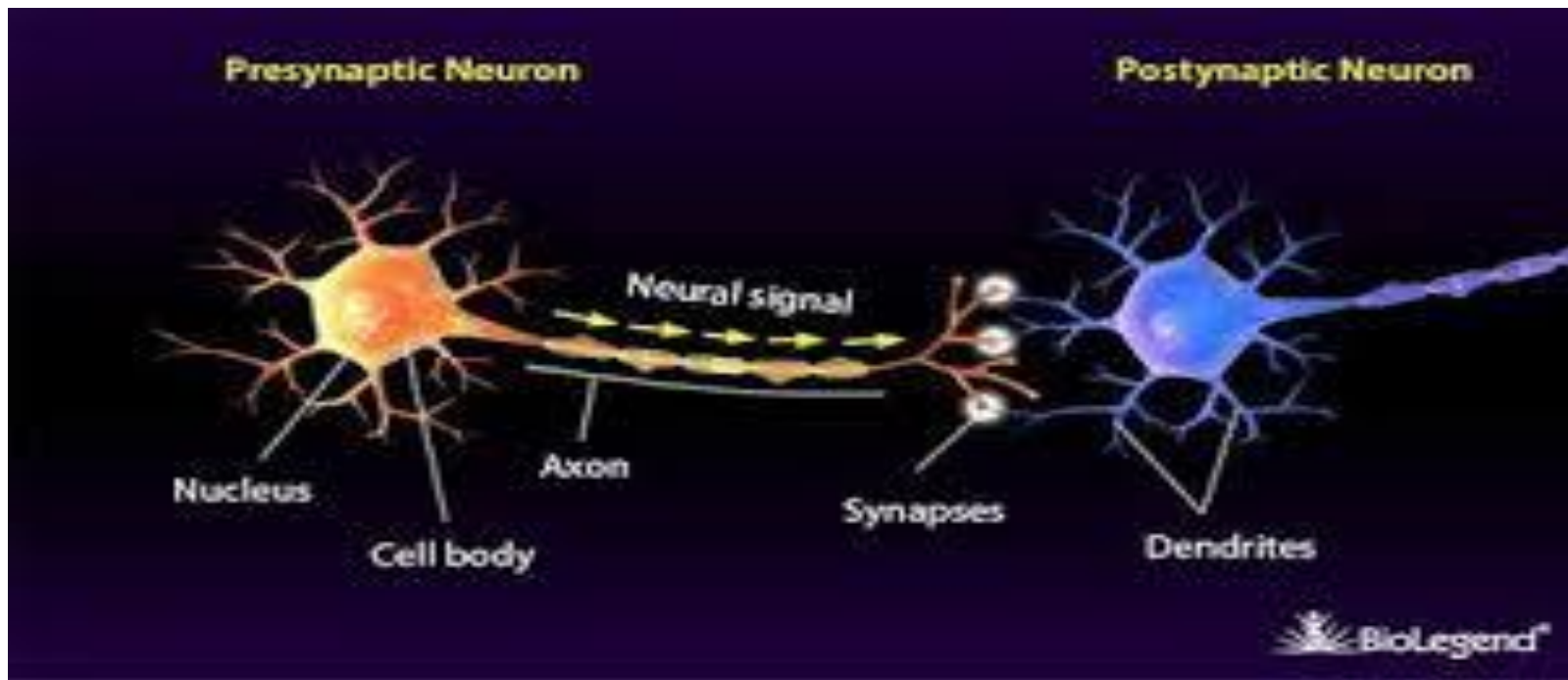




NOW AUTISM IS NO LONGER A  
PSYCHIATRIC DISEASE BUT A  
NEURODEVELOPMENTAL DISORDER



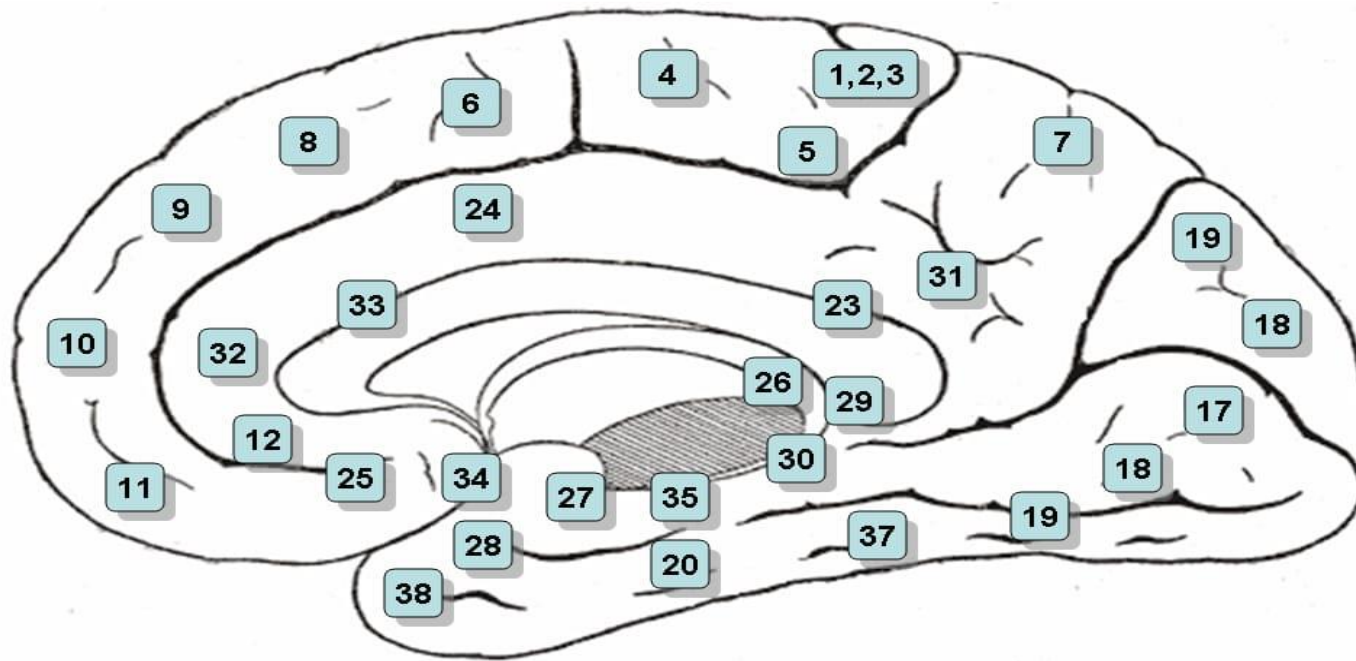
# ONE TIME DEFICIT IN SOME GROUP OF SENSORY- CONNECTING NEURONS



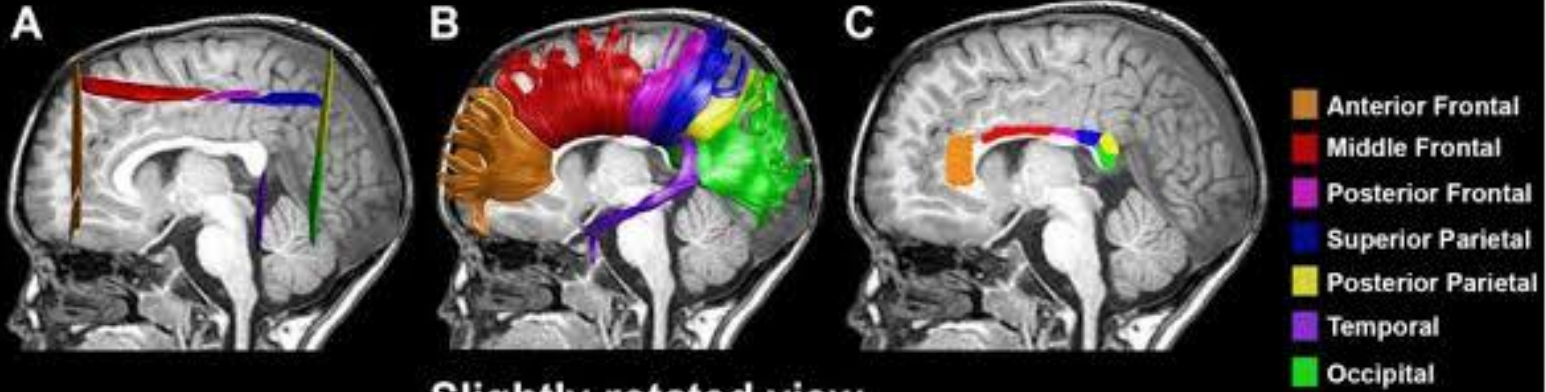


# POSSIBILITY OF CONNECTIONS IS ENDLESS AS WIDE AS AUTISM SPECTRUM

Mid-sagittal plane



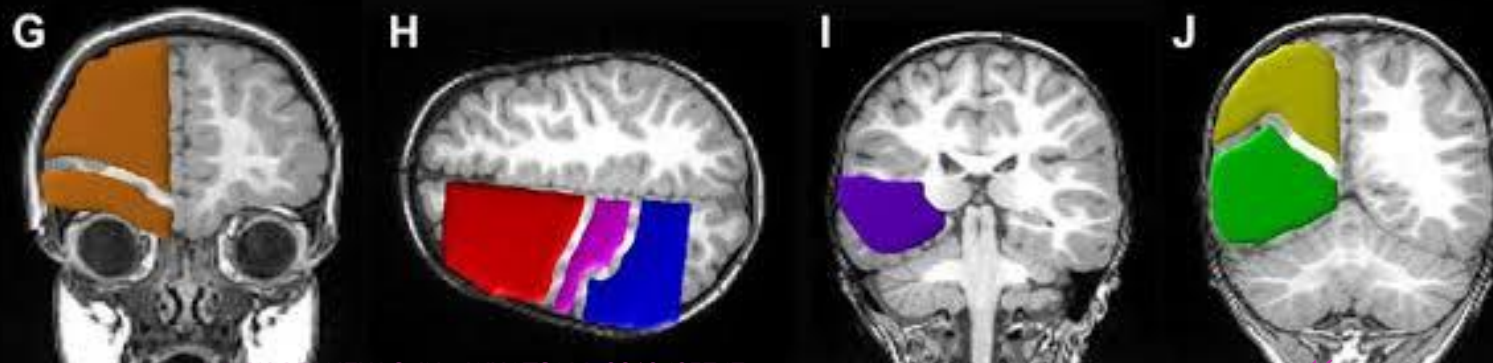
## Mid-sagittal plane

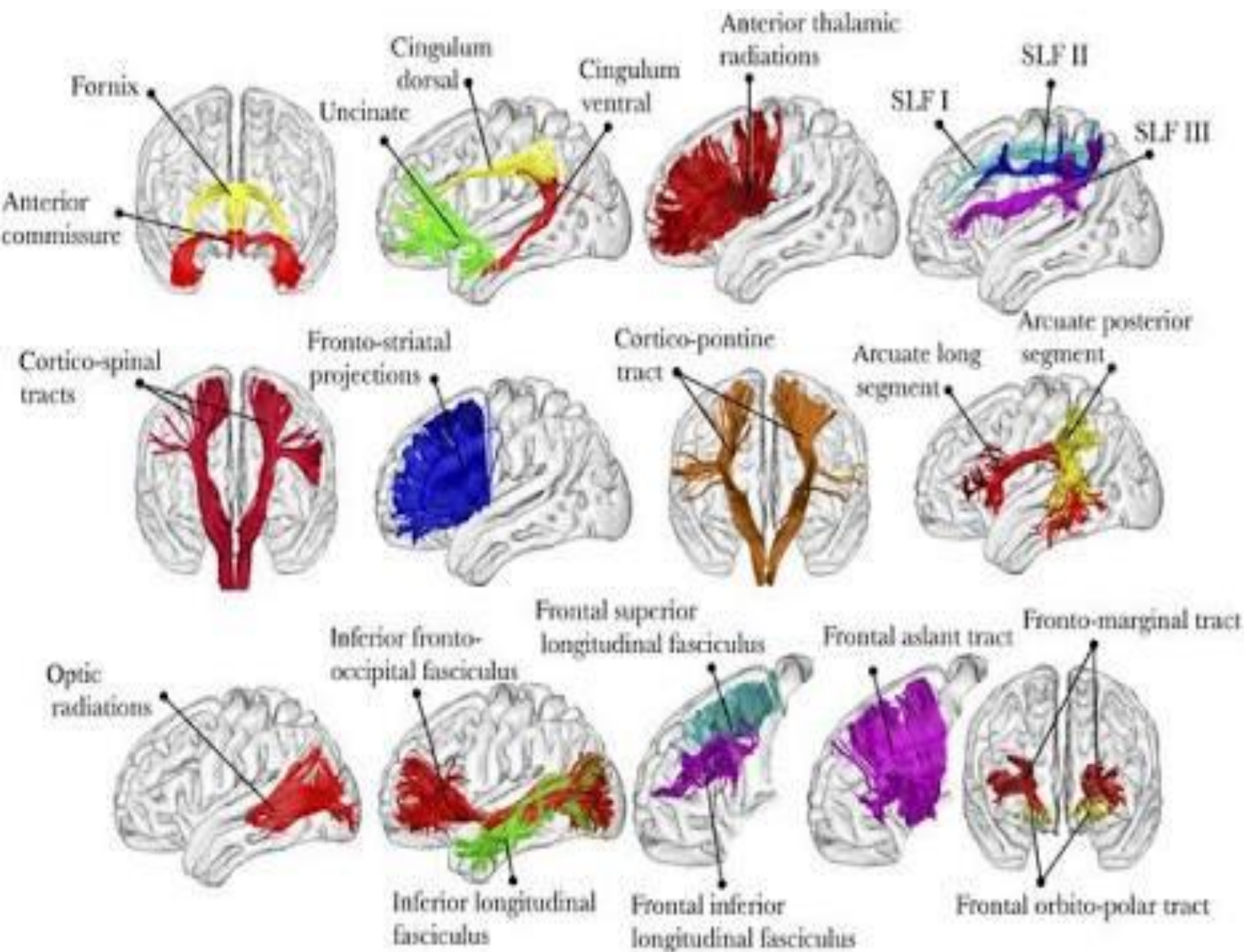


## Slightly rotated view

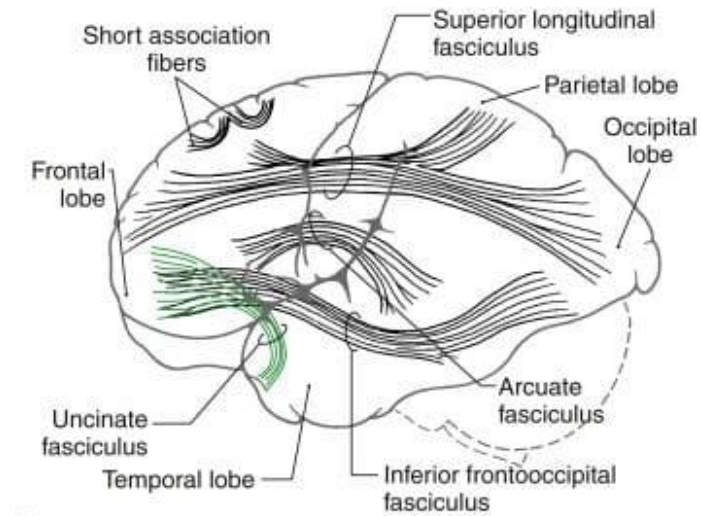


## ROI locations in slices

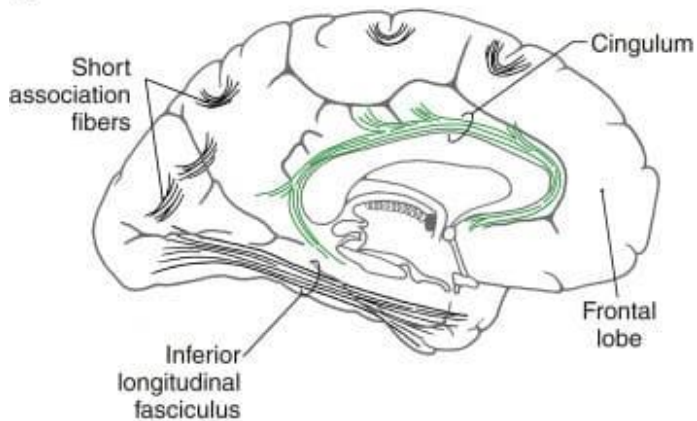




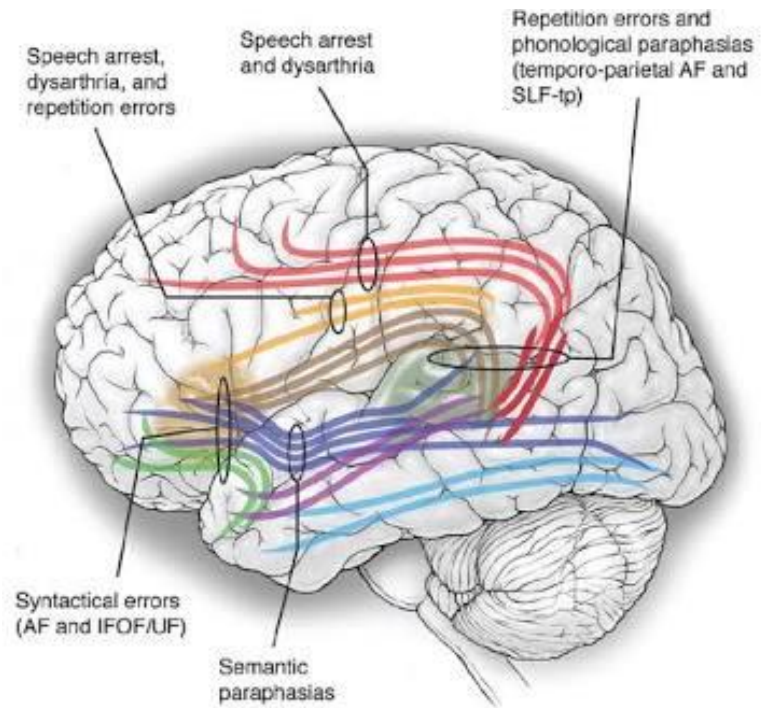




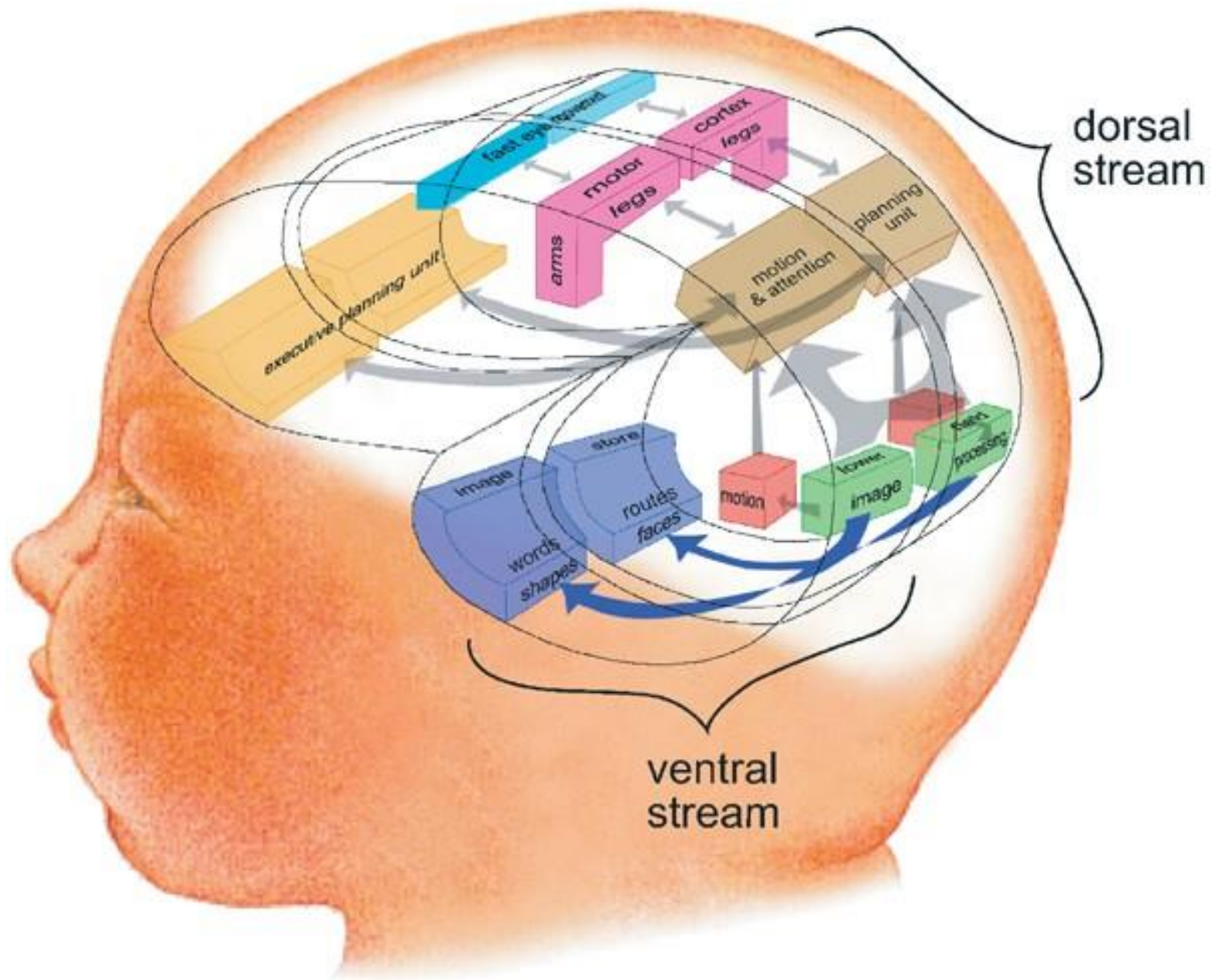
A



B



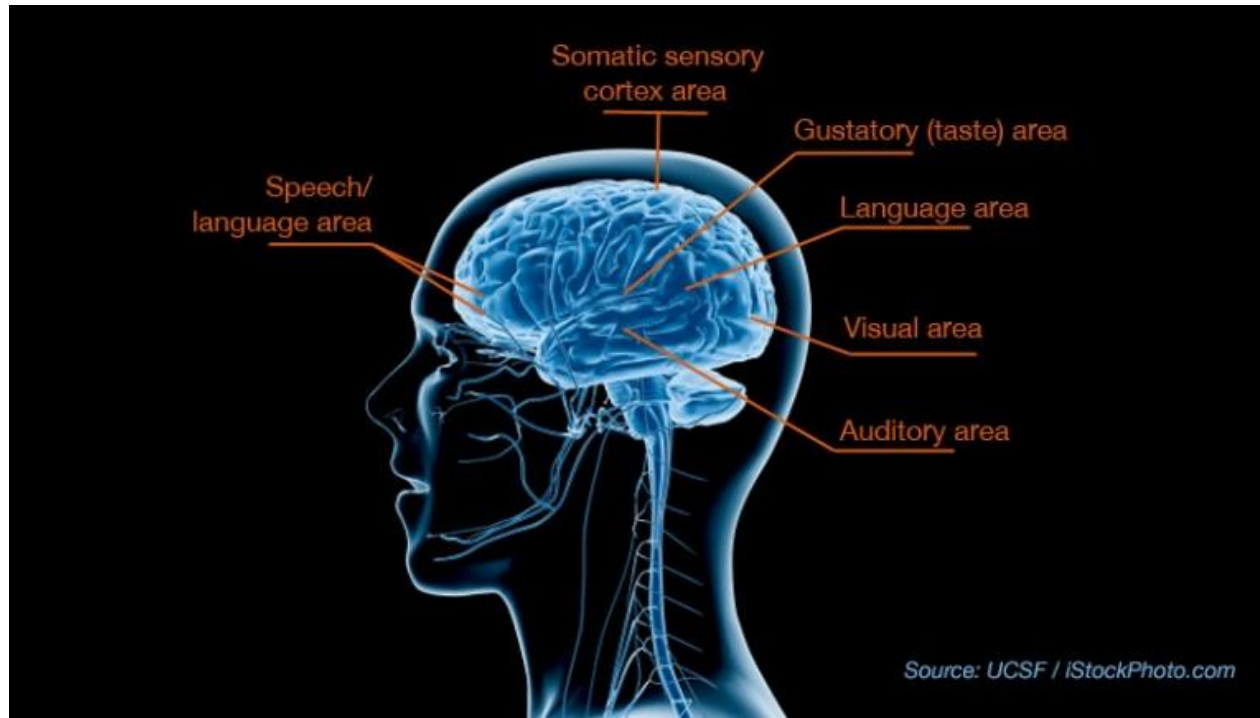
- |                                             |                          |
|---------------------------------------------|--------------------------|
| Superior longitudinal fasciculus (SLF) II   | SLF III                  |
| Inferior fronto-occipital fasciculus (IFOF) | Arcuate fasciculus (AF)  |
| Middle longitudinal fasciculus              | SLF-tp                   |
| Inferior longitudinal fasciculus            | Uncinate fasciculus (UF) |



# ITS NOT A DISEASE TO BE EXPLAINED BY

- ◉ Immunity
- ◉ Infection
- ◉ Inflammation
- ◉ Toxins
- ◉ Oxidative stress or cytokines
- ◉ Dietary deficiency
- ◉ Dysbiosis / Probiotics
- ◉ Metabolic diseases
- ◉ All above theories- it shall progress
- ◉ Autism is a developmental deficit that turns into disorder due to sensory discordance



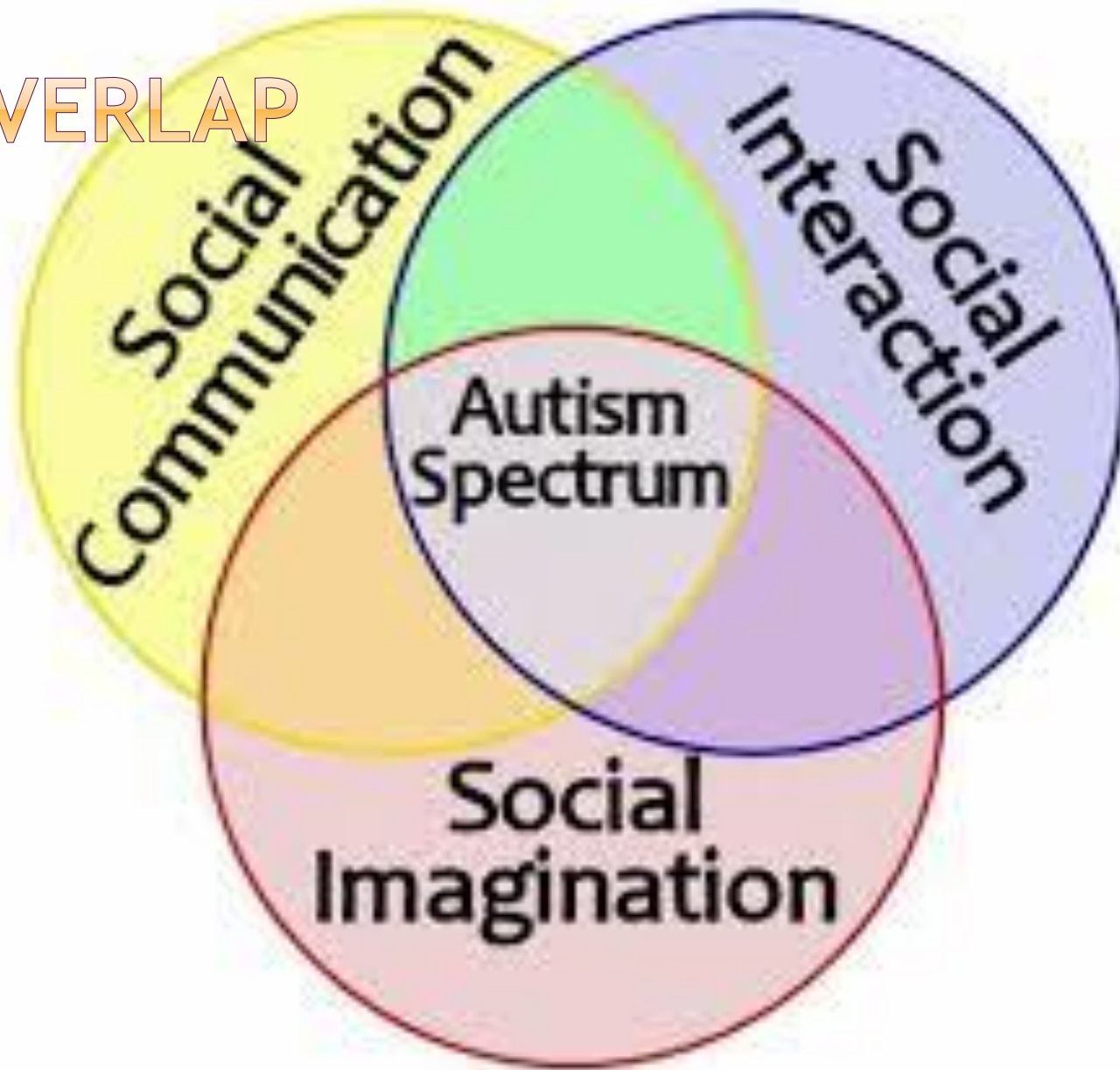


SYMPTOMS OF AUTISM SEEM TO BE CHANGING NOT AS A PART OF DISEASE PROGRESSION BUT AS AN INABILITY TO RESPOND TO DEVELOPMENTAL MATURATION

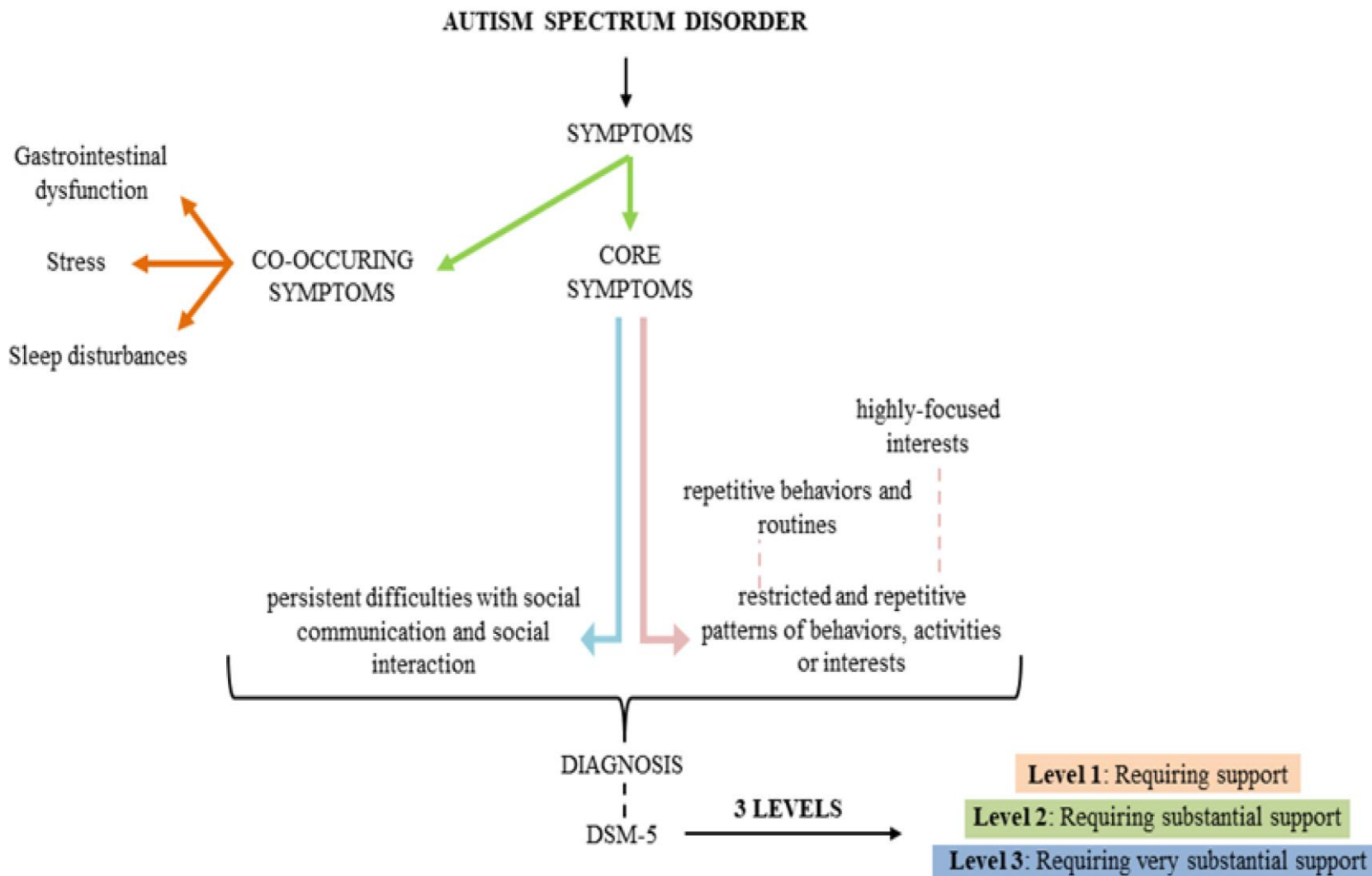
# AT TIMES AUTISM IS LINKED TO DISEASES AND SYNDROMES, DUE TO SYMPTOM OVERLAP

- ◉ Syndromic Epilepsy
- ◉ Tuberous Sclerosis
- ◉ Mitochondrial diseases
  
- ◉ THESE DO PROGRESS...
- ◉ When the symptoms are best explained by any known disease or abnormality as above, it shall be called by its name and not as Autism Spectrum Disorder.
- ◉ This is the biggest change with DSM 5 Autism criteria

OVERLAP

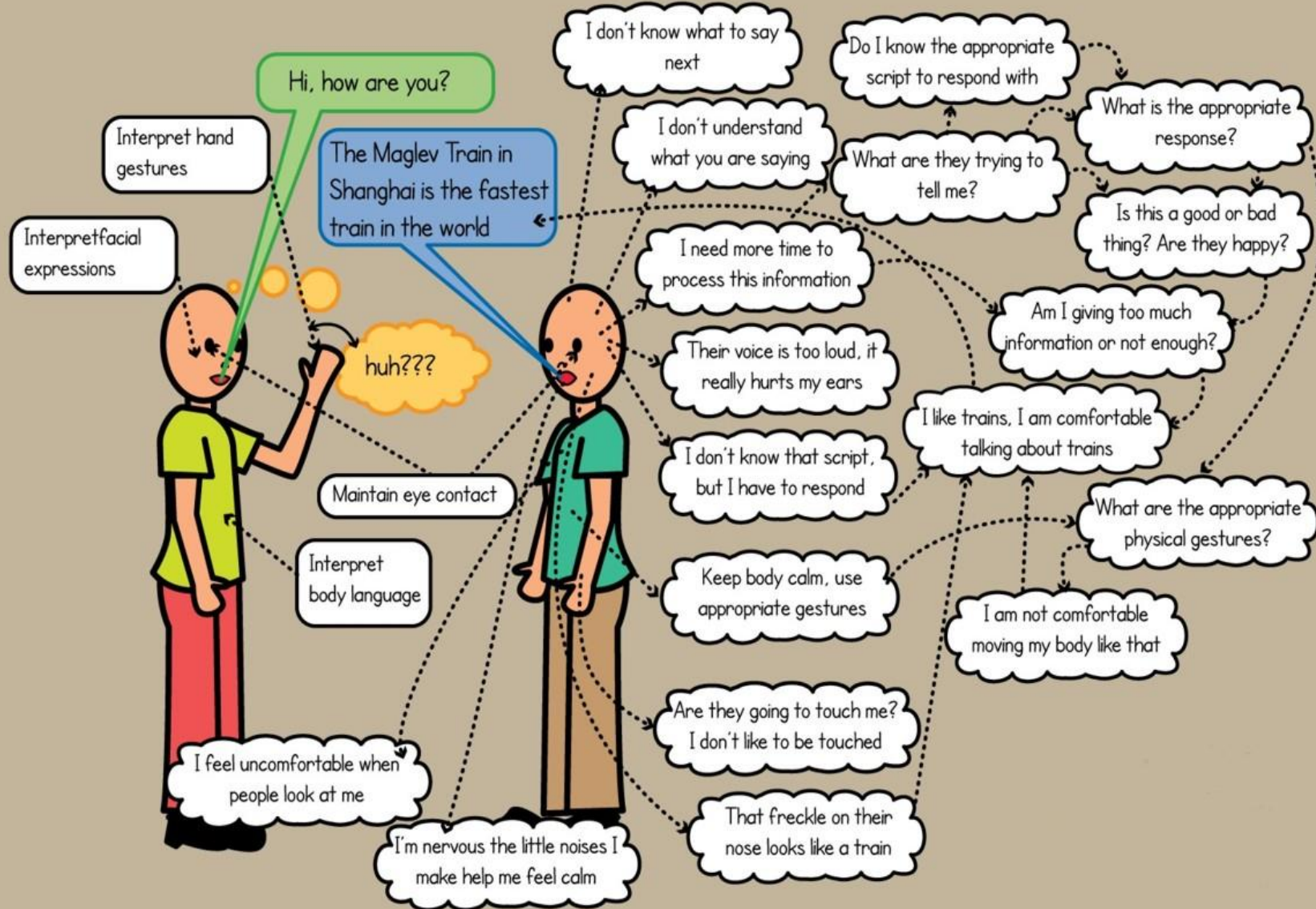


# PATHOGENESIS OF DSM 5 SYMPTOM PROFILE SEQUENCE IN AUTISM SP





# communication and autism



AN ADULT WITH AUTISM MAY HAVE  
MANY SUCH ISSUES

BUT IT ALL STARTS BEFORE AGE 5  
YEARS ANY TIME UPTO AGE OF  
CONCEPTION

BUT MAY NOT MANIFEST IN ALL  
UNLESS A CHALLENGING LEARNING  
IS DEMANDED AS PER AGE



SURELY YOUR KID MAY BE ABLE  
TO DO SOME COMMUNICATION  
AND YOU MAY FEEL YOUR KID IS  
LEARNING AND WILL PICK UP,  
ITS NOT ALWAYS SO AS OFTEN  
AS A PARENT ONE ENDS UP  
NEGLECTING AGE DEFICIT/ AGE  
APPROPRIATENESS AND  
QUALITY OF MILESTONE AS PER  
AGE

# NEURODEVELOPMENTAL DEFICIT

CP

- Action or movement deficit
- Presents like Cerebral Palsy

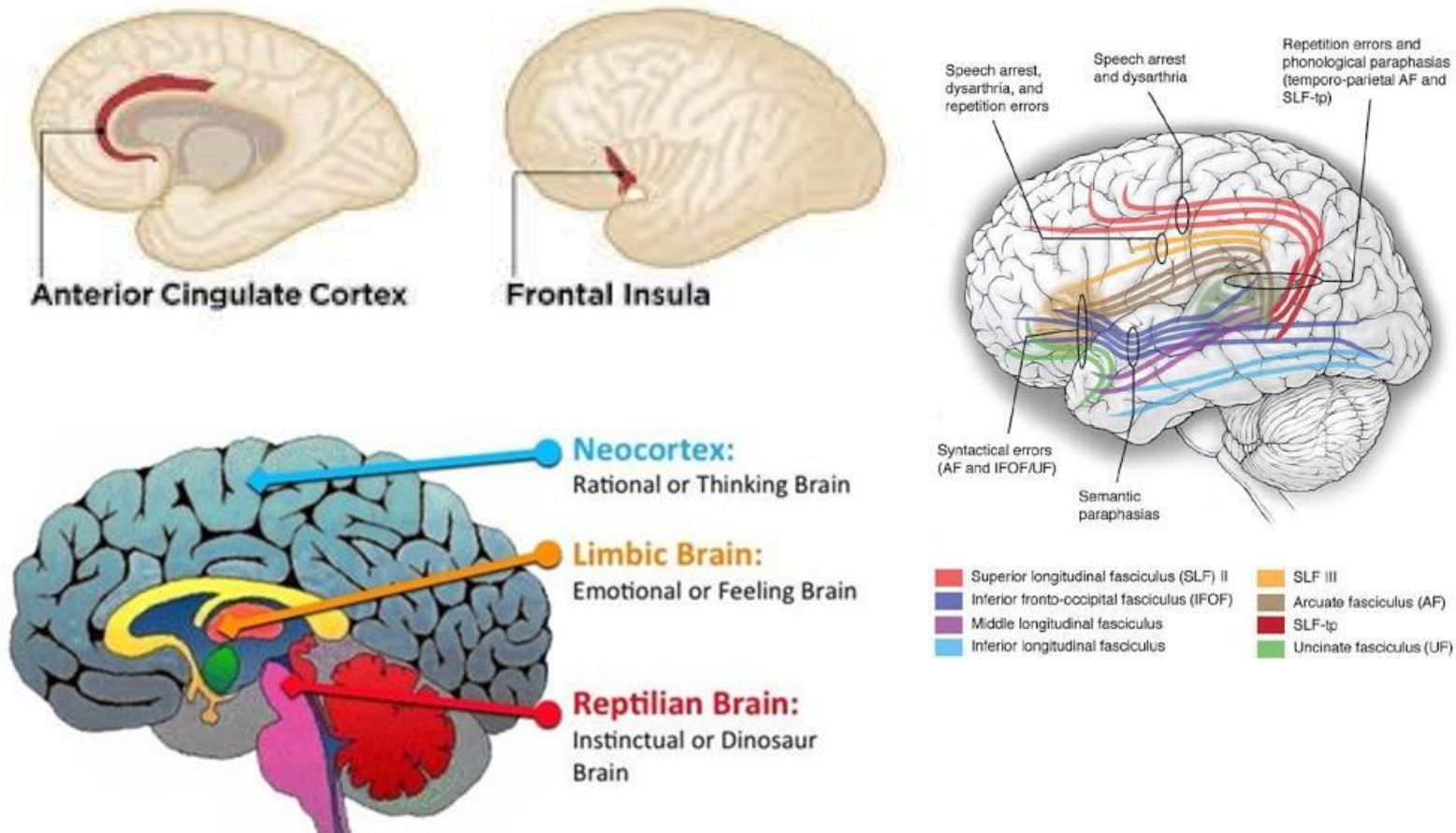
Intellectually  
disabled

- Processing deficit
- Presents with less understanding, mimicks autism

Social CP

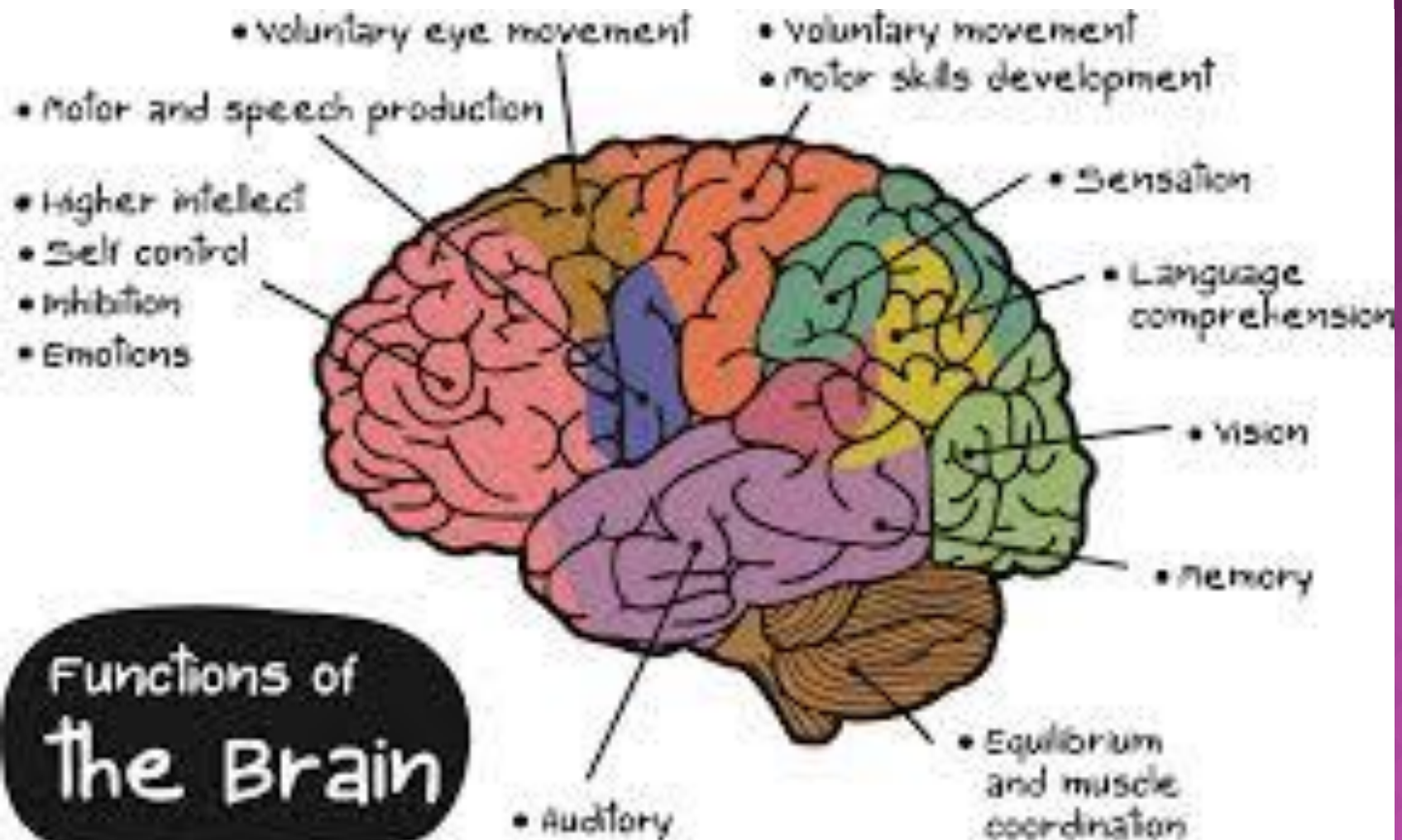
- Sensory /communication deficit
- Presents like autism

# SOCIAL EMOTIONAL COMMUNICATION



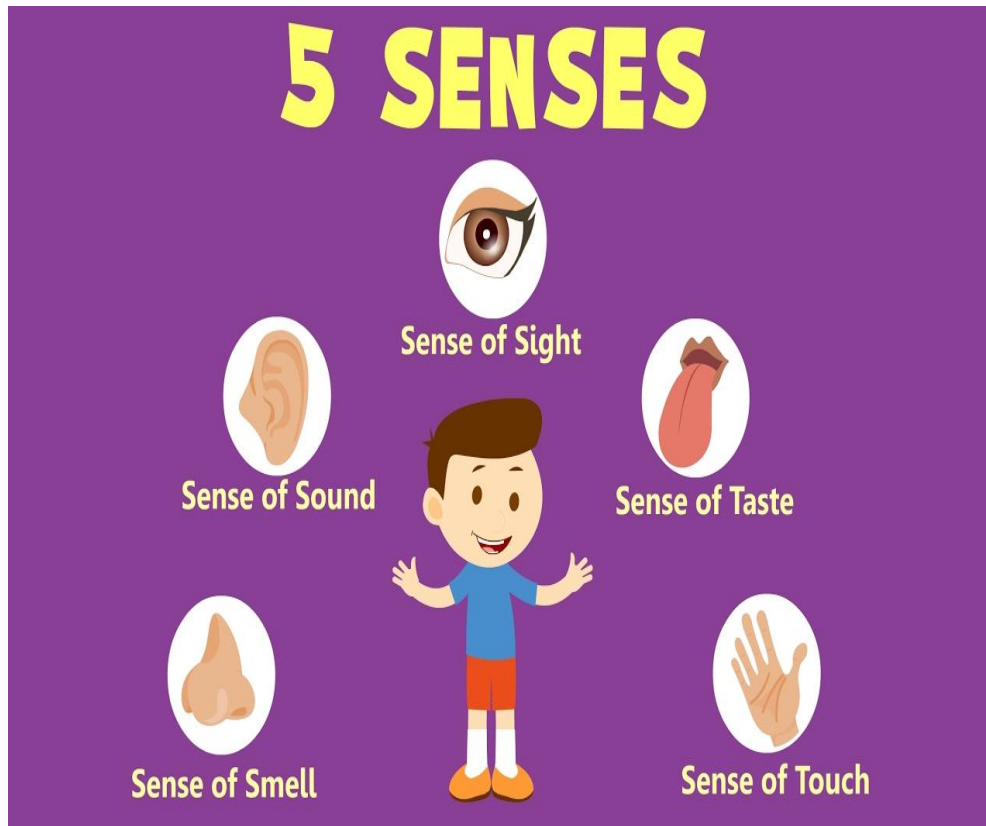
Minor software issues involve few fibres so needs special MRI like DTI or fMRI

# CONTROL CENTERS



# SENSING THE SENSES: 5 SENSES

- vision, hearing, touch/pain/temperature, taste, smell

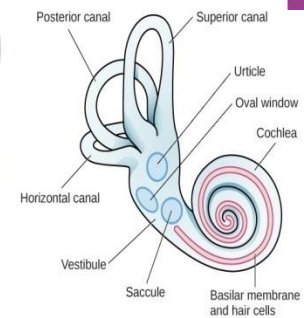
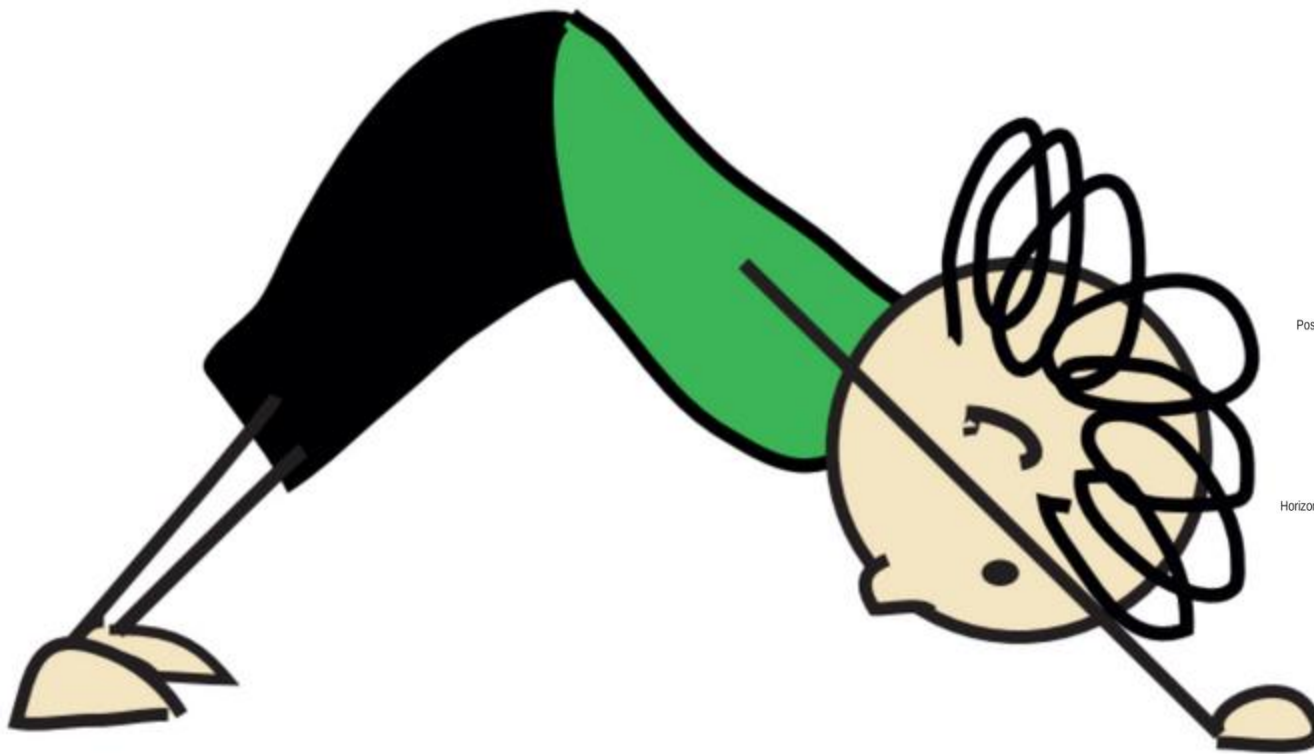


**Presents as  
hypo hyper  
or normal  
sensitivity  
to any sense  
often  
present but  
not must**



# TWO SPECIAL SENSES

- ◉ :vibration/ vestibular and proprioception/ balance





# TWO HIDDEN SENSES

- ◉ Sense of breathing > >> Repeated cough
- ◉ Sense of indigestion or gut movements >>> indigestion constipation

**ALL 9 SENSES, PRESENT AS LOW OR HIGH RESPONSE**  
LOW RESPONSE: IF CENTRAL PROCESSING AFFECTED  
HYPER RESPONSE IF PERIPHERAL INPUT PERCEPTION  
more AFFECTED

AND THERE IS 10<sup>TH</sup> SENSE, sense of cognition-  
recognition , if low kids have low IQ

BEING A SPECIAL / HYPER INTELLECTUAL , THOUGH  
RARE, was called Asperger or HF autism in old  
system

# ID

- ◉ 10% of ID have autism
- ◉ 38% and more of Autism have intellectual disability
- ◉ Lack of understanding of social and emotional inputs in Autism makes child “isolated”
- ◉ Often labelled as ID
- ◉ In isolation: child has deficit in understanding external stimuli [introvert] or internal stimuli [sensory issues]

# SOCIAL COMMUNICATION DEFICIT

- ◉ Imagine. At any age, for example say in College, if you are disconnected from social communication of people around for more than months.
- ◉ Either you develop complete isolation, start developing interest in objects and get involved or fascinated into your own imagination
- ◉ Or get agitated, restless, continuously run around, and if same continues over years your hit break or behave odd.

# IN AUTISM: CORE SYMPTOMS DSM 5 A

- ◉ Social and communication centers in brain and Sensory centers for different senses in brain, are damaged or underdeveloped due to genetic or other reasons
- ◉ This results in child losing interest/ or not developing interest in social communication, eye contact, response to commands, social initiation / reciprocation/ imaginary play & verbal and even nonverbal conversation and develops interests in objects. As people change, objects don't.





AS THE CORE SYMPTOMS IN  
DSM 5 CRITERIA FOR AUTISM  
ARE **SEQUENTIAL**, EXPLAINING  
THE PATHOPHYSIOLOGY OF  
SYMPTOMATOGENESIS.  
**DSM 5 IS THE CRITERIA.**

ASK FOR YOUR FREE COPY OF DSM 5 CRITERIA AND  
INCLIN DIAGNOSTIC TOOL .. WHATSAPP **9869405747**  
Or visit [www.pedneuro.in](http://www.pedneuro.in)

OLD ASSESSMENT TOOLS BASED ON DSM IV ARE  
STRONGLY DISCOURAGED.

# DSM 5 B

- ◉ With inability to communicate/ understand, the child develops
- ◉ Restricted interests
- ◉ Object fascinations
- ◉ Echolalia
- ◉ Repeated hand movements
- ◉ Fixed concepts/ ideas
- ◉ Hypo hyper sensory response
- ◉ **As a reflection of incomplete communications in brain, attempting to develop or cope up with some level of maturation of rest of the brain.**

# AN EXAMPLE

- ◉ As child hears some letters words sounds, he is not able to recognise but can only attempt to **copy** at his level best. In the same process he needs to **repeat** it 10000 or more times to associate the sound to something. If this phase of learning is not boosted by a goal directed plan, it stays for long.
- ◉ So most of the repeated behaviours / aggressions are either a part of SENSORY frustration, Cognitive incapacity, learning disability or tantrum/meltdown. Needs to be managed to make it effective.

# SEVERITY LEVELS OF AUTISM

- There is no more mild, moderate, severe. Mild word is often used to keep parents happy.





A VIDEO EXPLAINING COMPLETE DSM 5 FOR AUTISM  
CAN WHATSAPP TO YOU IF U TEXT TO 9869405747



**ITS MUST TO IDENTIFY AUTISM**

**ACCEPT AUTISM [HAVE HOPES]**

**BE WILLING TO CHANGE DIAGNOSIS**

**BUT DON'T GIVE UP,OR LET IT BE.**

NOW AS U KNOW HOW THE  
SYMPTOMS COME IN SEQUENCE, WE  
SHALL WORK TO MODIFY THEM IN  
SAME SEQUENCE.

# NO THERAPY TO BE DELAYED PENDING DIAGNOSIS OR CERTIFICATE

- ◉ Certificates don't give solution, it just helps us to have a paper to use concessions by PWD Act and Insurance schemes.
- ◉ Needs 3 yearly renewal till age 18 yr.
- ◉ Whatsapp me 9869405747 if u need copy of PWD act and its provisions.
- ◉ Parents group help share feelings, social venting out and finding a peer for socialisation. Learn from them. But remember all cases of autism are not same ot at same stage as level of affcetion and manifestation is likley to be different.

# COUNSELLING

- ◉ Is mainly for parents to cope up and have hopes
- ◉ Child can understand counselling only when child grows to that level of understanding
- ◉ Every parent ends up counselling others; so do therapists psychologist and doctors.
- ◉ Its more imp that parents spend more n more time with the child to understand the child and make the child understand them
- ◉ Being continuously on internet to search for info is less imp than being with child.
- ◉ More the understanding of the child, there will be response to Behavioural Therapies



# SO HOW IS DSM 5 THERAPUTICALLY USEFUL?

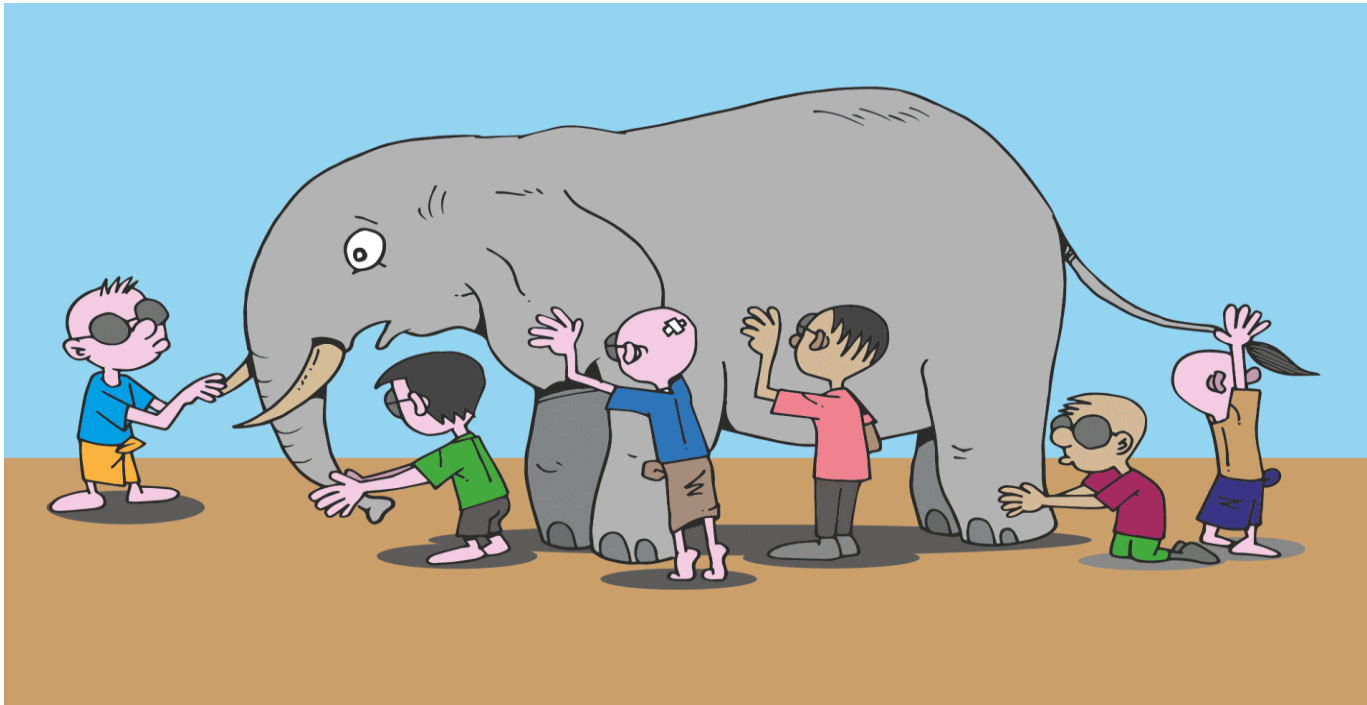
- ◉ Develop connections in brain in undeveloped areas, that will reflect in same externally
- ◉ **Synaptogenesis and pruning via medications and early interventions- OT ABA**
- ◉ Sensory modulation and integration
- ◉ OT ABA SpeechTherapy services for stepwise improvements
- ◉ Periodic assessment and goal settings
- ◉ IQ and tests for assessment of learning disability and certification

# SEQUENTIAL DEVELOPMENTS: CORE

- ◉ Some eye contact [communication]
- ◉ Response to commands [response]
- ◉ Receptive language- basic needs, later actions
- ◉ Reciprocation for basic needs, only 1 to 1
- ◉ Reciprocation for commands or actions
- ◉ Beginning of regulation/ sitting at one place, a must for learning
- ◉ Affection, emotions, non verbal communication
- ◉ Beginning of Vocalisation
- ◉ Change in fascination, repeatitive sounds, sensory issues and stereotypies or stimming

# SEQUENTIAL DEVELOPMENTS B

- ◉ How to improve processing and action - only by improving senses and frequency of input
- ◉ Every sense is used for cognition, that when processed or integrated together with information gives recognition



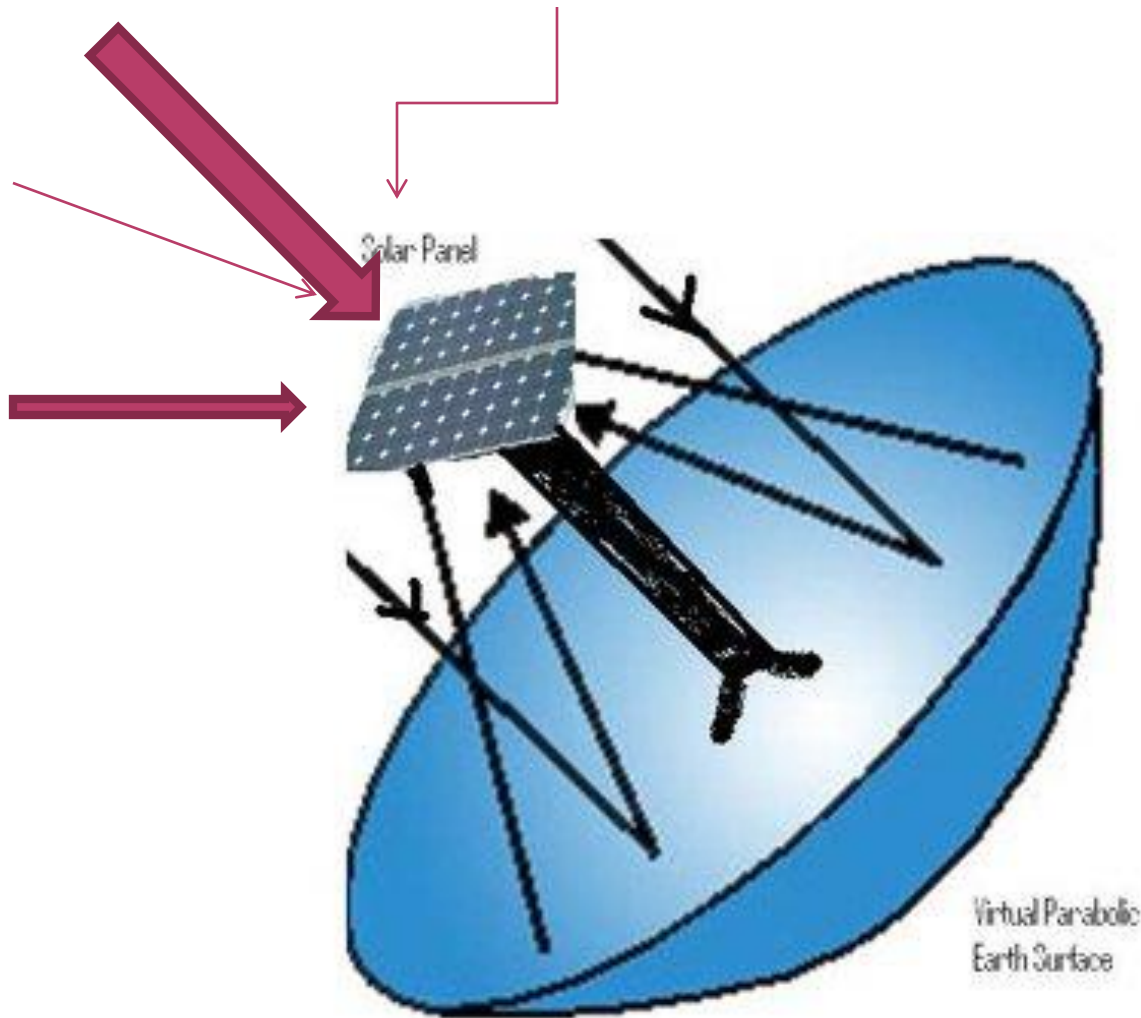
# THERAPY CANNOT BE RANDOM

- ◉ IT HAS TO BE STRUCTURED , TIME DISCIPLINED AND FREQUENT.
- ◉ PREFERABLY BY EXPERT, HOME THERAPY IS ENCOURAGED.
- ◉ HOME THERAPY AS ADDITIONAL, BETTER THAN NOTHING, DOESN'T MEAN EXPERT IS NOT NEEDED.
- ◉ FAMILY BASED THERAPY CANT BE A REPLACEMENT TO A TRAINED PROFESSIONAL WHO KNOWS RIGHT WRONG AND MEXT STEPS.

In some kids, doctors may suggest medicines to make child compliant for therapy. So that it wont go waste.



# SENSORY INTEGRATION



More strong ,  
More frequent,  
More persistent  
and more  
structured and  
planned the  
sensory input,  
faster will be the  
integration.

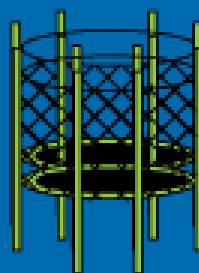
THIS IS THE  
SCIENCE OF  
CONSCIENCE.

# VESTIBULAR

The sense that detects movement through sensory receptors in the inner ear.



# Everyday Sensory Integration



Jump on the trampoline  
Run on the trampoline  
Roll on the trampoline  
Jump in a body sack



Carry the groceries in  
Put the groceries away  
Push the trolley  
Load the car  
Put items in the trolley

The whole activity of shopping has some great heavy work activities to help de-stress the body



Relax and unwind in a bath  
Add 1C epsom salts to ease stress



Use a straw when drinking  
It is a great for oral relaxation  
Wide or curly straws are better



Yoga stretches and relaxes muscles  
It helps focus breathing

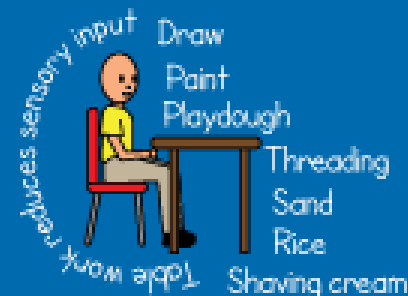


Table work provides sensory input  
Draw  
Paint  
Playdough  
Threading  
Sand  
Rice  
Shaving cream



Listening to music blocks external noise and reduces sensory input



Snuggle up in tight fitting sheets  
Use a weighted blanket  
Use calm colours in the bedroom

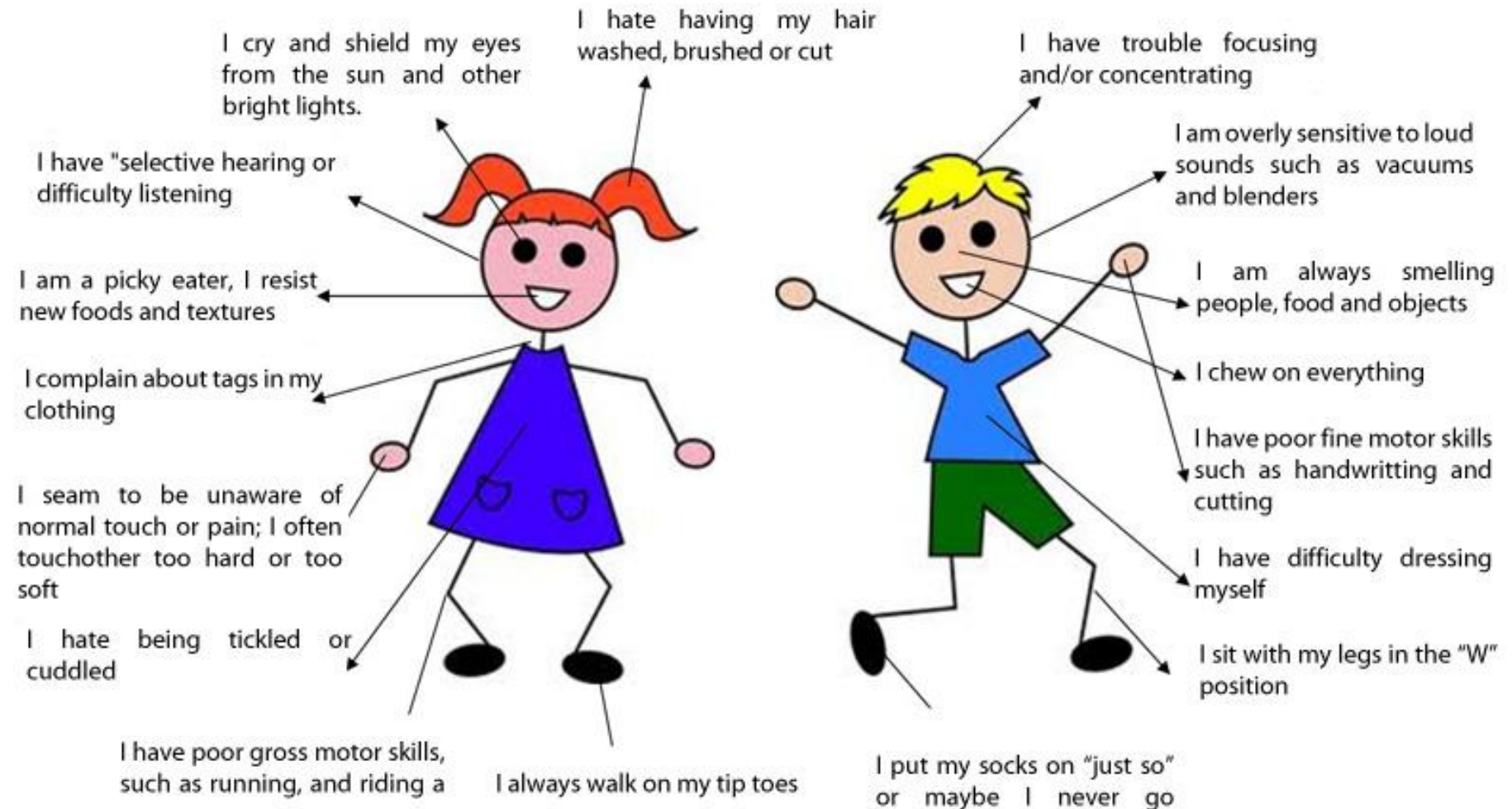


Run Outdoor play use the big muscles in your body  
Swing  
Walk  
Ride  
Scoot  
Skate



the little black duck  
autism communication  
and behaviour consultant  
[www.thelittleblackduck.com.au](http://www.thelittleblackduck.com.au)

## Signs of Sensory Processing Difficulties:





# VISUAL- ART THERAPY





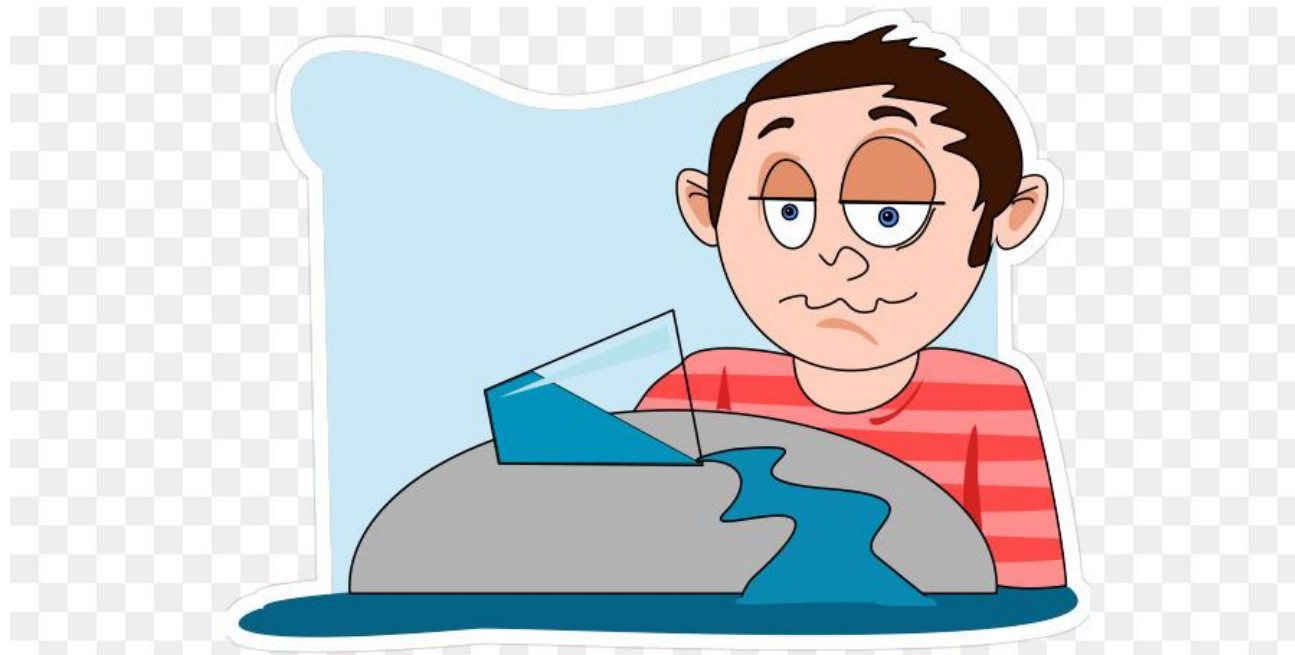
# VISUOSPATIAL



# ABA: TECHNIQUES OF LEARNING

- ◉ Positive Reinforcement
- ◉ Negative Reinforcement
- ◉ Prompting and Fading
- ◉ Task Analysis
- ◉ Generalization
- ◉ Behavior Contracts
- ◉ Video Modeling
- ◉ Picture Exchange Communications Teaching
- ◉ Errorless Teaching
- ◉ Peer-Mediated Social Skills Training

ONE MAY GIVE PLENTY OF INPUTS  
BUT IF CHILD IS NOT RECEPTIVE  
ITS WASTE.



**Ask you doctor to make the child receptive for therapy.**

# STAGES OF SPEECH DEVELOPMENT

Don't wait for red flag to match, if it's not like peers or normal development, consult neuro ped.

3 mo - social smile

6 month- babble

12 month- mama dada

18 months- 20-40 words

20 months - verbs

24 months or 2 year- 2 word sentences

3 year- 3 word sentences

4 yr- 4 word sentences, stories

**Any delay, don't sit quiet. Visit speech therapist.**

# HIGHER FUNCTIONS

- ◉ Right wrong
- ◉ Real unreal
- ◉ Imagination
- ◉ Imitation
- ◉ Abstract thoughts, thoughtfulness
- ◉ Conversation, stories
- ◉ Discussion
- ◉ Group behaviour
- ◉ Complex coordinated acts
- ◉ Sense of humor, sense of recognition
- ◉ Mathematics, complex maths



# HOW DO DRUGS AND NUTRIENTS HELP

- ◉ Random drugs random doses random nutrients are totally useless.
- ◉ Whatever is given should be aimed at developing synapses, to form new connections, usually a process of 1 to 10 months and develops faster if therapy continued alongwith.
- ◉ Eye contact and response to command are early sign of initiation.
- ◉ Medicines may be needed for regulation, reduce activities, stereotypies, fascinations, OCD and aggression.
- ◉ Nutrients help as raw material for synapses and forming newer connections.

# BRIDGE OF A NEURON IS FROM BOTH SIDES



Enable the Brain

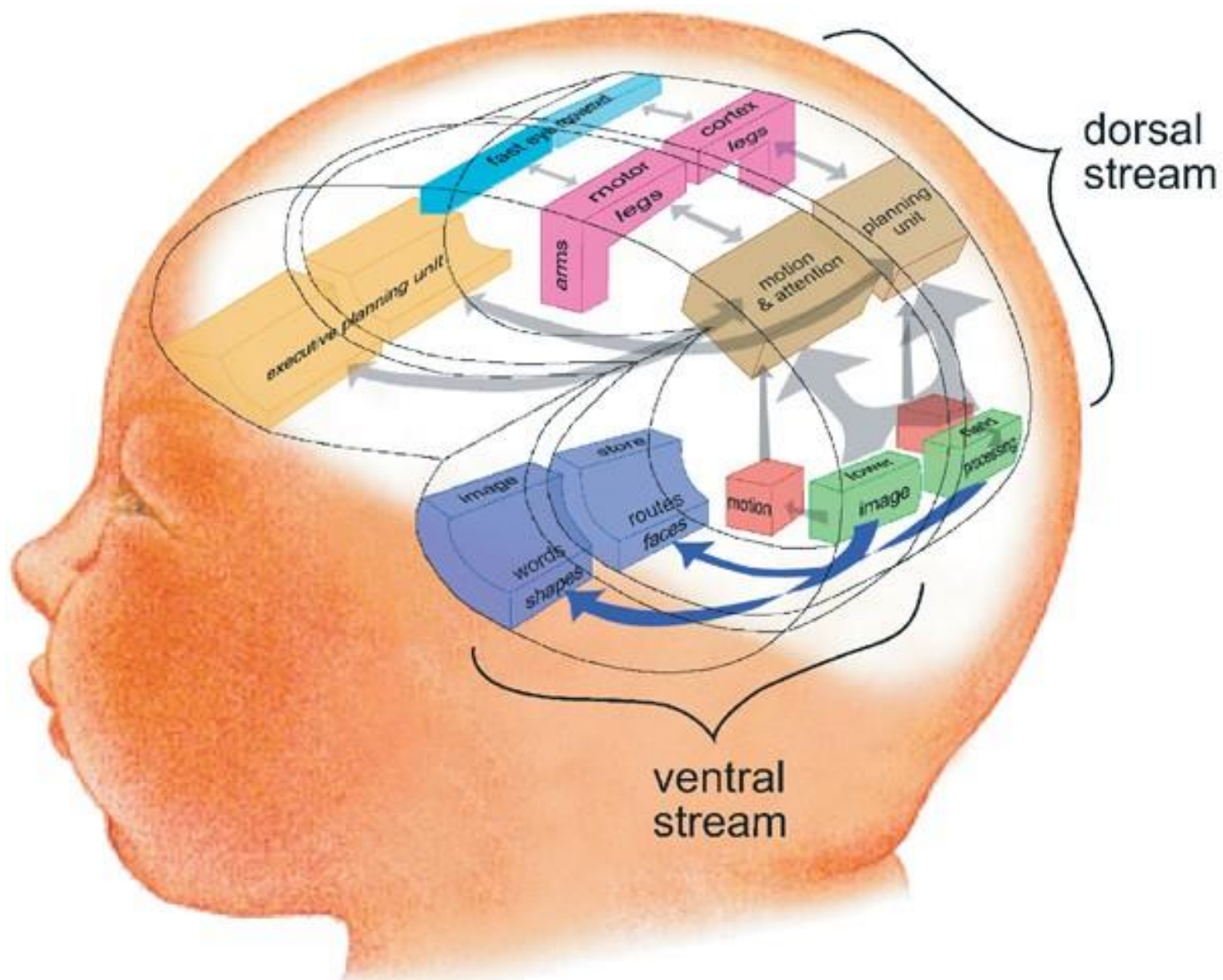
Add Sensory & Therapy Inputs

By Frits Ahlefeldt

BUILDING BRIDGES BETWEEN NEURONS  
HELPS US REDUCE THE SENSORY TRAFFIC  
JAM, BRIDGES HELP BYPASS THE CHAOS  
TO A GREAT EXTENT.







Internal communication of brain for coordinating sense and action

SYNAPSE FORMING MOLECULES  
WILL BE LIKE MAGIC@



# TO BUILD SUCH BRIDGES WE NEED LOTS OF RAW MATERIAL

- ◉ ITS NOT A NUTRITIONAL DEFICIENCY
- ◉ ITS ABOUT NUTRITIONAL NEED FOR NEWLY FORMING NEURON
- ◉ AND HENCE THE NEURONAL NUTRITIONAL COCKTAIL TO NOURISH NEW SYNAPSES
- ◉ INCLUDE MANY NUTRIENTS WHICH MAKE PART OF A NERVE STRUCTURE, FROM AMINO ACIDS TO FATTY ACIDS. CALCIUM TO VIT B
- ◉ A SINGLE IN SMALL DOSE IS NEVER ENOUGH
- ◉ MOST IMP IF ITS SCIENCE IS NOT UNDERSTOOD, ITS WASTE.

# DIET AND AUTISM



# DIET AND AUTISM

- ◉ NEVER TRY TO TREAT AUTISM WITH SPECIAL DIET PLANS, DIET WILL NEVER GIVE THE NUTRIENTS FOR NEURONS IN ENOUGH DOSES TO WORK AS MEDICINE. U NEED CONCENTRATED NUTRIENTS.
- ◉ WHAT TO GIVE IN AUTISM IS NOT IMP BUT WHAT NOT TO GIVE IS.
- ◉ SUGAR IS NEVER HARMFUL FOR AUTISM, NOR GLUTEN AS CHURNED SINCE DECADES.
- ◉ ITS NOT THE GUT INFLAMMATION, BUT THE SENSE OF INDIGESTION THAT DECIDES AGGRESSION

WHAT TO STOP IS MILK AND HARD FOODS THAT CONSTIPATE AND GIVE SENSE OF INDIGESTION.

# NEUROPLASTICITY HAS DEAD LINE

- ◉ If not tackled in time, it has potential for certifiable disability, dependency, learning disability, special schooling and intellectual disability.
- ◉ Early intervention is key, better late than never.
- ◉ Never give up.
- ◉ Remember parents are never at fault, they just are not aware of problem and its seriousness.

# NO CHILD IS HOPELESS

- ◉ Every child has potential to improve, at every age and stage beyond current capacity to get closer to main stream.
- ◉ Sounds impossible to those who have parented an ASD child for 10 years... but if not now, never.
- ◉ Science is changing, so did autism, from its definition to management.
- ◉ Always There is something newer you have not tried. Be with experts, don't be your own Dr.



# KEY MESSAGES

- ◉ Accept the possibility, that your child can do better than what is right now
- ◉ Do not neglect multidisciplinary approach, but leave it for your neuro pediatrician to decide.
- ◉ No change in 3 months, don't sit quiet, u need a change of plan / expert.
- ◉ If parents' and child's quality of life is not comfortable, experts / decision makers need a second thought... Change !!
- ◉ Holistic approach with all specialists as needed.
- ◉ Immediate goal setting is key to give target to experts. Continue with what works visibly in 3 months.

# GIVE UP THE NEGATIVITY



IMPROVE QUALITY OF LIFE OF PARENTS AND KIDS TO FULLEST.  
NOTHING BEYOND PARENTS QUALITY OF LIFE.

# PERSISTENCE PAYS



**Self directed  
home therapy**

**But there is always a better way to move the stone.. Use a stick.**

YOU CANT JUST GO ON WALKING..  
WHEN YOU ARE DISABLED.



**Therapists will get you on track.@**

# BUT HOW ABOUT GETTING IN A TRAIN.. IF NOT PLANE..



**Structured and disciplined....**



THERE IS ALWAYS A .....



To get closer to main stream.....

# THANK YOU

- ◉ Dr Kondekar
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