

Aluminum: Diet vs. Vaccines Primary Exposure, Metabolic Availability, and Accumulation

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Claim

- Infants receive more aluminum from diet than from vaccines.

Data

- **Aluminum per source**

Fanni et al., 2014. Aluminum exposure and toxicity in neonates: a practical guide to halt aluminum overload in the prenatal and perinatal periods. World J Pediatr. 10(2):101-7. doi: 10.1007/s12519-014-0477-x

- **Aluminum per vaccine total by month**

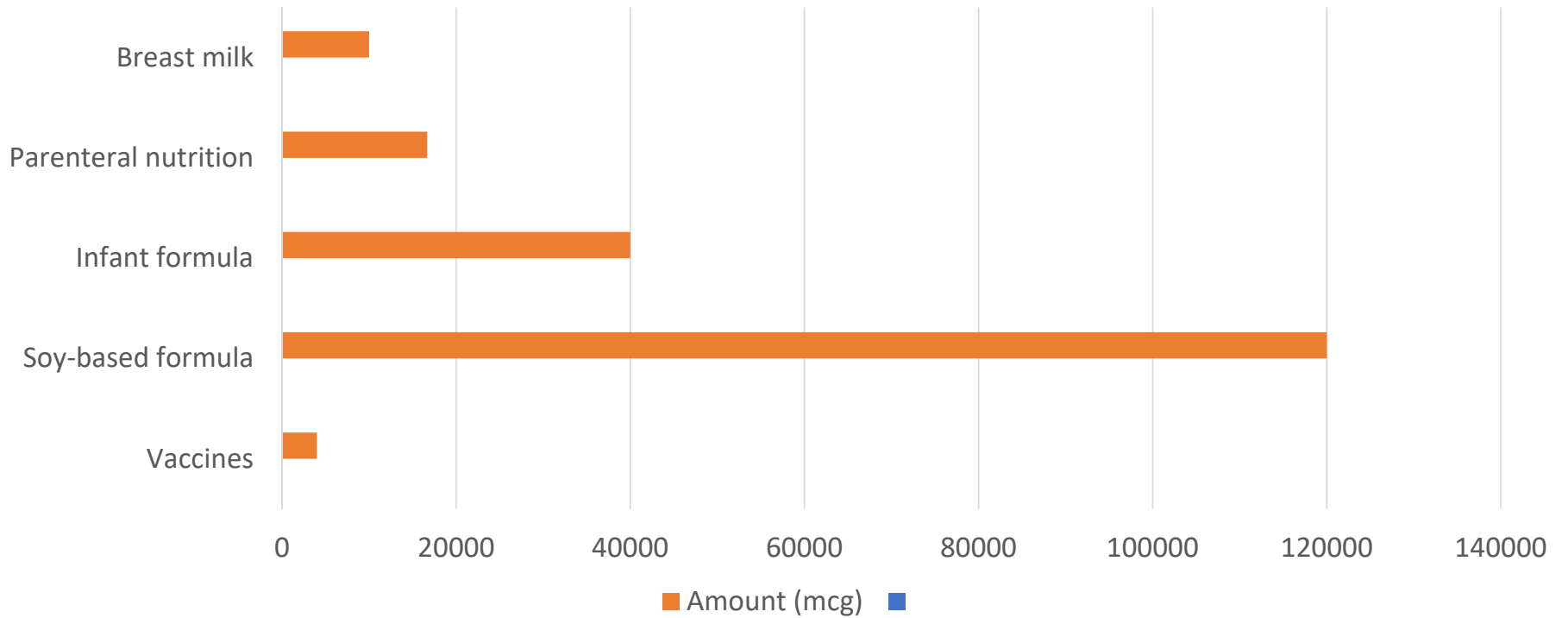
Lyons-Weiler, J and R. Ricketson. 2018. Reconsideration of the Immunotherapeutic Pediatric Safe Dose Levels of Aluminum. Journal and Trace Elements in Medicine and Biology 48:67-73 <https://www.sciencedirect.com/science/article/pii/S0946672X17300950>

US CDC.

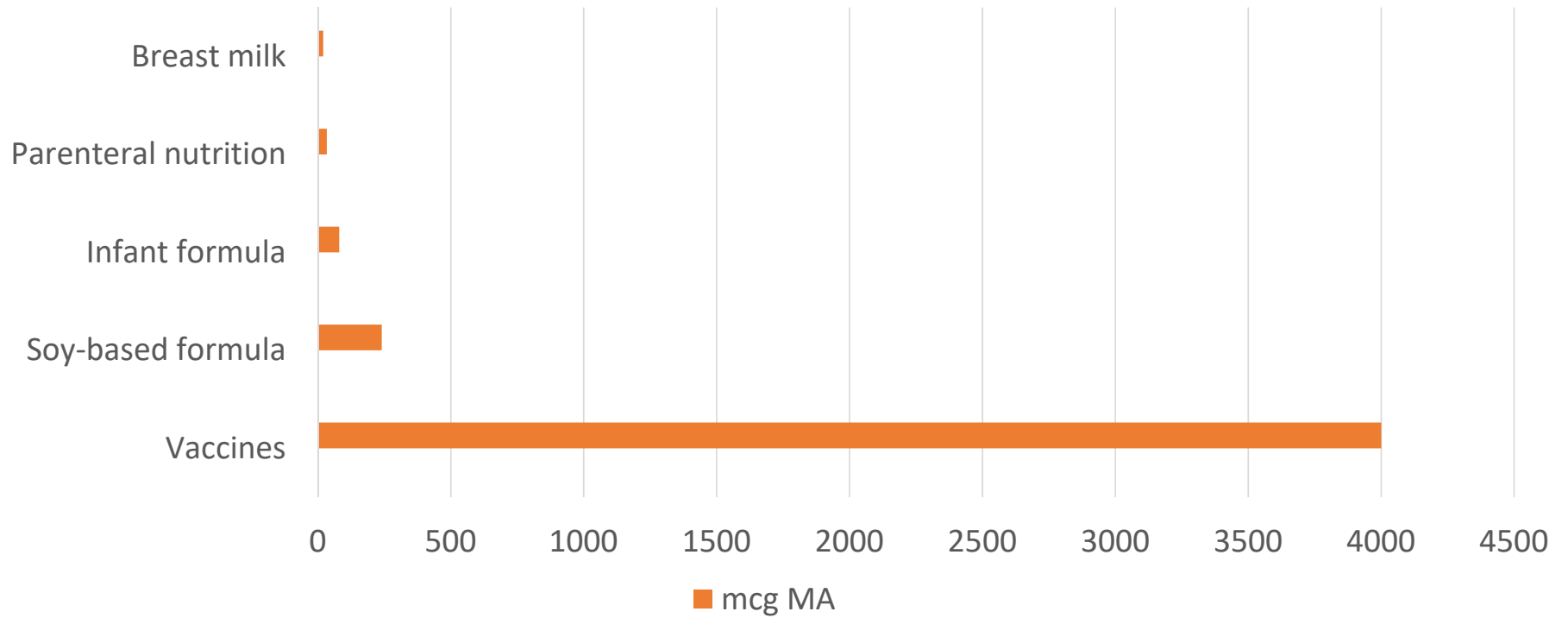
- **Monthly Clearance rate estimate (5.6%)**

Flarend et al. In vivo absorption of aluminium-containing vaccine adjuvants using ²⁶Al. Vaccine. 15(12-13):1314-8.

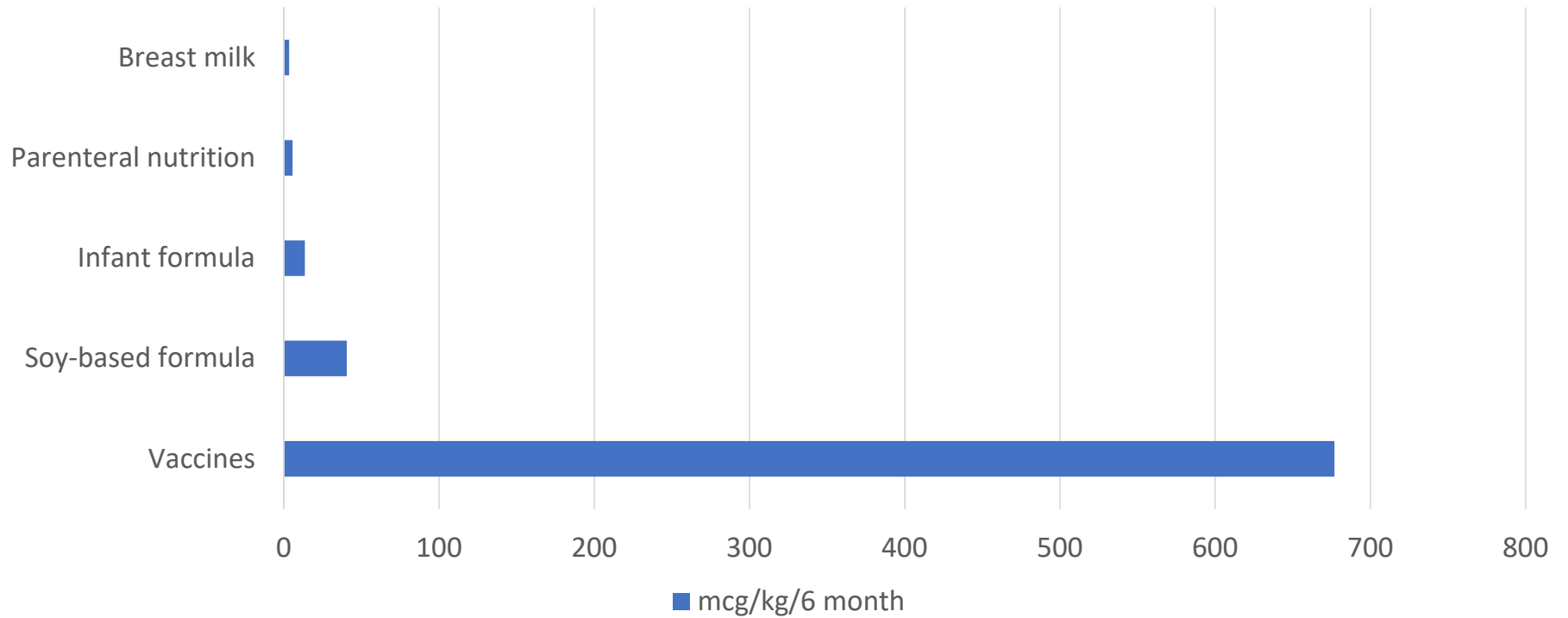
Primary Exposure



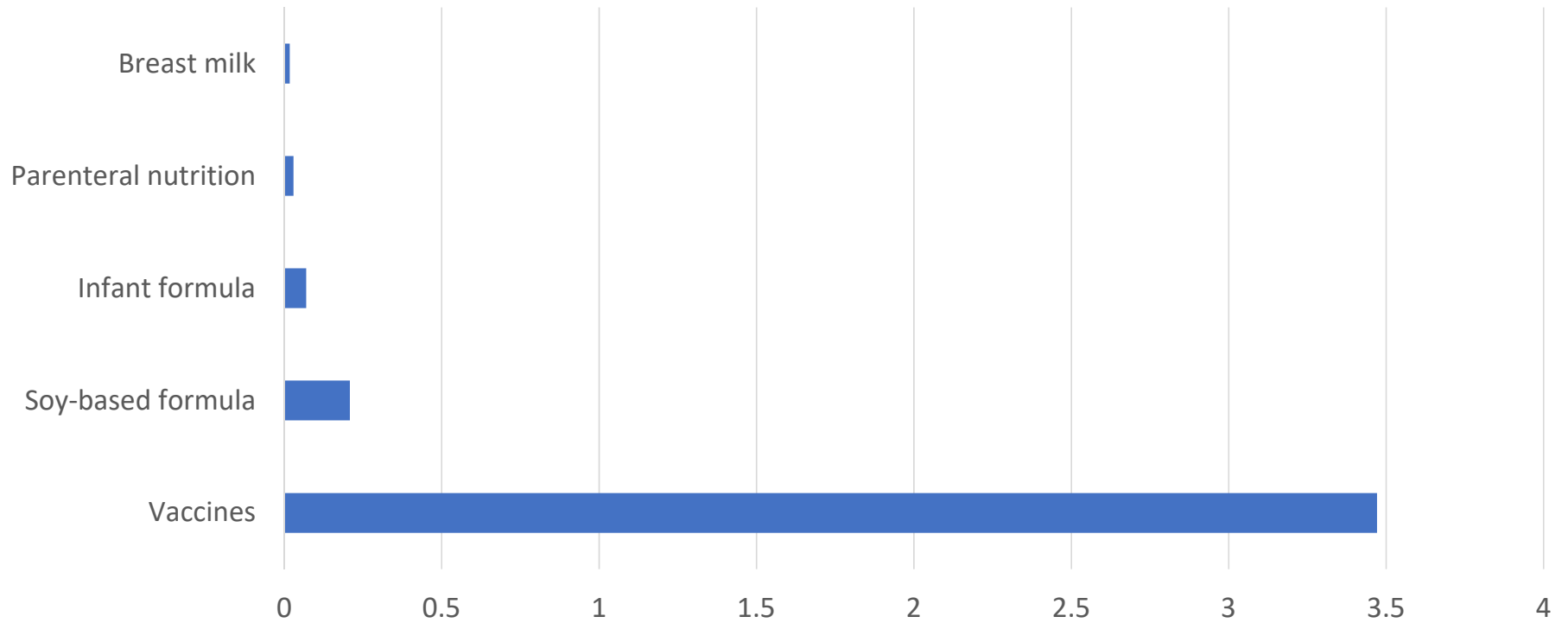
Metabolic Availability (mcg)



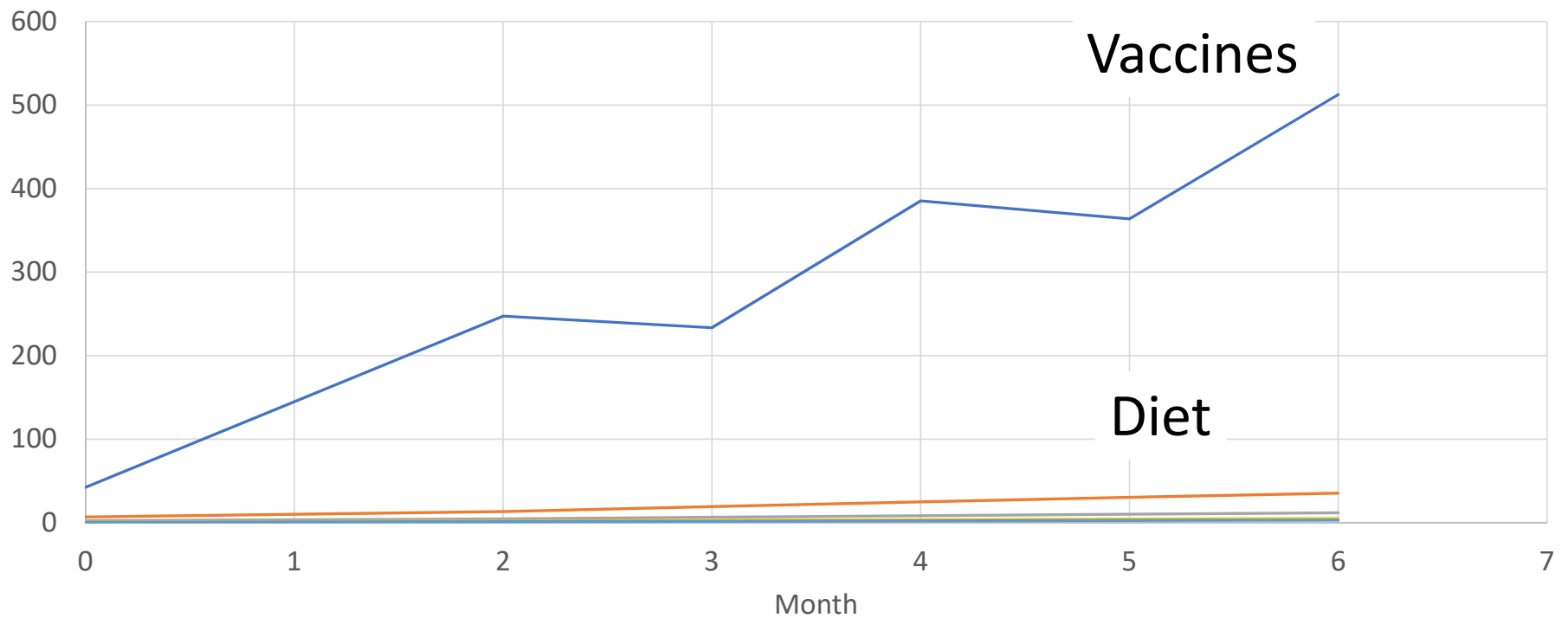
Average mcg/kg Exposure by Source



Average mcg/kg/day Exposure by Source (Ignoring Accumulation)



Accumulation By Source (mcg/kg)



Conclusion

- Claims that infants receive “more aluminum from diet than from vaccines” are misleading
- Whole-body accumulation extrapolated from Flarend et al. (1997) means chronic toxicity from vaccines
- At the end of 6 mos, the total **primary exposure to aluminum** is 2.5 times greater from breast milk than from vaccines
- At the end of 6 mos, the total **metabolically available aluminum** is 200 times higher from vaccines than from breast milk
- At the end of 6 mos, the total **accumulation of aluminum** is 174 times higher from vaccines than from breast milk
- More detailed clearance and accumulation rates per day are needed

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