cc: A. Netherwood - 3/4/77

Johnson & Johnson
BABY PRODUCTS COMPANY

MAR

RARITAN, N.J. 08869

March 2, 1977

GEORGE LEE

SUBJECT: RELATIONSHIP BETWEEN HAMSTER, BABY & ADULT EXPOSURES TO TALC

TO: Mr. G. Lee

cc: Dr. G. Hildick-Smith
Mr. J. Siverston
Dr. W. Waggoner
Mr. R. Rolle

Calculations of safety factors from the Battelle hamster study have been based on time-weighted exposures to respirable talc in the inspired air. This approach assumed linearity in terms of dose per unit body weight, so that direct comparisons could be made on the basis of exposure. (Comparable deposition as a percentage of the respirable fraction is also assumed.)

The following calculations confirm this basic approach. The amount of talc in the inspired air becomes the dose when expressed as a function of minute volume (liters per minute) per unit of body weight (Kg).

	Minute Volume (liters/minute)	Body Weight (Kg)
Baby	1.0 (newborn sleeping 0.43-1.41)*	6
Adult	10.0 (male resting 7.4 mean)* (female resting 4.5 mean)*	60
Hamster	0.06 (.03-.08)**	0.36***

These data provide approximate linearity. However, a hamster only weighs 0.1 - 0.15 Kg, and the extrapolated figure of 0.36 Kg would add approximately another 2-3X safety factor to human exposure versus hamster exposure.

Bruce Semple, M.D.
/mp

*Documenta Geigy Scientific Tables, 6th Edition, p. 625.
**Respiration & Circulation, Ed. Altman P.L., and Dittmer D.S., 1971, Federation of American Societies for Experimental Biology, Bethesda, Maryland, p. 57.
***Extrapolated using ratio as for humans.

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