

Table S1. Classification of the lifestyle-related exposures.

	Variable	Groups	Note
1.	Body mass index (BMI)	Normal ($18.5 \leq \text{BMI} < 25$)	The information was collected from the screening questionnaire. The classification was divided into three groups based on NHS suggestion [82].
		Overweight ($25 \leq \text{BMI} < 30$)	
		Obese ($\text{BMI} \geq 30$)	
2.	Tobacco smoking	Never	The information was obtained from Lifestyle Pattern Questionnaire.
		Previous	
		Current	
3.	Alcohol intake amount	Never	The information was obtained from Lifestyle Pattern Questionnaire. Alcohol consumption used the threshold of 7 drinks a week for categorisation. A drink was assumed to be one can or bottle of beer, or a glass of wine.
		< 7 drinks/week	
		≥ 7 drinks/week	
4.	Physical activity	No exercise habit	The information was obtained from Lifestyle Pattern Questionnaire.
		Exercising occasionally	
		Exercising routinely (at least 3 times a week, 30 minutes a day)	
5.	Cholesterol intake	<300 mg/d	The information was obtained from Food Frequency Questionnaire. Although the 2015–2020 Dietary Guidelines for Americans (DGA) removed the recommendation to restrict dietary cholesterol to 300 mg [83], the 2020-2025 DGA still advises that dietary cholesterol consumption should be as low as possible [84]. Additionally, foods that contribute most to cholesterol intake are usually high in saturated fats. Furthermore, well-known healthy eating patterns such as the Mediterranean-style [85] and DASH-style diets [51] also advocate for low cholesterol consumption. Therefore, this study continued to adhere to the earlier suggestion by the National Institute for Health and Care Excellence (NICE) that individuals at risk of cardiovascular disease in the UK should not exceed 300 mg of cholesterol per day [47,38].
		≥ 300 mg/d	
6.	Saturated fat intake	Men <30 g/d, Women <20 g/d	The information was obtained from Food Frequency Questionnaire. The saturated fat threshold was set at 30g per day, following the NHS recommendation of no more than 30g for men and 20g for women per day [39].
		Men ≥ 30 g/d, Women ≥ 20 g/d	
7.	Total sugar intake	≥ 90 g/d	The information was obtained from Food Frequency Questionnaire. Total daily sugar

	Variable	Groups	Note
		<90 g/d	intake per day was classified with a threshold of 90g daily, adhering to the NHS recommendation not to exceed this value [40].
8.	Vitamin D intake	≥ 10 mcg/d	The information was obtained from Food Frequency Questionnaire. Vitamin D categories were based on the NHS recommendation of at least 10 mcg/day [41].
		<10 mcg/d	
9.	Daily calorie intake	Men <2500 kcal/d, Women <2000 kcal/d	The information was obtained from Food Frequency Questionnaire. The daily calorie intake threshold was set at 2500 kcal/day for men and 2000 kcal/day for women, as the NHS suggests not exceeding these values [42].
		Men ≥ 2500 kcal/d, Women ≥ 2000 kcal/d	

Table S2. The component of healthy lifestyle index (HLI).

Variables	Category	Score	Variables	Category	Score
BMI	Normal	3	Cholesterol intake	<300 mg/d	2
	Overweight	2		≥300 mg/d	1
	Obesity	1	Saturated fat intake	Men <30 g/d, Women <20 g/d	2
Smoking	Never	3		Men ≥30 g/d, Women ≥20 g/d	1
	Previous	2	Total sugar intake	<90 g/d	2
	Current	1		≥90 g/d	1
Alcohol	Never	3	Vitamin D intake	≥10 mcg/d	2
	< 7 drinks/week	2		<10 mcg/d	1
	≥ 7 drinks/week	1	Daily calorie intake	Men <2500 kcal/d, Women <2000 kcal/d	2
Physical activity	Keep exercising routinely	3		Men ≥2500 kcal/d, Women ≥2000 kcal/d	1
	Exercise, but not routinely	2			
	No any exercise	1			
Total score		10-22			

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