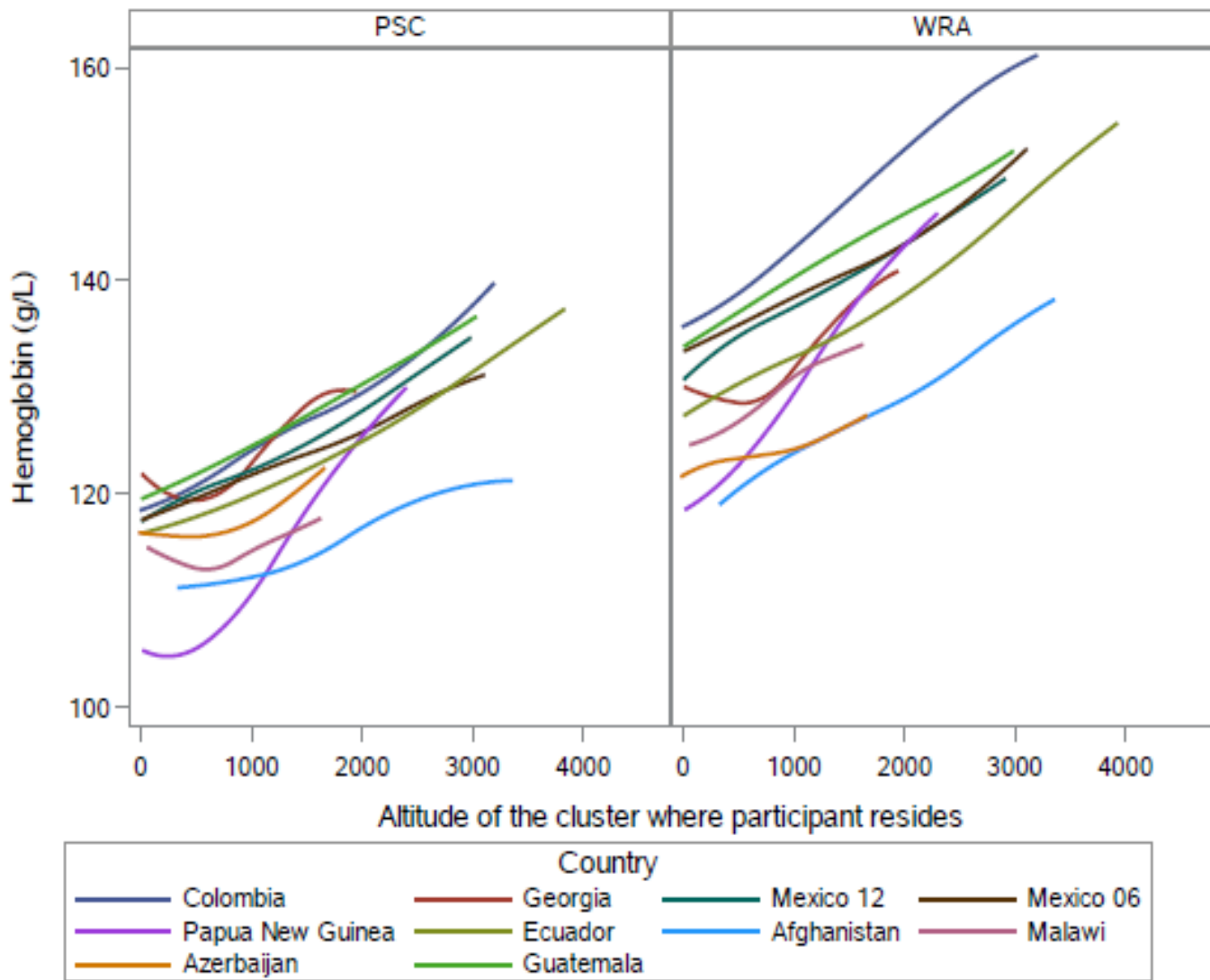
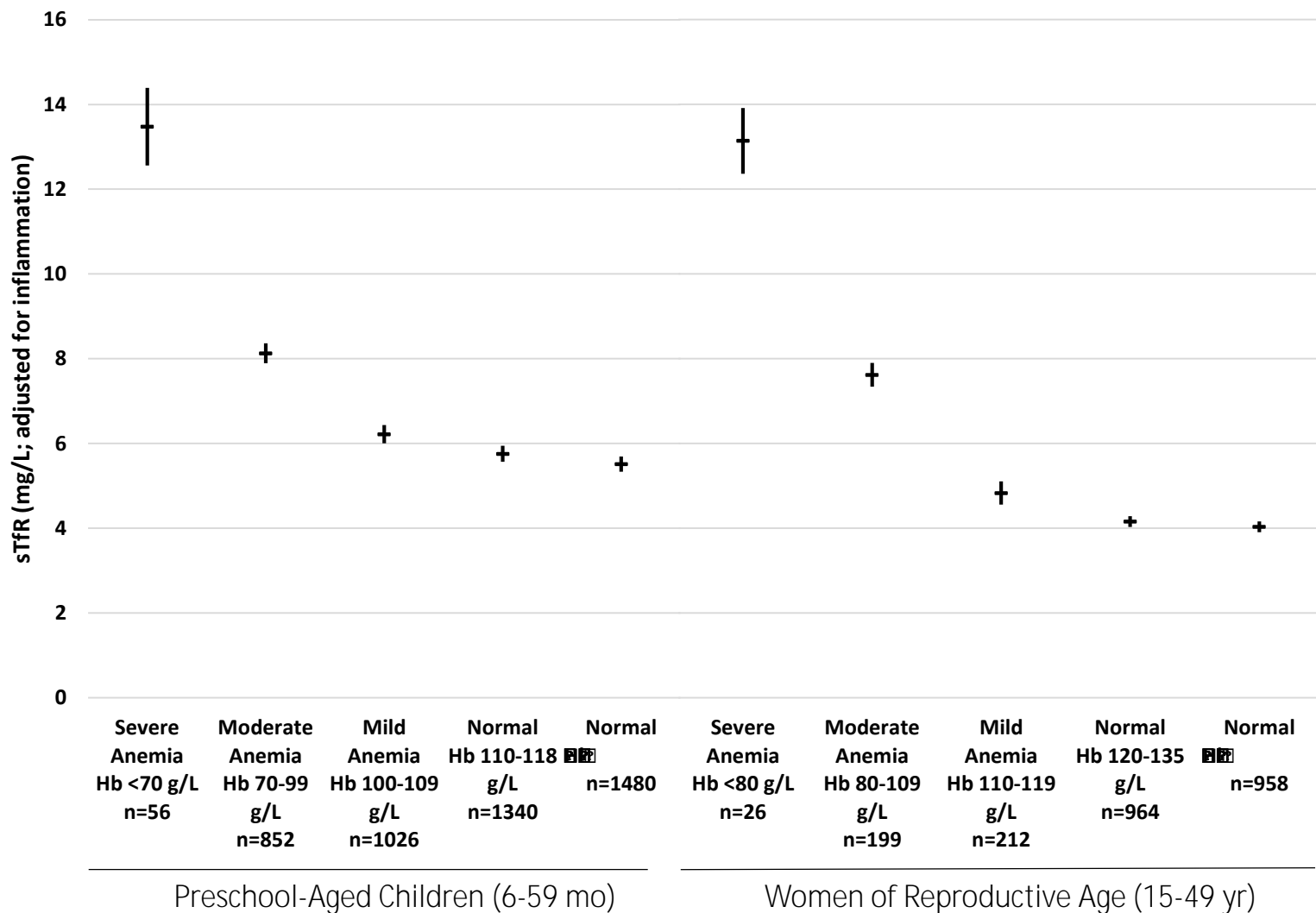


Figure S1. Association between altitude and hemoglobin fit with a penalized B-spline with three knots by survey for preschool-aged children (PSC) and women of reproductive age (WRA)*



*Excludes surveys with no variation in altitude (Bolivia and the United Kingdom) or altitude was reported only in three categories (Laos)

Figure S2. Mean (95% CI) inflammation-corrected soluble transferrin receptor (sTfR) concentration by hemoglobin adjusted for altitude using the proposed equations to adjust hemoglobin (Hb) for altitude and smoking*

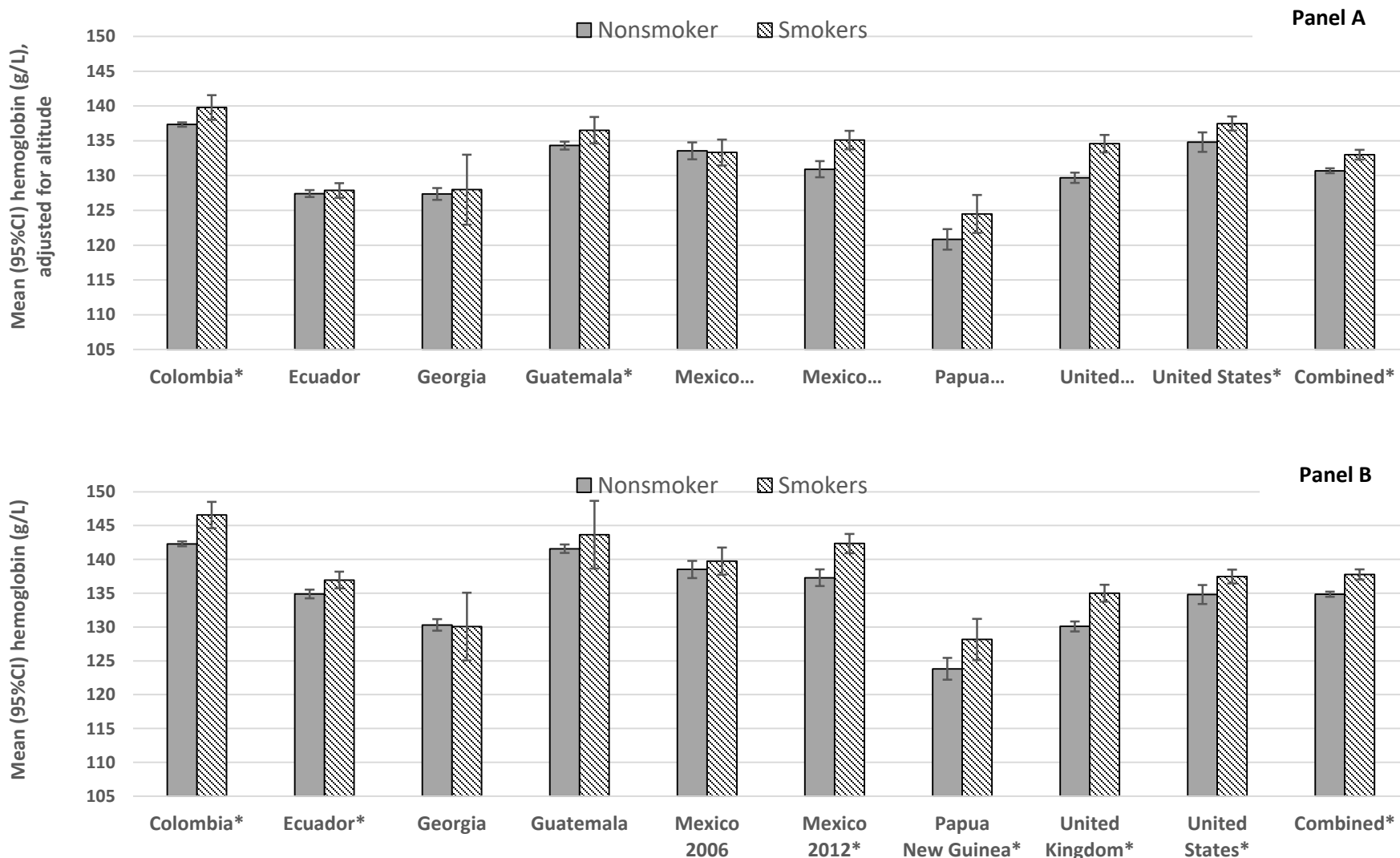


*Difference in mean sTfR between Hb categories: $P < 0.005$ except for between the Normal groups for PSC ($P = 0.35$) and WRA including smoking ($P = 0.82$). Hb adjusted by subtracting the following values from individual Hb concentration: For PSC, $Hb_adjustment (g/L) = (0.0048108 * altitude) + (0.0000004 * altitude^2)$. For WRA, $Hb_adjust_altitude (g/L) = (0.0052792 * altitude) + (0.0000003 * altitude^2)$. Adjustment for smoking was in addition to the adjustment for altitude based on: if cigarette quantity known $Hb_adjust_smoking (g/L) = (0.4573 * cigarette_number) + (-0.0078 * cigarette_number^2)$; if cigarette quantity unknown, $Hb_adjust_smoking (g/L) = 2$.

a Data from Azerbaijan, Bolivia, Guatemala, Laos, Malawi, and Papua New Guinea where sTfR and AGP were assessed.

b Data from Guatemala, and Papua New Guinea where both altitude and smoking data available and sTfR and AGP were assessed.

Figure S3. Mean (95% confidence interval) hemoglobin concentrations by smoking status for each country and for all countries combined (Panel A: Crude difference; Panel B, Hb adjusted for altitude).^a



^a Altitude adjustment based on WHO cutoffs.⁷

*Mean hemoglobin significantly higher among smokers, $P < 0.03$.