

Daytrana™ (methylphenidate transdermal system)

Rx Only

Daytrana™ (day-TRON-ah)

Prescribing Information

DESCRIPTION

Daytrana™ (methylphenidate transdermal system) is an adhesive-based matrix transdermal system (patch) that is applied to intact skin. The chemical name for methylphenidate is α -phenyl-2-piperidineacetic acid methyl ester. It is a white to off-white powder and is soluble in alcohol, ethyl acetate, and ether. Methylphenidate is practically insoluble in water and petrol ether. Its molecular weight is 233.31. Its empirical formula is C₁₄H₁₉NO₂. The structural formula of methylphenidate is:



Patch Components

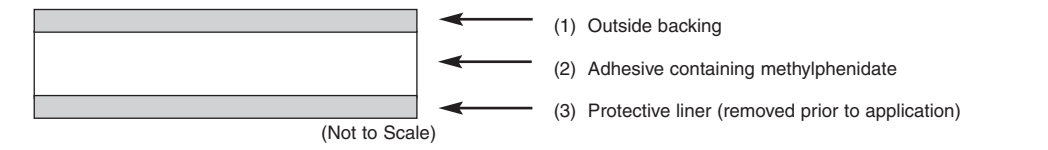
Daytrana™ contains methylphenidate in a multipolymeric adhesive. The methylphenidate is dispersed in acrylic adhesive that is dispersed in a silicone adhesive. The composition per unit area of all dosage strengths is identical, and the total dose delivered is dependent on the patch size and wear time.

Four dosage strengths are available:

Nominal Dose Delivered (mg) Over 9 Hours*	Dosage Rate* (mg/hr)	Patch Size (cm²)	Methylphenidate Content per Patch (mg)
10	1.1	12.5	27.5
15	1.6	18.75	41.3
20	2.2	25	55
30	3.3	37.5	82.5

*Nominal in vivo delivery rate in pediatric subjects aged 6-12 when applied to the hip, based on a 9-hour wear period.

The patch consists of three layers, as seen in the figure below (cross-section of the patch).



Proceeding from the outer surface toward the surface adhering to the skin, the layers are (1) a polyester/ethylene vinyl acetate laminate film backing, (2) a proprietary adhesive formulation incorporating Noven Pharmaceuticals, Inc.'s DOT Matrix™ transdermal technology consisting of an acrylic adhesive, a silicone adhesive, and methylphenidate, and (3) a fluoropolymer-coated polyester protective liner which is attached to the adhesive surface and must be removed before the patch can be used.

The active component of the patch is methylphenidate. The remaining components are pharmacologically inactive.

CLINICAL PHARMACOLOGY

Pharmacodynamics

Methylphenidate is a CNS stimulant. Its mode of therapeutic action in Attention Deficit Hyperactivity Disorder (ADHD) is not known, but methylphenidate is thought to block the reuptake of norepinephrine and dopamine into the presynaptic neuron and to increase the release of these monoamines into the extraneuronal space. Methylphenidate is a racemic mixture comprised of the *d*- and *l*-enantiomers. The *d*-enantiomer is more pharmacologically active than the *l*-enantiomer.

Pharmacokinetics

The pharmacokinetics of Daytrana™ when applied to the hip for 9 hours have been studied in ADHD patients 6 to 12 years old.

Absorption

When Daytrana™ was titrated to effect in the pivotal phase III clinical efficacy study, after at least 6 weeks of therapy with 9 hour wear times when applied to alternating hips, the mean peak *d*-methylphenidate (*d*-MPH) plasma concentration was 39 ng/mL with a range of 0 – 114 ng/mL. These mean peak concentrations varied inversely by age ranging from 25 ng/mL, (range 2 – 80 ng/mL) in 12 year olds, to 53 ng/mL, (range 18 – 83 ng/mL) in 6 year olds.

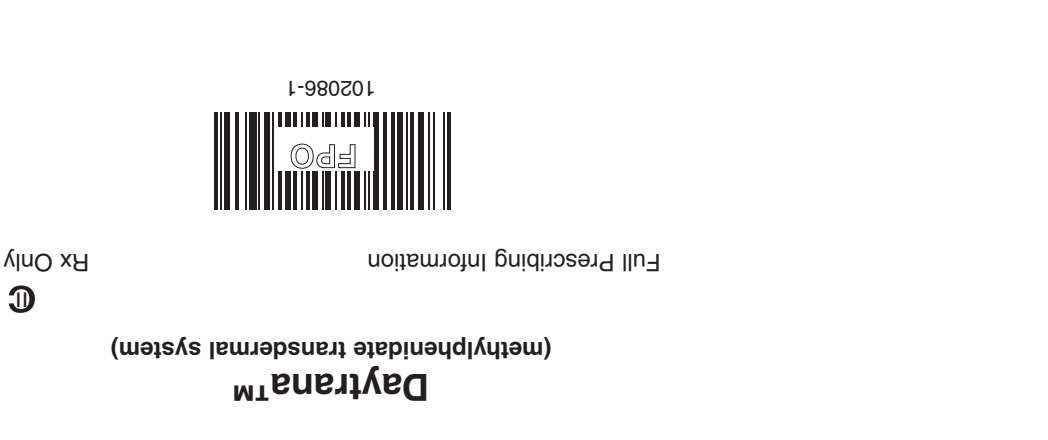
Daytrana™ mean peak *d*-MPH concentrations were approximately 1.9-4fold higher than the highest observed concentrations after a once-daily oral methylphenidate formulation over a period of 7.5 to 10.5 hours, when T_{max} typically occurs. These higher concentrations were observed for all children 6 – 12 years of age, both overall and when grouped by age. The Daytrana™ peak concentrations on chronic dosing were also higher than C_{max} seen with Daytrana™ after single dosing, or 4 days of multiple dosing. With single doses of Daytrana™, peak concentrations were comparable to C_{max} from single doses of the once daily oral MPH formulation.

The observed exposures with Daytrana™ could not be explained by drug accumulation predicted from observed single dose pharmacokinetics and there was no evidence that clearance or rate of elimination changed between single and repeat dosing. Neither were they explainable by differences in dosing parameters between treatments, age, race, or gender. This suggests that transdermal absorption of methylphenidate may increase with chronic therapy with the methylphenidate transdermal system.

On multiple dosing of the transdermal system, exposure to *l*-methylphenidate was 27% to 45% lower, on average, than exposures to *d*-methylphenidate. For comparison, little if any *l*-methylphenidate was detectable after administration of a once daily oral MPH formulation. *l*-Methylphenidate is less pharmacologically active than *d*-methylphenidate.

The average lag time (i.e., the time until any *d*-MPH is detectable in the circulation) was 3.1 hours, (range 1– 6 hours) with Daytrana™ in the single dose study. In the phase II PK/PD study, 2/3 of patients had 2-hour *d*-MPH concentrations < 5 ng/mL on chronic dosing, and at 3 hours 40% of patients had *d*-MPH concentrations < 5 ng/mL (see **CLINICAL STUDIES** - Study 1).

When Daytrana™ is applied to inflamed skin both the rate and extent of absorption are increased as compared with intact skin. When applied to inflamed skin, lag time is no greater than 1 hour, T_{max} is 4 hours, and both C_{max} and AUC are approximately 3-fold higher.



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Patient Information



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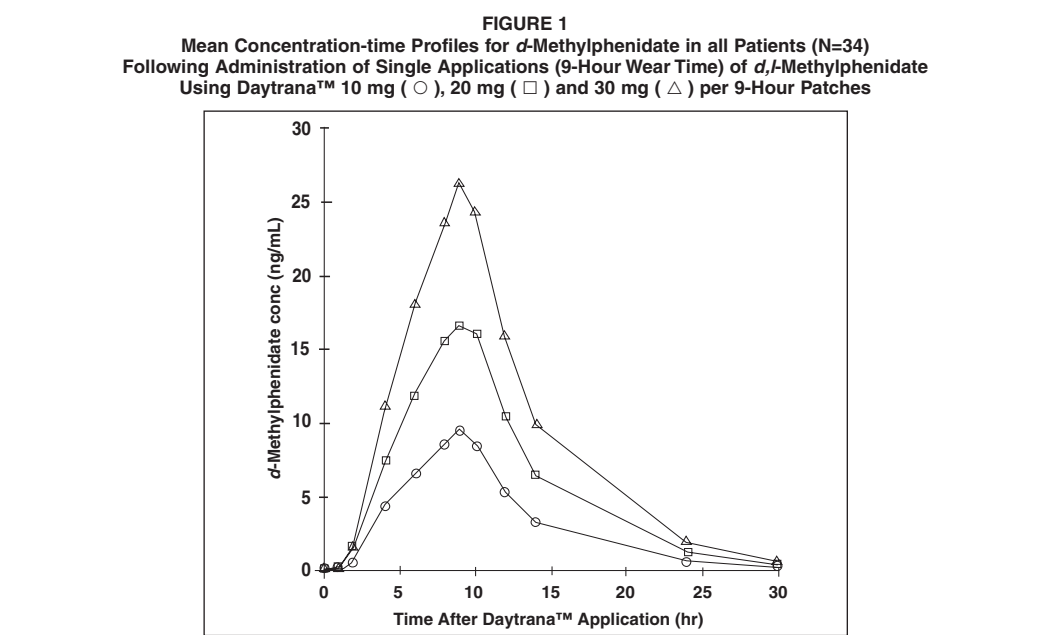
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When heat is applied to Daytrana™ after patch application, both the rate and the extent of absorption are significantly increased. Median T_{lag} occurs 1 hour earlier and T_{max} occurs 0.5 hours earlier, and median C_{max} and AUC are 2-fold and 2.5-fold higher, respectively.

Application sites other than the hip can have different absorption characteristics and have not been adequately studied in safety or efficacy studies.

Dose Proportionality

Following a single 9-hour application of Daytrana™ patch doses of 10 mg / 9 hour to 30 mg / 9 hour patches to 34 children with ADHD, C_{max} and AUC₀₋₁₂ of *d*-methylphenidate were proportional to the patch dose. Mean plasma concentration-time plots are shown in Figure 1. T_{max} of *l*-methylphenidate was also proportional to the patch dose. AUC₀₋₁₂ of *l*-methylphenidate was only slightly greater than proportional to patch dose.



Distribution

Upon removal of Daytrana™, methylphenidate plasma concentrations in children with ADHD decline in a biexponential manner. This may be due to continued distribution of MPH from the skin after patch removal.

Metabolism and Excretion

Methylphenidate is metabolized primarily by de-esterification to alpha-phenyl-piperidine acetic acid (ritalinic acid), which has little or no pharmacologic activity.

Transdermal administration of methylphenidate exhibits much less first pass effect than oral administration. Consequently, a much lower dose of Daytrana™ on a mg/kg basis compared to oral dosages may still produce higher exposures of *d*-MPH with transdermal administration compared to oral administration. In addition, very little, if any, *l*-methylphenidate is systemically available after oral administration due to first pass metabolism, whereas after transdermal administration of racemic methylphenidate exposure to *l*-methylphenidate is nearly as high as to *d*-methylphenidate.

The mean elimination 1/2 from plasma of *d*-methylphenidate after removal of Daytrana™ in children aged 6 to 12 years was approximately 3 to 4 hours. The 1/2 of *l*-methylphenidate was shorter than for *d*-methylphenidate and ranged from 1.4 to 2.9 hours, on average.

Food Effects

The pharmacokinetics or the pharmacodynamic food effect performance after application of Daytrana™ has not been studied, but because of the transdermal route of administration, no food effect is expected.

Adhesion

In a study of 20 mg / 9 hour (25 cm²) transdermal systems > 95% of patches were greater than 90% adhered, and the remainder were 75% - 90% adhered. No patients discontinued therapy during clinical trials due to adhesion failure.

Special Populations

Gender

The pharmacokinetics of methylphenidate after single and repeated doses of Daytrana™ were similar between boys and girls with ADHD, after allowance for differences in body weight.

Race

The influence of race on the pharmacokinetics of methylphenidate after administration of Daytrana™ has not been defined.

Age

The pharmacokinetics of methylphenidate after administration of Daytrana™ have not been studied in children less than 6 years of age.

Renal Insufficiency

There is no experience with the use of Daytrana™ in patients with renal insufficiency.

Hepatic Insufficiency

There is no experience with the use of Daytrana™ in patients with hepatic insufficiency.

CLINICAL STUDIES

Daytrana™ was demonstrated to be effective in the treatment of Attention Deficit Hyperactivity Disorder (ADHD) in two (2) randomized double-blind, placebo-controlled studies in children aged 6 to 12 years old who met Diagnostic and Statistical Manual (DSM-IV-TR)¹ criteria for ADHD. The patch wear time was 9 hours in both studies.

In Study 1, conducted in a classroom setting, symptoms of ADHD were evaluated by school teachers and observers using the Department Subscale from the Swanson, Kotkin, Agler, M-Flynn, and Pelham (SKAMP) rating scale which assesses behavior symptoms in the classroom setting. Daytrana™ was applied for 9 hours before removal. There was a 5-week open-label Daytrana™ dose optimization phase using dosages of 10, 15, 20, and 30 mg / 9 hours, followed by a 2-week randomized, double-blind, placebo-controlled crossover treatment phase using the optimal patch dose for each patient or placebo. The mean differences between Daytrana™ and placebo in change from baseline in SKAMP Department Scores were statistically significant in favor of Daytrana™ beginning at 2 hours and remained statistically significant at all subsequent measured timepoints through 12 hours after application of the Daytrana™ patch.

In Study 2, conducted in the outpatient setting, Daytrana™ or placebo was blindly administered in a flexible-dose design using doses of 10, 15, 20, and 30 mg / 9 hours to achieve an optimal regimen over 5 weeks, followed by a 2-week maintenance period using the optimal patch dose for each patient. Symptoms of ADHD were evaluated by the ADHD-Rating Scale (RS)-IV. Daytrana™ was statistically significantly superior to placebo as measured by the mean change from baseline for the ADHD-RS-IV total score. Although this study was not designed specifically to evaluate dose response, in general there did not appear to be any additional effectiveness accomplished by increasing the patch dose from 20 mg / 9 hours to 30 mg / 9 hours.

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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⁺, 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™ in patch sizes ranging from 6.25 cm² to 50 cm². 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.

Adverse events during exposure were obtained primarily by general inquiry at each visit, and were recorded by the clinical investigators using terminology of their own choosing. Consequently, it is not possible to provide a meaningful estimate of the proportion of individuals experiencing adverse events without first grouping similar types of events into a smaller number of standardized event categories. The stated frequencies of adverse events represent the proportion of individuals who experienced, at least once, a treatment-emergent adverse event of the type listed. An event was considered treatment emergent if it occurred for the first time or worsened while receiving therapy following baseline evaluation.

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.

The prescriber should be aware that these figures cannot be used to predict the incidence of adverse events in the course of usual medical practice where patient characteristics and other factors differ from those which prevailed in the clinical trials. Similarly, the cited frequencies cannot be compared with those obtained from other clinical investigations involving different treatments, uses, and investigators. The cited figures, however, do provide the prescribing physician with some basis for estimating the relative contribution of drug and non-drug factors to the adverse event incidence rate in the population studied.

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TABLE 1 Most Commonly Reported Treatment-Emergent Adverse Events (≥ 5% and 2x Placebo) in a 7-week Placebo-controlled Study		
System Organ Class Adverse Event	Daytrana™ (N = 98)	Placebo (N = 85)
Number of Subjects With ≥ 1 Adverse Event	74 (76)	49 (58)
Gastrointestinal Disorders		
Nausea	12 (12)	2 (2)
Vomiting	10 (10)	4 (5)
Infections and Infestations		
Nasopharyngitis	5 (5)	2 (2)
Investigations		
Weight decreased	9 (9)	0 (0)
Metabolism and Nutrition Disorders		
Anorexia	5 (5)	1 (1)
Decreased appetite	25 (26)	4 (5)
Psychiatric Disorders		
Affect lability*	6 (6)	0 (0)
Insomnia	13 (13)	4 (5)
Tic	7 (7)	0 (0)
Respiratory		
Nasal congestion	6 (6)	1 (1)

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

Skin Irritation

Daytrana™ is a dermal irritant. The majority of subjects in the pivotal phase III clinical efficacy study had minimal to definite erythema. This erythema generally caused no or minimal discomfort and did not usually interfere with therapy or result in discontinuation from treatment. If erythema, edema, and/or papules do not resolve or significantly reduce within 24 hours after patch removal, further evaluation should be sought. Erythema is not by itself an indication of contact sensitization. However, sensitization should be considered if erythema is accompanied by edema, papules, vesicles, or other evidence of more intense local reactions. Diagnosis of allergic contact dermatitis should be corroborated by appropriate diagnostic testing (see **WARNINGS – Contact Sensitization**).

Adverse Events With the Long-Term Use of Daytrana™

In a long-term open-label study of up to 40-month duration in 191 children with ADHD, the most frequently reported treatment-emergent adverse events in pediatric patients treated with Daytrana™ for 12 hours daily were anorexia (87 subjects, 46%), insomnia (57 subjects, 30%), viral infection (54 subjects, 28%), and headache (53 subjects, 28%). A total of 45 (24%) subjects were withdrawn from the study because of treatment-emergent adverse events. 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

Hepatobiliary: 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.

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.

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OVERDOSAGE

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.

DOSAGE AND ADMINISTRATION

It is recommended that Daytrana™ be applied to the hip area 2 hours before an effect is needed and should be removed 9 hours after application. Dosage should be titrated to effect. The recommended dose titration schedule is shown in the table below. Dose titration, final dosage, and wear time should be individualized according to the needs and response of the patient.

TABLE 2 Daytrana™ - Recommended Titration Schedule (Patients New to Methylphenidate)				
Patch Size	Upward Titration, if Response is Not Maximized			
	Week 1	Week 2	Week 3	Week 4
Nominal Delivered Dose* (mg/9 hours)	10 mg	15 mg	20 mg	30 mg
Delivery Rate*	(1.1 mg/hr)*	(1.6 mg/hr)*	(2.2 mg/hr)*	(3.3 mg/hr)*

*Nominal *in vivo* delivery rate in pediatric subjects aged 6-12 when applied to the hip, based on a 9-hour wear period.

Patients converting from another formulation of methylphenidate should follow the above titration schedule due to differences in bioavailability of Daytrana™ compared to other products.

Application

The parent 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. The patient information included at the end of this insert also includes a timetable to calculate when to remove Daytrana™, based on the 9-hour application time.

The adhesive side of Daytrana™ should be placed on a clean, dry area of the hip. The area selected should not be oily, damaged, or irritated. Apply patch to the hip area. Avoid the waistline, since clotting may cause the patch to rub off. When applying the patch the next morning, place on the opposite hip at a new site if possible.

Daytrana™ should be applied immediately after opening the pouch and removing the protective liner. Do not use if the pouch seal is broken. The patch should then be pressed firmly in place with the palm of the hand for approximately 30 seconds, making sure that there is good contact of the patch with the skin, especially around the edges. After proper application, bathing, swimming, or showering have not been shown to affect patch adherence. In the unlikely event that a patch should fall off, a new patch may be applied at a different site, but the total recommended wear time for that day should remain 9 hours.

Disposal of Daytrana™

Upon removal of Daytrana™, used patches should be folded so that the adhesive side of the patch adheres to itself and should be flushed down the toilet or disposed of in an appropriate lidded container. If the patient stops using the prescription, each unused patch should be removed from its pouch, separated from the protective liner, folded onto itself, and flushed down the toilet or disposed of in an appropriate lidded container.

The parent should be encouraged to record on the administration chart included with each carton the time that each patch was applied and removed. If a patch was removed without the parent or caregiver's knowledge, or if a patch is missing from the tray, the parent or caregiver should be encouraged to ask the child when and how the patch was removed.

Maintenance/Extended Treatment

There is no body of evidence available from controlled clinical trials to indicate how long the patient with ADHD should be treated with Daytrana™. It is generally agreed, however, that pharmacological treatment of ADHD may be needed for extended periods. Nevertheless, the physician who elects to use Daytrana™ for extended periods in patients with ADHD should periodically re-evaluate the long-term usefulness of the drug for the individual patient with periods off medication to assess the patient's functioning without pharmacotherapy. Improvement may be sustained when the drug is either temporarily or permanently discontinued.

Dose/Wear Time Reduction and Discontinuation

Daytrana™ may be removed earlier than 9 hours if a shorter duration of effect is desired or late day side effects appear. Plasma concentrations of *d*-methylphenidate generally begin declining when the patch is removed, although absorption may continue for several hours. Individualization of wear time may help manage some of the side effects caused by methylphenidate. If aggravation of symptoms or other adverse events occur, the dosage or wear time should be reduced, or, if necessary, the drug should be discontinued. Residual methylphenidate remains in used patches when worn as recommended.

APPLICATION INSTRUCTIONS FOR DAYTRANA™ (METHYLPHENIDATE TRANSDERMAL SYSTEM)

1. USING THE ADMINISTRATION CHART

Each carton of Daytrana™ contains an administration chart to help parents or caregivers keep track of when the patch is applied each morning, when it is removed and the method of disposal used. Daytrana™ should be worn for approximately 9 hours.

To use the administration chart, follow these instructions:

- Each day, when a new patch is applied, write down the date and time that the patch is applied.
- Use the timetable below to calculate when to remove the patch. For example, if the patch is applied at 6:00 a.m., it should be removed at 3:00 p.m. later the same day.
- After removing and disposing of the patch (see additional instructions in this insert), write down the time the patch was removed and how it was disposed.
- If the applied patch is missing, ask the child when and how the patch came off.

Timetable for 9-Hour Daytrana™ Application and Removal

If you applied the patch at:	Remove the patch at:
5:00 a.m.	2:00 p.m.
6:00 a.m.	3:00 p.m.
7:00 a.m.	4:00 p.m.
8:00 a.m.	5:00 p.m.
9:00 a.m.	6:00 p.m.
10:00 a.m.	7:00 p.m.
11:00 a.m.	8:00 p.m.
12:00 p.m.	9:00 p.m.



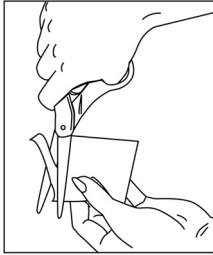
2. WHERE TO APPLY DAYTRANA™

- Apply patch to the hip area. Avoid the waistline, since clothing may cause the patch to rub off.
- When applying a new patch the next morning, use the child's opposite hip. Make sure there is no irritation at the site where the patch is going to be applied.

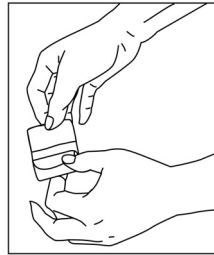
3. BEFORE YOU APPLY DAYTRANA™

Make sure the child's skin is:

- Clean (freshly washed), dry, and cool.
 - Free of any powder, oil, or lotion.
 - Free of cuts and/or irritation (rashes, inflammation, redness, or other skin problems).
3. **HOW TO APPLY DAYTRANA™**
- Open the tray containing Daytrana™ and discard the desiccant (drying agent) included in the tray.
 - Each patch is individually sealed in a protective pouch.
 - Carefully cut the protective pouch open with scissors, being careful not to cut the patch. Do not use patches that have been cut or damaged in any way.
 - Remove the patch from the pouch.



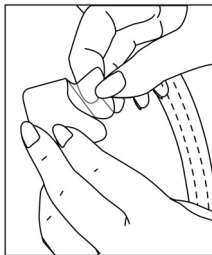
- **Apply the patch immediately after removing from pouch.**
- Holding the patch with the rigid protective liner facing you, remove **half** of the liner, which covers the sticky surface of the patch.
- Avoid touching the sticky side of the patch with your fingers.



- Using the other half of the protective liner as a handle, apply the sticky side of the patch to the selected area of the child's hip.
- Press the sticky side of the patch firmly into place and smooth it down.



- While still holding the sticky side down, fold back the other half of the patch.
- Grasp an edge of the remaining protective liner and gently pull it off.



- Avoid touching the sticky side of the patch with your fingers.



- Press the entire patch firmly into place with the palm of your hand over the patch, for approximately 30 seconds.
- Make sure that the patch is firmly adhered to the child's skin.
- Go over the edges with your fingers to assure good contact around the patch.
- Wash your hands after applying the patch.
- After the patch is applied, record the time on the administration chart on each carton, and use the timetable to calculate what time the patch should be removed.

PLEASE NOTE:

- After proper application, contact with water while bathing, swimming, or showering should not affect the patch or make it fall off.
- In the unlikely event that a patch should fall off, avoid touching the sticky side of the patch with your fingers. If this occurs, a new patch may be applied to a different area of the same hip. If a new patch is applied it is recommended that it be removed 9 hours after the first patch for that day was applied. Always wash your hands after handling a patch.
- If you forget to apply a patch in the morning, you may do so later in the day; however, you should remove the child's patch at the usual time of day to reduce the possibility of later day side effects. You can use the timetable above to know when to remove the patch.

5. HOW TO REMOVE AND DISCARD DAYTRANA™

- When you remove the patch, peel it off slowly.
- Fold the used Daytrana™ patch in half and press firmly so that the sticky side sticks to itself. **Flush the used patch down the toilet or dispose of in an appropriate lidded container right away.**
- Do not flush the pouches or the protective liners down the toilet. These items should be thrown away in an appropriate lidded container.
- If any adhesive residue remains on the child's skin after removing the patch, gently rub the area with oil or lotion to remove the residue from the skin.
- Wash your hands after handling the patch.
- After the patch is removed and disposed of, record this time on the administration chart.

UNUSED PATCHES

- **PLEASE KEEP PATCHES OUT OF REACH OF CHILDREN.**
- Throw away any unused Daytrana™ patches that are left over from the prescription as soon as they are no longer needed. Remove the leftover patches from their protective pouches and remove the protective liners. **Fold the patches in half with the sticky sides together, and flush the patches down the toilet or dispose of in an appropriate lidded container.**

This leaflet provides a summary of the most important information about Daytrana™ and methylphenidate. If you want more information, ask your doctor or pharmacist to show you the professional labeling.

Manufactured for Shire US Inc., Wayne, PA 19087 by Noven Pharmaceuticals, Inc., Miami, FL 33186.

For more information call 1-800-828-2088 or visit www.shire.com.

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Daytrana™
(methylphenidate transdermal system)

HOW SUPPLIED

Daytrana™ (methylphenidate transdermal system) is supplied in a sealed tray containing 30 or 10 individually pouched patches. See the chart below for information regarding available strengths.

Nominal Dose Delivered (mg) Over 9 Hours	Dosage Rate* (mg/hr)	Patch Size (cm ²)	Methylphenidate Content per Patch** (mg)	Patches Per Tray	NDC Number
10	1.1	12.5	27.5	30	54092-552-30
				10	54092-552-10
15	1.6	18.75	41.3	30	54092-553-30
				10	54092-553-10
20	2.2	25	55	30	54092-554-30
				10	54092-554-10
30	3.3	37.5	82.5	30	54092-555-30
				10	54092-555-10

*Nominal *in vivo* delivery rate per hour in pediatric subjects aged 6-12 when applied to the hip, based on a 9-hour wear period.

**Methylphenidate content in each patch.

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.

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