

Appendix 1 Detailed assessment of covariates

Smoking status was divided into three categories: (I) never smokers, defined as those who have smoked fewer than 100 cigarettes in their lifetime; (II) former smokers, defined as those who have smoked more than 100 cigarettes in their lifetime but no longer smoke; (III) current smokers, defined as those who have smoked more than 100 cigarettes in their lifetime and continue to smoke, either occasionally or daily (51).

Alcohol consumption was categorized into five groups: (I) never: individuals who have consumed fewer than 12 alcoholic drinks in their lifetime; (II) former: individuals who consumed more than 12 drinks in a single year but did not drink in the past year, or those who have consumed more than 12 drinks in their lifetime but did not drink in the past year; (III) mild: females who typically consumed 1 drink per day, or males who consumed 2 drinks per day; (IV) moderate: females who consumed 2 drinks per day, or males who consumed 3 drinks per day; (V) heavy: females who averaged more than 3 drinks per day, or males who averaged more than 4 drinks per day over the past year (52).

Physical activity was measured using metabolic equivalents (MET) based on responses from the questionnaire. Participants were then categorized into three groups: low activity (less than 600 MET minutes per week), moderate activity (600 to 2999 MET minutes per week), and high activity (3000 or more MET minutes per week) (53).

Dietary health was measured using the Healthy Eating Index-2015 (HEI-2015), which consists of 13 dietary components (54). Data from the first 24-hour dietary recall were used to calculate the HEI-2015 score. The total score, ranging from 0 to 100, was then categorized into two groups: scores below 60 and scores of 60 or above (51).

Hypertension was determined by any of the following: an average systolic blood pressure of 130 mmHg or higher, a diastolic blood pressure of 80 mmHg or higher, self-reported diagnosis, or the use of antihypertensive medication (55).

Diabetes status was assessed based on the following criteria: a physician's diagnosis, HbA1c levels of 6.5% or higher, fasting glucose levels of 7.0 mmol/L or higher, blood glucose levels of 11.1 mmol/L or higher during a random or two-hour oral glucose tolerance test (OGTT), or the use of diabetes medication or insulin (56).

Hyperlipidemia was identified based on the following criteria: total cholesterol levels of 5.0 mmol/L or higher, LDL-cholesterol levels of 3.0 mmol/L or higher, triglyceride levels of 1.7 mmol/L or higher, or the use of lipid-lowering medications (57).

Chronic kidney disease (CKD) was defined based on an estimated glomerular filtration rate (eGFR) below 60 mL/min/1.73 m². The eGFR was calculated using the Chronic Kidney Disease Epidemiology Collaboration (CKD-EPI) equation (58).

Cardiovascular disease (CVD) was defined as a self-reported diagnosis by a healthcare provider, including conditions such as congestive heart failure, coronary heart disease, angina, myocardial infarction, or stroke.

References

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Table S1 Characteristics of the study population according to history of kidney stones.				
Characteristics	Total	Kidney stones		P value
		No	Yes	
Age (years), mean (SE)	47.96 (0.27)	47.36 (0.28)	53.34 (0.53)	<0.001
TyG, mean (SE)	8.57 (0.01)	8.56 (0.01)	8.72 (0.02)	<0.001
BMI (Kg/m ²), mean (SE)	29.07 (0.09)	28.88 (0.09)	30.79 (0.23)	<0.001
TyG-WC, mean (SE)	857.28 (2.79)	850.30 (2.81)	920.71 (5.97)	<0.001
TyG-WHtR, mean (SE)	5.09 (0.02)	5.05 (0.02)	5.47 (0.04)	<0.001
TyG-BMI, mean (SE)	250.61 (0.98)	248.47 (0.99)	270.06 (2.27)	<0.001
Sex, n (%)				0.006
Female	7950 (50.89)	7280 (51.38)	670 (46.46)	
Male	7640 (49.11)	6824 (48.62)	816 (53.54)	
Race/ethnicity, n (%)				<0.001
Mexican American	2321 (8.62)	2127 (8.84)	194 (6.62)	
Non-Hispanic White	6351 (66.72)	5572 (65.83)	779 (74.88)	
Non-Hispanic Black	3236 (10.35)	3057 (10.93)	179 (5.03)	
Others	3682 (14.31)	3348 (14.40)	334 (13.47)	
PIR, n (%)				0.18
≤ 1.3	4520 (19.82)	4105 (20.07)	415 (17.64)	
1.3-3.5	6606 (38.33)	5972 (38.16)	634 (39.95)	
> 3.5	4464 (41.84)	4027 (41.78)	437 (42.41)	
Education level, n (%)				0.93
Less than high school	3779 (15.71)	3410 (15.66)	369 (16.16)	
High school	3532 (22.94)	3201 (22.94)	331 (22.88)	
Above high school	8279 (61.35)	7493 (61.39)	786 (60.96)	
Smoking status, n (%)				0.04
Never	8666 (55.24)	7899 (55.65)	767 (51.49)	
Former	3787 (25.74)	3353 (25.29)	434 (29.81)	
Now	3137 (19.02)	2852 (19.06)	285 (18.70)	
Alcohol consumption, n (%)				<0.001
Never	2098 (10.01)	1911 (9.99)	187 (10.25)	
Former	2031 (10.63)	1782 (10.20)	249 (14.47)	
Mild	5928 (40.97)	5321 (40.74)	607 (43.12)	
Moderate	2280 (17.00)	2093 (17.15)	187 (15.66)	
Heavy	3253 (21.39)	2997 (21.93)	256 (16.50)	
Physical activity, n (%)				0.90
Low	2109 (13.13)	1914 (13.18)	195 (12.64)	
Moderate	5834 (38.82)	5315 (38.81)	519 (38.89)	
High	7647 (48.05)	6875 (48.01)	772 (48.47)	
Hypertension, n (%)				<0.001
No	9162 (63.61)	8479 (65.22)	683 (48.97)	
Yes	6428 (36.39)	5625 (34.78)	803 (51.03)	
Diabetes, n (%)				<0.001
No	12217 (83.49)	11229 (84.64)	988 (73.02)	
Yes	3373 (16.51)	2875 (15.36)	498 (26.98)	
CVD, n (%)				<0.001
No	13838 (90.85)	12633 (91.51)	1205 (84.86)	
Yes	1752 (9.15)	1471 (8.49)	281 (15.14)	
HEI-2015, n (%)				<0.001
< 60	12485 (80.37)	11237 (79.87)	1248 (84.93)	
≥ 60	3105 (19.63)	2867 (20.13)	238 (15.07)	
CKD, n (%)				<0.001
No	12852 (86.16)	11743 (86.87)	1109 (79.76)	
Yes	2738 (13.84)	2361 (13.13)	377 (20.24)	
Hyperlipidemia, n (%)				<0.001
No	4411 (29.23)	4098 (30.04)	313 (21.88)	
Yes	11179 (70.77)	10006 (69.96)	1173 (78.12)	

SE: Standard Error; PIR: the ratio of income to poverty; BMI, body mass index; TyG: triglyceride glucose index; TyG-BMI: triglyceride glucose-body mass index; TyG-WC: triglyceride glucose-waist circumference; TyG-WHtR: triglyceride glucose-waist to height ratio; HEI-2015: Healthy Eating Index 2015; CVD: cardiovascular disease; CKD: chronic kidney disease.

Table S2 Characteristics of the study population according to quartiles of TyG-WC

Characteristics	Q1	Q2	Q3	Q4
Age (years), mean (SE)	40.65 (0.50)	48.93 (0.37)	51.02 (0.34)	51.72 (0.35)
TyG, mean (SE)	8.00 (0.01)	8.42 (0.01)	8.74 (0.01)	9.17 (0.02)
BMI (Kg/m ²), mean (SE)	22.67 (0.07)	26.90 (0.07)	30.20 (0.09)	36.84 (0.15)
TyG-WHtR, mean (SE)	3.90 (0.01)	4.72 (0.01)	5.35 (0.01)	6.46 (0.02)
TyG-BMI, mean (SE)	181.18 (0.57)	225.97 (0.55)	262.87 (0.73)	336.18 (1.36)
Sex, n (%)				
Female	2436 (64.13)	1995 (51.62)	1761 (43.54)	1758 (43.42)
Male	1462 (35.87)	1902 (48.38)	2136 (56.46)	2140 (56.58)
Race/ethnicity, n (%)				
Mexican American	390 (6.34)	592 (8.94)	697 (10.23)	642 (9.14)
Non-Hispanic White	1494 (64.22)	1469 (64.36)	1552 (67.16)	1836 (71.25)
Non-Hispanic Black	858 (11.49)	825 (10.63)	779 (9.76)	774 (9.44)
Others	1156 (17.95)	1011 (16.07)	869 (12.84)	646 (10.17)
PIR, n (%)				
≤ 1.3	1082 (19.67)	1081 (19.07)	1097 (18.56)	1260 (21.98)
1.3-3.5	1585 (35.76)	1635 (37.22)	1710 (39.68)	1676 (40.81)
> 3.5	1231 (44.57)	1181 (43.71)	1090 (41.76)	962 (37.21)
Education level, n (%)				
Less than high school	705 (12.10)	951 (15.62)	1074 (17.77)	1049 (17.59)
High school	835 (20.32)	854 (22.31)	905 (24.10)	938 (25.19)
Above high school	2358 (67.59)	2092 (62.07)	1918 (58.13)	1911 (57.23)
Smoking status, n (%)				
Never	2457 (62.07)	2217 (55.90)	2105 (53.51)	1887 (49.06)
Former	602 (17.97)	903 (24.40)	1045 (28.29)	1237 (32.78)
Now	839 (19.96)	777 (19.71)	747 (18.20)	774 (18.16)
Alcohol consumption, n (%)				
Never	552 (10.49)	542 (10.12)	510 (9.82)	494 (9.59)
Former	333 (7.04)	450 (8.86)	582 (12.05)	666 (14.76)
Mild	1533 (40.46)	1504 (41.78)	1508 (42.44)	1383 (39.28)
Moderate	701 (21.00)	584 (17.28)	511 (14.81)	484 (14.65)
Heavy	779 (21.01)	817 (21.96)	786 (20.88)	871 (21.73)
Physical activity, n (%)				
Low	481 (11.22)	548 (13.09)	519 (13.28)	561 (15.03)
Moderate	1439 (38.25)	1471 (39.64)	1458 (39.02)	1466 (38.43)
High	1978 (50.53)	1878 (47.27)	1920 (47.70)	1871 (46.53)
Hypertension, n (%)				
No	3138 (84.09)	2419 (67.62)	2048 (58.36)	1557 (43.18)
Yes	760 (15.91)	1478 (32.38)	1849 (41.64)	2341 (56.82)
Diabetes, n (%)				
No	3722 (96.95)	3374 (91.20)	2975 (83.02)	2146 (62.13)
Yes	176 (3.05)	523 (8.80)	922 (16.98)	1752 (37.87)
CVD, n (%)				
No	3707 (95.92)	3519 (92.13)	3409 (90.06)	3203 (85.00)
Yes	191 (4.08)	378 (7.87)	488 (9.94)	695 (15.00)
HEI-2015, n (%)				
< 60	2955 (73.91)	3024 (78.72)	3155 (81.87)	3351 (87.37)
≥ 60	943 (26.09)	873 (21.28)	742 (18.13)	547 (12.63)
CKD, n (%)				
No	3492 (90.63)	3327 (88.81)	3144 (85.93)	2889 (79.07)
Yes	406 (9.37)	570 (11.19)	753 (14.07)	1009 (20.93)
Hyperlipidemia, n (%)				
No	2157 (56.67)	1135 (29.31)	706 (18.79)	413 (10.41)
Yes	1741 (43.33)	2762 (70.69)	3191 (81.21)	3485 (89.59)
Kidney stones, n (%)				
No	3687 (94.62)	3570 (90.79)	3504 (89.54)	3343 (85.11)
Yes	211 (5.38)	327 (9.21)	393 (10.46)	555 (14.89)

SE: Standard Error; PIR: the ratio of income to poverty; BMI, body mass index; TyG: triglyceride glucose index; TyG-BMI: triglyceride glucose-body mass index; TyG-WC: triglyceride glucose-waist circumference; TyG-WHtR: triglyceride glucose-waist to height ratio; HEI-2015: Healthy Eating Index 2015; CVD: cardiovascular disease; CKD: chronic kidney disease.

Table S3 Characteristics of the study population according to quartiles of TyG-WHtR

Characteristics	Q1	Q2	Q3	Q4
Age (years), mean (SE)	39.91 (0.47)	49.19 (0.34)	51.04 (0.39)	52.88 (0.38)
TyG, mean (SE)	8.01 (0.01)	8.45 (0.01)	8.79 (0.01)	9.16 (0.02)
BMI (Kg/m ²), mean (SE)	22.80 (0.07)	27.00 (90.07)	30.39 (0.08)	37.35 (0.15)
TyG-WC, mean (SE)	658.09 (1.59)	802.15 (1.19)	911.99 (1.57)	1095.61 (3.48)
TyG-BMI, mean (SE)	182.25 (0.54)	227.47 (0.53)	265.91 (0.62)	340.63 (1.36)
Sex, n (%)				
Female	2003 (53.38)	1800 (46.53)	1874 (46.49)	2273 (57.31)
Male	1896 (46.62)	2095 (53.47)	2025 (53.51)	1624 (42.69)
Race/ethnicity, n (%)				
Mexican American	322 (5.40)	520 (7.87)	718 (10.62)	761 (11.15)
Non-Hispanic White	1589 (66.46)	1561 (67.16)	1529 (65.81)	1672 (67.51)
Non-Hispanic Black	948 (12.15)	816 (9.86)	744 (9.50)	728 (9.62)
Others	1040 (15.98)	998 (15.11)	908 (14.07)	736 (11.72)
PIR, n (%)				
≤ 1.3	1046 (18.32)	1013 (18.28)	1112 (19.11)	1349 (24.03)
1.3-3.5	1564 (35.42)	1599 (35.61)	1726 (40.27)	1717 (42.73)
> 3.5	1289 (46.25)	1283 (46.11)	1061 (40.62)	831 (33.23)
Education level, n (%)				
Less than high school	650 (11.24)	869 (14.33)	1037 (17.37)	1223 (20.77)
High school	820 (19.51)	866 (22.65)	947 (25.09)	899 (25.06)
Above high school	2429 (69.26)	2160 (63.03)	1915 (57.53)	1775 (54.17)
Smoking status, n (%)				
Never	2306 (59.21)	2210 (55.92)	2112 (52.82)	2038 (52.33)
Former	666 (19.49)	923 (24.95)	1040 (28.85)	1158 (30.75)
Now	927 (21.30)	762 (19.13)	747 (18.33)	701 (16.92)
Alcohol consumption, n (%)				
Never	431 (8.38)	509 (9.67)	512 (9.59)	646 (12.76)
Former	316 (6.38)	458 (9.75)	568 (11.77)	689 (15.40)
Mild	1592 (41.57)	1571 (43.58)	1454 (40.07)	1311 (38.36)
Moderate	705 (20.86)	573 (16.25)	542 (16.28)	460 (14.00)
Heavy	855 (22.81)	784 (20.74)	823 (22.29)	791 (19.47)
Physical activity, n (%)				
Low	449 (10.48)	553 (12.86)	512 (13.69)	595 (15.95)
Moderate	1382 (36.71)	1456 (39.51)	1499 (40.48)	1497 (38.83)
High	2068 (52.81)	1886 (47.63)	1888 (45.83)	1805 (45.22)
Hypertension, n (%)				
No	3180 (84.91)	2422 (66.54)	2058 (57.78)	1502 (41.35)
Yes	719 (15.09)	1473 (33.46)	1841 (42.22)	2395 (58.65)
Diabetes, n (%)				
No	3738 (97.25)	3386 (91.28)	2991 (82.21)	2102 (60.05)
Yes	161 (2.75)	509 (8.72)	908 (17.79)	1795 (39.95)
CVD, n (%)				
No	3714 (96.22)	3512 (91.61)	3408 (90.32)	3204 (84.24)
Yes	185 (3.78)	383 (8.39)	491 (9.68)	693 (15.76)
HEI-2015, n (%)				
< 60	2986 (73.97)	3015 (79.65)	3182 (83.27)	3302 (85.71)
≥ 60	913 (26.03)	880 (20.35)	717 (16.73)	595 (14.29)
CKD, n (%)				
No	3548 (92.08)	3327 (88.78)	3177 (85.92)	2800 (76.57)
Yes	351 (7.92)	568 (11.22)	722 (14.08)	1097 (23.43)
Hyperlipidemia, n (%)				
No	2228 (57.72)	1144 (28.45)	650 (16.47)	389 (9.76)
Yes	1671 (42.28)	2751 (71.55)	3249 (83.53)	3508 (90.24)
Kidney stones, n (%)				
No	3696 (94.94)	3561 (90.65)	3476 (88.36)	3371 (85.52)
Yes	203 (5.06)	334 (9.35)	423 (11.64)	526 (14.48)

SE: Standard Error; PIR: the ratio of income to poverty; BMI, body mass index; TyG: triglyceride glucose index; TyG-BMI: triglyceride glucose-body mass index; TyG-WC: triglyceride glucose-waist circumference; TyG-WHtR: triglyceride glucose-waist to height ratio; HEI-2015: Healthy Eating Index 2015; CVD: cardiovascular disease; CKD: chronic kidney disease.

Table S4 Characteristics of the study population according to quartiles of TyG-BMI

Characteristics	Q1	Q2	Q3	Q4
Age (years), mean (SE)	43.08 (0.54)	50.05 (0.38)	49.91 (0.40)	49.13 (0.38)
TyG, mean (SE)	8.05 (0.01)	8.46 (0.01)	8.77 (0.01)	9.06 (0.02)
BMI (Kg/m2), mean (SE)	22.09 (0.05)	26.49 (0.04)	30.19 (0.06)	38.03 (0.14)
TyG-WC, mean (SE)	659.19 (1.69)	798.06 (1.59)	905.20 (1.74)	1082.08 (3.83)
TyG-WHtR, mean (SE)	3.93 (0.01)	4.72 (0.01)	5.36 (0.01)	6.44 (0.02)
Sex, n (%)				
Female	2180 (58.68)	1774 (46.21)	1828 (44.41)	2168 (53.67)
Male	1718 (41.32)	2123 (53.79)	2069 (55.59)	1730 (46.33)
Race/ethnicity, n (%)				
Mexican American	337 (5.34)	567 (8.03)	720 (11.01)	697 (10.39)
Non-Hispanic White	1651 (67.70)	1583 (67.38)	1510 (65.39)	1607 (66.32)
Non-Hispanic Black	774 (9.74)	762 (9.55)	776 (10.07)	924 (12.07)
Others	1136 (17.22)	985 (15.04)	891 (13.52)	670 (11.22)
PIR, n (%)				
≤ 1.3	1080 (19.02)	1056 (18.39)	1087 (19.19)	1297 (22.76)
1.3-3.5	1601 (36.61)	1629 (35.58)	1702 (39.96)	1674 (41.38)
> 3.5	1217 (44.37)	1212 (46.04)	1108 (40.84)	927 (35.86)
Education level, n (%)				
Less than high school	753 (12.84)	948 (15.12)	1036 (17.24)	1042 (17.88)
High school	843 (20.35)	854 (22.92)	917 (23.90)	918 (24.77)
Above high school	2302 (66.81)	2095 (61.96)	1944 (58.86)	1938 (57.35)
Smoking status, n (%)				
Never	2289 (58.07)	2156 (54.98)	2135 (53.54)	2086 (54.14)
Former	702 (20.02)	956 (25.58)	1036 (28.53)	1093 (29.30)
Now	907 (21.91)	785 (19.45)	726 (17.93)	719 (16.57)
Alcohol consumption n (%)				
Never	533 (10.22)	497 (9.10)	532 (10.23)	536 (10.50)
Former	367 (7.41)	486 (10.11)	564 (11.27)	614 (13.96)
Mild	1600 (42.38)	1572 (43.66)	1416 (39.46)	1340 (38.23)
Moderate	625 (18.84)	578 (17.07)	553 (16.79)	524 (15.16)
Heavy	773 (21.15)	764 (20.06)	832 (22.26)	884 (22.14)
Physical activity, n (%)				
Low	504 (11.80)	525 (12.89)	504 (12.56)	576 (15.33)
Moderate	1460 (37.99)	1493 (40.43)	1468 (39.47)	1413 (37.43)
High	1934 (50.20)	1879 (46.67)	1925 (47.97)	1909 (47.24)
Hypertension, n (%)				
No	2982 (81.48)	2437 (66.80)	2095 (58.93)	1648 (45.88)
Yes	916 (18.52)	1460 (33.20)	1802 (41.07)	2250 (54.12)
Diabetes, n (%)				
No	3620 (95.54)	3294 (88.80)	2974 (83.28)	2329 (65.41)
Yes	278 (4.46)	603 (11.20)	923 (16.72)	1569 (34.59)
CVD, n (%)				
No	3610 (93.99)	3477 (91.02)	3441 (90.96)	3310 (87.21)
Yes	288 (6.01)	420 (8.98)	456 (9.04)	588 (12.79)
HEI-2015, n (%)				
< 60	2936 (73.49)	3019 (78.93)	3185 (82.69)	3345 (86.93)
≥ 60	962 (26.51)	878 (21.07)	712 (17.31)	553 (13.07)
CKD, n (%)				
No	3395 (89.28)	3274 (87.86)	3207 (86.69)	2976 (80.61)
Yes	503 (10.72)	623 (12.14)	690 (13.31)	922 (19.39)
Hyperlipidemia, n (%)				
No	2033 (53.95)	1130 (28.87)	708 (18.48)	540 (13.72)
Yes	1865 (46.05)	2767 (71.13)	3189 (81.52)	3358 (86.28)
Kidney stones, n (%)				
No	3664 (94.10)	3544 (90.55)	3496 (89.58)	3400 (85.80)
Yes	234 (5.90)	353 (9.45)	401 (10.42)	498 (14.20)

SE: Standard Error; PIR: the ratio of income to poverty; BMI, body mass index; TyG: triglyceride glucose index; TyG-BMI: triglyceride glucose-body mass index; TyG-WC: triglyceride glucose-waist circumference; TyG-WHtR: triglyceride glucose-waist to height ratio; HEI-2015: Healthy Eating Index 2015; CVD: cardiovascular disease; CKD: chronic kidney disease.

Table S5 Associations between TyG-related parameters and kidney stones in 7312 participants with complete data

Subgroup	Case/N	Crude model		Model 1		Model 2		Model 3	
		OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value
TyG-WC index									
Q1	101/1828	Reference		Reference		Reference		Reference	
Q2	139/1828	1.56 (1.11-2.19)	0.01	1.33 (0.96-1.86)	0.09	1.33 (0.95-1.86)	0.10	1.33 (0.93-1.89)	0.11
Q3	167/1828	1.80 (1.27-2.54)	0.001	1.44 (1.01-2.06)	0.045	1.42 (1.00-2.02)	0.050	1.39 (0.95-2.03)	0.09
Q4	230/1828	2.66 (1.96-3.61)	<0.001	2.14 (1.56-2.92)	<0.001	2.07 (1.52-2.83)	<0.001	1.86 (1.31-2.63)	<0.001
P for trend		<0.001		<0.001		<0.001		<0.001	
TyG-WHtR index									
Q1	98/1828	Reference		Reference		Reference		Reference	
Q2	136/1827	1.46 (0.98-2.18)	0.06	1.22 (0.82-1.81)	0.32	1.20 (0.81-1.79)	0.35	1.21 (0.80-1.84)	0.35
Q3	194/1827	2.28 (1.65-3.15)	<0.001	1.86 (1.33-2.59)	<0.001	1.82 (1.30-2.53)	<0.001	1.79 (1.24-2.59)	0.002
Q4	209/1830	2.54 (1.81-3.56)	<0.001	2.08 (1.48-2.92)	<0.001	2.01 (1.43-2.81)	<0.001	1.80 (1.23-2.64)	0.003
P for trend		<0.001		<0.001		<0.001		<0.001	
TyG-BMI index									
Q1	109/1828	Reference		Reference		Reference		Reference	
Q2	143/1828	1.42 (0.97-2.09)	0.07	1.25 (0.85-1.84)	0.26	1.24 (0.84-1.82)	0.27	1.24 (0.83-1.86)	0.28
Q3	182/1828	1.99 (1.48-2.69)	<0.001	1.75 (1.27-2.41)	<0.001	1.73 (1.26-2.37)	0.001	1.71 (1.22-2.41)	0.003
Q4	203/1828	2.33 (1.71-3.18)	<0.001	2.16 (1.57-2.97)	<0.001	2.10 (1.54-2.88)	<0.001	1.90 (1.34-2.71)	<0.001
P for trend		<0.001		<0.001		<0.001		<0.001	

TyG, triglyceride glucose; WC, waist circumference; WHtR, waist to height ratio; BMI, body mass index; N, number; OR, odds ratio; CI, confidence interval. Model 1: Adjusted for age, sex and race/ethnicity. Model 2: adjusted for family income-poverty ratio, educational level, smoking status, alcohol consumption, physical status, dietary health based on the model 1. Model 3: adjusted the chronic disease condition (hypertension, diabetes, hyperlipidemia, chronic kidney disease, and cardiovascular disease) based on the model 2.

Table S6 Associations between TyG-related parameter and kidney stones after regrouping

Subgroup	Case/N	Crude model		Model 1		Model 2		Model 3	
		OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value	OR (95% CI)	P-value
TyG-WC index									
Low	538/7796	Reference		Reference		Reference		Reference	
High	948/7794	1.87 (1.62-2.15)	<0.001	1.62 (1.39-1.89)	<0.001	1.57 (1.35-1.84)	<0.001	1.38 (1.17-1.63)	<0.001
TyG-BMI index									
Low	587/7795	Reference		Reference		Reference		Reference	
High	899/7795	1.70 (1.48-1.96)	<0.001	1.64 (1.43-1.89)	<0.001	1.60 (1.39-1.84)	<0.001	1.42 (1.21-1.67)	<0.001
TyG-WHtR index									
Low	540/7819	Reference		Reference		Reference		Reference	
High	946/7771	1.95 (1.69-2.27)	<0.001	1.74 (1.48-2.04)	<0.001	1.70 (1.44-1.99)	<0.001	1.51 (1.27-1.80)	<0.001

TyG, triglyceride glucose; WC, waist circumference; WHtR, waist to height ratio; BMI, body mass index; N, number; OR, odds ratio; CI, confidence interval. Model 1: Adjusted for age, sex and race/ethnicity. Model 2: adjusted for family income-poverty ratio, educational level, smoking status, alcohol consumption, physical status, dietary health based on the model 1. Model 3: adjusted the chronic disease condition (hypertension, diabetes, hyperlipidemia, chronic kidney disease, and cardiovascular disease) based on the model 2.