**Supplementary Table S1.** Confounder-adjusted overall longitudinal, intra-individual, and inter-individual associations (*n* = 247) between the dietary WCRF/AICR recommendations and metabolites of the kynurenine pathway

| | | Kynurenic acid (nmol/L) | Picolinic acid (nmol/L) | Tryptophan (µmol/L) | Kynurenine (µmol/L) | Xanthurenic acid (nmol/L) | Anthranilic acid (nmol/L) | 3−Hydroxy−anthranilic acid (nmol/L) | 3−Hydroxy−kynurenine (nmol/L) | Quinolinic acid (nmol/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| Dietscore WCRF/AICR (0−5 points) | Adjusted[1,2,3] | .03 (−.05, .11) | .02 (−.09, .13) | −.01 (−.12, .11) | −.05 (−.13, .04) | .01 (−.10, .12) | −.05 (−.16, .06) | .00 (−.11, .11) | −.04 (−.13, .08) | −.06 (−.15, .02) |
| | Within[1,4] | .02 (−.09, .12) | −.06 (−.20, .07) | .00 (−.16, .15) | −.07 (−.17, .04) | .01 (−.13, .15) | .01 (−.15, .16) | −.01 (−.16, .13) | −.02 (−.15, .10) | −.08 (−.17, .02) |
| | Between[1,5] | .05 (−.08, .17) | .17 (−.01, .36) | −.01 (−.19, .16) | −.01 (−.16, .13) | .00 (−.17, .18) | −.10 (−.26, .06) | .02 (−.15, .19) | .02 (−.14, .18) | −.01 (−.19, .16) |
| Dietscore WCRF/AICR excl. alcohol (0−4 points) | Adjusted[1,2,3] | .08 (−.01; .17) | .09 (−.03; .21) | .13 (−.01; .28) | −.05 (−.15; .04) | .13* (.02; .25) | −.03 (−.15; .09) | .02 (−.10; .14) | −.03 (−.17; .10) | −.12 (−.22; −.03) |
| | Within[1,4] | .04 (−.07; .16) | −.03 (−.18; .12) | .12 (−.05; .29) | −.02 (−.15; .10) | .06 (−.09; .22) | .05 (−.12; .22) | .01 (−.15; .17) | −.01 (−.15; .10) | −.11* (−.22; .00) |
| | Between[1,5] | .13 (−.01; .26) | .30* (.10; .49) | .13 (−.06; .32) | −.10 (−.26; .53) | .23* (.05; .42) | −.12 (−.29; .05) | .03 (−.15; .22) | −.08 (−.25; .10) | −.19 (−.37; .00) |
| Vegetable and fruit (g/day) | Adjusted[1,2,3] | −.01 (−.08, .05) | −.06 (−.14, .02) | .02 (−.07, .11) | −.05 (−.12, .01) | −.03 (−.11, .05) | −.02 (−.13, .09) | −.03 (−.12, .05) | −.08* (−.16, −.01) | −.01 (−.08, .05) |
| | Within[1,4] | .00 (−.09, .08) | −.12* (−.23, −.01) | .00 (−.12, .12) | −.05 (−.14, .03) | .00 (−.12, .11) | −.01 (−.13, .12) | −.05 (−.16, .07) | −.05 (−.15, .05) | .01 (−.07, .08) |
| | Between[1,5] | −.02 (−.10, .07) | .01 (−.12, .14) | .04 (−.08, .16) | −.05 (−.15, .05) | −.06 (−.18, .06) | −.04 (−.15, .07) | −.02 (−.14, .10) | −.13* (−.24, −.02) | −.06 (−.18, .06) |
| Dietary fibre (g/day) | Adjusted[1,2,3] | −.04 (−.11, .03) | −.05 (−.15, .05) | .03 (−.08, .14) | −.07 (−.15, .01) | −.05 (−.15, .05) | −.12* (−.22, −.02) | −.03 (−.14, .07) | −.04 (−.15, .08) | −.07 (−.15, .00) |
| | Within[1,4] | .03 (−.07, .12) | −.03 (−.16, .10) | .06 (−.08, .20) | −.07 (−.17, .04) | .07 (−.06, .20) | −.07 (−.21, .07) | .01 (−.13, .14) | −.01 (−.13, .11) | −.08 (−.17, .01) |
| | Between[1,5] | −.08 (−.18, .01) | −.07 (−.21, .07) | .00 (−.13, .14) | −.07 (−.18, .04) | −.16* (−.29, −.04) | −.15* (−.27, −.03) | −.07 (−.20, .06) | −.07 (−.19, .05) | −.05 (−.18, .08) |
| Alcohol (g/day) | Adjusted[1,2,3] | .12* (.03, .20) | .08 (−.02, .19) | .14* (.02, .27) | −.02 (−.11, .06) | .18* (.09, .28) | .05 (−.05, .14) | −.02 (−.12, −.08) | −.03 (−.16, .10) | −.08 (−.16, .00) |
| | Within[1,4] | .14 (−.01, .28) | .12 (−.07, .31) | .16 (−.05, .37) | −.02 (−.17, .13) | .15 (−.04, .35) | .07 (−.14, .28) | −.07 (−.27, .13) | .01 (−.17, .19) | −.01 (−.15, .12) |
| | Between[1,5] | .13* (.04, .21) | .06 (−.06, .19) | .09 (−.03, .21) | −.03 (−.13. .07) | .20* (.08, .31) | .04 (−.07, .15) | .00 (−.12, .12) | −.04 (−.16, .07) | −.12* (−.24, .00) |
| Ultra−processed foods (%energy) | Adjusted[1,2,3] | −.05 (−.11, .00) | −.05 (−.12, .03) | −.04 (−.12, .04) | .03 (−.03, .09) | −.10* (−.17, −.02) | .00 (−.08, .07) | −.04 (−.12, .04) | .01 (−.06, .08) | .06 (−.01, .13) |
| | Within[1,4] | −.01 (−.05, .03) | .02 (−.04, .08) | −.01 (−.07, .05) | .01 (−.03, .06) | −.02 (−.08, .04) | −.02 (−.08, .04) | −.02 (−.08, .04) | .00 (−.05, .06) | .03 (−.01, .07) |
| | Between[1,5] | −.06* (−.11, −.01) | −.11* (−.18, −.04) | −.05 (−.12, .03) | .02 (−.03, .08) | −.11* (−.17, −.04) | .01 (−.05, .08) | −.03 (−.10, .04) | .01 (−.05, .07) | .06 (−.01, .13) |
| Red meat (g/week) | Adjusted[1,2,3] | .02 (−.04, .08) | .05 (−.04, .13) | −.07 (−.15, .02) | .01 (−.05, .08) | .05 (−.03, .14) | .09 (−.01, .19) | .00 (−.08, .09) | .09* (.00, .19) | .02 (−.05, .08) |
| | Within[1,4] | .03 (−.05, .11) | .06 (−.04, .16) | −.06 (−.18, .05) | .01 (−.07, .09) | .06 (−.04, .17) | .12* (.01, .23) | .04 (−.06, .15) | .08 (−.02, .17) | .02 (−.05, .09) |
| | Between[1,5] | .00 (−.09, .10) | .01 (−.13, .16) | −.07 (−.21, .07) | .01 (−.10, .13) | .03 (−.11, .17) | .08 (−.04, .21) | −.07 (−.21, .07) | .12, −.01, .25) | .03 (−.11, .16) |
| Processed meat (g/week) | Adjusted[1,2,3] | −.03 (−.09, .03) | −.04 (−.13, .05) | −.05 (−.14, .03) | .02 (−.04, .09) | −.04 (−.12, .04) | .05 (−.05, .15) | −.09* (−.18, −.01) | .01 (−.06, .09) | −.01 (−.08, .07) |
| | Within[1,4] | .00 (−.08, .08) | −.06 (−.16, .04) | .00 (−.11, .12) | .01 (−.07, .09) | −.01 (−.11, .10) | .05 (−.06, .17) | −.08 (−.19, .02) | −.09 (−.18, .00) | −.05 (−.12, .02) |
| | Between[1,5] | −.07 (−.16, .03) | −.04 (−.18, .11) | −.14* (−.28, −.01) | .05 (−.07, .16) | −.10 (−.23, .04) | .09 (−.03, .22) | −.11 (−.24, .02) | .19* (.07, .32) | .13 (−.01, .26) |
| Sugar−sweetened drinks (g/day) | Adjusted[1,2] | −.04 (−.09, .02) | −.08 (−.15, .00) | −.06 (−.14, .02) | .02 (−.04, .08) | −.07 (−.14, .01) | −.01 (−.09, .07) | −.02 (−.09, .06) | −.03 (−.10, .04) | .03 (−.03, .09) |
| | Within[1,4] | −.02 (−.09, .05) | −.03 (−.12, .07) | .06 (−.16, .04) | −.04 (−.12, .03) | .00 (−.10, .09) | −.11* (−.21, .00) | −.03 (−.13, .07) | −.04 (−.13, .05) | −.01 (−.08, .06) |
| | Between[1,5] | −.06 (−.14, .02) | −.16* (−.28, −.04) | −.06 (−.18, .06) | .13* (.03, .23) | −.16* (−.27, −.04) | .09 (−.02, .20) | .00 (−.11, .12) | −.02 (−.13, 09) | .17* (.06, .29) |

Abbreviations: WCRF/AICR, World Cancer Research Fund/American Institute for Cancer Research.

Both exposure and outcome variables are standardized.

Standard deviations of kynurenines are: 29 nmol/L for kynurenic acid; 15 nmol/L for picolinic acid; 12 µmol/L for tryptophan; 0.5 µmol/L for kynurenine; 8 nmol/L for xanthurenic acid; 7 nmol/L for anthranilic acid; 15 nmol/L for 3−hydroxyanthranilic acid; 27 for 3−hydroxykynurenine; and 366 nmol/L for quinolinic acid.

Standard deviations of dietary intake are: 1 point for dietscore WCRF/AICR, 128 g/day for vegetable and fruit; 6 g/day for fiber; 19 g/day for alcohol; 10% for ultra−processed foods; 301 g/week for red meat; 209 g/week for processed meat, and 132 g/day for sugar−sweetened drinks.

[1] Linear mixed models adjusted for age at enrollment (years), sex (male, female), renal function (μmol/L), time since end treatment (weeks), chemotherapy (yes, no), comorbidities (0, 1, ≥2), stoma (yes, no), educational level (high, medium, low), BMI (kg/m$^2$), total PA (hours/day), smoking status (current, former, never) and energy intake (kcal/week)

[2] The β-coefficients represent the overall longitudinal difference in kynurenine concentrations using linear mixed models, and can be interpreted as the amount of SD difference in kynurenine concentration/ratio according to 1SD difference in dietary score/intake

[3] A random slope was added to the model for dietscore WCRF/AICR with HK; for dietscore WCRF/AICR excl. alcohol with Trp, and HK; for vegetable and fruit with KA, and AA; for dietary fiber with HK, KA, and QA; for alcohol with Trp, HK, KA, and QA; for ultra−processed foods with QA; for red meat intake with HK, and AA; and for processed meat intake with AA, Pic, and QA

[4] The β-coefficients represent the change in kynurenine concentration over time within individuals using a hybrid model within linear mixed models

[5] The β-coefficients represent the difference in kynurenine concentration between individuals using a hybrid model within linear mixed models

* Indicates a statistically significant association

**Supplementary Table S2.** Confounder-adjusted overall longitudinal, intra-individual, and inter-individual associations ($n$ = 247) between the dietary WCRF/AICR recommendations and relevant kynurenine ratios

| | | KA/QA | HAA/HK | KTR | HKr | Neopterin (nmol/L) |
|---|---|---|---|---|---|---|
| Dietscore WCRF/AICR (0–5 points) | Adjusted[1,2,3] | .09 (.00, .19) | −.03 (−.15, .08) | −.08 (−.19, .03) | −.07 (−.19, .05) | .03 (−.09, .14) |
| | Within[1,4] | .09 (−.03, .21) | −.09 (−.23, .04) | −.11 (−.22, .00) | −.04 (−.17, .08) | .02 (−.09, .14) |
| | Between[1,5] | .11 (−.06, .28) | .03 (−.13, .20) | .01 (−.15, .16) | −.05 (−.21, .11) | .02 (−.15, .19) |
| Dietscore WCRF/AICR excl. alcohol (0–4 points) | Adjusted[1,2,3] | .20* (.10; .31) | .01 (−.13; .14) | −.16* (−.28; −.04) | −.12 (−.26; .02) | −.06 (−.18, .05) |
| | Within[1,4] | .12 (−.01; .25) | −.09 (−.24; .06) | −.18* (−.30; −.05) | −.06 (−.20; .08) | .00 (−.13, .13) |
| | Between[1,5] | .36* (.17; .54) | .11 (−.07; .28) | −.18* (−.35; −.02) | −.23* (−.41; −.06) | −.21* (−.39, −.03) |
| Vegetable and fruit (g/day) | Adjusted[1,2,3] | .01 (−.06, .09) | .06 (−.01, .14) | −.04 (−.14, .06) | −.08* (−.15, −.01) | .03 (−.05, .12) |
| | Within[1,4] | −.03 (−.13, .06) | .04 (−.07, .15) | −.01 (−.10, .08) | −.03 (−.14, .07) | .05 (−.04, .14) |
| | Between[1,5] | .09 (−.03, .21) | .09 (−.02, .21) | −.07 (−.18, .03) | −.16* (−.27, −.04) | .03 (−.09, .14) |
| Dietary fiber (g/day) | Adjusted[1,2,3] | .05 (−.04, .14) | .02 (−.08, .12) | −.06 (−.14, .02) | −.01 (−.12, .09) | −.02 (−.11, .07) |
| | Within[1,4] | .08 (−.03, .19) | −.02 (−.14, .11) | −.05 (−.16, .05) | .01 (−.11, .13) | −.01 (−.12, .10) |
| | Between[1,5] | .01 (−.12, .13) | .05 (−.07, .18) | −.07 (−.18, .05) | −.04 (−.16, .08) | −.03 (−.16, .10) |
| Alcohol (g/day) | Adjusted[1,2,3] | .22* (.12, .31) | .04 (−.06, .14) | −.25* (−.40, −.11) | −.14* (−.27, −.01) | −.14* (−.25, −.04) |
| | Within[1,4] | .13 (−.03, .30) | .01 (−.18, .20) | −.13 (−.29, .02) | −.05 (−.23, .12) | −.07 (−.23, .09) |
| | Between[1,5] | .25* (.14, .37) | .05 (−.06, .16) | −.09 (−.20, .02) | −.12* (−.23, −.01) | −.15* (−.26, −.03) |
| Ultra−processed foods (%energy) | Adjusted[1,2,3] | −.11* (−.18, −.04) | .01 (−.07, .09) | .06 (−.03, .14) | .06 (−.03, .14) | .04 (−.02, .11) |
| | Within[1,4] | −.03 (−.08, .02) | .03 (−.03, .08) | .05* (.00, .09) | .01 (−.04, .07) | .01 (−.04, .06) |
| | Between[1,5] | −.14* (−.21, −.07) | −.03 (−.10, .04) | .05 (−.01, .11) | .07* (.01, .14) | .06 (−.01, .13) |
| Red meat (g/week) | Adjusted[1,2,3] | .00 (−.08, .07) | −.14* (−.22, −.06) | .07 (−.02, .16) | .09* (.01, .17) | .06 (−.02, .14) |
| | Within[1,4] | .01 (−.08, .10) | −.13* (−.22, −.03) | .06 (−.02, .14) | .06 (−.04, .15) | .08 (−.01, .16) |
| | Between[1,5] | −.04 (−.17, .10) | −.17* (−.30, −.04) | .08 (−.04, .21) | .15* (.02, .28) | .04 (−.10, .17) |
| Processed meat (g/week) | Adjusted[1,2,3] | −.04 (−.12, .03) | −.02 (−.14, .10) | .02 (−.07, .11) | .07 (−.01, .14) | .05 (−.03, .13) |
| | Within[1,4] | .01 (−.08, .10) | .01 (−.09, .10) | −.01 (−.09, .07) | −.05 (−.14, .05) | .01 (−.07, .10) |
| | Between[1,5] | −.16* (−.29, −.03) | −.25* (−.37, −.12) | .17* (.05, .29) | .28* (.16, .40) | .15 (.02, .28) |
| Sugar−sweetened drinks (g/day) | Adjusted[1,2,3] | −.10* (−.17, −.03) | .06 (−.07, .19) | .08 (−.01, .18) | .04 (−.02, .10) | .04 (−.05, .12) |
| | Within[1,4] | −.04 (−.13, .04) | .05 (−.04, .15) | .04 (−.03, .12) | .00 (−.09, .08) | −.03 (−.11, .05) |
| | Between[1,5] | −.21* (−.32, −.10) | −.05 (−.16, .06) | .14* (.04, .25) | .05 (−.06, .16) | .20* (.09, .31) |

Abbreviations: WCRF/AICR, World Cancer Research Fund/American Institute for Cancer Research; KA/QA, kynurenic-acid-to-quinolinic-acid ratio; HAA/HK, 3-hydroxyanthranilic-acid-to-3-hydroxykynurenine ratio; KTR, kynurenine-to-tryptophan ratio; and HKr, hydroxykynurenine ratio.
Both exposure and outcome variables are standardized.
Standard deviations of ratios are: 0.05 for KA/QA, 0.4 for HAA/HK; 10 for KTR; 0.2 for HKr; and 11 nmol/L for neopterin.
Standard deviations of dietary intake are: 1 point for dietscore WCRF/AICR, 128 g/day for vegetable and fruit; 6 g/day for fiber; 19 g/day for alcohol; 10% for ultra−processed foods; 301 g/week for red meat; 209 g/week for processed meat, and 132 g/day for sugar−sweetened drinks.
[1] Linear mixed models adjusted for age at enrollment (years), sex (male, female), renal function (μmol/L), time since end treatment (weeks), chemotherapy (yes, no), comorbidities (0, 1, ≥2), stoma (yes, no), educational level (high, medium, low), BMI (kg/m²), total PA (hours/day), smoking status (current, former, never) and energy intake (kcal/week)
[2] The β-coefficients represent the overall longitudinal difference in kynurenine concentrations using linear mixed models, and can be interpreted as the amount of SD difference in kynurenine concentration/ratio according to 1SD difference in dietary score/intake
[3] A random slope was added to the model for dietscore WCRF/AICR with KTR, HKr, HAA/HK, and Neopt; for dietscore WCRF/AICR excl alcohol with KTR, HKr, and HAA/HK; for vegetable and fruit with KTR, HKr, and Neopt; for dietary fiber with HKr; for alcohol with KTR, HKr, and Neopt; for ultra−processed foods with KTR, HKr, and HAA/HK; for red meat with KTR, and Neopt; for processed meat with KTR, HAA/HK, and Neopt; and for sugar−sweetened drink intake with KTR, HKr, HAA/HK, and Neopt.

[4] The β-coefficients represent the change in kynurenine ratios over time within individuals using a hybrid model within linear mixed models
[5] The β-coefficients represent the difference in kynurenine ratios between individuals using a hybrid model within linear mixed models
* Indicates a statistically significant association

**Supplementary Table S3.** Confounder-adjusted overall longitudinal, intra-individual, and inter-individual associations (*n* = 247) between the DHD recommendations and metabolites of the kynurenine pathway

| | | Kynurenic acid (nmol/L) | Picolinic acid (nmol/L) | Tryptophan (µmol/L) | Kynurenine (µmol/L) | Xanthurenic acid (nmol/L) | Anthranilic acid (nmol/L) | 3−Hydroxy−anthranilic acid (nmol/L) | 3−Hydroxy−Kynurenine (nmol/L) | Quinolinic acid (nmol/L) |
|---|---|---|---|---|---|---|---|---|---|---|
| Total DHD score (0−130 points) | Adjusted[1,2] | −.02 (−.08; .04) | −.02 (−.10; .07) | .02 (−.07; .11) | −.06 (−.13; .01) | −.05 (−.14; .03) | −.02 (−.11; .06) | .01 (−.08; .09) | −.08 (−.15; .00) | −.04 (−.11; .02) |
| | Within[1,4] | −.02 (−.10; .06) | −.07 (−.18; .03) | .00 (−.12; .12) | −.07 (−.16; .01) | −.06 (−.17; .05) | .02 (−.09; .14) | −.02 (−.13; .09) | −.07 (−.17; .03) | −.04 (−.11; .04) |
| | Between[1,5] | −.02 (−.11; .08) | .07 (−.07; .21) | .04 (−.09; .18) | −.04 (−.15; .07) | −.08 (−.21; .05) | −.07 (−.19; .05) | .04 (−.09; .17) | −.09 (−.21; .04) | −.05 (−.18; .08) |
| Total DHD score excl. alcohol (0−120 points) | Adjusted[1,2] | .00 (−.06; .06) | .00 (−.09; .08) | .05 (−.04; .13) | −.07* (−.14; −.01) | −.02 (−.11; .06) | −.01 (−.10; .07) | .01 (−.08; .09) | −.08* (−.16; −.01) | −.06 (−.13; .00) |
| | Within[1,4] | −.01 (−.09; .07) | −.06 (−.16; .04) | .02 (−.10; .14) | −.08 (−.16; .01) | −.04 (−.15; .06) | .04 (−.07; .16) | −.03 (−.14; .08) | −.07 (−.16; .03) | −.05 (−.12; .03) |
| | Between[1,5] | .02 (−.07; .11) | .10 (−.04; .24) | .08 (−.05; .21) | −.07 (−.18; .04) | .01 (−.12; .13) | −.07 (−.19; .04) | .05 (−.08; .18) | −.10 (−.22; .02) | −.10 (−23; .03) |
| Vegetables (g/day) | Adjusted[1,2,3] | .04 (−.02; .10) | −.03 (−.11; .06) | .02 (−.07; .10) | −.03 (−.09; .03) | .02 (−.06; .11) | −.05 (−.13; .03) | −.01 (−.09; .07) | −.01 (−.11; .10) | .00 (−.06; .07) |
| | Within[1,4] | .05 (−.03; .12) | −.05 (−.15; .04) | .00 (−.11; .11) | −.01 (−.08; .07) | .01 (−.09; .11) | −.06 (−.17; .05) | .00 (−.10; .11) | .00 (−.09; .09) | .05 (−.02; .12) |
| | Between[1,5] | .06 (−.03; .15) | .06 (−.07; .20) | .04 (−.09; .17) | −.07 (−.18; .03) | .08 (−.05; .20) | −.03 (−.15; .08) | −.03 (−.15; .10) | −.10 (−.21; .02) | −.15* (−.28; −.02) |
| Fruit (g/day) | Adjusted[1,2,3] | −.06 (−.12; .00) | −.07 (−.16; .03) | .01 (−.07; .10) | −.04 (−.11; .02) | −.07 (−.15; .01) | −.01 (−.12; .09) | −.04 (−.12; .05) | −.07 (−.16; .01) | −.02 (−.09; .04) |
| | Within[1,4] | −.05 (−.13; .03) | −.10 (−.20; .01) | −.01 (−.12; .11) | −.07 (−.15; .02) | −.03 (−.13; .08) | .05 (−.07; .17) | −.06 (−.17; .05) | −.07 (−.17; .03) | −.04 (−.12; .03) |
| | Between[1,5] | −.07 (−.15; .02) | −.03 (−.15; .10) | .03 (−.09; .15) | −.01 (−.11; .09) | −.13* (−.24; −.01) | −.03 (−.14; .08) | −.01 (−.13; .11) | −.10 (−.21; .01) | .03 (−.09; .14) |
| Legumes (g/day) | Adjusted[1,2] | .01 (−.03; .06) | .03 (−.03; .09) | .05 (−.02; .11) | −.03 (−.07; .02) | .02 (−.04; .08) | .13 (−.12; .38) | .02 (−.04; .08) | −.03 (−.08; .03) | .00 (−.04; .04) |
| | Within[1,4] | .01 (−.04; .06) | .04 (−.02; .10) | .04 (−.03; .11) | −.03 (−.08; .02) | .03 (−.03; .10) | .01 (−.06; .08) | .02 (−.04; .09) | −.03 (−.09; .03) | .00 (−.04; .04) |
| | Between[1,5] | .03 (−.07; .14) | −.02 (−.17; .13) | .06 (−.09; .20) | −.04 (−.16; .08) | −.04 (−.18; .11) | −.06 (−.19; .08) | .02 (−.12; .16) | −.01 (−.15; .12) | −.01 (−.15; .14) |
| Whole grain (g/day) | Adjusted[1,2,3] | −.01 (−.07; .05) | .02 (−.07; .11) | .01 (−.08; .10) | .00 (−.06; .07) | −.03 (−.11; .06) | −.08* (−.16; .00) | .02 (−.07; .10) | .07 (−.02; .17) | −.03 (−.10; .03) |
| | Within[1,4] | .00 (−.09; .09) | .02 (−.10; .14) | .04 (−.09; .17) | .02 (−.08; .11) | −.02 (−.14; .10) | .00 (−.13; .14) | .05 (−.08; .17) | .08 (−.03; .19) | −.05 (−.14; .03) |
| | Between[1,5] | −.02 (−.10; .07) | .02 (−.10; .15) | −.01 (−.13; .11) | −.01 (−.11; .09) | −.04 (−.15; .08) | −.12* (−.22; −.01) | −.01 (−.13; .11) | .05 (−.06; .17) | .01 (−.11; .13) |
| Nuts (g/day) | Adjusted[1,2,3] | .02 (−.03; .07) | .01 (−.06; .08) | .03 (−.03; .09) | −.03 (−.08; .03) | .01 (−.06; .08) | .00 (−.07; .08) | −.03 (−.09; .03) | −.05 (−.11; .01) | −.04 (−.09; .01) |
| | Within[1,4] | .03 (−.03; .09) | .02 (−.06; .10) | .03 (−.06; .12) | −.01 (−.08; .05) | .03 (−.05; .12) | .05 (−.04; .14) | .01 (−.07; .10) | −.02 (−.09; .05) | −.03 (−.09; .02) |
| | Between[1,5] | .01 (−.09; .10) | −.03 (−.17; .11) | .03 (−.10; .16) | −.07 (−.18; .03) | −.04 (−.16; .09) | −.07 (−.19; .04) | −.07 (−.19; .06) | −.13* (−.25; −.02) | −.08 (−.21; .05) |
| Lean fish (g/day) | Adjusted[1,2,3] | .01 (−.04; .07) | .03 (−.04; .10) | .01 (−.07; .09) | .00 (−.05; .06) | .07 (−.01; .14) | −.06 (−.15; .03) | .04 (−.03; .11) | .04 (−.02; .11) | −.03 (−.08; .02) |
| | Within[1,4] | .04 (−.02; .10) | .04 (−.04; .12) | .04 (−.05; .13) | .04 (−.03; .10) | .08 (.00; .16) | −.06 (−.15; .03) | .07 (−.02, .15) | .06 (−.01; .14) | −.01 (−.07; .05) |
| | Between[1,5] | −.05 (−.14; .05) | .00 (−.14; .14) | −.05 (−.19; .09) | −.09 (−.20; .02) | .02 (−.11; .16) | −.10 (−.22; .03) | −.03 (−.16; .11) | −.01 (−.14; .11) | −.08 (−.22; .06) |
| Fatty fish (g/day) | Adjusted[1,2] | .02 (−.02; .07) | .05 (−.01; .11) | .03 (−.04; .09) | −.03 (−.08; .02) | .04 (−.01; .10) | .02 (−.04; .08) | .07 (−.02; .16) | .02 (−.02; .07) | −.01 (−.05; .04) |
| | Within[1,4] | .03 (−.02; .08) | .03 (−.03; .09) | .02 (−.05; .10) | −.01 (−.06; .04) | .04 (−.03; .11) | .04 (−.03; .11) | .07 (.00; .13) | .03 (−.03; .09) | .01 (−.04; .05) |
| | Between[1,5] | −.01 (−.11; .10) | .18 (.03; .33)* | .03 (−.11; .18) | −.15* (−.27; −.03) | .07 (−.08; .21) | −.05 (−.18; .08) | .01 (−.14; .15) | −.02 (−.15; .12) | −.15* (−.29; .00) |
| Tea (g/day) | Adjusted[1,2,3] | −.02 (−.09; .05) | −.03 (−.13; .07) | −.05 (−.15; .05) | −.01 (−.09; .07) | −.07 (−.16; .03) | −.03 (−.11; .05) | −.09 (−.18; .01) | .01 (−.08; .09) | .00 (−.08; .09) |
| | Within[1,4] | −.07 (−.20; .05) | −.05 (−.21; .11) | .06 (−.12; .50) | .05 (−.08; .18) | −.13 (−.30; .03) | .02 (−.16; .19) | −.07 (−.24; .10) | .02 (−.13; .17) | .01 (−.11; .12) |
| | Between[1,5] | .01 (−.07; .10) | −.02 (−.15; .10) | −.10 (−.22; .02) | −.04 (−.14; .06) | −.03 (−.15; .08) | −.05 (−.16; .06) | −.10 (−.21; .02) | −.00 (−.11; .11) | .00 (−.12; .12) |
| Alcohol (g/day) | Adjusted[1,2,3] | .12 (.03; .20) | .08 (−.02; .19) | .14 (.02; .27)* | −.02 (−.11; .06) | .18* (.09; .28) | .05 (−.05; .14) | −.02 (−.12; .08) | −.03 (−.16; .10) | −.08 (−.16; .00) |
| | Within[1,4] | .14 (−.01; .28) | .12 (−.07; .31) | .16 (−.05; .37) | −.02 (−.17; .13) | .15 (−.04; .35) | .07 (−.14; .28) | −.07 (−.27; .13) | .01 (−.17; .18) | −.01 (−.15; .12) |
| | Between[1,5] | .13 (.04; .21) | .06 (−.06; .19) | .09 (−.03; .21) | −.03 (−.13; .07) | .20* (.08; .31) | .04 (−.07; .15) | .00 (−.12; .12) | −.04 (−.16; .07) | −.12 (−.24; .00) |
| Dairy (g/day) | Adjusted[1,2,3] | −.01 (−.07; .05) | −.04 (−.12; .05) | .02 (−.07; .10) | .01 (−.06; .08) | −.02 (−.11; .06) | −.03 (−.11; .05) | .05 (−.03; .13) | −.04 (−.13; .04) | −.02 (−.08; .05) |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Within[1,4] | −.02 (−.11; .07) | −.05 (−.16; .07) | .00 (−.13; .12) | −.04 (−.13; .05) | .01 (−.11; .12) | −.15* (−.27; −.02) | −.01 (−.13; .12) | −.06 (−.17; .04) | −.06 (−.14; .02) |
| | Between[1,5] | .00 (−.08; .08) | −.03 (−.15; .09) | .04 (−.08; .15) | .06 (−.03; .15) | −.02 (−.14; .09) | .04 (−.06; .14) | .10 (−.01; .21) | −.01 (−.11; .10) | .07 (−.05; .18) |
| Cheese (g/day) | Adjusted[1,2] | .07* (.01; .13) | .08 (−.01; .16) | .08 (.00; .17) | .04 (−.03; .11) | .15* (.07; .23) | −.01 (−.10; .07) | .06 (−.02; .14) | .02 (−.06; .09) | −.01 (−.10; .07) |
| | Within[1,4] | .04 (−.03; .12) | .03 (−.07; .13) | .14* (.03; .25) | .06 (−.02; .14) | .13* (.03; .23) | .03 (−.08; .14) | .07 (−.03; .18) | .02 (−.07; .11) | .01 (−.06; .09) |
| | Between[1,5] | .11* (.02; .20) | .17* (.03; .31) | .05 (−.08; .18) | .00 (−.11; .11) | .17* (.05; .30) | −.07 (−.18; .05) | .04 (−.09; .17) | .02 (−.10; .14) | −.13 (−.26; .00) |
| Soft fats (g/day) | Adjusted[1,2,3] | −.01 (−.07; .05) | −.01 (−.09; .07) | −.01 (−.10; .07) | −.03 (−.09; .04) | −.04 (−.12; .04) | −.05 (−.13; .02) | −.06 (−.14; .03) | −.01 (−.11; .08) | −.05 (−.12; .01) |
| | Within[1,4] | .01 (−.08; .09) | .03 (−.08; .14) | .01 (−.12; .13) | −.03 (−.12; .06) | −.02 (−.13; .10) | −.02 (−.15; .10) | −.02 (−.13; .10) | −.08 (−.18; .03) | −.06 (−.14; .02) |
| | Between[1,5] | −.03 (−.11; .05) | −.06 (−.18; .06) | −.03 (−.14; .09) | −.03 (−.12; .07) | −.07 (−.18; .05) | −.07 (−.18; .03) | −.09 (−.20; .02) | .04 (−.07; .14) | −.03 (−.15; .08) |
| Hard fats (g/day) | Adjusted[1,2] | .00 (−.06; .06) | .00 (−.09; .08) | .02 (−.07; .10) | .03 (−.03; .10) | .02 (−.06; .10) | .02 (−.07; .10) | .04 (−.04; .13) | .01 (−.07; .08) | .04 (−.02; .10) |
| | Within[1,4] | .03 (−.04; .11) | −.01 (−.11; .10) | .06 (−.06; .18) | .03 (−.05; .12) | .06 (−.05; .17) | .04 (−.07; .16) | .05 (−.06; .16) | .04 (−.06; .13) | .05 (−.02; .13) |
| | Between[1,5] | −.05 (−.14; .04) | .00 (−.11; .10) | −.03 (−.16; .09) | .03 (−.07; .13) | −.04 (−.16; .08) | −.01 (−.12; .10) | .03 (−.09; .15) | −.04 (−.15; .08) | .00 (−.12; .12) |
| Refined grain | Adjusted[1,2,3] | .01 (−.04; .07) | −.03 (−.11; .05) | −.09* (−.17; −.01) | −.04 (−.10; .02) | −.01 (−.09; .07) | −.03 (−.10; .05) | −.05 (−.13; .03) | .00 (−.07; .07) | −.01 (−.08; .07) |
| | Within[1,4] | .03 (−.04; .10) | .00 (−.09; .09) | −.12* (−.22; −.02) | −.04 (−.12; .03) | .02 (−.07; .12) | .00 (−.10; .10) | .01 (−.08; .11) | .01 (−.07; .10) | .02 (−.04; .09) |
| | Between[1,5] | −.02 (−.11; .07) | −.09 (−.23; .05) | −.05 (−.18; .08) | −.03 (−.14; .08) | −..08 (−.20; .05) | −.06 (−.18; .06) | −.15* (−.28; −.03) | −.02 (−.14; .10) | −.08 (−.21; .05) |
| Red meat (g/day) | Adjusted[1,2] | .04 (−.01; .09) | .08* (.01; .15) | .03 (−.06; .12) | .01 (−.04; .07) | .11* (.04; .18) | .03 (−.05; .10) | .07 (−.01; .14) | .04 (−.02; .10) | .00 (−.05; .05) |
| | Within[1,4] | .05 (−.01; .10) | .08* (.00; .16) | .01 (−.08; .09) | .01 (−.05; .08) | .11* (.03; .19) | .05 (−.04; .13) | .10* (.02; .18) | .06 (−.01; .14) | .02 (−.03; .08) |
| | Between[1,5] | .03 (−.07; .13) | .08 (−.07; .23) | .08 (−.07; .22) | .00 (−.11; .12) | .10 (−.04; .24) | −.01 (−.14; .12) | −.03 (−.17; .11) | −.03 (−.16; .10) | −.08 (−.22; .06) |
| Processed meat (g/day) | Adjusted[1,2,3] | −.01 (−.08; .06) | −.03 (−.13; .06) | −.07 (−.16; .02) | .01 (−.06; .08) | −.03 (−.12; .05) | .05 (−.06; .15) | −.06 (−.15; .03) | .07 (−.01; .14) | .01 (−.05; .08) |
| | Within[1,4] | .01 (−.07; .09) | −.02 (−.12; .09) | −.04 (−.15; .08) | .02 (−.06; .11) | −.04 (−.14; .07) | .09 (−.03; .20) | −.04 (−.15; .07) | .03 (−.06; .13) | .01 (−.06; .08) |
| | Between[1,5] | −.03 (−.13; .07) | −.03 (−.18; .12) | −.13 (−.27; .01) | −.02 (−.14; .10) | −.03 (−.17; .11) | .06 (−.06; .19) | −.09 (−.23; .04) | .13 (.00; .26) | .03 (−.11; .17) |
| Sweetened beverages and fruit juices (g/day) | Adjusted[1,2,3] | −.04 (−.09; .02) | −.06 (−.13; .01) | −.09* (−.17; −.02) | .02 (−.04; .07) | −.06 (−.14; .01) | .00 (−.07; .08) | −.04 (−.11; .04) | −.01 (−.08; .05) | .03 (−.03; .08) |
| | Within[1,4] | −.03 (−.09; .04) | −.02 (−.11; .06) | −.11* (−.21; −.01) | −.04 (−.11; .03) | −.02 (−.11; .07) | −.08 (−.18; .02) | −.05 (−.14; .04) | −.02 (−.10; .06) | .00 (−.06; .06) |
| | Between[1,5] | −.05 (−.14; .03) | −.15 (−.27; −.02) | −.06 (−.19; .06) | .13* (.03; .23) | −.14* (−.26; −.03) | .10 (.00; .21) | −.02 (−.14; .09) | −.01 (−.12; .10) | .14* (.02; .25) |

Abbreviations: DHD, Dutch Healthy Diet score.

Both exposure and outcome variables are standardized.

Standard deviations of kynurenines are: 29 nmol/L for kynurenic acid; 15 nmol/L for picolinic acid; 12 μmol/L for tryptophan; 0.5 μmol/L for kynurenine; 8 nmol/L for xanthurenic acid; 7 nmol/L for anthranilic acid; 15 nmol/L for 3−hydroxyanthranilic acid; 27 for 3−hydroxykynurenine; and 366 nmol/L for quinolinic acid.

Standard deviations of dietary intake are: 15 points for DHD score; 71 g/day for vegetables; 90 g/day for fruit; 10 g/day for legumes; 63 g/day for whole grain; 7 g/day for nuts; 16 g/day for lean fish; 15 g/day for fatty fish; 264 g/day for tea; 19 g/day for alcohol; 143 g/day for dairy; 21 g/day for cheese; 14 g/day for soft fats; 12 g/day for hard fats; 51 g/day for refined grain; 27 g/day for red meat; 33 g/day for processed meat; and 115 g/day for sweetened beverages and fruit juices.

[1] Linear mixed models adjusted for age at enrollment (years), sex (male, female), renal function (μmol/L), time since end treatment (weeks), chemotherapy (yes, no), comorbidities (0, 1, ≥2), stoma (yes, no), educational level (high, medium, low), BMI (kg/m²), total PA (hours/day), smoking status (current, former, never) and energy intake (kcal/week)

[2] The β-coefficients represent the overall longitudinal difference in kynurenine concentrations using linear mixed models, and can be interpreted as the amount of SD difference in kynurenine concentration/ratio according to 1SD difference in dietary score/intake

[3] A random slope was added to the model for DHD score with XA; for vegetables with HK, KA, XA, and Pic; for fruit with HK, AA, and Pic; for legumes with AA; for whole grain with HK, AA, and QA; for nuts with Trp, and HAA; for lean fish with AA, and QA; for fatty fish with HAA; for tea with AA; for alcohol with Trp, HK, KA, and QA; for dairy with HK, and XA; for cheese with Trp, and QA; for soft fats with HK, and AA; for refined grain with AA, and QA; for red meat with Trp, and QA; and for processed meat with Trp, KA, AA, and Pic

[4] The β-coefficients represent the change in kynurenine concentration over time within individuals using a hybrid model within linear mixed models

[5] The β-coefficients represent the difference in kynurenine concentration between individuals using a hybrid model within linear mixed models

* Indicates a statistically significant association

**Supplementary Table S4.** Confounder-adjusted overall longitudinal, intra-individual, and inter-individual associations ($n$ = 247) between the DHD recommendations and relevant kynurenine ratios

| | | KA/QA | HAA/HK | KTR | HKr | Neopt (nmol/L) |
|---|---|---|---|---|---|---|
| Total DHD score (0–130 points) | Adjusted[1,2] | .03 (−.05; .10) | .11* (.03; .19) | −.08* (−.15; −.01) | −.08* (−.16; −.01) | −.03 (−.10, .05) |
| | Within[1,4] | .02 (−.07; .11) | .10 (.00; .21) | −.08 (−.17; .01) | −.07 (−.16; .03) | −.03 (−.12, .06) |
| | Between[1,5] | .04 (−.09; .18) | .12 (−.01; .24) | −.08 (−.20; .04) | −.11 (−.24; .01) | −.02 (−.15, .10) |
| Total DHD score excl. alcohol (0–120 points) | Adjusted[1,2] | .07 (−.01; .14) | .11* (.03; .19) | −.11* (−.18; −.04) | −.11* (−.18; −.03) | −.06 (−.13, .01) |
| | Within[1,4] | .03 (−.06; .13) | .09 (−.01; .20) | −.10* (−.19; −.02) | −.08 (−.17; 02) | −.04 (−.13, .05) |
| | Between[1,5] | .14 (.01; .26) | .14* (.02; .26) | −.13* (−.25; −.01) | −.16* (−.28; −.04) | −.08 (−.21, .04) |
| Vegetables (g/day) | Adjusted[1,2,3] | .02 (−.05; .10) | .04 (−.04; .12) | −.01 (−.11; .09) | −.07 (−.14; .01) | .03 (−.04, .10) |
| | Within[1,4] | −.04 (−.13; .04) | .02 (−.08; .11) | .00 (−.08; .08) | .00 (−.09; .09) | .06 (−.02, .14) |
| | Between[1,5] | .17* (.05; .30) | .08 (−.04; .20) | −.11 (−.22; .01) | −.18* (−.29; −.06) | −.04 (−.17, .08) |
| Fruit (g/day) | Adjusted[1,2,3] | .00 (−.07; .07) | .05 (−.03; .13) | −.03 (−.13; .06) | −.08 (−.18; .02) | .03 (−.05, .10) |
| | Within[1,4] | .00 (−.09; .10) | .04 (−.07; .15) | −.01 (−.09; .08) | −.03 (−.13; .07) | .00 (−.09, .09) |
| | Between[1,5] | .00 (−.12; .11) | .06 (−.05; .17) | −.02 (−.13; .08) | −.09 (−.20; .02) | .07 (−.05, .18) |
| Legumes (g/day) | Adjusted[1,2] | .03 (−.02; .08) | .04 (−.01; .10) | −.04 (−.09; .01) | −.04 (−.09; .02) | −.02 (−.06, .03) |
| | Within[1,4] | .03 (−.02; .09) | .04 (−.02; .11) | −.04 (−.09; .01) | −.04 (−.09; .02) | −.02 (−.07, .04) |
| | Between[1,5] | .05 (−.10; .19) | .04 (−.10; .18) | −.05 (−.18; .08) | −.03 (−.16; .11) | .00 (−.15, .14) |
| Whole grain (g/day) | Adjusted[1,2,3] | .04 (−.04; .12) | −.05 (−.14; .03) | −.03 (−.10; .04) | .06 (−.03; .15) | −.04 (−.12, .04) |
| | Within[1,4] | .07 (−.03; .18) | −.12* (−.24; .00) | −.05 (−.14; .05) | .08 (−.03; .19) | −.03 (−.13, .08) |
| | Between[1,5] | .00 (−.11; .12) | .01 (−.11; .12) | −.02 (−.13; .09) | .05 (−.06; .17) | −.06 (−.18, .06) |
| Nuts (g/day) | Adjusted[1,2,3] | .10* (.04; .16) | .04 (−.04; .13) | −.10* (−.17; −.03) | −.09* (−.15; −.04) | −.05 (−.10, .00) |
| | Within[1,4] | .09* (.02; .16) | .05 (−.03; .13) | −.06 (−.12; .01) | −.05 (−.12; .03) | −.03 (−.09, .04) |
| | Between[1,5] | .11 (−.01; .24) | .13* (.01; .25) | −.10 (−.21; .02) | −.13* (−.25; −.01) | −.05 (−.18, .07) |
| Lean fish (g/day) | Adjusted[1,2,3] | .04 (−.02; .10) | −.01 (−.08; .06) | .00 (−.06; .05) | .01 (−.08; .10) | .01 (−.06, .08) |
| | Within[1,4] | .03 (−.05; .10) | .01 (−.07; .09) | .01 (−.06; .08) | .03 (−.05; .10) | −.01 (−.07, .06) |
| | Between[1,5] | .09 (−.05; .22) | −.05 (−.17; .08) | −.05 (−.17; .07) | .02 (−.11; .14) | .06 (−.08, .19) |
| Fatty fish (g/day) | Adjusted[1,2] | .05* (.00; .11) | .06 (−.01; .13) | −.04 (−.09; .01) | −.03 (−.08; .03) | −.01 (−.06, .04) |
| | Within[1,4] | .04 (−.02; .09) | .05 (−.02; .11) | −.01 (−.07; .04) | −.03 (−.09; .03) | .00 (−.06, .05) |
| | Between[1,5] | .15* (.01; .30) | .00 (−.14; .14) | −.18* (−.30; −.05) | −.04 (−.18; .09) | −.10 (−.24, .04) |
| Tea (g/day) | Adjusted[1,2,3] | −.04 (−.13; .05) | −.05 (−.14; .05) | .01 (−.07; .10) | .08 (−.04; .20) | .03 (−.06, .12) |
| | Within[1,4] | −.10 (−.24; .04) | −.11 (−.26; .05) | .00 (−.13; .13) | .11 (−.04; .25) | −.02 (−.16, .11) |
| | Between[1,5] | −.01 (−.12; .11) | −.02 (−.13; .10) | .02 (−.09; .13) | .07 (−.05; .18) | .07 (−.04, .19) |
| Alcohol (g/day) | Adjusted[1,2,3] | .22* (.12; .31) | .04 (−.06; .14) | −.25* (−.40; −.11) | −.14* (−.27; −.01) | −.14* (−.25, −.04) |
| | Within[1,4] | .14 (−.03; .30) | .01 (−.18; .20) | −.13 (−.29; .02) | −.05 (−.23; .12) | −.07 (−.23, .09) |
| | Between[1,5] | .25* (.14; .37) | .05 (−.06; .16) | −.09 (−.20; .02) | −.12* (−.23; −.01) | −.15* (−.26, −.03) |
| Dairy (g/day) | Adjusted[1,2,3] | −.02 (−.10; .05) | .04 (−.04; .12) | .01 (−.06; .08) | −.04 (−.13; .05) | −.04 (−.11, .03) |
| | Within[1,4] | .03 (−.07; .13) | −.01 (−.12; .11) | −.01 (−.11; .08) | .03 (−.08; .14) | −.06 (−.16, .04) |
| | Between[1,5] | −.09 (−.20; .02) | .07 (−.03; .18) | .04 (−.06; .14) | −.05 (−.16; .05) | −.02 (−.13, .09) |
| Cheese (g/day) | Adjusted[1,2] | .09* (.02; .17) | .01 (−.07; .09) | −.06 (−.13; .02) | −.06 (−.14; .01) | −.04 (−.11, .04) |
| | Within[1,4] | .01 (−.07; .10) | .03 (−.06; .13) | −.04 (−.13; .04) | −.06 (−.16; .03) | −.01 (−.09, .08) |
| | Between[1,5] | .26* (.14; .39) | −.02 (−.15; .10) | −.04 (−.16; .07) | −.06 (−.18; .07) | −.10 (−.23, .02) |
| Soft fats (g/day) | Adjusted[1,2,3] | .02 (−.06; .09) | −.01 (−.09; .07) | −.02 (−.09; .04) | −.02 (−.12; .08) | −.04 (−.13, .06) |
| | Within[1,4] | .01 (−.09; .11) | .07 (−.04; .18) | −.05 (−.14; .04) | −.10 (−.20; .00) | −.07 (−.16, .02) |
| | Between[1,5] | .03 (−.08; .15) | −.09 (−.19; .02) | .01 (−.09; .11) | .08 (−.03; .18) | .03 (−.08, .14) |
| Hard fats (g/day) | Adjusted[1,2] | −.07 (−.14; .01) | −.02 (−.10; .06) | .00 (−.06; .07) | .00 (−.07; .08) | .03 (−.04, .10) |
| | Within[1,4] | −.04 (−.13; .05) | −.06 (−.16; .04) | −.01 (−.10; .07) | .01 (−.08; .11) | .04 (−.05, .13) |
| | Between[1,5] | −.11 (−.23; .02) | .03 (−.09; .15) | .04 (−.07; .14) | −.01 (−.13; .10) | .01 (−.11, .13) |
| Refined grain | Adjusted[1,2,3] | .02 (−.04; .09) | −.10* (−.18; −.03) | .05 (−.04; .13) | .02 (−.05; .09) | .03 (−.03, .10) |
| | Within[1,4] | .02 (−.06; .10) | −.06 (−.15; .03) | .07 (−.01; .14) | −.01 (−.09; .08) | .02 (−.05, .10) |
| | Between[1,5] | .04 (−.09; .17) | −.10 (−.23; .02) | .01 (−.11; .12) | .05 (−.07; .17) | .06 (−.07, .18) |
| Red meat (g/day) | Adjusted[1,2,3] | .05 (−.01; .11) | −.04 (−.11; .02) | .03 (−.04; .11) | −.02 (−.08; .05) | .03 (−.03, .09) |
| | Within[1,4] | .04 (−.03; .11) | −.04 (−.12; .04) | .05 (−.02; .11) | .00 (−.07; .07) | .06 (−.01, .13) |
| | Between[1,5] | .09 (−.05; .23) | .00 (−.13; .14) | −.05 (−.18; .07) | −.06 (−.20; .07) | −.08 (−.22, .06) |
| Processed meat (g/day) | Adjusted[1,2,3] | −.05 (−.14; .04) | .01 (−.12; .13) | .03 (−.04; .10) | .09* (.01; .17) | .05 (−.03, .13) |
| | Within[1,4] | −.01 (−.10; .08) | −.01 (−.11; .09) | .01 (−.07; .10) | .04 (−.05; .13) | .03 (−.05, .12) |
| | Between[1,5] | −.10 (−.24; .04) | −.19* (−.32; −.06) | .07 (−.05; .20) | .19* (.06; .32) | .07 (−.07, .20) |
| | Adjusted[1,2,3] | −.09* (−.16; −.03) | .05 (−.07; .18) | .10 (.00; .20) | .04 (−.03; .11) | .07 (−.02, .16) |
| | Within[1,4] | −.06 (−.13; .02) | .05 (−.04; .13) | .09* (.02; .16) | .03 (−.05; .11) | .02 (−.05, .10) |

| | | | | | | |
|---|---|---|---|---|---|---|
| Sweetened beverages and fruit juices (g/day) | Between[1,5] | −.18* (−.30; −.06) | −.07 (−.18; .05) | .15* (.04; .25) | .06 (−.05; .17) | .19* (.07, .30) |

Abbreviations: DHD, Dutch Healthy Diet score; KA/QA, kynurenic-acid-to-quinolinic-acid ratio; HAA/HK, 3-hydroxyanthranilic-acid-to-3-hydroxykynurenine ratio; KTR, kynurenine-to-tryptophan ratio; and HKr, hydroxykynurenine ratio.
Both exposure and outcome variables are standardized.
Standard deviations of ratios are: 0.05 for KA/QA, 0.4 for HAA/HK; 10 for KTR; 0.2 for HKr; and 11 nmol/L for neopterin.
Standard deviations of dietary intake are: 15 points for DHD score; 71 g/day for vegetables; 90 g/day for fruit; 10 g/day for legumes; 63 g/day for whole grain; 7 g/day for nuts; 16 g/day for lean fish; 15 g/day for fatty fish; 264 g/day for tea; 19 g/day for alcohol; 143 g/day for dairy; 21 g/day for cheese; 14 g/day for soft fats; 12 g/day for hard fats; 51 g/day for refined grain; 27 g/day for red meat; 33 g/day for processed meat; and 115 g/day for sweetened beverages and fruit juices.
[1] Linear mixed models adjusted for age at enrollment (years), sex (male, female), renal function (μmol/L), time since end treatment (weeks), chemotherapy (yes, no), comorbidities (0, 1, ≥2), stoma (yes, no), educational level (high, medium, low), BMI (kg/m$^2$), total PA (hours/day), smoking status (current, former, never) and energy intake (kcal/week)
[2] The β-coefficients represent the overall longitudinal difference in kynurenine concentrations using linear mixed models, and can be interpreted as the amount of SD difference in kynurenine concentration/ratio according to 1SD difference in dietary score/intake
[3] A random slope was added to the model for vegetables with KTR; for fruit with KTR, HKr, and Neopt; for whole grain with KTR, and HKr; for nuts with KTR, HKr, HAA/HK, and Neopt; for lean fish with HKr, and Neopt; for fatty fish with HAA/HK; for tea with HKr; for alcohol with KTR, HKr, and Neopt; for dairy with HKr; for cheese with KTR; for soft fats with HKr, and Neopt; for refined grain with KTR, HKr, and HAA/HK; for red meat with KTR, and HAA/HK; for processed meat with HAA/HK, KA/QA, and Neopt; and for sweetened beverages and fruit juices with KTR, HAA/HK, and Neopt.
[4] The β-coefficients represent the change in kynurenine ratios over time within individuals using a hybrid model within linear mixed models
[5] The β-coefficients represent the difference in kynurenine ratios between individuals using a hybrid model within linear mixed models
* Indicates a statistically significant association