

# Migraine Associated With Psychiatric Disorders

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CHICAGO — Major depressive disorder, bipolar disorder, panic disorder, and social phobia were diagnosed twice as often in those with migraine as in those without headache in a major Canadian population survey, Dr. Nathalie Jette said at the American Headache Society meeting.

The data came from the Canadian Community Health Survey, which was con-

ducted in 2002, said Dr. Jette, of the clinical neurosciences department at the University of Calgary, Alta.

Many studies have shown an association between migraine and psychiatric conditions; the goal of this study was to determine potential impact on health outcomes and implications for health policies in Canada, Dr. Jette said. Patients with migraine and psychiatric comorbidities tend to use more health resources; identifying them can lead to more preventive treatment and

better-targeted therapies, Dr. Jette said.

Some 36,984 Canadian residents were randomly selected for the survey. Of these, 70% agreed to participate; all the subjects were interviewed at home by trained interviewers, she said.

Dr. Jette said that he estimated lifetime prevalence of migraine in Canada is 7%-17%. In the survey, 15% of women and 6% of men self-reported that they had physician-diagnosed migraine. Mental health was assessed using the World Health Men-

tal Composite International Diagnostic Interview.

As has been seen in other studies, migraine was most prevalent among lower-income respondents. Married respondents were less likely to have migraine than were those who were widowed, separated, or divorced, Dr. Jette said.

Psychiatric comorbidities were twice as common in those with migraine than in those without. After assessing the data, the researchers found that the higher prevalence of psychiatric disorders in migraineurs was not related to sociodemographics.

Major depression and bipolar disorder were more common among migraineurs. Middle- and higher-income respondents were less likely to have either condition, regardless of headache status, Dr. Jette said.

The authors also analyzed survey data on health-related outcomes, including 2-week disability, restrictions on activities, quality of life, and use of mental health care. They found that patients with a combination of migraine and major depressive disorder, bipolar disorder, panic disorder, or social phobia had a reduced likelihood of a good health outcome.

The study's strengths included its high participation rate and that it was a representative sample, said Dr. Jette, who reported no conflicts of interest. But, she noted, it did not use International Classification of Headache Disorder (ICHD) criteria, and it is cross-sectional, which she said limits inference on causal mechanisms for the relationship between migraine and psychiatric conditions. ■

## Psychosocial Risk Factors Weigh on Heart Patients

WASHINGTON — Psychosocial risk factors contribute a level of risk for cardiovascular events in clinically symptomatic women that is similar to the traditional major risk factors, Thomas Rutledge, Ph.D., reported at the annual meeting of the Society of Behavioral Medicine.

Dr. Rutledge and his associates prospectively studied the risk factors of smoking, hypertension, diabetes, dyslipidemia, inactivity, obesity, depression, and social isolation in a cohort of 734 women with clinical symptoms of myocardial ischemia. Each underwent coronary angiography and psychosocial testing. About 30% of the patients had one event during a follow-up of 6 years.

The women were clinically symptomatic, but the rate of obstructive coronary artery disease was relatively low (39%). Risk factors tended to cluster, which was associated with about a threefold increase from the lowest group to the highest group in death and CVD rates. Those events occurred in 12% of women with none or one risk factor, 19% with two to three risk factors, and 30% with four to six risk factors. The magnitude of the effects for depression and social isolation was comparable with those for the major CVD risk factors.

—Jeff Evans

**BRIEF SUMMARY:** Consult the Full Prescribing Information for complete product information.

**Daytrana™** (methylphenidate transdermal system)

**CII Rx Only**

### INDICATION AND USAGE

**Attention Deficit Hyperactivity Disorder (ADHD):** Daytrana™ (methylphenidate transdermal system) is indicated for the treatment of Attention Deficit Hyperactivity Disorder (ADHD) and is available in 10, 15, 20, and 30 mg dosing strengths. The efficacy of Daytrana™ was established in two controlled clinical trials in children with ADHD.

**Special Diagnostic Considerations:** Specific etiology of this syndrome is unknown, and there is no single diagnostic test. Adequate diagnosis requires the use not only of medical but of special psychological, educational, and social resources. Learning may or may not be impaired. The diagnosis must be based upon a complete history and evaluation of the child and not solely on the presence of the required number of DSM-IV-TR characteristics.

**Need for Comprehensive Treatment Program:** Daytrana™ is indicated as an integral part of a total treatment program for ADHD that may include other measures (psychological, educational, social) for patients with this syndrome. Drug treatment may not be indicated for all children with this syndrome. Stimulants are not intended for use in the child who exhibits symptoms secondary to environmental factors and/or other primary psychiatric disorders, including psychosis. Appropriate educational placement is essential and psychosocial intervention is often helpful. When remedial measures alone are insufficient, the decision to prescribe stimulant medication will depend upon the physician's assessment of the chronicity and severity of the child's symptoms.

**Long-Term Use:** The effectiveness of Daytrana™ for long-term use, i.e., for more than 7 weeks, has not been systematically evaluated in controlled trials. The physician who elects to use Daytrana™ for extended periods should periodically re-evaluate the long-term usefulness of Daytrana™ for the individual patient.

### CONTRAINDICATIONS

**Agitation:** Daytrana™ is contraindicated in patients with marked anxiety, tension, and agitation, since the drug may aggravate these symptoms.

**Hypersensitivity to Methylphenidate:** Daytrana™ is contraindicated in patients known to be hypersensitive to methylphenidate or other components of the product (polyester/ethylene vinyl acetate laminate film backing, acrylic adhesive, silicone adhesive, and fluoropolymer-coated polyester).

**Glaucoma:** Daytrana™ is contraindicated in patients with glaucoma.

**Tics:** Daytrana™ is contraindicated in patients with motor tics or with a family history or diagnosis of Tourette's syndrome (see **ADVERSE REACTIONS**).

**Monamine Oxidase Inhibitors:** Daytrana™ is contraindicated during treatment with monoamine oxidase inhibitors, and also within a minimum of 14 days following discontinuation of treatment with a monoamine oxidase inhibitor (hypertensive crises may result).

### WARNINGS

**Serious Cardiovascular Events**  
**Sudden Death and Pre-existing Structural Cardiac Abnormalities or Other Serious Heart Problems**

Sudden death has been reported in association with CNS stimulant treatment at usual doses in children and adolescents with structural cardiac abnormalities or other serious heart problems. Although some serious heart problems alone carry an increased risk of sudden death, stimulant products generally should not be used in children or adolescents with known serious structural cardiac abnormalities, cardiomyopathy, serious heart rhythm abnormalities, or other serious cardiac problems that may place them at increased vulnerability to the sympathomimetic effects of a stimulant drug.

**Adults:** Sudden deaths, stroke, and myocardial infarction have been reported in adults taking stimulant drugs at usual doses for ADHD. Although the role of stimulants in these adult cases is also unknown, adults have a greater likelihood than children of having serious structural cardiac abnormalities, cardiomyopathy, serious heart rhythm abnormalities, coronary artery disease, or other serious cardiac problems. Adults with such abnormalities should also generally not be treated with stimulant drugs.

**Hypertension and Other Cardiovascular Conditions**  
Stimulant medications cause a modest increase in average blood pressure (about 2-4 mmHg) and average heart rate (about 3-6 bpm) (see **ADVERSE REACTIONS**), and individuals with hypertension or other cardiovascular conditions would not be expected to have short-term consequences, all patients should be monitored for larger changes in heart rate and blood pressure. Caution is indicated in treating patients whose underlying medical conditions might be compromised by increases in blood pressure or heart rate, e.g., those with pre-existing hypertension, heart failure, recent myocardial infarction, or ventricular arrhythmia.

**Assessing Cardiovascular Status in Patients Being Treated With Stimulant Medications**  
Children, adolescents, or adults treated with stimulant medications should have a careful history (including assessment for a family history of sudden death or ventricular arrhythmia) and physical exam to assess for the presence of cardiac disease, and should receive further cardiac evaluation if findings suggest such disease (e.g., electrocardiogram and echocardiogram). Patients who develop cardiac symptoms such as exertional chest pain, unexplained syncope, or other symptoms suggestive of cardiac disease during stimulant treatment should undergo a prompt cardiac evaluation.

**Contact Sensitization:** Use of Daytrana™ may lead to contact sensitization. Daytrana™ should be discontinued if contact sensitization is suspected. Erythema is commonly seen with use of Daytrana™ and is not by itself an indication of sensitization. However, sensitization should be suspected if erythema is accompanied by evidence of a more intense local reaction (edema, papules, vesicles) that does not significantly improve within 48 hours or spreads beyond the patch site. Diagnosis of allergic contact dermatitis should be corroborated by appropriate diagnostic testing.

Patients sensitized from use of Daytrana™, as evidenced by development of an allergic contact dermatitis, may develop systemic sensitization or other systemic reactions if methylphenidate-containing products are taken via other routes, e.g., orally. Manifestations of systemic sensitization may include a flare-up of previous dermatitis or of other positive patch-test sites, or generalized skin eruptions in previously unaffected skin. Other systemic reactions may include headache, fever, malaise, arthralgia, diarrhea, or vomiting.

Patients who develop contact sensitization to Daytrana™ and require oral treatment with methylphenidate should be initiated on oral medication under close medical supervision. It is possible that some patients sensitized to methylphenidate by exposure to Daytrana™ may not be able to take methylphenidate in any form.

A study designed to provoke skin sensitization revealed a signal for Daytrana™ to be an irritant and also a contact sensitizer. This study involved an induction phase consisting of continuous exposure to the same skin site for 3 weeks, followed by a 2 week rest period, and then challenge/rechallenge. Under conditions of the study, Daytrana™ was more irritating than both the placebo patch control and the negative control (saline). Of 133 subjects who participated in the challenge phase of the sensitization study, at least 18 (13.5%) were confirmed to have been sensitized to Daytrana™ based on the results of the challenge and/or rechallenge phases of the study.

Using Daytrana™ as prescribed, alternating application sites on the hip, no cases of contact sensitization were reported. However, since patients were not specifically assessed for sensitization in the clinical effectiveness studies, it is unknown what the true incidence of sensitization is when Daytrana™ is used as directed.

**Psychiatric Adverse Events**  
**Pre-Existing Psychosis**  
Administration of stimulants may exacerbate symptoms of behavior disturbance and thought disorder in patients with a pre-existing psychotic disorder.

**Bipolar Illness**  
Particular care should be taken in using stimulants to treat ADHD in patients with comorbid bipolar disorder because of concern for possible induction of a mixed/manic episode in such patients. Prior to initiating treatment with a stimulant, patients with comorbid depressive symptoms should be adequately screened to determine if they are at risk for bipolar disorder; such screening should include a detailed psychiatric history, including a family history of suicide, bipolar disorder, and depression.

**Emergence of New Psychotic or Manic Symptoms**  
Treatment emergent psychotic or manic symptoms, e.g., hallucinations, delusional thinking, or mania in children and adolescents without a prior history of psychotic illness or mania can be caused by stimulants at usual doses. If such symptoms occur, consideration should be given to a possible causal role of the stimulant, and discontinuation of treatment may be appropriate. In a pooled analysis of multiple short-term, placebo-controlled studies, such symptoms occurred in about 0.1% (4 patients) with events out of 3,482 exposed to methylphenidate or amphetamine for several weeks at usual doses) of stimulant-treated patients compared to 0 in placebo-treated patients.

**Aggression**  
Aggressive behavior or hostility is often observed in children and adolescents with ADHD, and has been reported in clinical trials and the postmarketing experience of some medications indicated for the treatment of ADHD. Although there is no systematic evidence that stimulants cause aggressive behavior or hostility, patients beginning treatment for ADHD should be monitored for the appearance of or worsening of aggressive behavior or hostility.

**Long-Term Suppression of Growth:** Careful follow-up of weight and height in children ages 7 to 10 years who were randomized to either methylphenidate or non-medication treatment groups over 14 months, as well as in naturalistic subgroups of newly methylphenidate-treated or non-medication-treated children over 36 months (to the ages of 10 to 13 years), suggests that consistently medicated children (i.e., treatment for 7 days per week throughout the year) have a temporary slowing in growth rate (on average, a total of about 2 cm less growth in height and 2.7 kg less growth in weight over 3 years), without evidence of growth rebound during this period of development. Published data are inadequate to determine whether chronic use of amphetamines may cause a similar suppression of growth, however, it is anticipated that they likely have this effect as well. Therefore, growth should be monitored during treatment with stimulants, and patients who are not growing or gaining height or weight as expected may need to have their treatment interrupted.

**Seizures:** There is some clinical evidence that stimulants may lower the convulsive threshold in patients with prior history of seizures, in patients with prior EEG abnormalities in absence of seizures, and, very rarely, in patients without a history of seizures and no prior EEG evidence of seizures. In the presence of seizures, the drug should be discontinued.

**Visual Disturbance:** Difficulties with accommodation and blurring of vision have been reported with stimulant treatment.

**Use in Children Under Six Years of Age:** Daytrana™ should not be used in children under six years of age, since safety and efficacy in this age group have not been established.

**Drug Dependence**  
Daytrana™ should be given cautiously to patients with a history of drug dependence or alcoholism. Chronic abusive use can lead to marked tolerance and dependence with varying degrees of abnormal behavior. Frank psychotic episodes can occur, especially with parenteral abuse. Careful supervision is required during withdrawal from abusive use, since severe depression may occur. Withdrawal following chronic therapeutic use may unmask symptoms of the underlying disorder that may require follow-up.

### PRECAUTIONS

**Patients Using External Heat:** All patients should be advised to avoid exposing the Daytrana™ application site to direct external heat sources, such as heating pads, electric blankets, heated water beds, etc., while wearing the patch. There is a potential for temperature-dependent increases in methylphenidate release of greater than 2-fold from the patch.

**Hematologic Monitoring:** Periodic CBC, differential, and platelet counts are advised during prolonged therapy.

**Information for Patients:** Patients should be informed to apply Daytrana™ to a clean, dry site on the hip, which is not oily, damaged, or irritated. The site of application must be alternated daily. The patch should not be applied to the waistline, or where tight clothing may rub it.

Daytrana™ should be applied 2 hours before the desired effect. Daytrana™ should be removed approximately 9 hours after it is applied, although the effects from the patch will last for several more hours.

The patient or caregiver should be encouraged to use the administration chart included with each carton of Daytrana™ to monitor application and removal time, and method of disposal.

If there is an unacceptable duration of appetite loss or insomnia in the evening, taking the patch off earlier may be attempted before decreasing the patch size.

Skin redness or itching is common with Daytrana™, and small bumps on the skin may also occur in some patients. If any swelling or blistering occurs the patch should not be worn and the patient should be seen by the prescriber.

**Drug Interactions:** Daytrana™ should not be used in patients being treated (currently or within the preceding two weeks) with monoamine oxidase inhibitors (see **CONTRAINDICATIONS—Monoamine Oxidase Inhibitors**). Because of a possible effect on blood pressure, Daytrana™ should be used cautiously with pressor agents.

Methylphenidate may decrease the effectiveness of drugs used to treat hypertension.

Human pharmacologic studies have shown that methylphenidate may inhibit the metabolism of coumarin anticoagulants, anticonvulsants (e.g., phenobarbital, phenytoin, primidone), and some tricyclic drugs (e.g., imipramine, clomipramine, desipramine) and selective serotonin reuptake inhibitors. Downward dose adjustments of these drugs may be required when given concomitantly with methylphenidate. It may be necessary to adjust the dosage and monitor plasma drug concentrations (or, in the case of coumarin, coagulation times), when initiating or discontinuing methylphenidate.

Serious adverse events have been reported in concomitant use of methylphenidate with clonidine, although no causality for the combination has been established. The safety of using methylphenidate in combination with clonidine or other centrally acting alpha-2-agonists has not been systematically evaluated.

**Carcinogenesis, Mutagenesis, and Impairment of Fertility:** Carcinogenicity studies of transdermal methylphenidate have not been performed. In a lifetime carcinogenicity study of oral methylphenidate carried out in B6C3F1 mice, methylphenidate caused an increase in hepatocellular adenomas and, in males only, an increase in hepatoblastomas, at a daily dose of approximately 60 mg/kg/day. Hepatoblastoma is a relatively rare rodent malignant tumor type. There was no increase in total malignant hepatic tumors. The mouse strain used is sensitive to the development of hepatic tumors and the significance of these results to humans is unknown.

Orally administered methylphenidate did not cause any increases in tumors in a lifetime carcinogenicity study carried out in F344 rats; the highest dose used was approximately 45 mg/kg/day.

In a 24-week oral carcinogenicity study in the transgenic mouse strain p53<sup>-/-</sup>, which is sensitive to genotoxic carcinogens, there was no evidence of carcinogenicity. In this study, male and female mice were fed diets containing the same concentration of methylphenidate as in the lifetime carcinogenicity study; the high-dose groups were exposed to 60 to 74 mg/kg/day of methylphenidate.

Methylphenidate was not mutagenic in the *in vitro* Ames reverse mutation assay or in the *in vitro* mouse lymphoma cell forward mutation assay, and was negative *in vivo* in the mouse bone marrow micronucleus assay. Sister chromatid exchanges and chromosome aberrations were increased, indicative of a weak clastogenic response, in an *in vitro* assay in cultured Chinese hamster ovary cells.

Methylphenidate did not impair fertility in male or female mice that were fed diets containing the drug in an 18-week Continuous Breeding study. The study was conducted at doses up to 160 mg/kg/day.

**Pregnancy**  
**Pregnancy Category C:** Animal reproduction studies with transdermal methylphenidate have not been performed. In a study in which oral methylphenidate was given to pregnant rabbits during the period of organogenesis at doses up to 200 mg/kg/day no teratogenic effects were seen, although an increase in the incidence of a variation, dilation of the lateral ventricles, was seen at 200 mg/kg/day; this dose also produced maternal toxicity. A previously conducted study in rabbits showed teratogenic effects of methylphenidate at an oral dose of 200 mg/kg/day. In a study in which oral methylphenidate was given to pregnant rats during the period of organogenesis at doses up to 100 mg/kg/day, no teratogenic effects were seen although a slight delay in fetal skeletal ossification was seen at doses of 60 mg/kg/day and above; these doses caused some maternal toxicity.

In a study in which oral methylphenidate was given to rats throughout pregnancy and lactation at doses up to 60 mg/kg/day, offspring weights and survival were decreased at 40 mg/kg/day and above; these doses caused some maternal toxicity. Adequate and well-controlled studies in pregnant women have not been conducted. Daytrana™ should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

**Nursing Mothers:** It is not known whether methylphenidate is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised if Daytrana™ is administered to a nursing woman.

**Pediatric Use:** The safety and efficacy of Daytrana™ in children under 6 years old have not been established. Long-term effects of methylphenidate in children have not been well established (see **WARNINGS**).

In a study conducted in young rats, methylphenidate was administered orally at doses of up to 100 mg/kg/day for 9 weeks, starting early in the postnatal period (Postnatal Day 7) and continuing through sexual maturity (Postnatal Week 10). When these animals were tested as adults (Postnatal Weeks 13-14), decreased spontaneous locomotor activity was observed in males and females previously treated with 50 mg/kg/day or greater, and a deficit in the acquisition of a specific learning task was seen in females exposed to the highest dose. The no effect level for juvenile neurobehavioral development in rats was 5 mg/kg/day. The clinical significance of the long-term behavioral effects observed in rats is unknown.

**ADVERSE REACTIONS**  
The pre-marketing clinical development program for Daytrana™ included exposures in a total of 1,158 participants in clinical trials (758 pediatric patients and 400 healthy adult subjects). These participants received Daytrana™ patch sizes ranging from 6.25 cm<sup>2</sup> to 50 cm<sup>2</sup>. The 758 pediatric patients (age 6 to 16 years) were evaluated in 9 controlled clinical studies, 2 open-label clinical studies, and 4 clinical pharmacology studies. Adverse reactions were assessed by collecting adverse events data, the results of physical examinations, vital signs, weights, laboratory analyses, and ECGs.

Refer to the Full Prescribing Information for details of adverse event data collection.

**Adverse Findings in Clinical Trials With Daytrana™**  
**Adverse Events Associated With Discontinuation of Treatment:** In a 7-week double-blind, parallel-group, placebo-controlled study in children with ADHD conducted in the outpatient setting, 7.1% (7/98) of patients treated with Daytrana™ discontinued due to adverse events compared with 1.2% (1/85) receiving placebo. The reasons for discontinuation among the patients treated with Daytrana™ were application site erythema, application site reaction, confusional state, crying, tics, headaches, irritability, infectious mononucleosis, and viral infection.

**Adverse Events Occurring at an Incidence of 5% or More Among Patients Treated With Daytrana™:** Table 1 enumerates the incidence of treatment-emergent adverse events reported in a 7-week double-blind, parallel-group, placebo-controlled study in children with ADHD conducted in the outpatient setting.

Adverse Event	Number (%) of Subjects Reporting Adverse Events	
	Daytrana™ (N = 98)	Placebo (N = 85)
Number of Subjects With ≥ 1 Adverse Event	74 (76)	49 (58)
Nausea	12 (12)	2 (2)
Vomiting	10 (10)	4 (5)
Nasopharyngitis	5 (5)	2 (2)
Weight decreased	9 (9)	0 (0)
Anorexia	5 (5)	1 (1)
Decreased appetite	25 (26)	4 (5)
Affect lability*	6 (6)	0 (0)
Insomnia	13 (13)	4 (5)
Tic	7 (7)	0 (0)
Nasal congestion	6 (6)	1 (1)

\* Six subjects had affect lability, all judged as mild and described as increased emotionally sensitive, emotionality, emotional instability, emotional lability, and intermittent emotional lability.

The most common events leading to withdrawal were application site reaction (12 subjects, 6%), anorexia (7 subjects, 4%), and insomnia (7 subjects, 4%).

**Adverse Events With Oral Methylphenidate Products:** Nervousness and insomnia are the most common adverse reactions reported with other methylphenidate products. In children, loss of appetite, abdominal pain, weight loss during prolonged therapy, insomnia, and tachycardia may occur more frequently; however, any of the other adverse reactions listed below may also occur. Other reactions include: **Cardiac:** angina, arrhythmia, palpitations, pulse increased or decreased, tachycardia; **Gastrointestinal:** abdominal pain, nausea; **Immune:** hypersensitivity reactions including skin rash, urticaria, fever, arthralgia, exfoliative dermatitis, erythema multiforme with histopathological findings of necrotizing vasculitis, and thrombocytopenic purpura; **Metabolism/Nutrition:** anorexia, weight loss during prolonged therapy; **Nervous System:** dizziness, drowsiness, dyskinesia, headache, rare reports of Tourette's syndrome, toxic psychosis; **Vascular:** blood pressure increased or decreased, cerebral arteritis and/or occlusion.

Although a definite causal relationship has not been established, the following have been reported in patients taking methylphenidate: **Blood/Lymphatic:** leukopenia and/or anemia; **Hepatic/Biliary:** abnormal liver function, ranging from transaminase elevation to hepatic coma; **Psychiatric:** transient depressed mood; **Skin/Subcutaneous:** scalp hair loss; **Neuroleptic Malignant Syndrome:** Very rare reports of neuroleptic malignant syndrome (NMS) have been received, and, in most of these, patients were concurrently receiving therapies associated with NMS. In a single report, a ten-year-old boy who had been taking methylphenidate for approximately 18 months experienced an NMS-like event within 45 minutes of ingesting his first dose of venlafaxine. It is uncertain whether this case represented a drug-drug interaction, a response to either drug alone, or some other cause.

**Postmarketing Reports**  
Postmarketing reports of hypersensitivity reactions, including generalized erythematous and urticarial rashes, contact dermatitis, angioedema, and anaphylaxis, have been received. Because these reactions are reported voluntarily from a population of uncertain size, it is not possible to reliably estimate their frequency or establish a causal relationship to Daytrana™ exposure.

**DRUG ABUSE AND DEPENDENCE**  
**Controlled Substance Class:** Daytrana™ (methylphenidate transdermal system), like other methylphenidate products, is classified as a Schedule II controlled substance by federal regulation.

**Abuse, Dependence, and Tolerance:** See **WARNINGS—Drug Dependence** for boxed warning containing drug abuse and dependence information.

**OVERDOSSAGE**  
**Signs and Symptoms:** Signs and symptoms of acute methylphenidate overdose, resulting principally from overstimulation of the CNS and from excessive sympathomimetic effects, may include the following: vomiting, agitation, tremors, hyperreflexia, muscle twitching, convulsions (may be followed by coma), euphoria, confusion, hallucinations, delirium, sweating, flushing, headache, hyperpyrexia, tachycardia, palpitations, cardiac arrhythmias, hypertension, mydriasis, and dryness of mucous membranes.

**Recommended Treatment:** Remove all patches immediately and cleanse the area(s) to remove any remaining adhesive. The continuing absorption of methylphenidate from the skin, even after removal of the patch, should be considered when treating patients with overdose. Treatment consists of appropriate supportive measures. The patient must be protected against self-injury and against external stimuli that would aggravate overstimulation already present. Intensive care must be provided to maintain adequate circulation and respiratory exchange; external cooling procedures may be required for hyperpyrexia. Efficacy of peritoneal dialysis or extracorporeal hemodialysis for Daytrana™ overdose has not been established.

**Poison Control Center:** As with the management of all overdoses, the possibility of multiple drug ingestion should be considered. The physician may wish to consider contacting a poison control center for up-to-date information on the management of overdose with methylphenidate.

Do not store patches unopened. Store at 25° C (77° F); excursions permitted to 15°-30° C (59°-86° F) [see USP Controlled Room Temperature]. Once the tray is opened, use contents within 2 months. Apply the patch immediately upon removal from the protective pouch. Do not store patches unopened. For transdermal use only.

**REFERENCE** American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders, 4th ed. Washington, DC: American Psychiatric Association 1994. Manufactured by Shire US Inc., Wayne, PA 19087 by Noven Pharmaceuticals, Inc., Miami, FL 33186. For more information call 1-800-828-2088 or visit [www.daytrana.com](http://www.daytrana.com).

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