

Supplementary Table 1. Food groups and subgroups for dietary evaluation

Food groups	Subgroups
1. Dry rice, porridge and noodle products	1. Rice and grains
	2. Rice porridge
	3. Noodles and related products
	4. Rice milk
2. Breakfast cereals, oats, buns, glutinous rice, and related products	5. Breakfast cereals, oats, and related products
	6. Sweet buns and red beans
	7. Salty steamed buns
	8. Glutinous rice
	9. Glutinous rice desserts
3. Bread and its products	10. Bread and its products
4. Chinese dim sun and dumplings	11. Chinese savory cake
	12. Chinese buns and rolls
	13. Dumplings
5. Roots, carrots, and tubers	14. Root and tubers
	15. Carrots
	16. Root vegetables
	17. Bamboo shoot
	18. Melon
6. Eggs	19. Eggs
7. Milk and milk products	20. Fresh milk, milk powder

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| | 21. Flavored milk |
| | 22. Yogurt |
| | 23. Cheese |
| 8. Light-colored vegetables | 24. Light-colored vegetables |
| 9. Dark-colored vegetables | 25. Dark-colored vegetables |
| 10. Mushrooms and related products | 26. Mushrooms |
| 11. Legumes and beans | 27. Mung beans, black eye beans, speckled kidney beans, and other seed beans and their products |
| 12. Sea plant food | 28. Sea vegetables |
| | 29. Kelp |
| 13. Processed plant food | 30. Pickled vegetables |
| 14. Herbs and spices | 31. Garlic/garlic paste, onion, ginger, chili, green garlic, cilantro, toon, and nine-story tower |
| 15. Soybean and soybean products | 32. Soy milk, honey/soy milk, tofu pudding, and other soy milk drinks or products |
| | 33. Gluten and gluten sausages |
| | 34. General soy products |
| | 35. Soy-fermented foods |
| 16. Nuts and seeds | 36. Nuts and seeds |
| 17. Fresh fruits | 37. Fresh fruits |
| 18. Pure fruit juice or fruit/vegetable | 38. Pure fruit juice or fruit and vegetable juice |

- juice
- 39. Commercially available sugary vegetable juice
- 19. Canned fruits, dried fruits, and jam
- 40. Canned fruits
- 41. Dehydrated fruits, pickled fruits, and candied fruits
- 42. Jam
- 20. Fish, shellfish, and seafood
- 43. Fish (including all fish)
- 44. Aquatic products eaten with bones or shell
- 45. Edible sea snails and mollusks
- 46. Other seafood except fish and mollusks
- 47. Deep water fish
- 21. Processed seafood products
- 48. Roe of marine animals
- 49. Processed seafood products
- 22. Poultry meat
- 50. Poultry meat
- 23. Livestock meat
- 51. Lean livestock meat
- 52. Livestock semi-fat meat
- 24. Liver, organs, and blood products
- 53. Liver
- 54. Other internal organs besides the liver
- 55. Poultry and livestock blood
- 56. Other parts of poultry and livestock
- 25. Processed meat products
- 57. Processed meat products
- 58. Processed meat paste products

26. Salt

59. Salt

Supplementary Table 2. Spearman’s correlation coefficients between supplement intake and serum folate levels among pregnant women with pre-pregnancy overweight or obesity ($n = 436$)

Supplement intake, n (%)	Serum folate	
	ρ	p
Milk powder, 65 (14.8%)	–	–
Multivitamins/multiminerals, 259 (59.1%)	0.39	< 0.001
Folate (μg), 197 (45.0%)	0.50	0.042
Vitamin B complex, 77 (17.6%)	–	–
Vitamin D, 47 (10.7%)	–	–
Iron, 48 (11.0%)	–	–
Calcium (μg), 193 (44.1%)	0.12	0.043

The symbol of – shows no data evaluated because the consumption frequency was below 20%.

Supplementary Table 3. Generalized linear regression analysis for the association of processed and plant-based DP (DP-2) with serum anemia-related biomarkers among pregnant women with pre-pregnancy overweight or obesity ($n = 436$)

Variables	Model 1	Model 2	Model 3
	β (95% CI)	β (95% CI)	β (95% CI)
Folate, nmol/L	0.004 (-0.001, 0.009)	0.072 (-0.040, 0.183)	0.072 (-0.041, 0.185)
Vitamin B ₁₂ , pmol/L	-0.279 (-1.268, 0.709)	-0.505 (-1.443, 0.433)	-0.415 (-1.367, 0.537)
25(OH) Vitamin D, nmol/L	0.081 (-0.066, 0.229)	0.054 (-0.091, 0.198)	0.026 (-0.120, 0.173)
Hemoglobin, mmol/L	-0.004 (-0.012, 0.005)	-0.005 (-0.013, 0.004)	-0.005 (-0.014, 0.004)
Iron, μ mol/L	-0.008 (-0.049, 0.034)	-0.012 (-0.052, 0.029)	-0.009 (-0.050, 0.032)
Ferritin, nmol/L	-0.001 (-0.002, 0.001)	-0.001 (-0.002, 0.002)	-0.001 (-0.001, 0.002)
TIBC, μ mol/L	0.013 (-0.137, 0.111)	0.013 (-0.086, 0.112)	0.013 (-0.087, 0.114)
Transferrin saturation, %	-0.030 (-0.097, 0.037)	-0.024 (-0.092, 0.045)	-0.019 (-0.088, 0.050)

Model 1 was for crude values from an unadjusted model. Model 2 was adjusted for age, region, education level, parity, and trimester. Model 3 was adjusted for model 2 plus daily nutrient intake such as protein (g and % of energy), folate (μ g), and iron (mg). CI: confidence interval; DP: dietary pattern; ORs: Odds ratios; TIBC: total iron-binding capacity.

Supplementary Table 4. Odds ratios for low serum anemia-related biomarkers across the tertiles of processed and plant-based DP (DP-2) by binomial logistic regression analysis among pregnant women with pre-pregnancy overweight or obesity ($n = 436$)

Processed and plant-based DP (DP-2)						
Variables	Model 1		Model 2		Model 3	
	OR (95% CI)		OR (95% CI)		OR (95% CI)	
	T2	T3	T2	T3	T2	T3
Folate, nmol/L	0.534 (0.314, 0.908)*	0.451 (0.260, 0.781)*	0.566 (0.315, 1.015)	0.475 (0.256, 0.880)*	0.552 (0.303, 1.005)	0.412 (0.214, 0.791)*
Vitamin B ₁₂ , pmol/L	0.573 (0.275, 1.193)	0.830 (0.422, 1.633)	0.555 (0.259, 1.188)	0.899 (0.439, 1.841)	0.559 (0.257, 1.218)	0.890 (0.419, 1.892)
25(OH) Vitamin D, nmol/L	0.890 (0.533, 1.484)	0.706 (0.427, 1.166)	0.919 (0.542, 1.558)	0.727 (0.431, 1.226)	1.037 (0.602, 1.787)	0.881 (0.508, 1.529)
Hemoglobin, mmol/L	0.900 (0.502, 1.613)	0.826 (0.457, 1.495)	1.037 (0.552, 1.948)	0.996 (0.521, 1.904)	1.061 (0.559, 2.016)	0.977 (0.498, 2.043)
Iron, μ mol/L	1.091 (0.686, 1.735)	1.201 (0.755, 1.901)	1.231 (0.761, 1.991)	1.258 (0.776, 2.039)	1.288 (0.786, 2.111)	1.229 (0.742, 2.036)
Ferritin, nmol/L	0.893 (0.563, 1.417)	0.789 (0.497, 1.253)	0.842 (0.495, 1.432)	0.861 (0.498, 1.488)	0.777 (0.450, 1.340)	0.793 (0.448, 1.406)
TIBC, μ mol/L	0.500 (0.200, 1.300)	0.450 (0.201, 1.135)	0.256 (0.078, 1.384)	0.955 (0.428, 1.642)	0.960 (0.430, 1.645)	1.291 (0.596, 1.894)
Transferrin saturation, %	1.473 (0.927, 2.340)	1.165 (0.734, 1.848)	1.481 (0.926, 2.371)	1.140 (0.712, 1.825)	1.426 (0.883, 2.301)	1.074 (0.659, 1.752)

Model 1 was for crude values from an unadjusted model. Model 2 was adjusted for age, region, education level, parity, and trimester. Model 3 was adjusted for model 2 plus daily nutrient intake such as protein (g and % of energy), folate (μg), and iron (mg). Serum anemia-related variables were categorized into two levels based on serum cutoff values: folate, 13.6 nmol/L (6 ng/mL); vitamin B₁₂, 149.8 pmol/L (203 pg/mL); 25(OH) vitamin D, 75 nmol/L (30 ng/mL); hemoglobin, 6.52 mmol/L (10.5 g/dL); iron, 10.7 $\mu\text{mol/L}$ (60 $\mu\text{g/dL}$), ferritin, 0.034 nmol/L (15 ng/mL); TIBC, 42.96 $\mu\text{mol/L}$ (240 $\mu\text{g/dL}$); and transferrin saturation, 16%. Dietary pattern scores were classified into tertiles: T1 (reference), 1.26–10.64; T2, > 10.65–19.48; and T3 > 19.05–158.77. * $p \leq 0.05$. CI: confidence interval; DP: dietary pattern; ORs: Odds ratios; TIBC: total iron-binding capacity.