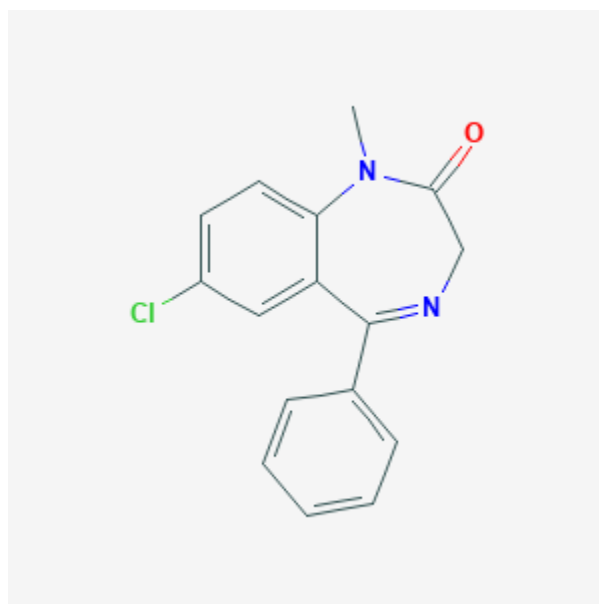




## Diazepam

Revised: October 31, 2018.

CASRN: 439-14-5



## Drug Levels and Effects

### Summary of Use during Lactation

Diazepam is excreted into breastmilk and it and its active metabolite, nordiazepam, accumulate in the serum of breastfed infants with repeated doses. Because the half-life of diazepam and nordiazepam are long, timing breastfeeding with respect to the dose is of little or no benefit in reducing infant exposure. Other agents are preferred, especially while nursing a newborn or preterm infant.

After a single dose of diazepam, as for sedation before a procedure, there is usually no need to wait to resume breastfeeding, although with a newborn or preterm infant, a cautious approach would be to wait a period of 6 to 8 hours before resuming nursing.

## Drug Levels

Diazepam is metabolized to the active metabolites nordiazepam (desmethyldiazepam) and temazepam, which are in turn metabolized to the active metabolite oxazepam.

*Maternal Levels.* Three patients were given diazepam 10 mg orally 3 times daily for the 6 days after delivery. Average milk levels of diazepam plus nordiazepam were 79 mcg/L after 4 days (total diazepam dosage 130 mg) and 130 mcg/L after 6 days (total diazepam dosage 190 mg). Oxazepam was not detected.[1]

In a 1-day postpartum woman, a colostrum diazepam level of 100 mcg/L milk level was found 25 hours after the last of 3 intravenous 5 mg doses of diazepam given over a 4-hour period.[2]

Four women were given diazepam 10 mg at bedtime for 6 days, beginning 3 days postpartum. Each had also received intravenous diazepam 20 mg immediately prior to delivery. Milk levels were collected 9.25 and 23.5 hours after each dose from days 3 to 9 postpartum. Milk levels of diazepam and nordiazepam did not differ markedly between the collection times and ranged from 17 to 39 mcg/L for diazepam and 19 to 52 mcg/L for nordiazepam.[3]

Breastmilk levels of 27 to 164 mcg/L of diazepam plus nordiazepam were found at various times between 9 days and 3.5 months postpartum during an irregular regimen of 6 to 10 mg daily of oral diazepam in 1 woman.[4]

A woman who had been abusing benzodiazepines was taking diazepam 80 mg and oxazepam 30 mg daily at the time of study. Milk samples were taken before and after the morning feeding following the morning dose of diazepam during a 30-day tapering dosage regimen. The average of the pre- and post-feed diazepam milk levels were 185 and 307 mcg/L and average nordiazepam milk levels were 124 and 141 mcg/L on days 14 and 15 during maternal intake of diazepam 40 mg daily. The average of the pre- and post-feed diazepam milk levels were 200 and 158 mcg/L and average nordiazepam milk levels were 140 and 85 mcg/L on days 23 and 25 during maternal intake of diazepam 30 mg daily. The average of the pre- and post-feed diazepam milk levels was 67 mcg/L and average nordiazepam milk levels was 42 mcg/L on days 30 during maternal intake of diazepam 10 mg daily. Nine days after discontinuing diazepam, milk diazepam and nordiazepam were both 6 mcg/L.[5]

Eight women who were at least 1 month postpartum received intravenous diazepam during a surgical sterilization procedure. Dosages ranged from 2.5 to 10 mg. Diazepam and nordiazepam were undetectable (<150 mcg/L) in the breastmilk of any of the women. The authors estimated that the maximum systemic exposure of one of the breastfed infants would be 3% of the mother's.[6]

*Infant Levels.* Three infants were breastfed from birth while their mothers were receiving diazepam 10 mg 3 times daily. Infant serum levels were measured on days 4 and 6 of life. On day 4, average infant serum levels were 172 mcg/L of diazepam and 243 mcg/L of nordiazepam. On day 6, average infant serum levels dropped to 74 mcg/L of diazepam and 31 mcg/L of nordiazepam, mostly due to a large drop in one of the infants.[1]

A fully breastfed infant was 32 days old at the time of serum sampling. His mother was taking diazepam 6 to 10 mg daily and had taken 2 mg of diazepam 10 hours before infant serum samples were taken. The infant's diazepam serum level was 0.7 mcg/L and nordiazepam was 46 mcg/L. The mother's simultaneous serum levels were 100 and 200 mcg/L for the drug and metabolite, respectively.[4]

## Effects in Breastfed Infants

Three infants were breastfed from birth while their mothers were receiving diazepam 10 mg 3 times daily. The authors noticed no lethargy or hypoventilation in the infants during the 6-day observation period. The authors expressed concern that nordiazepam may compete with bilirubin for hepatic glucuronide conjugation in the neonate.[1]

A nursing mother was given diazepam 10 mg orally 3 times a day beginning on day 5 postpartum. Weight loss, lethargy and an EEG consistent with sedative effect in her 8-day-old was probably caused by diazepam or its metabolites in breastmilk.[7]

Of 8 infants breastfed from birth during maternal diazepam therapy (dosages unspecified), 3 had mild jaundice during the first few days postpartum, although this was not thought by the authors to be unusual.[8]

Sedation was reported in the breastfed newborn infant of a mother taking oral diazepam 6 to 10 mg daily if the infant was nursed within a few hours of a dose, but not if she nursed 8 or more hours after a dose. Infant sedation was probably caused by diazepam and its major metabolite in breastmilk.[4]

In a telephone follow-up study, 124 mothers who took a benzodiazepine while nursing reported whether their infants had any signs of sedation. About 10% of mothers took diazepam while breastfeeding and none reported sedation in her infant.[9]

In a longitudinal study of women taking medications during breastfeeding, some mothers who were taking diazepam reported discontinuing breastfeeding because of drowsiness in their breastfed infants.[10]

## Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date.

## Alternate Drugs to Consider

Lorazepam, Midazolam, Oxazepam

## References

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## Substance Identification

### Substance Name

Diazepam

### CAS Registry Number

439-14-5

### Drug Class

Breast Feeding

Lactation

Hypnotics and Sedatives

Anti-Anxiety Agents

Benzodiazepines