



Supplementary Fig. 1 Monthly and seasonal changes in mean birth weight (BW) and five key meteorological factors in Lhasa from 2013-September to 2018-September. A clear yearly periodicity can be observed for both BW and meteorological factors, and a non-synchronous change of sunlight contrasting the other factors can be clearly seen as a distinctive feature of high-altitude climate. Altitude and latitude: Lhasa: 3660m-29.60°N; Chongqing: 400m-29.56°N; Wuhan: 40m-30.55°N.

Supplementary Table 1. Birth information of Tibetans (TBN) and Han Chinese (HAN) living in Lhasa. The mean of each item is presented as average \pm SD (standard deviation).

		Sample size	Birth weight (g)	Maternal age	Parity	Gestational age (days)
	ALL	8463	3115.67 \pm 438.46	28.49 \pm 4.82	1.87 \pm 1.24	272.01 \pm 8.64
TBN	Male	4298	3176.03 \pm 442.39	28.48 \pm 4.82	1.84 \pm 1.21	271.99 \pm 8.63
	Female	4165	3055.32 \pm 434.53	28.51 \pm 4.81	1.90 \pm 1.26	272.02 \pm 8.66
	ALL	455	2939.64 \pm 424.51	28.86 \pm 5.66	1.84 \pm 0.98	272.80 \pm 8.17
HAN	Male	222	2956.30 \pm 424.04	28.73 \pm 5.74	1.86 \pm 1.17	271.24 \pm 7.55
	Female	233	2922.99 \pm 424.98	28.99 \pm 5.58	1.82 \pm 0.79	274.35 \pm 8.79

Supplementary Table 2. Mean birth weight by month and season of birth after adjusted by maternal age, gestational age and parity. The data is visualized in Fig. 1A and 2A. adjAVG: adjusted average; SD: standard deviation.

Month	Male		Female		Season	Male		Female	
	adjAVG	SD	adjAVG	SD		adjAVG	SD	adjAVG	SD
Mar	3262.78	430.98	3097.29	424.44					
Apr	3222.21	445.65	3051.44	447.30	Spring	3213.66	436.90	3077.54	436.49
May	3152.54	430.59	3081.39	437.59					
Jun	3166.37	420.57	3049.39	441.89					
Jul	3112.69	417.27	3035.08	386.01	Summer	3120.09	425.32	3046.06	415.13
Aug	3080.88	433.63	3051.99	416.19					
Sep	3145.90	440.82	3035.29	434.90					
Oct	3163.81	428.22	2991.29	425.39	Autumn	3145.95	444.57	3025.08	435.95
Nov	3130.61	461.50	3047.85	446.95					
Dec	3179.21	454.91	3007.59	427.10					
Jan	3240.35	451.05	3124.87	460.10	Winter	3257.91	453.79	3107.19	446.84
Feb	3320.61	455.07	3151.96	453.29					

Supplementary Table 3. Birth weight and reduction comparison among lowlanders (SHH: Shanghai Han Chinese), and those living at high altitude (LST: Lhasa Tibetans; LSH: Lhasa Han Chinese). The reductions and its proportions are indicated as Δ and %. A more BW reduction and depletion of BW sex difference in males than in females is observed. M-male; F-female.

BW (g)	M	F	Δ(M-F)
SHH	3436	3319	117
LST	3176	3055	121
LSH	2956	2923	33
Δ(SHH-LST)	260 (7.57%)	264 (7.95%)	4 (0.39%)
Δ(SHH-LSH)	480 (13.97%)	396 (11.93%)	84 (2.04%)
Δ(LST-LSH)	220 (6.93%)	132 (4.32%)	88 (72.73%)

Supplementary Table 4. Statistics of low-BW prevalence and sex ratio in highlanders and lowlanders. A higher low-BW frequency in males than in females, and lower male counts than females in Han Chinese living at high altitude is observed. M-male; F-female.

Counts	SHH	LST	LSH
All	3436	4298	222
M			
Low-BW	44	237	29
Low-BW ratio	0.01	0.06	0.13
F			
Low-BW	70	384	33
Low-BW ratio	0.02	0.09	0.14
M/F Low-BW ratio	0.61	0.60	0.92
M/F ratio	1.04	1.03	0.95