### NEI’s Master Psychopharmacology Program
Study Guide: Anxiety Disorders†

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<tr>
<th>Subtopic</th>
<th>Benchmarks (You Should Be Able To)</th>
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</table>
| Symptom Presentation and Assessment | Differentiate pathological anxiety from normal anxiety  
Identify and describe symptoms of each anxiety disorder  
Identify symptoms that overlap among the different anxiety disorders  
Identify the unique symptoms that distinguish the different anxiety disorders | **Additional Resources**
Stahl SM, Grady MM. Stahl’s illustrated anxiety, stress, and PTSD. New York, NY: Cambridge University Press; 2010. (Chapter 2) |
| Neurobiology of Symptoms         | Associate each symptom of anxiety disorders with hypothesized brain regions and circuits  
Identify major neurotransmitters associated with fear and with worry  
Explain the steps involved in the normal stress response  
Explain deviations in the normal stress response under pathological conditions  
Explain the process of stress sensitization  
Explain the concepts of fear conditioning and fear extinction  
Recognize the environmental and genetic factors that can contribute to the development of anxiety disorders | **Learning Activities**
My Microbiota Made Me Do It: How the Microbiome Can Influence Behavior (CME animation)  
Fear Conditioning and Fear Extinction (CME animation)  
Early Life Adversity and Risk of Mental Illness (CME animation)  
Molecular and Neurobiological Aspects of Resilience (CME animation) |
|                                  | **Additional Resources**
Stahl SM, Grady MM. Stahl’s illustrated anxiety, stress, and PTSD. New York, NY: Cambridge University Press; 2010. (Chapter 1) |

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| **Mechanisms of GABA-ergic Anxiolytics** | Identify the four GABA receptor subtypes and explain GABA’s effects at each of them  
Differentiate between the GABA receptors involved in anxiety and those involved in sleep  
Explain the effects of benzodiazepines at GABA receptors  
Identify other mechanisms for modulating GABA neurotransmission to target anxiety symptoms | **Additional Resources**  
Stahl SM, Grady MM. Stahl’s illustrated anxiety, stress, and PTSD. New York, NY: Cambridge University Press; 2010. (Chapter 3) |
| **Clinical Characteristics of GABA-ergic Anxiolytics** | Identify currently available GABA-ergic agents with evidence of efficacy in anxiety disorders  
Identify the effective dose range and general titration requirements for each GABA-ergic anxiolytic  
Identify notable side effects for each GABA-ergic anxiolytic  
Identify any contraindications or major drug interactions for each GABA-ergic anxiolytic  
Identify risks and benefits of long-term use of each GABA-ergic anxiolytic | **Additional Resources**  
Stahl SM, Grady MM. Stahl’s illustrated anxiety, stress, and PTSD. New York, NY: Cambridge University Press; 2010. (Chapter 4)  
[NEI Prescribe](https://nei.global/mpp)  
Anxiolytic medication prescribing information/package inserts. |

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| **Mechanisms of Serotonergic Anxiolytics** | Identify pre- and postsynaptic serotonin receptor subtypes and explain serotonin’s effects at each of them Explain the consequences of antagonism at serotonin 2A and 2C receptors Explain the consequences of inhibition of the serotonin transporter Explain how serotonin 1A partial agonists have anxiolytic effects Identify the underlying mechanisms behind common side effects of serotonergic anxiolytics Describe how serotonergic agents can modulate BDNF and what relevance this may have to treatment | **Additional Resources**
Stahl SM, Grady MM. Stahl’s illustrated anxiety, stress, and PTSD. New York, NY: Cambridge University Press; 2010. (Chapter 3) |
| **Clinical Characteristics of Serotonergic Anxiolytics** | Identify currently available serotonergic agents with evidence of efficacy in anxiety disorders Explain the time course of therapeutic versus side effects Describe the clinically relevant receptor binding profiles and hypothesized corresponding clinical effects for each serotonergic anxiolytic Identify the effective dose range and general titration requirements for each serotonergic anxiolytic Differentiate among serotonergic anxiolytics in terms of risk of different side effects Identify any contraindications or major drug interactions for each serotonergic anxiolytic Identify risks and benefits of long-term use of each serotonergic anxiolytic | **Additional Resources**
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<td>Treatment Strategies</td>
<td>Identify appropriate monotherapies for each anxiety disorder</td>
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<td>Identify treatment methods for difficult cases of each anxiety disorder</td>
<td>40-Year-Old Woman With High-Dose Benzodiazepine Use and Facial Flushing Triggered by Anxiety</td>
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<td>Identify non-pharmacological strategies for the treatment of anxiety disorders</td>
<td>The WMDs of Posttraumatic Stress Disorder: Wellness, Medications, and Detox; An Update on Available and Effective Treatment Strategies</td>
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<td>Rationalize preemptive treatment approaches for fear conditioning</td>
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<td>Rationalize treatment approaches for facilitating fear extinction</td>
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<td>44-Year-Old Single Mother With Debilitating Social Anxiety Disorder</td>
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<td>33-Year-Old With Anxiety and Phobia of Medications</td>
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<td>57-Year-Old Man With a “Major Case of OCD”</td>
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| Special Considerations     | Identify anxiolytic agents for which dosing recommendations are different for children and/or adolescents than they are for adults  
Explain recommendations for anxiolytic selection/maintenance in women who are pregnant or breastfeeding  
Identify anxiolytic agents for which dosing recommendations are different for the elderly than they are for younger adults  
Identify anxiolytic agents for which dosing recommendations are different for individuals with medical complications | Additional Resources**  
NEI Prescribe  
Anxiolytic medication prescribing information/package inserts.  
This Month in Psychopharmacology, Anxiety Articles |

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