Supplementary Table 1: Crude median semen quality and reproductive hormone parameters according to age at indicators of pubertal development, imputed dataset (n=320)

Age groups in years	Distribution (%)	Sperm concentration (million ml⁻¹)	Semen volume (ml)	Sperm total count (million)	Motile sperm (%)	Normal morphology sperm (%)	DNA damage (%)	Testosterone (nmol l⁻¹)	Estradiol (nmol l⁻¹)	FSH (IU l⁻¹)	LH (IU L⁻¹)	SHBG (nmol l⁻¹)	Inhibin B (pg ml⁻¹)
First nocturnal emission													
<13	31	39.6 (21.4; 86.0)	2.7 (2.1; 3.7)	116.4 (48.7; 248.2)	70.0 (62.0; 77.0)	5.0 (2.5; 8.5)	8.4 (5.6; 10.5)	17.3 (14.5; 21.0)	0.1 (0.1; 0.1)	2.9 (2.1; 3.7)	4.8 (3.5; 5.7)	26.6 (20.2; 33.9)	164.0 (135.0; 190.0)
13–14	30	48.0 (22.9; 90.0)	3.1 (2.0; 4.0)	137.4 (55.0; 281.3)	69.0 (60.0; 75.0)	5.5 (3.5; 8.5)	8.1 (5.7; 12.0)	16.5 (14.2; 19.7)	0.1 (0.1; 0.1)	2.9 (2.2; 4.1)	4.0 (3.0; 5.0)	26.9 (19.9; 33.8)	155.0 (115.0; 180.0)
>14–15	22	31.2 (14.2; 78.8)	2.8 (2.3; 3.9)	112.9 (34.1; 223.4)	71.0 (61.0; 78.0)	6.0 (3.0; 8.0)	8.3 (5.4; 11.0)	16.5 (12.7; 19.4)	0.1 (0.1; 0.1)	3.1 (2.0; 4.5)	4.2 (3.3; 5.3)	25.2 (19.4; 32.5)	150.0 (113.0; 185.0)
>15	17	30.6 (18.4; 75.5)	3.0 (2.0; 3.8)	94.4 (44.5; 204.4)	72.0 (65.0; 78.0)	5.0 (3.0; 8.0)	9.2 (6.3; 11.9)	16.7 (12.4; 20.8)	0.1 (0.1; 0.1)	3.0 (2.1; 5.0)	4.2 (3.1; 5.5)	25.0 (18.7; 37.7)	135.0 (100.0; 180.0)
Start of pubic hair growth													
<13	29	48.5 (22.8; 100.0)	2.6 (2.1; 3.7)	132.5 (56.6; 281.3)	69.0 (60.0; 76.0)	5.5 (3.0; 8.5)	8.3 (5.9; 10.7)	16.9 (15.0; 20.6)	0.1 (0.1; 0.1)	2.9 (2.2; 3.6)	4.5 (3.6; 5.6)	27.5 (19.9; 34.6)	155.0 (122.0; 182.0)
13–14	33	43.4 (20.2; 84.8)	3.0 (2.0; 4.0)	125.6 (45.8; 248.4)	70.0 (60.0; 78.0)	6.0 (3.0; 8.5)	8.2 (5.7; 11.4)	16.3 (12.3; 19.4)	0.1 (0.1; 0.1)	3.0 (2.2; 4.4)	4.5 (3.3; 5.6)	26.6 (20.3; 34.9)	153.0 (109.0; 180.0)
>14–15	23	36.8 (20.1; 86.0)	2.9 (2.3; 3.9)	114.6 (50.2; 264.9)	72.0 (65.0; 78.0)	6.0 (3.0; 8.5)	8.6 (5.9; 11.6)	16.1 (13.0; 19.1)	0.1 (0.1; 0.1)	3.1 (2.1; 4.2)	3.9 (3.1; 5.2)	26.2 (19.9; 32.5)	155.0 (118.0; 188.0)
>15	15	24.6 (16.5; 53.0)	3.0 (2.2; 3.9)	81.5 (36.5; 186.3)	70.0 (62.0; 77.0)	4.5 (3.0; 6.5)	8.6 (5.5; 11.9)	17.0 (14.0; 21.1)	0.1 (0.1; 0.1)	2.8 (1.9; 4.8)	4.0 (2.7; 5.1)	23.9 (18.3; 32.4)	145.0 (115.0; 185.0)
First voice break episode													
<13	16	42.5 (22.8; 92.8)	2.7 (2.2; 3.7)	120.7 (56.6; 276.6)	70.0 (62.0; 77.0)	4.5 (3.0; 7.5)	8.5 (5.5; 11.3)	16.9 (14.8; 22.1)	0.1 (0.1; 0.1)	2.8 (2.0; 3.5)	4.7 (3.8; 5.7)	28.6 (20.6; 35.5)	162.0 (126.0; 184.0)
13–14	28	47.1 (20.5; 89.3)	3.0 (2.1; 4.1)	141.8 (45.8; 275.3)	71.0 (61.0; 78.0)	5.5 (3.0; 8.5)	8.9 (6.3; 12.0)	17.3 (14.5; 19.8)	0.1 (0.1; 0.1)	2.9 (2.2; 4.1)	4.2 (3.3; 5.4)	24.9 (19.0; 35.0)	156.0 (118.0; 187.0)
>14–15	27	33.3 (20.4; 78.0)	3.0 (2.2; 4.0)	114.6 (49.4; 209.5)	69.0 (60.0; 77.0)	6.0 (3.0; 9.0)	7.8 (5.4; 10.5)	15.7 (12.9; 18.6)	0.1 (0.1; 0.1)	3.0 (2.2; 4.6)	4.2 (3.2; 5.6)	26.6 (20.3; 33.3)	152.0 (117.0; 180.0)
>15	29	32.2 (20.1; 79.8)	2.7 (2.1; 3.7)	94.4 (43.7; 217.8)	70.0 (62.0; 77.0)	5.0 (3.0; 8.0)	8.6 (5.5; 11.6)	17.5 (14.8; 21.0)	0.1 (0.1; 0.1)	3.0 (2.1; 4.2)	4.0 (2.8; 5.2)	24.7 (19.4; 32.5)	147.0 (112.0; 185.0)

FSH: follicle-stimulating hormone; LH: luteinizing hormone; SHBG: sex hormone binding globulin