

## HIGHLIGHTS OF PRESCRIBING INFORMATION

These highlights do not include all the information needed to use VALTOCO nasal spray safely and effectively. See full prescribing information for VALTOCO nasal spray.

VALTOCO® (diazepam nasal spray), CIV  
Initial U.S. Approval: 1963

**WARNING: RISKS FROM CONCOMITANT USE WITH OPIOIDS; ABUSE, MISUSE, AND ADDICTION; and DEPENDENCE AND WITHDRAWAL REACTIONS**  
See full prescribing information for complete boxed warning

- Concomitant use of benzodiazepines and opioids may result in profound sedation, respiratory depression, coma, and death. (5.1, 7.1)
- The use of benzodiazepines, including VALTOCO, exposes users to risks of abuse, misuse, and addiction, which can lead to overdose or death. Before prescribing VALTOCO and throughout treatment, assess each patient's risk for abuse, misuse, and addiction. (5.2)
- Although VALTOCO is indicated only for intermittent use (1, 2), if used more frequently than recommended, abrupt discontinuation or rapid dosage reduction of VALTOCO may precipitate acute withdrawal reactions, which can be life-threatening. For patients using VALTOCO more frequently than recommended, to reduce the risk of withdrawal reactions, use a gradual taper to discontinue VALTOCO. (5.3)

### RECENT MAJOR CHANGES

Boxed Warning 2/2021  
Warnings and Precautions (5.2, 5.3) 2/2021

### INDICATIONS AND USAGE

VALTOCO is a benzodiazepine indicated for the acute treatment of intermittent, stereotypic episodes of frequent seizure activity (i.e., seizure clusters, acute repetitive seizures) that are distinct from a patient's usual seizure pattern in patients with epilepsy 6 years of age and older. (1)

### DOSAGE AND ADMINISTRATION

Administer VALTOCO by the nasal route only. (2.3)

Dosage is dependent on the patient's age and weight. (2.2)

*Initial Dose:* VALTOCO 5 mg and 10 mg doses are administered as a single spray intranasally into one nostril. Administration of 15 mg and 20 mg doses requires two nasal spray devices, one spray into each nostril. (2.2)

*Second Dose:* A second dose, when required, may be administered at least 4 hours after the initial dose. If administered, use a new blister pack. (2.2)

*Maximum Dosage and Treatment Frequency:* Do not use more than 2 doses to treat a single episode. It is recommended that VALTOCO be used to treat no more than one episode every five days and no more than five episodes per month. (2.2)

### DOSAGE FORMS AND STRENGTHS

Nasal spray: 5 mg, 7.5 mg, or 10 mg of diazepam in 0.1 mL. (3)

### CONTRAINDICATIONS

- Hypersensitivity to diazepam. (4)
- Acute narrow-angle glaucoma. (4)

### WARNINGS AND PRECAUTIONS

- *CNS Depression:* May cause an increased CNS-depressant effect when used with alcohol or other CNS depressants. (5.2)
- *Suicidal Behavior and Ideation:* Antiepileptic drugs increase the risk of suicidal ideation and behavior. (5.3)

### ADVERSE REACTIONS

The most common adverse reactions (at least 4%) were somnolence, headache, and nasal discomfort. (6.1)

To report SUSPECTED ADVERSE REACTIONS, contact Neurelis, Inc. at 1-866-696-3873 or FDA at 1-800-FDA-1088 or [www.fda.gov/medwatch](http://www.fda.gov/medwatch).

### DRUG INTERACTIONS

- *CYP2C19 and CYP3A4 Inhibitors:* Adverse reactions with VALTOCO may be increased. (7.3)
- *Inducers of CYP2C19 and CYP3A4 Inducers:* Exposure of diazepam after VALTOCO administration may be decreased. (7.3)

### USE IN SPECIFIC POPULATIONS

- *Pregnancy:* Based on animal data, may cause fetal harm. (8.1)

See 17 for PATIENT COUNSELING INFORMATION and Medication Guide.

Revised: 2/2021

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## FULL PRESCRIBING INFORMATION

### WARNING: RISKS FROM CONCOMITANT USE WITH OPIOIDS; ABUSE, MISUSE, AND ADDICTION; and DEPENDENCE AND WITHDRAWAL REACTIONS

- Concomitant use of benzodiazepines and opioids may result in profound sedation, respiratory depression, coma, and death. Reserve concomitant prescribing of these drugs for patients for whom alternative treatment options are inadequate. Limit dosages and durations to the minimum required. Follow patients for signs and symptoms of respiratory depression and sedation [see *Warnings and Precautions (5.1)* and *Drug Interactions (7.1)*].
- The use of benzodiazepines, including VALTOCO, exposes users to risks of abuse, misuse, and addiction, which can lead to overdose or death. Abuse and misuse of benzodiazepines commonly involve concomitant use of other medications, alcohol, and/or illicit substances, which is associated with an increased frequency of serious adverse outcomes. Before prescribing VALTOCO and throughout treatment, assess each patient's risk for abuse, misuse, and addiction [see *Warnings and Precautions (5.2)*].
- The continued use of benzodiazepines may lead to clinically significant physical dependence. The risks of dependence and withdrawal increase with longer treatment duration and higher daily dose. Although VALTOCO is indicated only for intermittent use [see *Indications and Usage (1)* and *Dosage and Administration (2)*], if used more frequently than recommended, abrupt discontinuation or rapid dosage reduction of VALTOCO may precipitate acute withdrawal reactions, which can be life-threatening. For patients using VALTOCO more frequently than recommended, to reduce the risk of withdrawal reactions, use a gradual taper to discontinue VALTOCO [see *Warnings and Precautions (5.3)*].

## 1 INDICATIONS AND USAGE

VALTOCO<sup>®</sup> is indicated for the acute treatment of intermittent, stereotypic episodes of frequent seizure activity (i.e., seizure clusters, acute repetitive seizures) that are distinct from a patient's usual seizure pattern in patients with epilepsy 6 years of age and older.

## 2 DOSAGE AND ADMINISTRATION

### 2.1 Instructions Prior to Dosing

Prior to treatment, healthcare professionals should instruct the individual administering VALTOCO on how to identify seizure clusters and use the product appropriately [see *Dosage and Administration (2.3)* and *Patient Counseling Information (17)*].

### 2.2 Dosing Information

The recommended dose of VALTOCO nasal spray is 0.2 mg/kg or 0.3 mg/kg, depending on the patient's age and weight. See [Table 1](#) for specific recommendations.

The following table provides the acceptable weight ranges for each dose and age category, such that patients will receive between 90% and 180% of the calculated recommended dose.

**Table 1: Recommended Dosage for Adults and Pediatric Patients 6 Years of Age and Older**

Dose Based on Age and Weight			Administration	
6 to 11 Years of Age (0.3 mg/kg)	12 Years of Age and Older (0.2 mg/kg)	Dose (mg)	Number of Nasal Spray Devices	Number of Sprays
Weight (kg)	Weight (kg)			
10 to 18	14 to 27	5	One 5 mg device	One spray in one nostril
19 to 37	28 to 50	10	One 10 mg device	One spray in one nostril
38 to 55	51 to 75	15	Two 7.5 mg devices	One spray in each nostril
56 to 74	76 and up	20	Two 10 mg devices	One spray in each nostril

Second Dose (if needed): A second dose, when required, may be administered after at least 4 hours after the initial dose. If the second dose is to be administered, use a new blister pack of VALTOCO.

Maximum Dosage and Treatment Frequency: Do not use more than 2 doses of VALTOCO to treat a single episode.

It is recommended that VALTOCO be used to treat no more than one episode every five days and no more than five episodes per month.

### 2.3 Important Administration Instructions

VALTOCO is for intranasal use only.

No device assembly is required. VALTOCO is a ready-to-use nasal spray device. VALTOCO nasal spray delivers its entire contents upon activation. Do not prime or attempt to use for more than one administration per device.

Patients and caregivers should be counseled to read carefully the “Instructions for Use” for complete directions on how to properly administer VALTOCO.

## 3 DOSAGE FORMS AND STRENGTHS

VALTOCO is available in 5 mg, 7.5 mg, and 10 mg strengths. Each VALTOCO nasal spray device contains 0.1 mL solution.

## 4 CONTRAINDICATIONS

VALTOCO nasal spray is contraindicated in patients with:

- Known hypersensitivity to diazepam
- Acute narrow angle glaucoma [see Warnings and Precautions (5.6)]

## 5 WARNINGS AND PRECAUTIONS

### 5.1 Risk of Concomitant Use with Opioids

Concomitant use of benzodiazepines, including VALTOCO, and opioids may result in profound sedation, respiratory depression, coma, and death [see *Drug Interactions (7.1)*]. Because of these risks, reserve concomitant prescribing of benzodiazepines and opioids for patients for whom alternative treatment options are inadequate.

Observational studies have demonstrated that concomitant use of opioid analgesics and benzodiazepines increases the risk of drug-related mortality compared to use of opioids alone. If a decision is made to prescribe VALTOCO concomitantly with opioids, prescribe the lowest effective dosages and minimum durations of concomitant use, and follow patients closely for signs and symptoms of respiratory depression and sedation. Advise both patients and caregivers about the risks of respiratory depression and sedation when VALTOCO is used with opioids.

### 5.2 Abuse, Misuse, and Addiction

The use of benzodiazepines, including VALTOCO, exposes users to the risks of abuse, misuse, and addiction, which can lead to overdose or death. Abuse and misuse of benzodiazepines often (but not always) involve the use of doses greater than the maximum recommended dosage and commonly involve concomitant use of other medications, alcohol, and/or illicit substances, which is associated with an increased frequency of serious adverse outcomes, including respiratory depression, overdose, or death [see *Drug Abuse and Dependence (9.2)*].

Before prescribing VALTOCO and throughout treatment, assess each patient's risk for abuse, misuse, and addiction. Use of VALTOCO, particularly in patients at elevated risk, necessitates counseling about the risks and proper use of VALTOCO along with monitoring for signs and symptoms of abuse, misuse, and addiction. Do not exceed the recommended dosing frequency; avoid or minimize concomitant use of CNS depressants and other substances associated with abuse, misuse, and addiction (e.g., opioid analgesics, stimulants); and advise patients on the proper disposal of unused drug. If a substance use disorder is suspected, evaluate the patient and institute (or refer them for) early treatment, as appropriate.

### 5.3 Dependence and Withdrawal Reactions After Use of VALTOCO More Frequently Than Recommended

For patients using VALTOCO more frequently than recommended, to reduce the risk of withdrawal reactions, use a gradual taper to discontinue VALTOCO (a patient-specific plan should be used to taper the dose).

Patients at an increased risk of withdrawal adverse reactions after benzodiazepine discontinuation or rapid dosage reduction include those who take higher dosages, and those who have had longer durations of use.

#### Acute Withdrawal Reactions

The continued use of benzodiazepines may lead to clinically significant physical dependence. Although VALTOCO is indicated only for intermittent use [see *Indications and Usage (1) and Dosage and Administration (2)*], if used more frequently than recommended, abrupt discontinuation or rapid dosage reduction of VALTOCO, or administration of flumazenil (a benzodiazepine antagonist) may precipitate acute withdrawal reactions, which can be life-threatening (e.g., seizures) [see *Drug Abuse and Dependence (9.3)*].

### Protracted Withdrawal Syndrome

In some cases, benzodiazepine users have developed a protracted withdrawal syndrome with withdrawal symptoms lasting weeks to more than 12 months [*see Drug Abuse and Dependence (9.3)*].

## **5.4 CNS Depression**

Benzodiazepines, including VALTOCO, may produce CNS depression. Caution patients against engaging in hazardous activities requiring mental alertness (e.g., operating machinery, driving a motor vehicle, or riding a bicycle) until the effects of the drug, such as drowsiness, have subsided, and as their medical condition permits. Although VALTOCO is indicated for use solely on an intermittent basis, the potential for synergistic CNS-depressant effects when used simultaneously with alcohol or other CNS depressants must be considered by the prescriber and appropriate recommendations made to the patient and/or caregiver.

## **5.5 Suicidal Behavior and Ideation**

Antiepileptic drugs (AEDs), including VALTOCO, increase the risk of suicidal thoughts or behavior in patients taking these drugs for any indication. Patients treated with any AED for any indication should be monitored for the emergence or worsening of depression, suicidal thoughts or behavior, and/or any unusual changes in mood or behavior.

Pooled analyses of 199 placebo-controlled clinical trials (mono- and adjunctive therapy) of 11 different AEDs showed that patients randomized to one of the AEDs had approximately twice the risk (adjusted Relative Risk 1.8, 95% CI:1.2, 2.7) of suicidal thinking or behavior compared to patients randomized to placebo. In these trials, which had a median treatment duration of 12 weeks, the estimated incidence rate of suicidal behavior or ideation among 27,863 AED-treated patients was 0.43%, compared to 0.24% among 16,029 placebo-treated patients, representing an increase of approximately one case of suicidal thinking or behavior for every 530 patients treated. There were four suicides in drug-treated patients in the trials and none in placebo-treated patients, but the number is too small to allow any conclusion about drug effect on suicide.

The increased risk of suicidal thoughts or behavior with AEDs was observed as early as one week after starting drug treatment with AEDs and persisted for the duration of treatment assessed. Because most trials included in the analysis did not extend beyond 24 weeks, the risk of suicidal thoughts or behavior beyond 24 weeks could not be assessed. The risk of suicidal thoughts or behavior was generally consistent among drugs in the data analyzed. The finding of increased risk with AEDs of varying mechanisms of action and across a range of indications suggests that the risk applies to all AEDs used for any indication. The risk did not vary substantially by age (5-100 years) in the clinical trials analyzed. [Table 2](#) shows absolute and relative risk by indication for all evaluated AEDs.

**Table 2: Risk by Indication for Antiepileptic Drugs in the Pooled Analysis**

Indication	Placebo Patients with Events/1000 Patients	Drug Patients with Events per 1000 Patients	Relative Risk: Incidence of Drug Events in Drug Patients /Incidence in Placebo Patients	Risk Difference: Additional Drug Patients with Events per 1000 Patients
Epilepsy	1.0	3.4	3.5	2.4
Psychiatric	5.7	8.5	1.5	2.9
Other	1.0	1.8	1.9	0.9
Total	2.4	4.3	1.8	1.9

The relative risk for suicidal thoughts or behavior was higher in clinical trials for epilepsy than in clinical trials for psychiatric or other conditions, but the absolute risk differences were similar for the epilepsy and psychiatric indications.

Anyone considering prescribing VALTOCO or any other AED must balance the risk of suicidal thoughts or behaviors with the risk of untreated illness. Epilepsy and many other illnesses for which AEDs are prescribed are themselves associated with morbidity and mortality and an increased risk of suicidal thoughts and behavior. Should suicidal thoughts and behavior emerge during treatment, the prescriber needs to consider whether the emergence of these symptoms in any given patient may be related to the illness being treated.

## 5.6 Glaucoma

Benzodiazepines, including VALTOCO, can increase intraocular pressure in patients with glaucoma. VALTOCO may be used in patients with open-angle glaucoma only if they are receiving appropriate therapy. VALTOCO is contraindicated in patients with narrow-angle glaucoma.

## 5.7 Risk of Serious Adverse Reactions in Infants due to Benzyl Alcohol Preservative

VALTOCO is not approved for use in neonates or infants. Serious and fatal adverse reactions including “gaspings syndrome” can occur in neonates and low birth weight infants treated with benzyl alcohol-preserved drugs, including VALTOCO. The “gaspings syndrome” is characterized by central nervous system depression, metabolic acidosis, and gasping respirations. The minimum amount of benzyl alcohol at which serious adverse reactions may occur is not known (VALTOCO contains 10.5 mg of benzyl alcohol per 0.1 mL) [see *Use in Specific Populations (8.4)*].

## 6 ADVERSE REACTIONS

The following serious adverse reactions are discussed elsewhere in the labeling:

- Risk of Concomitant Use with Opioids [see *Warnings and Precautions (5.1)*]
- Abuse, Misuse, and Addiction [see *Warnings and Precautions (5.2)*]
- Dependence and Withdrawal Reactions After Use of VALTOCO More Frequently Than

Recommended [see *Warnings and Precautions (5.3)*]

- CNS depression [see *Warnings and Precautions (5.4)*]
- Suicidal Behavior and Ideation [see *Warnings and Precautions (5.5)*]
- Glaucoma [see *Warnings and Precautions (5.6)*]
- Risk of Serious Adverse Reactions in Infants due to Benzyl Alcohol Preservative [see *Warnings and Precautions (5.7)*].

## 6.1 Clinical Trials Experience

Because clinical studies are conducted under widely varying conditions, adverse reaction rates observed in the clinical studies of a drug cannot be directly compared to the rates in the clinical studies of another drug and may not reflect the rates observed in practice. The safety of VALTOCO is supported by clinical trials using diazepam rectal gel, as well as open-label, repeat-dose studies of VALTOCO in healthy subjects and epilepsy patients.

### Diazepam Rectal Gel

In studies previously conducted with diazepam rectal gel, adverse event data were collected from double-blind, placebo-controlled studies and open-label studies. The majority of adverse events were mild to moderate in severity and transient in nature.

Two patients who received diazepam rectal gel died seven to 15 weeks following treatment; neither of these deaths was deemed related to diazepam rectal gel.

The most frequent adverse reactions (at least 4%) in the two double-blind, placebo-controlled studies were somnolence, headache, and diarrhea. Adverse events were usually mild or moderate in intensity.

Approximately 1.4% of the 573 patients who received diazepam rectal gel in clinical trials of epilepsy discontinued treatment because of an adverse event. The adverse reaction most frequently associated with discontinuation (occurring in three patients) was somnolence. Other adverse reactions most commonly associated with discontinuation and occurring in two patients were hypoventilation and rash. Adverse reactions associated with discontinuation occurring in one patient were asthenia, hyperkinesia, incoordination, vasodilatation, and urticaria.

In the two double-blind, placebo-controlled, parallel-group studies [see *Clinical Studies (14)*], the proportion of patients who discontinued treatment because of adverse events was 2% for the group treated with diazepam rectal gel, versus 2% for the placebo group. In the diazepam rectal gel group, one patient discontinued because of rash and one patient discontinued because of lethargy.

**Table 3: Adverse Reactions That Occurred in Greater Than 1% Of Patients in Parallel-Group, Placebo-Controlled Trials with Diazepam Rectal Gel and More Common Than Placebo**

<b>Adverse Reaction</b>	<b>Diazepam Rectal Gel N=101 %</b>	<b>Placebo N=104 %</b>
Somnolence	23	8
Headache	5	4
Diarrhea	4	<1
Ataxia	3	<1
Dizziness	3	2
Euphoria	3	0
Incoordination	3	0
Rash	3	0
Asthma	2	0
Vasodilation	2	0

#### VALTOCO (Diazepam Nasal Spray)

Clinical studies of patients with epilepsy 6 years of age and older were conducted to support the safety and tolerability of VALTOCO for the treatment of acute repetitive seizures. A total of 190 patients 6 years of age and older received VALTOCO, of whom 114 received VALTOCO for at least 6 months, and 67 for at least 1 year. Other than adverse reactions related to local nasal administration, the adverse reactions reported in these studies were similar to those seen in the efficacy trials of diazepam rectal gel.

The most common local adverse reactions that occurred in VALTOCO-treated patients were nasal discomfort (6%), nasal congestion (3%), epistaxis (3%), and dysgeusia (2%).

#### Other Adverse Reactions

Diazepam rectal gel has previously been administered to 573 patients with epilepsy during all clinical trials, only some of which were placebo-controlled. All of the events listed below occurred in at least 1% of the 573 individuals exposed to diazepam rectal gel.

Body as a Whole: Asthenia

Cardiovascular: Hypotension, vasodilatation

Nervous: Agitation, confusion, convulsion, dysarthria, emotional lability, speech disorder, thinking abnormal, vertigo

Respiratory: Hiccup

The following infrequent adverse events have been reported previously with diazepam use: depression, slurred speech, syncope, changes in libido, urinary retention, bradycardia, cardiovascular collapse, nystagmus, urticaria, neutropenia, and jaundice.

Paradoxical reactions such as acute hyperexcited states, anxiety, hallucinations, increased muscle spasticity, insomnia, rage, sleep disturbances and stimulation have been reported with other diazepam products. If these events occur with the use of VALTOCO, the prescriber should consider discontinuation of use.

## 7 DRUG INTERACTIONS

### 7.1 Effect of Concomitant Use of Benzodiazepines and Opioids

The concomitant use of benzodiazepines and opioids increases the risk of respiratory depression because of actions at different receptor sites in the CNS that control respiration. Benzodiazepines interact at GABA-A sites, and opioids interact primarily at mu receptors. When benzodiazepines and opioids are combined, the potential for benzodiazepines to significantly worsen opioid-related respiratory depression exists [*see Warnings and Precautions (5.1)*]. Limit dosage and duration of concomitant use of benzodiazepines and opioids, and follow patients closely for respiratory depression and sedation.

### 7.2 CNS Depressants and Alcohol

Coadministration of other CNS depressants (e.g., valproate) or consumption of alcohol may potentiate the CNS-depressant effects of diazepam [*see Warnings and Precautions (5.4)*].

### 7.3 Effect of Other Drugs on VALTOCO Metabolism

Potential interactions may occur when diazepam is given concurrently with agents that affect CYP2C19 and CYP3A4 activity.

#### Inhibitors of CYP2C19 and CYP3A4

Inhibitors of CYP2C19 (e.g., cimetidine, quinidine, and tranylcypramine) and CYP3A4 (e.g., ketoconazole, troleandomycin, and clotrimazole) could decrease the rate of diazepam elimination; therefore, adverse reactions to VALTOCO may be increased.

#### Inducers of CYP2C19 and CYP3A4

Inducers of CYP2C19 (e.g., rifampin) and CYP3A4 (e.g., carbamazepine, phenytoin, dexamethasone, and phenobarbital) could increase the rate of diazepam elimination; therefore, efficacy of VALTOCO may be decreased.

### 7.4 Effect of VALTOCO on the Metabolism of Other Drugs

Diazepam is a substrate for CYP2C19 and CYP3A4; therefore, it is possible that VALTOCO may interfere with the metabolism of drugs which are substrates for CYP2C19 (e.g., omeprazole, propranolol, and imipramine) and CYP3A4 (e.g., cyclosporine, paclitaxel, terfenadine, theophylline, and warfarin) leading to a potential drug-drug interaction.

## 8 USE IN SPECIFIC POPULATIONS

### 8.1 Pregnancy

#### Pregnancy Exposure Registry

There is a pregnancy exposure registry that monitors pregnancy outcomes in women exposed to antiepileptic drugs (AEDs), such as VALTOCO, during pregnancy. Encourage women who are taking VALTOCO during pregnancy to enroll in the North American Antiepileptic Drug (NAAED) Pregnancy Registry by calling 1-888-233-2334 or visiting <http://www.aedpregnancyregistry.org>.

#### Risk Summary

There are no adequate data on the use of VALTOCO in pregnant women. Available data suggest that the class of benzodiazepines is not associated with marked increases in risk for congenital anomalies. Although some early epidemiological studies suggested a relationship between benzodiazepine use in pregnancy and congenital anomalies such as cleft lip and or palate, these studies had considerable limitations. More recently completed studies of benzodiazepine use in pregnancy have not consistently documented elevated risks for specific congenital anomalies. There is insufficient evidence to assess the effect of benzodiazepine pregnancy exposure on neurodevelopment.

There are clinical considerations regarding exposure to benzodiazepines during the second and third trimesters of pregnancy or immediately prior to or during childbirth. These risks include decreased fetal movement and/or fetal heart rate variability, floppy infant syndrome, dependence, and withdrawal (*see Clinical Considerations and Human Data*).

In animal studies, administration of diazepam during the organogenesis period of pregnancy resulted in increased incidences of fetal malformations at doses greater than those used clinically. Data for diazepam and other benzodiazepines suggest the possibility of increased neuronal cell death and long-term effects on neurobehavioral and immunological function based on findings in animals following prenatal or early postnatal exposure at clinically relevant doses (*see Animal Data*).

Advise a pregnant woman and women of childbearing age of the potential risk to a fetus.

In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively. The estimated background risk of major birth defects and miscarriage for the indicated population is unknown.

#### Clinical Considerations

##### *Fetal/Neonatal Adverse Reactions*

Infants born to mothers who have taken benzodiazepines during the later stages of pregnancy can develop dependence, and subsequently withdrawal, during the postnatal period. Clinical manifestations of withdrawal or neonatal abstinence syndrome may include hypertonia,

hyperreflexia, hypoventilation, irritability, tremors, diarrhea, and vomiting. These complications can appear shortly after delivery to 3 weeks after birth and persist from hours to several months depending on the degree of dependence and the pharmacokinetic profile of the benzodiazepine. Symptoms may be mild and transient or severe. Standard management for neonatal withdrawal syndrome has not yet been defined. Observe newborns who are exposed to VALTOCO in utero during the later stages of pregnancy for symptoms of withdrawal and manage accordingly.

### *Labor and Delivery*

Administration of benzodiazepines immediately prior to or during childbirth can result in a floppy infant syndrome, which is characterized by lethargy, hypothermia, hypotonia, respiratory depression, and difficulty feeding. Floppy infant syndrome occurs mainly within the first hours after birth and may last up to 14 days. Observe exposed newborns for these symptoms and manage accordingly.

### Data

#### *Human Data*

##### Congenital Anomalies

Although there are no adequate and well-controlled studies of VALTOCO in pregnant women, there is information about benzodiazepines as a class. Dolovich et al. published a meta-analysis of 23 studies that examined the effects of benzodiazepine exposure during the first trimester of pregnancy. Eleven of the 23 studies included in the meta-analysis considered the use of chlordiazepoxide and diazepam and not other benzodiazepines. The authors considered case-control and cohort studies separately. The data from the cohort studies did not suggest an increased risk for major malformations (OR 0.90; 95% CI 0.61—1.35) or for oral cleft (OR 1.19; 95% CI 0.34—4.15). The data from the case-control studies suggested an association between benzodiazepines and major malformations (OR 3.01, 95% CI 1.32— 6.84) and oral cleft (OR 1.79; 95% CI 1.13—2.82). The limitations of this meta-analysis included the small number of reports included in the analysis, and that most cases for analyses of both oral cleft and major malformations came from only three studies. A follow up to that meta-analysis included 3 new cohort studies that examined risk for major malformations and one study that considered cardiac malformations. The authors found no new studies with an outcome of oral clefts. After the addition of the new studies, the odds ratio for major malformations with first trimester exposure to benzodiazepines was 1.07 (95% CI 0.91—1.25).

##### Neonatal Withdrawal and Floppy Infant Syndrome

Neonatal withdrawal syndrome and symptoms suggestive of floppy infant syndrome associated with administration of benzodiazepines during the later stages of pregnancy and peripartum period have been reported. Findings in published scientific literature suggest that the major neonatal side effects of benzodiazepines include sedation and dependence with withdrawal signs. Data from observational studies suggest that fetal exposure to benzodiazepines is associated with the neonatal adverse events of hypotonia, respiratory problems, hypoventilation, low Apgar score, and neonatal withdrawal syndrome.

### *Animal Data*

Diazepam has been shown to produce increased incidences of fetal malformations in mice and hamsters when given orally at single doses of 100 mg/kg or greater (approximately 13 times the maximum recommended human dose [MRHD = 0.6mg/kg/day] or greater on a mg/m<sup>2</sup> basis). Cleft palate and exencephaly are the most common and consistently reported malformations produced in these species by administration of high, maternally-toxic doses of diazepam during organogenesis.

In published animal studies, administration of benzodiazepines or other drugs that enhance GABAergic inhibition to neonatal rats has been reported to result in widespread apoptotic neurodegeneration in the developing brain at plasma concentrations relevant for seizure control in humans. The window of vulnerability to these changes in rats (postnatal days 0-14) includes a period of brain development that takes place during the third trimester of pregnancy in humans.

## **8.2 Lactation**

### Risk Summary

Diazepam is excreted in human milk.

There are no data to assess the effects of VALTOCO and/or its active metabolite(s) on the breastfed infant or on milk production. Postmarketing experience suggests that breastfed infants of mothers taking benzodiazepines, such as VALTOCO, may have effects of lethargy, somnolence, and poor sucking.

The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for VALTOCO nasal spray and any potential adverse effects on the breastfed infant from VALTOCO or from the underlying maternal condition.

## **8.4 Pediatric Use**

Safety and effectiveness of VALTOCO have been established in pediatric patients 6 years to 16 years of age. Use of VALTOCO in this age group is supported by evidence from adequate and well-controlled studies of diazepam rectal gel in adult and pediatric patients, adult bioavailability studies comparing VALTOCO with diazepam rectal gel, patient pharmacokinetic data, and an open-label safety study of VALTOCO including patients 6 years to 16 years of age [*see Adverse Reactions (6.1), Clinical Pharmacology (12.3), and Clinical Studies (14)*].

Safety and effectiveness of VALTOCO in pediatric patients below the age of 6 have not been established.

VALTOCO is not approved for use in neonates or infants.

- Prolonged CNS depression has been observed in neonates treated with diazepam.
- Serious adverse reactions including fatal reactions and the “gaspings syndrome” occurred in premature neonates and low-birth-weight infants in the neonatal intensive care unit who received drugs containing benzyl alcohol as a preservative. In these cases, benzyl

alcohol dosages of 99 to 234 mg/kg/day produced high levels of benzyl alcohol and its metabolites in the blood and urine (blood levels of benzyl alcohol were 0.61 to 1.378 mmol/L). Additional adverse reactions included gradual neurological deterioration, seizures, intracranial hemorrhage, hematologic abnormalities, skin breakdown, hepatic and renal failure, hypotension, bradycardia, and cardiovascular collapse. Preterm, low-birth-weight infants may be more likely to develop these reactions because they may be less able to metabolize benzyl alcohol. The minimum amount of benzyl alcohol at which serious adverse reactions may occur is not known (VALTOCO contains 10.5 mg of benzyl alcohol per 0.1 mL) [*see Warnings and Precautions (5.7)*].

## 8.5 Geriatric Use

Clinical studies of VALTOCO did not include sufficient numbers of subjects aged 65 and over to determine whether they respond differently from younger subjects.

Therefore, in elderly patients, VALTOCO should be used with caution because of an increase in half-life with a corresponding decrease in the clearance of free diazepam [*see Clinical Pharmacology (12.3)*]. It is also recommended that the dosage be decreased to reduce the likelihood of ataxia or oversedation.

## 8.6 Compromised Respiratory Function

VALTOCO should be used with caution in patients with compromised respiratory function related to a concurrent disease process (e.g., asthma, pneumonia) or neurologic damage.

# 9 DRUG ABUSE AND DEPENDENCE

## 9.1 Controlled Substance

VALTOCO contains diazepam, a Schedule IV controlled substance.

## 9.2 Abuse

VALTOCO is a benzodiazepine and a CNS depressant with a potential for abuse and addiction. Abuse is the intentional, non-therapeutic use of a drug, even once, for its desirable psychological or physiological effects. Misuse is the intentional use, for therapeutic purposes, of a drug by an individual in a way other than prescribed by a health care provider or for whom it was not prescribed. Drug addiction is a cluster of behavioral, cognitive, and physiological phenomena that may include a strong desire to take the drug, difficulties in controlling drug use (e.g., continuing drug use despite harmful consequences, giving a higher priority to drug use than other activities and obligations), and possible tolerance or physical dependence. Even taking benzodiazepines as prescribed may put patients at risk for abuse and misuse of their medication. Abuse and misuse of benzodiazepines may lead to addiction.

Abuse and misuse of benzodiazepines often (but not always) involve the use of doses greater than the maximum recommended dosage and commonly involve concomitant use of other medications, alcohol, and/or illicit substances, which is associated with an increased frequency of serious adverse outcomes, including respiratory depression, overdose, or death. Benzodiazepines are often sought by individuals who abuse drugs and other substances, and by individuals with addictive disorders [*see Warnings and Precautions (5.2)*].

The following adverse reactions have occurred with benzodiazepine abuse and/or misuse: abdominal pain, amnesia, anorexia, anxiety, aggression, ataxia, blurred vision, confusion, depression, disinhibition, disorientation, dizziness, euphoria, impaired concentration and memory, indigestion, irritability, muscle pain, slurred speech, tremors, and vertigo.

The following severe adverse reactions have occurred with benzodiazepine abuse and/or misuse: delirium, paranoia, suicidal ideation and behavior, seizures, coma, breathing difficulty, and death. Death is more often associated with polysubstance use (especially benzodiazepines with other CNS depressants such as opioids and alcohol).

In the clinical studies with VALTOCO at recommended doses, abuse-related adverse events included euphoria, somnolence, sedation, anterograde amnesia, depression, anxiety, hallucinations, and restlessness.

### 9.3 Dependence

#### Physical Dependence After Use of VALTOCO More Frequently Than Recommended

VALTOCO may produce physical dependence if used more frequently than recommended. Physical dependence is a state that develops as a result of physiological adaptation in response to repeated drug use, manifested by withdrawal signs and symptoms after abrupt discontinuation or a significant dose reduction of a drug. Although VALTOCO is indicated only for intermittent use [*see Indications and Usage (1) and Dosage and Administration (2)*], if used more frequently than recommended, abrupt discontinuation or rapid dosage reduction or administration of flumazenil, a benzodiazepine antagonist, may precipitate acute withdrawal reactions, including seizures, which can be life-threatening. Patients at an increased risk of withdrawal adverse reactions after benzodiazepine discontinuation or rapid dosage reduction include those who take higher dosages (i.e., higher and/or more frequent doses) and those who have had longer durations of use [*see Warnings and Precautions (5.3)*]. For patients using VALTOCO more frequently than recommended, to reduce the risk of withdrawal reactions, use a gradual taper to discontinue VALTOCO [*see Warnings and Precautions (5.3)*].

#### *Acute Withdrawal Signs and Symptoms*

Acute withdrawal signs and symptoms associated with benzodiazepines have included abnormal involuntary movements, anxiety, blurred vision, depersonalization, depression, derealization, dizziness, fatigue, gastrointestinal adverse reactions (e.g., nausea, vomiting, diarrhea, weight loss, decreased appetite), headache, hyperacusis, hypertension, irritability, insomnia, memory impairment, muscle pain and stiffness, panic attacks, photophobia, restlessness, tachycardia, and tremor. More severe acute withdrawal signs and symptoms, including life-threatening reactions, have included catatonia, convulsions, delirium tremens, depression, hallucinations, mania, psychosis, seizures, and suicidality.

#### *Protracted Withdrawal Syndrome*

Protracted withdrawal syndrome associated with benzodiazepines is characterized by anxiety, cognitive impairment, depression, insomnia, formication, motor symptoms (e.g., weakness, tremor, muscle twitches), paresthesia, and tinnitus that persists beyond 4 to 6 weeks after initial benzodiazepine withdrawal. Protracted withdrawal symptoms may last weeks to more than 12 months. As a result, there may be difficulty in differentiating withdrawal symptoms from potential re-emergence or continuation of symptoms for which the benzodiazepine was being used.

## Tolerance

Tolerance to VALTOCO may develop after use more frequently than recommended. Tolerance is a physiological state characterized by a reduced response to a drug after repeated administration (i.e., a higher dose of a drug is required to produce the same effect that was once obtained at a lower dose). Tolerance to the therapeutic effect of benzodiazepines may develop; however, little tolerance develops to the amnestic reactions and other cognitive impairments caused by benzodiazepines.

It is recommended that patients be treated with VALTOCO no more frequently than every five days and no more than five times per month.

VALTOCO is not recommended for chronic, daily use as an anticonvulsant. Chronic daily use of diazepam may increase the frequency and/or severity of tonic clonic seizures, requiring an increase in the dosage of standard anticonvulsant medication. In such cases, abrupt withdrawal of chronic diazepam may also be associated with a temporary increase in the frequency and/or severity of seizures.

## **10 OVERDOSAGE**

The manifestations of diazepam overdose reported are similar to those observed with other benzodiazepines, including somnolence, confusion, coma, and diminished reflexes. Respiration, pulse, and blood pressure should be monitored.

General supportive measures should be employed, along with intravenous fluids, and an adequate airway maintained. Hypotension may be combated by the use of levarterenol or metaraminol. Dialysis is of limited value.

Flumazenil, a specific benzodiazepine-receptor antagonist, is indicated for the complete or partial reversal of the sedative effects of benzodiazepines and may be used in situations when an overdose with VALTOCO is known or suspected. Prior to the administration of flumazenil, necessary measures should be instituted to secure the airway, assure adequate ventilation, and establish adequate intravenous access. The reversal of benzodiazepine effects may be associated with the onset of seizures in certain high-risk patients, particularly in long-term benzodiazepine users. The administration of flumazenil in cases of benzodiazepine overdose can lead to withdrawal and adverse reactions, including increased seizures. Its use in patients with epilepsy is typically not recommended.

## 11 DESCRIPTION

Diazepam, the active ingredient of VALTOCO nasal spray, is a benzodiazepine anticonvulsant with the chemical name 7-chloro-1,3-dihydro-1-methyl-5-phenyl-2H-1,4-benzodiazepin-2-one. The structural formula is as follows:



The inactive ingredients in VALTOCO nasal spray include benzyl alcohol (10.5 mg per 0.1 mL), dehydrated alcohol, n-dodecyl beta-D-maltoside, and vitamin E. VALTOCO nasal spray is a clear pale amber liquid.

## 12 CLINICAL PHARMACOLOGY

### 12.1 Mechanism of Action

The exact mechanism of action for diazepam is not fully understood, but it is thought to involve potentiation of GABAergic neurotransmission resulting from binding at the benzodiazepine site of the GABA<sub>A</sub> receptor.

### 12.2 Pharmacodynamics

The effects of diazepam on the CNS are dependent on the dose administered, the route of administration, and the presence or absence of other medications.

### 12.3 Pharmacokinetics

#### Absorption

Pharmacokinetic information for VALTOCO following nasal administration was obtained from studies conducted in healthy adult subjects, as well as adult and pediatric patients with epilepsy 6 years of age and older.

In a pharmacokinetic study in healthy adult subjects, the highest plasma diazepam concentrations after nasal administration of VALTOCO was reached in 1.5 hours. The estimated volume of distribution of diazepam at steady-state is 0.8 to 1.0 L/kg. The absolute bioavailability of VALTOCO relative to intravenous diazepam was 97%. The mean elimination half-life of diazepam following administration of a 10 mg dose of VALTOCO was found to be about 49.2 hours. In another pharmacokinetic study in healthy adult subjects, diazepam plasma exposures ( $C_{max}$  and AUC) increased approximately proportional to dose from 5 mg to 20 mg.

In a relative bioavailability study in healthy adult subjects, diazepam exposure ( $C_{max}$  and AUCs)

was evaluated following administration of 15 and 20 mg of VALTOCO nasal spray and diazepam rectal gel. The diazepam PK parameters were 2 to 4-fold less variable for VALTOCO and within the range of those seen with diazepam rectal gel.

In a pharmacokinetic study in patients with epilepsy, pharmacokinetic parameters were similar between seizure versus non-seizure states.

### Distribution

Both diazepam and its major active metabolite desmethyldiazepam bind extensively to plasma proteins (95-98%).

### Metabolism and Elimination

In vitro studies using human liver preparations suggest that CYP2C19 and CYP3A4 are the principal isozymes involved in the initial oxidative metabolism of diazepam. It has been reported in the literature that diazepam is extensively metabolized to one major active metabolite, desmethyldiazepam, and two minor active metabolites, 3-hydroxydiazepam (temazepam) and 3-hydroxy-N-diazepam (oxazepam), in plasma. At therapeutic doses, desmethyldiazepam is found in plasma at concentrations equivalent to those of diazepam while oxazepam and temazepam are not usually detectable. The metabolism of diazepam is primarily hepatic and involves demethylation (involving primarily CYP2C19 and CYP3A4) and 3-hydroxylation (involving primarily CYP3A4), followed by glucuronidation. The marked inter-individual variability in the clearance of diazepam reported in the literature is probably attributable to variability of CYP2C19 (which is known to exhibit genetic polymorphism; about 3-5% of Caucasians have little or no activity and are “poor metabolizers”) and CYP3A4. No inhibition was demonstrated in the presence of inhibitors selective for CYP2A6, CYP2C9, CYP2D6, CYP2E1, or CYP1A2, indicating that these enzymes are not significantly involved in metabolism of diazepam.

### Specific Populations

#### *Geriatric Patients*

A study of single dose IV administration of diazepam (0.1 mg/kg) indicates that the elimination half-life of diazepam increases linearly with age, ranging from about 15 hours at 18 years (healthy young adults) to about 100 hours at 95 years (healthy elderly) with a corresponding decrease in clearance of free diazepam [see *Use in Specific Populations (8.5)*].

#### *Pediatric Patients*

Literature review indicates that following IV administration (0.33 mg/kg), diazepam has a half-life in pediatric patients 6 to 12 years of age of approximately 15-21 hours.

#### *Patients with Renal Impairment*

The pharmacokinetics of diazepam have not been studied in subjects with renal impairment.

### *Patients with Hepatic Impairment*

No pharmacokinetic studies were conducted with VALTOCO in subjects with hepatic impairment. Literature review indicates that following administration of 0.1 to 0.15 mg/kg of diazepam intravenously, the half-life of diazepam was prolonged by two to five-fold in subjects with alcoholic cirrhosis (n=24) compared to age-matched control subjects (n=37) with a corresponding decrease in clearance by half. However, the exact degree of hepatic impairment in these subjects was not characterized in this literature.

### *Effect of Gender, Race, and Cigarette Smoking*

No targeted pharmacokinetic studies have been conducted to evaluate the effect of gender, race, and cigarette smoking on the pharmacokinetics of diazepam. However, covariate analysis of a population of treated patients following administration of diazepam rectal gel, indicated that neither gender nor cigarette smoking had any effect on the pharmacokinetics of diazepam.

## **13 NONCLINICAL TOXICOLOGY**

### **13.1 Carcinogenesis, Mutagenesis, Impairment of Fertility**

#### Carcinogenesis

The carcinogenic potential of diazepam delivered by the intranasal route of administration has not been evaluated. In studies in which mice and rats were administered diazepam orally in the diet at a dose of 75 mg/kg/day (approximately 10 and 20 times, respectively, the maximum recommended human dose [MRHD=0.6 mg/kg/day] on a mg/m<sup>2</sup> basis) for 80 and 104 weeks, respectively, an increased incidence of liver tumors was observed in males of both species.

#### Mutagenesis

The data currently available are inadequate to determine the mutagenic potential of diazepam.

#### Impairment of Fertility

Reproduction studies with orally administered diazepam in rats showed decreases in the number of pregnancies and in the number of surviving offspring following administration of an oral dose of 100 mg/kg/day (approximately 27 times the MRHD on a mg/m<sup>2</sup> basis) prior to and during mating and throughout gestation and lactation. No adverse effects on fertility or offspring viability were noted at a dose of 80 mg/kg/day (approximately 22 times the MRHD on a mg/m<sup>2</sup> basis).

## **14 CLINICAL STUDIES**

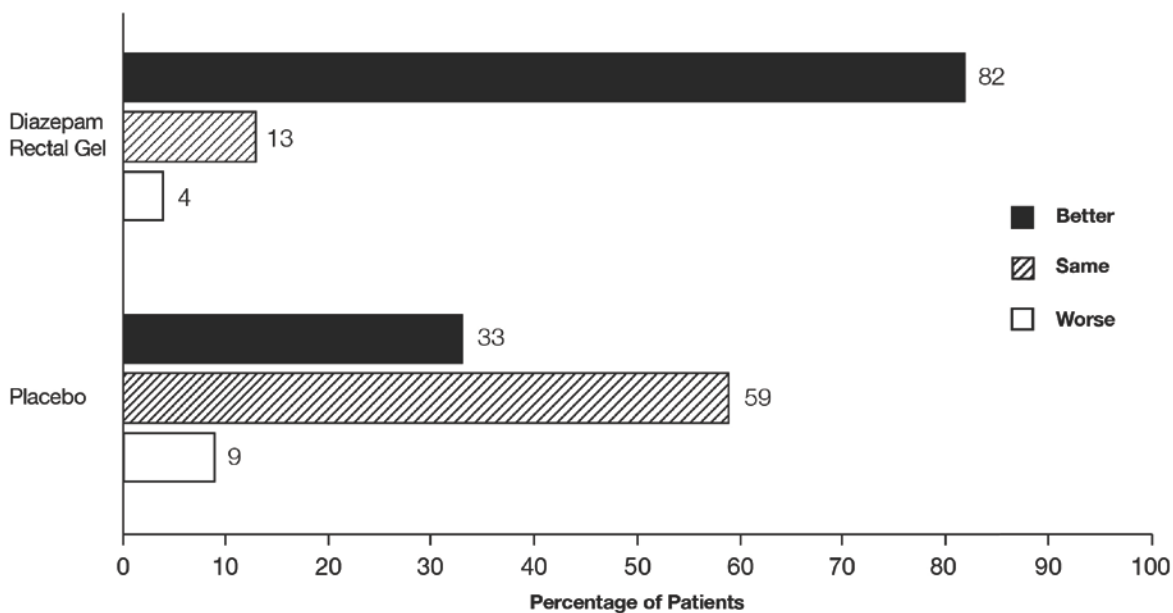
The efficacy of VALTOCO is based on the relative bioavailability of VALTOCO nasal spray compared to diazepam rectal gel in healthy adults [*see Clinical Pharmacology (12.3)*].

The effectiveness of diazepam rectal gel has been established in two adequate and well-controlled clinical studies in children and adults exhibiting seizure patterns.

A randomized, double-blind study compared sequential doses of diazepam rectal gel and placebo in 91 patients (47 children, 44 adults) exhibiting the appropriate seizure profile. The first dose was given at the onset of an identified episode. Children were dosed again four hours after the first dose and were observed for a total of 12 hours. Adults were dosed at four and 12 hours after the first dose and were observed for a total of 24 hours. Primary outcomes for this study were seizure frequency during the period of observation and a global assessment that took into account the severity and nature of the seizures as well as their frequency.

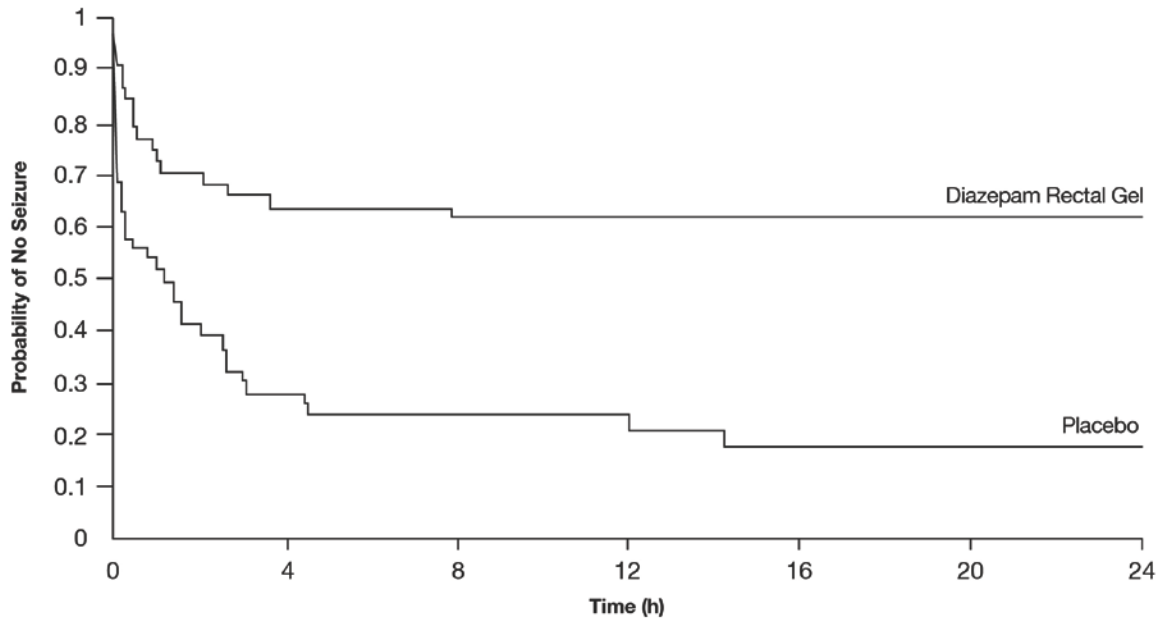
The median seizure frequency for the diazepam rectal gel treated group was zero seizures per hour, compared to a median seizure frequency of 0.3 seizures per hour for the placebo group, a difference that was statistically significant ( $p < 0.0001$ ). All three categories of the global assessment (seizure frequency, seizure severity, and “overall”) were also found to be statistically significant in favor of diazepam rectal gel ( $p < 0.0001$ ). The following histogram displays the results for the “overall” category of the global assessment.

**Figure 1: Caregiver Overall Global Assessment of the Efficacy of Diazepam Rectal Gel**



Patients treated with diazepam rectal gel experienced prolonged time-to-next-seizure compared to placebo ( $p = 0.0002$ ) as shown in the following graph.

**Figure 2: Kaplan-Meier Survival Analysis of Time-to-Next-Seizure - First Study**

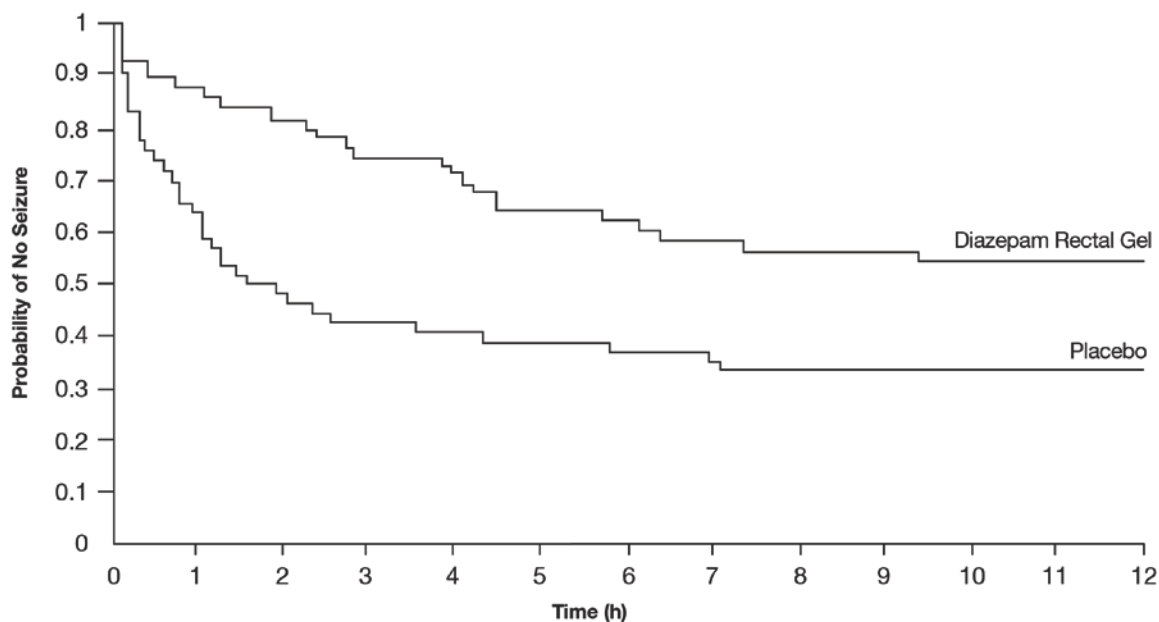


In addition, 62% of patients treated with diazepam rectal gel were seizure-free during the observation period compared to 20% of placebo patients.

Analysis of response by gender and age revealed no substantial differences between treatment in either of these subgroups. Analysis of response by race was considered unreliable, due to the small percentage of non-Caucasians.

A second double-blind study compared single doses of diazepam rectal gel and placebo in 114 patients (53 children, 61 adults). The dose was given at the onset of the identified episode and patients were observed for a total of 12 hours. The primary outcome in this study was seizure frequency. The median seizure frequency for the diazepam rectal gel-treated group was zero seizures per 12 hours, compared to a median seizure frequency of 2.0 seizures per 12 hours for the placebo group, a difference that was statistically significant ( $p < 0.03$ ). Patients treated with diazepam rectal gel experienced prolonged time-to-next-seizure compared to placebo ( $p = 0.0072$ ) as shown in [Figure 3](#).

**Figure 3: Kaplan-Meier Survival Analysis of Time-to-Next-Seizure - Second Study**



In addition, 55% of patients treated with diazepam rectal gel were seizure-free during the observation period compared to 34% of patients receiving placebo. Overall, caregivers judged diazepam rectal gel to be more effective than placebo ( $p = 0.018$ ), based on a 10 centimeter visual analog scale. In addition, investigators also evaluated the effectiveness of diazepam rectal gel and judged diazepam rectal gel to be more effective than placebo ( $p < 0.001$ ).

An analysis of response by gender revealed a statistically significant difference between treatments in females but not in males in this study, and the difference between the 2 genders in response to the treatments reached borderline statistical significance. Analysis of response by race was considered unreliable, due to the small percentage of non-Caucasians.

## 16 HOW SUPPLIED/STORAGE AND HANDLING

### 16.1 How Supplied

VALTOCO is available in 5 mg, 7.5 mg, and 10 mg strengths. VALTOCO is supplied and packaged in doses of 5 mg, 10 mg, 15 mg, or 20 mg (see Table 4).

**Table 4: Available Packaging Configurations**

Description	Contents	NDC
5 mg carton	2 individual blister packs, each containing one 5 mg nasal spray device	72252-505-02
10 mg carton	2 individual blister packs, each containing one 10 mg nasal spray device	72252-510-02
15 mg carton	2 individual blister packs, each containing two 7.5 mg nasal spray devices	72252-515-04
20 mg carton	2 individual blister packs, each containing two 10 mg nasal spray devices	72252-520-04

## 16.2 Storage and Handling

Do not open individual blister packs or test nasal spray devices before use.

Each single-dose nasal spray device sprays one (1) time and cannot be re-used.

Do not use if the nasal spray unit appears damaged.

Store VALTOCO at 20°C to 25°C (68°F to 77°F); excursions permitted from 15°C to 30°C (59°F to 86°F) [*see USP Controlled Room Temperature*]. Do not freeze. Protect from light.

## 17 PATIENT COUNSELING INFORMATION

Advise the patient and/or caregiver to read the FDA-approved patient labeling (Medication Guide and Instructions for Use).

### Concomitant use with Opioids

Concomitant use of benzodiazepines, including VALTOCO, and opioids may result in profound sedation, respiratory depression, coma, and death. Do not use such drugs concomitantly unless supervised by a health care provider [*see Warnings and Precautions (5.1)*].

### Abuse, Misuse, and Addiction

Inform patients that the use of VALTOCO more frequently than recommended, even at recommended dosages, exposes users to risks of abuse, misuse, and addiction, which can lead to overdose and death, especially when used in combination with other medications (e.g., opioid analgesics), alcohol, and/or illicit substances. Inform patients about the signs and symptoms of benzodiazepine abuse, misuse, and addiction; to seek medical help if they develop these signs and/or symptoms; and on the proper disposal of unused drug [*see Warnings and Precautions (5.2) and Drug Abuse and Dependence (9.2)*].

### Withdrawal Reactions

Inform patients that use of VALTOCO more frequently than recommended may lead to clinically significant physical dependence and that abrupt discontinuation or rapid dosage reduction of VALTOCO may precipitate acute withdrawal reactions, which can be life-threatening. Inform patients that in some cases, patients taking benzodiazepines have developed a protracted withdrawal syndrome with withdrawal symptoms lasting weeks to more than 12 months [*see Warnings and Precautions (5.3) and Drug Abuse and Dependence (9.3)*].

### Important Treatment Instructions

Instruct patients and caregivers on what is and is not an intermittent and stereotypic episode of increased seizure activity (i.e., seizure cluster) that is appropriate for treatment, and the timing of administration in relation to the onset of the episode.

Instruct patients and caregivers on what to observe following administration, and what would constitute an outcome requiring immediate medical attention.

Instruct patients and caregivers not to administer a second dose of VALTOCO if they are concerned by the patient's breathing, the patient requires emergency rescue treatment with assisted breathing or intubation, or there is excessive sedation [*see Use in Specific Populations (8.6)*].

Advise patients and caregivers on how frequently they can treat successive seizure cluster episodes over time.

### Pregnancy

Instruct patients to inform their healthcare provider if they are pregnant or are planning to become pregnant. Several studies have suggested an increased risk of congenital malformations associated with the use of benzodiazepine drugs. Animal studies have demonstrated an effect on early brain development and long-term cognitive effects with exposure to anesthetic and sedation drugs in the third trimester of gestation. Encourage patients to enroll in the North American Antiepileptic Drug (NAAED) Pregnancy Registry if they become pregnant while taking VALTOCO. The registry is collecting information about the safety of antiepileptic drugs during pregnancy [*see Use in Specific Populations (8.1)*].

### Lactation

Instruct patients to inform their healthcare provider if they are nursing [*see Use in Specific Populations (8.2)*].

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**MEDICATION GUIDE**  
**VALTOCO® (val-toe-koe)**  
**(diazepam nasal spray), C-IV**

**What is the most important information I should know about VALTOCO?**

- **VALTOCO is a benzodiazepine medicine. Taking benzodiazepines with opioid medicines, alcohol, or other central nervous system (CNS) depressants (including street drugs) can cause severe drowsiness, breathing problems (respiratory depression), coma, and death.** Get emergency medical help right away if any of the following happens:
  - shallow or slowed breathing
  - breathing stops (which may lead to the heart stopping)
  - excessive sleepiness (sedation)Do not drive or operate heavy machinery until you know how taking VALTOCO with opioids affects you.
- **Risk of abuse, misuse, and addiction.** There is a risk for abuse, misuse, and addiction with benzodiazepines, including VALTOCO, which can lead to overdose and serious side effects including coma and death.
  - **Serious side effects including coma and death have happened in people who have abused or misused benzodiazepines, including diazepam (the active ingredient in VALTOCO).** These serious side effects may also include delirium, paranoia, suicidal thoughts or actions, seizures, and difficulty breathing. **Call your healthcare provider or go to the nearest hospital emergency room right away if you get any of these serious side effects.**
  - You can develop an addiction even if you use VALTOCO as prescribed by your healthcare provider.
  - **Use VALTOCO exactly as your healthcare provider prescribed.**
  - Do not share your VALTOCO with other people.
  - Keep VALTOCO in a safe place and away from children.
- **Physical dependence and withdrawal reactions.** Benzodiazepines, including VALTOCO, can cause physical dependence and withdrawal reactions, especially if you use VALTOCO daily. VALTOCO is not intended for daily use.
  - **Do not suddenly stop using VALTOCO without talking to your healthcare provider.** Stopping VALTOCO suddenly can cause serious and life-threatening side effects, including, unusual movements, responses, or expressions, seizures, sudden and severe mental or nervous system changes, depression, seeing or hearing things that others do not see or hear, an extreme increase in activity or talking, losing touch with reality, and suicidal thoughts or actions. **Call your healthcare provider or go to the nearest hospital emergency room right away if you get any of these symptoms.**
  - **Some people who suddenly stop benzodiazepines have symptoms that can last for several weeks to more than 12 months,** including, anxiety, trouble remembering, learning, or concentrating, depression, problems sleeping, feeling like insects are crawling under your skin, weakness, shaking, muscle twitching, burning or prickling feeling in your hands, arms, legs or feet, and ringing in your ears.
  - Physical dependence is not the same as drug addiction. Your healthcare provider can tell you more about the differences between physical dependence and drug addiction.
  - Do not use more VALTOCO than prescribed or use VALTOCO more often than prescribed.
- **VALTOCO can make you sleepy or dizzy and can slow your thinking and motor skills.**
  - Do not drive, operate heavy machinery, or do other dangerous activities until you know how VALTOCO affects you.
  - Do not drink alcohol or take other drugs that may make you sleepy or dizzy while using VALTOCO without first talking to your healthcare provider. When taken with alcohol or drugs that cause sleepiness or dizziness, VALTOCO may make your sleepiness or dizziness worse.
- **Like other antiepileptic medicines, VALTOCO may cause suicidal thoughts or actions in a small number of people, about 1 in 500. Call your healthcare provider right away if you have any of these symptoms, especially if they are new, worse, or worry you:**

○ thoughts about suicide or dying	○ trouble sleeping (insomnia)
○ feeling agitated or restless	○ an extreme increase in activity and talking (mania)
○ acting aggressive, being angry, or violent	○ new or worse anxiety
○ attempts to commit suicide	○ new or worse irritability
○ panic attacks	○ other unusual changes in behavior or mood
○ acting on dangerous impulses	○ new or worse depression

**How can I watch for early symptoms of suicidal thoughts or actions?**

- Pay attention to any changes, especially sudden changes in mood, behaviors, thoughts, or feelings.
- Keep all follow-up visits with your healthcare provider as scheduled.

Call your healthcare provider between visits as needed, especially if you are worried about symptoms. Suicidal thoughts or actions can be caused by things other than medicines. If you have suicidal thoughts or actions, your healthcare provider may check for other causes.

**What is VALTOCO?**

- VALTOCO is a prescription medicine used for short-term treatment of seizure clusters (also known as “acute repetitive seizures”) in people 6 years of age and older.
- **VALTOCO is a federally controlled substance (C-IV) because it contains diazepam that can be abused or lead to dependence.** Keep VALTOCO in a safe place to prevent misuse and abuse. Selling or giving away VALTOCO may harm others and is against the law. Tell your healthcare provider if you have abused or been dependent on alcohol, prescription drugs, or street drugs.
- It is not known if VALTOCO is safe and effective in children under 6 years of age.

**Do not use VALTOCO if you:**

- are allergic to diazepam or any of the ingredients in VALTOCO. See the end of this Medication Guide for a complete list of ingredients in VALTOCO.
- have an eye problem called acute narrow angle glaucoma.

**Before using VALTOCO, tell your healthcare provider about all of your medical conditions, including if you:**

- have asthma, emphysema, bronchitis, chronic obstructive pulmonary disease, or other breathing problems.
- have a history of alcohol or drug abuse.
- have a history of depression, mood problems or suicidal thoughts or behaviors.
- have liver or kidney problems.
- are pregnant or plan to become pregnant. VALTOCO may harm your unborn baby.
  - Babies born to mothers receiving benzodiazepine medicines (including VALTOCO) late in pregnancy may be at risk of having breathing problems, feeding problems, dangerously low body temperature, and withdrawal symptoms.
  - If you become pregnant while using VALTOCO, talk to your healthcare provider about registering with the North American Antiepileptic Drug (NAAED) Pregnancy Registry. You can register by calling 1-888-233-2334. For more information about the registry, go to <http://www.aedpregnancyregistry.org>. The purpose of this registry is to collect information about the safety of antiepileptic drugs during pregnancy.
- are breastfeeding or plan to breastfeed. VALTOCO passes into your breast milk and may harm your baby. Talk to your healthcare provider about the best way to feed your baby if you use VALTOCO.

**Tell your healthcare provider about all the medicines you take**, including prescription and over-the-counter medicines, vitamins, and herbal supplements. Using VALTOCO with certain other medicines can cause side effects or affect how well VALTOCO or the other medicines work. Do not start or stop other medicines without talking to your healthcare provider.

**How should I use VALTOCO?**

- **Read the Instructions for Use that comes with this Medication Guide for detailed information about the right way to use VALTOCO.**
- Use VALTOCO exactly as prescribed by your healthcare provider.
- Your healthcare provider will tell you:
  - what seizure clusters are
  - exactly how much VALTOCO to give
  - when to give VALTOCO
  - how to give VALTOCO
  - what to do after you give VALTOCO if the seizures do not stop or there is a change in breathing, behavior, or condition that worries you
- You should carry VALTOCO with you in case you need it to control your seizure clusters.
- Family members, care providers, and other people who may have to give VALTOCO should know where you keep your VALTOCO and how to give VALTOCO before a seizure cluster happens.
- VALTOCO is given in the nose (nasal) only.
- VALTOCO comes ready to use.
- Each VALTOCO only sprays 1 time and cannot be reused. **Do not** test or prime the nasal spray before use.
- Each dose of VALTOCO is provided in an individual pack. Use all of the medicine in 1 pack for a complete dose.

**What should I do after I give VALTOCO?**

- Stay with the person after you give VALTOCO and watch them closely.
  - Make a note of the time VALTOCO was given.
  - Call for emergency help if any of the following happen:
    - seizure cluster behavior is different than other seizure clusters the person has had.
    - you are alarmed by how often the seizures happen, by how severe the seizure is, by how long the seizure lasts, or by the color or breathing of the person.
  - Throw away (discard) the used VALTOCO.
- If needed, a second dose may be given at least 4 hours after the first dose, using a new pack of VALTOCO. Do not give more than 2 doses of VALTOCO to treat a seizure cluster.
- A second dose should **not** be given if there is concern about the person’s breathing, they need help with their breathing, or have extreme drowsiness.

Do not use VALTOCO for more than 1 seizure cluster episode every 5 days. Do not use VALTOCO for more than 5 seizure cluster episodes in 1 month.

**What should I avoid while using VALTOCO?**

See “**What is the most important information I should know about VALTOCO**”

**What are the possible side effects of VALTOCO?**

**VALTOCO may cause serious side effects, including:**

- See “**What is the most important information I should know about VALTOCO?**”
- **Increase in eye pressure in people with open-angle glaucoma.** See “**Do not use VALTOCO if you:**”

**The most common side effects of VALTOCO include:**

- feeling sleepy or drowsy
- headache
- nose discomfort

These are not all of the possible side effects of VALTOCO. Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

**How should I store VALTOCO?**

- Store VALTOCO at room temperature between 68°F to 77°F (20°C to 25°C).
- Do not freeze VALTOCO.
- Keep VALTOCO in its blister pack until ready to use. Protect it from light.
- **Keep VALTOCO and all medicines out of the reach of children.**

**General information about the safe and effective use of VALTOCO.**

Medicines are sometimes prescribed for purposes other than those listed in a Medication Guide. Do not use VALTOCO for a condition for which it was not prescribed. Do not give VALTOCO to other people, even if they have the same symptoms that you have. It may harm them. You can ask your pharmacist or healthcare provider for information about VALTOCO that is written for health professionals.

**What are the ingredients in VALTOCO?**

**Active ingredient:** diazepam

**Inactive ingredients:** benzyl alcohol, dehydrated alcohol, n-dodecyl beta-D-maltoside, and vitamin E.

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# INSTRUCTIONS FOR USE

## For 5 mg and 10 mg Doses



### Important: For Nasal Use Only.

Check the expiration date before use.

Do not remove VALTOCO until ready to use. Do not test VALTOCO.

Keep out of reach of children.

Inspect VALTOCO for damage. If damaged, you may not receive the full dose.

You and your family members, caregivers, and others who may need to administer VALTOCO should read this Instructions for Use that comes with VALTOCO before using it. Talk to your healthcare provider if you, your caregiver, or others who may need to administer VALTOCO have any questions about the use of VALTOCO.

## Safely secure the person

If the person appears to be having a seizure, gently help them to the floor and lay them on their side

in a place where they cannot fall. The person can be on either their side or back to receive VALTOCO.

Move objects and furniture away from the person to avoid injury.

Give VALTOCO 5 mg dose or 10 mg dose. 1 dose equals 1 nasal spray device.

Device sprays one time only.

Important: Do not test or prime VALTOCO.



**Step 1: Remove 1 VALTOCO blister pack** from the box.

Each blister pack contains 1 nasal spray device. 1 device contains 1 dose.



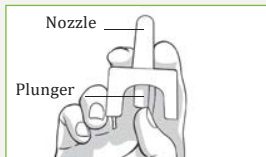
Peel back the tab with the arrow on the corner of the pack.



Remove VALTOCO from the pack.

**Step 2: Hold VALTOCO**

with your thumb on the bottom of the plunger and your first and middle fingers on either side of the nozzle.



**Step 3: Gently insert the tip of the nozzle into 1 nostril** until your fingers, on either side of the nozzle, are against the bottom of the person's nose.



**Step 4: Press the bottom of the plunger firmly** with your thumb to give VALTOCO.



**Step 5: Remove VALTOCO from the nose** after giving the dose. Each individual VALTOCO contains 1 single spray.

Throw it away (discard) after use.

## After giving VALTOCO, evaluate and support

Keep or move the person onto their side, facing you, so that you can watch them closely. Loosen any tight clothing and provide a safe area where the person can rest.



Call for emergency help if any of the following happen:

- Seizure clusters are different from that of other seizures the person has had
- You are alarmed by how often the seizures happen, by how severe the seizure is, by how long the seizure lasts, or by the color or breathing of the person

Make a note of the time VALTOCO was given and continue to watch the person closely.

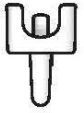
Time of first VALTOCO dose: \_\_\_\_\_ Time of second VALTOCO dose (if given): \_\_\_\_\_

The healthcare provider may prescribe another dose of VALTOCO to be given at least 4 hours after the first dose. If a second dose is needed, repeat Steps 1 through 5 with a new blister pack of VALTOCO. If the person is not having a seizure when the second dose of VALTOCO is given, it may be given to the person when they are lying down, standing, or sitting.

For more information about VALTOCO, please visit [www.valtoco.com](http://www.valtoco.com) or call 1-866-696-3873. You are encouraged to report side effects of prescription drugs to the FDA by visiting [www.fda.gov/medwatch](http://www.fda.gov/medwatch) or by calling 1-800-FDA-1088.

This Instructions for Use has been approved by the U.S. Food and Drug Administration. Issued: 1/2020

Instructions  
for Use



VALTOCO<sup>®</sup>  
(diazepam nasal spray) ©



VALTOCO<sup>®</sup>  
(diazepam nasal spray) ©



Instructions  
for Use



# INSTRUCTIONS FOR USE

## For 15 mg and 20 mg Doses



### Important: For Nasal Use Only.

Check the expiration date before use.

Do not remove VALTOCO until ready to use. Do not test VALTOCO.

Keep out of reach of children.

Inspect VALTOCO for damage. If damaged, you may not receive the full dose.

You and your family members, caregivers, and others who may need to administer VALTOCO should read this Instructions for Use that comes with VALTOCO before using it. Talk to your healthcare provider if you, your caregiver, or others who may need to administer VALTOCO have any questions about the use of VALTOCO.

### Safely secure the person

If the person appears to be having a seizure, gently help them to the floor and lay them on their side in a place where they cannot fall. The person can be on either their side or back to receive VALTOCO.

Move objects and furniture away from the person to avoid injury.

Give VALTOCO 15 mg dose or 20 mg dose. 1 dose equals 2 nasal spray devices.  
Each device sprays one time only.  
Important: Do not test or prime VALTOCO.



**Step 1: Remove 1 VALTOCO blister pack** from the box.

Each blister pack contains 2 nasal spray devices. 2 devices must be used for 1 dose.

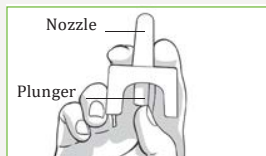


Peel back the tab with the arrow on the corner of the pack.



Remove the first VALTOCO from the pack.

**Step 2: Hold VALTOCO** with your thumb on the bottom of the plunger and your first and middle fingers on either side of the nozzle.



**Step 3: Gently insert the tip of the nozzle** into 1 nostril until your fingers, on either side of the nozzle, are against the bottom of the person's nose.



**Step 4: Press the bottom of the plunger firmly** with your thumb to give VALTOCO.



**Step 5: Remove VALTOCO from the nose** after giving the dose. Each individual VALTOCO contains 1 single spray.

**Step 6: You have not given the full dose** of VALTOCO yet. Remove the second VALTOCO from the pack.

Repeat Steps 2 through 5, using the second VALTOCO device in the other nostril, to give the full dose of VALTOCO.

Throw both nasal spray devices away (discard) after use.

### After giving VALTOCO, evaluate and support

Keep or move the person onto their side, facing you, so that you can watch them closely. Loosen any tight clothing and provide a safe area where the person can rest.

Call for emergency help if any of the following happen:

- Seizure clusters are different from that of other seizures the person has had
- You are alarmed by how often the seizures happen, by how severe the seizure is, by how long the seizure lasts, or by the color or breathing of the person

Make a note of the time VALTOCO was given and continue to watch the person closely.



Time of first VALTOCO dose (first dose equals one spray in each nostril): \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

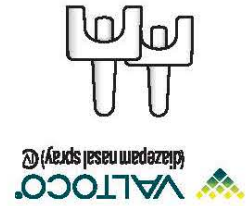
Time of second VALTOCO dose (if given, second dose equals one spray in each nostril): \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_

**The healthcare provider may prescribe another dose of VALTOCO to be given at least 4 hours after the first dose.** If a second dose is needed, repeat Steps 1 through 6 with a new blister pack of VALTOCO. If the person is not having a seizure when the second dose of VALTOCO is given, it may be given to the person when they are lying down, standing, or sitting.

For more information about VALTOCO, please visit [www.valtoco.com](http://www.valtoco.com) or call 1-866-696-3873. You are encouraged to report side effects of prescription drugs to the FDA by visiting [www.fda.gov/medwatch](http://www.fda.gov/medwatch) or by calling 1-800-FDA-1088.

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