Active learning template system disorder gestational diabetes

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## System Disorder

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## System Disorder

STUDENT NAME

DISORDER/DISEASE PROCESS BACTERIAL MENINGITIS

REVIEW MODULE CHAPTER 12 (P. 59-61) ACUTE NEUROLOGICAL DISORDERS: MENINGITIS

Alterations in Health (Diagnosis)

**ACTIVE LEARNING TEMPLATE:** 

Viral (aseptic): good prognosis Bacterial (septic): contagious infection. Prognosis depends on how quickly care is initiated

Pathophysiology

Inflammation of CSF + meninges [connective tissues that cover the brain & spinal cord)

Health Promotion and Disease Prevention

Hib \* PCV vaccines at: 2, 4, 6 months 12, 15 months

ASSESSMENT

Risk Factors

Viral: CMV, adenovirus, mumps, herpes simplex, arbovirus Bacterial; meningococcal, E.coli, Hib. pneumococca/

Injuries c direct access to CSF [skull fracture, penetrating head wound? Crowded living conditions

Laboratory Tests CBC + Blood cultures

CSF Analysis:

Viral: clear color; slight †WBC; norm glucose; norm-slight †protein; negative gram stain. Bacterial: cloudy color; †WBC; †protein; ¿glucose; positive gram stain

**Expected Findings** 

Newborns; vague sx; poor muscle tone; weak cry; poor suck; V/D; neck supple w/o nuchal rigidity: bulging fontanels (late sx) 3mo-2yrs; seizures; high-pitch cry; bulging fontanels; poss. nuchal rigid; poor feeding; vomiting; Brudzinski/Kernig () reliable

Zyr-Adolescence; seizures (initial sx): nuchal rigid: photophobia: \*\*Brudzinski/Kernig: feverichills: restless -) delirium, stupor coma; petechiae/purpura zastr, ear drainage: joint involvement. Diagnostic Procedures

LP; definitive dx test; measures spinal fluid

pressure + collects CSF for analysis → EMLA 1hr before; side-lying + head flexed +knees to chest; fentanyl + midazolam sedation; pressure bandage; remain in FLAT position to prevent leakage + spinal h/a Monitor for: bleeding, hematoma, infection CT/ MRI: identify increased ICP abscess

SAFETY CONSIDERATIONS

DROPLET PRECAUTIONS: -Private room or a room with a pt with the same infectious disease, ensuring each pt has their own equipment -Providers + visitors should wear a mask -Maintain respiratory isolation for a minimum of 24hrs after start Abx

-Risk for increased intracranial pressure -Risk for seizures -Risk for bleeding, hematoma, or infection after LP.

PATIENT-CENTERED CARE Medications

IV.Abx: up to 10d -Bacterial infection ·Tx until glucose WNL + neg. culture

Corticosteroids; dexamethasone -NOT FOR VIRAL -Ineuro complications for infection cx by Hib vaccine Analgesics; acetaminophen+codeine Assess temp PRIOR TO ADMIN, meds can mask fever

Monitor RR + LOC Therapeutic Procedures

Brudzinski's Sign: Severe neck stiffness causes hips and knees to FLEX when neck is FLEXED

Kemig's Sign: Unable to straighten leg greater

**ACTIVE LEARNING TEMPLATES** 

| Nursing Care - STAT attention: petechiae/ Early & complete tx of URIs

purpuric rash

neuro checks

Correct fluid deficit ->restrict

fluids until (NCP + Na" WNL

- If JLOC maintain NPO

1 environmental stimuli:

- Comfort measures: cool

room; positioning (side-lying)

pillow + slight (HOB) to (neck

diet tolerable by child

quiet # Ø bright lights

Seizure precautions

discomfort

- DROPLET PRECAUTIONS Maintain vaccines AS SOON AS SUSPECTED - VS; I&O; fluid status; pain; Head circumference

Interprofessional Care - As improves, clear liquids →

Complications

Increased ICP: can cx neuro dysfunction

Monitor for Sx of ICP: Newborn/Infant: bulging/ tense fontanels; †OFC; high-pitch cry; distended scalp veins; irritability; bradycardia; respiratory changes Children: †irritability; h/a;

N/V; diplopia; seizures;

Jenvironmental stimuli

bradycardia;resp changes

Reduce ICP: Ø coughing or straining; (3 bright lights; positioning;

 Keep family informed than 135 degrees without PAIN





## Ati active learning template system disorder gestational diabetes

Nutrition Education Materials Online (NEMO) Last updated: 3 March 2021 Search aliases for RAD51 gene in PubMed and other databases Search disorders "Autism" redirects here Autism may also refer to classic autism. Medical conditionAutism Other namesAutism spectrum disorderRepetitively stacking or lining up objects is associated with autism. SpecialtyPsychiatry, Clinical psychology, pediatrics, occupational medicineSymptomsDifferences in social interaction, verbal and nonverbal communication, and the presence of interests and repetitive behaviorComplicationsSocial isolation, educational and employment problems, [1] anxiety, [1] stress, [1] bullying, parents, certain prescribed drugs, perinatal and neonatal health issuesDiagnostic methodBased on combination of clinical observation of behavior and development and comprehensive diagnostic testing completed by a team of qualified professionals (including, but not limited to Clinical Psychologists, Neuropsychologists, Pediatricians, and Speech-Language Pathologists) Differential diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia diagnosis Intellectual disability, anxiety, depression, Rett syndrome, attention deficit hyperactivity disorder, selective mutism, schizophrenia disorder, selective mutism, schizophrenia disorder, selective mutism, schizophrenia disorder, selective mutism, worldwide The autism spectrum is a range of neurodevelopmental conditions generally characterized by difficulties in social interactions and communication, repetitive behaviors, intense interests, and unusual responses to sensory stimuli. It is commonly referred to as autism or, in the context of a professional diagnosis, as autism spectrum disorder (ASD), but the latter term remains controversial among neurodiversity advocates, neurodiversity researchers, and many autistic people due to the use of the word disorder and due to questions about its utility outside of diagnostic contexts. [2][3] A spectrum disorder is one that can manifest very differently from person to person: any given person with the disorder is likely to show some but not all of the characteristics associated with it, and may show them to very different degrees. Different autistic people might show strikingly different times.[4] Historically, the autism spectrum was divided into sub-categories, but questions persisted over the validity of these divisions,[4][5] and the most recent editions of the major English-language diagnostic manuals, Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR, published in 2021) and International Classification of Diseases (ICD-11, released in 2021) both list ASD as a single disorder.[6][7] Given concerns about the appropriateness of the term disorder,[8][9] many sources prefer to use the word "autism" without any additional words, on the basis that this is the least controversial term among people with different perspectives[10][11] or (in the United Kingdom) autism spectrum conditions (ASC)[12][13] rather than ASD. While psychiatry traditionally classifies autism as a neurodevelopmental disorder, many autistic people, most autistic advocates and a rapidly increasing number of researchers see autism as part of neurodiversity, the natural diversity in human thinking, and experience, with strengths, differences, and weaknesses.[9][14] On this view, promoted by the autism rights movement, autism is not pathological, but this does not preclude them from being disabled and potentially having high support needs due to co-occurring conditions and lack of person-environment fit.[15] This relatively positive and holistic view of autism has led to a certain degree of friction between autistic individuals, advocates, charities, researchers and practitioners.[16][17][18] The causes of autism are not well understood, but are likely linked to altered structures of the brain at birth. There is no official cure for autism, so interventions focus on, for example, finding and learning other modes of communication in a non-verbal autist, or applied behavior analysis interventions, which are highly controversial. Other controversial and uncertain if social-communication difficulties of autistic people are inherent core deficits (see empathizing-systemizing theory developed by Simon Baron-Cohen),[19] or due to mismatch in social communication styles, cognition, and experiences resulting in bidirectional misunderstanding between autistic people and non-autistic people and non-autistic people and non-autistic people and socialize well with autistic people), [20][21] or a combination of both factors. Moreover, scientists are still trying to determine what causes autism; it is highly heritable and believed to be mainly genetic, but there are many genes involved, and environmental factors may also be relevant. [22] It is unclear why autism commonly co-occurs with ADHD, intellectual disabilities, epilepsy and a range of other conditions. There are ongoing disagreements about what should be included as part of the autism spectrum, whether meaningful sub-types of autism exist,[5] and the significance of autism exist,[5] and the significance of autism exist,[6] an a trend of steadily increasing estimates of autism prevalence, causing a common misconception that there is an autism epidemic[25] and perpetuating the myth that it is caused by vaccines. Classification Spectrum model Autism is a highly variable neurodevelopmental disorder[26] and has long been thought to cover a wide spectrum, ranging from individuals with high support needs—who may be non-speaking, developmentally delayed, and more likely to present with odd social/conversation skills, narrowly focused interests, and verbose, pedantic communication. [27] Because the behavior spectrum is continuous, boundaries between diagnostic categories are somewhat arbitrary. [28] ICD The World Health Organization's International Classification of Diseases (11th Revision) ICD-11, regarded as the global standard, was released in June 2018 and came into full effect from January 2022.[29][30] It describes ASD as follows:[31] Autism spectrum disorder is characterised by persistent deficits in the ability to initiate and to sustain reciprocal social interaction and social communication, and by a range of restricted, repetitive, and inflexible patterns of behaviour, interests or activities that are clearly atypical or excessive for the individual's age and sociocultural context. The onset of the disorder occurs during the developmental period, typically in early childhood, but symptoms may not become fully manifest until later, when social demands exceed limited capacities. Deficits are sufficiently severe to cause impairment in personal, family, social, educational, occupational or other important areas of functioning and are usually a pervasive feature of the individual's functioning and language abilities.—ICD-11, chapter 6, section A02 ICD-11 was produced by professionals from 55 countries out of the 90 countries involved and is the most widely used reference worldwide. Clinicians use the Diagnostic and Statistical Manual of Mental Disorders (DSM-5-TR from 2022, DSM-5 from 2013, or their predecessors) as some material is not included in the ICD (the ICD is broader in scope, covering general as well as mental health). There remain differences, for example Rett disorder was included in the ICD is broader in scope, covering general as well as mental health). ICD and the DSM have been under revision and there has been collaborative work towards a convergence of the two since 1980 (when DSM-3 was published and ICD-9 was current), including more rigorous biological assessment - in place of historical experience - and a simplification of the system of classification. [30][32][33][34] DSM The American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, Text Revision (DSM-5-TR), released in 2022, is the current version of the DSM. The fifth edition, DSM-5, released in May 2013, was the first to define ASD as a single diagnosis, [35] which is continued in DSM-5-TR.[6] ASD encompasses previous diagnoses which included Asperger disorder, childhood disintegrative disorder, childhood disintegrative disorder, PDD-NOS, and the range of diagnoses which included the word autism.[36] Rather than distinguishing between these diagnoses which included the word autism. category. Within this category, the DSM-5 and the DSM includes a framework that differentiates each individual by dimensions of symptoms, other neurodevelopmental or mental disorders, intellectual disability, or language impairment).[6] The symptom domains are social communication and restricted, repetitive behaviors, with the option of a separate severity. [37] Prior to the DSM-5, the DSM separated social deficits and communication deficits into two domains.[38] Further, the DSM-5 changed to an onset age in the early developmental period, with a note that symptoms may manifest later when social demands exceed capabilities, rather than the previous, more restricted 3 years of age.[39] These changes continue in the DSM-5-TR.[6] Features and characteristics Autism has characteristics first appearing during infancy or childhood, and generally follows a steady course without remission. [40] Autistic people may be severely impaired in some respects but average, or even superior, in others. [41] [42] [verification needed] Overt features gradually begin after the age of six months, become established by age two or three years,[43] and tend to continue through adulthood, although often in more muted form.[44] Other aspects, such as atypical eating, are also common but are not essential for diagnosis.[45] Clinicians consider assessment for ASD when a patient shows: regular difficulties in social interaction or communication restricted or repetitive behaviors (often called "stimming") resistance to changes or restricted interests These features are typically assessed with the following, when appropriate: problems in obtaining or sustaining or sust neurodevelopmental conditions (including learning disabilities and ADHD) or mental health conditions.[46][47] There are many signs associated with ASD; the presentation varies widely:[48][49] Common signs for autistic spectrum disorder avoidance of eye-contact little or no babbling as an infant difficulty pointing to show interest not showing interest in indicated objects delayed language skills e.g., having a smaller vocabulary than peers or difficulty expressing themselves in words reduced interest in objects difficulty playing reciprocal games (e.g., peek-a-boo) increased sensitivity or unusual response to the smell, texture, sound taste, or appearance of things resistance to changes in routine repetitive, limited, or otherwise unusual usage of toys repetition, a small percentage of autistic people can exhibit notable ability, for example in mathematics, music or artistic reproduction, which in exceptional cases is referred to as savant syndrome.[50][51] Developmental course of developmental course of developmental course of development is more gradual in nature, in which parents report concerns in development over the first two years of life and diagnosis could be made around 3-4 years of age. [54] Some of the early signs of ASDs in this course include decreased attention at faces, failure to obviously respond when name is called, failure to show interests by showing or pointing, and delayed imaginative play. [55] A second course of development is characterized by normal or near-normal development before onset of regression or loss of skills. Within this course, there are two patterns of regression. The first pattern occurs in the first pa have conducted studies to determine whether regressive autism is a distinct subset of ASD. Over the years, the results of these studies have contradicted one another. Some researchers believe there is still nothing to support a definitive biological difference between early-onset and regressive autism. [58] Another pattern, childhood disintegrative disorder (a diagnosis now included under ASD), is characterized by regressive autism subsequently diagnosed with ASD.[58] Other terms used to describe regression, autistic regression regression, autistic regression, auti children show a mixture of features, with some early delays and some later losses; and there is evidence of a continuous spectrum of behaviors, rather than, or in addition to, a black-and-white distinction, between autism with and without regression.[61] There are several intermediate types of development, which do not neatly fit into either the traditional early onset or the regressive categories, including mixtures of early deficits, failures to progress, subtle diminishment, and obvious losses. If regression is defined strictly to require loss of language, it is less common; if defined more broadly, to include cases where language is preserved but social interaction is diminished, it is more common.[61] Regression may occur in a variety of domains, including communication, social, cognitive, and self-help skills; however, the most common regression is loss of language.[56][57] Some children lose social development instead of language; some lose both.[61] Skill loss may be quite rapid, or may be slow and preceded by a lengthy period of no skill progression; the loss may be accompanied by reduced social play or increased irritability.[60] The temporarily acquired skills typically amount to a few words of spoken language, and may include some rudimentary social perception.[61] After the regression, the child follows the standard pattern of autistic neurological development. The term regressive autism refers to the appearance that neurological development has reversed; it is actually only the affected development not to involve regression, with age-appropriate autistic symptoms being clear from birth. The apparent onset of regressive autism is surprising and distressing to parents, who often initially suspect severe hearing loss.[62] Attribution of regression to environmental stress factors may result in a delay in diagnosis.[63] Differential outcomes There continues to be a debate over the differential outcomes based on these two developmental courses Some studies suggest that regression is associated with poorer outcomes and others report no differences between those who experience a regression period. [64] While there is conflicting evidence surrounding language outcomes in autism, some studies have shown that cognitive and language abilities at age 2+1/2 may help predict language proficiency and production after age 5.[65] Overall, the literature stresses the importance of early intervention in achieving positive longitudinal outcomes.[66] Social and communication skills A defining feature is that autistic people take for granted. Impairments in social skills present many challenges for autistic individuals. Deficits in social skills may lead to problems with friendships, romantic relationships, daily living, and vocational success.[67] One study that examined the outcomes of autistic adults found that, compared to the general population, autistic people were less likely to be married, but it is unclear whether this outcome was due to deficits in social skills or intellectual impairment, or some other reason. [68] Prior to 2013, deficits in social function and communication were considered two separate symptom domains of autism. individuals to have deficits across three social skills: social-emotional reciprocity, nonverbal communication, and developing and sustaining relationships.[6] Communication deficits are due to problems with social-emotional reciprocity difficulties (and sustaining relationships.[6] Communication, and developing and sustaining relationships.[6] Communication deficits are due to problems with social-emotional skills like joint attention and social reciprocity. individual's ability to naturally engage in social interactions) may be present. Autistic individuals may lack mutual sharing of interests, for example many autistic children prefer not to play or interact with others. They may lack awareness or understanding of other people's thoughts or feelings - a child may get too close to peers (entering their personal space) without noticing that this makes them uncomfortable. They may also engage in attention before starting a conversation. [70] Older children and adults with ASD perform worse on tests of face and emotion recognition than non-autistic individuals, although this may be partly due to a lower ability to define a person's own emotions.[71] Autistic people experience deficits in their ability to develop, maintain, and understand relationships, as well as difficulty initiating a conversation or failure to consider the interests of the listener to sustain a conversation.[70][verification needed] The ability to be focused exclusively on one topic in communicate strong interest in a specific topic, speaking in lesson-like monologues about their passion instead of enabling reciprocal communication with whomever they are speaking to.[73] What may look like self-involvement or indifference toward others stems from a struggle to recognize or remember that other people have their own personalities, perspectives, and interests.[74][75] Another difference in the struggle to recognize or remember that other people have their own personalities, perspectives, and interests.[74][75] Another difference in the struggle to recognize or remember that other people have their own personalities, perspectives, and interests.[74][75] Another difference in the struggle to recognize or remember that other people have their own personalities, perspectives, and interests.[74][75] Another difference in the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle to recognize or remember that other people have the struggle that the struggle to recognize or remember that other people have the struggle that the strugg pragmatic communication skills is that autistic people may not recognize the need to control the volume of their voice in different social settings - for example, they may speak loudly in libraries or movie theaters. [76] Autistic people display atypical nonverbal behaviors or have difficulties with nonverbal communication. They may make infrequent eye contact - an autistic child may not make eye contact when called by name, or they may avoid making eye contact in autistic children is not due to shyness or anxiety; rather, it is overall diminished in quantity. Autistic individuals may struggle with both production and understanding of facial expressions. They often do not know how to recognize emotions from others' facial expressions, or they may not respond with the appropriate facial expressions. They may have trouble recognizing subtle expressions of emotion and identifying what various emotions mean for the conversation. [77][73] A defining feature is that autistic people have social impairments and often lack the intuition about others that many people take for granted. Temple Grandin, an autistic woman involved in autism activism, described her inability to understand the social communication of neurotypicals, or people with typical neural development, as leaving her feeling "like an anthropologist on Mars".[78] They may also not pick up on body language or social cues such as eye contact and facial expressions if they provide more information than the person can process at that time. They struggle with understanding the context and subtext of conversational or printed situations, and have trouble forming resulting conclusions about the content. This also results in a lack of social awareness and atypical language expressions differ between those on the autism spectrum and neurotypical individuals is not clear.[79] Further, at least half of autistic children have unusual prosody.[76] Autistic people may also experience difficulties with verbal communication. Differences in communication may be present from the first year of life, and may include delayed onset of babbling, unusual gestures, diminished responsiveness, and vocal patterns that are not synchronized with the caregiver. In the second and third years, autistic children have less frequent and less diverse babbling, consonants words, and word combinations; their gestures are less often integrated with words. Autistic children are less likely to make requests or share experiences, and are more likely to simply repeat others' words (echolalia).[80] Joint attention seems to be necessary for functional speech, and deficits in joint attention seem to distinguish infants with ASD [63] For example, they may look at a pointing hand instead of the object to which the hand is pointing,[81][80] and they consistently fail to point at objects in order to comment on or share an experience.[63] Autistic children may have difficulty with imaginative play and with developing symbols into language.[80] Some autistic linguistic behaviors include repetitive or rigid language, and restricted interests in conversation. For example, a child might repeat words or insist on always talking about the same subject. [70] Echolalia may also be present in autistic individuals, for example by responding to a question by repeating the inquiry instead of answering. [73] Language impairment is also common in autistic children, but is not part of a diagnosis.[70] Many autistic children develop language skills at an uneven pace where they easily acquire some aspects of communication, while never fully developing others, [73] such as in some cases, individuals remain completely nonverbal throughout their lives. The CDC estimated that around 40% of autistic children don't speak at all, although the accompanying levels of literacy and nonverbal communication skills vary.[82] Restricted and repetitive behaviors A young autistic boy who has arranged his toys in a row ASD includes a wide variety of characteristics. Some of these include behavioral characteristics and repetitive behaviors and repetitive behavior and repetitive which widely range from slow development of social and learning skills to difficulties creating connections with other people are more likely to experience, and as a result isolate themselves.[83][medical citation needed] Other behavioral characteristics include abnormal responses to sensations including sights, sounds, touch, taste and smell, and problems keeping a consistent speech rhythm. The latter problem influences an individual's social skills, leading to potential problems in how they are understood by communication partners. Behavioral characteristics displayed by autistic people typically influence development, language, and social competence. Behavioral characteristics of autistic people can be observed as perceptual disturbances, disturbances, disturbances of development rate, relating, speech and language, and motility.[84] The second core symptom of autism spectrum is a pattern of restricted and repetitive behaviors, activities, and interests. In order to be diagnosed with ASD under DSM-5 or DSM-5-TR, a person must have at least two of the following behaviors:[6][85] Repetitive behaviors or sounds.[70] These behaviors may occur constantly or only when the child gets stressed, anxious or upset. Resistance to change - A strict adherence to routines such as eating certain foods in a specific order, or taking the same path to school every day.[70] The child may have a meltdown if there is any change or disruption to their routine. Restricted interests - An excessive interest in a particular activity, topic, or hobby, and devoting all their attention to it. For example, young children might completely focus on things that spin and ignore everything else. Older children might try to learn everything about a single topic, such as the weather or sports, and perseverate or talk about it constantly.[70] Sensory reactivity- An unusual reaction to certain sensory inputs such as having a negative reaction to specific sounds or textures, being fascinated by lights or movements or having an apparent indifference to pain or heat.[86] Autistic individuals can display many forms of repetitive or restricted behavior, which the Repetitive Behavior Scale-Revised (RBS-R) categorizes as follows.[87] Stereotypeda for movements or having an apparent indifference to pain or heat.[86] Autistic individuals can display many forms of repetitive or restricted behavior. behaviors: Repetitive movements, such as hand flapping, head rolling, or body rocking. Compulsive behaviors: Time-consuming behaviors intended to reduce the anxiety that an individual feels compelled to perform repeatedly or according to rigid rules, such as placing objects in a specific order, checking things, or handwashing Resistance to change; for example, insisting that the furniture not be moved or refusing to be interrupted. Ritualistic behavior: Unvarying pattern of daily activities, such as an unchanging menu or a dressing ritual. This is closely associated with sameness and an independent validation has suggested combining the two factors.[87] Restricted interests: Interests or fixations that are abnormal in theme or intensity of focus, such as preoccupation with a single television program, toy, or game. Self-injury: Behaviors (SIB) are relatively common in autistic people, and can include headbanging, self-cutting, self-biting, and hair-pulling.[88] Some of these behaviors can result in serious injury or death.[88] Following are theories about the cause of self-injurious behavior can be influenced by environmental factors (e.g. reward in return for halting self-injurious behavior). However this theory is not applicable to younger children with autism. There is some evidence that frequency of self-injurious behavior can be reduced by removing or modifying environmental factors that reinforce this behavior. [89]: 10-12 Higher rates of self-injurious behavior can be reduced by removing or modifying environmental factors that reinforce this behavior. socially isolated individuals with autism. Studies have shown that socialization skills are related factors to self injurious behavior for individuals with autism. [90] Self-injury could be a response to modulate pain perception when chronic pain or other health problems that cause pain are present. [89]: 12-13 An abnormal basal ganglia connectivity may predispose to self-injurious behavior.[89]:13 Other features Autistic individuals may have symptoms that do not contribute to the diagnosis, but that can affect the individuals or the family.[45] Some individuals with ASD show unusual abilities, ranging from splinter skills such as the memorization of trivia to the rare talents of autistic savants.[91] One study describes how some individuals with ASD show superior skills in perception and attention, relative to the general population. [92] Sensory abnormalities are found in over 90% of autistic people, and are considered core features by some. under-responsivity (for example, walking into things) than for over-responsivity (for example, distress from loud noises) or for sensation seeking (for example, rhythmic movements).[93] An estimated 60-80% of autistic people have motor signs that include poor muscle tone, poor motor planning, and toe walking;[28][94] deficits in motor coordination are pervasive across ASD and are greater in autism proper. [95] Unusual eating behavior occurs in about three-quarters of children with ASD, to the extent that it was formerly a diagnostic indicator. Selectivity is the most common problem, although eating rituals and food refusal also occur. [96] There is tentative evidence that gender dysphoria occurs more frequently in autistic people (see Autism and LGBT identities).[97][98] As well as that, a 2021 anonymized online survey of 16-90 year-olds revealed that autistic males are more likely to be bisexual, while autistic males are more likely to be bisexual, while autistic males are more likely to be bisexual. conditions in autistic people.[100] These are linked to greater social impairment, irritability, behavior and sleep problems, language impairments and mood changes.[100][101] Parents of children with ASD report greater admiration and less conflict with the affected sibling than siblings of unaffected children and were similar to siblings of children with Down syndrome; siblings of individuals with ASD have greater risk of negative well-being and poorer sibling relationships as adults. [102] Causes Main article: Causes of autism It had long been presumed that there is a common cause at the genetic, cognitive, and neural levels for the social and non-social components of autism is instead a complex disorder whose core aspects have distinct causes that often co-occur.[103][104] While it is unlikely that a single cause for ASD exists, [104] many risk factors include genetics, prenatal and perinatal factors, neuroanatomical abnormalities, and environmental factors. It is possible to identify general risk factors, but much more difficult to pinpoint specific factors. Given the current state of knowledge, prediction can only be of a global nature and therefore requires the use of general markers.[105] Biologically meaningful subgroups within the autistic population [106] and by the traditional boundaries between the disciplines of psychiatry, psychology, neurology and pediatrics. [107] Newer technologies such as fMRI and diffusion tensor imaging can help identify biologically relevant phenotypes (observable traits) that can be viewed on brain scans, to help further neurogenetic studies of autism;[108] one example is lowered activity in the fusiform face area of the brain, which is associated with impaired perception of people versus objects.[109] It has been proposed to classify autism using genetics as well as behavior.[110] (For more, see Brett Abrahams) Genetics Hundreds of different genes are implicated in susceptibility. to developing autism,[111] most of which alter the brain structure in a similar way Autism has a strong genetic basis, although the genetics of autism are complex and it is unclear whether ASD is explained more by rare mutations with major effects, or by rare multi-gene interactions of common genetic variants.[112][113] Complexity arises due to interactions among multiple genes, the environment, and epigenetic factors which do not change DNA sequencing but are heritable and influence gene expression. [44] Many genes have been associated with autism through sequencing but are heritable and influence gene expression. risk have not been identified. Typically, autism cannot be traced to a Mendelian (single-gene) mutation or to a single chromosome abnormality, and none of the genetic syndromes associated with ASD have been shown to selectively cause ASD.[112] Numerous candidate genes have been located, with only small effects attributable to any particular gene.[112] Most loci individually explain less than 1% of cases of autism.[115] As of 2018[update], it appeared that between 74% and 93% of ASD risk is heritable.[85] If parents have one autistic child, they have a 2% to 8% chance of having a second child who is also autistic. If the autistic child is an identical twin the other will be affected 36 to 95 percent of the time. [medical citation needed] The large number of autistic individuals with unaffected family members may result from spontaneous structural variation, such as deletions, duplications or inversions in genetic material during meiosis.[116][117] Hence, a substantial fraction of autism cases that are highly heritable but not inherited: that is, the mutation that causes the autism is not present in the parental genome.[118][verification needed] As of 2018[update], understanding of genetic risk factors had shifted from a focus on a few alleles to an understanding that genetic involvement in ASD is probably diffuse, depending on a large effect. The most common gene disrupted with large effect rare variants appeared to be CHD8, but less than 0.5% of autistic people have such a mutation. The gene CHD8 encodes the protein chromodomain helicase DNA binding protein 8, which is a chromatin regulator enzyme that is essential during fetal development, CHD8 is an ATP dependent enzyme. [119][120][121] The protein contains an Snf2 helicase domain that is responsible for the hydrolysis of ATP to ADP.[121] CHD8 encodes for a DNA helicase that function as a transcription repressor by remodeling chromatin structure by altering the position of nucleosomes. CHD8 negatively regulates Wnt signaling. Wnt signaling is important in the vertebrate early development and morphogenesis. It is believed that CHD8 also recruits the linker histone H1 and causes the repression of β-catenin and p53 target genes.[119] The importance of CHD8 can be observed in studies where CHD8-knockout mice died after 5.5 embryonic days because of widespread p53 induced apoptosis. Some studies have determined the role of CHD8 in autism spectrum disorder (ASD). CHD8 expression significantly increases during human mid-fetal development. [119] The chromatin remodeling activity and its interaction with transcriptional regulators have shown to play an important role in ASD aetiology. [120] The developing mammalian brain has a conserved CHD8 target regions that are associated with ASD risk genes. [122] The knockdown of CHD8 in human neural stem cells results in dysregulation of ASD risk genes that are targeted by CHD8. [123] Recently CD8 has been associated to the regulation of XIII initiation, via regulation of XIII initiation of non-coding RNA, [ambiguous] the master regulator of XCI, [ambiguous] though competitive binding to Xist regulatory regions. [125] Some ASD is associated with clearly genetic conditions, like fragile X syndrome; however, only around 2% of autistic people have fragile X. [85] Hypotheses from evolutionary psychiatry suggest that these genes persist because they are linked to human inventiveness, intelligence or systemising.[126][127] Current research suggests that genes that increase susceptibility to ASD are ones that control protein synthesis in neuronal cells, synapse formation and remodeling, and excitatory to inhibitory neurotransmitter balance. Therefore, despite up to 1000 different genes thought to contribute to increased risk of ASD, all of them eventually affect normal neural development and connectivity between different functional areas of the brain in a similar manner that is characteristic of an ASD brain. Some of these genes are known to modulate production of the GABA neurotransmitter which is the main inhibitory neurotransmitter in the previous system. These GABA-related genes are under-expressed in an ASD brain. On the other hand, genes controlling expression of glial and immune cells in the brain e.g. astrocytes and microglia, respectively, are over-expressed which correlates with increased number of glial and immune cells found in postmortem ASD brains. Some genes under investigation in ASD pathophysiology are those that affect the mTOR signaling pathway which supports cell growth and survival.[128] All these genetic variants contribute to the development of the autistic spectrum; however, it cannot be guaranteed that they are determinants for the development.[129] Autism may be under-diagnosed in women and girls due to an assumption that it is primarily a male condition, [130] but genetic phenomena such as imprinting and X linkage have the ability to raise the frequency and severity of conditions in males, and theories have been put forward for a genetic reason why males are diagnosed more often, such as the imprinted brain hypothesis and the extreme male brain theory.[131][132][133] Early life Several prenatal and perinatal complications have been reported as possible risk factors for autism. These risk factors include maternal gestational diabetes, maternal and paternal and pa after first trimester, use of prescription medication (e.g. valproate) during pregnancy, and meconium in the amniotic fluid. While research is not conclusive on the relation of these factors to autism, each of these factors to autism, and other typically in children with autism, compared to their siblings who do not have autism, and other typically in children with autism, compared to their siblings who do not have autism, and other typically in children with autism, compared to their siblings who do not have autism, and other typically in children with a typically in children w developing youth.[134] While it is unclear if any single factors during the prenatal phase affect the risk of autism,[135] Low vitamin D levels in early development has been hypothesized as a risk factor for autism.[136] There are also studies being done to test if certain types of regressive autism have an autoimmune basis. [58] Maternal nutrition and inflammation during preconception and pregnancy influences fetal neurodevelopment. Intrauterine growth restriction is associated with ASD, in both term and preterm infants. damaging the nervous system.[138] Exposure to air pollution during pregnancy, especially heavy metals and particulates, may increase the risk of autism.[139][140] Environmental factors that have been claimed without evidence to contribute to or exacerbate autism include certain foods, infectious diseases, solvents, PCBs, phthalates and phenols used in plastic products, pesticides, brominated flame retardants, alcohol, smoking, illicit drugs, vaccine and autism and MMR vaccine and autism Parents may first become aware of autistic symptoms in their child around the time of a routine vaccine for causing autism. [146] In 1998 Andrew Wakefield led a fraudulent, litigation-funded study that suggested that the MMR vaccine may cause autism. [147][148][149] [150][151] This conjecture suggested that autism results from brain damage caused either by the MMR vaccine itself, or by thimerosal, a vaccine preservative. [152] No convincing scientific evidence continues to refute them, including the observation that the rate of autism continues to climb despite elimination of thimerosal from routine children worldwide; it concluded that neither the MMR vaccine, which has never contained thimerosal, [154] nor the vaccine components thimerosal or mercury, lead to the development of ASDs.[155] Despite this, misplaced parental concern has led to lower rates of childhood diseases in some countries, and the preventable deaths of several children.[156][157] Etiological hypotheses Several hypotheses have been presented that try to explain how and why autism develops by integrating known causes (genetic and environmental effects) and findings (neurobiological and somatic). Some are more comprehensive, such as the Pathogenetic Triad,[158] which proposes and operationalizes three core features (an autistic personality, cognitive compensation, neuropathological burden) that interact to cause autism, and the Intense World Theory, [159] which explains autism through a hyper-active neurobiology that leads to an increased perception, attention, memory, and emotionality. There are also simpler hypotheses that explain only individual parts of the neurobiology or phenotype of autism, such as mind-blindness (a decreased ability for Theory of Mind), the weak central coherence theory, or the extreme male brain and empathising-systemising theory. Evolutionary hypotheses Research exploring the evolutionary benefits of autism and associated genes has suggested that autistic people may have played a "unique role in technological spheres and understanding of natural systems" in the course of human development.[160][161] It has been suggested that it may have arisen as "a slight trade off for other traits that are seen as highly advantageous", providing "advantages in tool making and mechanical thinking", with speculation that the condition may "reveal itself to be the result of a balanced polymorphism, like sickle cell anemia, that is advantageous in a certain mixture of genes and disadvantageous in specific combinations. [162] In 2011, a paper in Evolutionary Psychology proposed that autistic traits, including increased abilities for spatial intelligence, concentration and memory, could have been naturally selected to enable self-sufficient foraging in a

more (although not completely) solitary environment, referred to as the "Solitary Forager Hypothesis".[163][164][165] A 2016 paper examines Asperger syndrome as "an alternative pro-social adaptive strategy" which may have developed as a result of the emergence of "collaborative morality" in the context of small-scale hunter-gathering, i.e. where

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"a positive social reputation for making a contribution to group wellbeing and survival" becomes more important than complex social understanding.[166] Conversely, some multidisciplinary research suggests that recent human evolution may be a driving force in the rise of a number of medical conditions in recent human populations, including
autism. Studies in evolutionary medicine indicate that as biological evolution, disorders linked to bodily dysfunction increase in prevalence due to a lack of contact with pathogens and negative environmental conditions that once widely affected ancestral populations. Because natural selection primarily favors
reproduction over health and longevity, the lack of this impetus to adapt to certain harmful circumstances creates a tendency for genes in descendant populations to over-express themselves, which may cause a wide array of maladies, ranging from mental illnesses to autoimmune disorders.[167] Pathophysiology Main article: Mechanism of autism
Autism's symptoms result from maturation-related changes in various systems of the brain. [168] How autism occurs is not well understood. Its mechanism can be divided into two areas: the pathophysiology of brain structures and behaviors. [168] The
behaviors appear to have multiple pathophysiologies.[169] There is evidence that gut-brain axis abnormalities may be involved.[100][170] A 2015 review proposed that immune, gastrointestinal inflammation, malfunction of the autonomic nervous system, gut flora alterations, and food metabolites may be involved.[100][170] A 2015 review proposed that immune, gastrointestinal inflammation and
dysfunction.[101] A 2016 review concludes that enteric nervous system abnormalities might play a role in neurological disorders such as autism. Neural connections and the immune system are a pathway that may allow diseases originated in the intestine spread to the brain.[170] Several lines of evidence point to synaptic dysfunction as a cause of
autism.[109] Some rare mutations may lead to autism by disrupting some synaptic pathways, such as those involved with cell adhesion.[171] All known teratogens (agents that cause birth defects) related to the risk of autism appear to act during the first eight weeks from conception, and though this does not exclude the possibility that autism can be
initiated or affected later, there is strong evidence that autism may involve a combination of brain enlargement in some areas and reduction in others.[173] These studies suggest that autism may be caused by abnormal neuronal growth and
pruning during the early stages of prenatal and postnatal brain development, leaving some areas of the brain, including the frontal lobe, the mirror
neuron system, the limbic system, the limbic system, the temporal lobe, and the corpus callosum.[175][176] In functional neuroimaging studies, when performing theory of mind and facial emotion response tasks, the median person on the autism spectrum exhibits less activation in the primary and secondary somatosensory cortices of the brain than the median member
of a properly sampled control population. This finding coincides with reports demonstrating abnormal patterns of cortical thickness and grey matter volume in those regions of autistic persons' brains. [177] Brain connectivity Brains of autistic persons' brains.
correlates with the severity of autism. Following are some observed abnormal connectivity patterns in autistic individuals:[178][128] Decreased connectivity between different specialized regions of the brain (e.g. lower neuron density in corpus callosum) and relative over-connectivity within specialized regions of the brain by adulthood. Connectivity
between different regions of the brain ('long-range' connections) are important for integration and global processing of information within the existing model of the world within the brain. Connections within each specialized regions ('short-range' connections) are important for processing individual details
and modifying the existing model of the world within the brain to more closely reflect incoming sensory information. In infancy, children at high risk for autism that were later diagnosed with autism were observed to have abnormally high long-range connectivity by
adulthood.[178] Abnormal preferential processing of information by the left hemisphere is associated with processing information in a
more global and integrated sense that is essential for pattern recognition. For example, visual information like face recognition is normally processed by the right hemisphere which tends to integrate all information in the left hemisphere where
information tends to be processed for local details of the face rather than the overall configuration of the face. This left lateralization negatively impacts both facial recognition and spatial skills.[178] Increased functional connectivity within the left hemisphere which directly correlates with severity of autism. This observation also supports preferential
processing of details of individual components of sensory information over global processing of sensory information in an ASD brain.[178] Prominent abnormal connectivity in the frontal and occipital regions. In autistic individuals low connectivity in the frontal and occipital regions.
connectivity which is high in infancy and low in adulthood in ASD.[178] Abnormal neural organization is also observed in the Broca's area which is important for speech production.[128] Neuropathology Listed below are some characteristic findings in ASD brains on molecular and cellular levels regardless of the specific genetic variation or mutation
contributing to autism in a particular individual: Limbic system with smaller neurons that are more densely packed together. Given that the limbic system is the main center of emotions and memory in the human brain, this observation may explain social impairment in ASD.[128] Fewer and smaller Purkinje neurons in the cerebellum. New research
suggest a role of the cerebellum in emotional processing and language. [128] Increased number of astrocytes and microglia in the cerebral cortex. These cells provide metabolic and functional support to neurons and act as immune cells in the nervous system, respectively. [128] Increased brain size in early childhood causing macrocephaly in 15-20%
of ASD individuals. The brain size however normalizes by mid-childhood. This variation in brain size in not uniform in the ASD brain with some parts like the frontal and temporal lobes being larger, some like the parietal and occipital lobes being larger, some like the parietal and occipital lobes being smaller than
neurotypical individuals.[128] Cell adhesion molecules that are essential to formation and maintenance of connections between neurons, neuroligins found on postsynaptic neurons are all found to be mutated in ASD.[128] Gut-immune-brain axis
Up to 70% of autistic individuals have GI-related problems like reflux, diarrhea, constipation, inflammatory bowel disease, and food allergies. [citation needed] It has been observed that the makeup of gut bacteria in autistic people is different than that of neurotypical individuals which has raised the question of influence of gut bacteria on ASD
development via inducing an inflammatory state.[179] Listed below are some research findings on the influence of gut bacteria and abnormal immune responses on brain development:[179] Some studies on rodents have shown gut bacteria influencing emotional functions and neurotransmitter balance in the brain, both of which are impacted in ASD.
[128] The immune system is thought to be the intermediary that modulates the influence of gut bacteria on the brain. Some ASD individuals have a dysfunctional immune antibodies. Increased inflammatory biomarkers correlate with
increased severity of ASD symptoms and there is some evidence to support a state of chronic brain inflammation in ASD.[179] More pronounced inflammatory responses to bacteria were found in ASD individuals with an abnormal gut microbiota. Additionally, immunoglobulin A antibodies that are central to gut immunity were also found in elevated
levels in ASD populations. Some of these antibodies may attack proteins that support myelination of the maternal immune system during pregnancy (by gut bacteria, bacterial toxins, an infection, or non-infectious causes) and gut bacteria
in the mother that induce increased levels of Th17, a pro-inflammatory immune cell, have been associated with an increased risk of autism. Some maternal IgG antibodies that inflammation within the brain promoted by inflammatory
responses to harmful gut microbiome impacts brain development.[179] Pro-inflammatory cytokines IFN-γ, IFN-α, IL-6 and IL-17 have been shown to negate this effect in the same animal models.[179] Some
gut proteins and microbial products can cross the blood-brain barrier and activate mast cells in the brain. Mast cells in the brain. Mast cells in the brain. Mast cells in the brain barrier permeability and help set up a cycle of chronic inflammatory factors and histamine which further information: Mirror neuron § Autism The
mirror neuron system consists of a network of brain areas that have been associated with empathy processes in humans, the mirror neuron system has been identified in the inferior frontal gyrus and the inferior parietal lobule and is thought to be activated during imitation or observation of behaviors.[181] The connection between
mirror neuron dysfunction and autism is tentative, and it remains to be seen how mirror neurons may be related to many of the important characteristics of autism. [182][183] Social brain interconnectivity A number of discrete brain regions and networks among regions that are involved in dealing with other people have been discussed together under
the rubric of the social brain. As of 2012[update], there is a consensus that autism spectrum is likely related to problems with interconnectivity among these regions and networks, rather than problems with any specific region or network. [184] Temporal lobe Functions of the temporal lobe are related to many of the deficits observed in individuals
with ASDs, such as receptive language, social cognition, joint attention, action observation, and empathy. The temporal sulcus and the fusiform face area, which may mediate facial processing. It has been argued that dysfunction in the superior temporal sulcus and the fusiform face area, which may mediate facial processing. It has been argued that dysfunction in the superior temporal sulcus and the fusiform face area, which may mediate facial processing.
autism. Compared to typically developing individuals, one study found that individuals with so-called high-functioning autism had reduced activity in the fusiform face area when viewing pictures of faces. [185] [verification needed] Mitochondria ASD could be linked to mitochondrial disease, a basic cellular abnormality with the potential to cause
disturbances in a wide range of body systems.[186] A 2012 meta-analysis study, as well as other population studies show that approximately 5% of autistic children meet the criteria for classical mitochondrial dysfunction.[187] It is unclear why this mitochondrial disease occurs, considering that only 23% of children with both ASD and mitochondrial
disease present with mitochondrial DNA abnormalities. [187] Serotonin Serotonin is a major neurons (synaptogenesis), formation of new neurons (synaptogenesis), remodeling of synapses, and survival and migration of neurons, processes that are
necessary for a developing brain and some also necessary for learning in the adult brain. 45% of ASD individuals have been found to have increased activity of serotonin in the developing brain may facilitate the onset of ASD, with an association found in six out of eight studies
between the use of selective serotonin reuptake inhibitors (SSRIs) by the pregnant mother and the development of ASD in the child exposed to SSRI in the antenatal environment. The study could not definitively conclude SSRIs caused the increased risk for ASD due to the biases found in those studies, and the authors called for more definitive, better
conducted studies.[188] Confounding by indication has since then been shown to be likely.[189] However, it is also hypothesized that SSRIs may help reduce symptoms of ASD and even positively affect brain development in some ASD patients.[128] Diagnosis This section needs to be updated. The reason given is: old sources, pre-DSM5. Please help
update this article to reflect recent events or newly available information. (March 2021) Process for screening and diagnosing ASD; M-CHAT is Modified Checklist for Autism in Toddlers; (+) is positive test result; (-) is negative test result Diagnosis is based on behavior, not cause or mechanism. [190] The diverse expressions of ASD behavioral and
observational symptoms and absence of one specific genetic or molecular marker for the disorder pose diagnostic challenges to clinicians who use assessment methods based on symptom expression may vary over the course
of development.[191] Furthermore, clinicians who use those methods must differentiate among pervasive developmental disorders, and may also consider similar conditions, including intellectual disorders, and may also consider similar conditions, including intellectual disorders, and may also consider similar conditions, including intellectual disorders, and may also consider similar conditions, including intellectual disorders, and may also consider similar conditions, including intellectual disorders.
diagnosis of ASD should be given by a team of professionals from different disciplines (e.g. child psychiatrists, child neurologists) and only after the child has been observed in many different settings.[193] ASD can sometimes be diagnosed by the age of 14 months, although diagnosis becomes increasingly stable over the first three
years of life: for example, a one-year-old who meets diagnostic criteria for ASD is less likely than a three-year-old to continue to do so a few years, however, because of delays in seeking and administering assessments, diagnoses often occur much later.[195] The cost of
screening and diagnosis and the challenge of obtaining payment can inhibit or delay diagnosed at age 3 while children with Aspergers are typically diagnosed at age 7.[197] In the UK the National Autism Plan for Children recommends at
most 30 weeks from first concern to completed diagnosis and assessment, though few cases are handled that quickly in practice. [198] Although the symptoms of ASD begin early in childhood, they are sometimes missed; years later, adults may seek diagnoses to help them or their friends and family understand themselves, to help their employers
make adjustments, or in some locations to claim disability living allowances or other benefits.[citation needed] A pediatrician commonly performs a preliminary investigation by taking developmental history and physically examining the child. If warranted, diagnosis and evaluations are conducted with help from ASD specialists, observing and
assessing cognitive, communication, family, and other factors using standardized tools, and taking into account any associated medical conditions.[198] A pediatric neuropsychologist is often asked to assess behavior and cognitive skills, both to aid diagnosis and to help recommend educational interventions.[199] A differential diagnosis for ASD at
this stage might also consider intellectual disability, hearing impairment, and a specific language impairment lan
particularly when other symptoms already suggest a genetic causes, [202] Although genetic technology allows clinical gene
legal, and social issues will emerge.[204] Commercial availability of tests may precede adequate understanding of how to use test results, given the complexity of autism may be more challenging for clinicians to detect in women and
girls.[205] This is partially due to differences in autistic phenotypes between males and females, the historical focus in research and practice on the male autistic phenotype, as well as the stereotype that autistic phenotype, as well as the stereotype that autistic phenotypes between males and females, the historical focus in research and practice on the male autistic phenotype, as well as the stereotype that autistic phenotype, as well as the stereotype that autistic phenotypes between males and females, the historical focus in research and practice on the male autistic phenotype, as well as the stereotype that autistic phenotype, as well as the stereotype that autistic phenotypes between males and females and females and females and females and females and females are male.
autistic males.[205] Masking may include making oneself perform normative facial expressions and eye contact.[206] A notable percentage of autistic females may be misdiagnosed, diagnosed after a considerable delay, or not diagnosed at all.[205] Considering the unique challenges in diagnosing ASD using behavioral and observational assessment.
specific US practice parameters for its assessment were published by the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the American Academy of Neurology in the year 2000,[207] the year 2000,[207] the year 2000,[207]
include an initial screening of children by general practitioners (i.e., "Level 1 screening") and for children who fail the initial screening, a comprehensive diagnostic assessment by experienced clinicians (i.e. "Level 2 evaluation"). Furthermore, it has been suggested that assessments of children with suspected ASD be evaluated within a developmental
framework, include multiple informants (e.g., parents and teachers) from diverse contexts (e.g., home and school), and employ a multidisciplinary team of professionals (e.g., clinical psychologists, neuropsychologists, neuropsychologists, and psychiatrists). [208] As of 2019[update], psychologists wait until a child showed initial evidence of ASD tendencies, then administer
various psychological assessment tools to assess for ASD.[208] Among these measurements, the Autism Diagnostic Observation Schedule (ADOS) are considered the "gold standards" for assessing autistic children.[209][210] The ADI-R is a semi-structured parent interview that probes for symptoms for symptoms for symptoms for symptoms for assessing autistic children.
of autism by evaluating a child's current behavior and developmental history. The ADOS is a semistructured interactive evaluation of ASD symptoms that is used to measure social and communication abilities by eliciting several opportunities for spontaneous behaviors (e.g., eye contact) in standardized context. Various other questionnaires (e.g., The
Childhood Autism Rating Scale, Autism Treatment Evaluation Checklist) and tests of cognitive functioning (e.g., The Peabody Picture Vocabulary Test) are typically included in an ASD assessment battery. The diagnostic interview for social and communication disorders (DISCO) may also be used.[211] Screening About half of parents of children with
ASD notice their child's atypical behaviors by age 18 months, and about four-fifths notice by age 24 months. [194] If a child does not meet any of the following milestones, it "is an absolute indication to proceed with further evaluations. Delay in referral for such testing may delay early diagnosis and treatment and affect the [child's] long-term
outcome".[45] No response to name (or gazing with direct eye contact) by 6 months. No single words by 12 months. No two-word (spontaneous, not just echolalic) phrases by 24 months. Loss of any language or social skills, at any age. The Japanese practice is to
screen all children for ASD at 18 and 24 months, using autism-specific formal screening tests. In contrast, in the UK, children whose families or doctors recognize possible signs of autism are screened. It is not known which approach is more effective.[109][clarification needed] The UK National Screening Committee does not recommend universal
ASD screening in young children. Their main concerns includes higher chances of early interventions[213] There is no consensus between professional and expert bodies in the US on screening for autism in children younger than 3 years.[215] Screening tools include the Modified
Checklist for Autism in Toddlers (M-CHAT), the Early Screening of Autistic Traits Questionnaire, and the First Year Inventory; initial data on M-CHAT and its predecessor, the Checklist for Autism in Toddlers (CHAT), on children aged 18–30 months suggests that it is best used in a clinical setting and that it has low sensitivity (many false-negatives)
but good specificity (few false-positives).[194] It may be more accurate to precede these tests with a broadband screener that does not distinguish ASD from other developmental disorders.[217] Although genetic screening
for autism is generally still impractical, it can be considered in some cases, such as children with neurological symptoms and dysmorphic features. [218] Misdiagnosis There is a significant level of misdiagnosis of autism in neurological symptoms and dysmorphic features.
lost diagnosis cannot be accounted for by successful ASD treatment alone. The most common reason parents reported as the cause of lost ASD diagnosis given so the child could receive ASD treatment (24.2%), ASD treatment success or
maturation (21%), and parents disagreeing with the initial diagnosis (1.9%).[214][non-primary source needed] Many of the children who were later found not to meet ASD diagnosis criteria then received diagnosis for another developmental disorder. Most common was ADHD, but other diagnoses included sensory disorders, anxiety, personality,
disorder, or learning disability.[214][non-primary source needed] Neurodevelopment and psychiatric disorder, anxiety disorder, reactive attachment disorder, cognitive impairment, visual impairment, hearing loss and normal behavioral
variation.[219] Some behavioral variations that resemble autistic traits are repetitive behaviors, sensitivity to change in daily routines, focused interests, and toe-walking. These are considered normal behaviors especially when excited, tired,
bored, or stressed. Some ways of distinguishing typical behaviors are the ability of the child to suppress these behaviors and the absence of these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors and the absence of these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress these behaviors are the ability of the child to suppress the suppress these behaviors are the ability of the child to suppress the su
Comorbidity may increase with age and may worsen the course of youth with ASDs and make intervention and treatment more difficult. Distinguishing between ASDs and other diagnoses can be challenging because the traits of ASDs make traditional diagnostic
procedures difficult.[220][221] The most common medical condition occurring in individuals with ASDs is seizure disorder or epilepsy, which occurs in 11-39% of autistic individuals.[222] The risk varies with age, cognitive level, and type of language disorder.[223] Tuberous sclerosis, an autosomal dominant genetic condition in which non-malignant
tumors grow in the brain and on other vital organs, is present in 1-4% of individuals with ASDs. [224] Intellectual disabilities are some of the most common comorbid disorders with ASDs. Recent estimates suggest that 40-69% of autistic individuals have some degree of an intellectual disability, [64] more likely to be severe for females. A number of
genetic syndromes causing intellectual disability may also be comorbid with ASD, including fragile X, Down, Prader-Willi, Angelman, Williams syndrome[225] and SYNGAP1-related intellectual disability. [226][227] Learning disability may also be comorbid in individuals with an ASD. Approximately 25–75% of individuals with an ASD also have
some degree of a learning disability. [228] Various anxiety disorders tend to co-occur with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall comorbidity rates of 7-84%. [64] They are common among children with ASDs, with overall common among children with ASDs, with a common among children with a 
itself, or are hard to distinguish from ASD's symptoms. [229] Rates of comorbid depression in individuals with an ASD range from 4-58%. [230] The relationship between ASD and schizophrenia remains a controversial subject under continued investigation, and recent meta-analyses have examined genetic, environmental, infectious, and immune risk
factors that may be shared between the two conditions.[231][232][233] Oxidative stress, DNA damage and DNA repair have been postulated to play a role in the aetiopathology of both ASD and schizophrenia.[234] Deficits in ASD are often linked to behavior problems, such as difficulties following directions, being cooperative, and doing things on
other people's terms. [235] Symptoms similar to those of attention deficit hyperactivity disorder (ADHD) can be part of an ASD diagnosis. [236] Sensory processing disorder is also comorbid with ASD, with comorbidity rates of 42-88%. [237] Starting in adolescence, some people with ASperger syndrome (26% in one sample) [238] fall under the criteria
10-15% of autism cases have an identifiable Mendelian (single-gene) condition, chromosome abnormality, or other genetic syndromes. [242] [verification needed] Sleep problems affect about two-thirds of individuals with ASD at some point in childhood.
These most commonly include symptoms of insomnia such as difficulty in falling asleep, frequent nocturnal awakenings, and early morning awakenings. Sleep problems are associated with difficult behaviors and family stress, and are often a focus of clinical attention over and above the primary ASD diagnosis. [243] Management Main article: Autism
therapies There is no treatment as such for autism, [244] and many sources advise that this is not an appropriate goal, [245] although treatment of co-occurring conditions remains an important goal. [247] There is no known cure for autism, nor can any known treatment as such for autism, lathough treatment of co-occurring conditions remains an important goal. [247] There is no known cure for autism, nor can any known treatment as such for autism, lathough those who
require little-to-no support are more likely to experience a lessening of symptoms over time. [248][250] Several interventions can help children with autism, [251] and no single treatment typically tailored to the child's needs. [252] Studies of interventions have methodological problems that prevent definitive conclusions
outcomes.[255][256] Behavioral, psychological, education, and/or skill-building interventions may be used to assist autistic people to learn life skills necessary for living independently,[257] as well as other social, communication, and language skills. Therapy also aims to reduce challenging behaviors and build upon strengths.[258] Intensive,
sustained special education programs and behavior therapy early in life can help children acquire self-care, communication, and job skills. [252] Although evidence-based interventions for autistic children vary in their methods, many adopt a psychoeducational approach to enhancing cognitive, communication, and social skills while minimizing
problem behaviors. While medications have not been found to help with core symptoms, they may be used for associated symptoms, such as irritability, inattention, or repetitive behavior patterns. [259] Non-pharmacological interventions Intensive, sustained special education or remedial education programs and behavior therapy early in life can help
children acquire self-care, social, and job skills. Available approaches include applied behavior analysis, developmental models, structured teaching, speech and language therapy, social skills therapy, and occupational therapy. [260] Among these approaches, interventions either treat autistic features comprehensively, or focus treatment on a specific
area of deficit.[256] Generally, when educating those with autism, specific tactics may be used to effectively relay information to these individuals. Using as much social interaction as possible is key in targeting the inhibition autistic individuals. Using as much social interaction as possible is key in targeting the inhibition autistic individuals.
groupings, which involves assigning words to typical conceptual categories, can be beneficial in fostering learning. [261] There has been increasing attention to the development of evidence-based interventions for autistic young children. Two theoretical frameworks outlined for early childhood intervention include applied behavioral analysis (ABA)
and the developmental social-pragmatic model (DSP).[256] Although ABA therapy has a strong evidence base, particularly in regard to early intensive home-based therapy, ABA's effectiveness may be limited by diagnostic severity and IQ of the person affected by ASD.[262] The Journal of Clinical Child and Adolescent Psychology has deemed two early
childhood interventions as "well-established":[263] individual comprehensive ABA, and focused teacher-implemented ABA combined with DSP.[256] Another evidence-based intervention that has demonstrated efficacy is a parent training model, which teaches parents how to implement various ABA and DSP techniques themselves.[256] Various DSP
programs have been developed to explicitly deliver intervention systems through at-home parent implementation. In October 2015, the American Academy of Pediatrics (AAP) proposed new evidence-based recommendations for early involvement with both
developmental and behavioral methods, support by and for parents and caregivers, and a focus on both the core and associated symptoms of ASD.[264] However, a Cochrane review found no evidence that early intensive behavioral intervention (EIBI) is effective in reducing behavioral problems associated with autism in most autistic children but did
help improve IQ and language skills. The Cochrane review did acknowledge that this may be due to the low quality of studies on pet therapy have
shown positive effects. [266] Generally speaking, treatment of ASD focuses on behavioral and educations can be recommended to target
specific symptoms or co-existing problems such as restricted and repetitive behaviors (RRBs), anxiety, depression, hyperactivity/inattention and sleep disturbance. [267] Melatonin for example can be used for sleep problems.
autism, there is uncertainty regarding the efficacy of interventions to treat RRBs. [269] Education An autistic three-year-old points to fish in an aquarium, as part of an experiment on the effect of intensive shared-attention training on language development. [270] Educational interventions often used include applied behavior analysis (ABA).
developmental models, structured teaching, speech and language therapy and social skills therapy. [252] Among these approaches, interventions either treat autistic features comprehensively, or focalize treatment on a specific area of deficit. [254] The quality of research for early intensive behavioral intervention (EIBI)—a treatment procedure
incorporating over thirty hours per week of the structured type of ABA that is carried out with very young children—is currently low, and more vigorous research designs with larger sample sizes are needed. [265] Two theoretical frameworks outlined for early childhood intervention include structured and naturalistic ABA interventions, and
developmental social pragmatic models (DSP), [254] One interventional strategy utilizes a parent training model, which teaches parents to disseminate interventions themselves. [254] Various DSP programs have been developed to explicitly deliver intervention systems through
at-home parent implementation. Despite the recent development of parent training models, these interventions have demonstrated effectiveness in numerous studies, being evaluated as a probable efficacious mode of treatment. [254] Early, intensive ABA therapy has demonstrated effectiveness in enhancing communication and adaptive functioning in
preschool children;[252] it is also well-established for improving the intellectual performance of that age group.[252] Similarly, a teacher-implemented intervention that utilizes a more naturalistic form of ABA combined with a developmental social pragmatic approach has been found to be beneficial in improving social-communication skills in young
children, although there is less evidence in its treatment of global symptoms. [254] Neuropsychological reports are often poorly communicated to educators, resulting in a gap between what a report recommends and what education is provided. [199] The appropriateness of including children with varying severity of autism spectrum disorders in the
general education population is a subject of current debate among educators and researchers. [271] Pharmacological interventions Medications may be used to treat ASD symptoms that interfere with integrating a child into home or school when behavioral treatment fails. [272] They may also be used for associated health problems, such as ADHD or
anxiety.[272] However, their routine prescription for the core features of ASD is not recommended.[273] More than half of US children diagnosed with ASD are prescribed psychoactive drugs or anticonvulsants, with the most common drug classes being antidepressants, stimulants, and antipsychotics.[274][275] The atypical antipsychotic drugs
risperidone and aripiprazole are FDA-approved for treating associated aggressive and self-injurious behaviors. [259] [276] However, their side effects must be weight gain, tiredness, drooling, and aggression. [259] There is some emerging
data that show positive effects of aripiprazole and risperidone on restricted and repetitive behaviors (i.e., stimming; e.g., flapping, twisting, complex whole-body movements),[273] but due to the small sample size and different focus of these studies and the concerns about its side effects, antipsychotics are not recommended as primary treatment of
RRBs.[277] SSRI antidepressants, such as fluovamine, have been shown to be effective in reducing repetitive and ritualistic behaviors, while the stimulant medication methylphenidate is beneficial for some children with co-morbid inattentiveness or hyperactivity.[252] There is scant reliable research about the effectiveness or safety of
systematic review on adults with autism has provided emerging evidence for decreasing stress, anxiety, ruminating thoughts, anger, and aggression through mindfulness-based interventions for improving mental health. [278] Although popularly used as an alternative treatment for autistic people, as of 2018 [update] there is no good evidence to
recommend a gluten- and casein-free diet as a standard treatment. [279][281] A 2018 review concluded that it may be a therapeutic option for specific groups of children with autism, such as those with known food intolerances or allergies, or with food intolerance markers. The authors analyzed the prospective trials conducted to date that
studied the efficacy of the gluten- and casein-free diet in children with ASD (4 in total). All of them compared gluten- and casein-free diet versus normal diet with a control group (2 double-blind trial). In two of the studies, whose duration was 12 and 24 months, a significant
improvement in ASD symptoms (efficacy rate 50%) was identified. In the other two studies, whose duration of the diet may be necessary to achieve the improvement of the ASD symptoms. [279] The authors concluded that a longer duration of the diet may be necessary to achieve the improvement of the ASD symptoms.
include transgressions of the diet, small sample size, the heterogeneity of the participants and the possibility of a placebo effect. [281][282][283] In the subset of people who have gluten sensitivity there is limited evidence that autistic children
have for unconventional foods can lead to reduction in bone cortical thickness with this risk being greater in those on casein-free diets, as a consequence of the low intake of exercise and gastrointestinal disorders. [287] In 2005, botched
chelation therapy killed a five-year-old child with autism. [288] [289] Chelation is not recommended for autistic people since the associated risks outweigh any potential benefits. [290] Another alternative medicine practice with no evidence is CEASE therapy, a mixture of homeopathy, supplements, and 'vaccine detoxing'. [medical citation needed]
Results of a systematic review on interventions to address health outcomes among autistic adults found emerging evidence to support mindfulness-based interventions for improving mental health. This includes decreasing stress, anxiety, ruminating thoughts, anger, and aggression. [291] An updated Cochrane review (2022) found evidence that music
therapy likely improves social interactions, verbal communication, and non-verbal communication skills. [292] There has been early research looking at hyperbaric treatments in children with autism. [293] Studies on pet therapy have shown positive effects. [294] Prevention While infection with rubella during pregnancy causes fewer than 1% of cases of
autism,[295] vaccination against rubella can prevent many of those cases.[296] Outcomes There is no known cure for autism.[252][109] The degree of symptoms can decrease, occasionally to the extent that people lose their diagnosis of ASD;[297] this occurs sometimes after intensive treatment and sometimes not. It is not known how often this
outcome happens, [298] with reported rates in unselected samples ranging from 3% to 25%. [297] Although core difficulties tend to persist, symptoms often become less severe with age. [44] Acquiring language before age six, having an IQ above 50, and having a marketable skill all predict better outcomes; independent living is unlikely with severe
autism.[299] Many autistic people face significant obstacles in transitioning to adulthood.[300] Compared to the general population, autistic people in their 20s with autism are not employed.[301] Some autistic adults are unable to live independently.[302] Academic
performance The examples and perspective in this section, discuss the issue on the talk page, or create a new section, as appropriate. (April 2022) (Learn how and when to remove this template message) The number of students
identified and served as eligible for autism services in the United States has increased from 5,413 children in 1991-1992 to 370,011 children in the 2010-2011 academic school year.[303] The United States Department of Health and Human Services reported approximately 1 in 68 children in the 2010-2011 academic school year.
between ages 2 and 4.[303] The increasing number of students diagnosed with ASD in the schools presents significant challenges to teachers, school psychologists, and other school professionals.[303] These challenges include developing a consistent practice that best support the social and cognitive development of the increasing number of autistic
students.[303] Although there is considerable research addressing assessment, identification, and support services for autistic children, there is a need for further research focused on these topics within the school psychologists and other
education professionals with specific directions for advocacy and service delivery that aim to enhance school outcomes for students with ASD.[303] Attempts to identify and use best intervention practices for students with ASD.[303] Some evidence
suggests that although these interventions work for some students, there remains a lack of specificity for which type of student, under what environmental conditions (one-on-one, specialized instruction or general education) and for which type of student, under what environmental conditions (one-on-one, specialized instruction or general education) and for which type of student, under what environmental conditions (one-on-one, specialized instruction or general education) and for which type of student, under what environmental conditions (one-on-one, specialized instruction or general education) and for which type of student, under what environmental conditions (one-on-one, specialized instruction or general education) and for which type of students, under what environmental conditions (one-on-one, specialized instruction or general education) and for which type of students, under what environmental conditions (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one, specialized instruction or general education) and for which type of students (one-on-one) and (one-one) and
effective for identifying the level of educational needs for students with ASD. A difficulty for academic performance in students with ASD is the tendency to generalize learning, accommodations are commonly put into place for students with
differing abilities. The existing schema of these students works in different ways and can be adjusted to best support the educational development for each student, which is about $12,000.[305] Employment The
examples and perspective in this section deal primarily with the United States and do not represent a worldwide view of the subject. You may improve this section, discuss the issue on the talk page, or create a new section, as appropriate. (April 2022) (Learn how and when to remove this template message) In the United States, about half of people in
their 20s with autism are unemployed, and one third of those with graduate degrees may be unemployers of autistics give positive reports of above average memory and detail orientation as well as a high regard for rules and procedure in autistic
employees.[306] The majority of the economic burden of autism is caused by lost productivity in the job market.[307] From the perspective of the social model of disability, social model of disability and disability and disability.
diversity training can clarify misconceptions, support employees, and help provide new opportunities for autism employees in the United States continue to grow. The most high-profile autism initiative in the United States, "Autism at Work" grew to 20 of the largest
companies in the United States.[311] However, special hiring programs remain largely limited to entry-level technology positions, such as software testing, and exclude those who have talents outside of technology positions, such as software testing.
include autistic employees improves the work experience of all employees.[312][313] Epidemiology of autism Reports of autism Reports of autism. The World Health Organization (WHO) estimates
that about 1 in 100 children have autism.[314] The number of people diagnosed has increased considerably since the 1990s, which may be partly due to increased recognition of the condition.[315] While rates of ASD are consistent across cultures, they vary greatly by gender, with boys diagnosed far more frequently than girls: 1 in 70 boys, but only 1
in 315 girls at eight years of age.[316] Girls, however, are more likely to have associated cognitive impairment, suggesting that less severe forms of ASD are likely being missed in girls with autism showing less
atypical behaviors and, therefore, less likely to receive an ASD diagnosis.[318] Autism prevalence has been estimated at 1-2 per 1,000, and PDD-NOS at 3.7 per 1,000.[141] These rates are consistent across cultures and ethnic groups, as autism is
considered a universal disorder.[64] Using DSM-5 criteria, 92% of the children diagnosed per DSM-IV with one of the disorders which is now considered part of ASD. However, if both ASD and the social (pragmatic) communication disorder categories of DSM-5 are combined, the prevalence of autism is
mostly unchanged from the prevalence of ASD is 0.7% or 1 child in 143 children. [319] Relatively mild forms of autism, such as Aspergers as well as other developmental disorders, are included in the DSM-5 diagnostic criteria. [320] ASD rates were constant between 2014 and 2016 but twice
the rate compared to the time period between 2011 and 2014 (1.25 vs 2.47%). A Canadian meta-analysis from 2019 confirmed these effects as the profiles of people diagnosed with autism became less and less different from the profiles of the general population.[321] In the US, the rates for diagnosed ASD have been steadily increasing since 2000
when records began being kept. [322] While it remains unclear whether this trend represents a true rise in incidence, it likely reflects changes in ASD diagnostic criteria, improved detection, and increased public awareness of autism. [323] As of 2007, reviews estimate a prevalence of 1-2 per 1,000 for autism and close to 6 per 1,000 for ASD. [141] As of 2007, reviews estimate a prevalence of 1-2 per 1,000 for autism.
2016 survey in the United States reported a rate of 25 per 1,000 children for ASD.[324] In 2012, the NHS estimated that the overall prevalence of autism among adults aged 18 years and over in the UK was 1.1%.[325] CDC estimates about 1 out of 59 (1.7%) for 2014 in the US, an increase from 1 out of every 68 children (1.5%) for 2010.[326] In the
UK, from 1998 to 2018, the autism diagnoses increased by 787%.[315] This increase is largely attributable to changes in diagnostic practices, referral patterns, availability of services, age at diagnoses increased by 787%.[315] though unidentified environmental risk factors cannot be ruled out.[330] The
available evidence does not rule out the possibility that autism's true prevalence has increase would suggest directing more attention and funding toward psychosocial factors and changing environmental factor for autism
and is not behind any increase in autism prevalence rates, if any change in the rate of autism exists at all.[155] Males have higher likelihood of being diagnosed with ASD than females. The sex ratio averages 4.3:1 and is greatly modified by cognitive impairment: it may be close to 2:1 with intellectual disability and more than 5.5:1 without [141]
Several theories about the higher prevalence in males have been investigated, but the cause of the difference is unconfirmed;[332] one theory is that females are underdiagnosed.[333] The risk of developing autism is greater with older fathers than with older mothers; two potential explanations are the known increase in mutation burden in older
sperm, and the hypothesis that men marry later if they carry genetic liability and show some signs of autism.[26] Most professionals believe that race, ethnicity, and socioeconomic background do not affect the occurrence of autism.[334] United States In the United States it is estimated to affect more than 2% of children (about 1.5 million) as of
2016[update].[335] According to the latest CDC prevalence reports, 1 in 44 children (2.3%) in the United States had a diagnosis of ASD in 2018.[341] History Further information: History of Asperger syndrome Portrait of Victor of Aveyron, a feral child caught in 1798 who displayed
possible symptoms of autism[337] A few examples of autistic symptoms and treatments were described long before autism was named. The Table Talk of Martin Luther, compiled by his notetaker, Mathesius, contains the story of a 12-year-old boy who may have been severely autistic.[338] The earliest well-documented case of autism is that of Hugh
Blair of Borgue, as detailed in a 1747 court case in which his brother successfully petitioned to annul Blair's marriage to gain Blair's inheritance. [339] The Wild Boy of Aveyron, a feral child found in 1798, showed several signs of autism. He was non-verbal during his teenage years, and his case was widely popular among society for its time. Such
cases brought awareness to autism, and more research was conducted on the natural dimensions of human behavior. The medical student Jean Itard treated him with a behavioral program designed to help him form social attachments and to induce speech via imitation. [337] The New Latin word autismus (English translation autism) was coined by
the Swiss psychiatrist Eugen Bleuler in 1910 as he was defining symptoms of schizophrenia. He derived it from the Greek word: αὐτός, romanized: autós, lit. 'self' and used it to mean morbid self-admiration, referring to "autistic withdrawal of the patient to his fantasies, against which any influence from outside becomes an intolerable disturbance"
[340] A Soviet child psychiatrist, Grunya Sukhareva, described a similar syndrome in Russian in 1925, and in German in 1926.
the Vienna University Hospital and Leo Kanner of the Johns Hopkins Hospital - used the word autism first took its modern sense in German, when Asperger adopted Bleuler's terminology autistic psychopaths in a 1938 lecture in German about child psychology
[342] Asperger was investigating an ASD which was later known as Asperger syndrome, although it did not become widely recognized as a separate diagnosis until 1981.[337] In English, Kanner first used autism in its modern sense when he introduced the label early infantile autism in a 1943 report of 11 children with striking behavioral similarities.
[343] Almost all the characteristics described in Kanner's first paper on the subject, notably "autistic aloneness", are still regarded as typical of the autistic spectrum of disorders. [104] It is not known whether Kanner derived the term independently of Asperger. [344] Kanner's reuse of autism led to decades of confused
terminology like infantile schizophrenia, [clarification needed] and child psychiatry's focus on maternal deprivation led to misconceptions of autism was established as a separate syndrome. [345] However, Kanner was the first person to describe ASD as a
neurodevelopmental disorder in 1943 by calling it infantile autism and therefore rejected the refrigerator mother theory. [346] The discussion of autism prior to the twentieth century is one that brings about much controversy. Without researchers being able to meet a consensus on the varying forms around the condition, there was a lack of research
        conducted on the disorder. Discussing the syndrome and its complexity frustrated researchers. Controversies have surrounded various claims regarding the etiology of ASDs. In the 1950s, the refrigerator mother theory emerged as an explanation for autism. The hypothesis was based on the idea that autistic behaviors stem from the employed as an explanation for autism.
frigidity, lack of warmth, and cold, distant, rejecting demeanor of a child's mother. [347] Parents of children with an ASD experienced blame, guilt, and self-doubt, especially as the theory was embraced by the medical establishment and went largely unchallenged into the mid-1960s. [citation needed] The "refrigerator mother" theory has since
continued to be refuted in scientific literature, including a 2015 systematic review which showed no association between caregiver interaction and language outcomes in ASD.[348] Another controversial claim suggested that watching extensive amounts of television may cause autism. This hypothesis was largely based on research suggesting that the
increasing rates of autism in the 1970s and 1980s were linked to the growth of cable television at this time.[153] Terminology and distinction from schizophrenia As late as the mid-1970s there was little evidence of a genetic role in autism, however by 2007 it was recognised as one of the most heritable psychiatric conditions.[349] Although the rise of
parent organizations and the destigmatization of childhood ASD have affected how ASD is viewed,[337] parents continue to feel social stigma in situations where their child's autistic behavior is perceived negatively,[350] and many primary care physicians and medical specialists express beliefs consistent with outdated autism research.[351] It took
until 1980 for the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III-R provided a checklist for diagnosing autism. In May 2013, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia. In 1987, the DSM-III to differentiate autism from childhood schizophrenia.
CDD, has been removed and replaced with the general term of Autism Spectrum Disorders. The two categories that exist are impaired social communication and/or repetitive behaviors. [352] The Internet has helped autistic individuals bypass nonverbal cues and emotional sharing that they find difficult to deal with,
and has given them a way to form online communities and work remotely.[353] Societal and cultural aspects of autism have developed: some in the community seek a cure, while others believe that autism is simply another way of being.[354][355] Societal and cultural aspects of autism Autism awareness ribbonAutism
rights movement infinity symbol An autistic culture has emerged, accompanied by the autistic rights and neurodiversity movements who argue autism should be accepted as a difference to be accommodated instead of cured, [356][357][358][359][359][358] although a minority of autistic rights and neurodiversity movements who argue autism should be accepted as a difference to be accommodated instead of cured, [360] Worldwide, events
related to autism include World Autism Awareness Day, Autistic Pride Day, Autistic Pride Day, Autistic Pride Day, Autistic Pride Day, Autism as a culture, transcultural comparisons ... and research on social movements."[365] Many autistic individuals have been successful
in their fields.[366] Neurodiversity movement Donna Williams, one of several memoirists who have introduced the general public to a more nuanced, emic portrayal of life on the spectrum The neurodiversity movement and the autism rights movement are social movement within the context of disability rights, emphasizing the concept of
neurodiversity, which describes the autism spectrum as a result of natural variations in the human brain rather than a disorder to be cured. [358] The autism rights movement advocates for including greater acceptance of autistic behaviors; therapies that focus on coping skills rather than imitating the behaviors of those without autism; [367] and the
recognition of the autistic community as a minority group. [367] [368] Autism rights or neurodiversity advocates believe that the autism spectrum is genetic and should be accepted as a natural expression of the human genome. [358] However, these movements are not without criticism; for example, a common argument made against neurodiversity
activists is that the majority of them are high-functioning, have Asperger syndrome, or are self-diagnosed, and do not represent the views of low-functioning autistic people. [368][369][370] The concept of neurodiversity is contentious within various autism advocacy and research groups and has led to infighting. [371][372] Caregivers Families who care
for an autistic child face added stress from a number of different causes. [373] Parents may struggle to understand the diagnosis, and may struggle emotionally. [374] More than half of parents over the age of 50 are still living with their child, as about 85% of
autistic people have difficulties living independently. [375] Some studies also find decreased earning among parents who care for autistic children. [376] Broader autism phenotype (BAP) describes individuals who may not have ASD but do have autistic traits, such as avoiding eye contact and stimming. [378] See also
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required. The Task Force also did not find any robust studies showing effectiveness of behavioral therapies in reducing ASD symptom severity. [213] American Academy of Pediatrics recommends ASD screening of all children between the ages if 18 and 24 months. [213] The AAP also recommends that children who screen positive for ASD be referred.
to treatment services without waiting for a comprehensive diagnostic workup[214] The American Academy of Neurology Society recommends general routine screening for delayed or abnormal
development in children followed by screening for ASD only if indicated by the general developmental screening autism symptoms in young children[213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening autism symptoms in young children[213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening autism symptoms in young children[213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening autism symptoms in young children [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening autism symptoms in young children [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening autism symptoms in young children [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routinely screening [213] The American Academy of Child and Adolescent Psychiatry recommend routin
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from studies with small sample size and are still controversial. In general, despite encouraging data, no definite proof still exists. Under this view, the use of therapeutic diets in children with autism should be restricted to specific subgroups, such as children with autism and epilepsy or specific inborn errors of metabolism (ketogenic diet), children
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Library resources in other libraries Autism spectrum at Wikipedia's sister projects: Definitions from WiktionaryNews from WikinewsQuotations from WikiguoteTextbooks from WikiguoteTextbooks from WikiguoteTextbooks from Wikidata Retrieved from "Spectrum model. Autism is a highly variable neurodevelopmental disorder and has long been thought to cover a wide spectrum, ranging from individuals with high support needs—who may be non-speaking, developmentally delayed, and more likely to present with other co-existing diagnoses including intellectual disability—to individuals with low support needs ... This section focuses on how adolescent beath.. Adolescent Development Explained: Check out the OPA Adolescent Development Explained guide for information about the major development Explained guide for information guide gu of Registration Agencies providing Digital Object Identifier (DOI) services and registration, and is the registration authority for the ISO standard (ISO 26324) for the DOI system. The DOI system ... Paper Upload Maximum upload file size: 8 MB. Only Pdf Format Allowed ABattaglia ATI Gestational Diabetes. None Pages: 8 2021/2022. 8 pages. 2021/2022 None. Save. ... System Disorder - Alts New. None Pages: 4 2018/2019. 4 pages. 2021/2022. 1 page. 2021/2022 None. Gestational diabetes and preeclampsia rates higher in women with posttraumatic stress disorder (PTSD)— Gestational diabetes is a condition in which some women without diabetes develops high blood sugar levels during pregnancy. In 90% of gestational diabetes cases, the condition will resolve after the baby is born, although women with the ... 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Mar 03, 2021 · Eating Disorder Community Meal Plan Template: Collaboration of Dietitians in Eating Disorders (COD-ED) Clinician NEMO, nutritional management Eating Disorders, COD-ED ... Gestational diabetes, nutrition, pregnancy, diabetes ... Classification Spectrum model. Autism is a highly variable neurodevelopmental disorder and has long been thought to cover a wide spectrum, ranging from individuals with high support needs—who may be non-speaking, developmentally delayed, and more likely to present with other co-existing diagnoses including intellectual disability—to individuals with low support needs ... Maternal health is the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to ensure a positive and fulfilling experience. In other cases, maternal health can reduce maternal morbidity and mortality. ... Paper Upload Maximum upload file size: 8 MB. Only Pdf Format Allowed ABattaglia ATI Gestational Diabetes. None Pages: 8 2021/2022. 8 pages. 2021/2022 None. Save. ... System Disorder - Alts New. None Pages: 4 2018/2019 None. Save. Peds syllabus New. ... Active Learning Template Therapeutic Procedure form. None Pages: 1 2021/2022 None. RAD51 (RAD51 Recombinase) is a Protein Coding gene. Diseases associated with RAD51 include Fanconi Anemia, Complementation Group R and Mirror Movements 2. Among its related pathways are Breast cancer pathway and DNA Damage. Gene Ontology (GO) annotations related to this gene include identical protein binding and protein binding. How gestational diabetes can affect your baby; Diabetes and pregnancy; Raspberry leaf tea; Pregnancy warning signs; How reflexology (foot therapy) can help in pregnancy; Pregnancy massage; A quick guide to asthma in pregnancy; Why chewing gum when pregnancy; Why chewing gum whe mitochondrial genome is remarkably conserved in all vertebrates, encoding the same 37-gene set and overall genomic structure, ranging from 16,596 base pairs (bp) in the teleost zebrafish (Danio rerio) to 16,569 bp in humans. Mitochondrial disorders are amongst ... Effects of a Mindfulness Intervention Delivered within Diabetes Education on Diabetes-related Outcomes in Military Veterans: DiNardo, Monica: Health Services R&D: I01RX003117-01A1: One-day Life Skills Workshop for Veterans with TBI, pain, and Psychopathology: Evaluating efficacy and mechanism of change: Dindo, Lilian: Rehabilitation R&D ... Maternal health is the health of women during pregnancy, childbirth, and the postpartum period. In most cases, it encompasses the health care dimensions of family planning, preconception, prenatal, and postnatal care in order to ensure a positive and fulfilling experience. In other cases, maternal health can reduce maternal morbidity and mortality. ...

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