

Table S1. Univariate analysis of baseline characteristics of Thai adolescents and adults and acne severity

Characteristics	No acne (N = 454)	Mild acne (N = 1279)	Moderate acne (N = 538)	Severe acne (N = 205)	Odds ratio (95% CI)	P-value
Age, mean +/- SD	28.39 +/- 6.64	26.30 +/- 6.17	24.81 +/- 5.99	24.01 +/- 5.30	0.94 (0.93-0.95)	<0.001*
**Age class, n (%)						
18-25 years	179 (39.43)	694 (54.26)	369 (68.59)	147 (71.71)	2.25 (1.92-2.63)	<0.001*
26-44 years	275 (60.57)	585 (45.74)	169 (31.41)	58 (28.29)	Reference	
Sex, n (%)						
Male	140 (30.84)	321 (25.10)	139 (25.84)	81 (39.51)	Reference	
Female	314 (69.16)	958 (74.90)	399 (74.16)	124 (60.49)	0.94 (0.79-1.11)	0.476
BMI, mean +/- SD	21.06 +/- 3.26	21.44 +/- 3.66	21.40 +/- 3.68	21.56 +/- 3.22	1.01 (1.00-1.04)	0.120
BMI class, n (%)						
<18.5	100 (22.03)	280 (21.89)	132 (24.54)	39 (19.02)	1.06 (0.88-1.28)	0.515
18.5-22.99	269 (59.25)	720 (56.29)	288 (53.53)	119 (58.05)	Reference	
≥23	85 (18.72)	279 (21.81)	118 (21.93)	47 (22.93)	0.10 (0.95-1.38)	0.157
BMI: Body mass index.						
*Statistically significant at P<0.05, ordered logistic regression.						
**Included in multivariate analysis.						

Table S2. Univariate analysis of family history of acne in Thai adolescents and adults and acne severity

Characteristics	No acne (N = 454)	Mild acne (N = 1279)	Moderate acne (N = 538)	Severe acne (N = 205)	Odds ratio (95% CI)	P-value
First degree relative**						
Yes	200 (44.05)	911 (71.23)	415 (77.14)	167 (81.46)	2.68 (2.27-3.18)	<0.001
No	254 (55.95)	368 (28.77)	123 (22.86)	38 (18.54)	Reference	
Father						
Yes	37 (8.39)	254 (20.99)	128 (24.90)	52 (27.23)	1.87 (1.55-2.25)	<0.001
No	404 (91.61)	956 (79.01)	386 (75.10)	139 (72.77)	Reference	
Mother						
Yes	41 (9.30)	313 (25.87)	191 (37.16)	68 (35.60)	2.37 (1.99-2.82)	<0.001
No	400 (90.70)	897 (74.13)	323 (62.84)	123 (64.40)	Reference	
Both parents						
Yes	4 (0.91)	87 (7.19)	48 (9.34)	15 (7.85)	1.98 (1.48-2.64)	<0.001
No	437 (99.09)	1123 (92.81)	466 (90.66)	176 (92.15)	Reference	
Siblings						
Yes	132 (29.32)	555 (45.87)	206 (40.08)	79 (41.36)	1.21 (1.04-1.41)	0.016
No	309 (70.07)	655 (54.13)	308 (59.92)	112 (58.64)	Reference	
*Statistically significant at P<0.05, ordered logistic regression						
**Included in multivariate analysis						

Table S3. Univariate analysis of lifestyle in Thai adolescents and adults and acne severity

Characteristics	No acne (N = 454)	Mild acne (N = 1279)	Moderate acne (N = 538)	Severe acne (N = 205)	Odds ratio (95% CI)	P-value
Smoking						
Nonsmoker	438 (96.84)	1242 (97.11)	521 (96.84)	190 (92.68)	Reference	
Smoker	16 (3.52)	37 (2.89)	17 (3.16)	15 (7.32)	0.72 (0.47-1.10)	0.135
Drinking						
No	169 (37.22)	538 (42.06)	200 (37.17)	98 (47.80)	Reference	
Yes	285 (61.78)	741 (57.94)	338 (62.83)	107 (52.20)	1.08 (0.93-1.25)	0.335
**Exercise						
<3 times/week	307 (67.62)	909 (71.07)	419 (77.88)	136 (66.34)	Reference	
≥3 times/week	147 (32.38)	370 (28.93)	119 (22.12)	69 (33.66)	0.83 (0.70-0.98)	0.025*
**Water intake						
<8 glasses/day	255 (56.17)	852 (66.61)	361 (67.10)	123 (60.00)	Reference	
≥8 glasses/day	199 (43.83)	427 (33.39)	177 (32.90)	82 (40.00)	0.84 (0.72-0.98)	0.026*
**Sleeping						
>8 hours/day	43 (9.47)	68 (5.32)	38 (7.06)	12 (5.85)	Reference	
6-8 hours/day	370 (81.50)	1073 (83.89)	427 (79.37)	142 (69.27)	1.16 (0.85-1.58)	0.366
<6 hours/day	41 (9.03)	138 (10.79)	73 (13.57)	51 (24.88)	2.05 (1.41-3.00)	<0.001*

*Statistically significant at P<0.05, ordered logistic regression.

**Included in multivariate analysis.

Table S4. Univariate analysis of dietary consumption and acne severity – chocolate and dairy products

Consumption	No acne (N = 314)	Mild acne (N = 958)	Moderate acne (N = 399)	Severe acne (N = 124)	Odds ratio (95% CI)	P-value
Any kind of chocolate**, n (%)						
None	170 (37.44)	264 (20.64)	112 (20.82)	37 (18.05)	Reference	
≤100 grams/week	165 (36.64)	528 (41.28)	211 (39.22)	64 (31.22)	1.50 (1.23-1.83)	<0.001*
>100 grams/week	119 (26.21)	487 (38.08)	215 (39.96)	104 (50.73)	2.05 (1.68-2.51)	<0.001*
Dark Chocolate, n (%)						
None	292 (64.32)	690 (53.53)	288 (53.53)	108 (52.68)	Reference	
≤100 grams/week	140 (30.84)	515 (40.27)	205 (38.10)	75 (36.59)	1.21 (1.03-1.41)	0.018*
>100 grams/week	22 (4.85)	74 (5.79)	45 (8.36)	22 (10.73)	1.79 (1.32-2.42)	<0.001*
Milk Chocolate, n (%)						
None	287 (63.22)	672 (52.54)	268 (49.81)	102 (49.76)	Reference	
≤100 grams/week	136 (29.96)	519 (40.58)	221 (41.08)	66 (32.20)	1.27 (1.09-1.49)	0.003*
>100 grams/week	31 (6.83)	88 (6.88)	49 (9.11)	37 (18.05)	1.97 (1.48-2.61)	<0.001*
White Chocolate, n (%)						
None	381 (83.92)	1024 (80.06)	415 (77.14)	142 (69.27)	Reference	
≤100 grams/week	66 (14.54)	234 (18.80)	108 (20.07)	50 (24.39)	1.38 (1.14-1.67)	0.001*
>100 grams/week	7 (1.54)	21 (1.64)	15 (2.79)	13 (6.34)	2.64 (1.59-4.40)	<0.001*
Chocolate confections, n (%)						
None	222 (49.34)	357 (27.91)	160 (29.74)	54 (26.34)	Reference	
≤100 grams/week	171 (37.67)	680 (53.17)	272 (50.56)	83 (40.49)	1.55 (1.30-1.84)	<0.001*
>100 grams/week	59 (13.00)	242 (18.92)	106 (19.70)	68 (33.17)	2.13 (1.71-2.65)	<0.001*
Any kind of milk**, n (%)						
None	135 (29.74)	221 (17.28)	91 (16.91)	40 (19.51)	Reference	
<2 glasses/week	51 (11.23)	194 (15.17)	68 (12.64)	12 (5.85)	1.24 (0.96-1.62)	0.055
≥2 glasses/week	268 (59.03)	864 (67.55)	379 (70.45)	153 (74.63)	1.58 (1.30-1.92)	<0.001*
Whole milk, n (%)						
None	220 (48.46)	503 (39.33)	203 (37.73)	87 (42.44)	Reference	
<2 glasses/week	75 (16.52)	280 (21.89)	112 (20.82)	39 (19.02)	1.21 (0.99-1.48)	0.056
≥2 glasses/week	159 (35.02)	496 (38.78)	223 (41.45)	79 (38.54)	1.22 (1.03-1.45)	0.018*
Chocolate milk, n (%)						
None	300 (66.08)	635 (49.65)	251 (46.65)	89 (43.41)	Reference	
<2 glasses/week	81 (17.84)	333 (26.04)	137 (25.46)	36 (17.56)	1.37 (1.14-1.64)	0.001*
≥2 glasses/week	73 (16.08)	311 (24.32)	150 (27.88)	80 (39.02)	1.90 (1.59-2.23)	<0.001*
Flavored milk, n (%)						
None	325 (71.59)	753 (58.87)	291 (54.09)	100 (48.78)	Reference	
<2 glasses/week	65 (14.31)	264 (20.64)	113 (21.00)	36 (17.56)	1.40 (1.16-1.70)	0.001*
≥2 glasses/week	64 (14.10)	262 (20.48)	134 (24.91)	69 (33.66)	1.87 (1.55-2.26)	<0.001*
Low fat or skim milk, n (%)						
None	310 (68.28)	753 (58.87)	323 (60.04)	108 (52.68)	Reference	
<2 glasses/week	30 (6.61)	152 (11.88)	64 (11.90)	24 (11.71)	1.41 (1.11-1.80)	0.005*
≥2 glasses/week	114 (25.11)	374 (29.24)	151 (28.07)	73 (35.61)	1.25 (1.05-1.47)	0.011*
Yoghurt**, n (%)						
None	146 (32.16)	310 (24.24)	115 (21.38)	43 (20.98)	Reference	
<2 portions/week	92 (20.26)	321 (25.10)	127 (23.61)	35 (17.07)	1.29 (1.04-1.60)	0.020*
≥2 portions/week	216 (47.58)	648 (50.66)	296 (55.02)	127 (61.95)	1.49 (1.24-1.79)	<0.001*
Whey protein, n (%)						
None	381 (83.92)	1113 (87.02)	480 (89.22)	161 (78.54)	Reference	
<2 portions/week	22 (4.85)	71 (5.55)	18 (3.35)	11 (5.37)	0.86 (0.61-1.21)	0.390
≥2 portions/week	51 (11.23)	95 (7.43)	40 (7.43)	33 (16.10)	1.04 (0.79-1.36)	0.802

*Statistically significant at $P<0.05$, logistic regression.

**Included in multivariate analysis.

Table S5. Univariate analysis of dietary consumption and acne severity – beverages, fruits and vegetables

Consumption	No acne (N = 314)	Mild acne (N = 958)	Moderate acne (N = 399)	Severe acne (N = 124)	Odds ratio (95% CI)	P-value
Soy and nuts milk, n (%)						
None	355 (78.19)	951 (74.35)	413 (76.77)	132 (64.39)	Reference	0.025* 0.502
<3 glasses/week	67 (14.76)	250 (19.55)	98 (18.22)	50 (24.39)	1.24 (1.02-1.50)	
≥3 glasses/week	32 (7.05)	78 (6.10)	27 (5.02)	23 (11.22)	1.11 (0.81-1.52)	
Coffee, n (%)						
None	256 (56.39)	746 (58.33)	307 (57.06)	113 (55.12)	Reference	0.056 0.272
<3 glasses/week	54 (11.89)	212 (16.58)	91 (16.91)	38 (18.54)	1.22 (0.99-1.51)	
≥3 glasses/week	144 (31.72)	321 (25.10)	140 (26.02)	54 (26.34)	0.91 (0.76-1.08)	
Black coffee **, n (%)						
None	334 (73.57)	995 (77.80)	453 (84.20)	136 (66.34)	Reference	0.051 0.001*
<3 glasses/week	32 (7.05)	115 (8.99)	36 (6.69)	28 (18.54)	1.30 (1.00-1.70)	
≥3 glasses/week	88 (19.38)	169 (13.21)	49 (9.11)	31 (15.12)	0.67 (0.54-0.84)	
Tea (no sugar) **, n (%)						
None	353 (77.75)	1004 (78.50)	455 (84.57)	154 (75.12)	Reference	0.920 0.005*
<3 glasses/week	57 (12.56)	189 (14.54)	63 (11.71)	34 (16.59)	0.99 (0.80-1.23)	
≥3 glasses/week	44 (9.69)	89 (6.96)	20 (3.72)	17 (8.29)	0.65 (0.48-0.87)	
Sweetened beverage**, n (%)						
None	124 (27.31)	174 (13.60)	82 (15.24)	31 (15.12)	Reference	0.014* <0.001*
<3 glasses/week	97 (21.37)	347 (27.13)	119 (22.12)	32 (15.61)	1.36 (1.06-1.73)	
≥3 glasses/week	233 (51.32)	758 (59.27)	337 (62.64)	142 (69.27)	1.73 (1.39-2.14)	
Diet soda, n (%)						
None	358 (78.85)	973 (76.08)	385 (71.56)	146 (71.22)	Reference	0.001* 0.639
<3 glasses/week	59 (13.00)	222 (17.36)	116 (21.56)	40 (19.51)	1.40 (1.15-1.70)	
≥3 glasses/week	37 (8.15)	84 (6.57)	37 (6.88)	19 (9.27)	1.07 (0.80-1.44)	
Juice, n (%)						
None	191 (42.07)	569 (44.49)	222 (41.26)	70 (34.15)	Reference	0.225 0.129
<3 glasses/week	127 (27.97)	409 (31.98)	174 (32.34)	57 (27.80)	1.11 (0.94-1.32)	
≥3 glasses/week	136 (29.96)	301 (23.53)	142 (26.39)	78 (38.05)	1.16 (0.96-1.39)	
Fruits**, n (%)						
None	126 (27.75)	183 (14.31)	83 (15.43)	33 (16.10)	Reference	<0.001* <0.001*
<3 times/week	92 (20.26)	334 (26.11)	148 (27.51)	47 (22.93)	1.65 (1.30-2.10)	
≥3 times/week	236 (51.98)	762 (59.58)	307 (57.06)	125 (60.98)	1.56 (1.26-1.93)	
Vegetables**, n (%)						
None	89 (19.60)	224 (17.51)	119 (22.12)	40 (19.51)	Reference	0.460 0.015*
<3 times/week	134 (29.52)	451 (35.26)	206 (38.29)	83 (40.49)	1.08 (0.88-1.34)	
≥3 times/week	231 (50.88)	604 (47.22)	213 (39.59)	82 (40.00)	0.78 (0.63-0.95)	

*Statistically significant at $P<0.05$, logistic regression **Included in multivariate analysis.

Table S6. Univariate analysis of dietary consumption and acne severity - carbohydrates and others

Consumption	No acne (N = 314)	Mild acne (N = 958)	Moderate acne (N = 399)	Severe acne (N = 124)	Odds ratio (95% CI)	P-value
White rice**, n (%)						
None	53 (11.67)	89 (6.96)	29 (5.39)	10 (4.88)	Reference	
<2 portions/day	115 (25.33)	413 (32.29)	145 (26.95)	43 (20.98)	1.62 (1.18-2.21)	0.002*
≥2 portions/day	286 (63.00)	777 (60.75)	364 (67.66)	152 (74.15)	1.89 (1.40-2.54)	<0.001*
Brown rice**, n (%)						
None	244 (53.74)	642 (50.20)	305 (56.69)	118 (57.56)	Reference	
<2 portions/day	153 (33.70)	483 (37.76)	187 (34.76)	64 (31.22)	0.91 (0.78-1.07)	0.273
≥2 portions/day	57 (12.56)	154 (12.04)	46 (8.55)	23 (11.22)	0.78 (0.61-0.99)	0.043*
Bread**, n (%)						
None	307 (67.62)	691 (54.03)	292 (54.28)	122 (59.51)	Reference	
<3 portions/week	83 (18.28)	352 (27.52)	137 (25.46)	29 (14.15)	1.12 (0.94-1.34)	0.204
≥3 portions/week	64 (14.10)	236 (18.45)	109 (20.26)	54 (26.34)	1.47 (1.21-1.79)	<0.001*
Whole wheat bread, n (%)						
None	277 (61.01)	689 (53.87)	308 (57.25)	123 (60.00)	Reference	
<3 portions/week	93 (20.48)	355 (27.76)	131 (24.35)	32 (15.61)	0.97 (0.81-1.16)	0.739
≥3 portions/week	84 (18.50)	235 (18.37)	99 (18.40)	50 (24.39)	1.10 (0.90-1.34)	0.354
Sweets and snack**, n (%)						
None	137 (30.18)	199 (15.56)	70 (13.01)	31 (15.12)	Reference	
<3 portions/week	113 (24.89)	358 (27.99)	117 (21.75)	33 (16.10)	1.42 (1.15-1.74)	0.001*
≥3 portions/week	204 (44.93)	722 (56.45)	351 (65.24)	141 (68.78)	2.15 (1.75-2.63)	<0.001*
Fish**, n (%)						
None	147 (32.38)	374 (29.24)	138 ((25.65)	60 (29.27)	Reference	
<3 times/week	228 (50.22)	670 (52.38)	287 (53.35)	104 (50.73)	1.15 (0.97-1.37)	0.112
≥3 times/week	79 (17.40)	235 (18.37)	113 (21.00)	41 (20.00)	1.26 (1.01-1.57)	0.037*
Cured meat**, n (%)						
None	157 (34.58)	298 (23.30)	107 (19.89)	52 (25.37)	Reference	
<3 times/week	228 (50.22)	708 (55.36)	286 (53.16)	113 (55.12)	1.39 (1.16-1.67)	<0.001*
≥3 times/week	69 (15.20)	273 (21.34)	145 (26.95)	40 (19.51)	1.73 (1.39-2.15)	<0.001*
Oily and fried food**, n (%)						
None	42 (9.25)	58 (4.53)	9 (1.67)	7 (3.41)	Reference	
<3 times/week	108 (23.79)	242 (18.92)	87 (16.17)	25 (12.20)	1.88 (1.27-2.79)	0.001*
≥3 times/week	304 (66.96)	979 (76.54)	442 (82.16)	173 (84.39)	2.93 (2.04-4.20)	<0.001*
Spicy food**, n (%)						
None	68 (14.98)	144 (11.26)	56 (10.41)	15 (7.32)	Reference	
<3 times/week	144 (31.72)	422 (32.99)	160 (29.74)	88 (42.93)	1.43 (1.11-1.85)	0.006*
≥3 times/week	242 (53.3)	713 (55.75)	322 (59.85)	102 (49.76)	1.40 (1.10-1.78)	0.007*
≥3 times/week	90 (19.82)	291 (22.75)	124 (23.05)	48 (23.41)	1.15 (0.94-1.40)	0.172
Fermented food, n (%)						
None	183 (40.31)	461 (40.31)	198 (36.80)	73 (35.61)	Reference	
<3 times/week	181 (39.87)	527 (41.20)	216 (40.15)	84 (40.98)	1.06 (0.90-1.26)	0.495

*Statistically significant at $P<0.05$, logistic regression. **Included in multivariate analysis.