



Supplementary Materials

Supplementary Table S1. Characteristics of study participants ($N = 750$ North Indian women aged 28 to 69 years [^]) based on their dietary patterns.

Characteristics	Lacto-veg $N = 155$	Ovo-veg $N = 466$	Non-veg $N = 129$	p -Value
Age (years), mean (SD)	47.9 (9.6)	48.8 (10.0)	50.7 (9.5)	0.048
Education N (%)				
Illiterate	54 (34.8)	137 (29.5)	26 (20.2)	<0.001
No formal education	14 (9.0)	79 (17.0)	7 (5.4)	
School	68 (43.9)	194 (41.7)	70 (54.3)	
College	19 (12.3)	55 (11.8)	26 (20.2)	
Religion (N (%))				
Sikhism	89 (57.4)	276 (59.3)	57 (44.2)	<0.001
Hinduism	46 (29.7)	140 (30.1)	68 (52.7)	
Others	20 (12.9)	49 (10.5)	4 (3.1)	
Family history of cancer (N (%))				
Yes	15 (9.7)	85 (18.2)	29 (22.5)	0.011
No	140 (90.3)	381 (81.8)	100 (77.5)	
Diabetes				
No	141 (91.0)	429 (92.1)	105 (81.4)	0.002
Yes	14 (9.0)	37 (7.9)	24 (18.6)	
Hypertension				
No	139 (89.7)	399 (85.6)	94 (72.9)	<0.001
Yes	16 (10.3)	67 (14.4)	35 (27.1)	
BMI (Kg/m^2), mean (SD)	26.8 (5.6)	26.8 (5.0)	28.3 (5.4)	0.012
Waist circumference, mean (SD)	96.1 (16.1)	92.6 (14.1)	99.5 (10.9)	<0.001
Age at menarche (years) mean (SD)	14.7 (1.3)	14.8 (1.3)	14.8 (1.4)	0.37
Menopause (N (%))				
Yes	93 (60.0)	265 (56.9)	86 (66.7)	0.13
No	62 (40.0)	201 (43.1)	43 (33.3)	
Age at menopause in years (mean $\pm$ SD)	45.6 (6.0)	45.1 (6.2)	45.6 (5.9)	0.7584
Years of estrogen exposure (mean $\pm$ SD)	28.8 (6.9)	28.2 (6.6)	29.4 (6.9)	0.21
Ever Pregnant (N (%))				
No	5 (3.2)	8 (1.7)	4 (3.1)	0.43
Yes	150 (96.8)	458 (98.3)	125 (96.9)	
Age at first pregnancy (years), mean (SD)	21.7 (4.0)	22.4 (3.1)	23.3 (3.3)	<0.001
Total pregnancies (N (%))				
1	6 (4.0)	37 (8.1)	2 (1.6)	0.028
2	28 (18.7)	107 (23.4)	31 (23.8)	
3+	116 (77.3)	314 (68.6)	92 (73.6)	
Total breastfeeding months/child, median (IQR)	13.8 (11.8)	13.8 (12.7)	17.3 (10.7)	0.0156
Physical activity, median (IQR)				
Moderate-vigorous (min/week)	240 (0, 1080)	180 (0, 525)	160 (0, 420)	0.0027

* Difference in mean/median/proportion among the groups by ANOVA, Kruskal-Wallis ANOVA/ Chi-Square test, respectively. [^] Information on dietary pattern missing for 4 participants.

Supplementary Table S2. Associations between dietary patterns and breast cancer among a sub-set of study participants with FFQ data ($N = 298$ North Indian women aged 28 to 69 years).

Dietary Pattern	Age-Adjusted OR (95% CI) $N = 258$	p -Value	Fully-adjusted * OR (95% CI) $N = 247$	p -Value
With non-veg as reference				

Non-vegetarian	Ref	-	Ref	-
Lacto-ovo-vegetarian	0.2 (0.1–0.4)	<0.001	0.2 (0.1–0.5)	0.001
Lacto-vegetarian	0.4 (0.1–1.1)	0.054	0.5 (0.1–1.6)	0.234
p-Interaction ** for menopausal status	0.4368		0.3204	
With lacto-veg as reference				
Lacto-vegetarian	Ref	-	Ref	-
Lacto-ovo-vegetarian	0.4 (0.2–0.9)	0.027	0.4 (0.1–0.9)	0.032
Non-vegetarian	2.6 (0.98–6.8)	0.054	1.2 (0.6–6.4)	0.234
p-Interaction ** for menopausal status	0.2237		0.0712	

* Unconditional logistic regression adjusted for age (years), state of residence (Punjab and Haryana), mode of recruitment (hospital- and population-based), education (categories), religion (categories), family history of cancer (Y/N), physical activity (mins/week), BMI (kg/m²), waist (cm), reproductive history (estrogen exposure (years), age at first pregnancy (years), breastfeeding per child (months)) and history of diabetes (Y/N) and hypertension (Y/N). Estrogen exposure: For postmenopausal women, calculated as the difference between age at menopause and age at menarche and for premenopausal women, calculated as the difference between current age and age at menarche. ** Likelihood-ratio test for interaction of menopausal status with dietary patterns (1. non-veg vs. lacto-ovo-veg; 2. lacto-veg vs. lacto-ovo-veg).

Supplementary Table 3. Estimated daily consumption of macro- and micro-nutrients based on dietary pattern in a sub-set of 298 study participants with FFQ data.

Nutrients Median (IQR)	Total ^ N = 298	Lacto-vegetarian N = 48	Ovo-vegetarian N = 188	Non-vegetarian N = 60	p-Value *
Energy (kcal)	890.9 (569.2, 1198.1)	934.9 (653.2, 1146.8)	882.7 (562.9, 1254.2)	890.3 (564.8, 1123.7)	0.76
Carbohydrates (g)	101.7 (69.0, 145.2)	103.0 (69.0, 144.4)	102.3 (71.9, 150.3)	98.9 (61.4, 123.3)	0.16
Fat (g)	39.6 (24.8, 53.8)	37.4 (25.1, 50.8)	38.7 (24.9, 53.7)	42.4 (22.9, 58.5)	0.55
Protein (g)	25.6 (16.2, 34.4)	27.4 (16.8, 33.9)	25.3 (16.8, 35.3)	25.9 (15.5, 32.2)	0.63
Cholesterol (mg)	51.0 (20.8, 115.4)	44.4 (18.1, 107.2)	40.6 (17.1, 63.0)	152.7 (95.5, 295.3)	0.0001
Calcium (mg)	549.7 (295.4, 790.0)	479.1 (277.2, 748.2)	534.0 (296.1, 766.8)	656.6 (335.3, 913.3)	0.19
Iron (mg)	7.3 (5.0, 9.8)	7.4 (5.5, 9.6)	7.3 (5.0, 10.2)	7.1 (4.0, 9.4)	0.30
Zinc (mg)	3.6 (2.3, 4.9)	3.5 (2.1, 4.7)	3.6 (2.3, 5.0)	3.6 (2.3, 4.6)	0.57
Choline (mg)	59.5 (38.1, 99.8)	59.2 (39.7, 95.4)	56.5 (37.9, 89.0)	85.9 (40.1, 138.2)	0.0392
Alpha carotene (µg)	477.8 (246.7, 741.7)	547.5 (283.9, 849.7)	409.2 (242.9, 671.7)	533.1 (247.6, 913.0)	0.2100
Beta carotene (µg)	1896.5 (1091.1, 3122.1)	1993.1 (1212.1, 3100.9)	1748.3 (1000.6, 2739.3)	2701.7 (1307.1, 4088.5)	0.0071
Lycopene (µg)	394.0 (258.9, 638.9)	438.5 (287.4, 655.7)	373.2 (247.2, 555.9)	551.3 (283.3, 700.1)	0.1242
Luteine+Zeaxanthine (µg)	608.9 (404.4, 991.2)	680.4 (412.3, 971.6)	565.9 (387.1, 914.6)	829.7 (515.6, 1260.2)	0.0200
Vitamin C (mg)	54.5 (38.8, 84.5)	51.3 (36.1, 67.4)	51.4 (38.2, 82.5)	71.3 (44.0, 98.0)	0.058
Folic Acid (µg)	102.1 (67.8, 147.1)	105.9 (68.3, 156.4)	102.6 (70.2, 148.5)	94.8 (58.8, 128.7)	0.33
Vitamin B12 (µg)	1.5 (0.6, 2.2)	1.1 (0.4, 2.2)	1.3 (0.6, 2.1)	2.0 (1.0, 2.7)	0.006

* Kruskal-Wallis rank test for differences in median values among groups; ^ Information on dietary pattern missing for 2 participants.

Supplementary Table S4. Comparison of participant characteristics with ($N = 298$) and without nutrient data ($N = 456$).

Baseline Characteristics	Participants with Nutrient Data	Participants Without Nutrient Data	p -Value *
N	298	456	
Age (years), median (IQR)	50.0 (42.0, 58.0)	48.0 (41.0, 56.0)	0.091
Education N (%)			
Illiterate	96 (32.3%)	121 (26.5%)	0.001
No formal education	51 (17.2%)	49 (10.7%)	
School	123 (41.4%)	211 (46.3%)	
College	27 (9.1%)	75 (16.4%)	
Diabetes N (%)			
No	265 (88.9%)	425 (91.0%)	0.35
Yes	33 (11.1%)	42 (9.0%)	
Hypertension N (%)			
No	263 (88.3%)	384 (82.2%)	0.024
Yes	35 (11.7%)	83 (17.8%)	
BMI (Kg/m ²), mean (SD)	26.5 (5.3)	27.5 (5.1)	0.016
Waist circumference, mean (SD)	92.8 (14.1)	95.7 (14.2)	0.009
Years of estrogen exposure (mean $\pm$ SD)	28.4 (6.8)	28.6 (6.6)	0.6870
Breastfeeding months /child (mean $\pm$ SD)	12.0 (12.0)	16.0 (12.1)	<0.001
Age at first pregnancy in years (mean $\pm$ SD)	22.3 (3.0)	22.5 (3.6)	0.3642
Physical activity, median (IQR)			
Moderate-vigorous (min/week)	210 (0, 757.5)	180 (0,420)	0.1262
Tobacco use N (%)			
No	297 (99.7%)	453 (98.7%)	0.17
Yes	1 (0.3%)	6 (1.3%)	

* p -Values for differences in proportion, mean or median values between groups are from Chi-square test, t -test or Wilcoxon Rank-sum test.