

Supplementary table 1. Geographic characteristics, life habits, and disease histories of 12,301 semen donors

Characteristic	n (%)
Age, years	
18-30	9996 (81.3)
30-39	2062 (16.8)
40-50	239 (1.9)
Ethnicity	
Han	12054 (98.0)
Others	247 (2.0)
Education	
High school	4669 (38.0)
Junior college	6272 (51.0)
Undergraduate or higher	1360 (11.1)
Marital status	
Unmarried	10033 (81.6)
Married	2169 (17.6)
Divorced	99 (0.8)
Childbearing history	
Never	10720 (87.1)
Ever	1581 (12.9)
Native geographical region	
South	9151 (74.4)
North	3150 (25.6)
Smoking habit	
Non-smoker	4327 (35.2)
Smoker	186 (1.5)
NA	7788 (63.3)
Drinking habit	
Never	4506 (36.6)
Ever	7 (0.1)
NA	7788 (63.3)
Overweight or fat	
No	3901 (31.7)
Yes	608 (5.0)
NA	7792 (63.3)
Hypertension	
No	4495 (36.5)
Yes	10 (0.1)
NA	7796 (63.4)
History of testicular surgery	
No	4511 (36.7)
Yes	2 (0.0)
NA	7788 (63.3)

NA: not available

Supplementary table 2. Semen quality parameters among different professions

Occupation	<i>n</i> (%)	Semen volume (ml)	Sperm concentration (10 ⁶ /ml)	Sperm count (10 ⁶)	Sperm mobility (%)
College students	4450 (36.2)	3.3 (2.5-4.5)	63.7 (44.8-83.7)	210 (141-290)	49.0 (40.3-55.0)
Business	1756 (14.3)	3.3 (2.5-4.5)	59.5 (41.0-78.4)	197 (126-282)	48.2 (40.0-53.0)
IT industry	975 (7.9)	3.5 (2.6-4.6)	60.0 (41.8-79.0)	211 (135-289)	47.0 (39.0-51.5)
Architectural engineering	706 (5.7)	3.6 (2.8-4.8)	61.8 (44.0-80.0)	220 (152-307)	48.5 (40.0-53.5)
Human health	276 (2.2)	3.7 (2.7-4.7)	60.2 (43.4-82.3)	214 (142-299)	47.0 (40.0-51.1)
Culture or education	318 (2.6)	3.7 (2.8-4.6)	60.2 (41.0-78.3)	213 (137-299)	47.0 (38.2-52.0)
Finance or insurance	416 (3.4)	3.3 (2.3-4.3)	60.0 (41.0-81.0)	200 (123-282)	48.6 (38.2-53.8)
Soldier or police	134 (1.1)	3.8 (2.6-4.8)	53.6 (40.4-75.1)	191 (131-302)	45.5 (38.0-52.8)
Commercial service	586 (4.8)	3.7 (2.7-5.0)	59.9 (41.0-79.0)	210 (141-301)	47.0 (39.0-52.0)
Civil servant	261 (2.1)	3.1 (2.3-4.1)	61.4 (44.0-80.5)	197 (120-280)	49.4 (41.2-55.3)
Industrial and mining enterprises	139 (1.1)	3.0 (2.3-4.0)	65.5 (45.8-84.5)	198 (135-270)	48.0 (38.4-55.0)
Transportation	119 (1.0)	3.3 (2.4-4.2)	60.0 (44.5-78.9)	200 (117-300)	49.0 (39.0-54.2)
Entertainment and sports	166 (1.3)	3.0 (2.3-4.0)	62.5 (43.0-80.8)	187 (109-251)	52.2 (40.0-58.1)
Others	1460 (11.9)	3.4 (2.5-4.4)	62.2 (43.8-80.3)	204 (138-282)	49.5 (40.0-55.0)
Unemployed	539 (4.4)	3.5 (2.5-4.7)	56.0 (38.7-73.5)	194 (119-275)	48.0 (39.0-52.5)

IT: Information Technology