

## References

- Aoki, F. Y., and Ruedy, J. R. (1971). *Canadian Medical Association Journal*, 106, 112.  
 Schou, M., Baastrup, P. C., Grof, P., Weis, P., and Angst, J. (1970). *British Journal of Psychiatry*, 116, 615.  
 Thomsen, K., and Shou, M. (1968). *American Journal of Physiology*, 215, 823.

- Vacaflor, L., Lehmann, H. E., and Ban, T. A. (1970). *Journal of Clinical Pharmacology*, 10, 387.  
 Weinstein, M. R., and Goldfield, M. D. (1970). *Journal of the American Medical Association*, 214, 1325.  
 Wilbanks, G. D., Bressler, B., Peete, C. H., Cherny, W. B., and London, W. L. (1970). *Journal of the American Medical Association*, 213, 865.  
 Woody, J. N., London, W. L., and Wilbanks, G. D. (1971). *Pediatrics*, 47, 94.

## Lithium and Pregnancy—III, Lithium Ingestion by Children Breast-fed by Women on Lithium Treatment

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*British Medical Journal*, 1973, 2, 138

## Summary

Children breast-fed by women on lithium treatment ingested lithium with the milk. Their serum lithium concentration was one-third to one-half the concentration in the nursing women's serum. Bottle-feeding should be considered for children of women on lithium treatment.

## Introduction

Lithium passes from the blood into the milk, and children breast-fed by women on lithium treatment therefore ingest a certain amount of the drug. We have studied the quantities involved and the serum lithium concentrations produced in the infants.

## Procedure

Some of our data are derived from the literature, some were reported to the Scandinavian Register of Lithium Babies, and some we obtained ourselves. The lithium concentration in milk was determined with a modification of the flame photometric method used for determining lithium in blood serum (Amdisen, 1967).

## Results

The lithium concentration in milk was about half the lithium concentration in the nursing women's blood serum (see table). We have analyzed milk samples drawn at various times during

the breast-feeding; their lithium concentrations did not vary appreciably. During the first week of life the nursing infants' serum lithium concentrations were about one-half of the mothers', and during the following weeks about one-third.

*Simultaneously-determined Lithium Concentrations in the Mother's Serum, Her Milk, and Breast-fed Child's Serum. Determinations were Carried out in Different Laboratories*

Case No.	Time after Birth (Weeks)	Lithium Concentrations (mmol/l.)		
		Mother's Serum	Milk	Child's Serum
1	1	0.34	0.16	0.22
2*	1	—	0.3	0.3
3†	1	1.5	0.6	0.6
4	2	0.9	0.3	0.3
5	2	0.84	0.56	0.15
6‡	3	0.57	0.24	—
7	4	—	0.5	0.1
8§	10	0.50	0.12	—

\*Reported by Fries (1969).

†Reported by Tunnessen and Hertz (1972).

‡Means of determinations on five consecutive days.

§Reported by Weinstein and Goldfield (1969).

## Discussion

Arguments can be presented both for and against the view that a lithium-treated woman should be permitted to breast-feed her child. On the one hand, during the pregnancy the child has been exposed to the same lithium concentration as the mother for many months, and it seems unlikely that exposure to a lower lithium concentration for a few more months will do any harm. On the other hand, any unnecessary ingestion of drugs is undesirable and potentially dangerous. The physician and the mother must decide whether they attach so much importance to breast-feeding that they are willing to take the admittedly small risk. We think that bottle-feeding is advisable.

## References

- Amdisen, A. (1967). *Scandinavian Journal of Clinical and Laboratory Investigation*, 20, 104.  
 Fries, H. (1969). *Acta Psychiatrica Scandinavica*, Suppl. No. 207, p. 41.  
 Tunnessen, W. W., and Hertz, C. G. (1972). *Journal of Pediatrics*, 81, 804.  
 Weinstein, M. R., and Goldfield, M. (1969). *Diseases of the Nervous System*, 30, 828.

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