**Sheri Spirt, M.D.**

16 East 96th Street 1A
New York, NY 10128
Phone: 212 595-6901

**Patient Education**

Remeron—is another antidepressant that also has hypnotic properties, but may increase appetite. It is non addictive. Direction are to take one half to a whole 30 minutes before sleep.

generic called mirtazapine

## Pharmacology

### Mechanism of Action

Tetracyclic structure different from SSRIs, TCAs and MAOIs; through its central presynaptic alpha2-adrenergic antagonist effects, stimulates norepinephrine and serotonin release; potent antagonist of 5-HT2 and 5-HT3 serotonin and histamine receptors; is a moderate alpha1 adrenergic and muscarinic antagonist

### Absorption

Bioavailability: 50%

Peak serum time: 2 hr

### Distribution

Protein bound: 85%

Vd: 4.5 L/kg

### Metabolism

Hepatic CYP450 enzymes CYP1A2, CYP2D6, CYP3A4

Metabolites: Inactive

### Elimination

Half-life: 20-40 hr

Excretion: Urine (75%); feces (15%)

**Indications**

**Depression**

15 mg PO qHS; may increase no more frequently than q1-2Weeks; not to exceed 45 mg qHS

**Post-traumatic Stress Disorder (Off-label)**

15 mg PO qHS; may increase no more frequently than q1-2Weeks; not to exceed 60 mg qHS

**Hot Flashes (Off-label)**

7.5-60 mg PO qDay

**Insomnia (Off-label)**

15-45 mg PO qHS

**Dosing Modifications**

Renal impairment (CrCl <39 mL/min): Clearance is reduced; monitor closely

Hepatic impairment: Clearance is reduced; monitor closely

## Adverse Effects

### >10%

Somnolence (54%)

Weight gain (>7% increase in <49% of pediatric patients)

Xerostomia (25%)

Increased appetite (17%)

Constipation (13%)

### 1-10%

Asthenia (8%)

Weakness (8%)

Weight gain (>7% increase in 8% of adults)

Dizziness (7%)

Serum TGs increased (6%)

Dream disorder (4%)

Disturbance in thinking (3%)

ALT increased (2%)

Peripheral edema (2%)

Myalgia (2%)

Confusion (2%)

Urinary frequency (2%)

Tremor (2%)

Back pain (2%)

Dyspnea (1%)

### <1%

Mania (0.2%)

Grand mal seizure (less than 0.1%)

### Frequency Not Defined

Depression exacerbation

Status epilepticus

Suicidal thoughts, suicide (rare)

Agranulocytosis

Neutropenia

### Postmarketing Reports

Severe skin reactions

* Stevens-Johnson syndrome
* Bullous dermatitis
* Erythema multiforme
* Toxic epidermal necrolysis
* Increased creatine kinase blood levels
* Rhabdomyolysis

## Warnings

### Black Box Warnings

In short-term studies, antidepressants increased the risk of suicidal thinking and behavior in children, adolescents, and young adults (<24 years) taking antidepressants for major depressive disorders and other psychiatric illnesses

This increase was not seen in patients >24 years

A slight decrease in suicidal thinking was seen in adults >65 years

In children and young adults, risks must be weighed against the benefits of taking antidepressants

Patients should be monitored closely for changes in behavior, clinical worsening, and suicidal tendencies

This should be done during the initial 1-2 months of therapy and dosage adjustments; the patient’s family should communicate any abrupt changes in behavior to the healthcare provider

Worsening behavior and suicidal tendencies that are not part of the presenting symptoms may require discontinuation of therapy

This drug is not approved for use in pediatric patients

### Contraindications

Hypersensitivity

Within 14 days of administration of MAOIs (serotonin syndrome)

Patients receiving linezolid or methylene blue IV

### Cautions

Start slowly in hepatic or renal dysfunction and in the elderly

Clinical worsening and suicidal ideation may occur despite medication

Rare reports of serotonin syndrome, particularly when coadministered with other serotonergic drugs

Abrupt discontinuation may cause dizziness, abnormal dreams, sensory disturbances (including paresthesia and electric shock sensations), agitation, anxiety, fatigue, confusion, headache, tremor, nausea, vomiting, and sweating

Bone fractures reported with therapy; consider possibility of fragility fracture if patient complains of bone pain, swelling, or bruising

Akathisia and psychomotor restlessness associated with antidepressant use

Rare reports of hyponatremia; caution in elderly or if coadministered with other drug known to cause hyponatremia

Risk for potentially life-threatening serotonin syndrome and neuroleptic malignant syndrome-like reactions has been reported with SSRIs, SNRIs, MAOIs, and other serotonergic drugs used as monotherapy, but particularly with concomitant use of the following agents: serotonergic drugs (including triptans), drugs that impair metabolism of serotonin (including MAOIs), antipsychotics, dopamine antagonists, and nonpsychiatric MAOIs (eg, linezolid, IV methylene blue)

May cause anticholinergic effects; use with caution in patients with xerostomia, BPH, paralytic ileus, or decreased intestinal motility

Risk of mydriasis; may trigger angle closure attack in patients with angle closure glaucoma with anatomically narrow angles without a patent iridectomy

May increase serum triglycerides and cholesterol levels

May cause orthostatic hypotension (low risk); use with caution in patients at risk

Sexual dysfunction may occur (incidence lower compared to SSRIs)

May worsen psychosis in some patients or precipitate mania or hypomania in patients with bipolar disorder

Use with caution in patients with history of seizures, head trauma, alcoholism, brain damage, and patients on medictions that may lower seizure treshold

QTc prolongation, ventricular fibrillation, and torsade de pointes rarely reported; use caution in patients with history of QTc prolongation, receiving QTc prolongent agents concomitantly, or with cardiovascular disease

Discontinue therapy if neutropenia/agrunolocytosis occur

May cause CNS depression, which may impair abilities to perform hazardous tasks that require mental alertness

May increase serum cholesterol and triglyceride levels

May increase appetite and cause weight gain

IMPORTANT: HOW TO USE THIS INFORMATION: This is a summary and does NOT have all possible information about this product. This information does not assure that this product is safe, effective, or appropriate for you. This information is not individual medical advice and does not substitute for the advice of your health care professional. Always ask your health care professional for complete information about this product and your specific health needs.

MIRTAZAPINE DISINTEGRATING TABLET - ORAL

(mer-TAZ-uh-peen)

COMMON BRAND NAME(S): Remeron Soltab

WARNING: Antidepressant medications are used to treat a variety of conditions, including depression and other mental/mood disorders. These medications can help prevent suicidal thoughts/attempts and provide other important benefits. However, studies have shown that a small number of people (especially people younger than 25) who take antidepressants for any condition may experience worsening depression, other mental/mood symptoms, or suicidal thoughts/attempts. Therefore, it is very important to talk with the doctor about the risks and benefits of antidepressant medication (especially for people younger than 25), even if treatment is not for a mental/mood condition.

Tell the doctor right away if you notice worsening depression/other psychiatric conditions, unusual behavior changes (including possible suicidal thoughts/attempts), or other mental/mood changes (including new/worsening anxiety, panic attacks, trouble sleeping, irritability, hostile/angry feelings, impulsive actions, severe restlessness, very rapid speech). Be especially watchful for these symptoms when a new antidepressant is started or when the dose is changed.

USES:
Mirtazapine is used to treat depression. It improves mood and feelings of well-being. Mirtazapine is an antidepressant that works by restoring the balance of natural chemicals (neurotransmitters) in the brain.

HOW TO USE:
Read the Medication Guide provided by your pharmacist before you start using mirtazapine and each time you get a refill because new information may be available. If you have any questions regarding the information, consult your doctor or pharmacist.

Take this medication by mouth, with or without food, usually once daily at bedtime or as directed by your doctor. The dosage is based on your medical condition and response to therapy, but should not exceed 45 milligrams per day.

With clean and dry hands, open the blister pack and place the tablet on your tongue. The tablet will quickly dissolve and can be swallowed with your saliva. Taking this medication with water or liquid is not necessary.

Do not break or crush the tablets. Do not remove any tablets from the original packaging until you are ready to take your dose. Doing so could decrease the effectiveness of this medication.

Use this medication regularly in order to get the most benefit from it. Remember to use it at the same time each day. It may take between 1-4 weeks to notice improvement in your symptoms. Therefore, do not increase your dose or take it more often than prescribed.

It is important to continue taking this medication even if you feel well. Do not stop taking this medication without consulting your doctor. Some conditions may become worse when the drug is abruptly stopped. Your dose may need to be gradually decreased.

Inform your doctor if your condition persists or worsens.

SIDE EFFECTS:
See also the Warning section.

Dizziness, drowsiness, lightheadedness, increased appetite, weight gain, dry mouth, or constipation may occur. If any of these effects persist or worsen, tell your doctor or pharmacist promptly.

To relieve dry mouth, suck on (sugarless) hard candy or ice chips, chew (sugarless) gum, drink water or use a saliva substitute.

Remember that your doctor has prescribed this medication because he or she has judged that the benefit to you is greater than the risk of side effects. Many people using this medication do not have serious side effects.

Tell your doctor right away if you have any serious side effects, including: swelling of the hands/feet, shaking (tremor), confusion, signs of infection (e.g., fever, persistent sore throat).

Get medical help right away if you have any very serious side effects, including: fast/irregular heartbeat, severe dizziness, fainting, eye pain/swelling/redness, widened pupils, vision changes (such as seeing rainbows around lights at night, blurred vision).

This medication may increase serotonin and rarely cause a very serious condition called serotonin syndrome/toxicity. The risk increases if you are also taking other drugs that increase serotonin, so tell your doctor or pharmacist of all the drugs you take (see Drug Interactions section). Get medical help right away if you develop some of the following symptoms: fast heartbeat, hallucinations, loss of coordination, severe dizziness, severe nausea/vomiting/diarrhea, twitching muscles, unexplained fever, unusual agitation/restlessness.

A very serious allergic reaction to this drug is rare. However, get medical help right away if you notice any symptoms of a serious allergic reaction, including: rash, itching/swelling (especially of the face/tongue/throat), severe dizziness, trouble breathing.

This is not a complete list of possible side effects. If you notice other effects not listed above, contact your doctor or pharmacist.

In the US -

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088 or at www.fda.gov/medwatch.

In Canada - Call your doctor for medical advice about side effects. You may report side effects to Health Canada at 1-866-234-2345.

PRECAUTIONS:
Before taking this medication, tell your doctor or pharmacist if you are allergic to it, or if you have any other allergies. This product may contain inactive ingredients, which can cause allergic reactions or other problems. Talk to your pharmacist for more details.

Before using this medication, tell your doctor or pharmacist your medical history, especially of: history or family history of psychiatric disorders (e.g., bipolar/manic-depressive disorder), history or family history of suicide attempts, liver disease, kidney disease, seizures, high blood cholesterol or triglyceride levels, heart disease (e.g., recent heart attack, angina), stroke, severe loss of body fluids (dehydration), low blood pressure, personal or family history of glaucoma (angle-closure type).

Mirtazapine may cause a condition that affects the heart rhythm (QT prolongation). QT prolongation can rarely cause serious (rarely fatal) fast/irregular heartbeat and other symptoms (such as severe dizziness, fainting) that need medical attention right away.

The risk of QT prolongation may be increased if you have certain medical conditions or are taking other drugs that may cause QT prolongation. Before using mirtazapine, tell your doctor or pharmacist of all the drugs you take and if you have any of the following conditions: certain heart problems (heart failure, slow heartbeat, QT prolongation in the EKG), family history of certain heart problems (QT prolongation in the EKG, sudden cardiac death).

Low levels of potassium or magnesium in the blood may also increase your risk of QT prolongation. This risk may increase if you use certain drugs (such as diuretics/"water pills") or if you have conditions such as severe sweating, diarrhea, or vomiting. Talk to your doctor about using mirtazapine safely.

This drug may make you dizzy or drowsy. Do not drive, use machinery, or do any activity that requires alertness until you are sure you can perform such activities safely. Limit alcoholic beverages.

To minimize dizziness and lightheadedness, get up slowly when rising from a seated or lying position.

This medicine may contain aspartame. If you have phenylketonuria (PKU) or any other condition where you must restrict your intake of aspartame (or phenylalanine), consult your doctor or pharmacist regarding the safe use of this medicine.

Older adults may be more sensitive to the side effects of this drug, especially drowsiness and QT prolongation (see above).

This medication should be used only when clearly needed during pregnancy. If this medication is used during the last 3 months of pregnancy, infrequently your newborn may develop symptoms including feeding or breathing difficulties, seizures, muscle stiffness, jitteriness or constant crying. Report any such symptoms to your doctor promptly. However, since untreated mental/mood disorders (such as depression) can be a serious condition, do not stop taking this medication unless your doctor directs you to do so. If you are planning pregnancy, become pregnant, or think you may be pregnant, immediately discuss with your doctor the benefits and risks of using this medication during pregnancy.

It is not known whether this drug passes into breast milk. Consult your doctor before breast-feeding.

DRUG INTERACTIONS:
Drug interactions may change how your medications work or increase your risk for serious side effects. This document does not contain all possible drug interactions. Keep a list of all the products you use (including prescription/nonprescription drugs and herbal products) and share it with your doctor and pharmacist. Do not start, stop, or change the dosage of any medicines without your doctor's approval.

Taking MAO inhibitors with this medication may cause a serious (possibly fatal) drug interaction. Avoid taking MAO inhibitors (isocarboxazid, linezolid, methylene blue, moclobemide, phenelzine, procarbazine, rasagiline, selegiline, tranylcypromine) during treatment with this medication. Most MAO inhibitors should also not be taken for two weeks before and after treatment with this medication. Ask your doctor when to start or stop taking this medication.

The risk of serotonin syndrome/toxicity increases if you are also taking other drugs that increase serotonin. Examples include street drugs such as MDMA/"ecstasy," St. John's wort, certain antidepressants (including SSRIs such as fluoxetine/paroxetine, SNRIs such as duloxetine/venlafaxine), tryptophan, among others. The risk of serotonin syndrome/toxicity may be more likely when you start or increase the dose of these drugs.

Tell your doctor or pharmacist if you are taking other products that cause drowsiness including alcohol, antihistamines (such as cetirizine, diphenhydramine), drugs for sleep or anxiety (such as alprazolam, diazepam, zolpidem), muscle relaxants (such as carisoprodol, cyclobenzaprine), and narcotic pain relievers (such as codeine, hydrocodone ).

Check the labels on all your medicines (such as allergy or cough-and-cold products) because they may contain ingredients that cause drowsiness. Ask your pharmacist about using those products safely.

OVERDOSE:
If someone has overdosed and has serious symptoms such as passing out or trouble breathing, call 911. Otherwise, call a poison control center right away. US residents can call their local poison control center at 1-800-222-1222. Canada residents can call a provincial poison control center. Symptoms of overdose may include: very fast/irregular heartbeat, severe dizziness, fainting.

## Pregnancy & Lactation

Pregnancy category: C

Lactation: Avoid