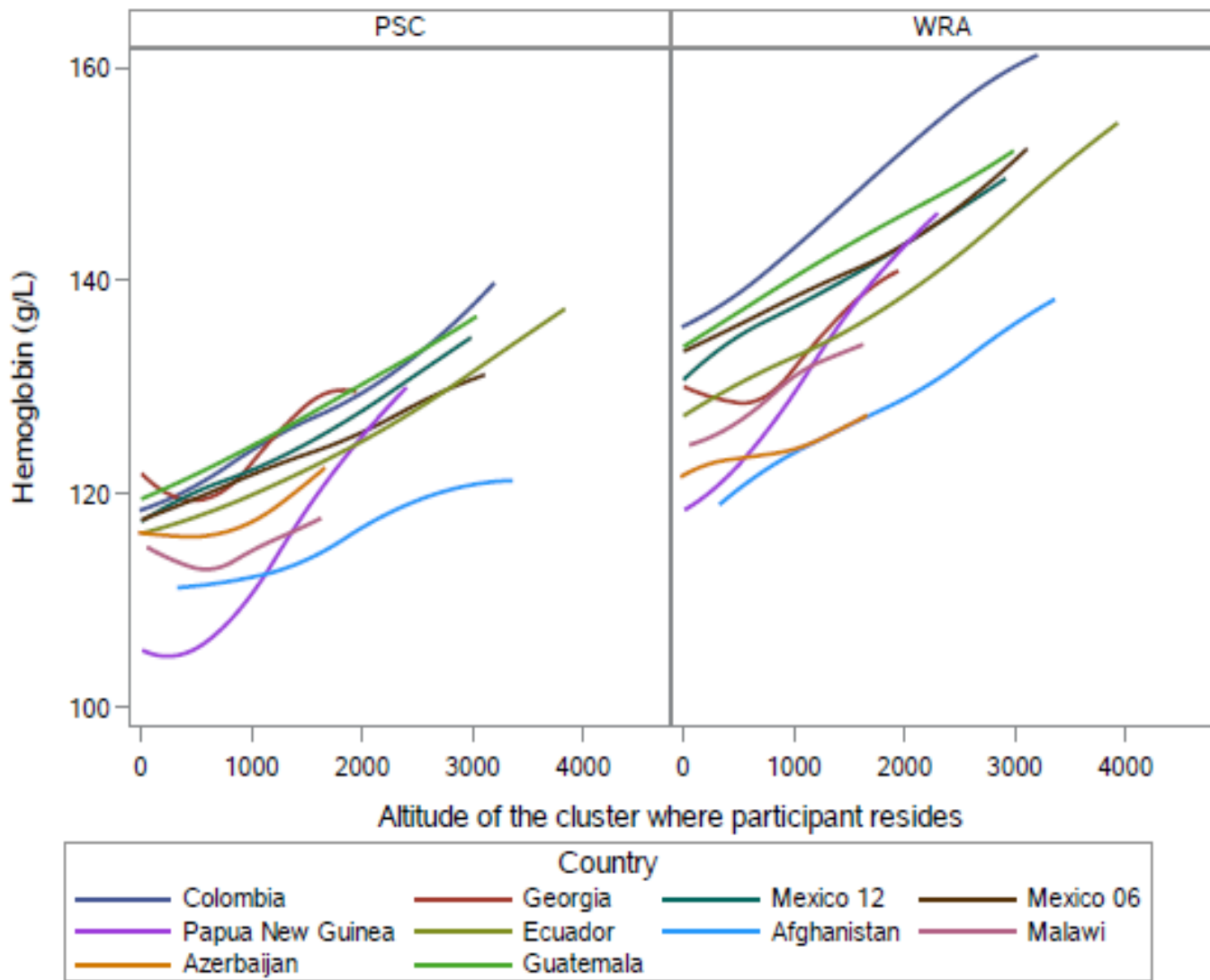**Figure S1.** Association between altitude and hemoglobin fit with a penalized B-spline with three knots by survey for preschool-aged children (PSC) and women of reproductive age (WRA)*

*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*
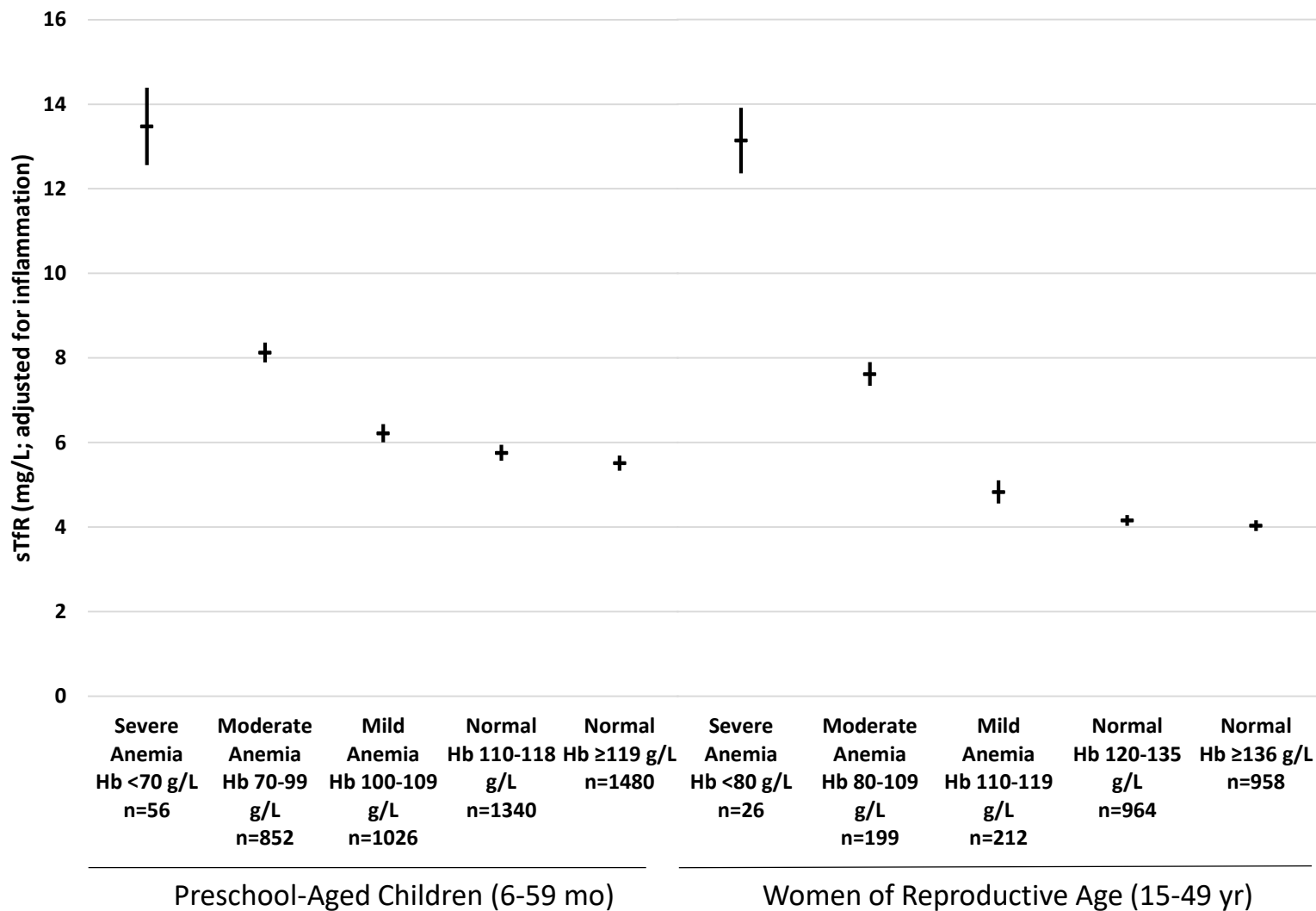
*Difference in mean sTfR between Hb categories: P < 0.005 except for between the Normal groups for PSC (P = 0.35) and WRA including smoking (P = 0.66). Hb adjusted by subtracting the following values from individual Hb concentration: For PSC, Hb_adjustment (g/L) = (0.0048108 * altitude) + (0.0000004 * altitude2). For WRA, Hb_adjust_altitude (g/L) = (0. 0052792 * altitude) + (0.0000003 * altitude2). 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_number2); 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]
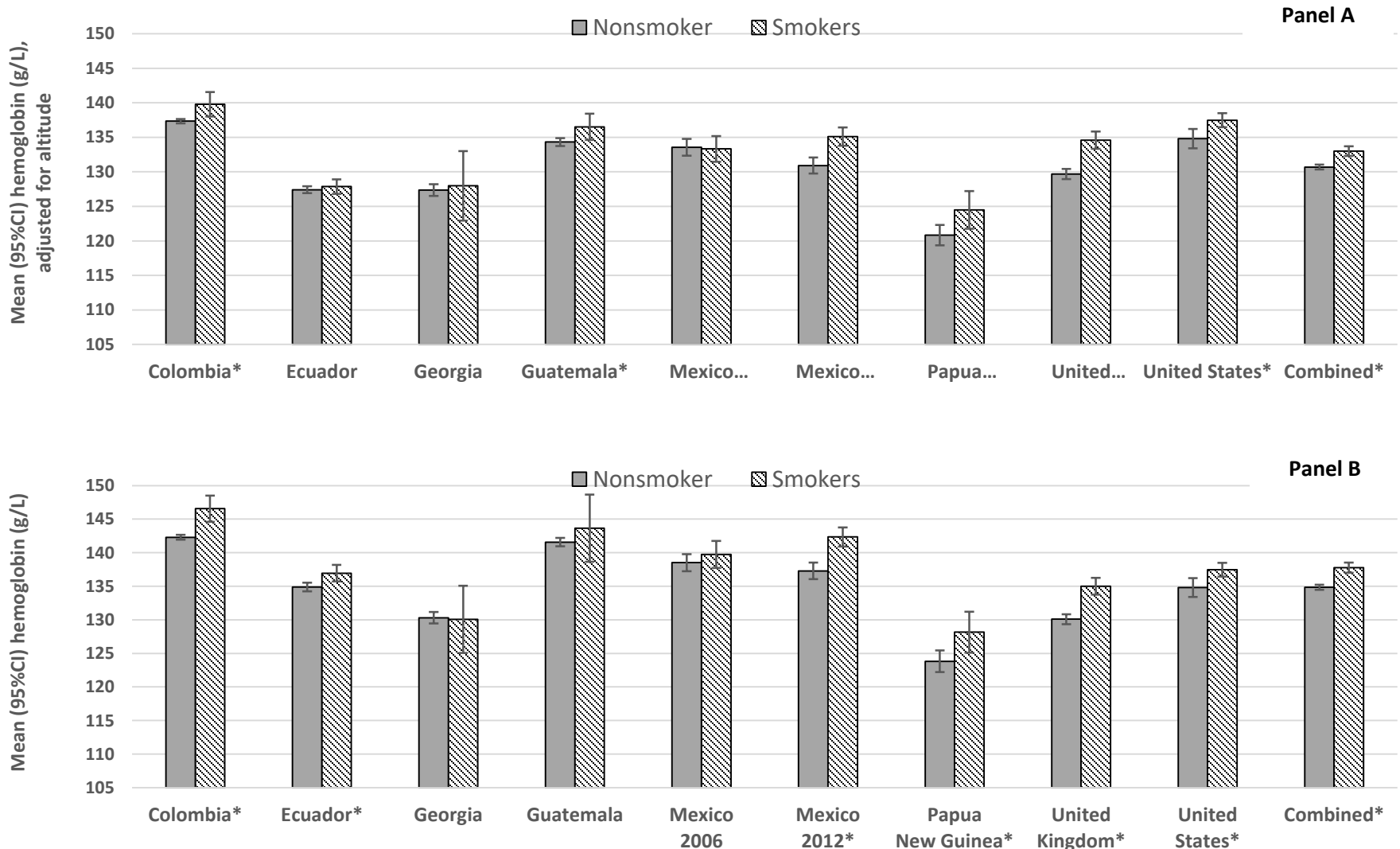
a Altitude adjustment based on WHO cutoffs.[7]
*Mean hemoglobin significantly higher among smokers, P < 0.03.