



## Pyrethrins

Revised: December 3, 2018.

CASRN: 8003-34-7

## Drug Levels and Effects

### Summary of Use during Lactation

Because absorption after topical application is very limited, occasional pyrethrins and piperonyl butoxide use is acceptable in nursing mothers. Extensive exposure, such as from agricultural use or malaria control might have long-term health concerns because residues can be found in breastmilk.[1] Only water-miscible cream, gel or liquid products should be applied to the breast because ointments may expose the infant to high levels of mineral paraffins via licking.[2]

### Drug Levels

*Maternal Levels.* Pyrethrins were measured in 53 breastmilk samples from 29 mothers collected 1998 to 1999 in Basel Switzerland. Pyrethrins were detected in 42 milk samples, even in mothers from households that reported no pyrethrin use. The average pyrethrins concentration was 89 mcg/kg of fat (range undetectable [ $<25$  mcg/kg] to 341 mcg/kg fat).[3]

Pyrethroids (permethrin, cyfluthrin, cypermethrin and deltamethrin) were found in the breastmilk of nursing mothers in 3 South African towns. Average levels in breastmilk ranged from 8.3 to 48.4 mcg/L in the 3 towns. The source was thought to be from a dusting powder widely available and used in gardening. The dosage and route of exposure (i.e., topical, inhalation, oral) could not be determined. All milk levels were below the allowable daily limit for permethrin.[4][5]

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

### Effects in Breastfed Infants

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

### Effects on Lactation and Breastmilk

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

## Alternate Drugs to Consider

Permethrin

## References

1. Bouwman H, Kylin H. Malaria control insecticide residues in breast milk: the need to consider infant health risks. *Environ Health Perspect.* 2009;117:1477-80. PubMed PMID: 20019894.
2. Noti A, Grob K, Biedermann M et al. Exposure of babies to C(15)-C(45) mineral paraffins from human milk and breast salves. *Regul Toxicol Pharmacol.* 2003;38:317-25. PubMed PMID: 14623482.
3. Zehringer M, Herrmann A. Analysis of polychlorinated biphenyls, pyrethroid insecticides and fragrances in human milk using a laminar cup liner in the GC injector. *Eur Food Res Technol.* 2001;212:247-51.
4. Sereda B, Bouwman H, Kylin H. Comparing water, bovine milk, and indoor residual spraying as possible sources of DDT and pyrethroid residues in breast milk. *J Toxicol Environ Health A.* 2009;72:842-51. PubMed PMID: 19557612.
5. Bouwman H, Sereda B, Meinhardt HM. Simultaneous presence of DDT and pyrethroid residues in human breast milk from a malaria endemic area in South Africa. *Environ Pollut.* 2006;144:902-17. PubMed PMID: 16564119.

## Substance Identification

### Substance Name

Pyrethrins

### CAS Registry Number

8003-34-7

### Drug Class

Breast Feeding

Lactation

Anti-Infective Agents

Antiparasitic Agents

Insecticides