**Figure S2a. Final path model for hemoglobin.** The path coefficients displayed at the arrows, are the partial correlations (correlations adjusted for other variables) between then variables, with corresponding p-values. Only significant partial correlations are displayed. Goodness of fit statistics: Chi-Square/DF= (2.4207/2) <2. Root Mean Square Residual (RMSR)= 0.0075. Goodness of Fit Index (GFI)= 0.9986. Adjusted GFI (AGFI)=0.9851.
Figure S2b. Final path model for erythrocyte count (RBC). The path coefficients displayed at the arrows, are the partial correlations (correlations adjusted for other variables) between then variables, with corresponding p-values. Only significant partial correlations are displayed. Goodness of fit statistics: Chi-Square/DF = 5.0075/3. Root Mean Square Residual (RMSR) = 0.0114. Goodness of Fit Index (GFI)= 0.9971. Adjusted GFI (AGFI)= 0.9795.
Figure S2c. Final path model for thrombocyte count (PLT). The path coefficients displayed at the arrows, are the partial correlations (correlations adjusted for other variables) between then variables, with corresponding p-values. Only significant partial correlations are displayed. Goodness of fit statistics: Chi-Square/DF= 1.6030/3 <2. Root Mean Square Residual (RMSR)= 0.0088. Goodness of Fit Index (GFI) = 0.9991. Adjusted GFI (AGFI) = 0.9934.

SAS code for the CALIS procedure

Initial model specified, which was not supported by the path analysis:

```sas
proc rank data=cesium.path_analysis noRMAL = blom out = b;
var hb cs_soil log_cs_kg kids_age sex spring summer autumn;
ranks R_hb R_cs_soil R_log_cs_kg R_kids_age R_sex R_spring R_summer R_autumn;
run;

proc means data=b;
var R_hb R_cs_soil R_log_cs_kg R_kids_age R_sex R_spring R_summer R_autumn;
run;

proc calis cov method=ml stderr data= b maxiter=500 mod OUTEST=pout effpart;
var R_hb R_log_cs_kg R_cs_soil r_kids_age R_sex R_spring R_summer R_autumn;
LINEQS
R_log_cs_kg= beta01 r_cs_soil + beta02 R_spring + beta03 R_summer + beta04 R_autumn + e_r_log_cs_kg,
R_hb = beta11 R_log_cs_kg + beta12 r_kids_age + beta13 R_sex + beta14 r_cs_soil + disturb;

STD
r_cs_soil = VE_r_cs_soil,
r_kids_age = VE_r_kids_age,
r_sex = VE_r_sex,
R_spring = VE_R_spring,
R_summer = VE_R_summer,
R_autumn = VE_R_autumn,
e_r_log_cs_kg = VE_e_R_log_cs_kg,
disturb = VE_disturb;

COV
```
Final models specified, which were supported by the path analysis:

*Final model for hemoglobin;

```
proc calis cov method=ml stderr data= b maxiter=500 mod OUTEST=pout effpart;
var R_hb R_log_cs_kg R_cs_soil R_spring R_summer R_autumn;
LINEQS
R_log_cs_kg = BETA01 r_cs_soil + beta02 R_spring + beta03 R_summer + beta04 R_autumn + e_r_log_cs_kg,
R_hb = BETA11 R_log_cs_kg + beta13 R_summer + beta14 R_autumn+ disturb;

STD
r_cs_soil = VE_r_cs_soil,
R_spring = VE_R_spring,
R_summer = VE_R_summer,
R_autumn = VE_R_autumn,
e_r_log_cs_kg = VE_e_R_log_cs_kg,
disturb = VE_disturb;

COV
r_cs_soil r_autumn = Csoilautumn,
r_cs_soil r_spring = Csoilspring,
r_summer r_autumn = Csummerautumn,
r_summer r_spring = Csummerspring,
r_autumn r_spring = Cautumnspring;
run;
```

*Final model for erythrocytes;

```
proc calis cov method=ml stderr data= b maxiter=500 mod OUTEST=pout effpart;
var R_rbc R_log_cs_kg R_cs_soil R_spring R_summer R_autumn;
LINEQS
R_log_cs_kg = BETA01 r_cs_soil + beta02 R_spring + beta03 R_summer + beta04 R_autumn + e_r_log_cs_kg,
R_rbc = BETA11 R_log_cs_kg + beta13 R_summer + disturb;

STD
r_cs_soil = VE_r_cs_soil,
R_spring = VE_R_spring,
R_summer = VE_R_summer,
R_autumn = VE_R_autumn,
e_r_log_cs_kg = VE_e_R_log_cs_kg,
disturb = VE_disturb;

COV
r_cs_soil r_autumn = Csoilautumn,
r_cs_soil r_spring = Csoilspring,
r_summer r_autumn = Csummerautumn,
r_summer r_spring = Csummerspring,
r_autumn r_spring = Cautumnspring;
run;
```
r_summer r_spring = Csummerspring,
r_autumn r_spring = Cautumnspring;
run;

*Final model for thrombocytes;

proc calis cov method=ml stderr data=b maxiter=500 mod OUTEST=pout effpart;
var R_plt R_log_cs_kg R_cs_soil R_spring R_summer R_autumn;
LINEQS
R_log_cs_kg = BETA01 R_cs_soil + beta02 R_spring + beta03 R_summer + beta04 R_autumn + e_r_log_cs_kg,
R_plt = BETA11 R_log_cs_kg + beta14 r_autumn + disturb;
STD
r_cs_soil = VE_r_cs_soil,
R_spring = VE_R_spring,
R_summer = VE_R_summer,
R_autumn = VE_R_autumn,
e_r_log_cs_kg = VE_e_R_log_cs_kg,
disturb = VE_disturb
;
COV
r_cs_soil r_autumn = Csoilautumn,
r_cs_soil r_spring = Csoilspring,
r_summer r_autumn = Csummerautumn,
r_summer r_spring = Csummerspring,
r_autumn r_spring = Cautumnspring;
run;