

# Modern day Autism in human society.

20200443 Dong-Geon Lee  
20200821 Khongor Damdinbayar



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# 1. Intro

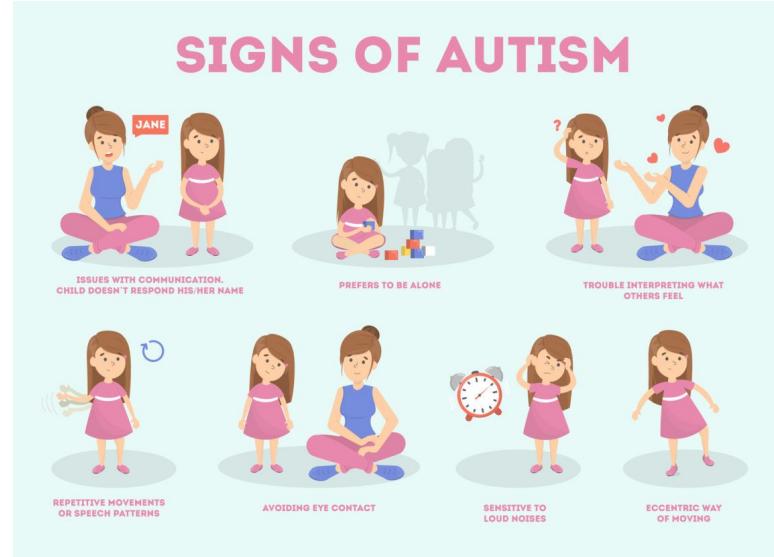


# 1. Intro



## 2. Sociological Aspects on ASD:Symptom

- Def-Neurological & Developmental disorder
- Symptoms
  - a serious impediment to language development and communication.
  - repetitive and homogeneous behavior
  - disability of interpersonal and social development



# 3. Scientific Aspects on ASD:Evidence

1. More than half of autistic children show brain waves abnormalities
2. Physiological awakening mechanisms are different
3. In identical twins, both autistic or autistic siblings show autism more often than ordinary children.

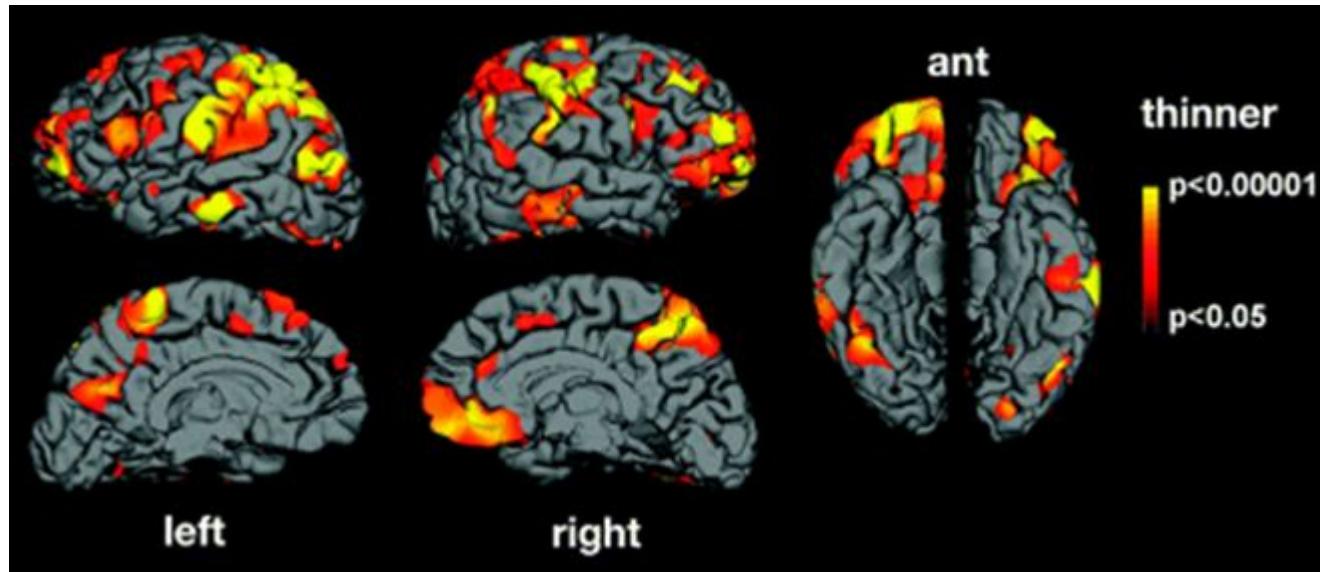
## What causes autism?

There is no known single cause of autism, but host of factors are thought to contribute to it. *They include;*

-  Abnormalities in the brain structure or function.
-  Heredity (Autism may have a genetic component)
-  Certain conditions, including Fragile X Syndrome, tuberous sclerosis.
-  Environmental factors, such as exposure to toxins like mercury.

# 3. Scientific Aspects on ASD:Neuroscopic Approach

## Difference in cerebral cortex thickness

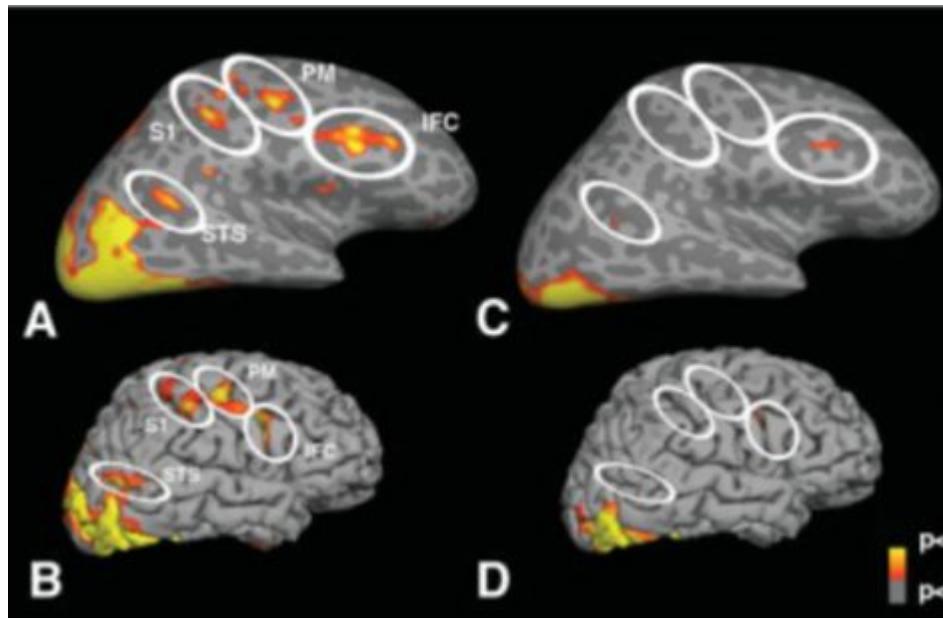


This area contributes to the

1. Creation of facial expression cognition,
2. Imitation
3. Social cognition.

# 3. Scientific Aspects on ASD:Neuroscopic Approach

## Difference in Emotional condition



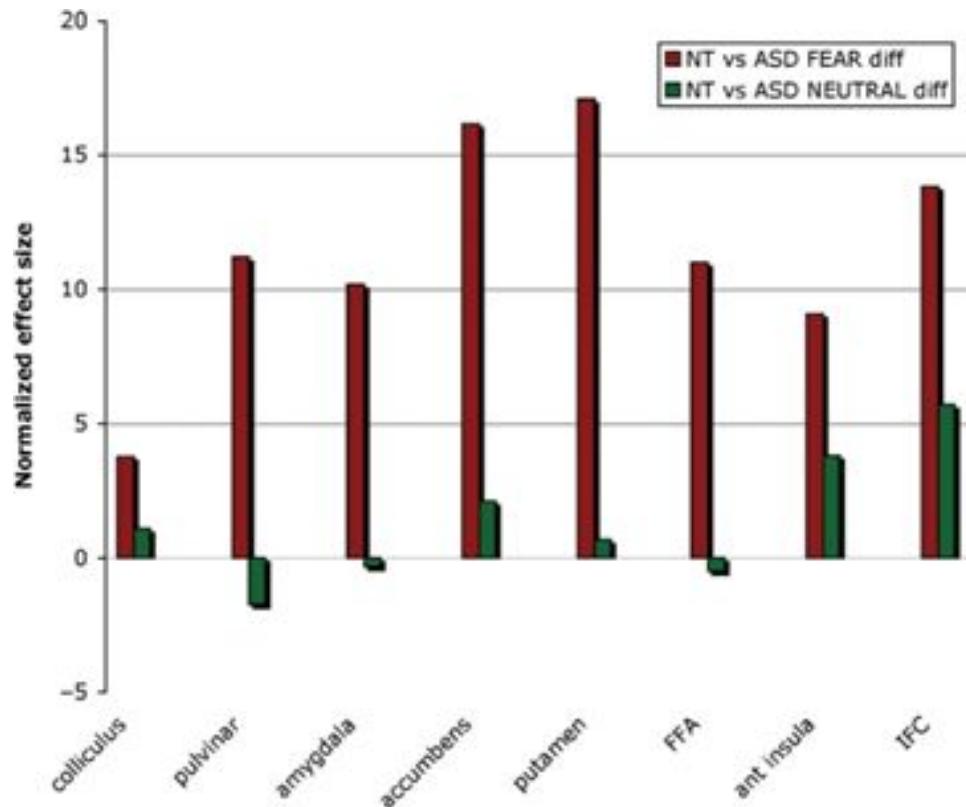
A&B:

several parts related to facial recognition are observed to be activated

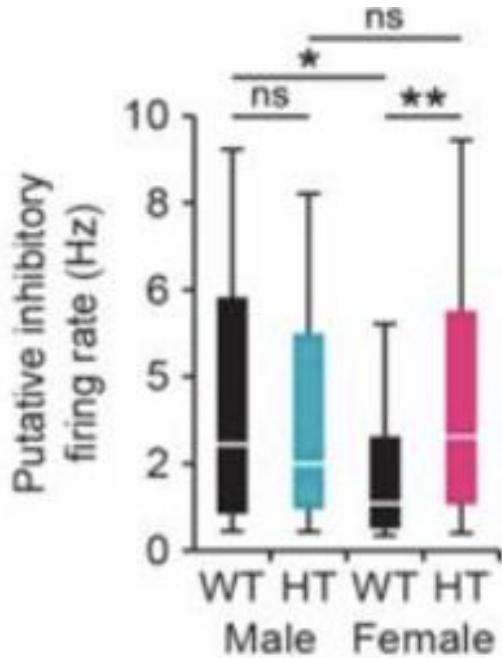
C&D:

observed to have lost several areas of activity compared to normal people.

### 3. Scientific Aspects on ASD:Neuroscopic Approach



### 3. Scientific Aspects on ASD: Male vs Female



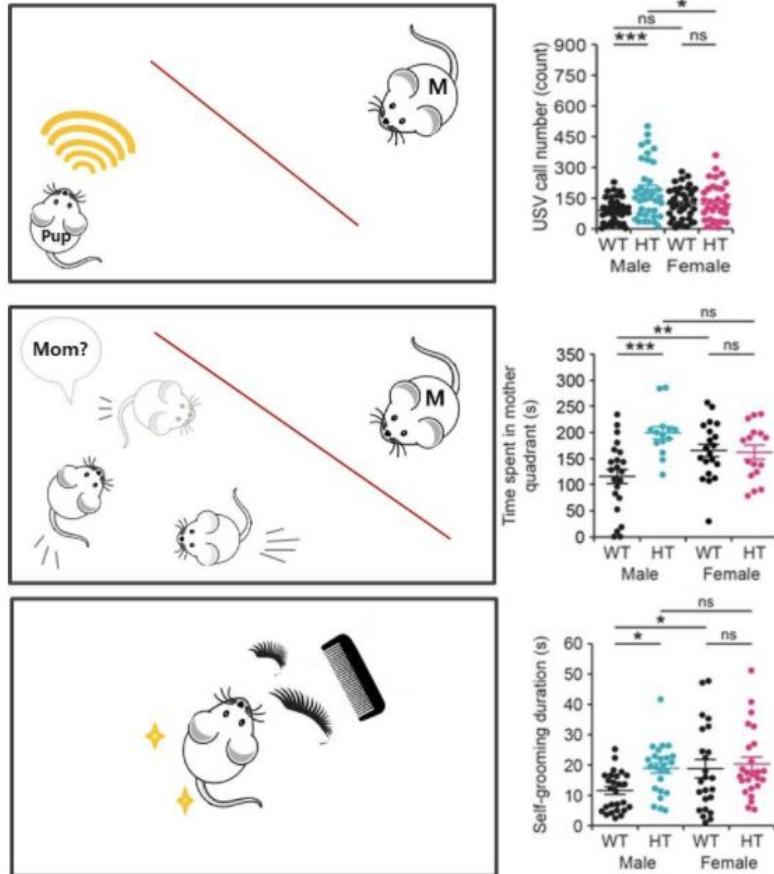
Female protective effect:  
Shows more effectiveness against autism

Frequency: Female > Male

Activation of Excitatory Neurons:

Male > Female

# 3. Scientific Aspects on ASD: Male vs Female



Behavior Analysis Experiment

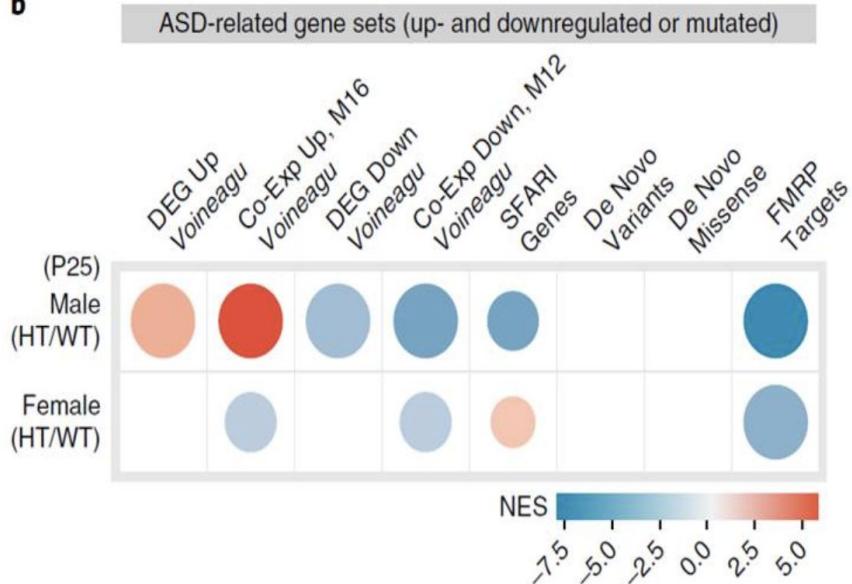
Result:

Male mice showed more anxiety

# 3. Scientific Aspects on ASD: Male vs Female

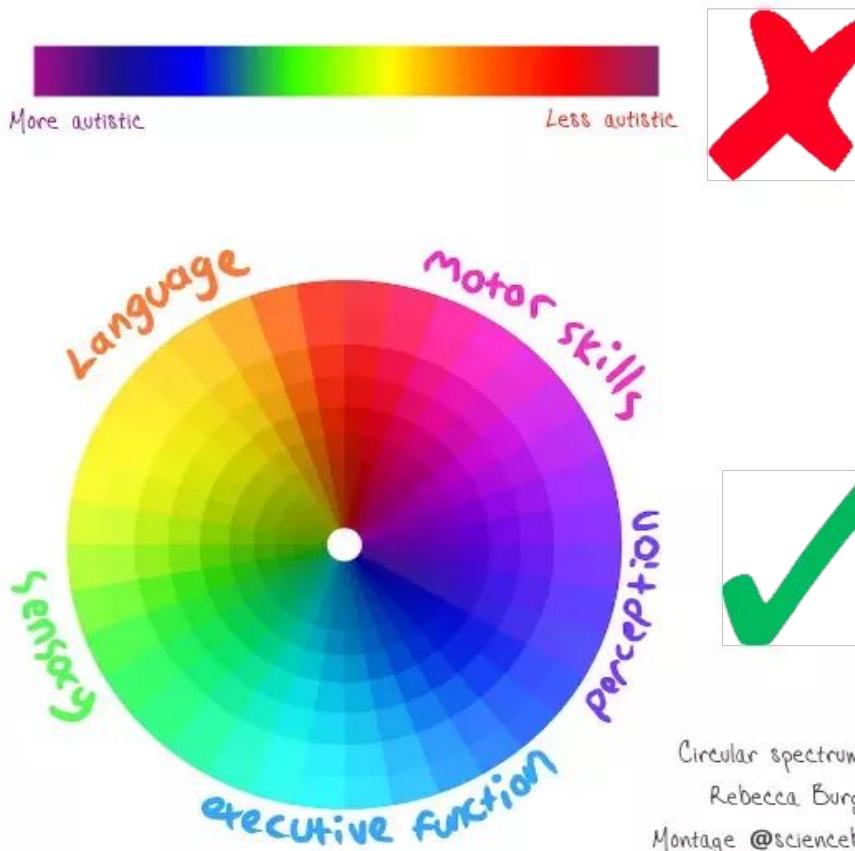
## Gene Comparison analysis

b



# 4. Different diagnostics of autism

What does the autism spectrum look like?



## What should we know about the Autism Spectrum Disorder?

- People with autism may share common symptoms but they're still not the same.
- Since autism isn't same for everyone, we cannot directly compare individuals.
- Each individual with ASD has their own unusual characteristics and each has their own hardships.



# Autism Spectrum Disorder

Autistic disorder



Pervasive Developmental  
Disorder - Not Otherwise  
Specified (PDD-NOS)

Asperger's Syndrome (SD)

Autistic disorder → The classical autism that people imagine when they hear the word “autism”

Common characteristics	
Social and communication challenges	Very common
Echolalia	Very common
Unusual, repetitive, (aggressive) behaviors	Very common
Unusual Interests	Very common
Physical clumsiness	Very Common (depends on type)
Sensory response problem	Very Common (depends on type)
Intellectual disability	Very Common (Can vary from very low to slightly below normal)

#### MEASURED INTELLIGENCE

Intellectual disability ← → Gifted

#### SOCIAL INTERACTION

(Making eye contact, enjoying interaction with others, etc.)

Not interested in others ← → A variety of friendships

#### COMMUNICATION

(Using words correctly to communicate)

Nonverbal ← → Verbal

#### BEHAVIORS

(Repetitive behaviors, unusual behaviors such as hand flapping, etc.)

Intense ← → Mild

#### SENSORY

(Response to touch, smell, sound, taste, and feel)

Pain ← → Sounds  
Not very sensitive ← → Very sensitive

#### MOTOR

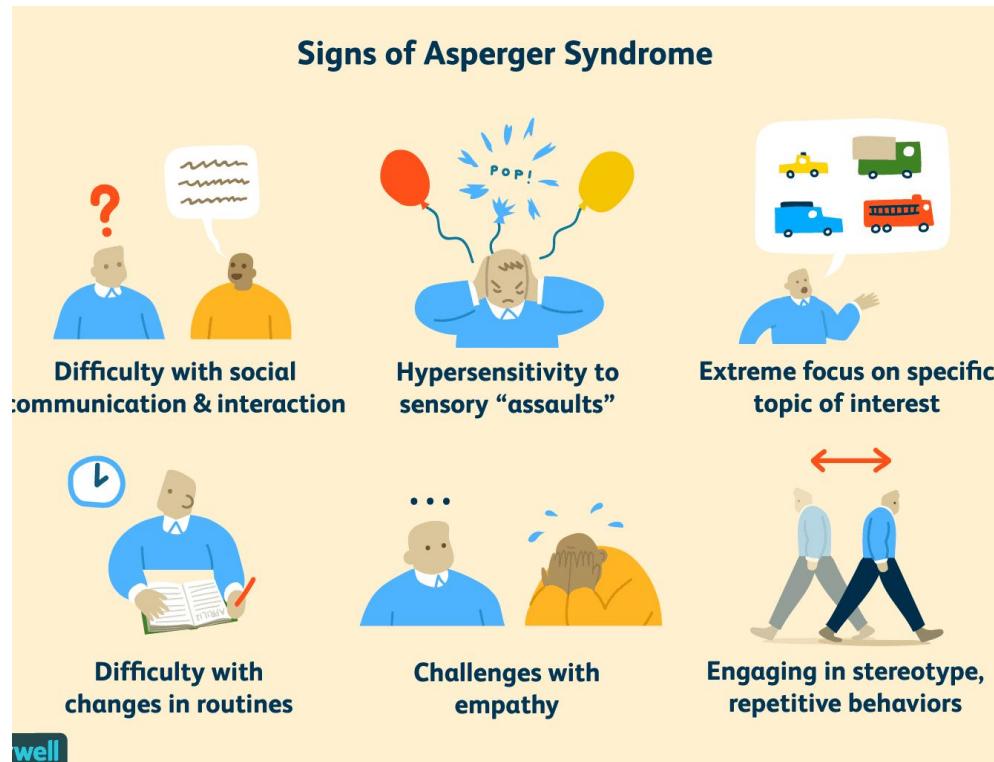
(Gross motor, such as walking)

(Fine motor, such as using fingers to grasp a small item)

Fine ← → Gross  
Uncoordinated ← → Coordinated

# Asperger's syndrome - The high-functioning end of the ASD

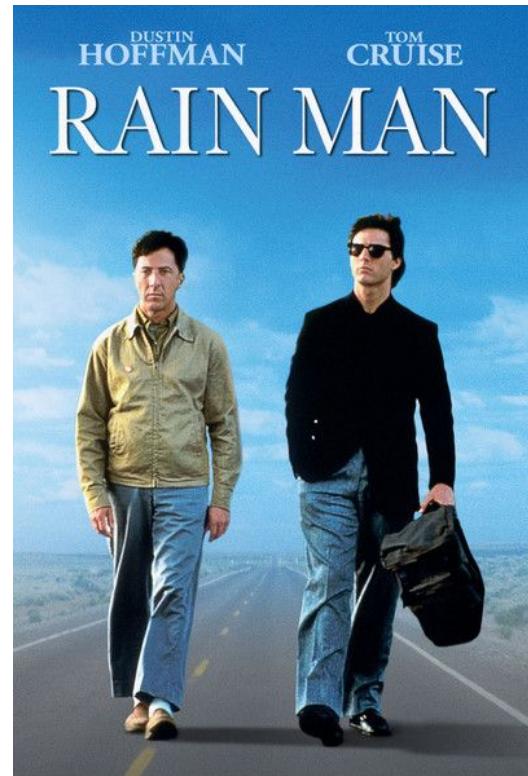
- Average to high intelligence
- Difficulty with social interaction; social anxiety
- Hypersensitivity to sensory “assaults”
- Difficulty with changes in routine
- Specialized interests and extreme focus on them
- Are detail oriented and have good memory, especially for facts in their area of interest
- Engage in stereotypical repetitive behaviors.
- Physical clumsiness



# An interesting facts about the Asperger's

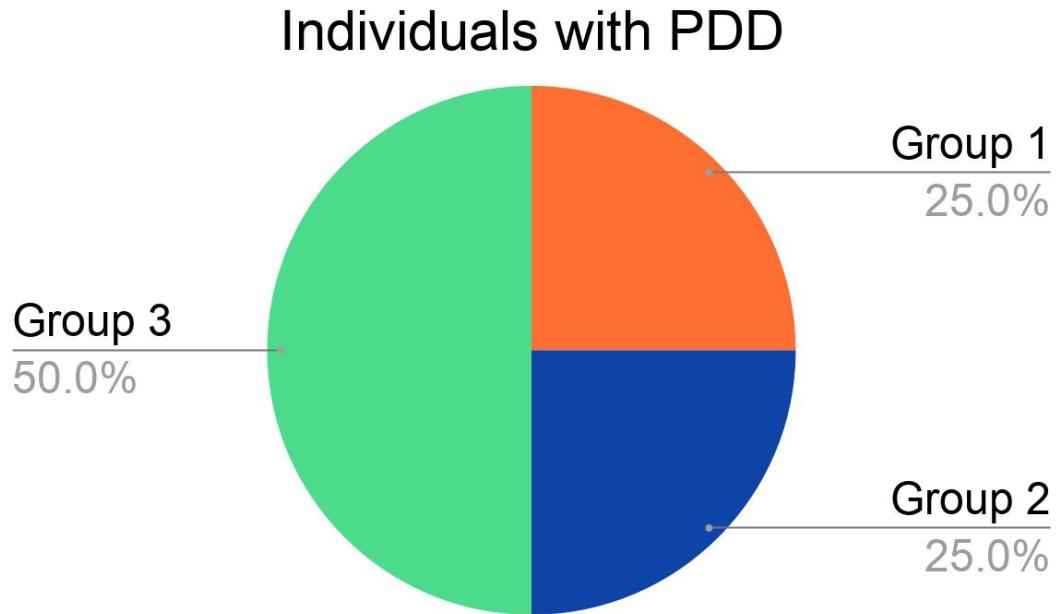
The disorder is sometimes nicknamed "geek syndrome" or "little professor syndrome."

Approximately 10% of people with ASD have special "savant" skills, such as Dustin Hoffman portrayed in the film "Rain Man".



# Pervasive Developmental Disorder-Not otherwise Specified (PDD-NOS)

1. Group 1 (25%) - the high functioning group
2. Group 2 (25%) - some but not all symptoms resemble autistic disorder.
3. Group 3 (50%) - meet all criteria for AD, except repetitive and stereotypical behaviors are mild.



## 5. Treatments of autism

# Treatments of autism

1. There is no one standard treatment for autism.
2. ASD is diagnosed based on the presence of multiple symptoms.
3. Scientists agree that early interventions can make significant differences.
4. Effective programs focus on developing communication, social and cognitive skills.
5. Currently there are no approved drugs that target core features

## Strategies for Coping with Autism



Look for support groups and credible sources of health education



Dietary changes, like gluten- and dairy-free guidelines



Behavioral treatments, like occupational therapy and relationship development intervention



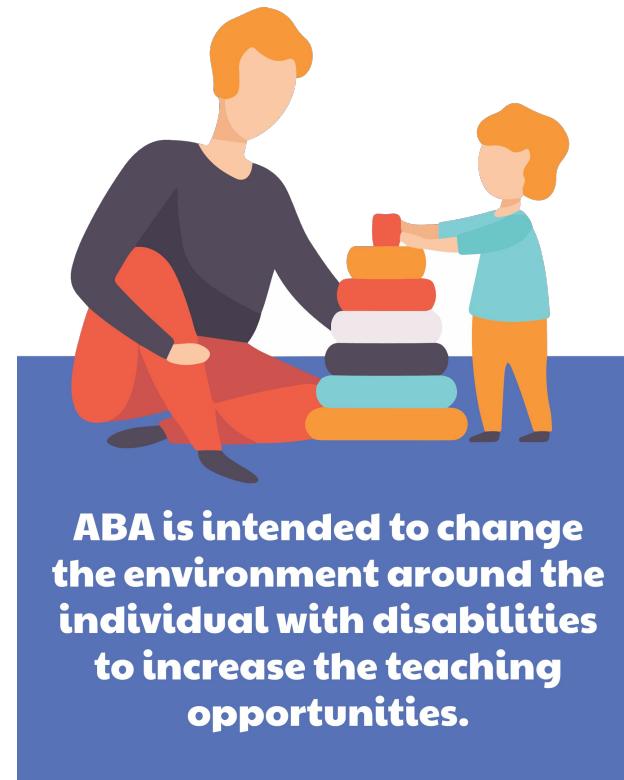
When in doubt, consult a doctor

# Treatments of autism

Therapies	Medications
Applied Behavior Analysis (ABA)	Stimulants
Speech Therapy	Anticonvulsants
Occupational Therapy	Anti-anxiety medications
Physical Therapy	SSRIs
Other Specialized Therapies	Psychoactive or antipsychotic medications

# Treatments of autism

- **Applied Behavior Analysis (ABA)** is a therapy based on the science of learning and behavior.
- The goal is to increase helpful behaviors and decrease behaviors that are harmful or affect learning.
- **ABA** therapies:
  1. Increase language and communication skills
  2. Increase attention, focus, social skills, memory, and focus
  3. Decrease problem behaviors.



**ABA is intended to change the environment around the individual with disabilities to increase the teaching opportunities.**

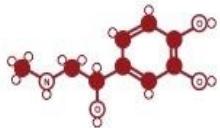
# Treatments of autism

- **Speech therapy:**
  - For children with **echolalia**.
  - Speech therapy with a licensed speech-language pathologist helps to improve a person's communication skills.
- **Occupational Therapy (OT):**
  - often used as a treatment for the sensory integration issues associated with ASDs
  - skills that involve fine-motor movements, such as dressing, using utensils, cutting with scissors, and writing
- **Physical Therapy (PT):**
  - Physical therapy is used to improve gross motor skills and handle sensory integration issues, particularly those involving the individual's ability to feel and be aware of his body in space.

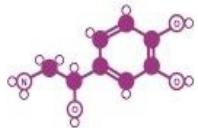


# Treatments of autism

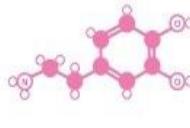
**ADRENALINE**



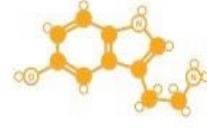
**NORADRENALINE**



**DOPAMINE**



**SEROTONIN**



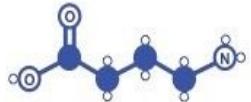
Fight or flight  
neurotransmitter

Concentration  
neurotransmitter

Pleasure  
neurotransmitter

Mood  
neurotransmitter

**GABA**



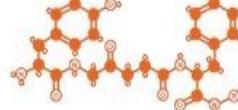
**ACETYLCHOLINE**



**GLUTAMATE**



**ENDORPHINS**

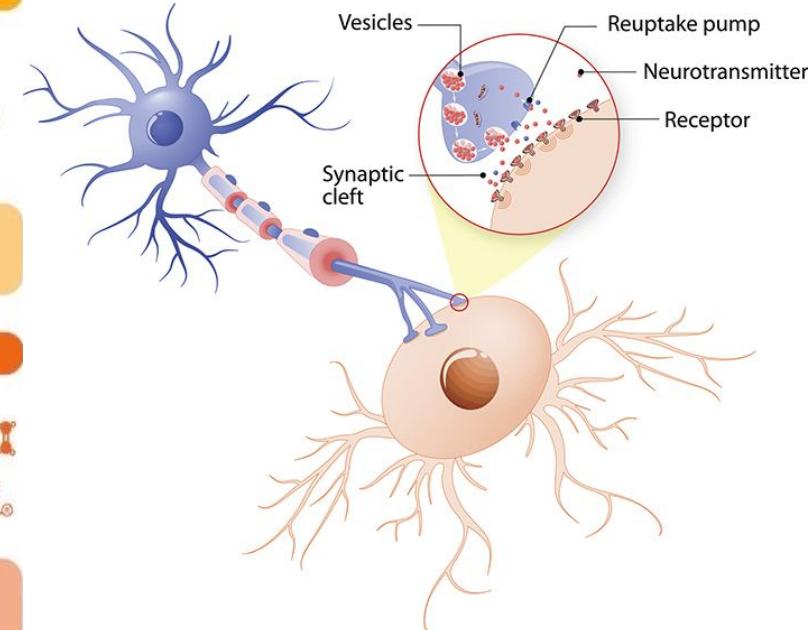


Calming  
neurotransmitter

Learning  
neurotransmitter

Memory  
neurotransmitter

Euphoria  
neurotransmitter



# Treatments of autism

## What are stimulants?

Stimulants are drugs that temporarily increase mental or physical function or both (Ex: dexamphetamine and methylphenidate) These are also used for people with ADHD.

## What are stimulants used for?

Stimulants are used to improve difficulties with attention, impulsivity and hyperactivity.

## What is the idea behind stimulants?

Stimulant medications increase levels of a brain chemical called dopamine.



dopamine levels can help control impulsivity, hyperactivity and inattention.

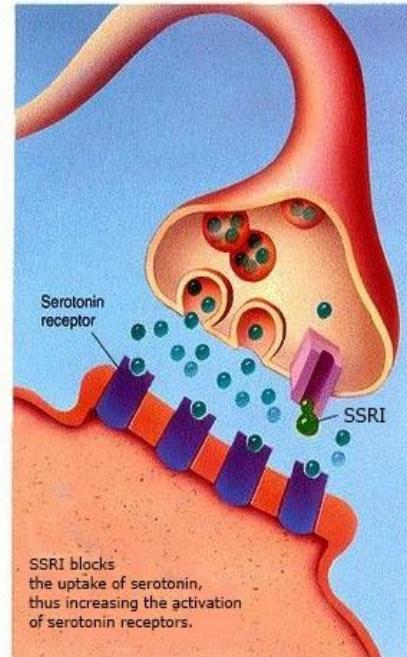
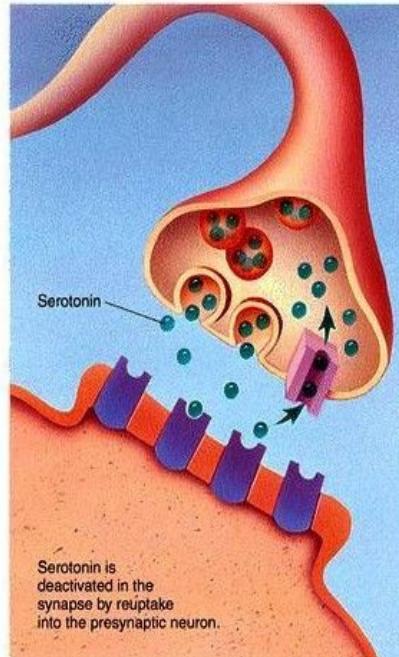
**Effects:** enhanced alertness, wakefulness and energy. etc.

**Warnings:** This therapy requires careful monitoring of effectiveness and side effects. In some people, it can increase repetitive movements, decrease appetite and disturb sleep.



# Treatments of autism

Type	Might help by
Anticonvulsants	reducing seizures and seizure disorders
Anti-anxiety medications	relieving anxiety and panic disorders
Selective Serotonin reuptake Inhibitors	reducing frequency and intensity of repetitive behaviors; decreasing anxiety, irritability, tantrums, and aggressive behavior; and improving eye contact.
Psychoactive or Antipsychotic Medications	decreasing hyperactivity, reducing stereotyped behaviors, and minimizing withdrawal and aggression among people with autism.



The first and best step is to consult a specialist as early as possible...

# References

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Thank you for attention!