

Table 2: The results of 3-level nested ANOVA

			Male (M)			Female (F)			Harris-Boyd method *1			Nested ANOVA *2		
Analytes	Units	Trans	n	mean	SD	n	mean	SD	z	k	az=k×z	SDR-sex	SDR-reg (M, F)	SDR-age (M, F)
Alb	g/L		1437	43.2	2.6	1871	41.8	2.5	15.97	0.269	4.3	0.40	0.00 (0.00, 0.00)	0.45 (0.51, 0.42)
Urea	mmol/L		1437	4.8	1.1	1871	4.3	1.1	14.35	0.269	3.9	0.33	0.24 (0.30, 0.18)	0.35 (0.24, 0.42)
UA	μmol/L		1437	349	65	1871	246	50	50.04	0.269	13.5	1.30	0.19 (0.16, 0.23)	0.13 (0.00, 0.19)
CRE	μmol/L	log	1437	77	10	1871	56	7	69.98	0.269	18.9	1.83	0.24 (0.25, 0.22)	0.07 (0.08, 0.00)
Na	mmol/L		1436	142.9	1.5	1871	141.9	1.6	17.78	0.269	4.8	0.44	0.00 (0.08, 0.00)	0.30 (0.10, 0.38)
K	mmol/L		1436	4.21	0.29	1871	4.14	0.29	6.98	0.269	1.9	0.08	0.23 (0.18, 0.27)	0.20 (0.18, 0.22)
Cl	mmol/L		1436	103.9	1.8	1871	104.5	1.7	9.33	0.269	2.5	0.23	0.00 (0.00, 0.00)	0.18 (0.22, 0.12)
Ca	mmol/L		1436	2.36	0.07	1871	2.32	0.07	14.15	0.269	3.8	0.35	0.00 (0.00, 0.00)	0.34 (0.33, 0.34)
TCho	mmol/L		1437	4.94	0.85	1871	4.96	0.89	0.36	0.269	0.1	0.00	0.00 (0.00, 0.00)	0.51 (0.45, 0.55)
TG	mmol/L	log	1437	1.23	0.66	1871	0.85	0.44	18.93	0.269	5.1	0.56	0.27 (0.25, 0.31)	0.36 (0.30, 0.36)
HDL-C	mmol/L		1437	1.38	0.33	1870	1.69	0.39	24.73	0.269	6.7	0.55	0.57 (0.64, 0.56)	0.00 (0.00, 0.00)
LDL-C	mmol/L		1437	3.06	0.76	1871	2.84	0.76	7.88	0.269	2.1	0.16	0.00 (0.00, 0.00)	0.46 (0.37, 0.51)
AST	U/L	log	1437	24.2	6.0	1871	21.2	5.4	15.02	0.269	4.0	0.41	0.12 (0.18, 0.00)	0.33 (0.19, 0.42)
ALT	U/L	log	1437	28.6	12.5	1871	20.1	8.2	22.32	0.269	6.0	0.68	0.12 (0.08, 0.14)	0.30 (0.08, 0.38)
LD	U/L	log	1437	188	27	1871	182	28	6.18	0.269	1.7	0.12	0.08 (0.16, 0.00)	0.34 (0.11, 0.43)
ALP	U/L	log	1437	64	16	1871	55	15	16.48	0.269	4.4	0.43	0.15 (0.21, 0.00)	0.35 (0.07, 0.50)
GGT	U/L	log	1435	36.0	20.6	1857	23.4	12.1	20.71	0.270	5.6	0.69	0.01 (0.10, 0.00)	0.34 (0.36, 0.30)
CK	U/L	log	1437	136	78	1871	83	38	23.81	0.269	6.4	0.82	0.11 (0.14, 0.04)	0.18 (0.00, 0.26)
AMY	U/L	log	1437	81	26	1871	86	27	6.18	0.269	1.7	0.15	0.11 (0.11, 0.12)	0.12 (0.15, 0.00)
IgG	g/L		1437	12.1	2.3	1870	12.9	2.3	11.00	0.269	3.0	0.15	0.38 (0.39, 0.37)	0.06 (0.04, 0.06)
IgA	g/L		1437	2.46	0.72	1871	2.54	0.73	3.15	0.269	0.8	0.00	0.27 (0.15, 0.32)	0.07 (0.11, 0.00)
IgM	g/L	log	1436	1.05	0.40	1871	1.54	0.64	26.48	0.269	7.1	0.71	0.17 (0.30, 0.00)	0.34 (0.26, 0.39)
C3	mg/L		1435	1061	181	1871	1020	180	6.48	0.269	1.7	0.00	0.47 (0.45, 0.56)	0.22 (0.00, 0.00)
C4	mg/L		1436	216	60	1871	207	62	4.49	0.269	1.2	0.00	0.41 (0.36, 0.46)	0.25 (0.17, 0.23)
CRP	mg/L	log	1411	0.97	1.77	1831	0.77	1.56	3.22	0.272	0.9	0.00	0.42 (0.46, 0.56)	0.15 (0.00, 0.07)
TTR	mg/L		1436	311	45	1871	252	39	40.00	0.269	10.8	1.05	0.24 (0.30, 0.19)	0.28 (0.28, 0.26)
Tf	g/L		1436	24	3.3	1871	27	4.1	16.09	0.269	4.3	0.36	0.26 (0.35, 0.21)	0.13 (0.00, 0.16)
Testosterone	nmol/L	log	1436	51.0	14.4	1869	5.8	2.2	118.07	0.269	31.8	7.57	0.00 (0.00, 0.00)	0.59 (0.27, 0.73)
Estradiol	pmol/L	log	1436	26.7	5.5	1869	69.8	61.6	30.14	0.269	8.1	0.89	0.00 (0.23, 0.00)	0.65 (0.05, 0.66)
Progesterone	nmol/L	log	1436	0.60	0.36	1869	3.12	5.06	21.40	0.269	5.8	0.42	0.21 (0.22, 0.00)	0.40 (0.29, 0.39)
Cortisol	nmol/L	log	1436	112	37	1869	98	39	10.83	0.269	2.9	0.24	0.00 (0.24, 0.15)	0.19 (0.11, 0.21)

Trans: transformation

SDR represents the ratio of the standard deviation for a given factor to that for a net between-individual variation.

SDR-sex, SDR-reg, and SDR-age denote SDR representing between-sex, between-region, and between-age differences, respectively.

*1 Harris-Boyd method was used to test for the need of partitioning by sex.

The z score representing differences in two means is adjusted to az by multiplying a coefficient (k), which depends on the sample sizes of the two groups.

For partitioning of RI, az≥3.0 is usually considered as significant.

*2 Three-level nested ANOVA was applied in 2 stages, first for between-sex, -region, and -age differences, and second for between-region, -age, and -BMI after partitioning by sex.

SDR ≥0.3 was regarded as a significant between-sex, between-city, or between-age difference