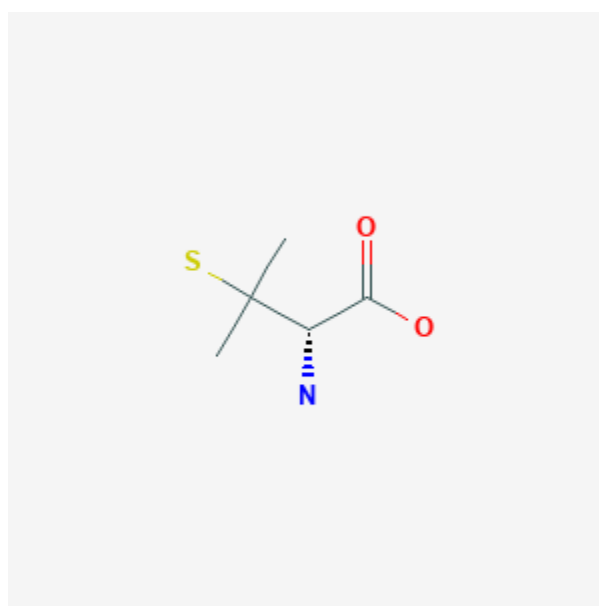




Penicillamine

Revised: June 30, 2019.

CASRN: 52-67-5



Drug Levels and Effects

Summary of Use during Lactation

Limited information indicates that penicillamine is not detectable in breastmilk and no adverse effects have been reported among breastfed infants whose mothers were taking the drug. Copper and zinc levels in breastmilk are reduced in mothers receiving penicillamine.[1][2][3][4][5] Penicillamine has been used with apparent safety during nursing of 3 infants. In infants who breastfeed infrequently, taking the drug right after nursing and waiting 4 to 6 hours before nursing again should minimize the amount of penicillamine in breastmilk. Copper and zinc levels in breastmilk are reduced in patients taking penicillamine. The implications for infants of this effect are not known.

Drug Levels

Maternal Levels. Four patients received penicillamine for Wilson's disease in dosages of 800, 600 (2 patients) and 500 mg daily. Penicillamine was not detectable by HPLC in the breastmilk of any of the mothers' milk samples. [4]

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

Effects in Breastfed Infants

One woman taking penicillamine 1500 mg daily for cystinuria breastfed her infant for 3 months with no apparent adverse effects in her infant. [6]

Another woman breastfed 2 infants after 2 pregnancies while being treated for Wilson's disease with penicillamine 750 mg daily. One infant had prolonged icterus that was unlikely to have been related to the penicillamine. [7]

A center in Turkey reported 23 infants born to mothers with Wilson's disease over a 20-year period. Twenty-one were treated with penicillamine 600 mg and zinc 100 mg daily. All of the infants were breastfed (extent and duration not specified). One premature infant died at 3 weeks of age (maternal drug not specified), but the other infant had no apparent complications over a median of 51 months (range 13 to 105 months) of follow-up. [8]

A center in Germany reports 32 patients with Wilson's disease who became pregnant. Thirteen of the patients were taking penicillamine in dosages of 600 to 1200 mg daily. Of the 31 women who delivered a live infant, 27 of them breastfed their infants (extent not stated). Four of the infants had neonatal jaundice, but its relationship to penicillamine cannot be determined. The exact number of women who breastfed while taking penicillamine is unclear in the report. [9]

Effects on Lactation and Breastmilk

Milk concentrations of zinc and copper are reduced during therapy of Wilson's disease with penicillamine. [3][7][8][9]

Alternate Drugs to Consider

(Rheumatoid Arthritis) [Auranofin](#), [Etanercept](#), [Gold Sodium Thiomalate](#), [Hydroxychloroquine](#), [Infliximab](#), [Methotrexate](#), [Sulfasalazine](#); (Wilson's disease) [Trientine](#)

References

1. Byron MA. Treatment of rheumatic diseases. *Br Med J.* 1987;294:236-8. PubMed PMID: 3101825.
2. Ramsey-Goldman R, Schilling E. Optimum use of disease-modifying and immunosuppressive antirheumatic agents during pregnancy and lactation. *Clin Immunother.* 1996;5:40-58. DOI: [10.1007/BF03259314](https://doi.org/10.1007/BF03259314).
3. Shiga K, Kaga H, Kodama H et al. Copper and zinc concentrations in the breast milk of mothers with Wilson disease and effects on infants. *J Inher Metab Dis.* 2006;29 (Suppl 1):139. Abstract. DOI: [10.1007/s10545-006-9995-6](https://doi.org/10.1007/s10545-006-9995-6).
4. Izumi Y. [Can mothers with Wilson's disease give her breast milk to their infant?]. *Teikyo Med J.* 2012;35:17-24.
5. Kaga F, Kodama H, Siga K et al. Copper and zinc status in the breast milk of mothers with Wilson disease. *J Inher Metab Dis* 2008;31 (Suppl 1):157. Abstract. DOI: [10.1007/s10545-008-9975-0](https://doi.org/10.1007/s10545-008-9975-0).
6. Gregory MC, Mansell MA. Pregnancy and cystinuria. *Lancet.* 1983;2:1158-60. PubMed PMID: 6139526.
7. Messner U, Gunter HH, Niesert S. [Wilson disease and pregnancy. Review of the literature and case report]. *Z Geburtshilfe Neonatol.* 1998;202:77-9. PubMed PMID: 9654718.

8. Demir K, Soyer OM, Karaca C et al. The course of pregnancy in Wilson's disease-one center, 20 years' experience. *Gastroenterology*. 2014;146:S-1009. Abstract TU1834.
9. Reuner U, Dinger J. Pregnancy and Wilson disease: Management and outcome of mother and newborns-experiences of a perinatal centre. *Ann Transl Med*. 2019;7 (Suppl 2):S56.

Substance Identification

Substance Name

Penicillamine

CAS Registry Number

52-67-5

Drug Class

Breast Feeding

Lactation

Antirheumatic Agents