**Supplementary Figure. The effect of sex on in vitro cytokine responses at age 4-6 months, stratified by NVAS**



Panel A-F, geometric mean ratios (GMR) of cytokine responses, comparing females with males, stratified by NVAS. Black bars represent placebo receiving individuals; grey bars represent NVAS receiving individuals. For responses of IL-13, IL-17, IL-10, IFN-γ and IL-5 in the medium3 condition and IL-17 to PPD, >50% of measurements were below the lower detection limit, hence these outcomes were analysed as the frequency of measureable values by Poisson regression, and reported as proportion ratios of measurements being above lower limit. Panel G and H, geometric mean ratio-ratios (GMRR) of cytokine responses TNF-α:IL-10 (G) or IFN-γ:IL-5 and IFN-γ:IL-10 (H), comparing females with males; only cytokine distributions with >50% detectable observations were included in the analysis. A GMR or GMRR > 1 can be interpreted as females having larger cytokine concentrations or ratios than males, respectively.

Note that the x-axes for IL-13, IL-17 and IFN-γ and IL-5 are identical.

collective: Cytokine responses were analysed collectively, grouped across the different stimulations.

#: IL-5 responses in the NVAS group could not be analysed collectively, due to effect estimates being too heterogeneous (p<0.05). Hence, the IFN-γ : IL-5 ratio of the collective responses was not reported.

NVAS: neonatal vitamin A supplementation; medium3, medium1: culture with medium alone for 3 days or 1 day, respectively; LPS: lipopolysaccharide; Pam: palmitoyl(3)-cysteine-serine-lysine(4); PHA: phytohaemagglutinin; PPD: purified protein derivative from *Mycobacterium tuberculosis*; TT: tetanus toxoid

Statistical test for effect of sex: \* p<0.05; \*\* p<0.01; \*\*\* p<0.001; statistical test for interaction between NVAS and sex: Δ p<0.05; ΔΔ p<0.01.