**Supplemental material 3 and tables 3a, and 3b.**

**Dutch Healthy Diet-index**

The Dutch Healthy Diet-index (DHD-i) is a continuous score with ten components that represent the ten Dutch Guidelines for a healthy Diet of 2006. For all components a maximum of ten points can be allotted, resulting in a score range of zero to 100 points. However, to enable comparison of results of the DHD-i score with the WCRF/AICR scores in the present study, we divided the DHD-i scores by 10, resulting in a score for which each score component is allotted a minimum of zero and a maximum of one point, in line with the allotted scores to each component of the WCRF/AICR score.

Two of the recommendations of the DHD-i were not operationalized in our study. First we did not operationalize the recommendation to limit mono trans fatty acid (TFA) consumption to less than 1 percent of energy intake, as the 85th percentile of TFA intake of our study population was lower than the cut-off value of 1 energy %, which made operationalization of the score impossible. The low TFA content of the diets of our study population is probably due to the fact that food manufacturers reduced the TFA content of their products due to new regulations. Second, we did not operationalize the recommendation to limit the consumption of foods and beverages that contain easily fermentable sugars and drinks that are high in food acids to seven occasions a day (including main meals), as our data does not allow calculation of this recommendation, since foods and drinks are registered in a pre-structured food diary with 6 periods (meal times and in between meals) per day.

This resulted in a DHD-i score with 8 operationalized components. Each score component was allotted a minimum of zero points in case of non-adherence to a recommendation up to 1 point in case of full adherence to a recommendation, resulting in an overall DHD-i score range from a minimum of zero to the overall maximum DHD-i score of eight points in the EnCoRe study. (Supplemental table 1a).

Recommendations 1 to 5 are adequacy components (i.e. physical activity, and the intake of vegetables, fruit and fruit juices, fiber, and fish). The other recommendations are moderation components (i.e. to limit saturated fatty acids (SFA), sodium and alcohol intake).

**Supplemental table 3a.** Operationalization of the Dutch dietary guidelines in the Dutch Healthy Diet-index (DHD-i) in the EnCoRe-study, and number and percentage of participants with high, moderate and low adherence to individual recommendations.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **DHD 2006 recommendations** | **EnCoRe study data** | **Operationalization4** | | **DHD-I Score** | **N (%)**  **(n=145)** | |
| 1 | **Physical activity**; At least 30 minutes of moderate intensity PA during at least five days a week, but preferably every day. | Level of moderate to vigorous PA  (questionnaire) | high | ≥ 5 d/wk ≥ 30 min/d | 1 | 102 | (70.3) |
| moderate | 3 - <5 d/wk ≥ 30 min/d | 0.5-<1 | 20 | (13.8) |
| low | 0 - 2 d/w ≥ 30 min/d | 0-<0.5 | 23 | (15.9) |
| 2 | **Vegetables;** Eat 150 to 200 grams of vegetables. | Vegetable1 intake  (7-day food diary) | high | ≥ 200 g/d | 1 | 29 | (20.0) |
| moderate | ≥ 100 - < 200 g/d | 0.5-<1 | 70 | (48.3) |
| low | 0 - <100 g/d | 0-<0.5 | 46 | (31.7) |
| 3 | **Fruit and fruit juices;** Eat 200 grams of fruit a day and up to a maximum of 100 g of fruit juices that naturally contain folate and vitamin C. | Fruit and fruit juice intake2  (7-day food diary) | high | ≥ 200 g/d | 1 | 42 | (29.0) |
| moderate | ≥ 100 - < 200 g/d | 0.5-<1 | 58 | (40.0) |
| low | 0 - <100 g/d | 0-<0.5 | 45 | (31.0) |
| 4 | **Fiber;** Eat 30 to 40 grams a day of dietary fiber, especially from sources such as fruit, vegetables and whole-grain cereal products. | Dietary fiber intake  (7-day food diary) | high | ≥ 14 g/4.2 MJ/d | 1 | 18 | (12.4) |
| moderate | ≥ 7 - <14 g/4.2 MJ/d | 0.5-<1 | 119 | (82.1) |
| low | 0 - <7 g/4.2 MJ/d | 0-<0.5 | 8 | (5.5) |
| 5 | **Fish;** Eat two portions of fish a week, at least one of which should be oily fish3 | Intake of DHA and EPA  (7-day food diary and inquired dietary supplement use by standardized questions during home visit) | high | ≥ 450 mg EPA+DHA/d | 1 | 32 | (22.1) |
| moderate | ≥ 225 - < 450 mg EPA+DHA/d | 0.5-<1 | 20 | (13.8) |
| low | 0 - < 225 mg EPA+DHA /d | 0-<0.5 | 93 | (64.1) |
| 6 | **SFA;** Limit saturated fatty acid consumption to less than 10 percent of energy intake. | Intake of SFA  (7-day food diary) | high | ≤ 10 en% SFA/d | 1 | 26 | (17.9) |
| moderate | > 10 en% - ≤ 12.45 en% SFA/d | 0.5-<1 | 53 | (36.6) |
| low | > 12.45 en% SFA/d | 0-<0.5 | 66 | (45.5) |
| 7 | **Sodium;** Limit consumption of table salt to 6 grams a day. | Intake of sodium4  (7-day food diary) | high | ≤ 1.68 g/d | 1 | 19 | (13.1) |
| moderate | > 1.68 g/d - ≤ 1.99 g/d | 0.5-<1 | 26 | (17.9) |
| low | > 1.99 g/d sodium | 0-<0.5 | 100 | (69.0) |
| 8 | **Alcohol;** If alcohol is consumed at all, intake should be limited to two Dutch units (20 gram ethanol) a day for males, and one for females. | Intake of alcohol  (7-day food diary) | high | ♂ ≤ 20 g/d, ♀ ≤ 10 g/d | 1 | 93 | 6(4.1) |
| moderate | ♂ >20 - ≤ 40 g/d, ♀ >10 - ≤ 25 g/d | 0.5-<1 | 40 | (27.6) |
| low | ♂ >40 g/d ♀ >25 g/d | 0-<0.5 | 12 | (8.3) |
|  | **Total of 8 operationalized recommendations (minimum-maximum)** | | | | **0-8** |  |  |

Abbreviations: PA, physical activity; d: day; DHA, docosahexaeenzuur; EPA, eicosapentaeenzuur; d, day; wk, week; g, gram; mg, milligram; min, minutes; MJ: mega joule; SFA, saturated fatty acid; TFA, trans fatty acid.

1 All products belonging to the group of vegetables of the Dutch Food Composition Table 2011 which is based on the Dutch Food Composition database. Nederlands Voedingsstoffenbestand NEVO 2011.

2 Included were fruit juices that only contain natural folate and/or vitamin C. Excluded were fruit juices without folate, without vitamin C, fruit juices enriched with vitamin C, and vegetable juices.

3 The intake of EPA and DHA consumed by the use dietary supplements was included in the calculation of the DHD-i score: Seven study participants made use of EPA or DHA containing dietary supplements.

4 Operationalization of the DHD-I, was based on the previous study of van Lee et al. (2012).

**Supplementary table 3b.** Results of adjusted multivariable linear regression models investigating associations of the adherence to the Dutch Healthy Diet-index (DHD-i) scorein colorectal cancer survivors for the overall study population, and stratified by gender, body mass index (BMI) and number of comorbidities.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| DHD-i adherence score (continuous) | | Global QOL1  (n=135) | | Physical functioning1  (n=135) | | Role functioning1  (n=135) | | Social functioning1  (n=135) | | Fatigue (CIS)1  (n=134) | | Disability (WHODAS)1  (n=131) | | Distress (HADS)1  (n=133) | |
|  | | β | (95% CI) | β | (95% CI) | β | (95% CI) | β | (95% CI) | β | (95% CI) | β | (95% CI) | β | (95% CI) |
| Overall study population2 | | 3.1 | (0.1, 6.2) | 4.2 | (0.9, 7.5) | 0.7 | (-3.6, 4.9) | -0.9 | (-4.1, 2.3) | 0.1 | (-4.5, 4.3) | -1.9 | (-4.4, 0.7) | -0.5 | (-1.5, 0.5) |
| Gender3 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Male | 0.2 | (-3.9, 4.4) | -0.2 | (-5.1, 4.6) | -3.0 | (-9.0, 3.0) | -0.4 | (-6.1, 5.4) | 1.5 | (-4.9, 8.0) | 1.4 | (-2.0, 4.9) | -0.1 | (-1.7, 1.4) |
|  | Female | 5.1 | (0.1, 10.1) | 8.3 | (3.2, 13.4) | 3.9 | (-3.0, 10.9) | -1.0 | (-4.2, 2.3) | -1.4 | (-8.5, 5.8) | -5.6 | (-9.5, -1.6) | -0.7 | (-2.0, 0.6 |
| BMI2 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | Normal weight (BMI<25) | -3.3 | (-11.2, 4.6) | 1.3 | (-8.4, 11.0) | 3.1 | (-7.4, 13.6) | 0.8 | (-4.9, 6.5) | 9.2 | (-3.7, 22.2) | -0.8 | ((-7.8, 6.3) | 0.8 | (-2.0, 3.5) |
|  | Overweight- obese (BMI≥25) | 3.3 | (-0.3, 7.0) | 5.4 | (1.5, 9.3) | -0.4 | (-5.8, 5.0) | -2.2 | (-6.3, 2.0) | -2.2 | (-7.2, 2.9) | -2.6 | (-5.7, 0.5) | -0.6 | (-1.8, 0.6) |
| Number of comorbidities4 | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | 0-1 | 1.8 | (-2.3, 5.9) | 2.9 | (-2.5, 8.3) | 3.6 | (-2.2, 9.3) | 1.1 | (-2.0, 4.3) | 2.1 | (-4.6, 6.9) | -1.8 | (-5.0, 1.4) | -0.1 | (-1.7, 1.6) |
|  | ≥2 | 2.5 | (-2.1, 7.1) | 3.2 | (-1.3, 7.8) | -3.3 | (-9.6, 2.9) | -2.7 | (-7.9, 2.6) | 0.7 | (-5.5, 7.0) | -0.4 | (-4.4, 3.6) | -0.5 | (-1.8, 0.8) |

Abbreviations: β, unstandardized regression coefficient; CI, confidence interval.

1Regression coefficients indicate the difference in mean score levels of global QoL, physical, role and social functioning, disability, fatigue, and distress per additional unit according to each unit increase in DHD-i adherence score.

2Adjusted for age, gender, number of comorbidities, smoking, education level, tumour stage, chemotherapy, time since diagnosis, total energy intake, stoma, gastro-intestinal problems.

3Adjusted for age, number of comorbidities, smoking, education level, tumour stage, chemotherapy, time since diagnosis, total energy intake, stoma, gastro-intestinal problems.

4Adjusted for age, gender, smoking, education level, tumour stage, chemotherapy, time since diagnosis, total energy intake, stoma, gastro-intestinal problems.