

SSRIs: Guidance for Pediatricians

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I have no disclosures/conflicts of interest associated with the presented material in this presentation.

Learning Objectives

Overview of pediatric mental health.

Review making diagnosis of anxiety/depression.

Learn how to provide informed consent for the ongoing use of these medications.

Learn starting doses and indications for SSRIs.

Be able to identify side effects.

Pediatric Mental Health

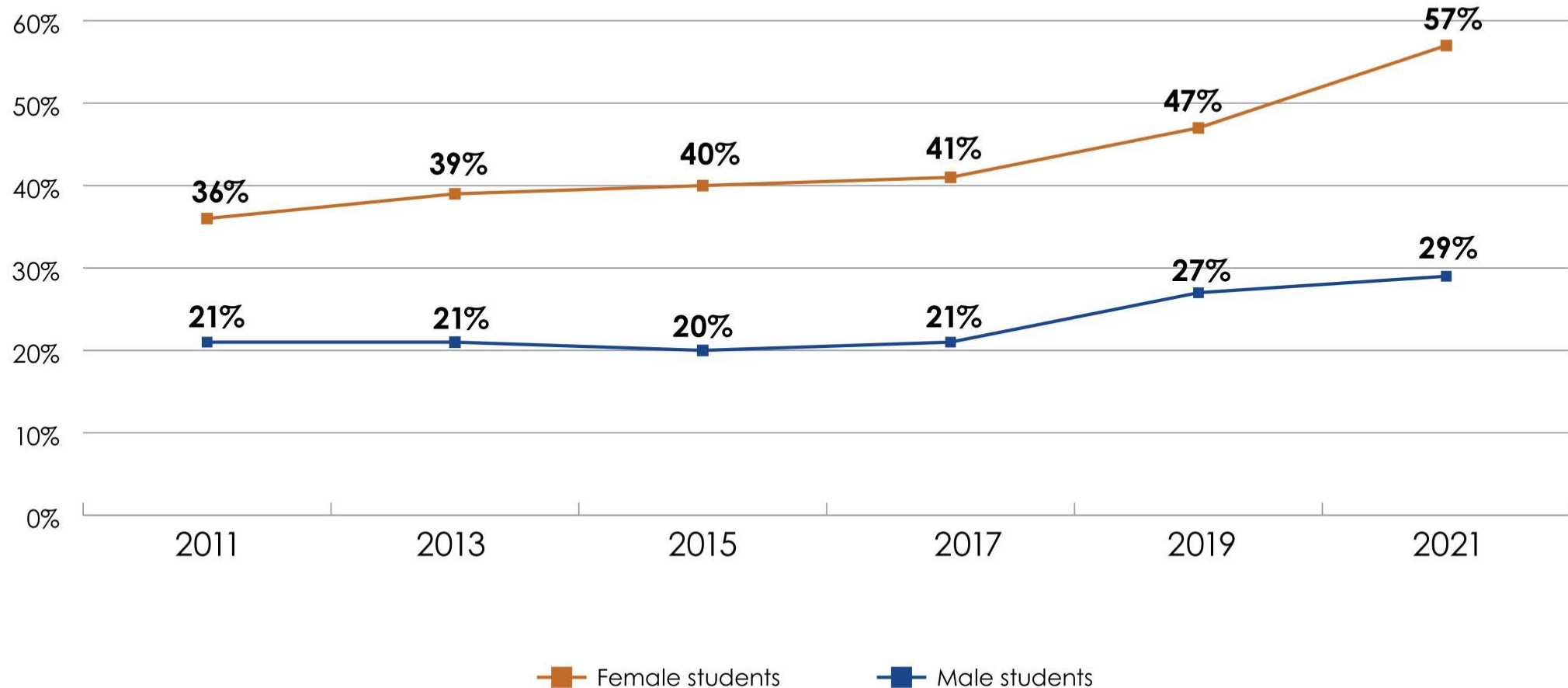
- Up to 50% of all lifetime cases of mental illness begins by age 14
- 1 in 5 children have a mental health problem.
- Of those, only 50% are treated.
- In 2020, 1 in 6 youth experienced MDD and suicide was the 2nd leading cause of death for ages 10-24

Pediatric Mental Health

- In 2021, 42% of high school students felt so sad or hopeless almost every day for at least two weeks in a row that they stopped doing their usual activities.
 - Female (57%) > male (29%)
 - Multiracial (49%) and Hispanic (46%) students > than White (41%), Black (39%), and Asian (35%), students
 - LGBTQ+ students (69%) and students who had any same-sex partners (78%) more likely than heterosexual peers (35%)

- [Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021 \(cdc.gov\)](#)

PERSISTENT FEELINGS OF SADNESS OR HOPELESSNESS AMONG U.S. HIGH SCHOOL STUDENTS, BY SEX, 2011-2021



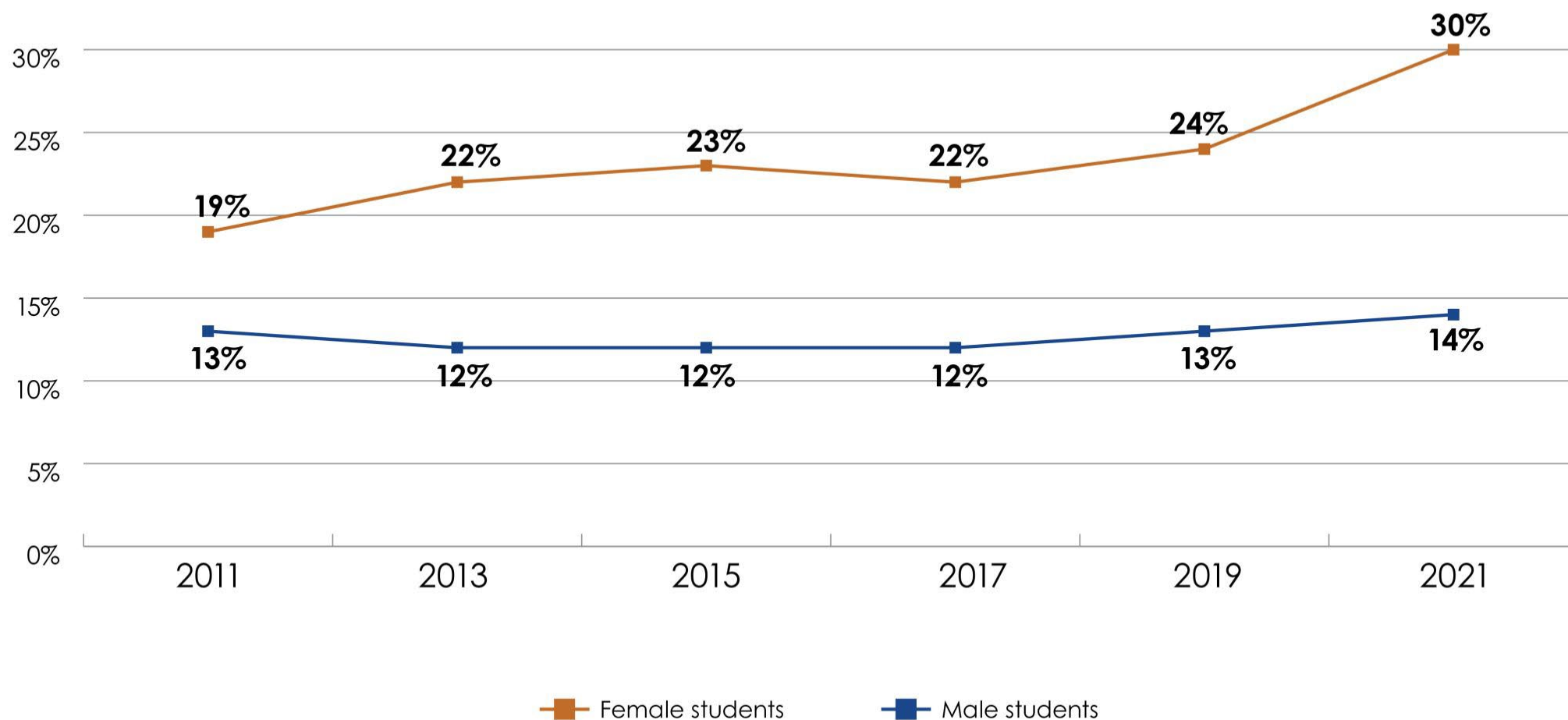
[CDC report shows concerning increases in sadness and exposure to violence among teen girls and LGBTQ+ youth](#) | [Fact Sheets](#) | [Newsroom](#) | [NCHHSTP](#) | [CDC](#); [Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021](#) ([cdc.gov](#))

Pediatric Mental Health

- In 2021, 22% of high school students seriously considered attempting suicide during the past year.
 - Female students (30%) > male students (14%)
 - Native American students most likely (27%)
 - Asian students least likely (18%)
 - LGBTQ+ students (45%) and students who had any same-sex partners (58%) were more likely than their peers (15%) to seriously consider attempting suicide

- [Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021 \(cdc.gov\)](#)

SERIOUSLY CONSIDERED ATTEMPTING SUICIDE AMONG U.S. HIGH SCHOOL STUDENTS, BY SEX, 2011-2021



Pediatric Mental Health

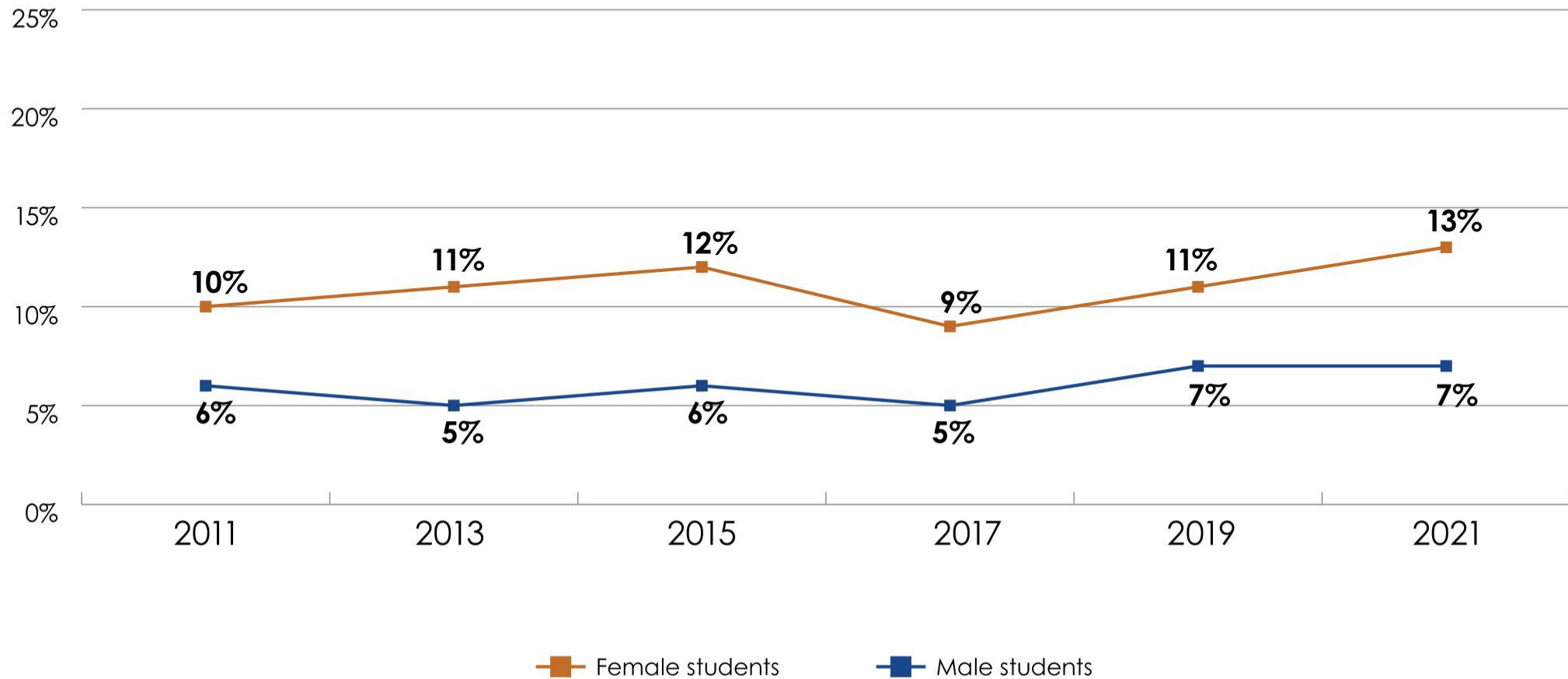
- In 2021, 18% of high school students made a suicide plan during the prior year.
 - Female students (24%) > male students (12%)
 - LGBTQ+ students (45%) and students who had any same-sex partners (45%) were more likely than their peers (12%) to seriously make a suicide plan

- [Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021 \(cdc.gov\)](https://www.cdc.gov/youthrisk/index.html)

Pediatric Mental Health

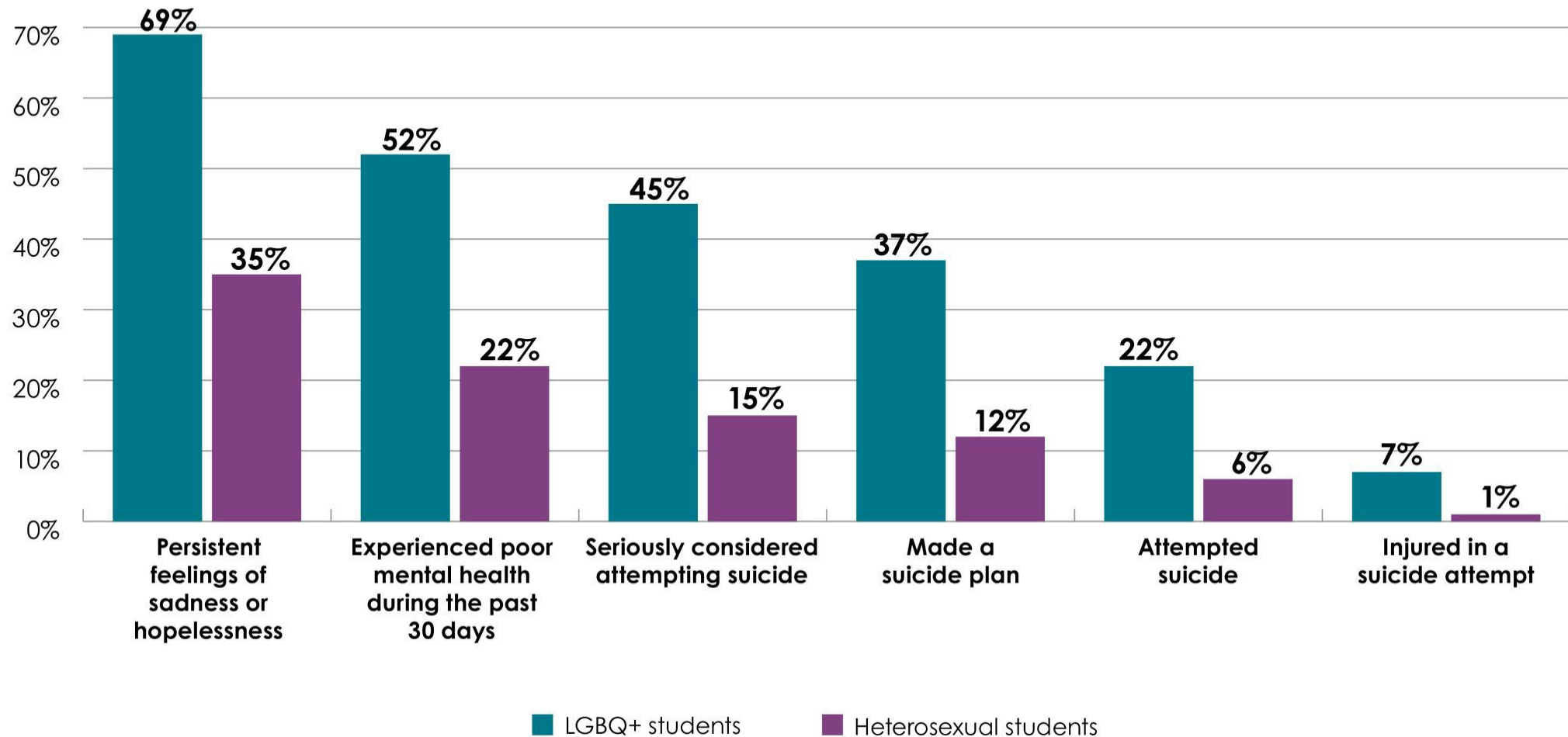
- In 2021, 10% of high school students made a suicide attempt one or more times during the prior year.
 - Female students (13%) > male students (7%)
 - Black students more likely than Asian, Hispanic, and White students to make a suicide attempt.
 - LGBTQ+ students (22%) and students who had any same-sex partners (33%) were more likely than their heterosexual peers (6%) to make a suicide attempt
- [Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021 \(cdc.gov\)](#)

ATTEMPTED SUICIDE AMONG U.S. HIGH SCHOOL STUDENTS, BY SEX, 2011-2021



[CDC report shows concerning increases in sadness and exposure to violence among teen girls and LGBTQ+ youth | Fact Sheets | Newsroom | NCHHSTP | CDC](#); [Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021 \(cdc.gov\)](#)

MENTAL HEALTH AMONG U.S. HIGH SCHOOL STUDENTS, BY SEXUAL IDENTITY, 2021



[CDC report shows concerning increases in sadness and exposure to violence among teen girls and LGBTQ+ youth](#) | [Fact Sheets](#) | [Newsroom](#) | [NCHHSTP](#) | [CDC](#); [Youth Risk Behavior Survey Data Summary & Trends Report: 2011-2021 \(cdc.gov\)](#)



Making A Diagnosis: Anxiety Disorders

- Anxiety Disorders:
 - Core symptoms are fears/phobias/worries/somatic concerns which cause ***avoidance*** of situations that generate the fears/worry or ***severe distress***
 - Symptoms cause ***disturbance in functioning***
 - Types of Symptoms:
 - *Fear/Phobia*: Separation Anxiety; Social anxiety; Specific phobia
 - *Worry*: Generalized Anxiety Disorder
 - *Somatic symptoms*: Restlessness/nausea/blushing/palpitations
 - Often presents as recurrent abdominal pain at pediatric Primary Care office
 - May present as agitation/aggression
 - Don't Forget to Screen for Depression (commonly occurs with anxiety disorders)
-
- Riddle MA, *Pediatric Psychopharmacology for Primary Care*, 25-28.

Making A Diagnosis: Anxiety Disorders



Core Symptoms:

Separation: Developmentally inappropriate/excessive fear/anxiety of separation

Generalized: Excessive anxiety/worry occurring more days than not, about many things

Social: Marked fear/anxiety about social situation and concern of scrutiny of others'



Impairment/Distress

Symptoms cause ***clinically significant distress or impairment*** in social, academic, occupational or other areas of functioning



Duration

Separation: > 4 weeks

Generalized: 6 months

Social: 6 months



Exclusions

Effect of a substance

Another medical condition

Another mental disorder

Making A Diagnosis: Major Depressive Disorder

- Depressive Disorders:
 - Symptoms cause ***disturbance in functioning*** or ***severe distress***
- Types of Symptoms:
 - *Mood*: Depressed mood/irritability
 - *Somatic symptoms*: psychomotor agitation or retardation/sleep changes/appetite changes/fatigue/decreased interests
 - *Cognitive*: Concentration/suicidal ideation/guilt
- Don't Forget to Screen for Mania/hypomania
 - Decreased need for sleep/grandiosity/increase in goal – directed activities/elevated moods that are different from usual behavior
- Riddle MA, *Pediatric Psychopharmacology for Primary Care*, 61.

Making A Diagnosis: Major Depressive Disorder



Core Symptoms:

Need 5/9 symptoms (SIGECAPS) – requires depression/irritability or decreased interest

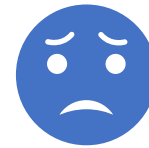
Change from previous functioning and present nearly every day

Has never had a manic/hypomanic episode



Impairment/Distress

Symptoms cause ***clinically significant distress or impairment*** in social, academic, occupational or other areas of functioning



Duration

2 weeks



Exclusions

Effect of a substance
Another medical condition
Another mental disorder

Pediatric Psychopharmacology

FOR PRIMARY CARE

3RD EDITION

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Psychiatric Prescribing Basics

- Prescribing physician:
 - Confidence in making an appropriate diagnosis for common psychiatric disorders
 - Knowledge of psychosocial treatments
 - Knowledge of medications prescribed
 - Procedures for monitoring medications
- Disorder:
 - Common
 - Efficiently and accurately diagnosable by pediatric primary care clinician
- Medication needs to have:
 - Demonstrated efficacy for the disorder
 - Be relatively safe and able to monitor any adverse effects appropriately
- Dosing: follow FDA or AAP/AACAP guidelines
- System of care: provide access to pediatric psychopharmacology expertise or general treatment guidance questions
- Riddle MA, *Pediatric Psychopharmacology for Primary Care*, 3-7.

FDA approved antidepressants for youth

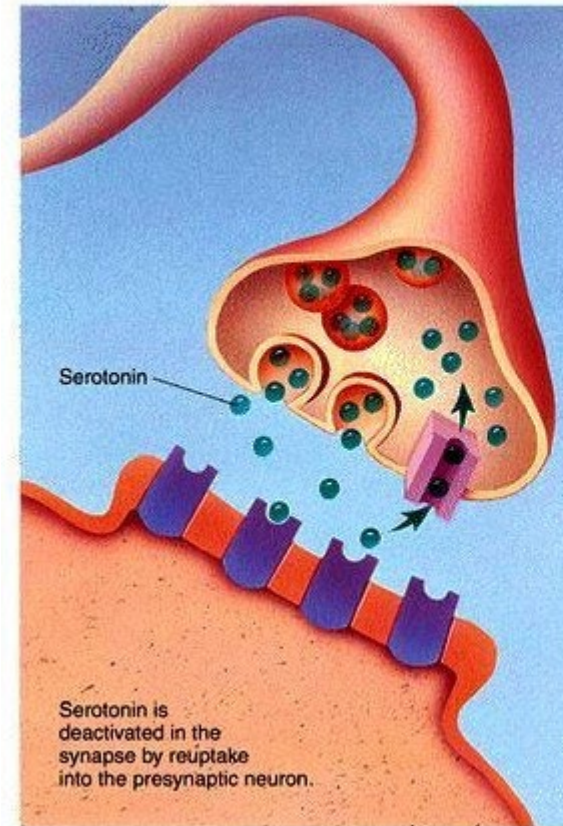
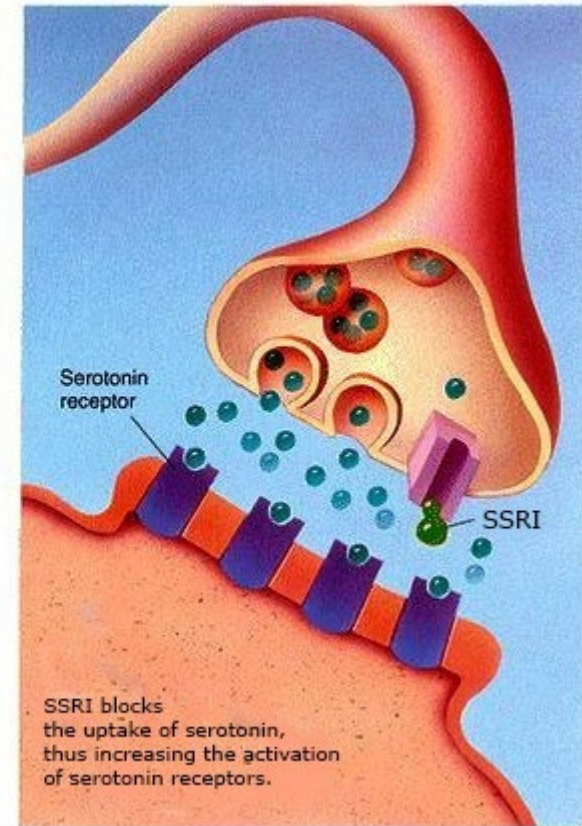
MEDICATION	AGE	DIAGNOSIS
Fluoxetine (Prozac)	8 and older	MDD
	7 and older	OCD
Escitalopram (Lexapro)	12 and older	MDD
Sertraline (Zoloft)	6 and older	OCD
Fluvoxamine (Luvox)	8 and older	OCD
Clomipramine (Anafranil)	10 and older	OCD
Duloxetine (Cymbalta)	7 and older	GAD

Prescribing SSRIs

- Used for both depression and anxiety (despite being called antidepressants)
- High placebo response rates for depression (industry studies versus NIMH)
- High quality NIMH studies have demonstrated efficacy and safety of fluoxetine, sertraline and fluvoxamine for the common anxiety disorders in children (generalized anxiety disorder, social anxiety disorder and separation anxiety disorder)
- Remember: Evidence-based psychotherapies are first-line interventions. (CBT for anxiety; CBT or interpersonal psychotherapy for youth with depression)
- Remember: other non-medication interventions (exercise, yoga, nutrition, sleep, meditation)

How do SSRIs work?

- Increase serotonin levels between serotonin releasing synapses in the brain
- Possible down regulation of 5HT1a post-synaptic receptors
- Rapid vs. delayed response (receptors may be changing)
- Unclear why one person responds to one and not another...



[How SSRIs work | OCD-UK \(ocduk.org\)](http://ocduk.org)

Antidepressants and Suicidal Thoughts/Behaviors

October 2004 FDA black box warning:
Warning as to significant increase in
risk of suicidality (*i.e. suicidal
ideation/attempts*) in children and
adolescents up to age 18

May 2007: revision; no longer has
specific guidance on monitoring

Antidepressant-induced suicide is *rare*

suicidality increased 2x greater on med
versus placebo (2% on placebo and 4%
on antidepressant (*Hammad et al, Arch
Gen Psych 2006*)); later analysis
showed increase in 0.7% (*Bridge et al,
JAMA, 2007*); most recently risk
difference of 0.9% (*Julius SA, Stat
Methods Med Research, 2013*)

SSRIs: Black Box Warning

Suicidal thoughts are common

Completed suicide is very rare

Depression and anxiety can be serious problems

SSRIs do work for depression in kids

Black Box Warning for antidepressants

Discuss

- Discuss in order to obtain informed consent from parent/guardian

Balance

- Balance increased risk versus clinical need for treatment

Monitor

- Monitor closely for any increased suicidality, worsening symptoms, agitation or other unusual behavior changes

Encourage

- Encourage families to discuss any concerns with provider

SSRIs: Serotonin Syndrome

- May see with overdose (not usual doses)
- In combination with other medications:
 - MAOI
 - Other SSRI
 - Triptans (rare)
 - Opiates (rare)
 - Stimulants (rare)
- *Symptoms:*
 - Cognitive: confusion, hallucinations, agitation, hypomania, coma
 - Autonomic: shivering, sweating, fever, diarrhea, nausea, tachycardia
 - Somatic: Hyperreflexia, myoclonus, tremor
- *Treatment:* Stop offending agent; supportive treatment

A case

A 15 year old boy has a diagnosis of major depressive disorder. He started therapy 2 months ago. He presents to your office with his mother who states that he is still depressed and not making progress. She states that the therapist recommended to see the pediatrician for possible medication.



What Else Do I need to Know?

- Medical concerns?
- Substance use concerns?
- Degree of life impairment: Going to school? Attending after school activities/work? Grades dropping? Impact on social and family life?
- Recent losses or trauma?
- Rating scales: PHQ-9
- Degree of symptoms: Suicidal? Hopeless? Self-injurious behaviors?
- Important as mild depression often self resolves

Choosing an SSRI



Depression

SSRIs with FDA approval for MDD in youth preferred



Anxiety

SSRIs with FDA approval for OCD in youth preferred



Other Issues

Frequency of dosing

Form of dosing

Drug-drug interactions

Half-life

Family members response?

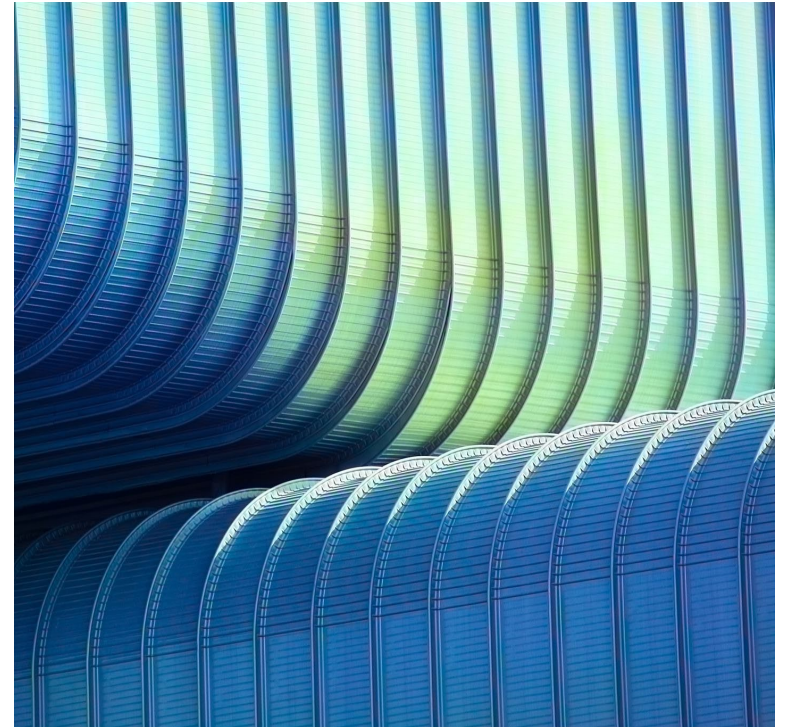
FDA Approved SSRIs for use in youth

Fluoxetine
(Prozac)

Escitalopram
(Lexapro)

Sertraline
(Zoloft)

Fluvoxamine
(Luvox)



SSRI Side Effects

Common

- Insomnia
- Sedation
- Appetite change
- Nausea
- Dry mouth
- Headache
- Sexual dysfunction

Less Common

- **Agitation/activation/akathisia** (generally happens < 48 hours after starting or changing dose)
- Restlessness
- Impulsivity
- Irritability
- Silliness/disinhibition
- Constipation
- Dizziness
- Tremor
- Diarrhea

Rare But Notable

- **New suicidality** (black box warning)
- Serotonin syndrome
- Easy bleeding (nosebleeds/bruising)
- Hyponatremia
- **Mania/bipolar switching**
- Prolonged QT interval

SSRI Side Effects

Brain

- Increased anxiety
- **Agitation/activation (disinhibition/impulsivity)**
- **Suicidal ideation/gestures**
- Bipolar switching
- Insomnia
- Fatigue/sleepiness
- Headaches
- Weight gain/loss
- Ejaculatory dysfunction/anorgasmia

Gut

- Constipation
- Diarrhea
- Nausea
- Abdominal pain

Platelets

- Nosebleeds
- bruising

What is SSRI Related Activation?

Emerges Quickly

- 24-48 hours after starting medication/increasing dose

Resolves

- When dose decreased or medication stopped

Symptoms

- Irritability
- Disinhibition
- Impulsivity
- Insomnia
- Hyperactivity
- Restlessness

Antidepressant Half Lives

Drug	Half Life
Fluoxetine	72 hours
Escitalopram	27-32 hours
Sertraline	26 hours
Fluvoxamine	15 hours
Duloxetine	12 hours

Starting FDA approved antidepressants for youth

MEDICATION	STARTING DOSE	MAX DOSE	DOSE FORMS
Fluoxetine (Prozac): MDD (8-17); OCD 7-17	10-20 mg (5-10 mg) daily	80 mg daily	Capsules/tablets
			Oral solution 4 mg/mL
Escitalopram (Lexapro): MDD (12-17)	10 mg (2.5-10 mg) daily	20 mg daily	Scored tablets; oral solution 1 mg/mL
Sertraline (Zoloft): OCD (6-17)	25 mg (12.5 mg) daily	200 mg daily	Scored tablets; oral solution 20 mg/mL
Fluvoxamine (Luvox): OCD (8-17)	25 mg (12.5-25 mg) daily	8-11: 200 mg daily 12-17: 300 mg daily (divide dose > 50 mg daily)	tablets
Duloxetine (Cymbalta): GAD (7 -17)	20-30 mg daily	120 mg daily	Delayed release capsule

Summary: Starting an SSRI

- Discuss *need to take daily* in order for them to work. Need to take 3-4 weeks at a therapeutic dose to see effect.
- Discuss course of treatment (*take for 6 – 12 months after improvement*) and need to taper down when discontinuing (as opposed to abrupt discontinuation)
- Review common and most concerning side/adverse effects.
 - You may have side effects such as sleep changes, appetite changes, headache, GI upset then benefits later.
 - **Must discuss suicidality/black box warning. If new SI happens, call the office.**
 - Encourage them to call if have any problems/concerns
- Follow up by phone in 1-2 weeks; Follow up in person in 2-4 weeks
- Review other treatment modalities with family (therapy, lifestyle changes, etc.)

Resources

- American Academy of Pediatrics
 - [Mental Health Minute \(aap.org\)](https://www.aap.org/mentalhealthminute)
- American Academy of Child and Adolescent Psychiatry
- ChildMind.org

Thank you!

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