

# Integrated Health Topic: Anxiety in Pediatrics

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Transforming Mental  
Health

*Leading the way for children to  
live their best lives*



# Introduction

No disclosures



# MHI Flow



PCP CONCERN  
SCREENERS – PHQ 9 > 10 OR + 9



WARM HAND OFF



PSYCHOSOCIAL ASSESSMENT



THERAPY  
4-6 SESSION



CARE  
COORDINATION



REFERRALS



Hub



PSYCHIATRY  
1-10 SESSIONS

THERAPY  
12-16 SESSION

**REF IHT**

# Developmental Worries and Fears

- Infants
  - Loud Noises
  - Dropped
  - Startle Reflex



# Developmental Worries and Fears

- 9 Months
  - Stranger Anxiety
- Toddlers
  - Monsters, Darkness



# Developmental Worries and Fears

- Early School age
  - Physical wellbeing, injuries
  - Natural Disasters, storms
  - Spiders, Darkness



# Developmental Worries and Fears

- Early Adolescence
  - Social Competence



# Developmental Worries and Fears

- Adolescence
  - Social Evaluation
  - Psychological Well Being





# Developmental Worries and Fears

- Loud Noises
- Dropped
- Startle Reflex
- Stranger Anxiety
- Separation
- Monsters, Darkness
- Physical wellbeing, injuries
- Natural Disasters, storms
- Spiders, Darkness
- Social Competence
- Social Evaluation
- Psychological Well Being



Fears and Worries

More Complex Worries  
Context Specific Fears

# What is Anxiety?

- Worry Cognitions – Apprehension, thoughts about how things could or will go wrong
  - Gets more complex over time
- Fear – Perceived imminent or likely threat, more immediate
  - Diminishes over time
- Somatic Symptoms



# Cognitions of Anxiety

- High frequency and salience of negative predictions
- Catastrophizing thought style
- All or Nothing Thinking
- Mental Filter
- Often co-morbid with depression

# Symptoms of Anxiety

- Hand wringing, stomach/GI upset, headaches
- Panic Attacks
  - Abrupt occurrence of
    - Palpitations, trembling, sweating, cp, n/v, dizziness, chills, heat sensations, parasthesias, derealization / depersonalization, fear of dying or "going crazy"
- Sympathetic symptoms
- Somatic symptoms



# Child and Adolescent Understanding Anxiety

- Problematic or Disorder
  - Symptoms
  - Distress
  - Dysfunction
  - Inflexibility
  - Avoidance
- Eventually Anxiety in the absence of stimulus

# Anxiety Friend or Foe?

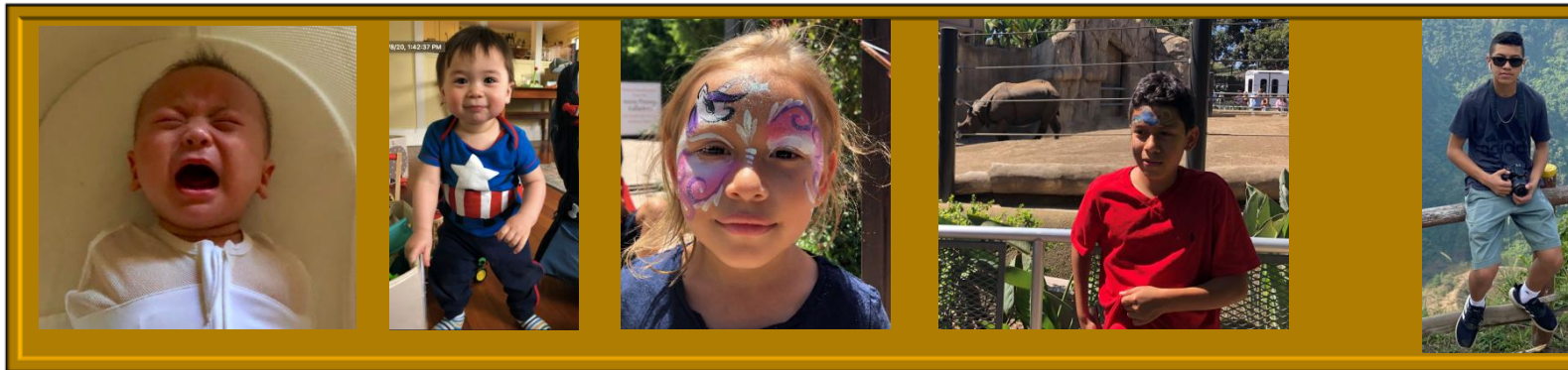
- Avoid Danger
- Promote Adaptation
- Avoid Discomfort
- School Avoidance
- Avoidance of relationships
- Full Criteria

Friend

Disorder

# Developmental Anxiety

- Attachment Distress
- <https://youtu.be/6CZXW4R9w2g>
- Acting out Behaviors
- Nail biting,
- Selective Mutism
- Separation Anxiety
- Specific Phobia
- Social Anxiety
- Panic Disorder
- Generalized Anxiety



Fears and Worries

More Complex Worries  
Context Specific Fears

# 2016 National Survey of Children's Health

- Anxiety Becomes more prevalent in Teen years
- 7.1% from 3-17 Years of Age
  - 3 – 5 yo : 1.3 %
  - 5 – 11 yo: 6.6 %
  - 12 – 17 yo: 10.5 %

Table I. Prevalence of currently diagnosed depression, anxiety, and behavioral/conduct problems among children aged 3-17 years, by sociodemographic and health characteristics, NSCH 2016



# Approach to Anxiety

- Normalize
  - "Anxiety is a good thing, we all have it, and need it"
  - Fight or flight examples (snake, car accident)
  - Sometimes this reaction gets too strong, and people forget to turn it off. Sometimes they can't turn it off
- Does the pattern match age expected anxiety syndromes?
- Give a SCARED : 8 - 17 Years old
  - <http://www.midss.org/content/screen-child-anxiety-related-disorders-scared>

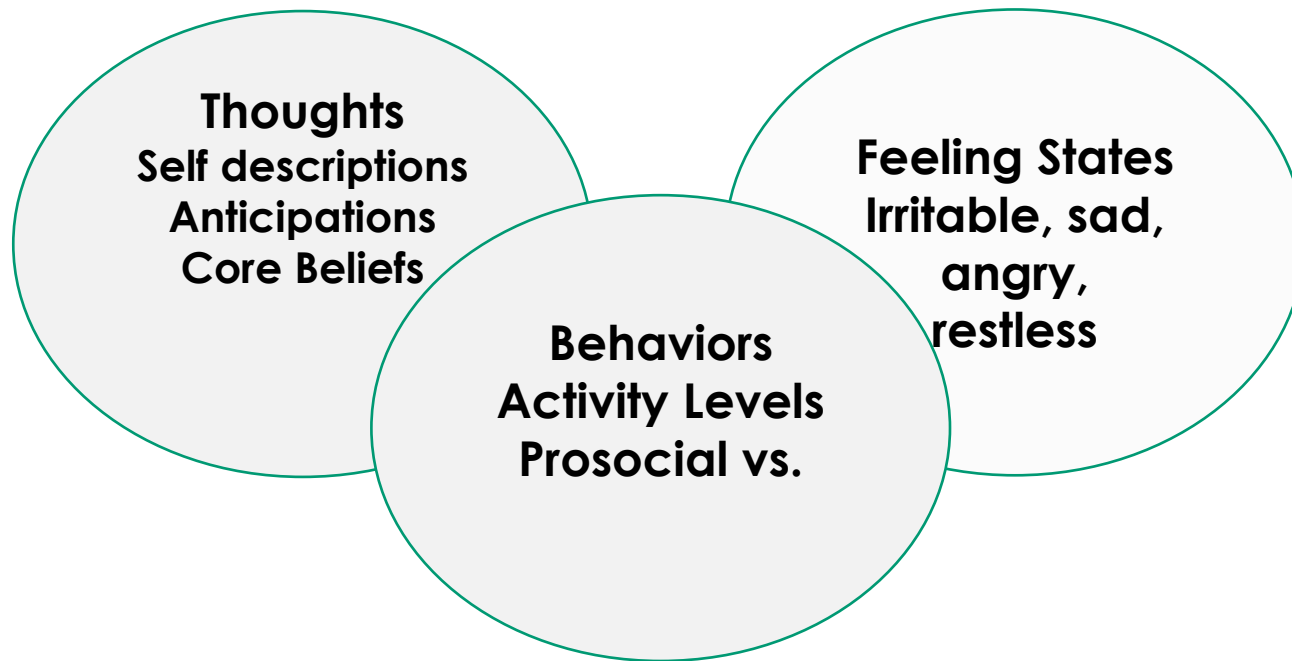


# Approach to Anxiety

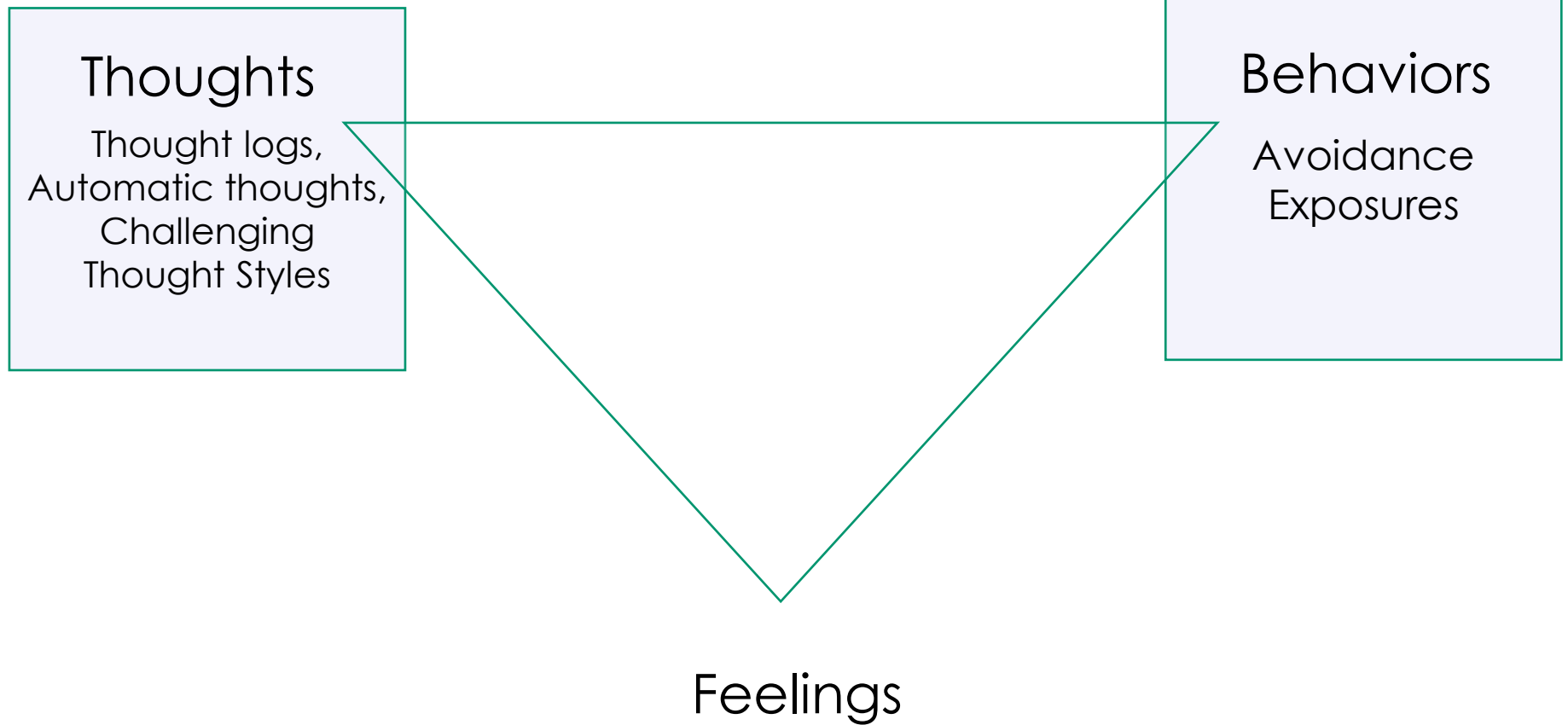
- Connect family with resources
- Therapy is first line
  - CBT
    - Anxiety scales followed by exposures targeting avoidance
- SSRIs Can be helpful
  - Medication without therapy is not first-line

# Treatment

- Therapy
- Medication
- Combination therapy has best data
- CBT for Anxiety



# Treatment



# Child and Adolescent Anxiety

- Social Anxiety Disorder
  - Fear about social settings with PEERS (not just adults), out of proportion to context
  - Concern with scrutiny of others
  - CBT
  - SSRI > SNRI
  - Multiple RCTs

# SSRI

- First Line: Big Three
  - Fluoxetine
  - Escitalopram
  - Sertraline
- Return in 1-4 weeks to see if tolerating, ask about SI.
  - Follow-up meetings can be brief
    - The pay off comes in the form of improved compliance, placebo response and better titration
- Up-titrate
  - *Week 8 – good response or maximal dose*

# SSRIs

- Second Line: A different of the big Three
  - Fluoxetine
  - Escitalopram
  - Sertraline

# SSRIs for Anxiety

## General

Headache, GI Upset, SI  
Rare activation or mania/Hypo Mania  
Black Box Warning  
Cross placenta and breast milk but Generally Safe

## Fluoxetine

Start at 5 -10 mg  
40 - 60 mg MAX  
Can be more activating  
Withdrawal is usually well tolerated  
Most interactions

## Escitalopram

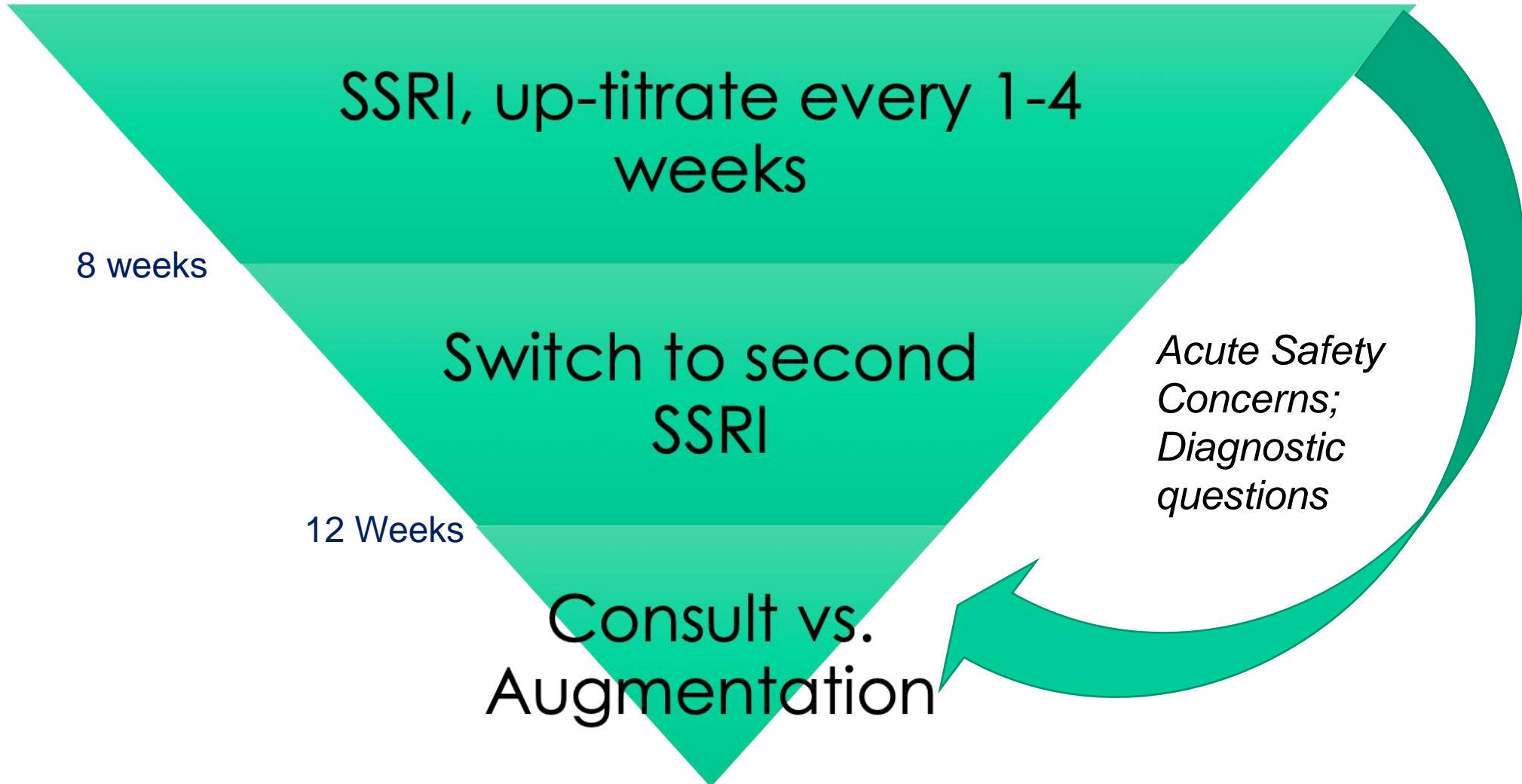
Start 5 - 10 mg  
Max is 20 mg  
Can be more sedating, / orthostasis  
Fewest Interactions  
When stopping taper over 1-2 weeks, or slower

## Sertraline

Start 12.5 - 25 mg  
Target 125 -150 mg or remission  
When stopping, taper



# Stepped Treatment



# SSRI : Adverse Effects

- Headache, GI upset
- Black Box Warning: Suicide Events
- Antidepressants increased the risk compared to placebo of suicidal thinking and behavior (suicidality) in children, adolescents, and young adults in short-term studies of major depressive disorder (MDD) and other psychiatric disorders

# Medications: SSRIS

- Rates of suicide events vary .7% - 4%
- FDA and TADS study show no completed suicides
- <https://www.uptodate.com/contents/effect-of-antidepressants-on-suicide-risk-in-children-and-adolescents>
- For Families:
  - Communication about safety
  - Monitoring

# Fluoxetine

- Fluoxetine 10 to 40 mg po daily (TADS Study; Cochrane Review)
- FDA Approved for Depression
- Adolescents: Start at 10 mg, within 1-4 weeks increase to 20 mg, true target is remission
- School Age: Start lower 5; Use Liquid; go Slow

# Fluoxetine

- Long Half-life! (2-3 days parent, 2 week metabolite)
  - Good: no withdrawal
  - Bad: 5 week washout for MAOi
- Can be activating
- Less often can be sedating
- CYP inhibition (2D6 → Codeine, B blockers; 3A4 → some benzos, Statins)

# SSRI : General Approach

- Lowest effective dose, target remission
- Symptomatic and tolerating? Increase
- Effect can take 3-5 Weeks per dose change
- Monitor weekly or bimonthly
  - Suicidal ideation
  - Mania or hypomania (SLEEP, personality change, etc.)

# SSRI : Labs

- At baseline: IF clinical exam is concerning for biological underpinnings or any association with eating disorder
  - CBC, TSH, CMP, B12, Vit D.
- Follow-up Labs if symptoms of electrolyte abnormality

# SSRI : Other Cautions

- Use with other serotonergic medications can cause Serotonin Syndrome
- Risk Category C, present in breast milk
- Rare adverse effects can be serious: Suicidal Ideation (Black Box), Bleeding, Electrolyte abnormalities
- Likely safe with OCPS, more studies needed (Berry-Bibee et al, 2016)





# SSRI: Other Considerations

- Higher doses tend to be helpful for more anxiety
- Co-treatment with stimulants is usually safe
- There are studies that show increase hypomania risk with this combination

# Resource List

- SmartCare for Families : 858-956-5900
- SmartCare for Providers : 858-880-6405
- Psychologytoday.com
- County Sevices
  - [https://www.optumsandiego.com/content/dam/sandiego/documents/socdirectory/SBC\\_DBH-SUDRS\\_Provider\\_Directory\\_English.pdf](https://www.optumsandiego.com/content/dam/sandiego/documents/socdirectory/SBC_DBH-SUDRS_Provider_Directory_English.pdf)

# References

Ghandour, R. M., Sherman, L. J., Vladutiu, C. J., Ali, M. M., ... Blumberg, S. J. (2018). Prevalence and Treatment of Depression, Anxiety, and Conduct Problems in US Children. *The Journal of Pediatrics*, 206, 256–267.e3. <https://doi.org/10.1016/j.jpeds.2018.09.021>

Ipser JC., Dj, S., Hawkrigde, S., & Hoppe, L. (2010). Pharmacotherapy for anxiety disorders in children and adolescents ( Review ), (3). doi:10.1002/14651858.CD005170.pub2.www.cochranelibrary.com

**Treating and Preventing Adolescent Mental Health Disorders: What We Know and What We Don't Know: A Research Agenda for Improving the Mental Health of Our Youth.** Edited by Dwight L. Evans, Edna B. Foa, Raquel E. Gur, Herbert Hendin, Charles P. O'Brien, Martin E.P. Seligman, and B. Timothy Walsh. 818 pp. New York, Oxford University Press, 2005

Strawn, J. R., Welge, J. A., Ph, D., Wehry, A. M., Keeshin, B., & Rynn, M. A. (2015). EFFICACY AND TOLERABILITY OF ANTIDEPRESSANTS IN PEDIATRIC ANXIETY DISORDERS : A SYSTEMATIC REVIEW AND META-ANALYSIS, 157(November 2014), 149–157. doi:10.1002/da.22329

# References

**Table I. Prevalence of currently diagnosed depression, anxiety, and behavioral/conduct problems among children aged 3-17 years, by sociodemographic and health characteristics, NSCH 2016**

| Characteristics                          | Currently diagnosed with depression |             |             |           | Currently diagnosed with anxiety |             |             |           | Currently diagnosed with behavioral or conduct problems |             |             |           |
|--|-------------------------------------|-------------|-------------|-----------|----------------------------------|-------------|-------------|-----------|---|-------------|-------------|-----------|
|  | Unweighted, n                       | Weighted, N | Weighted, % | 95% CI    | Unweighted, n                    | Weighted, N | Weighted, % | 95% CI    | Unweighted, n   | Weighted, N | Weighted, % | 95% CI    |
| All children (3-17 y)                    |                                     | 1 934 000   | 3.2         | 2.9-3.5   |                                  | 4 355 000   | 7.1         | 6.6-7.6   |   | 4 509 000   | 7.4         | 6.9-7.9   |
| Severity of diagnosed condition          |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| Mild                                     | 806                                 | 885 000     | 46.3        | 41.4-51.2 | 1796                             | 1 949 000   | 45.2        | 41.5-48.9 | 1342  | 1 748 000   | 39.5        | 36.1-42.9 |
| Moderate                                 | 716                                 | 841 000     | 44.0        | 39.1-49.0 | 1634                             | 2 037 000   | 47.2        | 43.4-51.1 | 1445  | 2 110 000   | 47.6        | 44.1-51.2 |
| Severe                                   | 135                                 | 185 000     | 9.7         | 6.6-14.0  | 308                              | 326 000     | 7.6         | 6.2-9.2   | 335   | 572 000     | 12.9        | 10.6-15.7 |
| Current depression                       |                                     |             | N/A         |           | 1280                             | 1 402 000   | 32.3        | 29.1-35.8 | 673   | 908 000     | 20.3        | 17.7-23.2 |
| Current anxiety                          | 1280                                | 1 402 000   | 73.8        | 69.4-77.8 |                                  |             | N/A         |           | 1308  | 1 630 000   | 36.6        | 33.2-40.1 |
| Current behavioral or conduct problems   | 673                                 | 908 000     | 47.2        | 42.3-52.2 | 1308                             | 1 630 000   | 37.9        | 34.3-41.6 |   |             | N/A         |           |
| Sociodemographic characteristics         |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| Sex                                      |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| Male                                     | 715                                 | 932 000     | 3.0         | 0.2-2.6   | 1783                             | 2 164 000   | 6.9         | 6.2-7.7   | 2205  | 3 155 000   | 10.1        | 9.3-10.9  |
| Female                                   | 957                                 | 1 002 000   | 3.3         | 0.2-2.9   | 1980                             | 2 191 000   | 7.3         | 6.6-8.1   | 968   | 1 354 000   | 4.5         | 4.0-5.1   |
| Age, y                                   |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| 3-5                                      | 7                                   | 9000        | *0.08       | 0.0-0.2   | 113                              | 153 000     | 1.3         | 0.9-1.7   | 288   | 410 000     | 3.4         | 2.8-4.2   |
| 6-11                                     | 271                                 | 421 000     | 1.7         | 1.3-2.2   | 1115                             | 1 624 000   | 6.6         | 5.7-7.6   | 1390  | 2 259 000   | 9.1         | 8.3-10.1  |
| 12-17                                    | 1394                                | 1 504 000   | 6.1         | 5.5-6.8   | 2535                             | 2 578 000   | 10.5        | 9.7-11.3  | 1495  | 1 840 000   | 7.5         | 6.7-8.3   |
| Race/ethnicity                           |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| Hispanic                                 | 184                                 | 330 000     | 2.2         | 1.6-2.9   | 375                              | 915 000     | 6.0         | 4.8-7.5   | 364   | 837 000     | 5.5         | 4.5-6.7   |
| Non-Hispanic white                       | 1198                                | 1 088 000   | 3.4         | 3.1-3.8   | 2908                             | 2 713 000   | 8.6         | 8.0-9.2   | 2158  | 2 394 000   | 7.6         | 7.0-8.2   |
| Non-Hispanic black                       | 110                                 | 331 000     | 4.2         | 3.1-5.6   | 136                              | 358 000     | 4.5         | 3.4-5.9   | 287   | 848 000     | 10.7        | 9.1-12.7  |
| Non-Hispanic multiracial/other           | 180                                 | 184 000     | 2.9         | 2.3-3.6   | 344                              | 368 000     | 5.7         | 4.4-7.5   | 364   | 430 000     | 6.7         | 5.3-8.5   |
| Family structure                         |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| Two parents, married                     | 899                                 | 904 000     | 2.3         | 2.0-2.7   | 2385                             | 2 504 000   | 6.4         | 5.8-7.0   | 1753  | 1 986 000   | 5.1         | 4.6-5.6   |
| Two parents, unmarried                   | 130                                 | 172 000     | 3.5         | 2.3-5.2   | 249                              | 404 000     | 8.1         | 5.9-11.1  | 253   | 508 000     | 10.2        | 7.7-13.4  |
| Single mother                            | 404                                 | 585 000     | 5.9         | 5.0-7.0   | 736                              | 946 000     | 9.6         | 8.4-11.0  | 674   | 1 177 000   | 12.0        | 10.6-13.6 |
| Other                                    | 218                                 | 254 000     | 4.5         | 3.6-5.6   | 340                              | 430 000     | 7.6         | 6.3-9.3   | 422   | 715 000     | 12.7        | 10.7-15.0 |
| Household educational attainment         |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| Less than high school                    | 53                                  | 262 000     | 4.6         | 3.0-7.0   | 83                               | 419 000     | 7.3         | 5.3-10.1  | 111   | 499 000     | 8.7         | 6.5-11.6  |
| High school, GED, or vocational training | 266                                 | 422 000     | 3.6         | 2.9-4.4   | 467                              | 810 000     | 6.9         | 5.7-8.3   | 524   | 988 000     | 8.4         | 7.2-9.7   |
| More than high school                    | 1317                                | 1 191 000   | 2.9         | 2.6-3.2   | 3139                             | 3 013 000   | 7.2         | 6.7-7.8   | 2438  | 2 840 000   | 6.8         | 6.3-7.4   |
| Household poverty                        |                                     |             |             |           |                                  |             |             |           |   |             |             |           |
| <100% FPL                                | 273                                 | 625 000     | 4.8         | 3.8-6.0   | 463                              | 984 000     | 7.6         | 6.3-9.0   | 557   | 1 405 000   | 10.8        | 9.4-12.4  |
| 100%-199% FPL                            | 334                                 | 420 000     | 3.1         | 2.4-3.9   | 659                              | 1 010 000   | 7.4         | 6.1-9.0   | 650   | 1 024 000   | 7.5         | 6.4-8.8   |
| 200%-399% FPL                            | 500                                 | 453 000     | 2.8         | 2.2-3.4   | 1136                             | 1 124 000   | 6.8         | 5.9-7.9   | 923   | 1 066 000   | 6.5         | 5.6-7.5   |
| ≥400% FPL                                | 565                                 | 436 000     | 2.4         | 2.0-2.8   | 1505                             | 1 237 000   | 6.8         | 6.1-7.6   | 1043  | 1 014 000   | 5.6         | 5.0-6.3   |

(continued)

# Cochrane Review

- Ipser JC, Stein DJ, Hawkrigde S, Hoppe L (2009). Pharmacotherapy for anxiety disorders in children and adolescents (Review). Cochrane Review
- 22 short-term ( $\leq 16$  weeks) RCTs (2519 participants)
- 15/22 studies assessed the efficacy of the SSRIs
  - Medication and placebo response occurred in 58.1% and 31.5% of patients,
  - Number needed to treat = 4.
  - Medication was more effective than placebo in reducing overall symptom severity in OCD in a post-hoc comparison (N = 7, Weighted Mean Difference (WMD) = -4.45, 95%CI = -5.94, -2.97, n = 765).
- **Medication treatments can reduce core symptoms**
- Best data is for OCD
- No clear evidence to show that any particular class of medication is more effective or better tolerated than any other.
- **Routine use of benzodiazepines cannot be recommended, especially given concerns of dependency and AEs**

# Child and Adolescent Anxiety

- Separation anxiety
  - > 4 weeks and  $\geq 3$  of
    - Developmentally inappropriate fear concerning separation for attachment figures
    - Persistent worry about bad things happening to attachment figures
    - Alterations in sleep, absenteeism, nightmares, somatic symptoms
  - CBT and SSRIs

# Child and Adolescent Anxiety

- Selective Mutism
  - > 1 month of consistent failure to speak in certain settings, that interferes with schooling, social relationships
  - Exposures, CBT
  - SSRI

# Child and Adolescent Anxiety

- Panic Disorder
  - Recurrent panic attacks
  - Fear of inducing attacks (> 1 Month)
  - Resulting change in behavior
- Treatment: CBT and SSRIs (at least 3 RCTS)



# Child and Adolescent Anxiety

- Generalized Anxiety Disorder
  - $\geq 6$  mo of worry that is difficult to control and about many things
  - $\geq 1$ 
    - Restlessness, fatigue, poor concentration, irritability, muscle tension, sleep probs
- CBT
- SSRI, SNRI

# Child and Adolescent Anxiety

- Specific Phobia
  - > 6 Mo → Marked fear or anxiety of a thing that is out of proportion to associated danger
  - Can be expressed by tantrums, freezing or clinging
  - Impairing
- EXPOSURES
- Data for SSRI is less convincing, but exposures work so well, that we use medication less

# Escitalopram

- Escitalopram 10 to 20 mg po daily (TADS Study; Cochrane Review)
- FDA Approved for depression
- Adolescents: Start at 5 mg, increase to 10 mg, true target is remission, increase accordingly
- School age kids go slower

# Escitalopram

- Half life is 24 – 32 hrs
- Discontinuation withdrawal symptoms rare, but can happen → taper
- Few interactions

# Sertraline

- Sertraline 25 – 150 mg
- 130 mg is the average studied dose
- FDA Approved for OCD
- Adolescents: Start at 25 mg, increase to 50 mg, true target is remission, increase accordingly
- School age kids go slower

# Sertraline

- Half-life is 24-36 hours, can be longer
- Taper on discontinuation 50% over 3 days to week
- Some CYP inhibition