Whole grain intake of Australians estimated from a cross-sectional analysis of dietary intake data from the 2011-13 Australian Health Survey

Leanne M. Galea  
*University of Wollongong, lg906@uowmail.edu.au*

Eleanor J. Beck  
*University of Wollongong, eleanor@uow.edu.au*

Yasmine Probst  
*University of Wollongong, yasmine@uow.edu.au*

Chris Cashman  
*Sanitarium Health and Wellbeing*

**Publication Details**

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Abstract
Objective: The Australian Dietary Guidelines recommend Australians choose mostly whole-grain and/or high-fibre varieties within the grains (cereal) foods category, with other groups specifying a whole grain Daily Target Intake of 48 g for Australians aged 9 years or above. The USA and UK report estimates of whole grain intake that are low and declining, and no comprehensive studies on whole grain intake in the Australian population are available. The present study aimed to determine national estimates of whole grain intake, compared with current recommendations. Design: A recently updated whole grain database was applied to the most current population dietary intake data. Single 24 h dietary recall intake data were reviewed against age group, sex, relative to energy intake and whole grain recommendations. Setting: Australia. Subjects: Australians (2-85 years) participating in the 2011-13 Australian Health Survey (n 12 153). Results: The median daily whole grain intake was 21 g for adults (19-85 years) and 17 g for children/adolescents (2-18 years), or 28 and 23 g/10 MJ per d, respectively. Approximately 30% of children/adolescents consumed no whole grains on the day of the survey. Whole grain intake was lowest for the age group 14-18 years (8·7 g/d). Of all participants aged ≥9 years, 73% did not reach the recommended Daily Target Intake of 48 g. Conclusions: Whole grain intake in Australia is below recommendations in all age groups. Adolescents may be a key target for campaigns to increase whole grain consumption. This study provides the first quantification of absolute whole grain intake from all food sources in a national sample of Australians.

Keywords
intake, grain, australians, estimated, cross-sectional, analysis, dietary, data, 2011-13, australian, health, survey, whole

Disciplines
Medicine and Health Sciences | Social and Behavioral Sciences

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Subjects: Australians (2-85 years) participating in the 2011-2013 Australian Health Survey (AHS) (n=12 153).

Results: The median daily whole grain intake was 21g/d for adults (19-85 years) and 17g/d for children/adolescents (2-18 years), or 28g/10MJ/d and 23g/10MJ/d respectively. Approximately 30% of children/adolescents consumed no whole grains on the day of the survey. Whole grain intake was lowest for the age group 14-18 years (8.7g/d). Of all participants aged ≥9 years, 73% did not reach the recommended Daily Target Intake of 48g.

Conclusions: Whole grain intake in Australia is below recommendations in all age categories. Adolescents may be a key target for campaigns to increase whole grain consumption. This study provides the first quantification of absolute whole grain intake from all food sources in a national sample of Australians.
Article:

Introduction

Epidemiological studies of adult populations have reported an inverse relationship between whole grain intake and risk of chronic diseases, including cardiovascular disease,\(^1\) type two diabetes,\(^3\) and some cancers.\(^4\) Whole grains may also have a role in weight management.\(^5\);\(^6\) However generally, whole grain consumption of any population has been difficult to study, as the majority of intake data available do not contain quantified whole grain intake measures. Dietary guidelines developed globally including the Australian Dietary Guidelines (ADG), recommend choosing mostly whole grain and/or high cereal fibre foods within the cereals food group.\(^7\) Other groups promoting whole grain consumption encourage Australians nine years and above to meet a 48g whole grain Daily Target Intake (DTI).\(^9\)

A whole grain database has been expanded to include all whole grain foods reported within the Nutrition and Physical Activity component of the Australian Health Survey (AHS),\(^10\) providing a useful tool to quantify whole grain intake. Secondary analysis of dietary intake data, involving the application of this whole grain database, provides a more in depth understanding of both amounts and patterns of consumption of whole grains to assist guidance of both nutrition education and food product development.\(^11\) In addition, absolute amounts of whole grain intake at the food level help to account for biological interactions that might otherwise be lost in the analysis of individual nutrients.\(^8\)

The aims of this study were to determine (i) national estimates of reported whole grain intake, compared to national guidelines (ADG and DTI), (ii) key dietary sources of whole grains within the Australian diet.

Materials/ subjects and methods

Data and study population

A full description of methods for data collection in the AHS has been reported by the Australian Bureau of Statistics (ABS).\(^12\) In brief, the AHS is a nationally representative cross sectional survey conducted between 2011-2013. Within this broader survey, the National Nutrition and Physical Activity Survey (NNPAS) collected data on the nutrition and health status of individuals aged 2 to 85 years, based on a stratified multistage area sample of private dwellings, which are geographically and demographically representative of the
The dataset used for the analyses of this study was from the ABS Confidentialised Unit Record Files obtained in the NNPAS.

Dietary assessment

Dietary intake data of the NNPAS were collected by trained interviewers using computer and telephone assisted 24-hour dietary recalls, adapted using the Automated Multiple Pass Method. Detailed descriptions of dietary interview methods, including a Food Model Booklet used by interviewers to assist in describing amounts of food and beverages consumed, are provided elsewhere. Intake data was collected for one day for n=12 153 participants, and a second recall was repeated with a subsample (n=7 735).

Estimation of whole grain intake

Age categories for analysis were selected in line with Nutrient Reference Value age groupings; hereafter referred to as children (2-18 years), and adults (19 – 85 years). Differences between mean whole grain intake on day one of the survey, and the average of two days were determined using a paired samples t-test. A statistically significant difference existed (33.9g/day and 33.6g/day respectively, p=0.000). The difference of 0.3g whole grains between mean values was not deemed clinically relevant and did not justify excluding the participants who did not provide two days of dietary intake data, hence data from day one of the survey was used.

Whole grains considered in the present study aligned with the Food Standards Australia New Zealand definition as ‘the intact grain or the dehulled, ground, milled, cracked or flaked grain where the constituents- endosperm, germ and bran- are present in such proportions that represent the typical ratio of those fractions occurring in the whole cereal, and includes wholemeal.”

The whole grain percentage of each food item identified as containing whole grains was calculated using a whole grain database. In brief, from over 5 700 food codes, 590 foods were identified as containing any whole grains, as a percentage of the fresh weight of food. Whole grain content was calculated through the adaptation of an existing whole grain database, recipes and ingredient information, including input from non-profit organisations and industry sources. Whole grain intake was calculated by multiplying the gram weight of all foods reported as containing whole grain, by the percentage of whole grain, avoiding the
use of an arbitrary cut-off to define whole grain foods. Foods were classified as core (non-
discretionary) and discretionary using criteria within the ADG.(7) Core cereal foods include
mostly whole grain and/or high cereal fibre varieties. This includes breads, cereals, rice,
pasta, noodles, polenta, couscous, oats, quinoa and barley.(7) Within the context of cereal
foods, discretionary foods include highly refined versions containing added fats and/or sugars
such as biscuits, cakes, pastries, commercial burgers, pizza, fried foods, and other savoury
snacks.(18)

Intake was reviewed to determine the number of consumers meeting the DTI. Consumption
was also reviewed within age categories, using food intake data and food group codes.

**Statistical analyses**

To account for differences in total dietary intake by age and sex, whole grain intake was
adjusted for daily energy intake (10MJ/d) as reported within single 24-hour recalls,(19)
providing a relative representation of whole grain density of the diet. Parametric tests were
applied to the data. Differences between age categories and genders meeting whole grain
recommendations were assessed using chi-square analyses to compare associations between
proportions. One-way analysis of variance (ANOVA) and Bonferroni post-hoc tests were
used to explore statistically significant differences in whole grain intake between age groups.

All statistical analyses used the Statistical Package for the Social Sciences (SPSS version 21,
2009, Chicago, IL). Given the sample size of the data set, effect size was calculated using eta
squared, calculated as the sum of squares between groups divided by the total sum of squares.
The strength of the effect was interpreted based on Cohen’s criteria.(20)

**Results**

On the day of the survey, the median whole grain intake for children was 16.5g/d
(22.7g/10MJ/d), range 8.7 – 21.2g/d across age groups. Median whole grain intake and for
adults was 21.2 g/d (28.0g/10MJ/day). The median intake of whole grains ranged from 9.4 –
48.7g/10MJ per day across age groups (Table 1). The 48g DTI was not met by 71.7% of
adults, and 72.7% of the total population >9 years to which the DTI applies. A larger
proportion of older Australian adults, aged ≥51 years (42.4%) reached the 48g DTI than
adults aged 19-50 years (38.4%, P= <0.001).
Median reported whole grain intake was lowest for the age group 14-18 years (8.7 g/d), males (8.6g/d) and females (8.9g/d), and highest overall for the age group ≥71 years, (33.7g/d), males (35.9g/d) and females (33.0g/d) (Table 1). Using absolute values, males consumed more whole grains than females. However, when whole grain intake was adjusted for energy intake, females appeared to consume relatively more whole grain than males (29.7g/10MJ per day females, 25.8g/10MJ per day males), within all age categories >14 years.

**Whole grain consumers and non-consumers**

Amongst all respondents to the NNPAS, 29.1% (30.9% males, 27.5% females) did not consume any whole grains on the day of the survey. Of the whole population sampled, 28.8% of adults, and 29.9% of children did not report consuming any whole grains on the day of the survey. The highest proportion of non-consumers was males aged 14-18 years (40.0%), and females also aged 14-18 years (36.9%). Both males and females aged ≥71 comprised the largest proportion of consumers.

Amongst adults who reported consuming whole grains on the day of the survey (>0.0g, n=6648), the median whole grain intake was 38.4g/d (IQR 19.0 – 66.0) with the 48g DTI not reached by 60.3% of adult consumers of whole grains.

**Sources of whole grain intake**

Core foods contributed 82.4% of total whole grain intake for children and 96.3% of total whole grain intake for adults; indicating small contributions from discretionary foods. Key discretionary sources included muesli or cereal-style bars (43% and 46% of total whole grain from discretionary foods for children and adults, respectively), and corn snacks (children 35% and adults 27%), including buttered popcorn.

Across all foods identified as containing whole grains, the cereals and cereal products food group contributed the largest proportion to whole grain intake amongst children and adults. Major reported whole grain sources for children included ready to eat cereals (RTEC), and regular breads and bread rolls. For both children and adults, regular breads and bread rolls and RTEC were the largest contributors to whole grain intake (Table 2).

Persons consuming very low or no amounts of whole grains still appeared to consume foods from the cereals and cereal products major food group. However, this same group tended to report consuming refined versions of cereal foods, on a gram weight basis of total food
consumption. Mean intake of the major food groups including cereal and cereal products, and cereal based products and dishes are not dissimilar amongst the lowest and highest groups of whole grain consumers within each age category (Table 3).
Discussion

This study reports whole grain intake of Australian children and adults, based on one day of dietary intake data from the 2011-13 NNPAS. It provides the most comprehensive analysis of whole grain consumption in an Australian population published to date.

The median intakes were 17g/d and 21g/d for children and adults respectively, with approximately 30% of children and adults considered non-consumers of whole grains. After adjusting for energy intake, adult females appeared to consume more whole grains than males. The reported whole grain intake in this sample was low, with 73% of the adults not meeting the recommended DTI for whole grains. The highest median daily whole grain intake reported was observed in males aged ≥71 years (35.9g/d) falling below the DTI. This concurs with comparable reports from other Western countries. Mann et al.\(^ {19} \) report median intake in the UK of 13 and 20g/d for children and adults respectively, with 15% and 18% non-consumers, collected through estimated 3-day food diaries. Median intake amongst US adults was lower (10-12g/d). Less than 1% of the US population consumed the recommended three servings (48g) per day and 20% of adults reported consuming no whole grain products via 24-hour recalls.\(^ {21} \) Whole grain intake in Australia appears to be greater than France, although less than Scandinavian countries for which data are available. In France, 55% of adults and 62% of children were identified as whole grain non-consumers based on 3-day dietary records. Amongst whole grain consumers in this population, median intakes were 5.4g/d and 8.1g/d for adults and children, respectively.\(^ {22} \) Comparatively, Scandinavian populations consume markedly more whole grains, with median adult intakes at 35g/d and 49g/d for Swedish females and males, and 31g/d and 41g/d for Danish females and males.\(^ {23; 24} \) While observed intake patterns are evidently similar in the US,\(^ {25} \) UK and Australia, this is a contrast with the data from Scandinavian countries, where whole grain bread is considered a staple of the diet.\(^ {24} \) In addition, methods used to collect dietary intake data, and define and quantify whole grain intake differ between countries. This must be considered as a limitation in international comparisons of whole grain intake.

Cereals and cereal products were key contributing food groups to reported whole grain intake amongst children and adults in the present study. These findings concur with observations in similar population based studies in the US\(^ {25; 26} \) and UK,\(^ {27; 28} \) where the major sources of whole grain foods were breakfast cereals and breads for children and adults, respectively.
RTEC and plain breads and bread rolls were the main sources of reported whole grains for children and adults in the present study, becoming key foods to target for increased consumption of whole grain foods. The highest proportion of male and female non-consumers were individuals aged 14-18 years, and not unexpectedly, this age group also had the lowest median whole grain intake per day. Comparison of consumers aged 9-18 years reporting intake less than one serve of whole grain (0-8g whole grain/d), indicates consumers within the lowest category of whole grain intake report consuming similar amounts of breads but less RTEC overall, on a gram weight basis of food intake. These consumers reported eating bread, but did not report eating whole grain varieties of bread. They reported eating less RTEC, highlighting the importance of breakfast consumption as a contribution to overall diet quality, including meeting recommended whole grain target intakes.

This is supported by an analysis of the National Health and Nutrition Examination Survey 1999-2002, which identified that RTEC consumers had higher mean healthy eating index scores for multiple food groups, and higher micronutrient intakes than breakfast skippers and other breakfast consumers.\(^{(29)}\) RTEC may be a useful vehicle for encouraging consumption of whole grains, as well as fruit and dairy foods.\(^{(30)}\) Preferably, RTEC with limited amounts of added sugar would be encouraged. Myhre and Loken\(^{(31)}\) investigated the importance of different meal types for the intakes of whole grains, fruits, vegetables and fish in Norwegian adults. Breakfast was the most important meal for whole grain intake within this cohort, and consequently, a lower intake of whole grains was observed on days when breakfast was skipped. Breakfast skipping is noticeably common amongst 14-18 year old adolescents,\(^{(30)}\) and has been associated with a lower dietary quality and adverse health outcomes; although results have been inconsistent.\(^{(29}; 30)}\) This highlights implications for practice, and the potential importance of focusing on meal types to target improvements in whole grain intake,\(^{(32)}\) while contributing to a message which is understandable and adaptable at a broader public health level.

Whole grain consumers have been characterised as having an overall healthier diet, and generally healthier lifestyle habits.\(^{(25}; 26; 33; 34)}\) Analysing intake of adult whole grain consumers in comparison with the lowest category of whole grain intakes, on a gram weight basis of food intake, indicated that the latter do report to consume foods from the breads and cereals category, but chose the refined or ‘white’ alternatives of whole grain products. Encouraging this population to align their intake with the ADG recommendations to choose...
mostly whole grain and/or high fibre varieties within the grain foods group (7) may be a useful strategy for increasing whole grain consumption. In order to increase consumption of whole grains at a population level, concerted efforts are necessary to both decrease the proportion of low and non-consumers, by encouraging higher quality choices within the breads and cereals food group, and increased consumption in existing consumers, focused on groups with particularly low consumption. (35)

This study is the first to report estimates of whole grain intake within the Australian population, utilising data from the most recent national survey in Australia. The adopted method of reporting whole grain intake aligns with recent recommendations: specifically, reporting absolute grams of whole grains consumed rather than serves of intake, and separating added bran and germ from calculations. (36) This contributes to international consistency in quantifying whole grain intake within epidemiological studies.

The retrospective cross sectional design of the NNPAS lacks temporality, hence results from this analysis cannot determine causation. Further, 24-hour dietary recalls may not accurately reflect usual dietary intake patterns of participants. One day of dietary intake data was used, rather than adjusting intake with a second day of data gathered from a subset of participants, which would allow estimation of usual intake. The data were not weighted hence results cannot be considered as representative of the Australian population. This limitation is partly adjusted for by the very large sample size, but it is still an important consideration. (21)

Assumptions inherent to the whole grain database may have under- or overestimated whole grain intake within the present study. The database reflects likely, rather than actual composition of foods and changes in formulations cannot be accounted for. Despite these limitations, the analysis is useful in estimating whole grain intake at a point in time within a large Australian sample.

Target groups for communication strategies and product development of more sensorially appealing whole grain rich foods should be adolescents/ young adults (males and females aged 14-30 years). Activities for all low or non-consumers may focus on increasing whole grain intake through breakfast consumption, and encouraging higher whole grain choices within the breads and cereals category which may reduce the proportion of non-consumers, and increase average intake amongst consumers.
References


### Table 1 Median reported whole grain intake (g per day) within the 2011-13 Australian Health Survey by age category and gender

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>N=</th>
<th>Median whole grain intake (g per day)</th>
<th>Median whole grain intake (g/10MJ per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>IQR</td>
</tr>
<tr>
<td>2-3</td>
<td>228</td>
<td>236</td>
<td>464</td>
</tr>
<tr>
<td></td>
<td>397</td>
<td>392</td>
<td>789</td>
</tr>
<tr>
<td>9-13</td>
<td>392</td>
<td>395</td>
<td>787</td>
</tr>
<tr>
<td>14-18</td>
<td>403</td>
<td>369</td>
<td>772</td>
</tr>
<tr>
<td>19-30</td>
<td>739</td>
<td>853</td>
<td>1592</td>
</tr>
<tr>
<td>31-50</td>
<td>1669</td>
<td>1896</td>
<td>3565</td>
</tr>
<tr>
<td>51-70</td>
<td>1341</td>
<td>1565</td>
<td>2906</td>
</tr>
<tr>
<td>71+</td>
<td>533</td>
<td>745</td>
<td>1278</td>
</tr>
<tr>
<td>Total children</td>
<td>1420</td>
<td>1392</td>
<td>2812</td>
</tr>
<tr>
<td>Total adults</td>
<td>4281</td>
<td>5059</td>
<td>9340</td>
</tr>
<tr>
<td>Whole population</td>
<td>5701</td>
<td>6452</td>
<td>12153</td>
</tr>
</tbody>
</table>

*a* Children defined as 2-18 years.

*b* Adults defined as 19 years and above.
Table 2: Percentage contribution of food groups to total whole grain intake of children and adults in the 2011-13 Australian Health Survey, based on the gram weight of all foods consumed.

<table>
<thead>
<tr>
<th>Food Category</th>
<th>Contribution to total whole grain intake</th>
<th>Children</th>
<th>Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals and cereal productsa</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breakfast cereals, ready to eatb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breakfast cereal, wheat based, fortified, sugars ≤20 g/100g</td>
<td></td>
<td>22.1%</td>
<td>12.9%</td>
</tr>
<tr>
<td>Breakfast cereal, wheat based</td>
<td></td>
<td>2.8%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Breakfast cereal, mixed grain, with fruit and/or nuts, fortified</td>
<td></td>
<td>2.5%</td>
<td>4.3%</td>
</tr>
<tr>
<td>Breakfast cereal, mixed grain, fortified, sugars &gt;20 g/100g</td>
<td></td>
<td>2.3%</td>
<td>0.3%</td>
</tr>
<tr>
<td>Breakfast cereal, mixed grain, fortified, sugars ≤20 g/100g</td>
<td></td>
<td>2.1%</td>
<td>1.0%</td>
</tr>
<tr>
<td>Breakfast cereal, wheat based, with fruit and/or nuts, fortified, sugars ≤25 g/100g</td>
<td></td>
<td>2.0%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Breakfast cereal, mixed grain, with fruit and/or nuts</td>
<td></td>
<td>1.8%</td>
<td>11.7%</td>
</tr>
<tr>
<td>Regular breads, and bread rolls (plain/unfilled/untopped varieties)</td>
<td></td>
<td>33.7%</td>
<td>36.4%</td>
</tr>
<tr>
<td>Breads, and bread rolls, wholemeal, not stated as to fortification</td>
<td></td>
<td>13.3%</td>
<td>8.4%</td>
</tr>
<tr>
<td>Breads, and bread rolls, wholemeal and brown, mandatorily fortified</td>
<td></td>
<td>9.4%</td>
<td>14.0%</td>
</tr>
<tr>
<td>Breads, and bread rolls, mixed grain, not stated as to fortification</td>
<td></td>
<td>4.7%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Breads, and bread rolls, mixed grain, mandatorily fortified</td>
<td></td>
<td>3.7%</td>
<td>6.9%</td>
</tr>
<tr>
<td>Breakfast cereals, hot porridge style</td>
<td></td>
<td>7.8%</td>
<td>10.7%</td>
</tr>
<tr>
<td>Porridge style, oat based</td>
<td></td>
<td>7.8%</td>
<td>10.7%</td>
</tr>
<tr>
<td>English-style muffins, flat breads, and savoury and sweet breads</td>
<td></td>
<td>3.1%</td>
<td>2.6%</td>
</tr>
<tr>
<td>Flat breads (e.g. Pita bread), wheat based</td>
<td></td>
<td>2.9%</td>
<td>2.3%</td>
</tr>
<tr>
<td>Flours and other cereal grains and starches</td>
<td></td>
<td>2.8%</td>
<td>4.4%</td>
</tr>
<tr>
<td>Cereal based products and dishes</td>
<td></td>
<td>6.6%</td>
<td>6.4%</td>
</tr>
<tr>
<td>Mixed dishes where cereal is the major ingredient</td>
<td></td>
<td>4.1%</td>
<td>3.6%</td>
</tr>
<tr>
<td>Savoury biscuits</td>
<td></td>
<td>1.9%</td>
<td>2.1%</td>
</tr>
<tr>
<td>Snack foods</td>
<td></td>
<td>4.5%</td>
<td>1.2%</td>
</tr>
<tr>
<td>Confectionery and cereal/nut/fruit/seed bars</td>
<td></td>
<td>4.2%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Muesli or cereal style bars</td>
<td></td>
<td>4.2%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Muesli and cereal style bars, added coatings or confectionery</td>
<td></td>
<td>2.2%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Muesli and cereal style bars, with fruit and/or nuts</td>
<td></td>
<td>2.0%</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

*a Major food group
*b Sub-major food group
*c Minor food group
Table 3: Characteristics of participants, by age group and category of whole grain intake, including mean gram weight of food intake from four major food groups

<table>
<thead>
<tr>
<th>Range of whole grain intake (g/d)</th>
<th>2 – 8 years (n=1 253)</th>
<th>9-18 years (n=1 559)</th>
<th>≥19 years (n=9 341)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>≤8.0g/d</td>
<td>&gt;8.0g/d</td>
<td>≤8.0g/d</td>
</tr>
<tr>
<td>n</td>
<td>446</td>
<td>807</td>
<td>722</td>
</tr>
<tr>
<td>Age, mean years</td>
<td>4.6</td>
<td>4.6</td>
<td>13.6</td>
</tr>
<tr>
<td>Female, %</td>
<td>53.4</td>
<td>48.3</td>
<td>49.2</td>
</tr>
<tr>
<td>Proportion of age group (%)</td>
<td>35.6</td>
<td>64.4</td>
<td>46.3</td>
</tr>
<tr>
<td>Mean energy intake, kJ/d</td>
<td>6256</td>
<td>6746</td>
<td>8412</td>
</tr>
</tbody>
</table>

Mean intake from four major food groups (g of food per day)

<table>
<thead>
<tr>
<th></th>
<th>≤8.0g/d</th>
<th>&gt;8.0g/d</th>
<th>≤8.0g/d</th>
<th>&gt;8.0g/d</th>
<th>≤8.0g/d</th>
<th>&gt;8.0g/d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cereals and cereal products</td>
<td>42</td>
<td>38</td>
<td>65</td>
<td>58</td>
<td>70</td>
<td>59</td>
</tr>
<tr>
<td>Cereal based products and dishes</td>
<td>53</td>
<td>45</td>
<td>111</td>
<td>101</td>
<td>115</td>
<td>99</td>
</tr>
<tr>
<td>Snack foods</td>
<td>29</td>
<td>25</td>
<td>37</td>
<td>37</td>
<td>45</td>
<td>43</td>
</tr>
<tr>
<td>Confectionery *</td>
<td>22</td>
<td>21</td>
<td>29</td>
<td>32</td>
<td>38</td>
<td>32</td>
</tr>
</tbody>
</table>

* Includes cereal/nut/fruit/seed bars