Lifestyle-Based Prevention Strategies

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Dana-Farber Cancer Institute
Breast Cancer: New Horizons, Current Controversies
July 12, 2019
Disclosure

Dr. Ligibel receives in-kind product support from Fitbit, Nestle Health Science and Osiri corporation to support the Breast Cancer Weight Loss Trial
Objectives

• Review the observational data linking lifestyle factors to cancer risk

• Discuss existing evidence suggesting that lifestyle change could reduce an individual’s risk of malignancy

• Review current lifestyle-based guidelines for cancer prevention
Higher body weight is becoming more common around the world

Proportion of adults who are overweight or obese, 1970-2017

www.oecd.org
Childhood obesity rates around the world

### Childhood Obesity Rates
Percentage of overweight and obese children under the age of 20 in select countries

- **U.S. girls**: 29.7%
- **U.S. boys**: 28.8%
- **China girls**: 14%
- **China boys**: 23%
- **South Korea girls**: 13.2%
- **South Korea boys**: 21.2%
- **Japan girls**: 3.4%
- **Japan boys**: 15.3%
- **India girls**: 2.3%
- **India boys**: 5.3%

Source: Select countries; The Lancet, University of Washington | WSJ.com
Obese individuals at higher risk of developing and dying from cancer

Figure 2. Summary of Mortality from Cancer According to Body-Mass Index for U.S. Women in the Cancer Prevention Study II, 1982 through 1998.

Calle et al. NEJM 2003; 348: 1625-38
Consistent observational evidence shows strong link between obesity and cancer risk

- Reviewed more than 1000 studies evaluating the relationship between body weight and cancer risk
- Identified 13 malignancies for which there was sufficient evidence that excess weight led to increased cancer risk
  - Additional 3 malignancies with limited evidence

Lauby-Secretan et al. NEJM 2016
Pooled analysis of leisure-time physical activity and cancer risk

- 12 US/European cohorts, including 1.44 million individuals
- 186,932 cancers diagnosed, 11 years median follow up
- PA assessed through self report
- Multivariate models:
  - Adjustment for BMI modestly attenuated association in several cancers, 10/13 still sig
  - Adjustment for smoking attenuated association for lung

Exercise associated with lower risk of 13 malignancies

<table>
<thead>
<tr>
<th>Cancer</th>
<th>Studies; Cases, No.</th>
<th>HR (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esophageal adenocarcinoma</td>
<td>5; 809</td>
<td>0.58 (0.37-0.89)</td>
<td>.01</td>
</tr>
<tr>
<td>Gallbladder</td>
<td>6; 382</td>
<td>0.72 (0.51-1.01)</td>
<td>.06</td>
</tr>
<tr>
<td>Liver</td>
<td>10; 1384</td>
<td>0.73 (0.55-0.98)</td>
<td>.04</td>
</tr>
<tr>
<td>Lung</td>
<td>12; 19133</td>
<td>0.74 (0.71-0.77)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Kidney</td>
<td>11; 4548</td>
<td>0.77 (0.70-0.85)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Small intestine</td>
<td>7; 503</td>
<td>0.78 (0.60-1.00)</td>
<td>.05</td>
</tr>
<tr>
<td>Gastric cardia</td>
<td>6; 790</td>
<td>0.78 (0.64-0.95)</td>
<td>.02</td>
</tr>
<tr>
<td>Endometrial</td>
<td>9; 5346</td>
<td>0.79 (0.68-0.92)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Esophageal squamous</td>
<td>6; 442</td>
<td>0.80 (0.61-1.06)</td>
<td>.05</td>
</tr>
<tr>
<td>Myeloid leukemia</td>
<td>10; 1692</td>
<td>0.80 (0.70-0.92)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Myeloma</td>
<td>9; 2161</td>
<td>0.83 (0.72-0.95)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Colon</td>
<td>12; 14160</td>
<td>0.84 (0.77-0.91)</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

Dietary factors linked to increased cancer risk

- Alcohol
- Red meat
- Processed meat
How does the rising prevalence of obesity impact cancer?

• Average person in US and UK weighed 9-18 kg more in 2007 than 1990

• Using SEER data to calculate attributable risk percent of cancers due to obesity, in 2007 obesity led to:
  • 4% of all cancers in men (38,000 cancers/year)
  • 7% of all cancers in women (50,500 cancers/year)

• If the prevalence of obesity continues to grow at the same rate over the next 20 years, estimated 500,000 excess cancer cases in the US alone

Lifestyle factors are associated with cancer risk

What is the evidence that losing weight, exercising more or changing diet could prevent cancer?
Strongest evidence that weight loss could reduce cancer risk comes from bariatric surgery studies

Meta-analysis of cancer risk and bariatric surgery in controlled studies

Cancer risk in 22,000 bariatric surgery patients vs. 66,000 matched controls

Fig. 2  Association between cancer risk and bariatric surgery in controlled studies

Emerging data for association of bariatric surgery with lower risk of breast cancer

- Association between bariatric surgery and breast cancer risk in 17,990 surgery patients and 53,889 matched controls

- Patient characteristics
  - Age: 44.6 years
  - BMI 44.5 kg/m²

- Median follow up
  - 47.5 months (surgery)
  - 40.8 months (control)

- 700 incidence breast cancer cases

Association between bariatric surgery and breast cancer subtype may depend on menopausal status

<table>
<thead>
<tr>
<th>Outcome</th>
<th>N</th>
<th>HR*</th>
<th>95% CI</th>
<th>P</th>
<th>HR†</th>
<th>95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>All breast cancer</td>
<td>700</td>
<td>0.32</td>
<td>0.51–0.73</td>
<td>&lt;0.001</td>
<td>0.52</td>
<td>0.32–0.76</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Premenopausal breast cancer</td>
<td>301</td>
<td>0.72</td>
<td>0.55–0.95</td>
<td>0.02</td>
<td>0.72</td>
<td>0.54–0.94</td>
<td>0.02</td>
</tr>
<tr>
<td>ER-positive</td>
<td>234</td>
<td>0.84</td>
<td>0.63–1.14</td>
<td>0.27</td>
<td>0.84</td>
<td>0.62–1.13</td>
<td>0.25</td>
</tr>
<tr>
<td>ER-negative</td>
<td>58</td>
<td>0.37</td>
<td>0.17–0.81</td>
<td>0.01</td>
<td>0.36</td>
<td>0.16–0.79</td>
<td>0.01</td>
</tr>
<tr>
<td>Postmenopausal breast cancer</td>
<td>397</td>
<td>0.81</td>
<td>0.62–1.07</td>
<td>&lt;0.001</td>
<td>0.81</td>
<td>0.62–1.07</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>ER-positive</td>
<td>330</td>
<td>0.51</td>
<td>0.38–0.69</td>
<td>&lt;0.001</td>
<td>0.52</td>
<td>0.39–0.70</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>ER-negative</td>
<td>52</td>
<td>0.79</td>
<td>0.41–1.51</td>
<td>0.47</td>
<td>0.84</td>
<td>0.44–1.62</td>
<td>0.61</td>
</tr>
</tbody>
</table>

*Adjusted for study site, BMI at index date, age, comorbidity index.
†Adjusted for study site, BMI at index date, age, comorbidity index, race/ethnicity, diabetes, smoking status, alcohol abuse, use of hormone therapy.
The Women’s Health Initiative (WHI)

Hormone Therapy Trial: Coronary Heart Disease & Fractures. Adverse effect for Breast Cancer?
Calcium/Vitamin D Trial: Fractures & Colorectal Cancer
Dietary Modification Trial: Breast & Colorectal Cancers & Coronary Heart Disease
Observational Study

93,676
161,808 women total

3 Controlled Trials
1 Observational Study

161,808 women total

27,347
36,282
48,835

161,808 total women
Participants in the Women’s Health Initiative (WHI) Observational Study (n= 93,676)
- Postmenopausal, ages 50-79 years, with anticipated 3 year survival, recruited from 40 US Clinical Centers from 1993-1998
- 11.4 years mean follow-up through September 30, 2015

Measures
- Information on demographics, medical history and breast cancer risk factors collected at baseline by questionnaires
- Height and weight collected by study staff at baseline and 3 years after enrollment
- Participants asked about intentionality of weight loss

Cancers
- 566 endometrial cancers
- 3410 breast cancers

Luo et al. JCO 2017; Chlebowski et al. Cancer, 2018
## Weight Change and Endometrial Cancer Incidence

<table>
<thead>
<tr>
<th>% Weight change between baseline And Year 3</th>
<th>Endometrial cancer cases (N)</th>
<th>HR (95% CI) Multivariable-adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Weight (within ± 5%)</td>
<td>384</td>
<td>Reference</td>
</tr>
<tr>
<td>Weight gain (≥ 5%)</td>
<td>124</td>
<td>1.12 (0.92-1.38)</td>
</tr>
<tr>
<td>Weight loss (≥ 5%)</td>
<td>58</td>
<td>0.71 (0.54-0.95)</td>
</tr>
<tr>
<td>Intentional</td>
<td>33</td>
<td>0.60 (0.42-0.86)</td>
</tr>
<tr>
<td>Unintentional</td>
<td>25</td>
<td>0.94 (0.62-1.41)</td>
</tr>
</tbody>
</table>

Luo et al. JCO 2017
## Weight Change and Breast Cancer Incidence

<table>
<thead>
<tr>
<th>% Weight change between baseline And Year 3</th>
<th>Breast cancer cases (N)</th>
<th>HR (95% CI) Multivariable-adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stable Weight (within ± 5%)</td>
<td>2,092</td>
<td>Reference</td>
</tr>
<tr>
<td>Weight gain (≥ 5%)</td>
<td>620</td>
<td>1.02 (0.93-1.11)</td>
</tr>
<tr>
<td>Weight loss (≥ 5%)</td>
<td>349</td>
<td>0.88 (0.78-0.98)</td>
</tr>
<tr>
<td>Intentional</td>
<td>229</td>
<td>0.91 (0.79-1.04)</td>
</tr>
<tr>
<td>Unintentional</td>
<td>120</td>
<td>0.82 (0.68-0.99)</td>
</tr>
</tbody>
</table>

Statistical test between intentional and unintentional weight loss groups found no significant difference (P=0.2)

Chlebowski et al. Cancer, 2018
The Women’s Health Initiative (WHI)

Hormone Therapy Trial: Coronary Heart Disease & Fractures. Adverse effect for Breast Cancer?

Calcium/Vitamin D Trial: Fractures & Colorectal Cancer

Dietary Modification Trial: Breast & Colorectal Cancers & Coronary Heart Disease

Observational Study

161,808 women total
WHI Low-Fat Dietary Intervention Study

- Randomized 48,835 postmenopausal women to low-fat diet intervention or control

- Intervention goals:
  - Decrease dietary fat to 20% of calories
  - Increase fruits, vegetable and grains

- Endpoints:
  - Breast and colorectal cancer
  - Ovarian, endometrial and total cancer

- Eligibility: ≥ 32% of calories from fat

Primary results of WHI Low-Fat Diet Intervention Study

No difference in rates of total cancer....
Mortality in women who developed cancer during WHI dietary intervention period

WHI Dietary Modification Clinical Trial Analysis Plan

- 1764 breast cancers occurred during intervention period
  - No difference in total number of breast cancer
  - Lower proportion of patients with ER+/PR- cancers in diet arm

- 3437 total cancer-related deaths during the 17.7 year follow up period
  - 327 deaths from breast cancer

Chlebowski et al. JAMA Oncol. Published online May 24, 2018

Postmenopausal Women
N=48,835
- Age 50-79 years
- No prior breast cancer
- Fat intake ≥ 32% calories
- Mammogram normal
- Entry: 1993-1998

Comparison
N=29,294

Dietary Intervention
N=19,541
17.7 Years (median) cumulative

8.5 Years (median) intervention
Association between dietary intervention and mortality

- Lower all-cause mortality in women with breast cancer in low fat diet arm
- No association in other cancer
- No significant association between group assignment and cancer mortality
What about other diets?

*Prevencion con Dieta Mediterranea (PREDIMED) Study*

- RCT testing impact of a Mediterranean diet on heart disease
  - Breast cancer was 2nd outcome in women

- Participants randomized to 1 of 3 groups:
  - Mediterranean diet + EVOO
  - Mediterranean diet + nuts
  - Usual diet control

- Patient population: postmenopausal women at risk of heart disease
  - Average age 67.7 years
  - Average BMI 30.7 kg/m2
  - 86% of women had HTN
  - ~45% had type II DM

Toledo et al. JAMA, epub September 14, 2015
Patients randomized to Med diet + EVOO had 62% lower risk of developing breast cancer.

Caveat: Only 35 breast cancer cases.
What about supplements for cancer prevention?
The Selenium and Vitamin E Cancer Prevention Trial (SELECT)

- **Primary objective:** To determine if Selenium and/or Vitamin E decrease risk of prostate cancer
- **Enrollment:** 35,533 men
- **Eligibility:** PSA ≤ 4.0
  Normal DRE
  Age ≥ 55
- **Arms:** Selenium + placebo
  Vitamin E + placebo
  Selenium + vitamin E
  Placebo + placebo
- **Study halted in 2008 after DSMB determined that Vitamin E and Selenium did not lower risk of prostate cancer**

Cumulative Incidence of Prostate Cancer by Group
With longer follow-up, supplements increased risk of prostate cancer

Table 3. Number and Risk of Prostate Cancers

<table>
<thead>
<tr>
<th></th>
<th>Placebo (n = 8696)</th>
<th>Vitamin E Alone (n = 8737)</th>
<th>Selenium Alone (n = 8752)</th>
<th>Vitamin E + Selenium (n = 8702)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No. of prostate cancers</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October 2008</td>
<td>416</td>
<td>473</td>
<td>432</td>
<td>437</td>
</tr>
<tr>
<td>July 2011</td>
<td>529</td>
<td>620</td>
<td>575</td>
<td>555</td>
</tr>
<tr>
<td><strong>Hazard ratio, (99% CI)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>October 2008</td>
<td>1.13 (0.95-1.35)</td>
<td>1.04 (0.87-1.24)</td>
<td>1.05 (0.88-1.25)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P value .06</td>
<td>62</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>July 2011</td>
<td>1.17 (1.004-1.36)</td>
<td>1.09 (0.93-1.27)</td>
<td>1.05 (0.89-1.22)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>P value .008</td>
<td>.18</td>
<td>.46</td>
<td></td>
</tr>
<tr>
<td><strong>Absolute risk</strong></td>
<td>9.3</td>
<td>10.9</td>
<td>10.1</td>
<td>9.7</td>
</tr>
</tbody>
</table>

Gleason ≥7, No.

<table>
<thead>
<tr>
<th></th>
<th>Placebo (n = 8696)</th>
<th>Vitamin E Alone (n = 8737)</th>
<th>Selenium Alone (n = 8752)</th>
<th>Vitamin E + Selenium (n = 8702)</th>
</tr>
</thead>
<tbody>
<tr>
<td>133</td>
<td>155</td>
<td>161</td>
<td>164</td>
<td></td>
</tr>
<tr>
<td><strong>Hazard ratio (99% CI)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.16 (0.86-1.58)</td>
<td>.20</td>
<td>.11</td>
<td>.08</td>
<td></td>
</tr>
</tbody>
</table>

*Prostate cancers per 1000 person-years.
• Vitamin D and Omega-3 fatty acids associated with lower risk of cancer and heart disease

• VITAL enrolled 20,000 healthy adults to an RCT with a 2X2 factorial design

• Interventions:
  – Vitamin D3: 2000 IU/day
  – Omega-3 (1 gm/day)

• Outcomes:
  – Cancer Incidence
  – Cardiovascular disease (MI, stroke, CVD death)

VITAL Study Design

20,000 Initially Healthy Men and Women
(Men ≥50 yrs; Women ≥55 yrs)

- Vitamin D3 (2000 IU/d); N=10,000
  - EPA+DHA (1 gm/d); N=5000
  - Placebo N=5000
- Placebo N=10,000
  - EPA+DHA (1 gm/d); N=5000
  - Placebo N=5000

Mean Treatment Period = 5.0 years
Blood collection in ~16,000, follow-up bloods in ~6000
Primary Outcomes: Cancer (total) and CVD (MI, stroke, CVD death)

Baseline characteristics of VITAL Study participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total (N = 25,871)</th>
<th>Vitamin D Group (N = 12,927)</th>
<th>Placebo Group (N = 12,944)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female sex, no. (%), n (%)</td>
<td>11,095 (43.0)</td>
<td>6,547 (50.6)</td>
<td>5,548 (50.5)</td>
</tr>
<tr>
<td>Race—</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>22,340 (86.3)</td>
<td>12,645 (98.0)</td>
<td>9,695 (79.0)</td>
</tr>
<tr>
<td>Black</td>
<td>2,223 (8.6)</td>
<td>567 (4.4)</td>
<td>1,656 (12.9)</td>
</tr>
<tr>
<td>Other</td>
<td>308 (1.2)</td>
<td>156 (1.2)</td>
<td>152 (1.2)</td>
</tr>
<tr>
<td>Race or ethnic group— no./total no. (%), n (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic white</td>
<td>18,046/25,304 (71.3)</td>
<td>9,013/12,647 (71.3)</td>
<td>9,033/12,657 (71.4)</td>
</tr>
<tr>
<td>Black</td>
<td>5,106/25,304 (20.2)</td>
<td>2,553/12,647 (20.2)</td>
<td>2,553/12,657 (20.2)</td>
</tr>
<tr>
<td>Nonblack Hispanic</td>
<td>1,013/25,304 (4.0)</td>
<td>516/12,647 (4.1)</td>
<td>497/12,657 (3.9)</td>
</tr>
<tr>
<td>Asian or Pacific Islander</td>
<td>388/25,304 (1.5)</td>
<td>188/12,647 (1.5)</td>
<td>200/12,657 (1.6)</td>
</tr>
<tr>
<td>Native American or Alaskan native</td>
<td>228/25,304 (0.9)</td>
<td>118/12,647 (0.9)</td>
<td>110/12,657 (0.9)</td>
</tr>
<tr>
<td>Other or unknown</td>
<td>58/25,304 (0.2)</td>
<td>55/12,647 (0.4)</td>
<td>23/12,657 (0.2)</td>
</tr>
<tr>
<td>Body-mass index‡±</td>
<td>28.1±5.7</td>
<td>28.1±5.7</td>
<td>28.1±5.8</td>
</tr>
<tr>
<td>Current smoking</td>
<td>3,026/25,205 (12.0)</td>
<td>1,603/12,605 (12.7)</td>
<td>1,423/12,600 (11.2)</td>
</tr>
<tr>
<td>Hypertension treated with medication— no./total no. (%)</td>
<td>12,791/25,698 (49.8)</td>
<td>6,352/12,834 (49.5)</td>
<td>6,439/12,864 (50.1)</td>
</tr>
<tr>
<td>Current use of cholesterol-lowering medication— no./total no. (%)</td>
<td>9,524/25,428 (37.5)</td>
<td>4,822/12,700 (38.0)</td>
<td>4,702/12,728 (36.9)</td>
</tr>
<tr>
<td>Diabetes— no./total no. (%)</td>
<td>3,549/25,828 (13.7)</td>
<td>1,812/12,903 (14.0)</td>
<td>1,737/12,925 (13.4)</td>
</tr>
</tbody>
</table>

* Plus–minus values are means ± SD. Percentages may not sum to 100 because of rounding. There were no significant differences between the groups with regard to the baseline characteristics.
† Race and ethnic group were reported by the participants.
‡ The body-mass index is the weight in kilograms divided by the square of the height in meters. Data were missing for 2.4% of the participants.
Impact of VITAL interventions on cancer risk

Vitamin D

- Hazard ratio, 0.96 (95% CI, 0.88–1.05)
- \( P = 0.47 \)

Omega-3 Fatty Acids

- Hazard ratio, 1.03 (95% CI, 0.93–1.13)
- \( P = 0.56 \)

JAE Mason et al. NEJM, 2019; JAE Manson, NEJM 2019.
### Subgroup analyses of Vitamin D Group vs Placebo Group

#### Table 3. Hazard Ratios of the Primary Outcomes According to Subgroup, Comparing the Vitamin D Group with the Placebo Group.

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>No. of Participants</th>
<th>Invasive Cancer of Any Type</th>
<th>Major Cardiovascular Events</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>no. of participants with event</td>
<td>Hazard Ratio (95% CI)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– &lt; Median of 66.7 yr</td>
<td>12,859</td>
<td>302</td>
<td>122</td>
</tr>
<tr>
<td>– ≥ Median of 66.7 yr</td>
<td>13,012</td>
<td>491</td>
<td>502</td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Male</td>
<td>12,786</td>
<td>452</td>
<td>488</td>
</tr>
<tr>
<td>– Female</td>
<td>13,085</td>
<td>341</td>
<td>336</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– Non-Hispanic white</td>
<td>18,046</td>
<td>626</td>
<td>632</td>
</tr>
<tr>
<td>– Black</td>
<td>5,106</td>
<td>98</td>
<td>126</td>
</tr>
<tr>
<td>– Other</td>
<td>2,152</td>
<td>53</td>
<td>57</td>
</tr>
<tr>
<td><strong>Body-mass index</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– &lt;25</td>
<td>7,843</td>
<td>206</td>
<td>278</td>
</tr>
<tr>
<td>– 25 to &lt;30</td>
<td>10,122</td>
<td>338</td>
<td>323</td>
</tr>
<tr>
<td>– ≥30</td>
<td>7,289</td>
<td>228</td>
<td>193</td>
</tr>
<tr>
<td><strong>Body-mass index category</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– &lt; Median of 27.1</td>
<td>12,582</td>
<td>361</td>
<td>421</td>
</tr>
<tr>
<td>– ≥ Median of 27.1</td>
<td>12,672</td>
<td>411</td>
<td>379</td>
</tr>
<tr>
<td><strong>Baseline serum 25-hydroxyvitamin D</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>– &lt;20 ng/ml</td>
<td>2,001</td>
<td>58</td>
<td>63</td>
</tr>
<tr>
<td>– ≥20 ng/ml</td>
<td>13,785</td>
<td>459</td>
<td>464</td>
</tr>
</tbody>
</table>
World Cancer Research Fund Cancer Prevention Guidelines

- **Be a healthy weight**
  - Keep your weight within the healthy range and avoid weight gain in later life
  - Balancing your weight

- **Move more**
  - Be physically active as part of everyday life – walk more and sit less
  - Getting active

- **Enjoy more grains, veg, fruit & beans**
  - Eat a wide variety of wholegrains, vegetables, fruit and pulses such as beans
  - Reshape your plate

- **Avoid high-calorie foods**
  - Limit consumption of fast foods and other processed foods high in fat or sugar
  - Stay full for longer

- **Limit consumption of red and processed meat**
  - Eat no more than three portions of red meat a week and eat little, if any, processed meat
  - What counts as processed?

- **Limit consumption of sugar-sweetened drinks**
  - Drink mostly water and unsweetened drinks
  - What counts as sugar-sweetened?

- **For cancer prevention, don’t drink alcohol**
  - If you do, limit alcoholic drinks and follow national guidelines
  - Tips for cutting down

- **Don’t rely on supplements**
  - Eat a healthy diet rather than relying on supplements to protect against cancer
  - Learn more

- **Breastfeed your baby**
  - If you can, breastfeed your baby for six months before adding other liquids and foods
  - Benefits of breastfeeding
ASCO Obesity Initiative

- Developed to **increase awareness** regarding link between obesity/inactivity and cancer and **foster conversations** between providers and patients

- Obesity Tool Kit materials available on [cancer.net](http://cancer.net)

- Available in English, French and Spanish