Supplementary Table SI Results of adjusted linear models assessing relation of semen quality[a] on pregnancy outcomes among male births ($n = 110$)

Semen analysis variable	BW (g)	GA at delivery (weeks)	HC (cm)	BL (cm)	PI ($100 \times BL/BW^3$)
General characteristics					
Volume (ml)	−23.91	0.08	−0.13	−0.18	0.01
Sperm concentration ($\times 10^6$/ml)	0.58	0.00	0.00	0.00	0.00
Total sperm count ($\times 10^6$/ejaculate)	0.02	0.00	0.00	0.00	0.00
Hypo-osmotic swollen (%)	−4.07	−0.03	0.01	−0.04	0.00
Sperm motility (24 h)					
Average path velocity (mm/s)	−6.74	−0.01	−0.01	−0.03	0.00
Straight line velocity (mm/s)	−7.41	−0.04**	0.00	−0.04	0.00
Curvilinear velocity (mm/s)	−2.98	−0.01	−0.01	−0.02	0.00
Amplitude head displacement (mm)	−32.30	−0.48***	0.09	−0.30	0.02
Beat cross frequency (Hz)	−12.43*	−0.03	0.01	−0.06	0.00
Straightness (%)	−1.64	−0.01	0.00	−0.02	0.00
Linearity (%)	−2.19	−0.01	0.00	−0.03	0.00
Percent motility (%)	−5.71	−0.04**	0.01	−0.03	0.00
Sperm head measurements					
Length (mm)	−444.25**	−0.46	−1.76**	−1.29	−0.14
Area (mm^2)	−21.05	−0.18	−0.39*	0.29	−0.07*
Width (mm)	543.28*	−0.26	0.49	3.68**	−0.16
Elongation factor (%)	29.28***	0.02	0.08*	0.14**	0.00
Perimeter (mm)	−143.20	−0.46	−0.97**	−0.06	−0.10
Acrosome area of head (%)	−10.92	−0.11***	−0.07	−0.05	0.00
Morphology					
Strict criteria (%)	5.81	−0.04*	−0.01	0.01	0.00
Traditional normal (%)	4.96	−0.04*	0.00	0.02	0.00
Amorphous (%)	−6.09	0.02	0.01	−0.02	0.00
Round (%)	−40.10	0.31*	−0.35*	−0.15	0.00
Pyriform (%)	−16.60*	−0.02	−0.07*	−0.06	0.00
Bicephalic (%)	1.28	−0.04	0.11	0.14	−0.02
Taper (%)	−19.85	0.03	−0.06	−0.09	0.00
Megalo head (%)	−1.53	0.00	0.06	0.01	0.00
Micro head (%)	44.36	0.25	0.22	0.18	0.02
Neck/midpiece abnormalities (%)	−4.59	0.02	−0.02	−0.03	0.00
Coiled tail (%)	2.78	0.04**	0.01	0.00	0.00
Other tail abnormalities (%)	−6.70	−0.07	0.01	−0.05	0.00
Cytoplasmic droplet (%)	−9.08	0.00	0.00	−0.08	0.01
Immature sperm (#)	−19.69*	0.01	0.03	−0.09	0.00
Sperm chromatin stability assay	−23.91	0.08	−0.13		
DNA fragmentation index (%)	0.58	0.00	0.00	0.01	0.00
High DNA stainability (%)	0.02	0.00	0.00	−0.03	0.01

BW, birthweight; GA, gestational age; HC, head circumference; BL, birth length; PI, ponderal index.
*$P < 0.1$, **$P < 0.05$, ***$P < 0.01$, ****$P < 0.001$; Adjusted model included age (years), smoking status (unexposed, passive exposure, current smoker), site (MI or TX, USA), race (white non-Hispanic, black non-Hispanic, Hispanic, other) and BMI (kg/m^2).
[a]For these models, semen parameters were included from only the first semen sample.

Supplementary Table SII Results of adjusted linear models assessing relation of semen quality[a] on pregnancy outcomes among female births (n = 116)

Semen analysis variable	BW (g)	GA at delivery (weeks)	HC (cm)	BL (cm)	PI ($100 \times BL/BW^3$)
General characteristics					
Volume (ml)	13.12	0.09	0.03	0.03	0.01
Sperm concentration ($\times10^6$/ml)	−0.78	0.00	−0.01	−0.01**	0.00**
Total sperm count ($\times10^6$/ejaculate)	0.03	0.00	0.00	0.00	0.00
Hypo-osmotic swollen (%)	6.68	−0.01	0.02	−0.03	0.01**
Sperm motility (24 h)					
Average path velocity (mm/s)	6.04*	0.03*	−0.01	0.03	0.00
Straight line velocity (mm/s)	5.71	0.03*	−0.02	0.03	0.00
Curvilinear velocity (mm/s)	3.90*	0.02*	0.00	0.01	0.00
Amplitude head displacement (mm)	61.16*	0.19	−0.25	0.18	0.01
Beat cross frequency (Hz)	11.69*	0.04	0.02	0.06	0.00
Straightness (%)	5.31**	0.03***	0.00	0.02*	0.00
Linearity (%)	6.97*	0.04**	0.00	0.04*	0.00
Percent motility (%)	−0.93	0.00	−0.02	−0.02	0.00
Sperm head measurements					
Length (mm)	356.09*	1.52*	2.07*	2.18**	−0.12
Area (mm^2)	34.16	0.24	0.69**	−0.11	0.04
Width (mm)	−304.56	−0.27	0.89	−2.70*	0.25
Elongation factor (%)	−18.16*	−0.07*	−0.04	−0.14**	0.01
Perimeter (mm)	153.40	0.65	1.40**	0.50	0.03
Acrosome area of head (%)	−13.70	−0.04	−0.09	−0.10*	0.01
Morphology					
Strict criteria (%)	−9.24*	−0.02	−0.05*	−0.07**	0.00
Traditional normal (%)	−9.86**	−0.02	−0.04*	−0.06***	0.00
Amorphous (%)	8.91*	0.01	0.00	0.05**	0.00
Round (%)	36.14	−0.01	0.24	0.10	0.01
Pyriform (%)	9.90	0.06	0.06	0.11**	−0.01
Bicephalic (%)	32.76	−0.05	0.22	0.08	0.01
Taper (%)	38.36**	0.07	−0.04	0.04	0.02**
Megalo head (%)	47.02*	0.01	0.02	0.23	0.01
Micro head (%)	59.78*	0.20	−0.12	0.09	0.03
Neck/midpiece abnormalities (%)	11.36**	0.04*	0.07**	0.08***	0.00
Coiled tail (%)	4.90	0.01	0.05*	0.05*	0.00
Other tail abnormalities (%)	1.26	−0.02	0.10	0.00	0.00
Cytoplasmic droplet (%)	34.96****	0.06	0.02	0.21****	0.00
Immature sperm (#)	27.37***	−0.01	0.05	0.10**	0.01
Sperm chromatin stability assay					
DNA fragmentation index (%)	4.61	0.02	0.01	0.09**	−0.01*
High DNA stainability (%)	21.58**	0.01	0.07	0.11**	−0.01

*$P < 0.1$, **$P < 0.05$, ***$P < 0.01$, ****$P < 0.001$; Adjusted model included age (years), smoking status (unexposed, passive exposure, current smoker), site (MI or TX, USA), race (white non-Hispanic, black non-Hispanic, Hispanic, other) and BMI (kg/m^2).
[a]For these models, semen parameters were included from only the first semen sample.