
بسم الله الرحمن الرحیم

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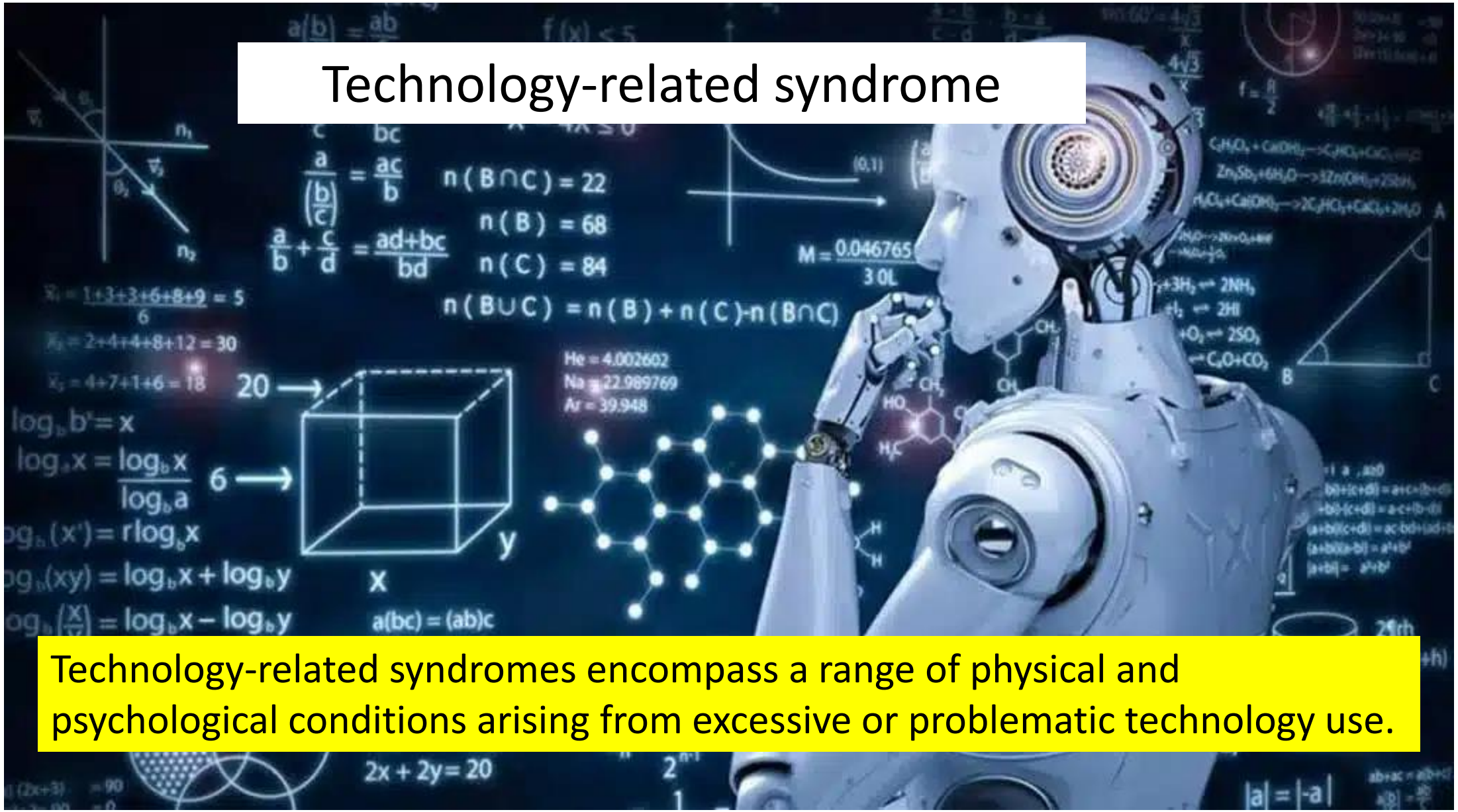
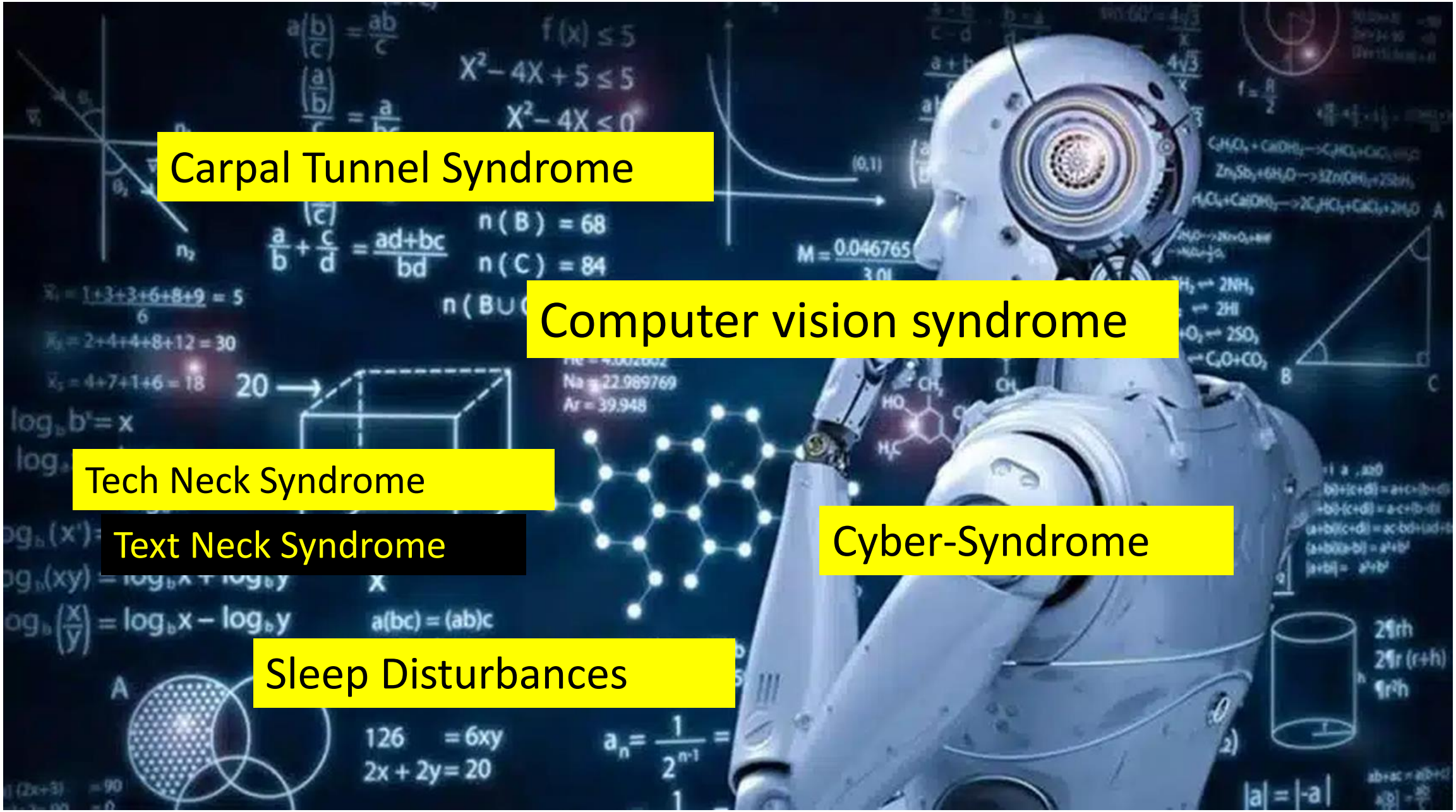
Technology-related syndrome



Technology-related syndromes encompass a range of physical and psychological conditions arising from excessive or problematic technology use.


Carpal Tunnel Syndrome
Computer vision syndrome
Tech Neck Syndrome
Text Neck Syndrome
Cyber-Syndrome
Sleep Disturbances

Technology-related behaviors & Autistic like Syndrome

A New Threat to Toddlers

Technology-Related Behaviors

What is Technology Addiction?

What is Technology Addiction?

- Excessive and compulsive use of the internet **or** online activities can lead to negative consequences in various aspects of an individual's life.

- Technology addiction can potentially involve various forms of online activity including social media, gaming, gambling, problematic use of online pornography, and others.

Online gambling

- **Online gambling** is another area of growing concern. A wide variety of games and sports betting apps are increasingly readily available. Gambling functions are also incorporated into other online activities such as within online gaming activities.
- While gambling disorder is not new, the increased availability and easy access via phone or computer are raising new concerns.

Social media addiction

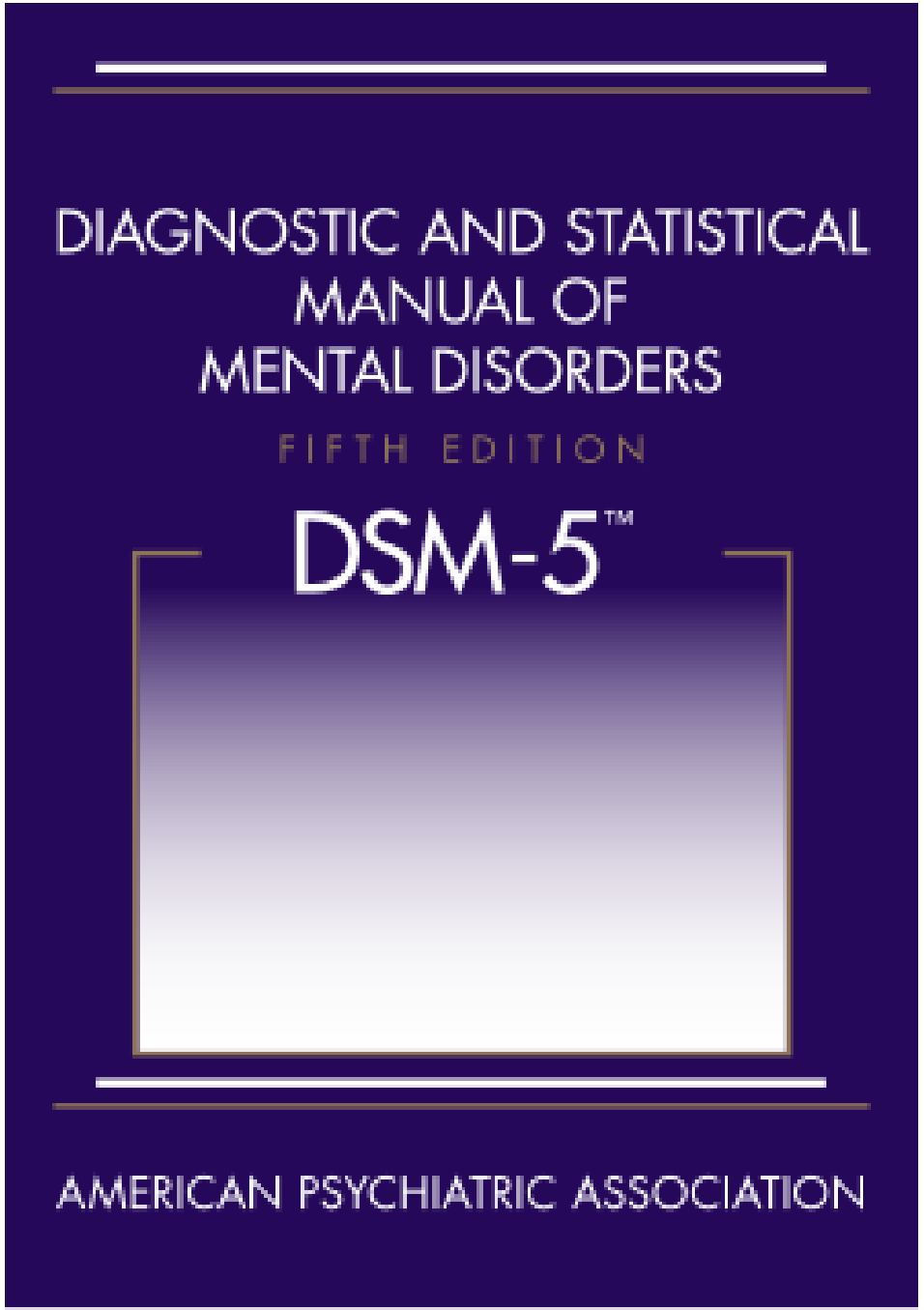
- involves problematic and compulsive use of social media; an obsessive need to check and update social media platforms, often resulting in problems in functioning and disrupted real-world relationships.

Online shopping or auction addiction

- Online shopping or auction addiction involves an impulse, drive, or temptation to shop online and repeatedly acting on the impulse in a way that is harmful and leads to disruption in various areas of a person’s life.

Problematic use of online pornography

- **Problematic use of online pornography** involves compulsive use of online sexual content, impacting personal relationships and mental well-being.



Internet Addiction

Internet gaming disorder

- **Internet gaming disorder** refers to excessive use of online or video games, leading to neglect of responsibilities and physical health.

Internet gaming disorder

1. Preoccupation with gaming
2. Withdrawal symptoms when gaming is taken away or not possible (sadness, anxiety, irritability)
3. Tolerance, the need to spend more time gaming to satisfy the urge
4. Inability to reduce playing, unsuccessful attempts to quit gaming
5. Giving up other activities, loss of interest in previously enjoyed activities due to gaming
6. Continuing to game despite problems
7. Deceiving family members or others about the amount of time spent on gaming
8. The use of gaming to relieve negative moods, such as guilt or hopelessness
9. Risk, having jeopardized or lost a job or relationship due to gaming

Internet gaming disorder

- The **American Psychiatric Association** -(2013) included IGD in the appendix of the DSM-5 as a potential diagnosis. Referring to the diagnostic criteria for substance use disorders, the DSM-5 drafted diagnostic criteria for IGD and indicated that further research is warranted.

پیمایش تجارب دیجیتال کودکان و نوجوانان توسط پژوهشکدهٔ فرهنگ، هنر و ارتباطات در سال ۱۴۰۰

پژوهشگاه فضای مجازی

پژوهشگاه فضای مجازی در سال ۱۳۹۱ با هدف پاسخگویی به نیازهای پژوهشی شورای عالی و مرکز ملی فضای مجازی و هدایت و توسعه ظرفیت‌های پژوهشی در راستای اولویت‌های فضای مجازی کشور تأسیس شد. پژوهشگاه فضای مجازی یکی از معدود مراکزی است که ارتباط مستقیم میان پژوهشگران و نخبگان علمی فضای مجازی کشور و سیاست‌گذاران، قانون‌گذاران و مجریان حاکمیتی را ممکن ساخته است. از دیگر اهداف این نهاد پژوهشی می‌توان اولویت‌سنجی خلأها و نیازهای پژوهشی کشور، حمایت از ایده‌های پژوهشی و محصولات پژوهشگران و شرکت‌های دانش‌بنیان فضای مجازی کشور نام برد.

پیوندها

- پایگاه اطلاع رسانی دفتر مقام معظم رهبری
- مرکز ملی فضای مجازی
- مرکز تحقیقات هوش مصنوعی دانشگاه صنعتی شریف
- پژوهشکده مطالعات فناوری
- پایگاه اطلاع‌رسانی ریاست جمهوری
- پژوهشگاه فضای مجازی دانشگاه شهید بهشتی
- پژوهشکده فضای مجازیژوهشگاه ارتباطات و فناوری اطلاعات
- گروه علمی-تحلیلی طیف

خبرنامه

efatpana@gmail.com

ثبت

شبکه‌های اجتماعی

پیمایش تجارب دیجیتال کودکان و نوجوانان توسط پژوهشکدهٔ فرهنگ، هنر و ارتباطات در سال ۱۴۰۰

- **سن شروع استفاده از اینترنت در بین کودکان و نوجوانان ایرانی ؟**

- در بین ۶۰ درصد از کودکان و نوجوانان، یعنی اکثریت آنان، **سن ۱۰ سالگی و کمتر** از آن اولین زمان استفادهٔ آنان از اینترنت بوده است.

پیمایش تجارب دیجیتال کودکان و نوجوانان توسط پژوهشکدهٔ فرهنگ، هنر و ارتباطات در سال ۱۴۰۰

- **میزان استفاده از اینترنت در بین کودکان و نوجوانان ایرانی؟**

- آمارها نشان داد که ۱۹/۷ درصد از دخترها، ۲۴/۱ درصد از نوجوانان و ۱۸/۱ درصد از کودکان و نوجوانانِ ساکن در مناطق شهری روزانه **حدود ۷ ساعت و بیشتر** از اینترنت استفاده می‌کنند

پیمایش تجارب دیجیتال کودکان و نوجوانان توسط پژوهشکدهٔ فرهنگ، هنر و ارتباطات در سال ۱۴۰۰

- **میزان استفادهٔ مشکل‌زا از اینترنت ؟**

- ۳۱/۹ درصد از کودکان و نوجوانان کاربر اینترنت خیلی سعی کرده‌اند از مدت زمان استفادهٔ خود از اینترنت کم کنند، اما نتوانسته‌اند.

- ۳۰/۳ درصد فکر می‌کنند به‌خاطر زمانی که صرف اینترنت می‌کنند، با مشکلاتی مواجه شده‌اند.

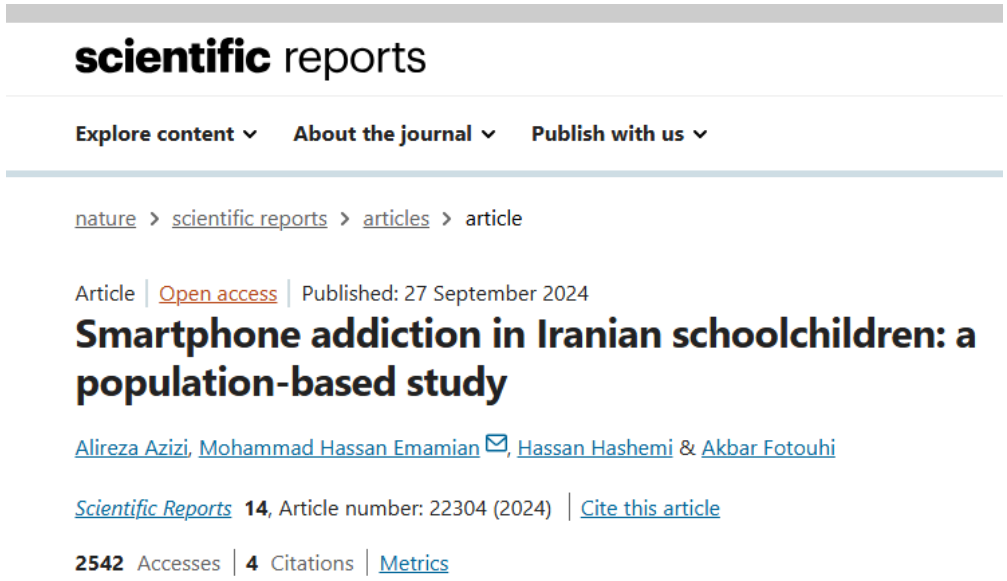
- همچنین ۲۵/۴ درصد به سبب زمان زیادی که در اینترنت بوده‌اند، با خانواده یا دوستانشان کشمکش داشته‌اند .

- ۲۲/۷ درصد نیز به علت استفاده از اینترنت در امتحان نمرهٔ خوبی نگرفته‌اند .

- ۱۹/۲ درصد نیز بیان کردند که اینترنت باعث شده از خواب و خوراکشان کم کنند.

Smartphone addiction in Iranian schoolchildren: a population-based study

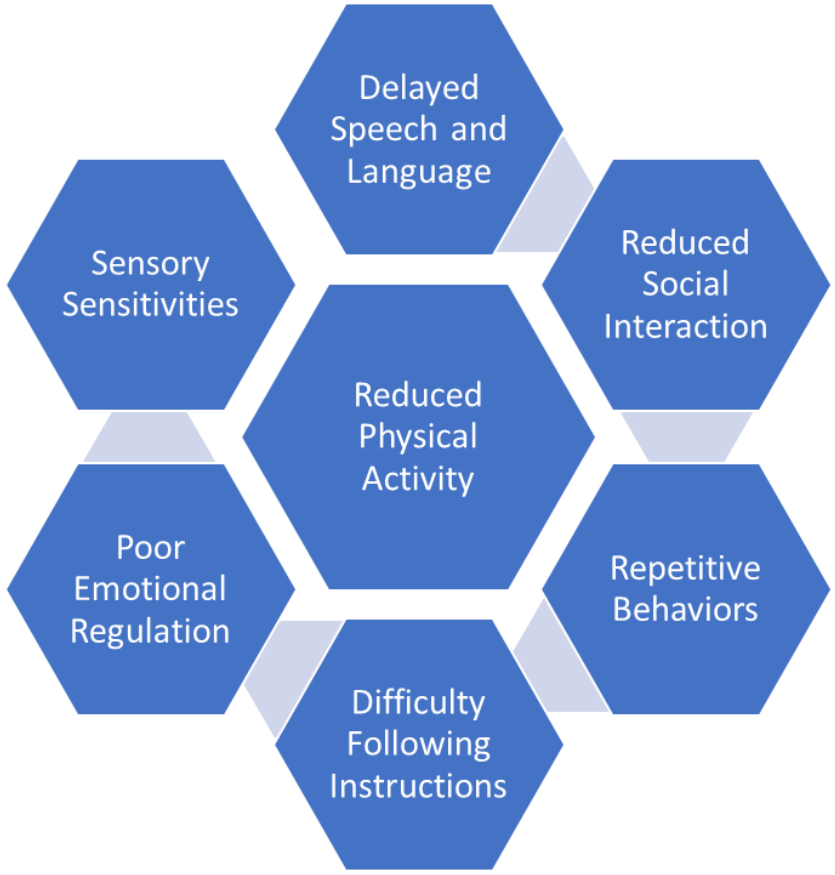
- **The Prevalence of smartphone addiction was 29.8% (95% CI: 28.1–31.5) in studied population.**



The average American spends 5 hours and 24 minutes on their mobile device each day

Challenges

Excessive screen time


Delayed Speech and Language
Sensory Sensitivities
Reduced Social Interaction
Reduced Physical Activity
Poor Emotional Regulation
Repetitive Behaviors
Difficulty Following Instructions


Attention Difficulties
Mood Swings and Irritability
appearing uninterested in their environment
avoiding eye contact
withdrawing
lack of interest in playing with others

Common autism spectrum-like features symptoms

- **Delayed Speech and Language Development:** Children may exhibit a limited vocabulary, struggle to form sentences, and have difficulty with communication.
- **Reduced Social Interaction:** They may prefer solitary activities, show less interest in engaging with others, and have difficulty with social skills like eye contact and understanding social cues.
- **Repetitive Behaviors:** Some children may engage in repetitive actions like hand-flapping, rocking, or fixating on specific objects or activities.

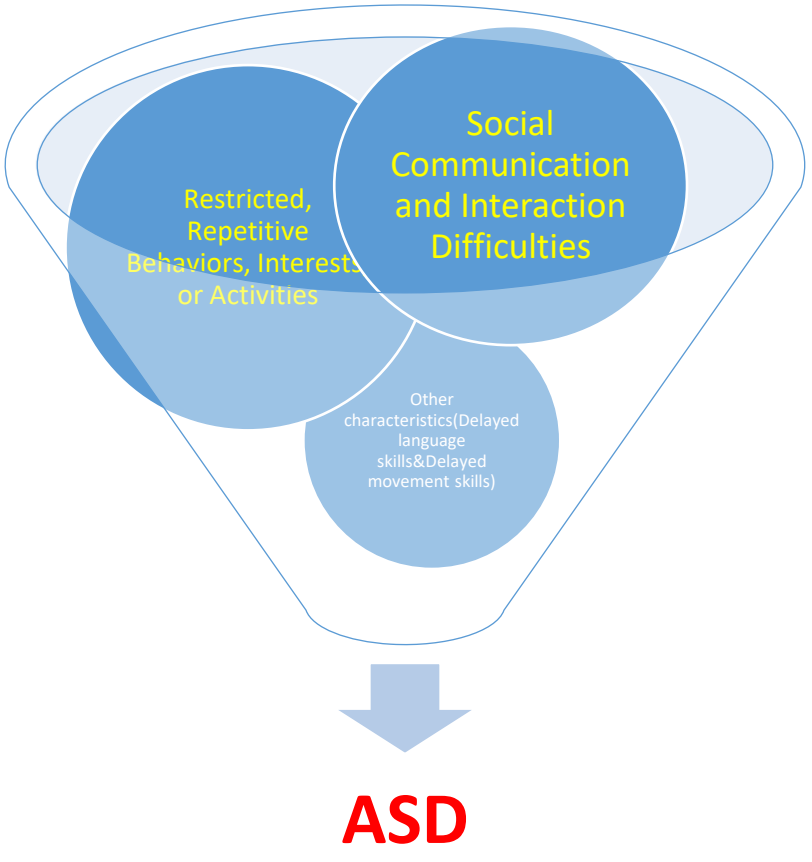
Common autism spectrum-like features symptoms

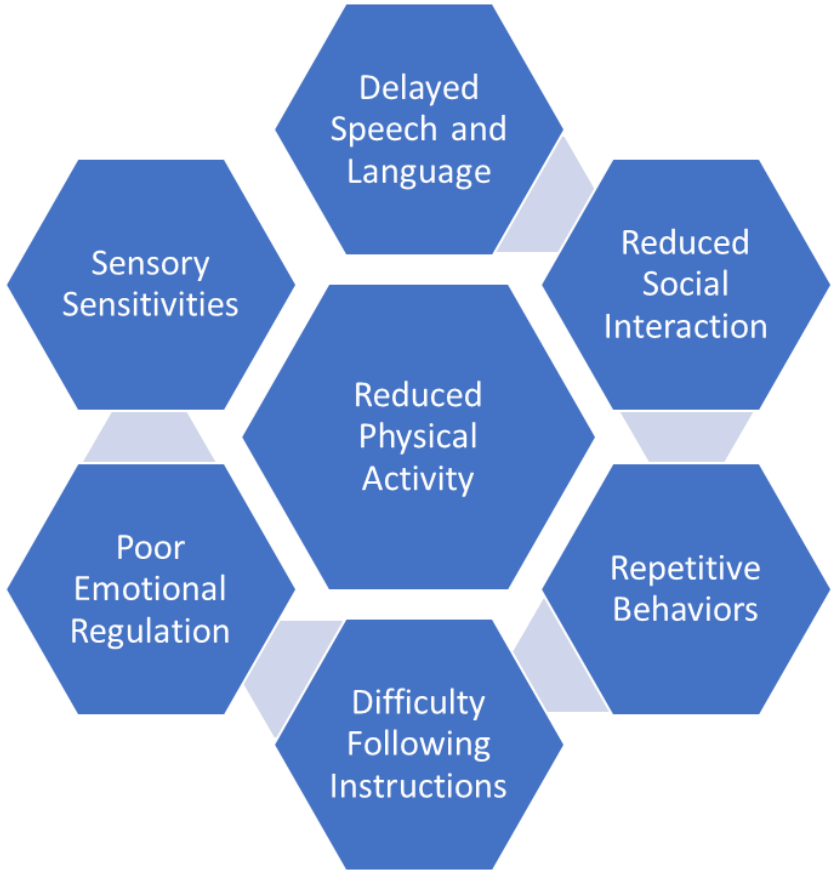
- **Difficulty with Emotional Regulation:** They may experience frequent tantrums or meltdowns, especially when screen time is limited or restricted.
- **Lack of Interest in Play:** Children might show a preference for screen-based activities over traditional play, and struggle with imaginative or creative play.
- **Sensory Sensitivities:** They may be overly sensitive to certain stimuli like loud noises or bright lights, which are often controlled in the virtual environment.

Common autism spectrum-like features symptoms

- **Poor Eye Contact:** Reduced eye contact or avoidance of direct gaze can be a noticeable sign.
- **Difficulty Following Instructions:** Children might struggle to understand and respond to simple instructions, impacting daily interactions.
- **Hyperactivity:** Some children may exhibit signs of hyperactivity.
- **Decreased Cognition:** In some cases, reduced cognitive development can be observed.

Autism Spectrum-Like Features

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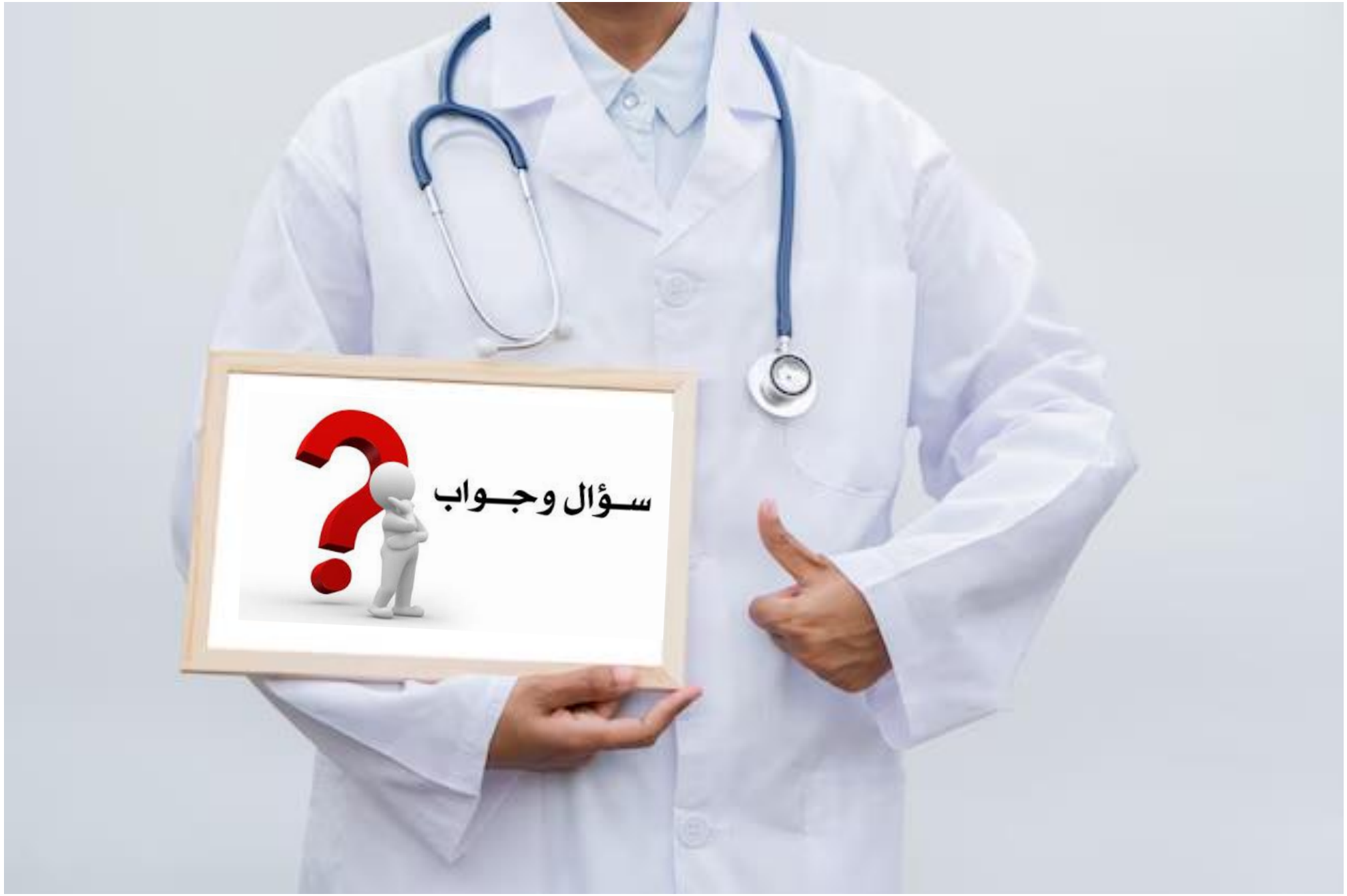
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Common comorbidities of ASD

Genetics

- Simple genetic disorders: fragile X, TS, Rett, etc.
- Copy number variants: 16p11-p12, 15q11-q13, 22q13, etc.
- Rare variants: NRXN1, NLGN4, Shank3, Sert, etc

Cognitive Comorbidities

- Intellectual disability
- Language impairment

Behavioral Comorbidities

- Hyperactivity/ impulsivity
- Agitation aggression

Medical Comorbidities

- Severe constipation
- Seizure disorder
- Abnormal EEG
- Developmental macrocephaly
- Hyper-serotonemia
- Altered immune/ motochondrial indices
- Neuroimagine: altered brain region size

Source: Macmillan Publishers Ltd: Neuropsychopharmacology 20

Autism risk factors

Some genetic/ chromosomal conditions, such as fragile X syndrome or tuberous sclerosis

Children who have a sibling with ASD

Some prescription drugs taken during pregnancy, such as thalidomide and valporic acid

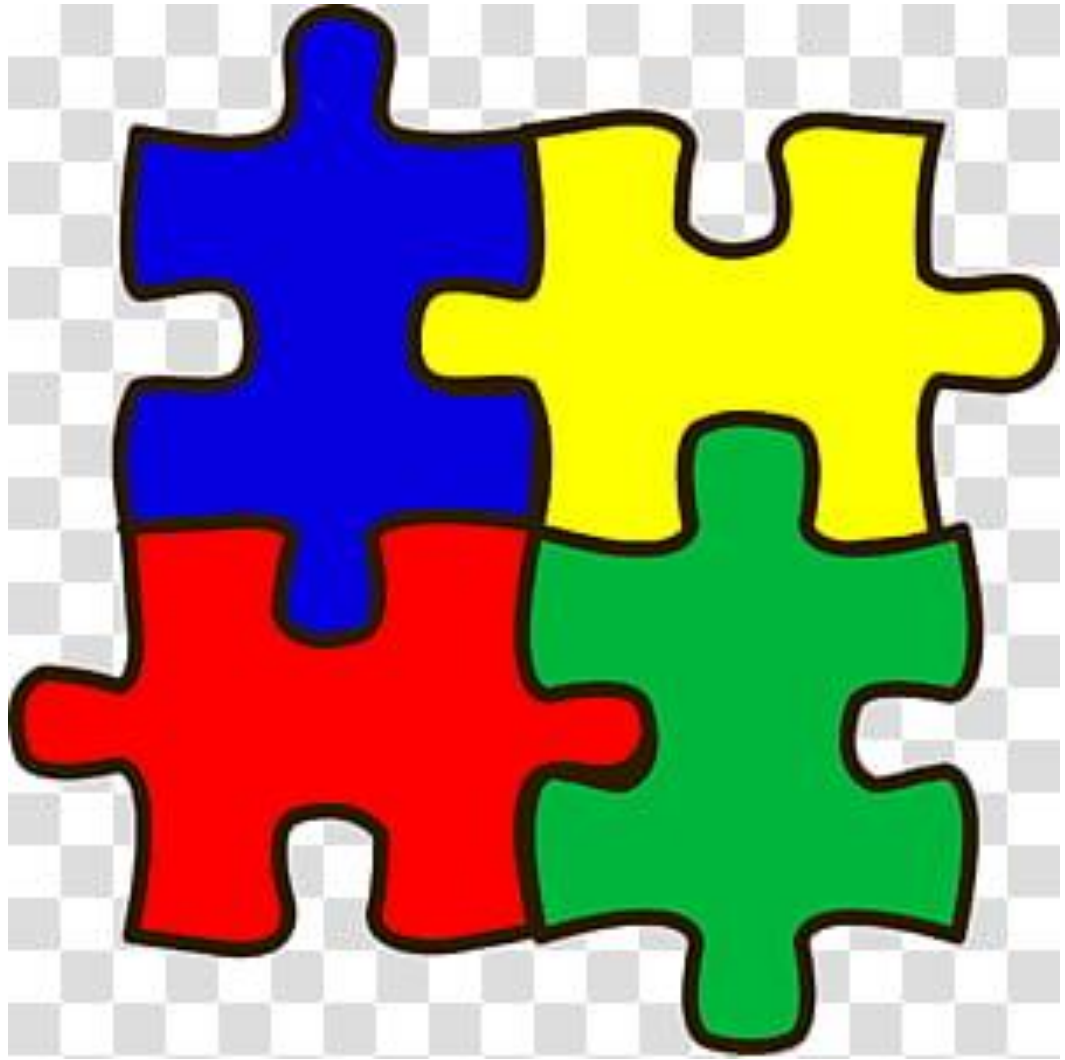
Children born to older parents

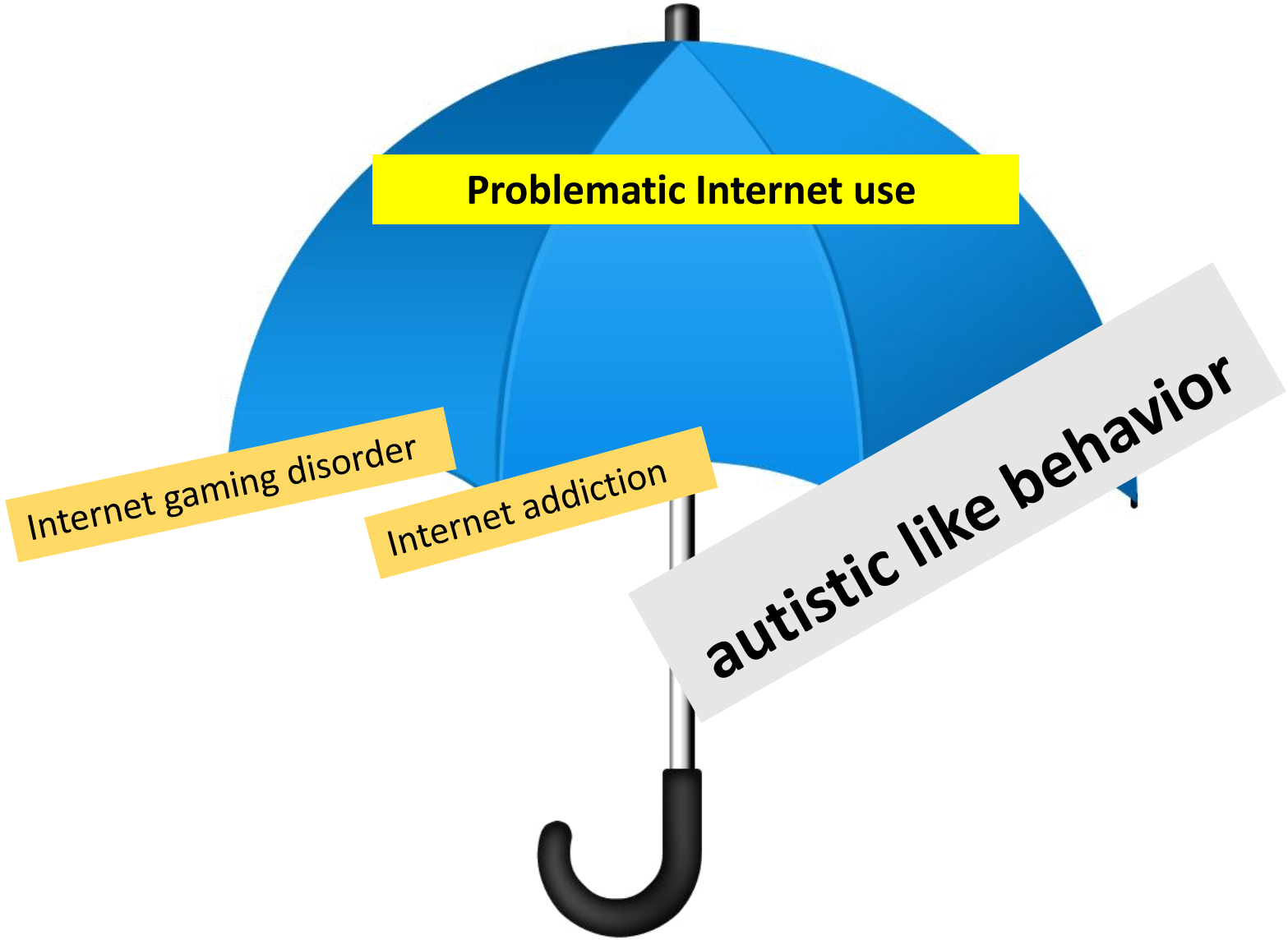
Table

Target symptoms and treatment options for patients with ASD

Medication class	Target symptoms	Evidence for use	Adverse effects	Comments
Second-generation antipsychotics	Irritability: aggression, self-injury, severe tantrum	Multiple RCTs for risperidone and aripiprazole Other SGAs with small studies, retrospective or prospective open-label studies	Weight gain, increased appetite, sedation	Adverse effects are often limiting. Most SGAs have some positive results in literature with exception of lurasidone, which is the only antipsychotic with a published negative placebo-controlled trial
Apha-2 agonists	Inattention, hyperactivity	Several RCTs with relatively small numbers of participants	Sedation, irritability	
Stimulants	Inattention, hyperactivity	One moderate-sized RCT, other small studies	Irritability	Only methylphenidate has been studied
Selective serotonin reuptake inhibitors	Anxiety-related symptoms	RCTs do not support efficacy in children with ASD Limited evidence for efficacy in adults	Activation and irritability	Adverse events appear more severe in youth
Antiepileptics	Irritability, repetitive behaviors	Several small RCTs with mixed results	Rash, weight change, irritability	

ASD: autism spectrum disorder; RCTs: randomized controlled trials; SGAs: second-generation antipsychotics

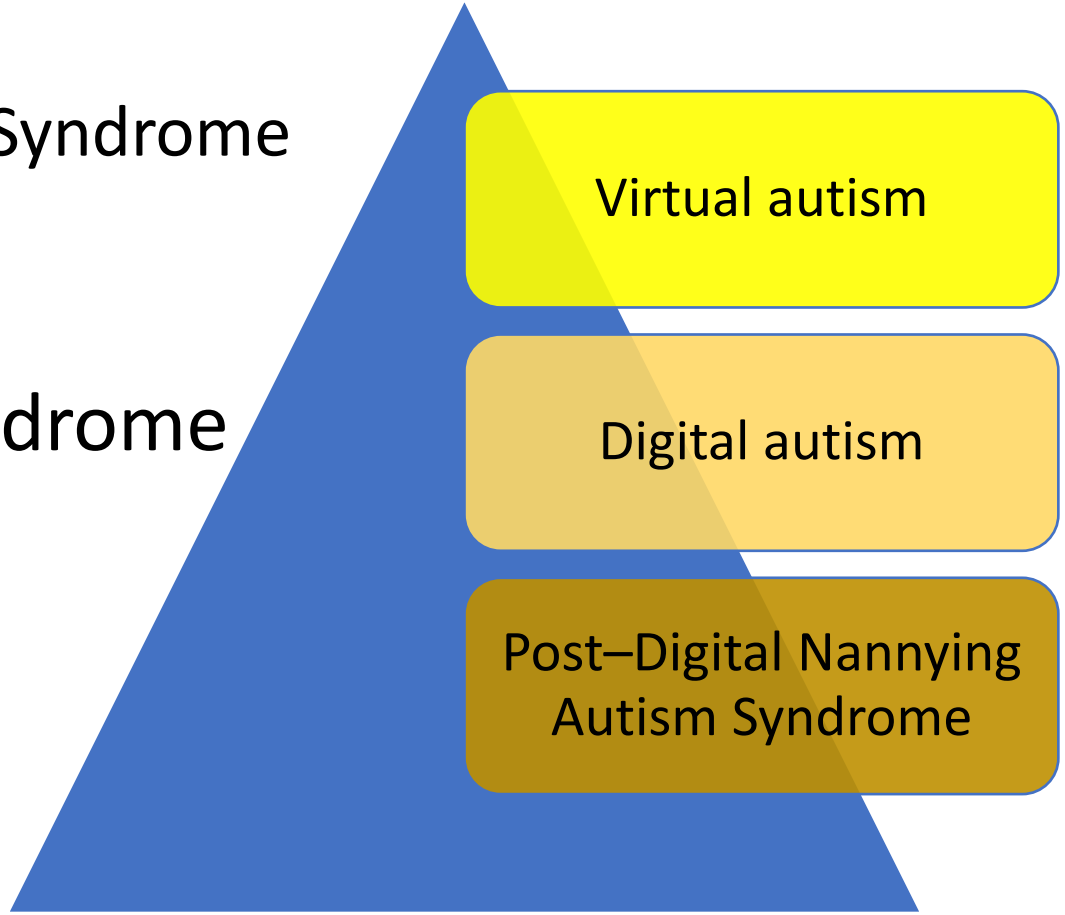



Problematic Internet use
Internet gaming disorder
Internet addiction
autistic like behavior

autistic like behavior

Electronic Screen Syndrome

Digital Baby Syndrome



what physicians need to now

Symptoms

- Hyperactivity
- Delayed Language Development
- Lack of Social Interaction
- Frequent Mood Swings
- Repetitive Behaviors
- Difficulty with Emotional Regulation
- Limited Eye Contact
- Lack of Interest in Physical Play
- Difficulty Following Instructions
- Short Attention Span

Virtual Autism

Excessive Screen Time During the Child's Developmental Period

Virtual Autism: A New Threat to Toddlers

- In 2018, Marius Zamfir, a Romanian psychologist, used the term “virtual autism” to describe behavioral abnormalities seen in children between zero and three years old, arising from sensory-motor and socio-affective deprivation caused by exposure to more than four hours/day of virtual environment.
- According to Zamfir, the functional and developmental symptoms seen in such children were similar to childhood autistic disorder, as per DSM-4 and ICD-10.
- This was followed by several studies confirming the presence of “autism-like symptoms” in toddlers exposed to electronic screens excessively.

Marius Teodor Zamfir

Autonomous clinical psychologist, expert psychologist in clinical psychology and forensic psychology, registered with the Romanian College of Psychologists in 2013.

President and founding member of the "Saint Seraphim of Sarov" Association for Child Mental Health since 2010.

Member of the Institute of Forensic Psychology since 2016 and registered in the Board of Psychologist Experts with the specialty of clinical psychology and forensic psychology since 2017.

- This was followed by several studies confirming the presence of “autism-like symptoms” in toddlers exposed to electronic screens excessively.

- Even though the evidence is too preliminary for it to be recognized as a diagnostic entity or included in current disease classification systems.

Meet the international team that is studying the association between electronic screens and autism

Michael Waldman, Ph.D

- Charles H. Dyson Professor of Management and Professor of Economics, [illegible]
- Editor, [illegible]

[illegible]
Tel: [illegible]
Email: [illegible]
[illegible]

Karen F. Heffler, MD

- Researcher, Autism Spectrum Disorder
- Associate Professor, Department of Psychiatry

[illegible]
Email: [illegible]

Sean Nicholson, Ph.D.

- Professor and Director of the Sloan Program in Health Administration
- Weiss Presidential Fellow
- Department of Policy Analysis and Management, Cornell University
- Research Associate, [illegible]

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Tel: [illegible]
Email: [illegible]
[illegible]

Lori Frome, M.Ed.

Early Interventionist/Special Instructor
[illegible]
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Marius-Teodor Zamfir, M.D.

- Expert psychologist- Clinical psychology and judicial psychology Member of the Panel of Expert Psychologists Psychologist
- Coordinator Saint Michael's Center for Children with Autism Children in Distress Foundation - Romania

Tel: [illegible]
Email: [illegible]
Web sites: [illegible]

Ana-Maria Zamfir, M.D.

- Principal Psychologist- Clinical psychology and judicial psychology Member of the Panel of Expert Psychologists
- Executive Director and Vice-President Association for Child Mental Health

Tel: [illegible]
Email: [illegible]

Mrs. Anne-Lise Ducanda, M.D.

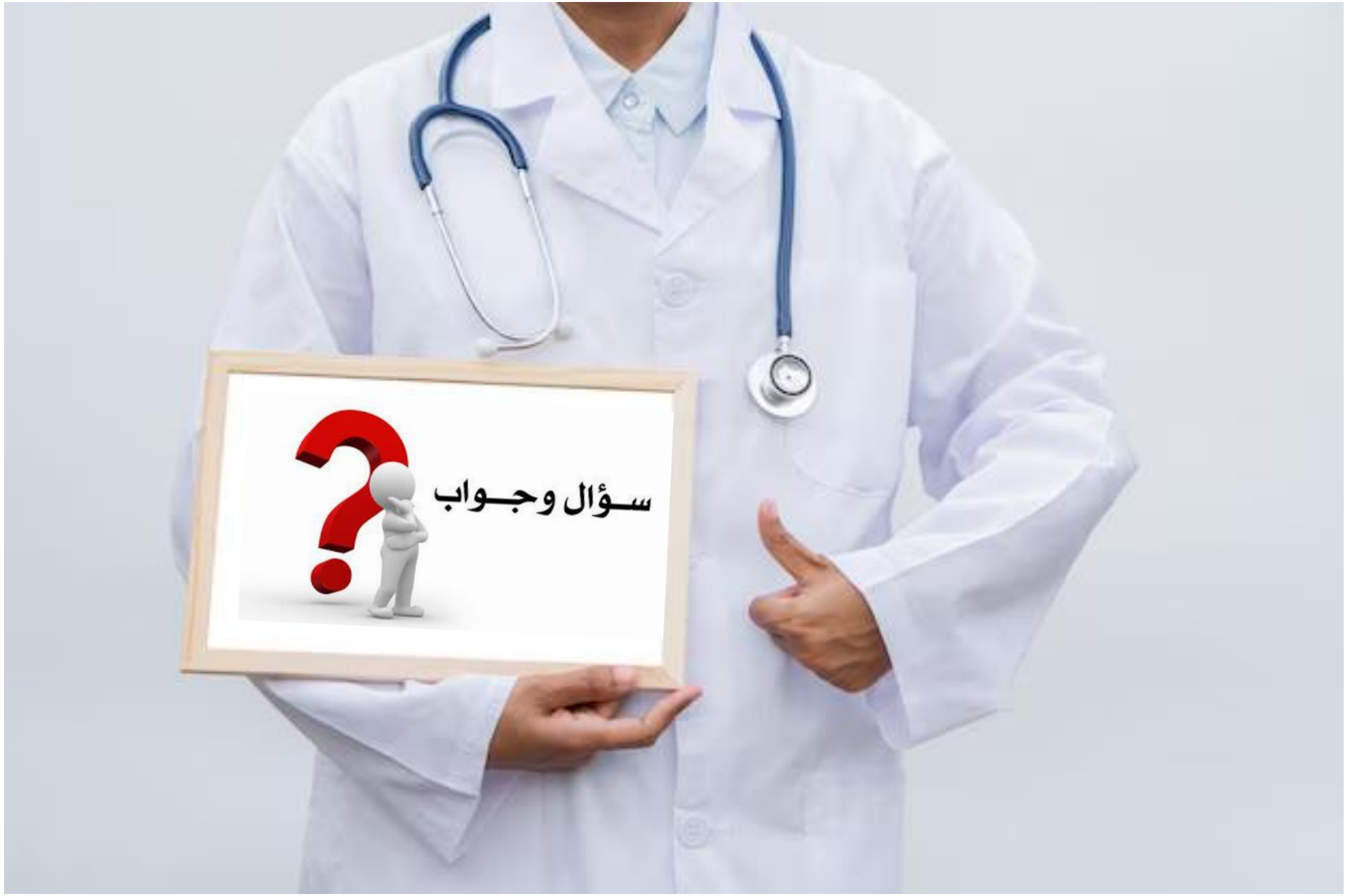
Physician expert of Child's Health and Development, French
Email: [illegible]

Sabine Duflo, M.D.

- Clinical psychologist, family therapist, Georges Daumezon Public Mental Health Institution
- UMTC & Full-time Hospitalization Unit for adolescents
- Psychologue et thérapeute familial [illegible]

Hamid Reza Pouretemad, BA, MSc, MPh, Ph.D

- Professor of Clinical Neuropsychology
- Founder & Head of the Institute for Cognitive and Brain Sciences, Shahid Beheshti University
- Founder of the Iranian Society for Cognitive [illegible]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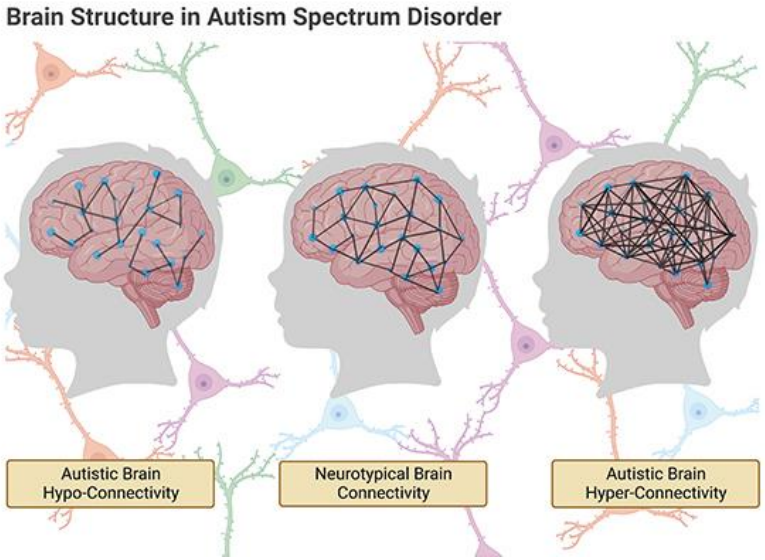
Excessive screen time and language delay

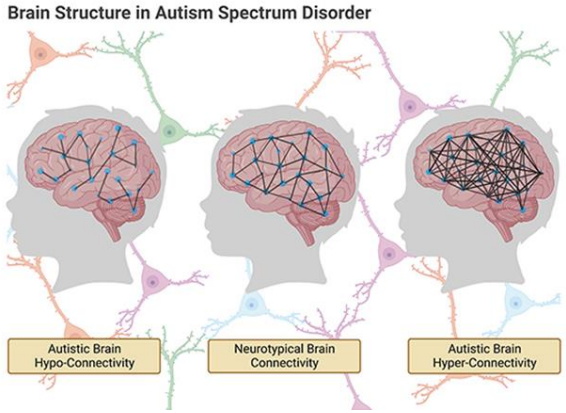
- Excessive screen time, particularly in early childhood, has been linked to language delays. Studies suggest that high levels of screen time, especially for toddlers, can negatively impact language development, including comprehension and expressive language skills.



Rayce et al. BMC Public Health (2024)

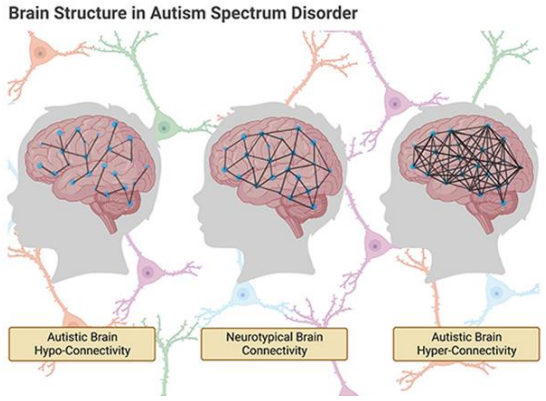
Excessive screen time and loss of eye contact in conversation

- Excessive screen time can negatively impact the ability to maintain eye contact during conversations, potentially hindering social interactions and emotional connections. This is because prolonged digital interaction can lead to a decline in face-to-face communication skills, making it harder to express empathy and understand others in person. Kaiser et al.(2022)



Excessive screen time and Restricted and Repetitive Behaviors

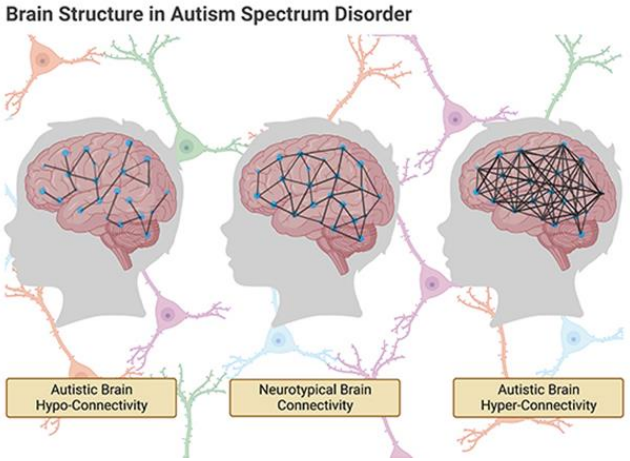
- Excessive screen time, particularly in early childhood, may be associated with the development of restricted and repetitive behaviors (RRBs), which are characteristic of autism spectrum disorder (ASD). While screen time itself isn't a direct cause of ASD, it can exacerbate or mimic certain ASD-like symptoms, especially in vulnerable children.



K.F. Heffler, et al ,Psychiatry Research Case Reports (2022)

Excessive screen time and aggressive behavior

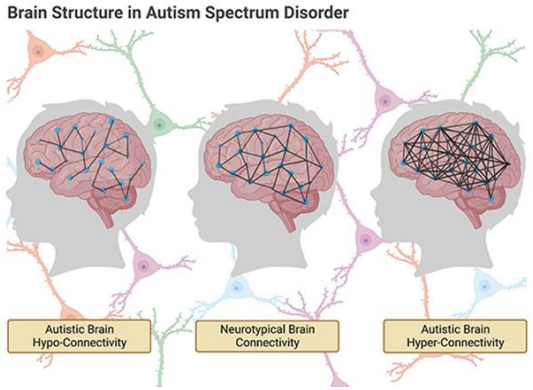
- Excessive screen time, particularly exposure to violent content, has been linked to increased aggression and behavioral problems in children and adolescents. This can manifest as both immediate and long-term effects, including increased impulsivity, conduct disorder, and a greater likelihood of engaging in aggressive behaviors.



J.M. Nagata et al-2022

Excessive screen time and deficits in social communication and social interaction

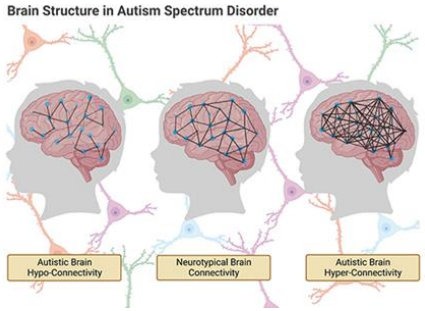
- Excessive screen time can negatively impact social communication and social interaction, particularly in children.
- This is often due to reduced opportunities for face-to-face interaction, which is crucial for developing essential social skills.
- Studies have linked high screen time to deficits in empathy, emotional understanding, and communication abilities.



Brain Sci et al . 2024

Interconnections of screen time with neuroinflammation

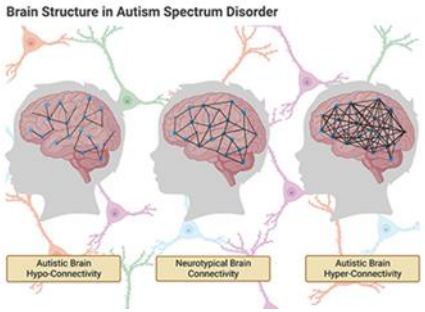
- Key findings : Prolonged exposure to screens may contribute to neuroinflammation through mechanisms such as disrupted sleep patterns, diminished cognitive engagement, and increased stress levels.



https://doi.org/10.1007/s11010-024-05123-9

Brain Changes in digital autism

- Excessive screen time can pose significant challenges to a toddler's behavioral and developmental progress. Reduced melatonin concentration and neurotransmitter deficiencies, including dopamine, acetylcholine, GABA, and 5-HT, have been associated with screen exposure.
- Moreover, brain studies have indicated changes in regional **gray matter volume and white matter volume**, potentially affecting verbal competence, aggression, and cognitive abilities



https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5849631/

Excessive screen time brain Structural Changes

- Studies, like the NIH's Adolescent Brain Cognitive Development (ABCD) study, show links between high screen use and a thinner cerebral cortex, reduced brain volume in certain areas, and poorer development of skills related to language and executive functions.

Paulus et al. 2019

National Institutes of Health

Question: Does screen use contribute to autism symptoms in young children?

- **Answer**: Although there isn't evidence that screen media use causes autism, there are a growing number of studies that link higher daily screen use with more autism-like symptoms in early childhood.

American Academy of Pediatrics

DEDICATED TO THE HEALTH OF ALL CHILDREN™


How To Treat Virtual Autism at Home.

Eliminate or Reduce Screen Time (Digital Detox)

- **WHO Guidelines on Screen Time**

❖Infant (less than 1 year of age): Screen time is not recommended.

❖1-2 years of age: No screen time for a 1-year-old. No more than an hour for 2-year-olds, with less time preferred.

❖3 to 4 years old: No more than one hour.

How to Reduce or Eliminate Screen Time

1. Replace the screen time with other activities like play, reading, music, etc.

2. Remove TV or tablet from the child's reach/bedroom

3. Avoid using TV screens, smartphones, or tablets during meals, bedtime.

Fun Alternatives to Digital Devices

1. Storytelling with puppets
2. Drawing, painting, or coloring
3. Sensory bins with rice, sand, or water
4. Playdough and clay modeling
5. Role play (shopkeeper, doctor, etc.)
6. Dancing to music or doing action songs

Create a Stimulating, Screen-Free Environment

The Best Option is Toys or other playing material

1. Open-ended toys like blocks, Lego, and stacking rings
2. Pretend play kits (kitchen sets, toolkits)
3. Art supplies (crayons, glue, paper, scissors)
4. Musical instruments (drums, xylophones)
5. Picture cards, flashcards, alphabet boards

Importance of Outdoor and Physical Play

- فعالیت‌هایی مانند دویدن، پریدن، بالا رفتن و بازی‌های توپی، هماهنگی و اعتماد به نفس را بهبود می‌بخشند.

- قرار گرفتن در معرض نور خورشید و هوای تازه برای بهبود خلق و خو و کیفیت خواب

- بازی گروهی، مشارکت، رعایت نوبت و رشد اجتماعی (social development)را ارتقا می‌دهد.

Enhance Parent-Child Communication

Importance of Talking, Singing, and Storytelling

- کارهای روزمره تان را روایت کنید
- شعرهای کودکانه با هم بخوانید.
- داستان‌های ساده و گویا تعریف کنید.

Building Connection through Eye Contact and Emotion

- در طول تعاملات با فرزندتان ، همسطح او بنشینید.
- تماس چشمی را حفظ کنید و به صداها یا درخواست های او به گرمی پاسخ دهید.
- لبخند بزنید، بغل کنید و از لمس برای ایجاد اعتماد و امنیت استفاده کنید.

Home-Based Therapeutic Activities

Speech and Language Enrichment

- اشیاء داخل منزل را برچسب بزنید: «این یک فنجان است»، «این بینی توست»
- از طریق بازی‌های سرگرم‌کننده، تکرار را تشویق کنید («مثل گوسفند بع بع بگو!»)
- از آینه‌ها برای کمک به کودکان در مشاهده حرکات دهانشان استفاده کنید.

Simple Occupational Therapy (OT) Activities

- نخ کردن مهره یا ماکارونی برای مهارت‌های حرکتی ظریف
- **بازی‌های تعادلی** مانند راه رفتن روی یک طناب
- **بازی‌های حسی**: نقاشی با انگشت، له کردن خمیر، ریختن آب
- **راه رفتن حیوانات**: خزیدن مثل خرس، پریدن مثل خرگوش

Social Interaction Through Structured Play

- بازی‌های نوبتی مثل قل دادن توپ به جلو و عقب
- بازی‌های تخته‌ای یا پازل‌های ساده
- آواز خواندن گروهی یا قرار بازی با کودکان دیگر (بدون صفحه نمایش)

Establish a Healthy Daily Routine

Consistency in Meals, Sleep, and Play

- Set a fixed wake-up and bedtime (7–8 AM wake-up, 8–9 PM bedtime)
- **Structured** play, nap, and eating times reduce anxiety and tantrums

Symptoms

- Hyperactivity
- Delayed Language Development
- Lack of Social Interaction
- Frequent Mood Swings
- Repetitive Behaviors
- Difficulty with Emotional Regulation
- Limited Eye Contact
- Lack of Interest in Physical Play
- Difficulty Following Instructions
- Short Attention Span

Virtual Autism

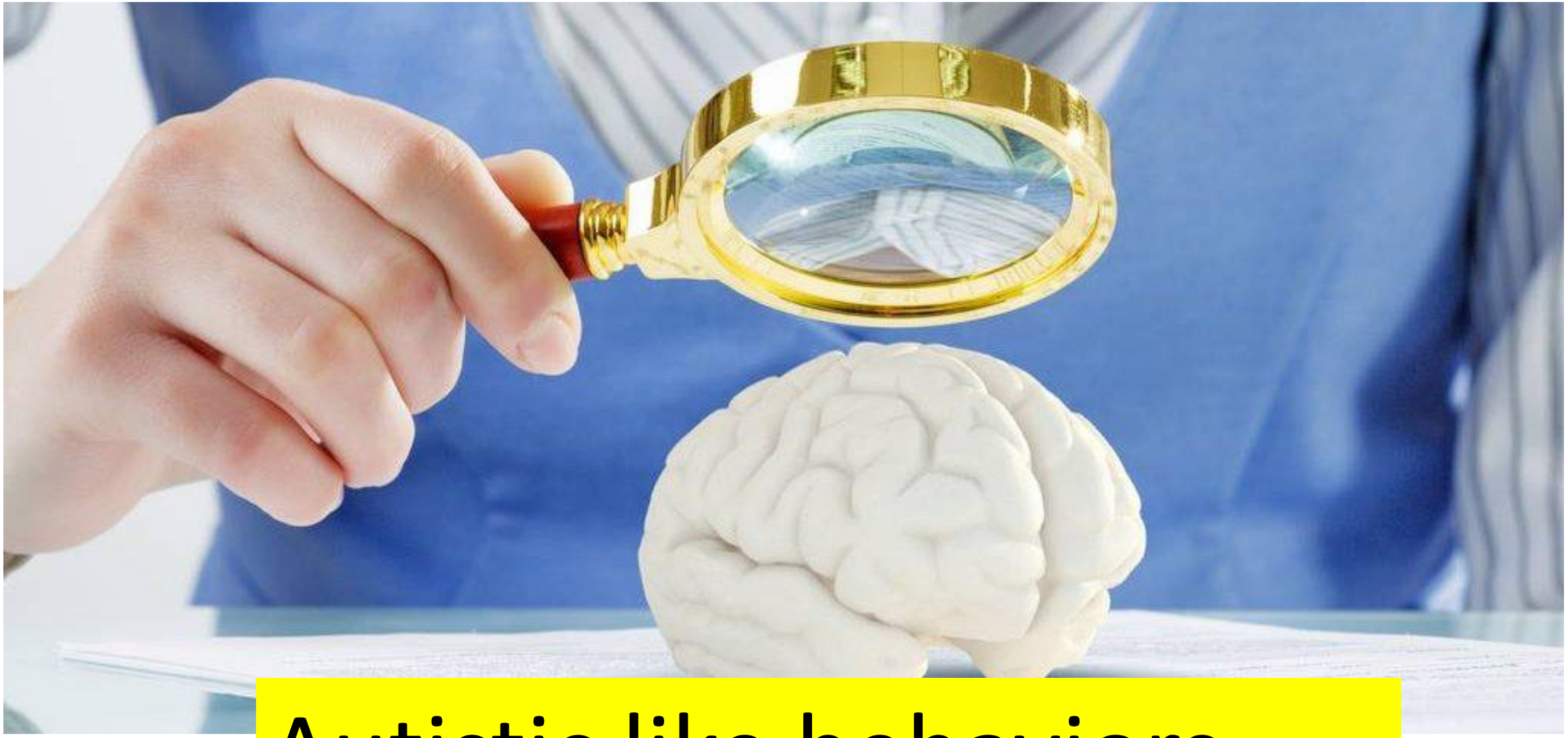
Excessive Screen Time During the Child's Developmental Period

Step-by-Step Guide For Home Treatment Of Virtual Autism

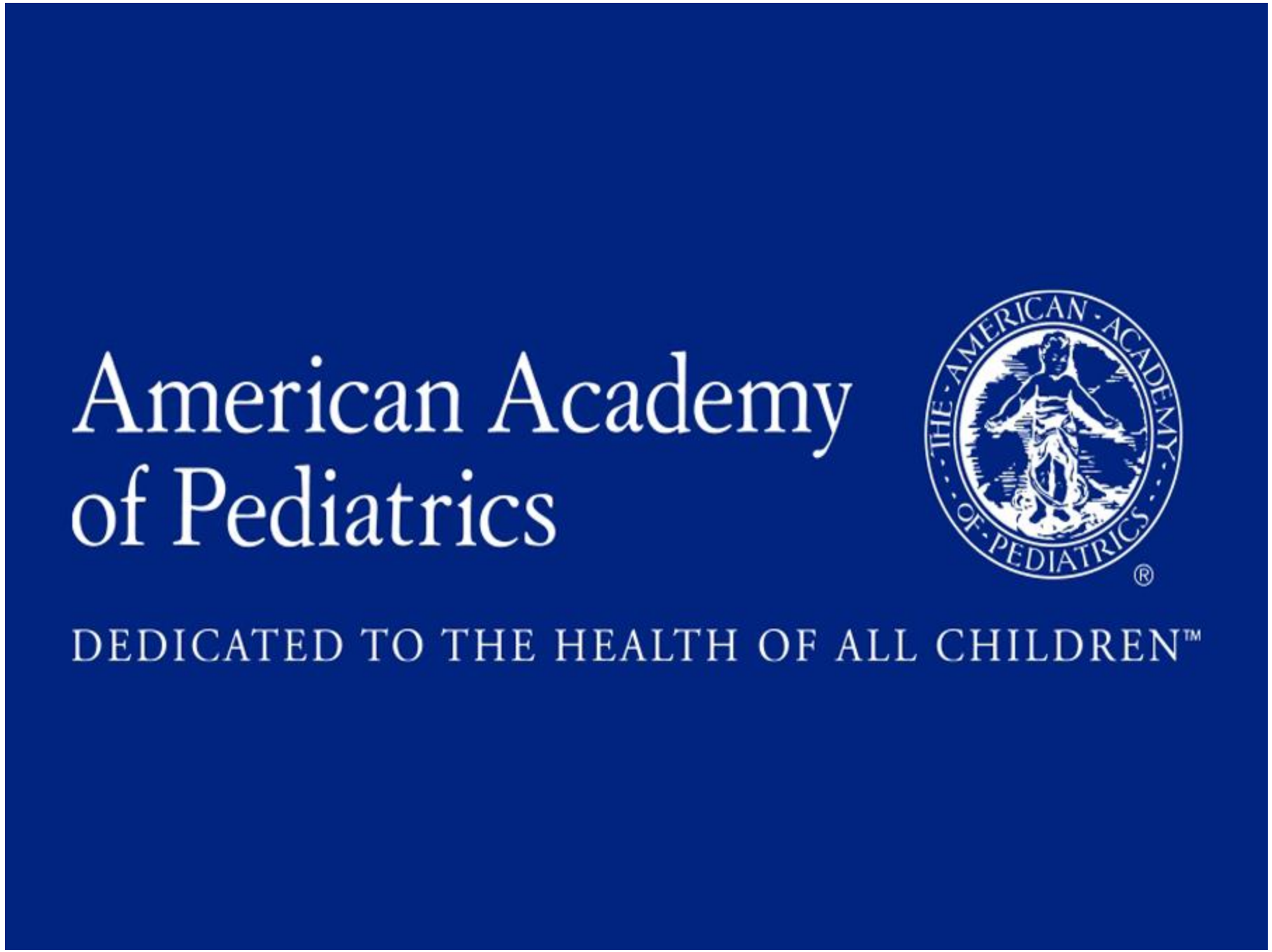
The End

- Comments
- Question and answer
- Thank you!

Tehran University of
Medical Sciences



Autistic like behaviors


American Academy
of Pediatrics
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DEDICATED TO THE HEALTH OF ALL CHILDREN™

American Academy of Pediatrics

- We have recommendation he American Academy of Pediatrics recommends never to expose children below 18 months of age to screens but some video-chatting.
- At 18 to 24 months you can view some high-quality programming apps and use them with the child and not to leave them alone.
- *No screen during* meals and within 1 hour before bedtime

Question: Does screen use contribute to autism symptoms in young children?

- **Answer**: Although there isn't evidence that screen media use causes autism, there are a growing number of studies that link higher daily screen use with more autism-like symptoms in early childhood.

why are autism rates rising?

- Autism is a genetically-driven condition, meaning that it is caused by differences in our DNA. Researchers think autism is becoming more common for a few reasons:
- 1. Diagnostic shift - Children that used to be diagnosed with a 'developmental delay' now are recognized as having autism.
- 2. Increased rates of screening and identification.
- 3. The increase of premature infants, who are at higher risk of autism.

What is the impact of screen use on brain development?

- Only one research study has examined differences in brain anatomy in young children based on their screen media experiences. It's hard to get a young child to sit through a brain MRI, which are loud, long, and claustrophobic! One research group recruited about 50 preschool-aged kids to undergo a brain MRI.
- They found that the children with more unhealthy media use (i.e. longer time per day, less healthy content, and having a device in the bedroom) had brain differences such as **white matter** and **grey matter** that was less organized.