

Anxiety Disorders in Children and Adolescents

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Anxiety disorders are the most frequent mental health problems seen in primary care and child psychiatry.

Objectives

- Epidemiology of Anxiety Disorders in Children and Adolescents
- Susceptibility Models
- Types of Anxiety Disorders
- Assessment
 - Recognize risk factors for & presenting signs & symptoms of anxiety disorders
- Treatment
 - Review evidence based behavioral & (some) pharmacologic management of anxiety in children and adolescents
- Resources

Epidemiology: Anxiety in Children and Adolescents

- Community prevalence 3.1% to 17.5 % across multiple international epidemiological studies
- Equal prevalence among young boys and girls *until*
- Adolescence and then females to males 2:1 to 3:1
- Half of adults in US with mental health disorder, had onset of sx by age 14 years
- Adults seen for anxiety had the origins in childhood adolescence

The Informant Matters

- Parents commonly under- and over-report child's mood and anxiety feelings (internalizing symptoms)
- Parents are typically good reporters of disruptive behaviors such as hyperactivity & aggression (externalizing symptoms)

Features of Anxiety Disorders of Infancy and Early Childhood

Separation anxiety disorder	<ul style="list-style-type: none">• Developmentally inappropriate and excessive anxiety regarding separation from home or parent.• Characterized by inconsolable or persistent crying when parent leaves, and unable to be soothed by others.• Children may be aggressive or self-injurious during the separation.• Anxiety and avoidance may occur in relation to going to childcare.• Young children may leave their parent's room to room and be reluctant to be alone.• Nightmares may occur but not have a specific theme.	Duration: at least 1 mo
Specific phobia	<ul style="list-style-type: none">• Excessive, unreasonable, and persistent fear to a specific object or situation (or anticipation of the object or situation) which results in an immediate response of panic, crying, tantrums, freezing, or clinging.• Causes child to avoid the situation and parents may facilitate this avoidance. Leads to impairment of child and family's functioning and/or child's development.	Duration: at least 4 mo
Social anxiety disorder	<ul style="list-style-type: none">• Marked and persistent fear of one or more social and performance situations where the child is exposed to unfamiliar people or scrutiny. Examples include play dates, family gatherings, birthday parties, or circle time.• Child reacts with panic, crying, tantrums, freezing, clinging, and withdrawing from the situation. Leads to impairment of child and family's functioning and/or child's development.	Duration: at least 4 mo
Generalized anxiety disorder	<ul style="list-style-type: none">• Child has excessive anxiety and worry most days, which is difficult to control. They may repeatedly ask for reassurance.• Occurs in 2 or more situations or relationships.• At least one physical symptom must be present: restless, fatigue, difficulty concentrating, irritable, muscle tension, and sleep difficulties.	Duration: at least 6 mo
Anxiety disorder NOS	<ul style="list-style-type: none">• Anxiety or phobic avoidance that causes distress that is impairing, but does not meet criteria for any specific anxiety disorder.• Infants may display agitation and irritability,	Duration for anxiety disorder NOS is not specified in the

Early Childhood Anxiety

- Comorbid with depression, oppositional defiant disorder, attention deficit hyperactivity disorder or conduct disorder
- Published data support either a chronic and persistent course or a relapsing and remitting course when anxiety disorders are diagnosed in childhood and adolescence

Age range	Common fears
Infancy	Loud noises, being startled, strangers, large objects
Toddlers	Dark, separating from parents (can begin at 9 mo), imaginary creatures, sleeping alone, doctors
*School-aged children	Injury, natural disasters or events (eg, storms)
Older children and adolescents	School performance, social competence, worries about their own and others health.

Anxiety Maintenance Cycle

- (1) exposure to an anxiety trigger (such as something a person fears, separation from an attachment figure, obsessional thinking);
- (2) an increase in the anxiety to high levels (sometimes accompanied by thoughts of catastrophes); and
- (3) various forms of escape behavior (leaving school, running away from an insect, counting rituals) which produces immediate and often total relief of anxiety.
- Relief from high anxiety so rewarding that the escape behavior very rapidly becomes habitual.
- Children also rapidly learn to avoid all situations where they might be exposed to an anxiety trigger

Models of Susceptibility to Anxiety

- Genetic
- Cognitive-Behavioral
 - Physiological
 - Ecological

Genetic Heritability

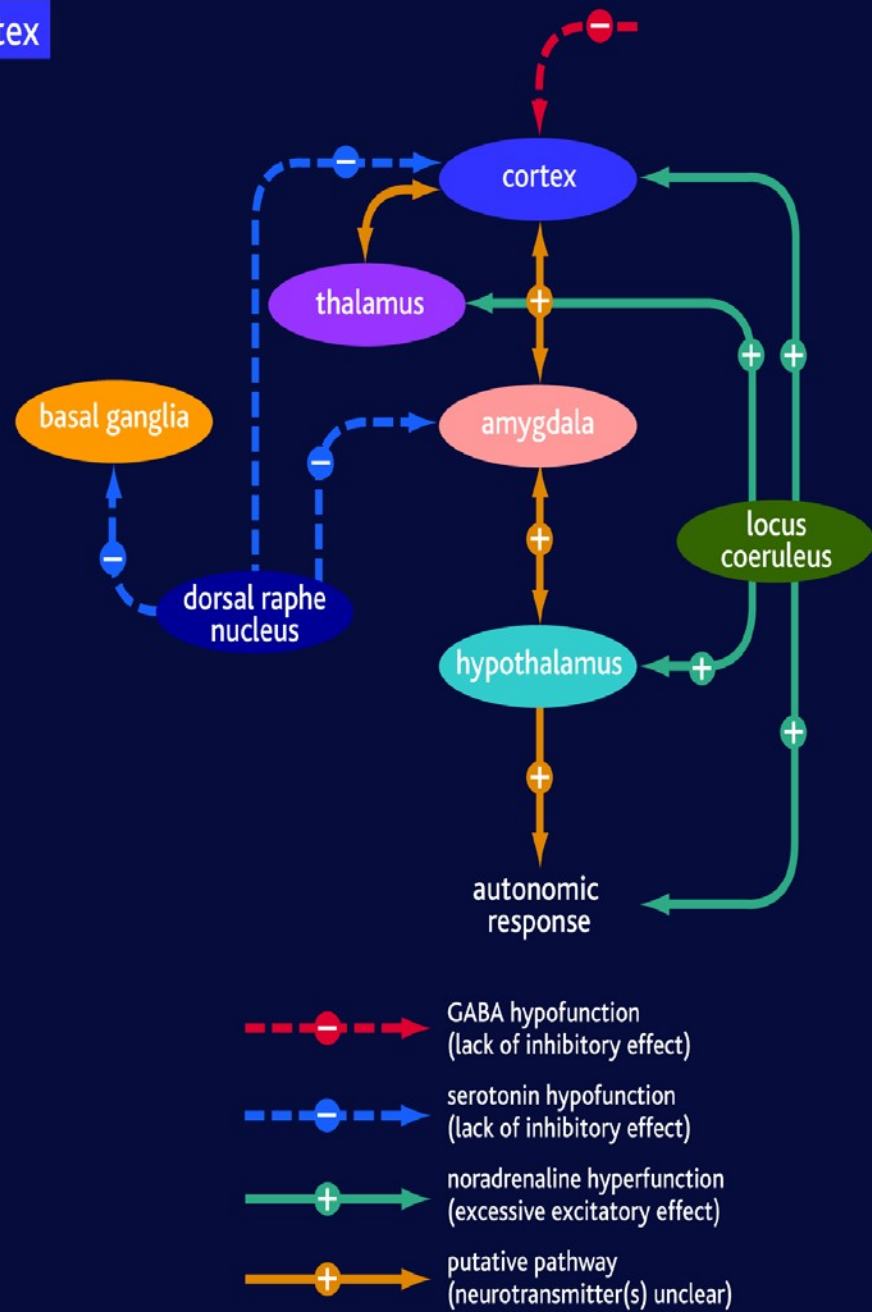
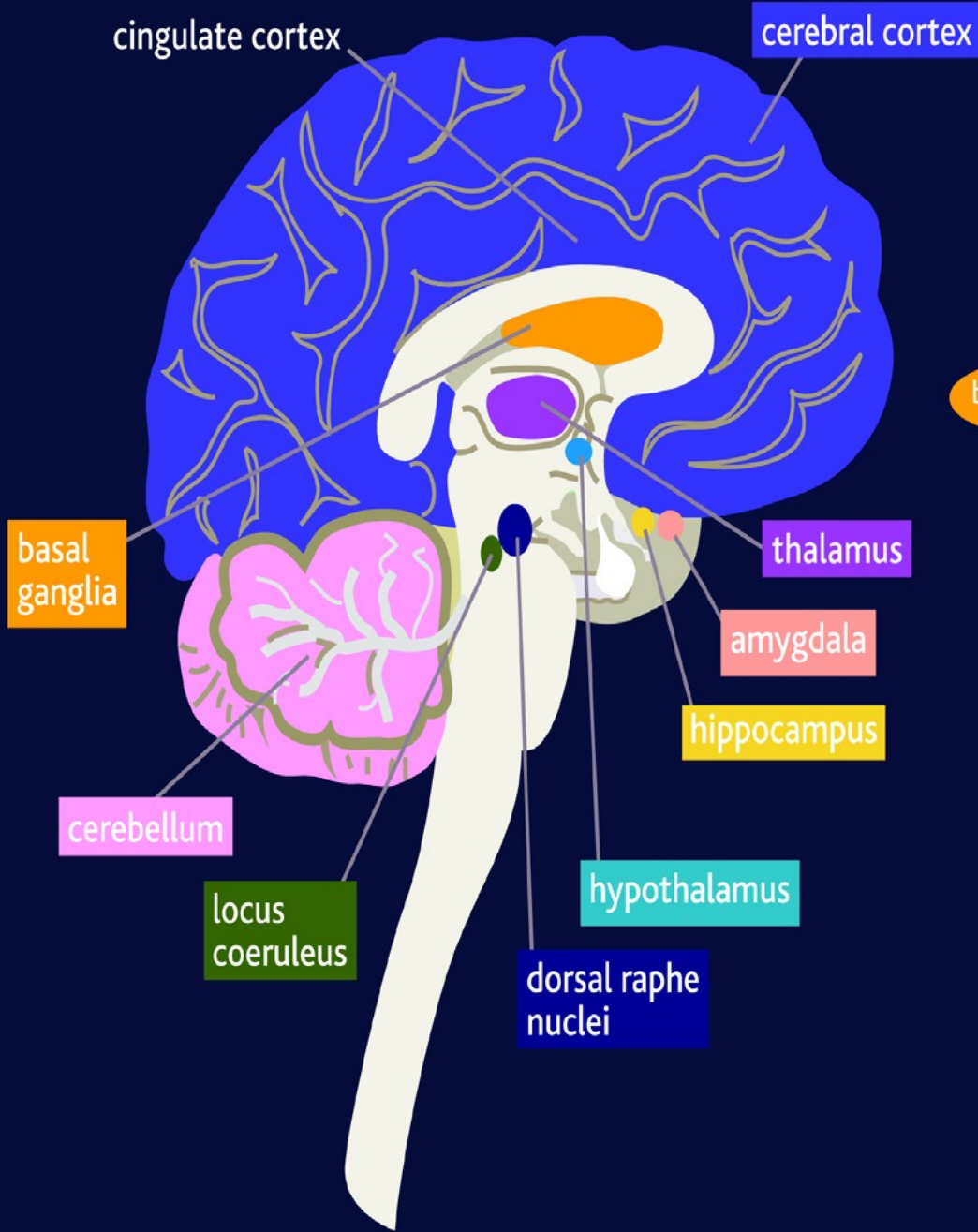
- Is 36 to 65% including but not limited to obsessive-compulsive disorder (OCD), panic disorder (PD), and generalized anxiety disorder (GAD).
- Meta-analyses –anxiety disorders aggregate in families but also have strong environmental influences
- Predisposition to overarousal and hyper-reactivity to stimuli and are more inclined to develop anxiety disorders

Cognitive-Behavioral

- Learned dysfunctional thoughts, feelings, and behaviors through their experiences before and during adolescence.
- Negative responses reinforced thru avoidance and escape
- Cognitive biases are developed such as paying attention to threat related stimuli and overestimating degree of personal risk in various situations.

Physiological

- Functional impairments in brain regions that modulate emotion and fear
- Amygdala- fear conditioning and responses and is responsive to stress-induced hormones and neurotransmitters which strengthen memories associated with fearful stimuli
- Hippocampus- contextual processing
- Prefrontal cortical regions in modulation of fear and extinction of fear responses
- Neuroimaging studies of adolescents with elevated levels of anxiety consistent with anxiety disorders have revealed a hypersensitivity of fear circuits and a lack of dampening of fear response by activation of cortical circuits



Ecological Model—Environmental Factors

- Exposure to members of the child's family and to factors in the broader community
 - Postpartum maternal depression + anxiety = infant with long-term impaired physiological regulation of stress
 - Insecure parent–child attachment
 - Anxious and controlling parenting styles, and parental modeling of fearful behavior
 - Parental overprotection - development of child social phobia in a longitudinal prospective study
 - Parent–child arguments are associated with increased anxiety symptom levels in adolescents
 - Some studies conflicting information- role of having a parent with an anxiety or substance use disorder and did not find any association between family climate or rearing style and subsequent anxiety disorders in a cohort of children.[[]

Risk Factors

- Poverty
- Community Violence
- Lower educational attainment
- Exposure trauma in childhood, including neglect and abuse-
more severe trauma more likely it will result in mental health
disorder

Types of Anxiety Disorders in Children and Adolescents

- Separation Anxiety Disorder
- Panic Disorder with and without agoraphobia
- Social phobia
- Obsessive-compulsive Disorder
- Acute Stress Disorder
- PTSD
- Generalized anxiety disorders
- Anxiety Disorder NOS

Physical Symptoms of Anxiety can be vague and numerous

- Fatigue, general muscle tension, memory loss and difficulty in concentrating, malaise, insomnia, dry mouth, or a poorly defined sense of “not being well.”
- Palpitations, tachycardia, syncope or pre-syncope, shortness of breath, and chest tightness or pain
- Diarrhea, nausea, and abdominal pain.
- Frequent urination and urinary urgency may be reported. Neurological symptoms may include trembling, dizziness, paresthesias, or numbness.

Angela

- 8 yr old Caucasian female, irritable, dislikes being away from her mother, tantrums that can escalate to biting and kicking when she anticipates they will be separated, does not want to go to school
- Diagnosis?
- Questions?
- Further eval?
- Treatment?

Separation Anxiety Disorder

- A. Developmentally inappropriate and excessive anxiety concerning separation from home or from those to whom the individual is attached 3 symptoms of list of 8 required:
 - ● Distress with anticipated or actual separation.
 - ● Worry about losing or harm befalling attachment figure.
 - ● Worry that an event will cause separation.
 - ● Persistent reluctance or refusal to go to school due to fear of separation.
- Duration 4wks>
- Must have onset before age 18. Specified early onset if before age 6.

Separation Anxiety Disorder (cont.)

- Persistent and excessive fear to be alone at home or without adults in other settings.
 - Repeated nightmares with theme of separation.
 - Repeated complaints of physical symptoms when separation occurs or is anticipated.
- A. 1. Recurrent and unexpected panic attacks
2. At least one of the attacks has been followed by ≥ 1 month of ≥ 1 of these symptoms: persistent concern about having additional attacks; worry about the implications of the attack or its consequences; a significant change in behavior related to attacks
- B. Absence of agoraphobia

Jonathan

- 17 year old Caucasian male, senior, on football team, has a girlfriend of many years; pervasive sense of doom, as if in a dream at time, feels like he is going crazy, hospitalized a year ago as “did not want to live like this” Diagnosis?
- Questions?
- Further eval?
- Treatment?

Panic Disorder with Agoraphobia

- A. 1. Recurrent and unexpected panic attacks
2. At least one of the attacks has been followed by ≥ 1 month of ≥ 1 of these symptoms: persistent concern about having additional attacks; worry about the implications of the attack or its consequences; a significant change in behavior related to attacks
- B. Absence of agoraphobia
- Duration ≥ 1 month

Panic Disorder with Agoraphobia

- Duration \geq 1 month
- Same criteria as Panic Disorder without Agoraphobia (1 and 2). Intense fear related to being in situations from which escape might be difficult or embarrassed.
B. Presence of agoraphobia

Panic Disorder Differential

- ✓ Usually focus on 1 specific feature
- ✓ 20% of pts c/o syncope have dx of mood, anxiety, or substance-abuse disorder..most commonly *panic disorder*
- Dx made after medical etiology ruled out.
- ✓ Asthma
- ✓ Thyrotoxicosis
- ✓ Pheochromocytoma
- ✓ Hypoglycemia
- ✓ Paroxysmal Atrial Tachycardia
- ✓ Mitral Valve Prolapse
- ✓ Medications, SE & Interax

IAN

- 15 yr Korean male, dislikes going to school, being in crowded places, will not go into a store if many cars in the parking lot, takes about an hour to fall asleep, occasionally awakens with nightmare, nonrestful sleep. Likes his belongings in order, doors shut, clothes only worn once.

- Diagnosis?
- Questions?
- Further eval?
- Treatment?

Specific Phobia

- ≥ 6 mo
 - A. Marked and persistent fear that is excessive or unreasonable, cued by the presence or anticipation of a specific object or situation.
 - B. Exposure to the phobic stimulus almost invariably provokes an immediate anxiety response, which may take the form of a panic attack.
 - C. The person recognizes that the fear is excessive or unreasonable (not necessary for children).
 - D. The phobic stimulus is avoided or else is endured with intense anxiety or distress.
 - B. In children, the anxiety may be expressed by crying, as tantrums, freezing, or clinging.
C. In children, it is not necessary that the child recognizes that the fear is excessive or unreasonable
- A. A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. Fears of acting in a way that will be humiliating or embarrassing.
 - B. Exposure to the feared situation almost invariably provokes an immediate anxiety response, which may take the form of a panic attack.
 - C. The person recognizes that the fear is excessive or unreasonable.
 - D. The feared situation is avoided or else is endured with intense anxiety or distress.

Social Phobia

- ≥ 6 mo
- A. A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. Fears of acting in a way that will be humiliating or embarrassing.
 - B. Exposure to the feared situation almost invariably provokes an immediate anxiety response, which may take the form of a panic attack.
 - C. The person recognizes that the fear is excessive or unreasonable.
 - D. The feared situation is avoided or else is endured with intense anxiety or distress.
- A. In children, there must be evidence of capacity for age-appropriate social relationships with familiar people and the anxiety must occur in peer settings, not just with adults.
 - B. In children the anxiety may be expressed by crying, tantrums, freezing or clinging.
 - C. In children, it is not necessary that the child recognizes that the fear is excessive or unreasonable.

Phobia Disorders Differential

- ✓ Lifetime rate of 10-11%
- ✓ Onset childhood, early adulthood
- ✓ Marked or persistent fear of objects or situations, exposure to which results in an immediate anxiety reaction.
- ✓ Avoids phobic stimulus
- ✓ Avoidance impairs occupational or social functioning
- ✓ Experience anxiety only in specific situations
- ✓ Common phobias- fear of closed spaces, blood, flying
- ✓ Social Phobia-specific fear of social or performance situation in which individual is exposed to unfamiliar individuals or to possible examination and evaluation by others i.e., converse at a party, use public restrooms, meet strangers

Lousie

16 year old African American female with history of washing hands until they are raw, wiping herself after urinating or a bowel movement until she is raw as she never feels “clean”, grooming the cat (picks out whitish hairs) until he scratches her. She has to arrange her room for hours sometimes at night until it is “just right” and then she’s able to go to bed, which often makes her late in the morning for school.

Diagnosis?

Questions?

Further eval?

Treatment?

Obsessive Compulsive Disorders (no duration specified)

- A. Either obsessions or compulsions
- Obsessions: recurrent, persistent thoughts, impulses, or images that are intrusive and cause anxiety and distress, and are not simply excessive worries about real-life problems.
- The person attempts to ignore or suppress the thoughts, or neutralize them with another thought or action. The person recognizes that the thoughts or images are from their own mind.
- Compulsions: Repetitive behaviors or mental acts that a person feels driven to perform in response to obsessions or according to rigid rules. The behaviors are aimed at preventing some dreaded event.
- B. At some point during the course of the disorder, the person realizes that the obsessions or compulsions are excessive or unreasonable.
- C. The obsessions or compulsions cause marked distress, are time-consuming (take more than one hour per day), or significantly interfere with the person's normal routine, occupational or academic functioning, or usual social activities or relationships.

Obsessive Compulsive Disorder (OCD)

- 1/3 to 1/2 of adult cases start between 10-12 years old
- 4th most common neurobiological illness
- 1:40 adults & 1:200 children having lifetime occurrence
- Common obsessions: concern w/order, counting, fear of acting on aggressive impulses (30%); dirt, germs & contamination (35%)
- Compulsions: repetitive hand washing (75%), checking & rechecking, repetitive actions such as stepping only on the cracks in the sidewalk, concern with arranging.
- Effects pathways in brain using serotonin transmitter
- Relationship between OCD & tic disorders

The Pediatric OCD Treatment Study (POTS)

- Most extensive study of pediatric OCD
- 4 treatment arms over a 12-week period:
 - 1) CBT-alone
 - 2) Sertraline-alone
 - 3) CBT & Sertraline
 - 4) Placebo
- All 3 treatment arms were found to be superior to placebo
- #1 Combined treatment was superior to either CBT or sertraline alone.
- Remission rates were 53.6% for the combined group
- 39% in the CBT-only group
- 21% in the sertraline-only group
- 4% for placebo

Pharmacological Treatment of OCD in Youth

- Regarding specific anxiety subtypes, pediatric OCD is the anxiety disorder that has the strongest support for pharmacological intervention achieving effectiveness
- Has been supported by RCTs of fluoxetine, fluvoxamine,¹ sertraline, and paroxetine.
- Evidence for citalopram is limited to open-label studies and comparison to fluoxetine without placebo.
- Sertraline, fluoxetine, and fluvoxamine have been approved by the Food and Drug Administration (FDA) for the treatment of OCD in youth.

Acute Stress Disorder

- Minimum 2 d, maximum 4 wk
- A. Occurs after traumatic experience that the person believes was life-threatening, and the person's response involved intense fear, helplessness, or horror.
B. During or after the event the person has three or more dissociative symptoms (sense of numbing or detachment; reduced awareness of surroundings; derealization (the external world feeling strange or unreal); depersonalization (feeling as though watching oneself); dissociative amnesia (not being able to remember an important aspect of the event).
- C. The person persistently re-experiences the event via recurrent images, thoughts, dreams, or flashbacks; or is distressed with reminders of event.
D. The person avoids situations that may trigger memories of past event.
E. The person has anxiety or increased arousal, such as difficulty sleeping, exaggerated startle.

Ted

- 5 year old boy who is irritable, always “looking for a fight”, jumpy, feels the need to protect his mother, repeatedly plays a SWAT team attacking a house and he’s defending the house, hard time settling for sleep, nightmares
- Diagnosis?
- Questions?
- Further eval?
- Treatment?

Postrumatic Stress Disorder

- >1 month
- Same symptoms as Acute Stress Disorder.
- A. In children, response to traumatic experience may be expressed by disorganized or agitated behavior.
- B. 1. In young children, reexperiencing may be inferred by repetitive play in which themes or aspects of the trauma are expressed.
- 2. In young children, reexperiencing can include frightening dreams without recognizable content.
- 3. In young children, trauma-specific reenactment may occur

5 Nonverbal Signs of PTSD in Children

1. Sleep disturbances that are more than several days; actual dreams of the trauma may or may not appear
2. Clinging behavior, anxiety from separating, reluctance on going back to school
3. Phobias about distressing stimuli people, places, events which remind the child of the precipitating event
4. Conduct disturbances at home or school which are responses to anxiety & frustrations. Doubts about self worth & desire to withdraw

Generalized Anxiety Disorder \geq 6 Months

- A. Excessive anxiety and worry occurring more days than not about a number or events or activities (such as work or school performance)
- B. The person finds it difficult to control the worry.
- C. The anxiety or worry are associated with \geq 3 symptoms from this list: (1) restlessness or feeling keyed up or on edge; (2) being easily fatigued; (3) difficulty concentrating or mind going blank; (4). irritability; (5). muscle tension; (6). sleep disturbance.

Generalized Anxiety Disorder Differential

- ✓ Onset usually before age 20
- ✓ Hx of childhood fears & social inhibition
- ✓ Incidence increased in 1st degree relatives w/the dx
- ✓ Over 80% w/GAD also suffer major depression, dysthymia or social phobia
- ✓ Comorbid substance abuse, particularly ETOH and sedative/hypnotic abuse
- ✓ Rare c/o of SOB, palpitations and tachycardia
- ✓ Readily admit to worrying excessive over minor matters w/life-disrupting effects

Anxiety Disorder NOS

- Anxiety or phobic avoidance that causes distress that is impairing, but does not meet criteria for any specific anxiety disorder.
 - Infants may display agitation and irritability, uncontrollable crying, disturbances in sleeping and eating, separation distress, or social anxiety.
- Especially with a family history of anxiety disorders these symptoms may indicate an early-onset anxiety disorder.
- Duration for anxiety disorder NOS is not specified in the DC: 0-3R

Sleep Related Problems

- SRPs common feature of anxiety disorders
- Obtain detailed information related to both sleep & anxiety in adolescents presenting with difficulties in either domain
- Sleep problems are early markers for nascent psychopathology, including anxiety disorders
- SRPs associated with impaired family functioning
- Sleep dysregulation, irritability, social withdrawal, poor concentration, negative attitude about self and future, decreased appetite a subgroup of 28% to 69% have anxiety or depression have both at the same time

Clinical Pearls

- Standardized rating tools are better than winging it
- Some tools double for screening and treatment monitoring
- Rating tools can be used as psychoeducational tools

Comorbidity

- Co-occurrence of Tourette's Disorder and OCD is common with a common set of genetic factors contribute to both disorder
- Limited evidence demonstrates a strong and significant association between substance use disorders and anxiety disorders
- 40% to 90% of adolescents with substance abuse disorders have comorbid psychiatric diagnoses, with anxiety disorders being a common co-occurrence
- When anxiety disorders begin in childhood, there is increased risk for the development of substance abuse during adolescence and adulthood.
- When active substance use begins, it interferes with the detection of the anxiety disorder
- Anxiety disorders have been found to increase the risk for the development of eating disorders in adolescent girls, including anorexia nervosa and binge eating in children.

Pediatric Symptom Checklist

- FREE (e.g. Bright Futures website)
- Parent and youth version, ages: 4-16
- Simple to score and interpret
- Helps identify those in need of further mental health evaluation and intervention
 - 2/3 with positive score will have moderate to serious mental health problem
 - 6-16 yrs: positive ≥ 28
 - 4-5 yrs: positive ≥ 24
- Helps to screen out those not in need
 - 95% accurate
- Does not provide a diagnosis

Scared

- Screen for Child Anxiety Related Disorders
- FREE (e.g. schoolpsychiatry.org)
- Age 8+; parent and youth versions
- 5 minutes to fill out
- Scoring easy but needs a few minutes, interpretation fairly straightforward
 - Still need a comprehensive evaluation
- Five factors that suggest specific, mostly DSM anxiety disorders: GAD, Separation Anxiety, Social Anxiety, School Avoidance
- NB: PTSD and OCD are not screened

Assessment of Dangerousness

- Suicide
- Homicide
- Other risk-taking, e.g.
 - Running away
 - Drug use
 - Sexual risk-taking

Suicide – Partial Assessment

- ASK!!!!!!!!!!!!!!!!!!!!!!
- Thoughts
- Intentions
- Plans
- Means
 - GET RID OF FIREARMS and other weapons such as large knives, poisons, lengths of rope!
- Social supports
- Stressors
- Psychiatric symptoms
- Reasons to live
- Problem-solving capacity

Resources

- [At: http://www.mchlibrary.info/KnowledgePaths/kp_Mental_Conditions.html](http://www.mchlibrary.info/KnowledgePaths/kp_Mental_Conditions.html)
- Bright Futures in Practice: Mental Health—Volume II and its accompanying Tool Kit

Comorbidity

- Child-Adolescent Anxiety Multimodal Study (CAMS) identified children and adolescents with social phobia, GAD, or SAD. They found that 78.6% of the sample had 2 or more of those disorders and 35.9% met criteria for all 3 diagnoses simultaneously.^[78] Providers should examine the criteria of each anxiety disorder separately, and if the patient meets criteria for more than one anxiety disorder, all applicable should be diagnosed.
- CAMS study youth who met criteria for one or more anxiety disorders 46% met criteria for other internalizing disorders, 11.9% for ADHD, 9.4% for ODD and 2.7% for tic disorders

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Treatment

- Entail various combinations of interventions, including psychoeducation, cognitive therapy, behavioral shaping, school consultation, and pharmacotherapy
- American Academy of Child and Adolescent Psychiatry initially recommends the use of psychoeducation for patients and family, focusing on the anxiety cycle and the process whereby avoidance contributes to greater fear reactivity.
- Furthermore, psychotherapy is recommended, with the greatest evidence for CBT,
- For moderate to severe cases of anxiety, the intensity of treatments should be increased,¹ and consideration of a combination of medications and therapy is recommended.
- Medication may be considered sooner when participation in psychotherapy is not effective or feasible because of the degree of impairment.

Medical Disorders that can present with systems of anxiety

System	Disorder
Cardiovascular	Arrhythmias
Endocrine/Metabolic	Hyperthyroidism (Graves's, initial presentation of subacute thyroiditis) Hypoglycemia Hyperglycemia Hyperparathyroidism Pheochromocytoma Cushing's disease
Neurologic	Temporal lobe epilepsy Vestibular dysfunctions Intracranial mass lesions Postconcussive states/traumatic brain injury Encephalopathies
Respiratory	Asthma Pneumonia Pneumothorax Pulmonary embolus
Medications	Akathisia (secondary to antipsychotic agents, SSRIs) Anticholinergic toxicity Benadryl, tricyclics Stimulants Methylphenidate, dextroamphetamine Bronchodilators Sympathomimetics OTC agents Pseudoephedrine
Illicit substance use	Marijuana—toxic reaction Hallucinogens Stimulant Cocaine, amphetamines Withdrawal syndromes Alcohol, sedative-hypnotics
Hematologic	Anemia Acute intermittent porphyria
Immunologic/Rheumatologic	Systemic lupus erythematosus Anaphylaxis
Miscellaneous	Excessive caffeine, use of energy drinks/aids

Web Resources

- [http:// www.brightfutures.org](http://www.brightfutures.org)
- www.massgeneral.org/schoolpsychiatry/
- www.aacap.org
 - acts for Families
 - NB: includes brief handout about what to expect from a child psychiatry evaluation
- http://www.schoolpsychology.net/p_01.html
- **Websites:**
- 1. Anxiety Disorders Association of America, www.adaa.org
- 2. Children's Center for OCD and Anxiety, www.worrywisekids.org
- 3. Child Anxiety Network, www.childanxiety.net/Anxiety_Disorders.htm
- 4. American Academy of Child and Adolescent Psychiatry, facts for families on anxiety, www.aacap.org/cs/root/facts_for_families?the_anxious_child
- 5. US Department of Health, <http://mentalhealth.samhsa.gov/publications/allpubs/CA-0007/default.asp>