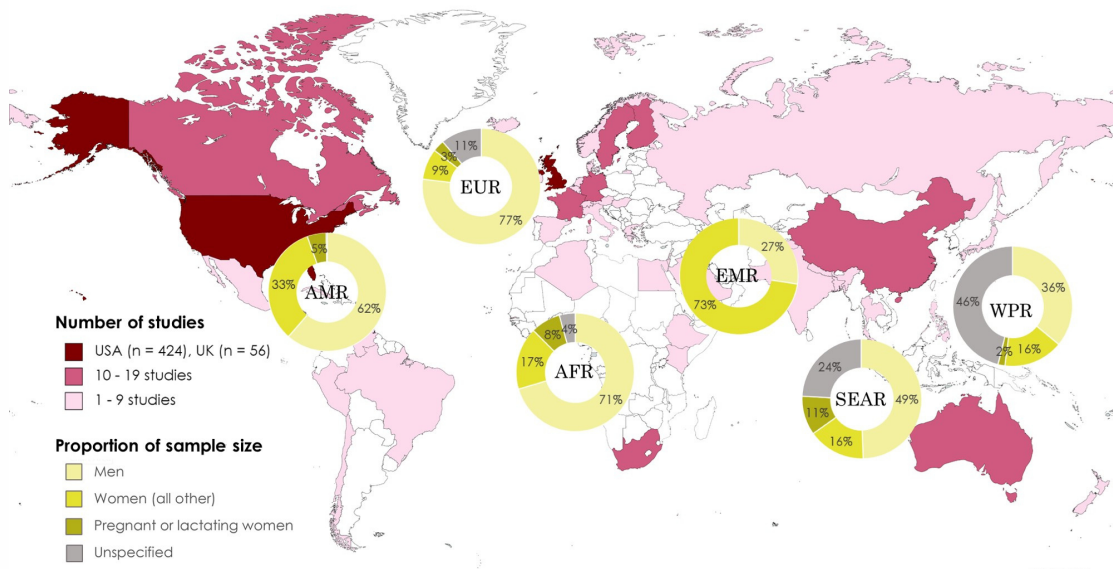
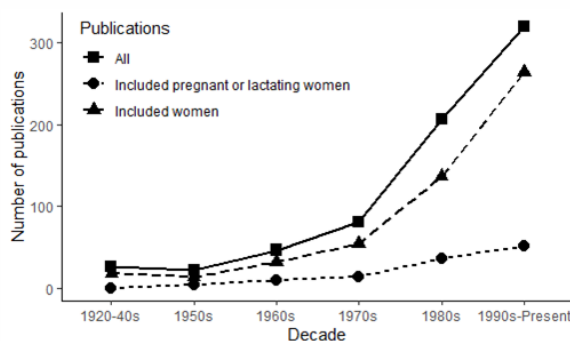


# LIMITED DATA EXIST TO INFORM OUR BASIC UNDERSTANDING OF MICRONUTRIENT REQUIREMENTS IN PREGNANCY

Women and pregnant people have historically been underrepresented in biomedical research. We confirmed that this problem extends to the basic and translational research informing nutrient reference values (NRVs).



Research studies that contributed to the NRVs generally lacked data from low- and middle-income countries. Across the six WHO regions, women represented only 1/3 of the study population, with wide regional variations.



The inclusion of women, but NOT pregnant people, has improved over time.

29%

Women made up less than one-third of the participants in studies that reported on sex

5%

Pregnant & lactating people accounted for only 5% of the sample size across all studies

92%

Among US-based studies, investigators failed to report the race or ethnicity of 92% of participants

For most micronutrients, there was not a single study that included pregnant people to inform the selection of indicators or to establish the 'safe' upper level.

Micronutrient	Indicator Section (Dietary Reference Intakes Report)		Life Stages Section		Upper Level Section	
	Included Women	Included Pregnant/Lactating Women	Included Women	Included Pregnant/Lactating Women	Included Women	Included Pregnant/Lactating Women
Vitamin A	67%	0%	89%	33%	100%	40%
Vitamin B1	57%	0%	60%	10%	0%	0%
Vitamin B2	70%	10%	87%	30%	0%	0%
Vitamin B3	0%	0%	80%	0%	50%	0%
Folate	64%	12%	80%	33%	80%	5%
Vitamin B12	100%	0%	74%	15%	0%	0%
Vitamin C	0%	0%	100%	13%	100%	0%
Vitamin D & Calcium	100%	0%	100%	32%	67%	0%
Iron	83%	17%	87%	13%	88%	25%
Zinc	50%	0%	78%	29%	63%	13%

Nutrient reference values (NRVs) play important roles in the public and private sector. We found that women and pregnant or lactating people are underrepresented in research that informs NRVs.

We call urgently upon funders and researchers to address these fundamental gaps in knowledge with high-quality nutrition research.

-- Smith & He, et al. Science Advances 2021