


UNC LINEBERGER COMPREHENSIVE CANCER CENTER

## Psycho-Oncology: Supporting the Mental Health of Oncology Patients

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### Disclosures

I have no financial interests or relationships to disclose.

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### Objectives

- Identify psychiatric syndromes that may impede oncologic care.
- Improve your understanding of psychopharmacology in the cancer setting.
- Recognize when it is appropriate to refer to psycho-oncology.

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**Psycho-Oncology**

- Started as a sub-specialty of oncology care in the 1970s
- Interdisciplinary approach to care
- Addresses psychological, behavioral, emotional, and social issues that arise for cancer patients and their families

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**Adjustment Disorders**



The development of emotional or behavioral symptoms in response to an identifiable stressor(s) occurring within 3 months of the onset of the stressor.

**Symptoms:**

- Marked distress that is out of proportion to the severity or intensity of the stressor
- Significant impairment in social, occupational, or other important areas of functioning

The stress-related disturbance does not meet the criteria for another mental disorder and is not merely an exacerbation of a pre-existing mental disorder. The symptoms do not represent normal bereavement.

Once the stressor or its consequences have terminated, the symptoms do not persist for more than an additional 6 months. (American Psychiatric Association, 2013)

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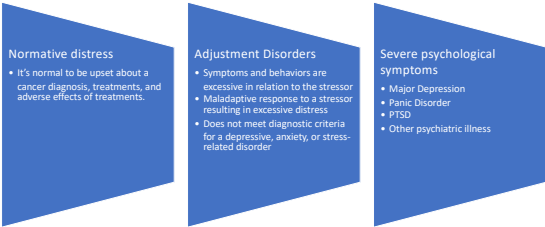
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**Adjustment Disorders**



**Normative distress**

- It's normal to be upset about a cancer diagnosis, treatments, and adverse effects of treatments.



**Adjustment Disorders**

- Symptoms and behaviors are excessive in relation to the stressor
- Maladaptive response to a stressor resulting in excessive distress
- Does not meet diagnostic criteria for a depressive, anxiety, or stress-related disorder

**Severe psychological symptoms**

- Major Depression
- Panic Disorder
- PTSD
- Other psychiatric illness

(De Vries et al., 2021)

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**Adjustment Disorder Types**

- With depressed mood
- With anxiety
- With mixed anxiety and depressed mood
- With disturbance of conduct
- With mixed disturbance of emotions and conduct
- Unspecified (for maladaptive reactions that are not classifiable as one of the specific subtypes of adjustment disorder) (American Psychiatric Association, 2013)

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**Adjustment Disorder Treatment**

- First line treatment is psychotherapeutic interventions. This can include psychoeducation, relaxation, individual therapy, and family therapy.
- Temporary use of hypnotics and benzodiazepines for insomnia or anxiety, and antidepressants for depressive symptoms may be helpful. (De Vries et al., 2021)

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**Depression**

**Symptoms:**

- Depressed mood most of the day, nearly every day
- Anhedonia
- Weight changes (up or down)
- Insomnia or hypersomnia
- Psychomotor agitation or retardation
- Fatigue
- Feelings of worthlessness or excessive or inappropriate guilt
- Diminished ability to think or concentrate, or indecisiveness
- Recurrent thoughts of death (not just fear of dying), recurrent suicidal ideation

**The symptoms cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.**

**The episode is not attributable to the physiological effects of a substance or to another medical condition.** (American Psychiatric Association, 2013)

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**Considerations**

- Continuous symptoms?
- Length of depression? At least 2 weeks?
- Is the depression due to a stressor or is it generalized?
- Is this a recurrence? (Roth & Nelson, 2021)



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**Risk Factors for Depressive Syndromes in Cancer Patients**

- Previous history of depression or anxiety
- Patient has more advanced cancer
- Pancreatic, lung, and head and neck cancers
- Poorly controlled pain
- Social isolation
- Other life stressors or recent losses
- Recent history of substance abuse or cessation of alcohol or tobacco use
- Hopelessness
- Worthlessness and guilt
- Suicidal ideation

(Roth & Nelson, 2021, p. 4)

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**Look-A-Like Explanations for Depressive Symptoms**

- **Cognitive disorder**—chemo-brain or hormone brain can affect attention, memory, multitasking, planning, and organization
- **Fatigue**—may be related to cancer treatment
- **Inadequately treated pain**—pain can lead to depression if not adequately treated
- **Thyroid function abnormalities**
- **Vitamin B-12 deficiency**
- **Folate deficiency**
- **Metabolic abnormalities** (hypercalcemia, Na or K imbalance, anemia)
- **Alcohol and/or substance abuse**
- **Infectious disease**
- **Hyper- or hypocortisolemia**
- **Cognitive impairment**

(Roth & Nelson, 2021, p. 6)

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**Medications that can affect mood, cognitive, and behavioral symptoms:**

- Corticosteroids
- Interleukin-2
- Interferon
- Opiates
- Benzodiazepines
- Dopamine-blocking antiemetics: Prochlorperazine, metoclopramide, and promethazine

**\*\*If someone develops psychiatric symptoms after being treated with one of these agents, it may be more prudent to lower the dose or discontinue use of something currently prescribed.** (Rosenstein et al., 2014)


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**Is it Depression?**

**Symptoms common with cancer or cancer treatments that are also symptoms of depression:**

- Fatigue
- Anorexia
- Weight loss/Weight gain
- Insomnia

**When depression is questioned,**

- We can take a personal or family history
- Assess for the length, onset, and severity of depressed mood
- Assess for symptoms of anhedonia, ruminative thinking, feelings of worthlessness, or feelings of guilt (Rosenstein et al., 2014)


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**Untreated Depression**

- Often leads to poor compliance with oncology treatments
- Increased pain and disability
- Greater likelihood of considering suicide
- Increased mortality (Rosenstein et al., 2014)


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**Suicide**

- Oncology patients—increased risk for suicide over general population
- Pay attention to symptoms such as hopelessness, helplessness, suicidal ideation, and intense anxiety
- Greater risk of suicide—lung, GI, and head & neck cancers. Also, adult survivors of childhood cancers
- Highest risk of suicide immediately after diagnosis
- Advanced cancer, pain, poor prognosis
- Prior suicide attempts
- Family history of suicide
- Prior psychiatric illness
- Delirium, psychosis, illogical thoughts
- History of substance abuse
- Impulsive behavior
- Recent loss or poor social support
- Other risks factors: male (especially elderly men), white, and being unmarried (Rosenstein et al., 2014)

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**Depression Strategies**

- Medication
- Psychotherapy
- Psychotherapy with medication—most effective
- Exercise—most effective way of improving cancer-related fatigue. Regular aerobic exercise and strength training can also combat mild to moderate depression.
- Meditation
- Life-style changes—improving nutrition and sleep (Roth & Nelson, 2021)

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**Selective Serotonin Reuptake Inhibitors (SSRIs)**

- **Citalopram (Celexa)**—Don't exceed 40 mg dose (20 mg for patients over 60 or those with renal or hepatic dysfunction). Higher doses increase risk for QT prolongation.
- **Escitalopram (Lexapro)**—max is 20 mg. If you see a patient with a 25 mg dose, get EKGs.
- **Fluoxetine (Prozac)**—long half life. Helpful for patients with *history of non-compliance*. Weaning off slowly not as critical.
- **Paroxetine (Paxil)**—anticholinergic effects, withdrawal syndrome
- **Sertraline (Zoloft)**—GI symptoms common
- **Fluvoxamine (Luvox)**—commonly used for OCD. Many drug interactions. (Roth & Nelson, 2021)

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**SSRIs**

- Great for major depression, anxiety disorders, recurrent panic attacks, and obsessive-compulsive disorder
- Daily adherence is the key
- It can take 2-6 (usually 4-6) weeks before improvement is noted
- Start low and go slow
- When first started, not uncommon to see an increase in anxiety. Very distressing for patients. (Fernandez-Robles, 2015)
- Akathisia—severe restlessness. “I can’t sit still.” “I feel like my skin is crawling.” “I feel like I’m jumping out of my skin.” (Roth & Nelson, 2021)

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**SSRIs (continued)**

- Suicidal ideation—sometimes energy improves before the hopelessness improves
- Most common side effect is nausea. This typically subsides in a few weeks.
- May slightly increase bleeding risk
- Headache, insomnia, sweating, dry mouth, and sexual dysfunction are all possible side effects (Fernandez-Robles, 2015)

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**Serotonin Norepinephrine Reuptake Inhibitors (SNRIs)**

- **Venlafaxine (Effexor)**—can help with hot flashes, GI symptoms, anticholinergic effects, hypertension at doses over 225 mg. Acts mainly as an SSRI at doses below 150 mg. At or above 150 mg, it works on serotonin and norepinephrine.
- **Desvenlafaxine (Pristiq)**—can help with hot flashes and fibromyalgia in addition to depression and anxiety. Helpful for depressed patients with somatic symptoms, fatigue, and pain. Avoid when patient has uncontrolled hypertension or cardiac disease.
- **Duloxetine (Cymbalta)**—can help with neuropathic pain. GI symptoms, headache, dizziness. Cimetidine and fluoroquinolones can significantly increase duloxetine blood levels, placing patients at risk for hepatotoxicity. Cigarette smoking and omeprazole can significantly reduce duloxetine blood levels. (Yappa & Braun, 2015) (Stahl, 2017)

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**Discontinuation Syndrome for SSRIs and SNRIs**

- Can occur when medication stopped abruptly.
- Worst meds for this are paroxetine and venlafaxine due to their short half lives.
- Symptoms are malaise, dizziness, and lightening-like pains (often referred to as brain zaps). Not life threatening.

(Fernandez-Robles, 2015)

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**Mirtazapine (Remeron)**

- Primarily works on serotonin, as well as norepinephrine and histamine.
- Helps with depression, anxiety, appetite, and sleep.
- The lower the dose, the more sedating. The higher the dose, the more it helps with anxiety, depression, and appetite.
- No gastric side effects.
- Dissolvable tablet form available.
- Dry mouth, weight gain, constipation, dizziness.
- Low incidence of sexual dysfunction.
- It has anti-emetic properties.
- Commonly used in augmentation with SSRIs.

(Roth & Nelson, 2021)

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**Bupropion (Wellbutrin)**

- Primarily works on dopamine and norepinephrine.
- Activating medication (counters fatigue).
- Not indicated for severe anxiety or panic disorder.
- Contraindicated for seizure history.
- Used in smoking cessation and ADHD.
- Does not cause sexual side effects.
- May cause or increase anxiety, agitation, and insomnia.
- May aggravate psychotic symptoms.
- GI symptoms, tremor, increased risk for seizure at high doses or with CNS lesions.

(Roth & Nelson, 2021)

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**Vortioxetine (Trintellix)**

- Considered a serotonin modulator, and not SSRI specifically, because it works on multiple locations of neurons, synapse, and transporters (Roth & Nelson, 2021)
- Low side effect profile: Nausea, vomiting, constipation (typically does not last long). Sexual side effects (uncommon) (Stahl, 2017)
- Expensive

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**Vilazodone (Viibryd)**

- SPARI—serotonin partial agonist reuptake inhibitor
- It boosts the neurotransmitter serotonin and blocks the serotonin reuptake pump (serotonin transporter)
- Weight gain and sedation are unusual
- Side effects: nausea, diarrhea, vomiting, insomnia, dizziness, bruising and rare bleeding, rare hyponatremia (elderly patients), sexual dysfunction, SIADH (Stahl, 2017)
- Expensive

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**Trazodone (Desyrel)**

- Heterocyclic antidepressant; primarily works on serotonin
- Used for insomnia. Works immediately for insomnia.
- Orthostatic hypotension, priapism, some weight gain. (Roth & Nelson, 2021)

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**TCA's**

- First introduced in the 1950s and were the primary treatment of depression until the 1990s when the SSRIs became available.
- Can help with neuropathic pain
- May cause hypotension because they block alpha adrenergic receptors
- Sedation, dry mouth, blurry vision, urinary hesitancy, orthostatic hypotension, and constipation can occur because of the anticholinergic activity
- They prolong conduction from the His bundle to the ventricle so are used with caution in patients with bundle branch block
- These side effects can lead to falls, cardiac conduction problems, abnormal heart rhythms, and blood pressure changes---difficult for medically fragile or elderly
- Monitor for drug interactions, especially with opioids and antibiotics

(Fernandez-Robles, 2015) (Roth & Nelson, 2021)


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**Tricyclic Antidepressants (TCAs)**

- **Amitriptyline (Elavil)**—primarily works on serotonin and norepinephrine
- **Imipramine (Tofranil)**—primarily works on serotonin and norepinephrine
- **Nortriptyline (Pamelor)**—metabolite of amitriptyline; primarily works on serotonin and norepinephrine
- **Desipramine (Norpramin)**—metabolite of imipramine; primarily works on norepinephrine and serotonin
- **Doxepin (Sinequan)**—primarily works on serotonin, norepinephrine, and histamine; used for sleep and to ease pruritis (potent antihistamine) (Roth & Nelson, 2021)


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**TCA—monitoring**

- Baseline EKG
- Monitor BP, HR, and orthostatic BPs
- Constipation, dry mouth, and urinary retention
- Blood levels can be useful to assess toxicity (amitriptyline, imipramine, nortriptyline, clomipramine) or provide a therapeutic window (nortriptyline) (Roth & Nelson, 2021)


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**Monoamine Oxidase Inhibitors (MAOIs)**

- Phenelzine (Nardil)
- Tranylcypromine (Parnate)
- Isocarboxazid (Marplan)

MAOIs are rarely used in the cancer setting due to drug interaction issues, severe side effect profiles, and dietary restrictions (avoiding foods that contain tyramines such as aged cheeses, cured meats, pickled or fermented foods, fava beans, and alcoholic beverages). Using an MAOI with either Demerol or SSRI can be life-threatening by causing serotonin syndrome (Rosenstein et al., 2014) (Roth & Nelson, 2021)

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**Antidepressant Multitasking**

Patient is Depressed AND...	Medication to Consider
Has decreased appetite	Mirtazapine, TCA
Has gastric upset or nausea	Mirtazapine, TCA
Has fatigue or trouble concentrating	Bupropion, psychostimulant
Has difficulty falling asleep or staying asleep	Mirtazapine, trazodone
Has neuropathic pain	Duloxetine, TCA
Is on Tamoxifen	Venlafaxine, citalopram, escitalopram, mirtazapine
Is nearing the end of life	Psychostimulant

(Roth & Nelson, 2021)

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**Tamoxifen and Antidepressants**

Several antidepressants are inhibitors of cytochrome P-450 2D6. This inhibition reduces the metabolism of tamoxifen to its active metabolite, endoxifen. Venlafaxine (Effexor) has the least inhibitory effect at 2D6 and thus is preferred in breast cancer patients taking Tamoxifen.

**Antidepressant Inhibitors: CYP2D6**

Strong	Fluoxetine, paroxetine, bupropion
Moderate	Duloxetine, sertraline, fluvoxamine
Mild	Citalopram, escitalopram
Minimal	Venlafaxine, mirtazapine, desvenlafaxine

(Rosenstein, 2014)

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**Other drug interaction considerations**

- **Enzalutamide (Xtandi)** for prostate cancer can have a small risk for seizures, so you may not want to prescribe bupropion. If a patient has a seizure history, you definitely would avoid bupropion (Roth & Nelson, 2021)



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**Serotonin Syndrome**

- Agitation
- High blood pressure
- Confusion
- Increased reflexes
- Tremor
- Muscle twitching
- Sweating
- Diarrhea
- Coma
- Death

• Drugs that can lead to serotonin toxicity: fentanyl, meperidine, tramadol, Toradol, methadone, dextromethorphan, sumatriptan, procarbazine, or the antibiotic linezolid (a weak MAOI) (Yuppa & Braun, 2015) (Roth & Nelson, 2021)



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**Psychostimulants**

- Can be useful in improving mood, motivation, fatigue, foggy concentration, and the sedating effects of other medications
- Start low and go slow
- Can lead to anxiety, irritability, and insomnia
- If a patient is nearing the end of life, we may skip the antidepressant and use a faster acting psychostimulant for both mood and energy (Roth & Nelson, 2021)



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**Stimulants**

- Used for cancer-related fatigue
- Can also enhance mood and help with attention and cognition post treatment
- Always start low
- Rule out reversible systemic causes of fatigue first (cachexia, deconditioning, hypothyroidism, sleep apnea)
- Side effects: agitation, anxiety, and restlessness
- Short-acting formulations should be given in the AM and early afternoon (BID dosing) to avoid insomnia
- Can increase HR and BP
- Potential for abuse (Fernandez-Robles, 2015)

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**Psychostimulants**

- **Methylphenidate (Ritalin)** and **Amphetamine (Adderall)** are the most common. Improves mood, energy and concentration. Possible side effects: cardiac rhythm complications, hypertension, seizures (if predisposed), agitation, restlessness, anxiety, insomnia, and tics
- **Modafinil (Provigil)**—wakefulness agent commonly used for narcolepsy. Usually well-tolerated. Improves energy, mood, and focus. Rarely covered by insurance. Side effects include nausea, anxiety, insomnia, and increased heart rate (Roth & Nelson, 2021)

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**Anxiety**

**Symptoms:**

- Excessive anxiety and worry
- Difficulty controlling the worry
- Restlessness or feeling keyed up or on edge
- Being easily fatigued
- Difficulty concentrating or mind going blank
- Irritability
- Muscle tension
- Sleep disturbance (difficulty falling or staying asleep, or restless, unsatisfying sleep) (American Psychiatric Association, 2013)

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**Panic Attacks**

- Palpitations, pounding heart, or accelerated heart rate
- Sweating
- Trembling or shaking
- Sensations of shortness of breath or smothering
- Feelings of choking
- Chest pain or discomfort
- Nausea or abdominal distress
- Feeling dizzy, unsteady, light-headed, or faint
- Chills or heat sensations
- Paresthesia (numbness or tingling sensations)
- Derealization (feelings of unreality) or depersonalization (being detached from oneself)
- Fear of losing control or "going crazy"
- Fear of dying (American Psychiatric Association, 2013)

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**Panic Attack vs Panic Disorder**

- A panic attack is not a mental disorder.
- Panic attacks can occur in the context of any anxiety disorder as well as other mental disorders and some medical conditions (cardiac, respiratory, vestibular, gastrointestinal)
- A **panic disorder** is recurrent unexpected panic attacks. There is usually persistent concern or worry about additional panic attacks or their consequences (for example, losing control, having a heart attack, or "going crazy"). There is also a significant maladaptive change in behavior (behavior designed to avoid having panic attacks). (American Psychiatric Association, 2013)

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**Anxiety in the Cancer Population**

- Stress of new cancer diagnosis
- Complications of cancer treatment
- Changes in body image
- Fear of recurrence
- Dealing with recurrence or progression of disease
- People with a history of anxiety or trauma are more at risk for anxiety when cancer comes into their lives (Roth & Nelson, 2021)

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**Medical causes of anxiety**

- Uncontrolled pain
- Electrolyte disturbances such as hypocalcemia
- Endocrine anomalies such as hyperthyroidism
- Antinausea medication can precipitate restlessness (prochlorperazine or metoclopramide). These medications can cause anxiety and akathisia (agitation, distress, restlessness)
- Steroids (Roth & Nelson, 2021)

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**Medical Look-Alike Causes of Anxiety**

Metabolic	Medication Induced	Other	Substances
Hypoxia	Corticosteroids	Pain	Intoxication
Delirium	Dexamethasone	Balance problems	Withdrawal
Sepsis	Prednisone	Sensory losses	
Bleeding	Antiemetics (akathisia)	Endocrine anomalies (hyperthyroidism)	
Pulmonary embolus	Bronchodilators		
Hypocalcemia	Hormonal agents		

**Consider the following:** vital signs including orthostatic BP, thyroid function tests (hyperthyroidism can make people feel anxious and restless), UA/culture, electrolyte assessment, CBC for possible anemia, Chest X-ray for causes of SOB, ECG for possible arrhythmia (Roth & Nelson, 2021)

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**Benzodiazepines Explained**

- Great for immediate, short-term relief of anxiety symptoms
- Relieves panic attacks, insomnia, chemotherapy-induced nausea, and medication-induced akathisia
- Can cause sedation, unsteadiness (falls), and poor coordination
- Severe effects may include memory loss, mood swings, erratic behavior, and paradoxical anxiety
- A few studies have found an association between benzos and dementia—but these studies were not designed to assess causality
- Can help with insomnia (which can be due to anxiety), but over time, there can be problems with dependence and tolerance
- Potential for addiction—should be monitored in people with substance use disorders
- Physical dependence can develop if taking for more than 1 month (this is not addiction!). DO NOT STOP ABRUPTLY—TAPER
- Sexual dysfunction, bradycardia and respiratory depression possible (Roth & Nelson, 2021) (Friga & Braun, 2015)

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**Patients who should avoid benzodiazepines**

- Older than 70 or frail
- History of cognitive disorder or deficits
- Impaired liver or kidney function
- Impaired balance or ambulation
- Compromised breathing
- History of substance addiction or abuse or current use of substances (especially alcohol or opioids)
- Pregnant women (Roth & Nelson, 2021)

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**Benzodiazepines**

**Alprazolam (Xanax):**

- Quick onset of action (within 15 minutes)
- Best for periodic or intermittent anxiety or panic attacks
- Brings relief for a few hours
- Wears off abruptly and can cause rebound anxiety (possible to feel more anxious when the medication wears off than before taking the medication)—which may lead to the patient wanting another dose right away
- Can be taken sublingually (Roth & Nelson, 2021)
- Risk of seizure is greatest during the first 3 days after discontinuation (Stahl, 2017)

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**Benzodiazepines**

**Lorazepam (Ativan):**

- Longer onset of action (less favorable when having panic attacks)
- Smoother winding down of action—usually no rebound anxiety
- Longer duration of action
- Can relieve chemo-induced nausea
- Cleared partially by the liver but mostly by the kidneys, so safer for those with compromised liver function—but problematic for those with poor kidney clearance (Roth & Nelson, 2021)

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**Benzodiazepines**

**Clonazepam (Klonopin):**

- Longer onset and longer duration
- Less addictive because there is less immediate gratification
- Smooth ending of action—less chance of rebound anxiety
- Longer acting nature can lead to a hangover or groggy feeling
- Helps people sleep longer—especially if someone is hampered by anxious ruminations
- Comes in a disintegrating wafer (Roth & Nelson, 2021)


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**Benzodiazepines**

**Diazepam (Valium):**

- Quick onset
- Long acting
- Can be used as an antiseizure medication
- Can be used as a muscle relaxant
- Can cause amnesia


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**Non-Benzodiazepines to Treat Anxiety**

**Buspirone (Buspar)**—increases serotonin levels in the brain and can enhance the dopamine neurotransmitter. Needs to be taken daily. Can take weeks to take effect. Useful for generalized anxiety. Can cause gastric disturbance, so not a good choice if struggling with nausea.

**Antidepressants: SSRIs, SNRIs, Mirtazapine, and TCAs**

**Atypical Antipsychotics: Olanzapine and Quetiapine**

- Can cause sedation, unsteadiness, cardiac arrhythmias, weight problems
- Can be helpful with insomnia and nausea
- Fast onset of action (Roth & Nelson, 2021)


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**Non-Benzodiazepines to Treat Anxiety**

**Antihistamines: Hydroxyzine, Diphenhydramine**  
**Antiseizure medications: Pregabalin, Gabapentin**

- Helpful with neuropathic pain, hot flashes (gabapentin), and sleep

**Propranolol**—helpful with performance anxiety and panic, can lower blood pressure. Long-term use can lead to fatigue and depression, so not used as an antihypertensive much anymore. Can also help with PTSD. (Roth & Nelson, 2021)

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**Insomnia**

- This can involve difficulty falling asleep, staying asleep, or early morning awakening.
- It would be ideal to get sleep studies to monitor brain activity, eye movements, and muscle tone—often not feasible. (Roth & Nelson, 2021)
- Often multifactorial with physiological, psychological, behavioral, and environmental bases
- Negatively impacts mood, physical symptoms, pain sensitivity, fatigue, and quality of life. (Lowery-Allison & Eldridge-Smith, 2021)

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**Factors Influencing Sleep Problems in People with Cancer**

- Stress
- Hot flashes
- Hospitalization
- Radiation therapy
- Pain
- Anxiety
- Ruminations or obsessions
- Depression
- Other physical distress (cough, SOB, gastric upset, headaches, urinary frequency)
- Medications (steroids, hormonal agents, activating agents)
- Biological aspects of the cancer (inflammatory processes)
- Too much daytime napping
- Substances that either activate (caffeine) or sedate then activate (alcohol) (Roth & Nelson, 2021)

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**Insomnia Impact**

- Decreased energy
- Poor concentration and attention
- Increased forgetfulness
- Lower mood
- Increased anxiety
- Increased physical complaints and potential compromise of other medical issues
- Subjective feeling of poor decision-making
- Increased risk of falls and accidents (Roth & Nelson, 2021) (Lowery-Alison & Eldridge-Smith, 2021)


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**Sleep Hygiene**

- The bedroom is for sleep
- Set times for going to sleep and waking
- Exercise regularly, but not too late in the day
- Limit nap times and time in bed that is not for sleep
- Avoid caffeine or late day wakefulness agents
- Avoid alcohol before bedtime
- Avoid screen time
- Avoid clock watching
- Abdominal breathing
- Mindfulness meditation
- Visual imagery (Roth & Nelson, 2021)


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**OTC options**

**Antihistamines**—diphenhydramine

- Morning grogginess common
- Weight gain
- Anticholinergic side effects (dry mouth, urinary retention, constipation, and confusion)

**Melatonin**

- Take an hour before bedtime (or longer)
- Can cause morning grogginess (Roth & Nelson, 2021)


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**Sedating Antidepressants**

- Trazodone
- Mirtazapine
- Doxepin (Sinequan—TCA)
- Amitriptyline (Elavil—TCA)
- Nortriptyline (Pamelor—TCA) (Roth & Nelson, 2021)



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**Benzodiazepines**

- **Lorazepam**
- **Temazepam (Restoril)**—shorter onset, reduces sleep latency, increases sleep duration, and does not treat anxiety
- **Clonazepam** (Roth & Nelson, 2021)



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**Atypical Antipsychotics**

- Olanzapine (Zyprexa)
- Quetiapine (Seroquel)
- Lurasidone (Latuda)

These medications can help counter the agitating effects of steroids.  
Helpful with anxiety. (Roth & Nelson, 2021)



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**Antiseizure Medications**

- **Gabapentin (Neurontin)**—also helps with hot flashes and anxiety
- **Pregabalin (Lyrica)** (Roth & Nelson, 2021)

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**Zolpidem (Ambien)**

- GABA positive allosteric modulator
- Takes effect in less than 1 hour
- Improves sleep quality
- Side effects: dizziness, dose-dependent amnesia, hyperexcitability, nervousness, rare hallucination, headache, diarrhea, nausea
- Can cause respiratory depression when taken with other CNS depressants
- Schedule IV drug. Habit forming. History of drug addiction may increase risk of dependence.
- Rebound insomnia common when trying to stop this medication.
- If taken for more than a few weeks, taper to reduce withdrawal (Stahl, 2017)

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**Zaleplon (Sonata)**

- Takes effect in less than 1 hour
- Improves sleep quality
- Side effects: dizziness, dose-dependent amnesia, hyperexcitability, nervousness, rare hallucinations, headache, decreased appetite
- Can cause respiratory depression when taken with other CNS depressants
- Generally used for 1 month or less
- Habit forming. Schedule IV drug.
- Does not increase total sleep time and does not decrease the number of awakenings.
- Not absorbed as quickly if taken with high-fat foods—may reduce onset of action (Stahl, 2017)

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**Eszopiclone (Lunesta)**

- Takes effect in less than 1 hour
- Side effects: unpleasant taste, dizziness, dose-dependent amnesia, nervousness, dry mouth, headache
- Schedule IV drug
- Can be expensive
- Best documented agent to be safe for long-term use, with little to no suggestion of tolerance, dependence, or abuse
- May even be safe to consider in patients with a past history of substance abuse
- Not a benzodiazepine itself, but it binds to the benzodiazepine receptor
- Rebound insomnia does not appear to be common (Stahl, 2017)

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**Ramelteon (Rozerem)**

- Melatonin Receptor Agonist
- Enhances sleep through effects on sleep regulatory mechanisms in the brain rather than inducing a groggy feeling
- Helps reinforce or shift the timing of the circadian rhythm. Takes time for it to work. Useful when needing to recalibrate one's sleep cycle of patients who are delirious and not sleeping at night.
- Does not induce sleep
- Not habit forming
- No evidence of rebound insomnia
- Side effects: dizziness, fatigue, headache (Roth & Nelson, 2021) (Stahl, 2017)

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**Suvorexant (Belsomra)**

- Orexin inhibitor. Orexin is a peptide released from the hypothalamus that helps maintain wakefulness
- Common side effects: dizziness, headache, unusual dreams, dry mouth, cough, and diarrhea
- Rebound insomnia not common
- Safe for long-term use
- Expensive
- OK to use when patient has a history of substance abuse
- Can interact with medications that are CYP3A4 inhibitors: ketoconazole, erythromycin, fluconazole, ritonavir (Roth & Nelson, 2021) (Stahl, 2017)

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**Delirium**

- A disturbance in attention (reduced ability to direct, focus, sustain, or shift attention) and awareness (reduced orientation to the environment)
- The disturbance develops over a short period of time (usually hours to a few days), represents a change from baseline attention and awareness, and tends to fluctuate in severity during the course of a day
- An additional disturbance in cognition (memory deficit, disorientation, language, visuospatial ability, or perception)
- Not better explained by another pre-existing, established, or evolving neurocognitive disorder
- There is evidence that the disturbance is a direct physiological consequence of another medical condition, substance intoxication or withdrawal, or exposure to a toxin.
- Delirium can be acute (lasting a few hours or days) or persistent (lasting weeks or months)
- Response can be hyperactive (may be accompanied by mood lability, agitation, and/or refusal to cooperate with medical care), hypoactive (accompanied by sluggishness and lethargy that approaches stupor), or mixed level of activity (American Psychiatric Association, 2013)

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**Delirium Management**

- Safety—attend to environmental cues including reorienting the patient and maybe providing a sitter to prevent falls
- Identify and treat the precipitating factors (such as an infection)
- Discontinue nonessential medications that may be deliriogenic (benzos, anticholinergics, opioids)
- Haldol (can be given IM or IV)—first generation antipsychotic—can cause sedation or hypotension
- Second generation antipsychotics can be used such as olanzapine and risperidone—associated with weight gain, sedation, and metabolic syndrome (Rosenstein et al., 2014)

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**Antipsychotics**

- **Haloperidol (Haldol)**—first line treatment for agitation associated with delirium
- Repeated doses can cause extrapyramidal side effects that can be mistaken for anxiety
- 2<sup>nd</sup> generation antipsychotics (**Olanzapine or Risperidone**) have lower risk for EPS. Use these medications with caution with older adults with dementia.
- Orthostatic hypotension can occur with antipsychotics. Especially possible with risperidone.
- **Olanzapine and quetiapine** can cause sedation and weight gain due to antihistaminic and anticholinergic activity
- Monitor for hyperglycemia
- Can prolong QT segment. Monitor when using other QT altering drugs. (Fernandez-Robles, 2015)

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**Antipsychotics—Dopaminergic Movement Complications**

- **Tardive Dyskinesia**—involuntary muscle movements often of the hands, face, and sometimes trunk. Muscles cannot stay at rest. The newer atypical antipsychotics don't commonly cause this side effect. Seen most often in long-term use.
- **Akathisia**—internal sense of restlessness that causes patients to pace or move. Can be relieved with a benzodiazepine or a beta blocker such as propranolol (however, these meds might make a delirium worse). Best to lower the antipsychotic dose.
- **Parkinsonian Symptoms**—can happen with Haldol. Makes patients feel stiff, walk with a stiff festinating gait, have masked facies, or have tremors (making them look like they have Parkinson's disease). (Roth & Nelson, 2021)

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**Antipsychotics**

- Helpful in managing side effects of cancer or cancer treatment, such as delirium, confusion, agitation, anxiety, insomnia, or nausea
- Helpful to explain to patients that these medications have many uses and that you don't think they are psychotic or have a bipolar disorder

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**Steroid-Induced Psychosis/Mania**

- Steroids can cause severe neuropsychiatric consequences: suicidal ideation/suicide attempt, psychosis, mania, depression, panic disorder, and delirium, confusion, or disorientation.
- The risks can increase with age and with people who have suffered with psychiatric illness in the past.
- Subsequent exposure to steroids can cause a recurrence in symptoms
- Educating patients about the possible side effects and the need to report these side effects is essential.
- **Olanzapine** is usually used with cancer patients. Mood stabilizers can be effective. Lithium is rarely used in the cancer setting (small therapeutic window and sensitivity to subtle fluctuations in fluid balance make it less than ideal). (Hugga & Braun, 2015) (Judd, et al., 2014)

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**Non-pharmacologic Methods**

- Exercise
- Meditation
- Psychotherapy
- Making life-style changes as appropriate



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**Psychotherapy Options**

- Supportive psychotherapy
- Cognitive Behavioral Therapy
- Acceptance and Commitment Therapy
- Motivational Interviewing
- Psychodynamic
- Support Groups
- And many more....



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**When to refer to psycho-oncology**

- Underlying mental health issue that you suspect is not well managed
- You recognize that your patient may have a psychiatric illness or is not coping well with his/her cancer diagnosis/treatments
- Sudden behavior changes or non-compliance
- Psychiatric medication changes needed due to potential drug interactions or a recognition that the medication regimen is no longer effective
- Anxiety, depression, or insomnia is disrupting your patient's quality of life
- Family expressing concern about your patient's mental health

It's always ok to let patients know about our services. If you don't know who to refer to, we can sort out how best to help the patient.



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