



# Pediatric OCD

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- pediatric OCD remains relatively understudied compared to its adult counterpart.

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  - Despite advances in research and clinical practice, OCD remains a chronic and impairing affliction for children and families and sequelae of the disorder contribute to social, academic, and familial dysfunction.



# History

Early examples of childhood onset OCD, consisting of case descriptions, date back to the late 19th century.

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In 1895 Sigmund Freud described an 11-year-old child with obsessions.



Subsequently, the French physician Pierre Janet provided the first description consistent with OCD in childhood in his 1903 report on a 5-year-old boy.

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In 1942 L. Berman extracted clinical information on 62 children with possible obsessive-compulsive neurosis out of a case registry of 3,050 cases.

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- In 1955 Louise Despert described more than 60 cases of children with “obsessive-compulsive neurosis,” noting a male preponderance, children's recognition that their symptoms are abnormal and unwanted, and the tendency to attempt to conceal their symptoms from treatment professionals and others.

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- Leo Kanner's 1962 textbook of child psychiatry contained descriptions of childhood OCD and the consequences of social isolation and family accommodation.

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- In 1965 Lewis Judd provided descriptive criteria for the diagnosis of OCD in children that closely resembles the current diagnostic criteria, including the requirement of significant impairment in functioning

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- Reports as recent as 1973 implicated **parental withdrawal of attention** as a critical causal factor in childhood OCD.
  - by the 1980s, the notion that OCD was a neurobiological disorder with possible childhood onset became more commonplace.

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- findings from the Epidemiologic Catchment Area (ECA) study that indicate that most adults with **OCD** report an onset of the disorder during adolescence prompted increased awareness of the disorder in childhood as well as research in this area

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- Programmatic work in the 1980s under the direction of Judith Rapoport and her group at the National Institute of Mental Health provided the basis for the first systematic studies of epidemiology, phenomenology, and treatment of childhood- and adolescent-onset OCD as well as fundamentally dismissing any notion that the emergence of OCD in youth was unusual or unexpected.



# Obsessions

- recurrent, persistent, and intrusive thoughts, ideas, impulses, or mental images that are experienced by the individual as distressing and as a product of one's own mind (to differentiate them from thought insertion).
- are usually described as generating (or associated with) feelings of anxiety, tension, disgust, or aversion.



# Compulsions

- purposeful, repetitive behaviors or mental acts that typically function to neutralize, prevent, or reduce anxiety
- compulsions are performed in response to an obsessive thought or according to some other rigidly applied rules.
- Although compulsions function to mitigate distress or anxiety or prevent some dreaded event, they are clearly excessive or are not realistically connected with the triggering stimulus

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- are frequently ego dystonic and are often recognized by children as senseless or exaggerated, such insight **is not required** for the diagnosis of OCD in childhood.

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- take more than 1 hour per day or cause significant impairment in functioning;
  - and obsessions and compulsions not due to the presence of another mental disorder, substance, or other medical condition.



# Common Obsessions

- Concerns with dirt, germ exposure, fears of illness
- Fears of harm befalling self or others
- Need for symmetry, order, exactness
- Need to save or hoard
- Excessive moral, religious, or sexual concerns



# Common Compulsions

- Cleaning rituals
- Checking
- Repeating behaviors
- Ordering or arranging
- Confessing
- reassurance seeking

# ICD-10

describes five subtypes of OCD:

- (1) predominantly obsessional thoughts or ruminations
- (2) predominantly compulsive acts (obsessive rituals)
- (3) mixed obsessional thoughts and acts
- (4) other obsessive-compulsive disorders
- and (5) OCD unspecified.



# epidemiology

- studies suggest a lifetime prevalence for OCD in children between 2 and 4 percent,

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- indicating that OCD is more common than previously thought and as common in youth as in adults.

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- a large prevalence study from the United Kingdom showed an exponential rise in rates across age groups (5 to 7, 8 to 10, 11, 12, and 13 years).
  - Another recent community sample found a prevalence rate of 3 percent for “clinical” OCD, defined as symptoms severe enough to cause distress and interference in functioning.

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- The most commonly accepted 6-month prevalence rate is between 0.5 and 1 percent of the general pediatric population.
  - Of note, rates of OCD in late adolescence make it more common than panic disorder, schizophrenia, and bipolar disorder.

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- Mean age of onset is between ages 6 and 11.
  - Onset age appears bimodal and varies by gender with a **male preponderance** in cases of prepubertal onset with an initial peak of incidence around puberty and subsequently in young adulthood.
  - The gender distribution becomes roughly equivalent during adolescence.

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- It is currently believed that up to 80 percent of adult OCD cases have an initial onset during childhood.
  - children with an early onset of OCD (below age 7) have also been shown more likely to be male and to have a family history of OCD in comparison to children with later onsets, suggesting that **genetic factors** may be more likely to play a role in development of early onset cases.

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- Referral bias may account for the underrepresentation of minorities and youngsters from lower socioeconomic strata in clinical samples of OCD youth, as this pattern has not been replicated in epidemiological studies with adult samples.

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- The occurrence of OCD in childhood may be somewhat higher than reported:
    1. given secrecy that children often display in reporting embarrassing thoughts and behaviors.
    2. Additionally, limited insight into the abnormality of their symptoms (and linking OCD symptoms



3. parent inability to recognize OCD symptoms, and the lack of awareness about the availability of efficacious treatments may contribute to underdiagnosis.

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Therefore, it is reasonable to assume that many childhood cases of OCD remain undetected



## comorbidity

- in an analysis of 70 clinical cases of youth with OCD, 84 % carried at least one additional Axis I psychiatric diagnosis
- It has been estimated that as many as %50 of pediatric patients with OCD have two or more co-occurring diagnoses



## The most common comorbid disorders

- other anxiety disorders (26 to 75 percent, depending on the sample)
- depressive disorders (25 to 62 percent)
- tic disorders (11 to 26 percent)
- attention-deficit/hyperactivity disorder (ADHD) (16 to 20 percent)
- and disruptive behavior disorders (9 to 19 percent).



# Etiology

- Neurobiological Factors
- Although the cause of OCD remains unknown, multiple neurochemical, neuroanatomical, and immunological etiologic theories have been proposed. Clinical descriptions of OCD associated with Sydenham's chorea (SC), tic disorders, traumatic brain injury,

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- encephalitis, and Huntington's chorea have helped to solidify the broad concept of the disorder as brain based and presumably reflecting impaired striatal functioning. Although the neurocircuitry and neurochemistry



pediatric autoimmune  
neuropsychiatric disorders  
associated with streptococcus  
(PANDAS)

- represent an autoimmune process related, if not identical to, that associated with rheumatic fever (RF) and SC. (It is noteworthy that patients with RF and SC both



display higher frequencies of obsessions and compulsions versus comparison groups, and up to one third of patients with SC meet research criteria for the diagnosis of OCD).

- Immune activation leads to the inflammation of the basal ganglia and disruption of the cortical-striatal-thalamol-cortical (CSTC) function.

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- This acquired basal ganglic dysfunction may result in choreiform movements, tics, obsessions, compulsions, and hyperactivity.
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- PANDAS are characterized by abrupt childhood onset and episodic or saw-toothed course
  - Relations between the size of the basal ganglia nuclei and OCD symptom severity has been observed using MRI.

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- Similarly, small sample studies of immunomodulating treatments (intravenous immunoglobulin G [IgG] and plasmapheresis) have been associated with improvements in OCD patients with suspected PANDAS. However, these interventions remain **experimental**, and efforts to establish **markers of PANDAS** have been inconclusive.

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- In addition, the proportion of child OCD cases potentially attributable to streptococcal infection remains unknown.
  - Although additional research into PANDAS appears warranted, the association between GABHS infection and OCD remains **debated** and probably represents a usual etiological influence.



# Diagnosis and Clinical Features

- compared to adults, children are more likely to deny impairment due to obsessions and compulsions.
- Children may also be somewhat less likely to consider their OCD symptoms excessive, perhaps due to lower levels of cognitive awareness.

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- Unlike most adults, children might not report symptoms to be ego dystonic.
  - However, children are typically willing to discuss distress from **family conflict** arising from their rituals (e.g., chronically running late, excessive need for reassurance, time burden on parents,

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- disruption of siblings functioning) or interference in schoolwork resulting in dropping grades.
  - Overall, most children are quite open in describing their symptoms and seek assistance in better managing the illness.
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- Although comorbidity is the rule rather than the exception in childhood OCD, the content of the obsessions and compulsions cannot be better explained by a co-occurring Axis I disorder.
  - Examples include self-deprecating ruminations associated with depression, obsessive concern with appearance in body dysmorphic disorder, hair pulling in



Trichotillomania, and fears of harm befalling a loved one in separation anxiety disorder. Similarly, the symptoms also are required not to be substance induced or due to the influence of a medical condition.

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- The range of obsessions and compulsions experienced in childhood is similar to that of adults with OCD,
  - although children are more likely to engage in compulsive reassurance seeking and
  - involve family members in their rituals.
  - Most children with OCD have both obsessions and compulsions; pure obsessional illness is rare in this age group

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- most childhood cases of OCD involve multiple obsessions and compulsions (mean number of **four** current compulsions and four current obsessions in one report).

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- Compulsions in the absence of anxiety-related or otherwise distress-inducing obsessions may occur in (mostly younger) children, who often describe their rituals as being performed in response to an irresistible urge or an otherwise vague sensation (the “just-right” phenomena).

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- The absence of reported obsessions in these cases may be due to:
    1. underdeveloped awareness or
    2. ability to articulate these thoughts or
    3. result of a misdiagnosed tic disorder.
    4. Specific types of symptoms (e.g., touching/tapping/rubbing) may change with age, but the number of symptoms generally remains constant.

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- The most common obsessions in childhood include:
  - fears of contamination (e.g., dirt, exposure to germs, toxins, contracting an illness),
  - fears of harm befalling self or others (e.g., becoming aggressive, failing to prevent harm),
  - need for symmetry or exactness,
  - hoarding or saving concerns, and excessive moralization or religiosity.

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- obsessions also may manifest as excessive guilt, self-doubt, or other forbidden thoughts. Common compulsions involve:

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cleaning/washing rituals,
  - checking,
  - repeating behaviors (touching, tapping, rubbing),

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- counting,
  - ordering/arranging,
  - avoidance,
  - doubt/indecision,
  - confessing,
  - seeking reassurance,
  - and slowness.
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- The content and type of obsessive and compulsive symptoms may **change over time**.

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  - OCD is also **stress sensitive**, and many children experience acute symptom exacerbations during times of psychosocial stress or change (e.g., attending a new school, moving to a new home, death of a family member).

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- Similar to adult OCD, family members are commonly drawn into the child's OCD symptoms through:
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1. provision of reassurance to the child
2. modification of family routines as a result of the child's symptoms,
3. or even actual participation in the child's compulsive rituals.

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- Such accommodation can negatively impact the family environment and lead to increased levels of family conflict and negative emotional reactions toward the affected child.

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- Accommodation has also been associated with increased feelings of depression and anxiety on the part of the accommodating family member (typically mothers).

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- Given the typically strange and senseless nature of many OCD symptoms, many children and adolescents will attempt to camouflage their rituals.
  - It is not uncommon for children with OCD to be able to inhibit their rituals for short periods of time to avoid detection (e.g., in class).

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- Not infrequently, teachers, peers, and even parents remain unaware of the child's OCD for months or years, only becoming aware of the problem after the child can no longer control the symptoms or becomes too overwhelmed to cope.



# Differential diagnosis

- self-deprecating ruminations associated with depression,
- obsessive concern with appearance in body dysmorphic disorder,
- hair pulling in trichotillomania,
- and fears of harm befalling a loved one in separation anxiety disorder



# Developmentally Normative Rituals and Superstitions

- Benign habits, transitory superstitions, or mildly excessive thoughts are not uncommon during childhood
- In certain phases of early childhood, rituals or superstitions may be utilized by a child to **manage new or stressful situations** (first day of preschool, separating from a parent) or achieving a sense of mastery

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- These normative rituals usually fade by the time of entry into formal schooling
  - and are rarely associated with distress,
  - significant interference with activities,
  - or overlap in content with typical obsessions or compulsions.

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- patients with generalized anxiety disorder (GAD) present with heightened anxiety relating to their health and safety, safety of others, and their future.
  - is grounded in everyday matters (finances, health, grades, safety)

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- Patients with social anxiety have fears of negative evaluation and extreme scrutiny by others
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- Tics are differentiated from compulsions is usually being avolitional and are not preceded by precipitating obsessional thoughts.
  - The content of tics is unlikely to be as purposeful as common compulsions (e.g., washing, arranging)



# PDD

- perseverations **lack an association with anxiety**; indeed, autistic perseverations or stereotyped behaviors
- the stereotyped behavior may be elicited by **excitement or frustration** or may serve to manage stimulation and are generally not associated with preceding intrusive thought or impulse
- Examples include ordering, arranging, sequencing, and preservative speech.



# Psychotic disorder

- Children with OCD are typically aware that symptoms are products of their own mind (i.e., not thought insertion).
- OCD can usually be distinguished from schizophrenia by the absence of other symptoms, including formal thought disorder and hallucinations, and by the ability to engage in reality testing.

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- In severe cases of OCD, reality testing may be challenged, and the boundary between obsession and delusion may be difficult to distinguish. OCD and psychotic disorders, though rarely, do co-occur



# hypochondriasis

- If the distressing thoughts are exclusively related to fears of having a serious medical condition, based on misinterpretation of bodily symptoms.



## Course and Prognosis

- Follow-up studies suggest that 43 to 68 percent of youth diagnoses with OCD continue to meet diagnostic criteria for the disorder up to 14 years after identification.



# Worse outcomes at follow-up

predicted by

1. poor initial treatment response,
2. a lifetime history of tic disorder,
3. and a parental Axis I psychiatric disorder.

The literature **lacks long-term controlled** treatment studies, and most follow-up data are from extant treatment trials following only a few months posttreatment

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- Further, this literature is complicated by multiple confounding variables, including treatment type, comorbidity, age or age of onset, and access to follow-up care.

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- The largest long-term follow-up study to date re-evaluated 54 participants in controlled medication trials at the National Institute of Mental Health 2 to 7 years postintake



## continued

- At follow-up, 43 percent of subjects still met diagnostic criteria for OCD, and only 6 percent were classified as remitters. However, only 19 percent of subjects reported no change or worsening of symptoms.

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- Overall, in follow-up studies of childhood treatment study samples, **remission** is seen in 11 to 50 percent, continued OCD symptoms sufficient for diagnosis have been seen in 6 to 60 percent



with subclinical OCD as a common outcome in the remainder.

- In sum, despite promising treatments for youth with OCD, long-term data are scarce.

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- **treatment-outcome research has produced multiple controlled trials of first-line treatments for OCD in childhood, cognitive-behavioral therapy with exposure and response prevention, and serotonin reuptake inhibitors.**

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- According to the American Academy of Child and Adolescent Psychiatry CBT or CBT with concurrent pharmacotherapy using an SSRI is considered the first-line treatment for pediatric OCD
  - Recent data suggest both the **robustness and durability of CBT**



# Medications

- Fluoxetine (Prozac) 20–60
- Sertraline (Zoloft) 50–200
- Fluvoxamine (Luvox) 50–200
- Paroxetine (Paxil) 20–60
- Citalopram (Celexa) 20–60
- Escitalopram (Lexapro) 5–20
- Clomipramine (Anafranil) 50–200

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- no controlled comparisons between these medications
  - choice should be based on the patient's medical history, concomitant medications, and the adverse events
  - Poor clinical response to one SSRI is not necessarily predictive of failure with other SSRIs, suggesting adequate trials of multiple SSRIs may be indicated before augmentation.
  - 10-12 weeks

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- An implication of this warning may be to attempt an adequate trial of the cognitive-behavioral therapy prior to pharmacological intervention.
  - FDA issued an advisory regarding the use of paroxetine in children and adolescents (June 19, 2003) recommending that paroxetine not be used in the treatment of major depressive disorder.

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- activation, disinhibition, and possible worsening of suicidal thoughts associated with SSRI or SRI exposure may be a special concern in depressed children and certainly demand caution and careful monitoring.

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- Current FDA approval has been granted for four medications for pediatric OCD use: Sertraline, fluoxetine, fluvoxamine, and clomipramine
  - the inability to tolerate treatment due to side effects was reported in 15 percent or less of cases



## SSRI augmentation

with atypical antipsychotics for refractory OCD in adult patients.

For example, an 8-week, double-blind, placebo-controlled trial was performed to determine the efficacy of risperidone (Risperdal)



Augmentation in adults with treatment-resistant OCD found a **40 percent response** rate. Additionally, two recent meta-analyses of off-label use of neuroleptics (including haloperidol [Haldol], risperidone, olanzapine [Zyprexa], and quetiapine [Seroquel]) in