The leading cause of disability in the United States for people ages 15 to 44, major depressive disorder (MDD) affects approximately 14.8 million adults—6.7% of the U.S. population age 18 and older—every year, according to the National Institute of Mental Health (NIMH). It’s also estimated that 2 million Americans over age 65 have a depressive disorder. MDD is more prevalent in women than men, although men are more likely to commit suicide. MDD can occur at any age, but according to the NIMH, the median age of onset is 32. As a nurse, you’re likely to see patients in the primary care and inpatient settings with this common disorder.

In this article, I’ll help you uncover MDD by learning how to recognize its symptoms and understanding which treatment options are best for your patient.

Not just feeling blue
MDD is distinguished from everyday feelings of sadness by its duration and severity. Characterized by at least 2 weeks of a depressed mood or loss of interest in pleasure or activities (anhedonia), the Diagnostic and Statistical Manual of Mental Disorders, 4th edition, Text Revision (DSM-IV TR) indicates a diagnosis of MDD if four or more of the following symptoms are present in addition to depressed mood or anhedonia:

• significant weight loss or gain
• difficulty sleeping (insomnia or hypersomnia)
• psychomotor agitation or retardation
• fatigue
• feelings of sadness, worthlessness, or guilt
• inability to concentrate
• recurrent thoughts of suicide.

These symptoms must be present almost every day for at least a 2-week period, representing a change from previous functioning and causing significant distress in the patient’s life. Symptoms must not be caused by a medical condition, bereavement, or substance abuse and must not meet criteria for another diagnosis.

There are several different types of MDD. The DSM-IV TR specifies the following subtypes:

• psychotic depression—a severe depressive illness accompanied by some form of psychosis, such as a break with reality, hallucinations, or delusions
• postpartum depression—diagnosed when a new mother develops a major depressive episode within 1 month after delivery
• seasonal affective disorder (SAD)—characterized by the onset of a depressive illness during the winter months when there’s less natural sunlight; the depression generally
disorder
Dysthymic disorder, also called dysthymia, is a less severe, long-term form of depression characterized by milder symptoms that last most of the day, more days than not, for 2 years or longer. The symptoms of a chronically depressed mood may not disable a person but can prevent him from functioning normally or feeling well. People with dysthymia may also experience one or more episodes of major depression during their lifetimes.

Out of balance
Although the exact pathophysiology of MDD is unknown, there are several theories about its cause. These theories are linked to biochemical changes, genetics, and environment. One theory is that norepinephrine and serotonin are deficient in individuals with MDD (see Neurotransmitters out of balance). It’s theorized that the lack of serotonin is related to a problem with serotonergic transmission. In addition, some individuals with depression have exhibited a reduction in both central and peripheral 5-hydroxytryptamine (also known as serotonin) reuptake sites. Postmortem and imaging studies also indicate that individuals with MDD have fewer serotonin transporter sites.

Disturbances in the function of the hypothalamic-pituitary-adrenal (HPA) axis may also play a critical role in depression. In people without depression, cortisol levels are usually flat from late afternoon to a few hours before dawn, when they begin to rise. In people experiencing depression, cortisol levels spike erratically throughout the day. Cortisol levels return to normal as depression resolves. In 40% of patients diagnosed with depression, hypersecretion of cortisol is resistance to feedback inhibition, indicating a dysfunction in the HPA axis. Other theories include hypothyroidism, which has been found in some individuals with depression (especially women); circadian rhythm changes, as evidenced by the abnormal sleep patterns of patients with MDD; and a defective gene on chromosome 4 (individuals with this defective gene are 26 times more likely to be hospitalized for severe depression and attempted suicide).

Another theory, known as kindling, points to environmental stressors that activate internal physiologic stress responses, which trigger the first episode of depression. This episode then creates electrophysiologic sensitivity to future episodes so that less stress is required to evoke another

Neurotransmitters out of balance
Forming the basic structure of the nervous system, neurons generate electrochemical impulses and transmit information. Neurotransmitters are the chemical vehicles that allow neurons to transmit these impulses smoothly (see illustration below).

The neurotransmitters serotonin, norepinephrine, dopamine, and gamma-aminobutyric acid are produced in neurons and stored in the synaptic vesicles until release. After release, any neurotransmitter not used during impulse transmission is sent back to storage through a reuptake mechanism. In depression, levels of serotonin or dopamine are inadequate, causing symptoms of sadness and a feeling of emptiness.

Antidepressants increase the sensitivity of postsynaptic alpha-adrenergic and serotonin receptors, and decrease the sensitivity of presynaptic sites. This helps relieve depression by improving the effectiveness of neurotransmission.
episode. And according to psychoanalytic theory, depression results from inward-directed anger and aggression over a significant loss. It has also been theorized that depression is a problem of negative cognitive patterns that develop over a period of time. Environmental factors, such as the recent loss of a family member through death, divorce, or separation; the lack of a social support system; or the diagnosis of a significant health problem, are also associated with MDD.

At risk
The exact cause of depression is unknown; however, researchers have linked certain risk factors to an increased incidence of developing depression. Risk factors for MDD include:
• family history (MDD is up to three times more common among first-degree biological relatives)
• stressful situations
• female gender
• prior episodes of depression
• onset before age 40
• medical comorbidity
• past suicide attempt
• lack of a support system
• history of physical or sexual abuse
• current substance abuse.

Clinically significant depressive symptoms occur in up to 36% of individuals with a nonpsychiatric general medical condition, including:
• cerebrovascular accident
• cognitive impairment disorders (dementia)
• diabetes
• coronary artery disease
• cancer
• chronic fatigue syndrome
• AIDS.

Additionally, some medications can cause or induce depression, such as:
• hormones (oral contraceptives and glucocorticoids)
• cardiovascular drugs (beta-blockers, calcium channel blockers, and thiazide diuretics)
• psychotropic medications (benzodiazepines and neuroleptics)
• anti-inflammatory and anti-infective drugs (nonsteroidal anti-inflammatory drugs and sulfonamides)
• antiulcer medications (cimetidine and ranitidine).

Older adults are also at increased risk for developing MDD; however, it may be overlooked because symptoms may present differently or in a less obvious way. Older adults may have more medical conditions, such as heart disease, stroke, or cancer, which may cause depressive symptoms, or they may be taking medications with adverse reactions that contribute to depression. The highest suicide rate is among Caucasian men age 85 and older, so signs and symptoms of depression in older patients must be taken seriously and not attributed to a normal part of aging.

Put on your investigation cap
Many people experience depression but seek treatment for somatic complaints, such as:
• headache
• backache
• abdominal pain
• fatigue
• malaise
• anxiety
• decreased desire or problems with sexual functioning.

It’s important that patients who are diagnosed with MDD be thoroughly evaluated to determine if depression is the cause of symptoms. The workup must include a medical history (including a history of alcohol and drug use), physical examination, and laboratory tests.

Assessing patients with depression
The following are questions you can ask your patient who has been diagnosed with depression:
• Can you describe what your depression feels like to you? How long have you felt this way?
• How would you rate your feeling of depression on a scale of 1 to 10, with 10 being the worst depression?
• What activities or things in your life give you pleasure?
• Do you sleep excessively or have difficulty sleeping?
• Have you lost weight recently or do you have a poor appetite?
• Have you experienced any losses or changes in your life?
• Are you experiencing thoughts of suicide? Do you have a specific suicide plan?
hol and substance use), a physical exam (including a mental status exam), and a review of current medications. Also investigate the patient’s family, social, and occupational history, including current stressors such as recent illnesses or losses (see Assessing patients with depression).

Assess for the following risk factors for suicide:
- previous suicide attempt
- organized plan
- alcohol or substance abuse
- presence of a thought disorder
- lack of a support system
- unmarried, divorced, or widowed
- presence of physical illness (especially a chronic condition).

For more information about suicide risk, see “Assessing Suicide Risk” from our May/June 2008 issue.

After depression is revealed

Many medications are available for the treatment of MDD. Selective serotonin re-uptake inhibitors (SSRIs) are often the first line of medication treatment. SSRIs work by inhibiting the reuptake of serotonin, decreasing symptoms with minimal adverse reactions (see The downside of SSRIs and SNRIS). Another commonly used class of drugs is the serotonin-norepinephrine re-uptake inhibitors (SNRIs). SNRIs treat depression by increasing the availability of serotonin and norepinephrine. The norepinephrine-dopamine reuptake inhibitor bupropion, which increases norepinephrine and dopamine, or the noradrenergic and specific serotonergic antidepressant mirtazapine, which increases serotonin and aids in its delivery, may also be prescribed. Tricyclic antidepressants, which act by blocking the reuptake of serotonin and norepinephrine at the presynaptic neuron, and monoamine oxidase inhibitors, which inhibit the enzyme monoamine oxidase and increase the amount of serotonin and norepinephrine in the brain, aren’t regularly used as a first-line treatment due to their adverse reactions. See Medications used to manage depression for adverse reactions and nursing considerations.

Nonpharmacologic methods used to treat MDD include psychotherapy (cognitive-behavior, psychodynamic, and group therapy), electroconvulsive therapy (ECT), and ultraviolet light therapy for patients with SAD.

Psychotherapy, either alone or in combination with medication, is considered to be an important component of treatment. The goals of cognitive-behavior therapy are to identify and challenge the accuracy of the patient’s negative thinking, reinforce more accurate perceptions, and encourage behaviors that are designed to counteract the depressive symptoms. Psychodynamic therapy is based on the belief that unconscious conflicts, childhood trauma, and painful feelings take a toll on mental well-being. The therapist helps the patient explore how past events and trauma affect different aspects of his life. Group therapy allows patients to meet with others who are experiencing similar symptoms to share suggestions on dealing with everyday events and gain strength from knowing they’re not alone.

The downside of SSRIs and SNRIs

Although considered relatively safe, SSRIs and SNRIs do pose these risks:
- **Discontinuation syndrome.** The patient may develop such signs and symptoms as dizziness, headache, diarrhea, insomnia, irritability, nausea, and lowered mood if he abruptly stops taking the medication.
- **Drug interactions.** Taking an SSRI with warfarin, an anticoagulant, or certain medications used to treat cardiac disorders or diabetes can increase one medication level and decrease the other. For this reason, the patient needs close monitoring to make sure he’s receiving safe and therapeutic doses of each drug in his regimen.
- **Serotonin syndrome.** This potentially fatal reaction to medications that elevate serotonin levels can cause tremor, diarrhea, hyperthermia, agitation, tachycardia, labile BP, changes in mental status, and diaphoresis. A patient with severe serotonin syndrome can develop seizures, respiratory failure, and coma. Immediately stop all medications and treat the signs and symptoms to prevent death.
- **Suicide.** When a patient starts an antidepressant, close monitoring for suicidal thoughts is important because mood elevation due to therapy can increase his energy to complete the act.
### Medications used to manage depression

<table>
<thead>
<tr>
<th>Medication</th>
<th>Actions and indications</th>
<th>Adverse reactions</th>
<th>Nursing implications</th>
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<tbody>
<tr>
<td><strong>SSRIs</strong></td>
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<tr>
<td>citalopram (Celexa)</td>
<td>Increase serotonin</td>
<td>Sexual dysfunction, gastrointestinal (GI) upset, mild sedation, and restlessness</td>
<td>The patient may need 4 to 6 weeks of therapy before getting the full benefit.</td>
</tr>
<tr>
<td>escitalopram (Lexapro)</td>
<td>Commonly the first line of treatment because they’re effective and generally cause minimal adverse reactions</td>
<td>Serotonin syndrome (confusion, hallucinations, agitation, change in BP, nausea/vomiting, and seizures)</td>
<td>Tell him that adverse reactions often decrease within 2 to 4 weeks of starting therapy.</td>
</tr>
<tr>
<td>fluoxetine (Prozac, Prozac Weekly)</td>
<td></td>
<td>Discontinuation problems (nausea, headache, dizziness, and flulike symptoms)</td>
<td>Warn him not to stop the drug abruptly. To discontinue, slowly taper the dose to prevent discontinuation syndrome.</td>
</tr>
<tr>
<td>fluvoxamine (Luvox)</td>
<td></td>
<td>For persistent adverse reactions, switching to another SSRI or controlled-release formulation may alleviate the problem</td>
<td>Pregnant women should avoid paroxetine due to increased risk of birth defects.</td>
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<tr>
<td>paroxetine (Paxil, Paxil CR)</td>
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<td></td>
<td>Teach older adults to discuss safety and dosing with their healthcare provider.</td>
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<tr>
<td>sertraline (Zoloft)</td>
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<tr>
<td><strong>SNRIs</strong></td>
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<tr>
<td>duloxetine (Cymbalta)</td>
<td>Increase norepinephrine and serotonin</td>
<td>Serotonin syndrome and discontinuation problems</td>
<td>Slowly taper the dose to prevent discontinuation syndrome.</td>
</tr>
<tr>
<td>venlafaxine (Effexor)</td>
<td>GI problems, sexual dysfunction, agitation, and anxiety</td>
<td></td>
<td>Closely monitor a patient taking venlafaxine, which can raise cholesterol levels and BP.</td>
</tr>
<tr>
<td><strong>Norepinephrine-dopamine reuptake inhibitor</strong></td>
<td></td>
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<tr>
<td>bupropion (Wellbutrin, Wellbutrin SR, Wellbutrin XL)</td>
<td>Increases norepinephrine and dopamine</td>
<td>Anorexia, weight loss, GI problems, shakiness, tachycardia</td>
<td>Closely monitor the patient for increased BP.</td>
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<tr>
<td><strong>Noradrenergic and specific serotoninergic antidepressant</strong></td>
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</tr>
<tr>
<td>mirtazapine (Remeron)</td>
<td>Increases serotonin and aids its transmission</td>
<td>GI problems and weight gain, Orthostatic hypotension, agitation, drowsiness, and tremor</td>
<td>May increase suicide risk.</td>
</tr>
<tr>
<td><strong>Tricyclic antidepressants</strong></td>
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<tr>
<td>amitriptyline (Apo-Amitriptyline)</td>
<td>Increase concentrations of serotonin, norepinephrine, and dopamine</td>
<td>More adverse reactions than SSRIs</td>
<td>Teach the patient that drinking plenty of fluids and increasing dietary fiber helps prevent constipation.</td>
</tr>
<tr>
<td>clomipramine (Anafranil)</td>
<td>Older and less expensive than newer drugs</td>
<td>Dry mouth, dry eyes, constipation, weight gain, sedation, and cardiac dysrhythmias</td>
<td>Closely monitor him for potentially fatal cardiac dysrhythmias, especially after an overdose.</td>
</tr>
<tr>
<td>desipramine (Norpramin)</td>
<td></td>
<td>Hypertensive crisis when taken with substances containing tyramine</td>
<td>Monitor for hypoglycemia and hyperglycemia.</td>
</tr>
<tr>
<td>imipramine (Tofranil)</td>
<td></td>
<td></td>
<td>Contraindicated in patients with a history of seizures or an eating disorder.</td>
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<tr>
<td>nortriptyline (Pamelor)</td>
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<td><strong>MAOIs</strong></td>
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<tr>
<td>isocarboxazid (Marplan)</td>
<td>Prevent monoamine oxidase from metabolizing norepinephrine, serotonin, and dopamine</td>
<td>GI problems, decreased sexual function, weight gain, headache, orthostatic hypotension, sleep disturbances, and tremor</td>
<td>Teach the patient to avoid foods and beverages that contain tyramine because they can cause a potentially fatal hypertensive crisis. Provide a list of foods to avoid, including smoked meats, aged beer, wine, pickled foods, and chocolate.</td>
</tr>
<tr>
<td>phenelzine (Nardil)</td>
<td>Can cause serious adverse reactions; reserved for patients who don’t respond to other antidepressants</td>
<td>Hypertensive crisis when taken with substances containing tyramine</td>
<td>Warn him not to take any other drugs without his healthcare provider’s approval. Combining an MAOI with other antidepressants and certain other drugs (including pain medications, decongestants, weight-loss products, and herbal supplements) can cause a dangerous interaction.</td>
</tr>
</tbody>
</table>
Although ECT has been associated with negative publicity, the procedure is relatively safe and may benefit patients with severe, pharmacologically resistant MDD, especially older patients or those with severe adverse reactions to psychotropic drugs. Delivered in three treatments per week for up to 4 weeks, ECT may be indicated for patients who are severely incapacitated by depression or who have a strong suicide plan.

The importance of following through

If your patient has been diagnosed with MDD, teach him about the disorder, including the nature of the illness, symptom identification and management (including signs and symptoms of relapse), treatment recommendations, information about prescribed medication and its expected effects, and long-term self-management. Make sure he understands that taking medication as prescribed is important and that antidepressants may not have an immediate effect. It may take 2 to 4 weeks or longer for him to experience a noticeable improvement in his mood. Teach him the importance of continuing treatment and not to abruptly stop taking his medication, even if he feels better.

Patients with MDD require monitoring and follow-up. A referral to a specialist may be required in certain situations, including coexistence of a psychiatric disorder, the presence of suicidal behavior, or when a patient is at risk for noncompliance or he doesn’t have a support system.

Teach the patient’s family the following:
• Don’t attempt to cheer up a depressed person; rather, be accepting of his current mood.
• Be supportive by reassuring him that his mood will improve with treatment.
• Encourage him to maintain regular activity and rest patterns, with a balance of both.
• Take talk about suicide seriously; contact the healthcare provider if this occurs.

A helping hand

MDD is a serious condition that can affect a patient’s mental, emotional, and physical health across the life span. As a nurse, you may be the first person to screen a patient for depression. And now you’re better prepared to identify the symptoms of MDD and help your patient receive the most effective treatment.

Learn more about it


Murphy K. Shedding the burden of depression and anxiety.

Characteristics of MDD

Physiologic responses
• Altered appetite (increased or decreased)
• Altered sleep patterns (hypersomnia or insomnia)

Cognitive responses
• Indecisiveness
• Reduced concentration and attention span

Emotional responses
• Sadness or despondency
• Anger, agitation, or resentment
• Guilt or feelings of worthlessness
• Hopelessness or helplessness
• Apathy

Behavioral responses
• Poor personal hygiene
• Psychomotor retardation
• Decreased motivation
• Anhedonia
• Frequent complaints and demands
• Lack of spontaneity
• Lack of exercise
• Fatigue
• Somatic complaints
• Restlessness and undirected activity
On the Web

These online resources may be helpful to your patients and their families:

Helpguide.org: Understanding depression:
http://www.helpguide.org/mental/depression_signs_types_diagnosis_treatment.htm

MayoClinic.com: Depression (major depression):
http://www.mayoclinic.com/health/depression/ds00175

Medline Plus: Depression:

Mental Health America: Fact sheet: Depression:
http://www.mentalhealthamerica.net/go/depression

National Institute of Mental Health: Depression:

For more than 21 additional continuing education articles related to psychosocial/psychiatric topics, go to Nursingcenter.com\CE.
Uncovering major depressive disorder

GENERAL PURPOSE: To provide the professional nurse with an overview of how to recognize and assist patients with major depressive disorder (MDD).

LEARNING OBJECTIVES: After reading this article and taking this test, you should be able to: 1. Describe the types, pathophysiology, risk factors, symptoms, and assessment of MDD. 2. Discuss the pharmacologic and nonpharmacologic treatment of MDD.

1. MDD differs from normal sadness by
   a. the presence of suicidal thoughts.
   b. the presence of anhedonia.
   c. its duration and severity.

2. Which isn’t a symptom of MDD according to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision?
   a. significant weight gain
   b. recurrent headaches
   c. insomnia

3. A diagnosis of MDD can be made if symptoms are
   a. caused by bereavement.
   b. present almost every day for a minimum of 2 weeks.
   c. present for 2 to 3 days per week for a minimum of 4 to 6 weeks.

4. Which type of depression is accompanied by a break with reality, hallucinations, and delusions?
   a. postpartum depression
   b. psychotic depression
   c. dysthymic disorder

5. In MDD, neurotransmission is altered due to
   a. inadequate levels of serotonin or dopamine.
   b. increased central and peripheral 5-hydroxytryptamine reuptake sites.
   c. increased serotonin levels and serotonin transporter sites.

6. In people with depression, cortisol levels
   a. are usually flat from late afternoon and begin to rise a few hours before dawn.
   b. are usually high from late afternoon and begin to fall at night.
   c. spike erratically throughout the day.

7. One of the risk factors for MDD is
   a. stressful situations.
   b. age over 60 at onset.
   c. male gender.

8. One type of medication that may induce depression is
   a. an anticholinergic.
   b. a beta-blocker.
   c. a bronchodilator.

9. The highest suicide rate is among
   a. Caucasian women age 40 and younger.
   b. African American women age 50 and older.
   c. Caucasian men age 65 and older.

10. Many patients with depression initially seek treatment for somatic complaints such as
   a. chest pain.
   b. tremors.
   c. fatigue.

11. Selective serotonin reuptake inhibitors (SSRIs)
   a. are often the first line of medication treatment.
   b. work by increasing the reuptake of serotonin.
   c. are used only with psychotherapy and act by blocking monoamine oxidase.

12. Serotonin syndrome is
   a. when an SSRI is abruptly discontinued, causing mild symptoms.
   b. a drug interaction that causes the SSRI to have a lessened therapeutic effect.
   c. a potentially fatal reaction to SSRIs.

13. Tremor, diarrhea, agitation, tachycardia, changes in mental status, and diaphoresis are symptoms of
   a. discontinuation syndrome.
   b. serotonin syndrome.
   c. a drug interaction of monoamine oxidase inhibitors (MAOIs) and warfarin.

14. Discontinuation syndrome occurs with abrupt stoppage of
   a. MAOIs.
   b. tricyclic antidepressants.
   c. SSRIs or serotonin-norepinephrine reuptake inhibitors (SNRIs).

15. Tricyclic antidepressants
   a. are used to decrease the risk of suicide with depression.
   b. require monitoring of hypoglycemia and hyperglycemia.
   c. are contraindicated for patients with a history of an eating disorder.

16. Which statement about MAOIs is correct?
   a. They’re effective and generally cause minimal adverse reactions.
   b. They should be reserved for patients who don’t respond to other antidepressants.
   c. They’re considered the first-line pharmacologic treatment for MDD.

17. Which type of medication is contraindicated in patients with glaucoma or benign prostatic hyperplasia?
   a. SNRIs
   b. MAOIs
   c. tricyclic antidepressants

18. Electroconvulsive therapy is least likely to be prescribed for
   a. strongly suicidal patients.
   b. younger patients who wish to avoid taking antidepressants.
   c. patients with severe, pharmacologically resistant MDD.

19. Which advice is appropriate to teach the depressed patient’s family?
   a. Take talk of suicide seriously and contact the healthcare provider.
   b. Most depressed people respond well to attempts to cheer them up.
   c. Not accepting the depressed mood is supportive to the patient’s recovery.

Go to page 54 for the CE Enrollment Form.