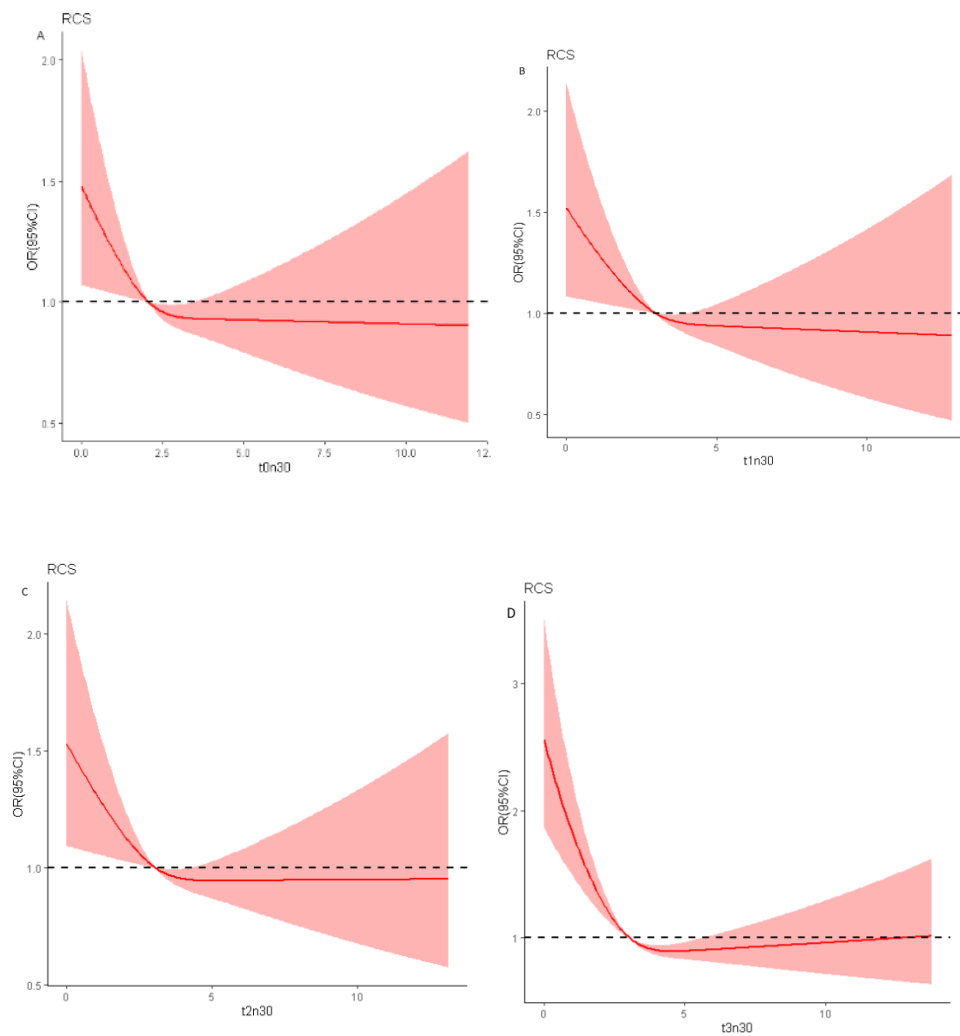


Appendix 1. Distributions of selected characteristics of the study population

Characteristics	Term(n=8017)	Preterm (n=880)	P-value
Maternal age	28.57±4.18	28.76±5.30	<0.001
Pre-pregnancy BMI (kg/m ²)	20.65 ± 2.70	20.96±2.93	<0.001
Weight gain during pregnancy(kg)	17.32±5.32	14.09±6.12	<0.001
Total energy intake(kcal/d)	1685(1435, 1972)	1547(1244, 1831)	<0.001
Dietary copper intake(mg/d)	3.06(2.33,3.91)	2.70(1.89,3.61)	<0.001
Dietary zinc intake(mg/d)	8.38(6.67, 10.39)	7.30(5.30, 9.35)	<0.001
Maternal nation			0.004
Han	7518(90.35)	803(9.65)	
Minority	499(86.63)	77(13.37)	
Family monthly income per capita			<0.001
< 3000	4314(87.52)	615(12.48)	
≥ 3000	3703(93.32)	265(6.68)	
Maternal education level			<0.001
< College	4792(87.69)	673(12.31)	
≥ College	3225(93.97)	207(6.03)	
Smoking (passive and active)			0.005
No	6433(90.55)	671(9.45)	
Yes	1584(88.34)	209(11.66)	
Drink during pregnancy			0.189
No	8005(90.13)	877(9.87)	
Yes	12(80.00)	3(20.00)	
Maternal employ			<0.001
No	2384(86.98)	357(13.02)	
Yes	5633(91.50)	523(8.50)	
Multivitamin supplement			<0.001
≤ 12w	4634(87.93)	636(12.07)	
> 12w	3383(93.27)	244(6.73)	
Gestational diabetes			0.027
No	7943(90.18)	865(9.82)	
Yes	74(83.15)	15(16.85)	
Gestational hypertension			<0.001
No	7726(91.28)	738(8.72)	
Yes	291(67.21)	142(32.79)	
Anemia during pregnancy			0.351
No	7123(90.01)	791(9.99)	
Yes	894(90.95)	89(9.05)	
History of miscarriage			0.331
No	6919(90.23)	749(9.77)	
Yes	1098(89.34)	131(10.66)	
History of premature birth			<0.001
No	7910(90.63)	818(9.37)	
Yes	107(63.31)	62(36.69)	
Reproductive history			<0.001
Primipara	5983(91.60)	549(8.40)	
Multiparous	2034(86.00)	331(14.00)	
Newborn's sex			0.531
Male	4211(89.92)	472(10.08)	
Female	3806(90.32)	408(9.68)	

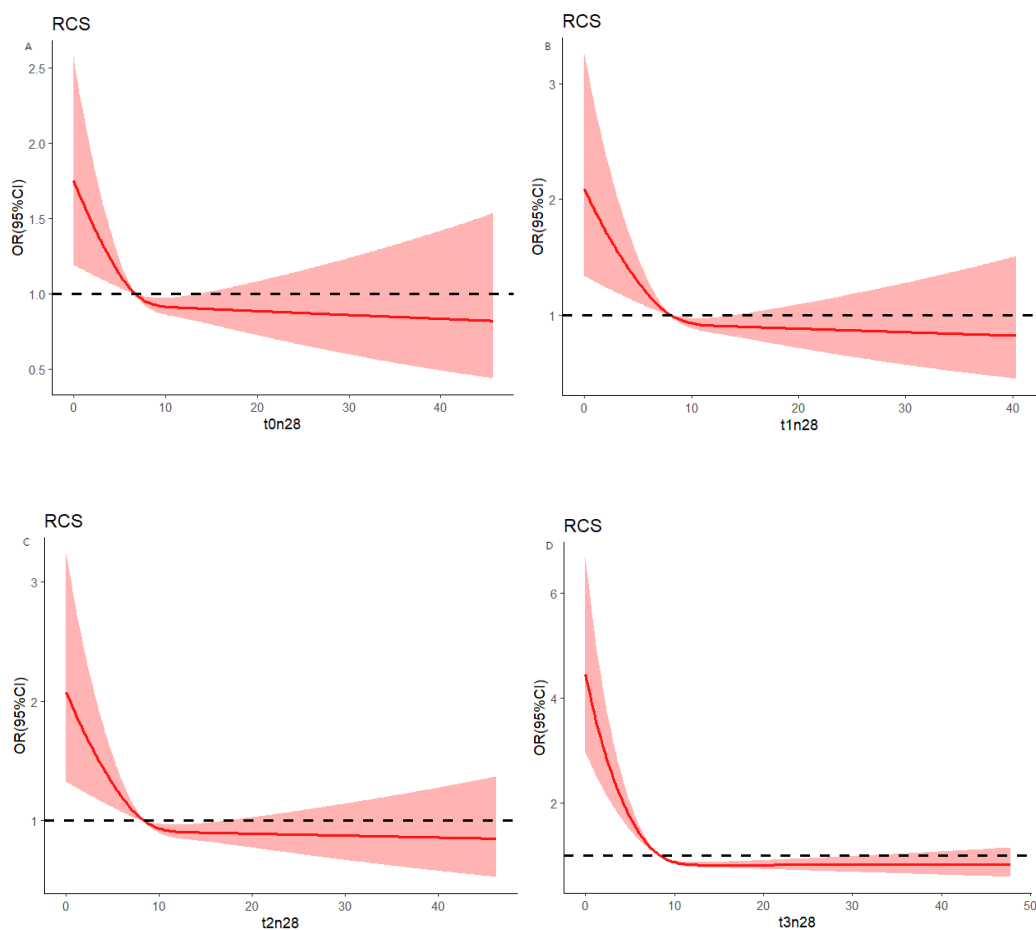
Supplementary figures

Appendix 2 shows the RCS curves for the associations between copper intake and the risk of PTB before and during pregnancy. As copper intake increased, the risk of PTB decreased and then increased slightly after reaching 2.04 mg/day, 2.97 mg/day, 3.03 mg/day, and 3.04 mg/day before pregnancy, first, second, and third trimester, respectively ($P_{\text{Nonlinear}} < 0.05$).



Appendix 2. Restricted cubic spline models of PTB risk associated with copper intake before pregnancy (**A**), at the first trimester (**B**), at the second trimester (**C**), and at the third trimester (**D**).

Appendix 3. shows the RCS curve of the association between zinc intake before and during pregnancy and the risk of preterm birth. With the increase of zinc intake, the risk of preterm birth decreased slowly when zinc intake was higher than 6.71 mg/d, 8.22 mg/d and 8.45mg/d in the preconception, first and second trimesters, respectively, and reached a plateau when zinc intake was 8.62mg/d in the third trimester ($P < 0.05$).



Appendix 3. Restricted cubic spline models of PTB risk associated with zinc intake before pregnancy (**A**), at the first trimester (**B**), at the second trimester (**C**), and at the third trimester (**D**).