

# CNS SPECTRUMS®

The International Journal of Neuropsychiatric Medicine



## Sexual Dysfunction and Function

*Guest Editor – Angelos Halaris, MD*

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# Guide to *DSM-IV* and *ICD-10* Codes

	<b>DSM-IV</b>	<b>ICD-10</b>
Dementia of the Alzheimer Type, With Early Onset With Depressed Mood Specify if: With Behavioral Disturbance	290.13	F00.03
Dementia of the Alzheimer's Type, With Late Onset With Depressed Mood Specify if: With Behavioral Disturbance	290.21	F00.13
Delirium Due to: Indicate General Medical Condition	293.0	F05.0
Psychotic Disorder Due to: Indicate General Medical Condition With Delusions	293.81	F06.2
With Hallucinations	293.82	F06.0
Mood Disorder Due to: Indicate General Medical Condition	293.83	F06
Anxiety Disorder Due to: Indicate General Medical Condition	293.89	F06.4
Amnestic Disorder Due to: Indicate General Medical Condition	294.0	F02.8
Dementia NOS	294.8	F03
Amnestic Disorder NOS	294.8	R41.3
Schizophrenia	295	F20
Schizophrenia—Disorganized Type	295.10	F20.1
Schizophrenia—Catatonic Type	295.20	F20.2
Schizophrenia—Paranoid Type	295.30	F20.0
Schizophrenia—Residual Type	295.60	F20.5
Schizoaffective Disorder	295.70	F25
Schizophrenia—Undifferentiated Type	295.90	F20.3
Major Depressive Disorder	296	F32
Bipolar I Disorder	296	F30
Bipolar Disorder NOS	296.80	F39
Bipolar II Disorder	296.89	F31.8
Mood Disorder NOS	296.90	F39
Psychotic Disorder NOS	298.9	F29
Autistic Disorder	299.00	F84
Asperger's Disorder	299.80	F84.5
Pervasive Developmental Disorder NOS	299.80	F84.9
Anxiety Disorder NOS	300.00	F41.9
Panic Disorder Without Agoraphobia	300.01	F41
Generalized Anxiety Disorder	300.02	F41.1
Dissociative Identity Disorder	300.14	F44.81
Dissociative Disorder NOS	300.15	F44.9
Factitious Disorder NOS	300.19	F68.1
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Agoraphobia Without History of Panic Disorder	300.22	F40
Social Phobia	300.23	F40.1
Specific Phobia	300.29	F40.2
Obsessive-Compulsive Disorder	300.3	F42.8
Dysthymic Disorder	300.4	F34.1
Depersonalization Disorder	300.6	F48.1
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Stuttering	307.0	F98.5
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# Time for wakefulness

## PROVIGIL® (modafinil) TABLETS

### BRIEF SUMMARY: Consult Package Insert for Complete Prescribing Information

**INDICATIONS and USAGE:** To improve wakefulness in patients with excessive daytime sleepiness associated with narcolepsy.

**CONTRAINDICATIONS:** Known hypersensitivity to PROVIGIL

**PRECAUTIONS: General:** Patients should be cautioned about operating an automobile or other hazardous machinery until they are reasonably certain that PROVIGIL therapy will not adversely affect their ability to engage in such activities.

**Cardiovascular System:** In clinical studies of PROVIGIL, signs and symptoms including chest pain, palpitations, dyspnea, and transient ischemic T-wave changes on ECG were observed in 3 subjects in association with mitral valve prolapse or left ventricular hypertrophy. It is recommended that PROVIGIL tablets not be used in patients with a history of left ventricular hypertrophy or ischemic ECG changes, chest pain, arrhythmia or other clinically significant manifestations of mitral valve prolapse in association with CNS stimulant use. Patients with a recent history of MI or unstable angina should be treated with caution. Periodic monitoring of hypertensive patients taking PROVIGIL may be appropriate.

**Central Nervous System:** Caution should be exercised when PROVIGIL is given to patients with a history of psychosis. **Patients with Severe Renal Impairment:** Treatment with PROVIGIL resulted in much higher exposure to its inactive metabolite, modafinil acid, but not PROVIGIL itself.

**Patients with Severe Hepatic Impairment:** PROVIGIL should be administered at a reduced dose because its clearance is decreased.

**Patients Using Contraceptives:** The effectiveness of steroidal contraceptives may be reduced when used with PROVIGIL and for 1 month after discontinuation. Alternative or concomitant methods of contraception are recommended during and for 1 month after treatment.

**Information for Patients:** Physicians are advised to discuss the following with patients taking PROVIGIL:

**Pregnancy:** Animal studies to assess the effects of PROVIGIL on reproduction and the developing fetus were not conducted so as to ensure a comprehensive evaluation of the potential of PROVIGIL to adversely affect fertility, or cause embryolethality or teratogenicity. Patients should notify their physician if they become pregnant or intend to become pregnant during therapy. They should be cautioned of the potential increased risk of pregnancy when using steroidal contraceptives (including depot or implantable contraceptives) with PROVIGIL and for 1 month after discontinuation. **Nursing:** Patients should notify their physician if they are breast feeding. **Concomitant Medication:** Patients should inform their physician if they are taking or plan to take any prescription or over-the-counter drugs, because of the potential for drug interactions. **Alcohol:** It is prudent to avoid alcohol while taking PROVIGIL. **Allergic Reactions:** Patients should notify their physician if they develop a rash, hives, or a related allergic phenomenon.

**Drug Interactions: CNS Active Drugs:** In a single-dose study, coadministration of PROVIGIL 200 mg with methylphenidate 40 mg delayed the absorption of PROVIGIL by approximately 1 hour. The coadministration of a single dose of clomipramine 50 mg with PROVIGIL 200 mg/day did not affect the pharmacokinetics of either drug. One incident of increased levels of clomipramine and its active metabolite desmethylclomipramine has been reported. In a single-dose study with PROVIGIL (50, 100 or 200 mg) and triazolam 0.25 mg, no clinically important alterations in the safety profile of either drug were noted. In the absence of interaction studies with monoamine oxidase (MAO) inhibitors, caution should be exercised.

**Potential Interactions with Drugs That Inhibit, Induce, or Are Metabolized by Cytochrome P-450 Isoenzymes and Other Hepatic Enzymes:** Chronic dosing of PROVIGIL 400 mg/day resulted in ~20% mean decrease in PROVIGIL plasma trough concentration suggesting that PROVIGIL may have caused induction of its metabolism. Coadministration of potent inducers of CYP3A4 (eg, carbamazepine, phenobarbital, rifampin) or inhibitors of CYP3A4 (eg, ketoconazole, itraconazole) could alter the levels of PROVIGIL. Caution needs to be exercised when PROVIGIL is coadministered with drugs that depend on hepatic enzymes for their clearance; some dosage adjustment may be required. Potentially relevant *in vivo* effects of PROVIGIL based on *in vitro* data are:

A slight induction of CYP1A2 and CYP2B6 in a concentration-dependent manner has been observed. A modest induction of CYP3A4 in a concentration-dependent manner may result in lower levels of CYP3A4 substrates (eg, cyclosporine, steroidal contraceptives, theophylline).

An apparent concentration-related suppression of expression of CYP2C9 activity may result in higher levels of CYP2C9 substrates (eg, warfarin, phenytoin).

A reversible inhibition of CYP2C19 may result in higher levels of CYP2C19 substrates (eg, diazepam, propranolol, phenytoin, S-mephenytoin). In some patients deficient in CYP2D6, the amount of metabolism via CYP2C19 may be substantially larger. Co-therapy with PROVIGIL may increase levels of some tricyclic antidepressants (eg, clomipramine, desipramine).

### Carcinogenesis, Mutagenesis, Impairment of Fertility

**Carcinogenesis:** The highest dose studied in carcinogenesis studies represents 1.5 times (mouse) or 3 times (rat) the maximum recommended human daily dose of 200 mg on a mg/m<sup>2</sup> basis. There was no evidence of tumorigenesis associated with PROVIGIL administration in these studies, but because the mouse study used an inadequate high dose below that representative of a maximum tolerated dose, the carcinogenic potential in that species has not been fully evaluated. **Mutagenesis:** There was no evidence of mutagenic or clastogenic potential of PROVIGIL. **Impairment of Fertility:** When PROVIGIL was administered orally to male and female rats prior to and throughout mating and gestation at up to 100 mg/kg/day (4.8 times the maximum recommended daily dose of 200 mg on a mg/m<sup>2</sup> basis) no effects on fertility were seen. This study did not use sufficiently high doses or large enough sample size to adequately assess effects on fertility.

**Pregnancy: Pregnancy Category C:** Embryotoxicity was observed in the absence of maternal toxicity when rats received oral PROVIGIL throughout the period of organogenesis. At 200 mg/kg/day (10 times the maximum recommended daily human dose of 200 mg on a mg/m<sup>2</sup> basis) there was an increase in resorption, hydronephrosis, and skeletal variations. The no-effect dose for these effects was 100 mg/kg/day (5 times the maximum recommended daily human dose on a mg/m<sup>2</sup> basis). When rabbits received oral PROVIGIL throughout organogenesis at doses up to 100 mg/kg/day (10 times the maximum recommended daily human dose on a mg/m<sup>2</sup> basis), no embryotoxicity was seen. Neither of these studies, however, used optimal doses for the evaluation of embryotoxicity. Although a threshold dose for embryotoxicity has been identified, the full spectrum of potential toxic effects on the fetus has not been characterized. When rats were dosed throughout gestation and lactation at doses up to 200 mg/kg/day, no developmental toxicity was noted post-natally in the offspring. There are no adequate and well-controlled trials with PROVIGIL in pregnant women. PROVIGIL should be used during pregnancy only if the potential benefit outweighs the potential risk.

**Labor and Delivery:** The effect of PROVIGIL on labor and delivery in humans has not been systematically investigated. Seven normal births occurred in patients who had received PROVIGIL during pregnancy.

**Nursing Mothers:** It is not known whether PROVIGIL or its metabolite are excreted in human milk. Caution should be exercised when PROVIGIL is administered to a nursing woman.

**PEDIATRIC USE:** Safety and effectiveness in individuals below 16 years of age have not been established.

**GERIATRIC USE:** Safety and effectiveness in individuals above 65 years of age have not been established.

**ADVERSE REACTIONS:** PROVIGIL has been evaluated for safety in over 2200 subjects, of whom more than 900 subjects with narcolepsy or narcolepsy/hypersomnia were given at least 1 dose of PROVIGIL. In controlled clinical trials, PROVIGIL was well tolerated, and most adverse experiences were mild to moderate. The most commonly observed adverse events (≥5%) associated with the use of PROVIGIL more frequently than placebo-treated patients in controlled US and foreign studies were headache, infection, nausea, nervousness, anxiety, and insomnia. In US controlled trials, 5% of the 369 patients who received PROVIGIL discontinued due to an adverse experience. The most frequent (≥1%) reasons for discontinuation that occurred at a higher rate for PROVIGIL than placebo patients were headache (1%), nausea (1%), depression (1%) and nervousness (1%). The incidence of adverse experiences that occurred in narcolepsy patients at a rate of ≥1% and were more frequent in patients treated with PROVIGIL than in placebo patients in US controlled trials are listed below. Consult full prescribing information on adverse events.

**Body as a whole:** Headache,<sup>1</sup> chest pain, neck pain, chills, rigid neck, fever/chills

**Digestive:** Nausea,<sup>1</sup> diarrhea,<sup>1</sup> dry mouth,<sup>1</sup> anorexia,<sup>1</sup> abnormal liver function,<sup>1</sup> vomiting, mouth ulcer, gingivitis, thirst

**Respiratory system:** Rhinitis,<sup>1</sup> pharyngitis,<sup>1</sup> lung disorder, dyspnea, asthma, epistaxis

**Nervous system:** Nervousness,<sup>1</sup> dizziness, depression, anxiety, cataplexy, insomnia, paresthesia, dyskinesia,<sup>1</sup> hypertonnia, confusion, amnesia, emotional lability, ataxia, tremor

**Cardiovascular:** Hypotension, hypertension, vasodilation, arrhythmia, syncope

**Hemic/Lymphatic:** Eosinophilia

**Special senses:** Amblyopia, abnormal vision

**Metabolic/Nutritional:** Hyperglycemia, albuminuria

**Musculo-skeletal:** Joint disorder

**Skin/Appendages:** Herpes simplex, dry skin

**Urogenital:** Abnormal urine, urinary retention, abnormal ejaculation<sup>1</sup>

<sup>1</sup>Incidence ≥5%. <sup>2</sup>Elevated liver enzymes. <sup>3</sup>Oro-facial dyskinesias. <sup>4</sup>Incidence adjusted for gender.

**Dose Dependency:** In US trials, the only adverse experience more frequent (≥5% difference) with PROVIGIL 400 mg/day than PROVIGIL 200 mg/day and placebo was headache.

**Vital Signs Changes:** There were no consistent effects or patterns of change in vital signs for patients treated with PROVIGIL in the US trials.

**Weight Changes:** There were no clinically significant differences in body weight change in patients treated with PROVIGIL compared to placebo.

**Laboratory Changes:** Mean plasma levels of gamma-glutamyl transferase (GGT) were higher following

administration of PROVIGIL but not placebo. Few subjects (1%) had GGT elevations outside the normal range. Shift to higher, but not clinically significantly abnormal, GGT values appeared to increase with time on PROVIGIL. No differences were apparent in alkaline phosphatase, alanine aminotransferase, aspartate aminotransferase, total protein, albumin, or total bilirubin. There were more elevated eosinophil counts with PROVIGIL than placebo in US studies; the differences were not clinically significant.

**ECG Changes:** No treatment-emergent pattern of ECG abnormalities was found in US studies following administration of PROVIGIL.

**Postmarketing Reports**

In addition to the adverse events observed during clinical trials, the



following adverse events have been identified during post-approval use of PROVIGIL in clinical practice. Because these adverse events are reported voluntarily from a population of uncertain size, reliable estimates of their frequency cannot be made.

**Hematologic:** Agranulocytosis

**Central Nervous System:** Symptoms of psychosis, symptoms of mania

**DRUG ABUSE and DEPENDENCE: Abuse Potential and Dependence:** In addition to wakefulness-promoting effect and increased locomotor activity in animals, in humans, PROVIGIL produces psychoactive and euphoric effects, alterations in mood, perception, thinking, and feelings typical of other CNS stimulants. *In vitro*, PROVIGIL binds to the dopamine reuptake site and causes an increase in extracellular dopamine but no increase in dopamine release. PROVIGIL is reinforcing, as evidenced by its self-administration in monkeys previously trained to self-administer cocaine. In some studies PROVIGIL was also partially discriminated as stimulant-like. Physicians should follow patients closely, especially those with a history of drug and/or stimulant (eg, methylphenidate, amphetamine, or cocaine) abuse. Patients should be observed for signs of misuse or abuse (eg, incrementation of doses or drug-seeking behavior). In individuals experienced with drugs of abuse, PROVIGIL produced psychoactive and euphoric effects and feelings consistent with other scheduled CNS stimulants (methylphenidate). Patients should be observed for signs of misuse or abuse.

**Withdrawal:** Following 9 weeks of PROVIGIL use in 1 US trial, no specific symptoms of withdrawal were observed during 14 days of observation, although sleepiness returned in narcoleptic patients.

**OVERDOSAGE: Human Experience:** A total of 151 doses of ≥1000 mg/day (5 times the maximum recommended daily dose) have been recorded for 32 individuals. Doses of 4500 mg and 4000 mg were taken intentionally by 2 patients participating in foreign depression studies. In both cases, adverse experiences observed were limited, expected, and not life-threatening, and patients recovered fully by the following day. The adverse experiences included excitation or agitation, insomnia, and slight or moderate elevations in hemodynamic parameters. In neither of these cases nor in others with doses ≥1000 mg/day, including experience with up to 21 consecutive days of dosing at 1200 mg/day, were any unexpected effects or specific organ toxicities observed. Other observed high-dose effects in clinical studies have included anxiety, irritability, aggressiveness, confusion, nervousness, tremor, palpitations, sleep disturbances, nausea, diarrhea, and decreased prothrombin time. **Overdose Management:** No specific antidote to the toxic effects of PROVIGIL overdose has been identified. Overdoses should be managed with primarily supportive care, including cardiovascular monitoring. Emesis or gastric lavage should be considered. There are no data suggesting that dialysis or urinary acidification or alkalinization enhance drug elimination. The physician should consider contacting a poison-control center on the treatment of any overdose.

Manufactured by: Cephalon, Inc., West Chester, PA 19380

For more information about PROVIGIL, please call Cephalon Professional Services at 1-800-896-5855

or visit our Website at [www.PROVIGIL.com](http://www.PROVIGIL.com)

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# Time for wakefulness

## A unique wake-promoting agent

PROVIGIL promotes daytime wakefulness, improving patients' ability to participate in daily activities—with no effect on nighttime sleep.<sup>1-3</sup>

## Long-term safety

The long-term safety profile of PROVIGIL has been demonstrated for up to 136 weeks.<sup>4</sup>

PROVIGIL was generally well tolerated. Most frequently reported adverse events in clinical trials were headache, nausea, nervousness, anxiety, infection, and insomnia. Most adverse events were mild to moderate. PROVIGIL may interact with drugs that inhibit, induce, or are metabolized by cytochrome P450 isoenzymes.

## Dosing

Recommended dose for PROVIGIL is 200 mg taken orally once daily in the morning. Both PROVIGIL doses, 200 mg and 400 mg QD, were effective.

**PROVIGIL is indicated to improve wakefulness in patients with excessive daytime sleepiness associated with narcolepsy.**

**References:** 1. PROVIGIL full prescribing information. 2. US Modafinil in Narcolepsy Multicenter Study Group. Randomized trial of modafinil for the treatment of pathological somnolence in narcolepsy. *Ann Neurol.* 1998;43:88-97. 3. US Modafinil in Narcolepsy Multicenter Study Group. Randomized trial of modafinil as a treatment for the excessive daytime somnolence of narcolepsy. *Neurology.* 2000;54:1166-1175. 4. Data on file, Cephalon, Inc.

**PROVIGIL®**  
(MODAFINIL)   
Tablets

Wake up to life.™

Please see brief summary of prescribing information on adjacent page.  
For more information, call 1-800-896-5855 or visit our Website at [www.PROVIGIL.com](http://www.PROVIGIL.com).

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CNS Spectrums' editorial mission is to address relevant neuropsychiatric topics, including the prevalence of comorbid diseases among patients, and reports that emphasize the profound diagnostic and physiologic connections made within the neurologic and psychiatric fields. It serves as a resource to psychiatrists and neurologists seeking to understand and treat disturbances of cognition, emotion, and behavior as a direct consequence of central nervous system disease, illness, or trauma.

**BRIEF SUMMARY OF PRESCRIBING INFORMATION**

**INDICATIONS AND USAGE**  
SEROQUEL is indicated for the treatment of schizophrenia.  
The efficacy of SEROQUEL in schizophrenia was established in short-term (6-week) controlled trials of schizophrenic in-patients (See **CLINICAL PHARMACOLOGY**). The effectiveness of SEROQUEL in long-term use, that is, for more than 6 weeks, has not been systematically evaluated in controlled trials. Therefore, the physician who elects to use SEROQUEL for extended periods should periodically re-evaluate the long-term usefulness of the drug for the individual patient.

**CONTRAINDICATIONS**

SEROQUEL is contraindicated in individuals with a known hypersensitivity to this medication or any of its ingredients.

**WARNINGS**

**Neuroleptic Malignant Syndrome (NMS):** A potentially fatal neuroleptic syndrome complex sometimes referred to as Neuroleptic Malignant Syndrome (NMS) has been reported in association with antipsychotic drugs. The following cases of NMS (2/2387 (0.1%)) have been reported in clinical trials with SEROQUEL. Clinical manifestations of NMS are hyperreflexia, muscle rigidity, altered mental status, and evidence of autonomic instability (irregular pulse or blood pressure, tachycardia, diaphoresis, and cardiac dysrhythmia). Additional signs may include elevated creatine phosphokinase, myoglobinuria (rhabdomyolysis) and acute renal failure. The diagnostic evaluation of a patient with this syndrome is complicated. In a rivigested diagnosis, it is important to exclude causes where the clinical presentation includes both serious medical illness (e.g., pneumonia, systemic infection) and untreated or inadequately treated extrapyramidal signs and symptoms (EPS). Other important considerations in the differential diagnosis include central anticholinergic toxicity, heat stroke, drug fever and primary central nervous system (CNS) pathology. The management of NMS requires a combination of the following: (1) discontinuation of antipsychotic drugs and other drugs not essential to concurrent therapy; (2) intensive symptomatic treatment and medical monitoring; and (3) treatment of any concomitant serious medical problems for which specific treatments are available. There is no general agreement about specific pharmacologic treatment regimens for NMS. If a patient requires antipsychotic drug treatment after recovery from NMS, the potential re-induction of drug therapy should be carefully monitored. The patient should be carefully monitored since recurrences of NMS have been reported. **Tardive Dyskinesia:** A syndrome of potentially irreversible, involuntary, dyskinetic movements may develop in patients treated with antipsychotic drugs. Although the prevalence of the syndrome appears to be highest among the elderly, especially elderly women, it is impossible to rely upon prevalence estimates to predict, at the inception of antipsychotic treatment, which patients are likely to develop the syndrome. Whether antipsychotic drug products differ in their potential to cause tardive dyskinesia is unknown. The risk of developing tardive dyskinesia and the likelihood that it will become irreversible are believed to increase as the duration of treatment and the total cumulative dose of antipsychotic drugs administered to the patient increase. However, the syndrome can develop, although much less commonly, after relatively brief treatment periods at low doses. There is no known treatment for established cases of tardive dyskinesia, although the syndrome may partially or completely, if antipsychotic treatment is withdrawn. Antipsychotic treatment, itself, however, may suppress (or partially suppress) the signs and symptoms of the syndrome and thereby may possibly mask the underlying process. The effect that symptomatic suppression has upon the long-term course of the syndrome is unknown. Given these considerations, SEROQUEL should be prescribed in a manner that most likely to minimize the symptoms of tardive dyskinesia. If a patient receiving chronic treatment should generally be reserved for patients who appear to suffer from a chronic illness that (1) is known to respond to antipsychotic drugs, and (2) for whom alternative, equally effective, but potentially less harmful treatments are not available or appropriate. In patients who do require chronic treatment, the smallest dose and the shortest duration of treatment producing a satisfactory clinical response should be compared with the lowest effective dose. The patient should be periodically. If signs and symptoms of tardive dyskinesia appear in a patient on SEROQUEL, drug discontinuation should be considered. However, some patients may require treatment with SEROQUEL despite the presence of the syndrome.

**PRECAUTIONS: General**

**Orthostatic hypotension:** SEROQUEL may induce orthostatic hypotension associated with dizziness, tachycardia and, in some patients, syncope, especially during the initial dose escalation. The orthostatic hypotension is thought to be related to anticholinergic properties. Syncope was reported in 1% (22/2162) of the patients treated with SEROQUEL compared with 0% (0/206) on placebo and about 0.5% (2/420) on active control drugs. The risk of orthostatic hypotension and syncope may be minimized by limiting the initial dose to 25 mg bid. If hypotension occurs during titration to the target dose, a return to the previous dose in the titration schedule is appropriate. SEROQUEL should be used with caution in patients with known cardiovascular disease (history of myocardial infarction or ischemic heart disease, heart failure or conduction abnormalities), cerebrovascular disease or conditions which would predispose patients to hypotension (dehydration, hypovolemia and treatment with antihypertensive medications). **Cataracts:** The development of cataracts was observed in association with quetiapine treatment in chronic dog studies. Animal studies have shown that lens changes have been observed in patients during long-term SEROQUEL treatment, but a causal relationship to SEROQUEL use has not been established. Nevertheless, the possibility of lenticular changes cannot be excluded at this time. Therefore, examination of the lens by methods adequate to detect cataract formation, such as slit lamp exam or other appropriately sensitive methods, is recommended at initiation of treatment or at regular intervals. **Seizures:** During clinical trials, seizures occurred in 0.8% (18/2387) of patients treated with SEROQUEL compared to 0.5% (1/206) on placebo and 1% (4/420) on active control drugs. As with other antipsychotics SEROQUEL should be used cautiously in patients with a history of seizures or with conditions that potentially lower the seizure threshold, e.g., Alzheimer's dementia. Conditions that lower the seizure threshold may be more prevalent in SEROQUEL-treated patients than in older. **Hypothyroidism:** Clinical trials with SEROQUEL demonstrated a dose-related decrease in total and free thyroxine (T4) of approximately 20% at the higher end of the therapeutic dose range and was maximal in the first two to four weeks of treatment and maintained without adaptation or progression during more chronic therapy. Generally, these changes were of no clinical significance and TSH was unchanged in most patients, and levels of T8G were unchanged. In nearly all cases, cessation of SEROQUEL treatment resulted in reversal of the changes. These changes were free T4, irrespective of the duration of treatment. About 0.4% (10/2386) of SEROQUEL patients did experience TSH increases. Six of the patients with TSH increases needed replacement thyroid treatment. **Cholesterol and Triglyceride Elevations:** In a pool of 3- to 6-week placebo-controlled trials, SEROQUEL-treated patients had increases from baseline in cholesterol and triglyceride of 11% and 7%, respectively. Increases in cholesterol and triglyceride levels and other lipid changes were only weakly related to the increases in weight observed in SEROQUEL-treated patients. **Hyperprolactinemia:** Although an elevation of prolactin levels was not demonstrated in clinical trials with SEROQUEL, increased prolactin levels were observed in rat studies with this compound, and were associated with an increase in mammary gland neoplasia in rats (see **Carcinogenesis**). Tissue culture experiments indicate that prolactin-induced proliferation of mammary epithelial cells is independent *in vitro*, a factor of potential importance if the prescription of these drugs is contemplated in a patient with previously detected breast cancer. Although disturbances such as galactorrhea, amenorrhea, gynecostasia, and impotence have been reported with prolactin-elevating compounds, the clinical significance of elevated serum prolactin levels is unknown for most patients. Neither clinical studies or epidemiologic studies have shown a causal relationship between hyperprolactinemia and chronic administration of this class of drugs and tumorigenesis in humans; the available evidence is considered too limited to be conclusive at this time. **Transaminase Elevations:** Asymptomatic, transient and reversible elevations in serum transaminases (primarily ALT) have been reported. The proportions of patients with transaminase elevations of 3 times the upper limits of the normal reference range in 3- to 6-week placebo-controlled trials were approximately 18% for SEROQUEL compared to 1% for placebo. These hepatic enzyme elevations usually occurred within the first 3 weeks of drug treatment and promptly returned to pre-study levels with ongoing treatment with SEROQUEL. **Potential for Cognitive and Motor Impairment:** Somnolence was a commonly reported adverse event reported in patients treated with SEROQUEL especially during the 3-5 day period of initial dose titration. In the 3- to 6-week placebo-controlled trials, some data was reported on the effects of SEROQUEL compared to placebo in placebo patients. Since SEROQUEL has the potential to impair judgment, thinking, or motor skills, patients should be cautioned about performing activities requiring mental alertness, such as operating a motor vehicle (including automobiles) or operating hazardous machinery until they are reasonably certain that SEROQUEL therapy does not affect them adversely. **Fatigue:** One case of praprisim in a patient receiving SEROQUEL has been reported prior to market introduction. While a causal relationship to use of SEROQUEL has not been established, other drugs with alpha-adrenergic blocking effects have been reported to induce praprisim, and it is possible that SEROQUEL may share this capacity. Severe praprisim may require surgical intervention. **Body Temperature Regulation:** Although not reported with SEROQUEL, disruption of the body's ability to reduce core body temperature has been attributed to antipsychotic drugs. Antipsychotic drugs may contribute to SEROQUEL for patients who will be experiencing conditions which may contribute to an elevation in core body temperature, e.g., exercising strenuously, exposure to extreme heat, receiving concomitant medication with anticholinergic activity, or being subject to dehydration. **Dysphagia:** Esophageal dysmotility and aspiration

**SEROQUEL® (quetiapine fumarate) Tablets**

have been associated with antipsychotic drug use. Aspiration pneumonia is a common cause of morbidity and mortality in elderly patients, in particular those with advanced Alzheimer's dementia. SEROQUEL and other antipsychotic drugs should be used cautiously in patients at risk for aspiration pneumonia. **Suicide:** The possibility of a suicide attempt is inherent in schizophrenia and close supervision of high risk patients should accompany drug therapy. Prescriptions for SEROQUEL should be written on a short-term basis and should be closely monitored. Appropriate management in order to reduce the risk of overdose. **Use in Patients with Concomitant Illness:** Clinical experience with SEROQUEL in patients with certain concomitant systemic illnesses is limited. SEROQUEL has not been evaluated or used to any appreciable extent in patients with a recent history of myocardial infarction or unstable heart disease. Patients with these diagnoses were excluded from premarketing clinical studies. Because of the hypotensive properties of SEROQUEL, caution should be observed in cardiac patients (see **Orthostatic Hypotension**). **Information for Patients:** Physicians are advised to discuss the following issues with patients for whom they prescribe SEROQUEL. **Orthostatic Hypotension:** Patients should be advised of the risk of orthostatic hypotension, especially during the 3-5 day period of initial dose titration, and also at times of re-initiating treatment or increases in dose. **Interference with Cognitive and Motor Performance:** Since somnolence was a commonly reported adverse event associated with SEROQUEL treatment, patients should be advised of the risk of somnolence, especially during the 3-5 day period of initial dose titration. Patients should be cautioned about performing any activity requiring mental alertness, such as operating a motor vehicle (including automobiles) or operating hazardous machinery, until they are reasonably certain that SEROQUEL therapy does not affect them adversely. **Pregnancy and Nursing:** Patients should be advised to become pregnant or intend to become pregnant during therapy. **Nursing:** Patients should be advised not to breast feed if they are taking SEROQUEL. **Concomitant Medication:** As with other medications, patients should be advised to notify their physicians if they are taking, or plan to take, any prescription or over-the-counter drugs. **Alcohol:** Patients should be advised to avoid consuming alcoholic beverages while taking SEROQUEL. **Heat Exposure and Dehydration:** Patients should be advised regarding appropriate care in avoiding overheating and dehydration. **Laboratory Tests:** No specific laboratory tests are recommended. **Drug Interactions:** The risks of using SEROQUEL in combination with other drugs have not been extensively evaluated in systematic studies. Given the primary CNS effects of SEROQUEL, caution should be used when it is taken in combination with other centrally acting drugs. SEROQUEL potentiates the sedative and motor effects of alcohol. A clinical trial in subjects with selected psychotic disorders, and alcoholic beverages should be avoided while taking SEROQUEL. Because of its potential for inducing hypotension, SEROQUEL may enhance the effects of certain antihypertensive agents. SEROQUEL may antagonize the effects of levodopa and dopamine agonists. **Effect of Other Drugs on SEROQUEL Phenytoin:** Coadministration of quetiapine (250 mg bid) and phenytoin (100 mg tid) increased the mean oral clearance of quetiapine by 5-fold. Inhibition of SEROQUEL clearance by phenytoin was not observed in a clinical trial in subjects with selected psychotic disorders, and alcoholic beverages should be avoided while taking SEROQUEL. 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References: 1. Prescribing Information for SEROQUEL® (quetiapine fumarate), Rev 1/01, AstraZeneca Pharmaceuticals LP, Wilmington, Delaware. 2. Data on file, IMS data, AstraZeneca Pharmaceuticals LP, Wilmington, Delaware.

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