

Background Information
IOM/FNB Workshop on Dietary Reference Intakes
The Development of DRIs 1994-2004: Lessons Learned & New Challenges
September 18-20, 2007
Washington, DC

Information Compiled and Posted July 11, 2007

Purpose: To Provide Useful/Relevant Information for
Workshop Participants and Attendees

Opportunity for interested parties to comment electronically through August 11, 2007:
www.iom.edu/driworkshop2007

DOCUMENTS:

Uses and Challenges Related to Use of the DRIs

Developed by:

Document 1
US Federal DRI Steering Committee

Document 2
Health Canada

Document 3
American Dietetic Association

Document 4
Dietitians of Canada

Date: June 2007

Uses and Challenges Related to Use of the DRIs

DOCUMENT 4:

**Dietary Reference Intakes:
Perspectives of Members of Dietitians of Canada**

Developed by:

Dietitians of Canada

Date: June 2007



Dietitians of Canada
Les diététistes du Canada

Promoting Health Through Food & Nutrition

Dietary Reference Intakes: Perspectives of Members of Dietitians of Canada

June 2007

Acknowledgement:

Dietitians of Canada (DC) acknowledges Susan Barr PhD, RD for the design of an online survey on the uses and purposes of Dietary Reference Intakes (DRIs) from the perspective of members of Dietitians of Canada, the analysis of the survey results and the development of this report based on that analysis. We also thank Stephanie Atkinson PhD, Theresa Glanville PhD, PDt and Susan Whiting PhD for their input into the survey design and their thoughtful feedback on drafts of the report. In addition DC thanks all members that took time to complete the online survey, providing their candid responses needed for the preparation of this document.

This report – *Dietary Reference Intakes: Perspectives of Members of Dietitians of Canada* - was prepared and submitted at the request of The Institute of Medicine (IOM) of the National Academies of Science as a background document to inform deliberations at an upcoming workshop “Development of DRIs, 1994-2004: Lessons Learned and New Challenges,” to be held in Washington, DC, on September 18-20, 2007. The 3-day workshop is jointly sponsored by the US Department of Health and Human Services, the US Department of Agriculture, and the Canadian Institutes for Health Research with additional funding anticipated from Health Canada. Further information about the workshop can be found on the project website (www.iom.edu/driworkshop2007).

Dietary Reference Intakes: Perspectives of Members of Dietitians of Canada

Executive Summary

In response to a call for input from the Institute of Medicine (IOM) on uses and purposes of Dietary Reference Intakes (DRIs) from the perspective of members of the Dietitians of Canada, an on-line survey was conducted. Responses were received from a convenience sample of 646 members (~12% of the membership). Key findings were:

- Most Canadian dietitians have used the DRIs in some capacity in their practice, and individual dietary assessment is the most common application of DRIs by dietitians.
- Very few dietitians use DRIs as their primary means of dietary assessment or planning, either for individuals or groups. *Canada's Food Guide* or recommendations for specific health/disease states are more commonly used as the primary tools for dietary assessment or planning.
- When dietitians do use DRIs in assessing individual diets, very few use the IOM methodology to assess the degree of confidence that intake is adequate or not excessive. Most assume intakes are adequate if they meet the Recommended Dietary Allowance (RDA) or Adequate Intake (AI), are not excessive if they are below the Tolerable Upper Intake Level (UL), and are appropriate if macronutrient intakes fall within the Acceptable Macronutrient Distribution Ranges (AMDRs). Some, however, assume that intakes are adequate if they meet the Estimated Average Requirement (EAR).
- When dietitians use DRIs to plan individual diets, most use the RDA or AI as goals for intake, although some report use of the EAR.
- Most dietitians who use DRIs to assess group diets compare *mean* intakes to the DRIs, rather than assessing the proportion of the usual intake distribution with intakes below the EAR, above the UL, or within the AMDR.
- Very few dietitians apply the IOM methodology to plan intakes with a low prevalence of inadequacy or excess. Most plan for mean intakes that meet the RDA, and some use the EAR as a goal for mean intake.
- Barriers to using the DRIs include uncertainty about: how to apply the methods correctly; whether the DRIs apply to patients with specific health conditions; and whether they should use methods for individuals or groups. Difficulty in comparing units and lack of access to adjusted usual intake distributions were also barriers.

It is clear that there is a need for straightforward and accessible communication about when and how to apply the DRIs in dietetic practice, and that dietitians have a professional responsibility to develop expertise in this area.

Background

Dietitians of Canada (DC) is the nation-wide voice of over 5600 Canadian dietitians. DC brings the skills of its members together to inform decisions that affect food, nutrition and health, with impact at the local, regional/provincial, national and international levels. DC is the national accrediting body for all baccalaureate and practicum training programs that credential dietitians to practice in Canada.

This document was prepared in response to the call for input from the Institute of Medicine (IOM) to submit a background document for the September workshop on Dietary Reference Intakes (DRIs), in the form of any relevant comments on the uses and purposes of the DRIs from the perspective of DC members. Accordingly, we formed an advisory committee of DC members with extensive experience with the DRIs. In collaboration with committee members, we developed and administered an on-line survey to explore Canadian dietitians' uses of the DRIs in dietary assessment and planning for individuals and groups, as well as the challenges experienced in those applications. Specifically, we asked:

1. Are the DRIs used by Canadian dietitians? And if not, why not?
2. How, specifically, are DRIs being used by those who use them?
3. What challenges do dietitians face when trying to use the DRIs?
4. What has facilitated dietitians' use of DRIs?
5. What do dietitians think about how the % Daily Value (DV) should relate to DRIs?
6. What other comments do dietitians have about DRIs and their use in practice?

All members were notified about the on-line survey through a broadcast e-mail message that invited their candid anonymous responses. (The e-mail message and the survey itself are included as appendices to this report.) The survey was available on the Association members' website for 10 days, and 646 responses were received. This response rate (~12%) is similar to that of other member on-line surveys.

Table 1 shows data on survey respondents' highest level of education achieved, the number of years since completing their highest degree, and their practice setting. Although respondents were generally similar to the membership as a whole with regard to these characteristics, it should be emphasized that they constitute a convenience sample, and that results cannot be generalized with confidence to all DC members. Nevertheless, the results provide insight into dietitians' uses of the DRIs.

Table 1. Characteristics of Survey Respondents

	Survey respondents (n=646)
Highest degree	
Bachelor's	76%
Master's	21%
PhD	3%
Highest degree completed	
<5 years ago	28%
5-9 years ago	17%
10-19 years ago	25%
20-29 years ago	20%
30+ years ago	10%
Practice setting	
Clinical	41%
Community health	18%
Public health	11%
Education	9%
Administrative dietetics	6%
Business and industry	4%
Sales, marketing, retail	1%
Other	10%

1. Are the DRIs used by Canadian dietitians? And if not, why not?

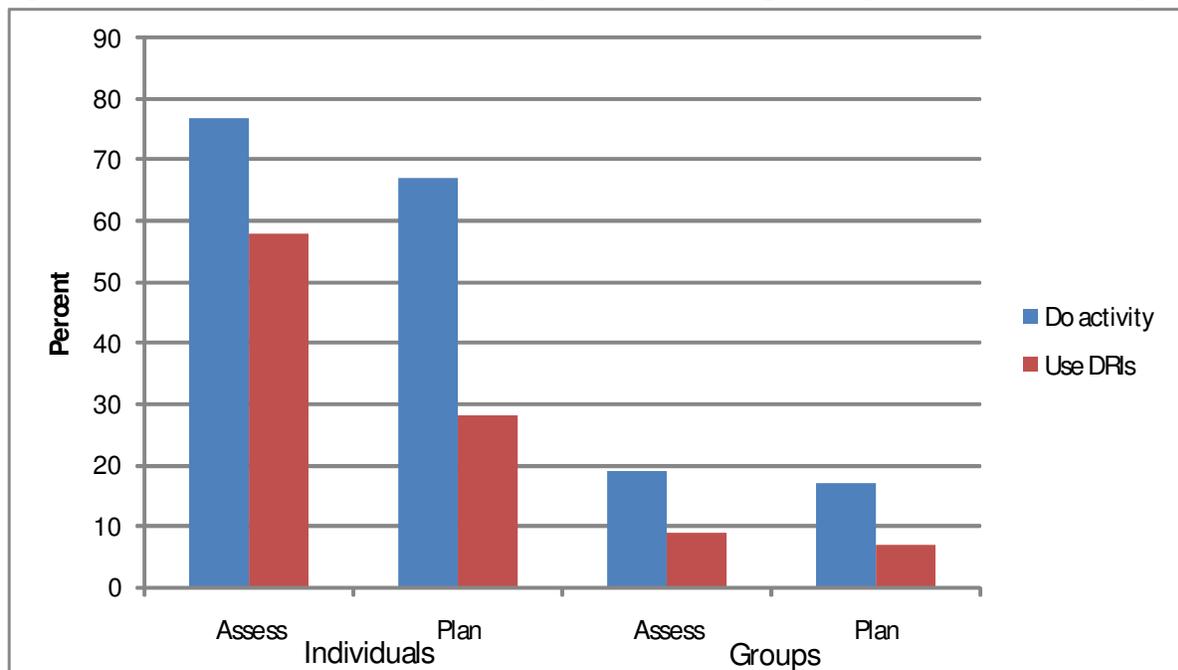
Most dietitians have used the DRIs in some capacity.

Eighty-eight percent (88%) of respondents (n=566) indicated that they had used the DRIs in some capacity in their practice. The 12% who had never used the DRIs (n=79) indicated that this was because they were not involved in planning or assessing intakes of individuals or groups, that they hadn't had time to learn about how the DRIs applied to their practice, that they didn't see the applications of the DRIs to their practice, or that they were not currently working. The remaining items in the survey were completed by those who had used the DRIs in some capacity in their practice, and results reported subsequently were derived from that group.

Individual dietary assessment is the most common application of use of DRIs.

Figure 1 shows the percent of respondents whose practices included assessing or planning diets of individuals or groups, and within each type of activity, the proportion who had ever used the DRIs in that activity. It can be seen that more respondents worked with individuals than with groups, and that assessing individual diets was the activity associated with the highest prevalence of using the DRIs.

Figure 1. Dietitians' use of DRIs in dietary assessment and planning for individuals and groups*



* Percentages refer to the 566 respondents who used DRIs in some capacity in their practice

Very few dietitians use DRIs as their primary means of dietary assessment or planning.

It should be noted, however, that among respondents who had used the DRIs to assess or plan the diets of individuals or groups, very few used them as the “most frequent” method.

- Among those who had ever used the DRIs to assess individual diets, only 9% reported using this approach most frequently, compared to 52% who compared intakes to Canada’s Food Guide, 35% who compared intakes to recommendations for specific health conditions (such as those for diabetes or heart disease), and 4% who used other methods. This is consistent with the information provided by the IOM, which indicates that those who conduct individual assessments have access to a variety of information sources, and that nutrient intake data (if used) should always be considered in conjunction with other sources of information (Assessment report).
- Among those who had ever used DRIs to plan individual diets, 7% reported using this approach most frequently, compared to 40% who made recommendations based on Canada’s Food Guide, 51% who used recommendations for specific health conditions, and 3% who used other methods. This pattern of use is also consistent with information from the IOM, which recognizes that food-based nutrition education tools (such as food guides) are regularly used for individual dietary planning. Because food guides are based in part on nutrient reference standards, the reference standards are implicitly used to plan individual diets when food guides are used (Planning report).
- Among those who had ever used DRIs to assess diets of groups, 19% reported using this method most frequently, compared to 48% who compared group intakes to Canada’s Food Guide and 30% who compared the group’s intake to recommendations for specific health conditions.

- Among those who had ever used DRIs to plan diets of groups, 11% reported using this method most frequently, compared to 55% who used Canada’s Food Guide and 30% who used recommendations for specific health conditions.

Those who don’t use DRIs in assessment or planning lack resources, time, or knowledge or think that other methods are preferable

Dietitians whose practices included individual or group assessment or planning activities, but who had never used the DRIs in those activities, provided a variety of reasons for not using the DRIs. As shown in Table 2, lack of access to nutrient analysis programs and (in the case of group assessment and planning) to adjusted usual intake distributions were frequently cited, as was a lack of time. Some felt that other methods were more useful, and about 15% indicated that they were not familiar with how to apply the DRIs in dietary assessment or planning.

Table 2. Reasons provided by those who have never used the DRIs in assessment or planning*

Reason	Assessing Individuals	Planning for Individuals	Assessing Groups	Planning for Groups
No access to a nutrient analysis program	42%	29%	22%	26%
Not enough time	27%	26%	19%	23%
Other methods provide better information/more useful	14%	26%	10%	14%
Don’t know how to apply the DRIs in this capacity	13%	15%	14%	16%
No access to adjusted usual intake distribution	n/a	n/a	28%	18%
Other	5%	4%	7%	4%

* Respondents could select more than one reason

2. How, specifically, are the DRIs being used by those who use them?

Individual Assessment: Very few dietitians use the methods developed by the IOM

- About 80% of dietitians who had used DRIs in individual dietary assessment used them to assess nutrient adequacy. Among this group, only 3% reported using the IOM method to compute the level of confidence that usual intake was adequate. Seventy-eight percent (78%) simply assumed adequacy if intake was at or above the Recommended Dietary Allowance (RDA) or Adequate Intake (AI), which is consistent with the ‘qualitative’ guidelines provided by the IOM. Of potential concern was that 16% assumed intake was adequate if it was at or above the Estimated Average Requirement (EAR). Two percent (2%) reported using other methods.
- About two-thirds of dietitians who had used DRIs in individual dietary assessment used them to assess whether individual intakes were excessive. Among this group, only 5% of dietitians reported using the IOM method to assess the level of confidence that usual intake was not excessive. Ninety percent (90%) simply assumed intake was excessive if

it was above the Tolerable Upper Intake Level (UL) – again, this is consistent with the ‘qualitative’ guidance provided by the IOM -- and 6% used other methods.

- Less than a third of dietitians who used DRIs in individual dietary assessment used the Acceptable Macronutrient Distribution Ranges (AMDRs) to assess macronutrient distribution. Among those who did, only 3% used the IOM equations to assess whether usual intake fell within the AMDRs, whereas 92% simply assumed intake was appropriate if it fell within the AMDR. Five percent (5%) reported using other methods.
- Less than half of those who used DRIs in individual dietary assessment used the EER to assess the adequacy of energy intake. Among those who did, 59% compared reported energy intake to the client’s calculated EER, 38% compared reported energy intake to the tabulated values for those in the same age/sex category, and 4% used another method. Although the IOM publications recommend that BMI change or stability reflects usual energy balance better than comparing reported intake to the EER, the survey tool did not assess whether the EER was used in conjunction with BMI.
- Taken together, these results show that most dietitians use the appropriate DRIs when assessing adequacy or excessive intakes, but do not use the statistical approach to calculate the level of confidence associated with a judgment about intake. However, there may be some lack of clarity regarding the adequacy of intakes that meet the EAR, and the extent to which it is appropriate to use the EER in dietary assessment.

Planning Individual Diets: Some confusion regarding appropriate goals

- Among those who used DRIs to plan for nutrient adequacy, 13% reported using the EAR as a goal for individual intake; 35% planned for intakes that *met but did not exceed* the RDA or AI; and 49% planned intakes that *met or exceeded* the RDA or AI. Three percent (3%) reported other methods.
- When using the DRIs to plan for intakes that were not excessive, 25% planned for intakes that were at or just above the RDA or AI; 41% planned for intakes that were between the RDA or AI and the UL; and 32% recommended that intakes from supplements should be below the UL. Three percent (3%) reported other methods.
- Most of those who used the EER to plan individual diets used it in more than one way, likely as the situation warranted. Almost half used the EER equations to calculate a specific value for a client’s energy needs, and similar proportions used the equations and added or subtracted calories to plan for weight gain or loss, or to obtain a ‘ballpark’ estimate of energy needs. About a quarter reported using the tabulated EER values for someone in a given age/sex category.
- Taken together, these results suggest that some dietitians may not be aware that the EAR meets the needs of only half the population. They also suggest that the concept of a “safe range of intake” between the RDA/AI and the UL is not universally used in planning.

Assessing Group Diets: Many dietitians use mean intakes rather than intake distributions

- Among the 53 respondents who used DRIs to assess the adequacy of a group’s intake, only about a third (n=17) used the IOM approach and based their assessment on the prevalence of usual intakes that were below the EAR. In contrast, a quarter (n=13) assumed that the prevalence of inadequacy would be low if mean intake met or exceeded the EAR, and almost half (n=25) assumed that a mean intake at or above the RDA would reflect a low prevalence of inadequacy.

- Among the 38 respondents who used DRIs to assess whether a group's nutrient intake was excessive, more than half based their assessment on whether mean intake was above the UL (versus a low prevalence of intakes above the UL).
- Among the 33 respondents who used the AMDR to assess the macronutrient distribution of a group's diet, the majority used a group mean intake within the AMDR as reflecting an appropriate distribution (versus a low prevalence of intakes below or above the AMDR).
- Only 29 respondents used the EER to assess the adequacy of a group's energy intake. Among this group, three-quarters compared the group's mean intake to the tabulated EER for that sex/age group. Only 4 respondents determined the group's mean EER (based on the calculated EERs of the individuals in the group) and compared that value to the mean intake.
- It was not possible to discern from this survey whether dietitians relied on data about mean intakes (rather than intake distributions) because they were not familiar with the methods recommended in the IOM reports, or because they were not able to obtain adjusted intake distributions to use the recommended methods.

Planning Group Diets: The IOM concepts are not well understood

- Among the 50 respondents who reported using DRIs to plan for nutrient adequacy of a group's diet, only 5 (about 10%) indicated that they planned for a usual intake distribution with a low prevalence of intakes below the EAR. About a quarter reported planning for a mean intake that meets the EAR, and about two-thirds reported planning for a mean intake that meets the RDA.
- Among the 25 respondents who indicated that they used DRIs to plan for group intakes that are not excessive, only 4 planned for an intake distribution with a low prevalence of intakes above the UL. About two-thirds reported planning for a mean intake that was at or just above the RDA, and the remainder planned for a mean intake somewhere between the RDA and the UL.
- Only 19 respondents used the EER to plan diets for groups. Among this group, similar proportions used the tabulated EER values for the age/sex of group members, and the EER equations to calculate the mean group intake.
- These results suggest that most respondents who planned group diets did not understand the concepts underlying the IOM approach, as mean intakes at either the EAR or RDA would likely lead to an undesirably high prevalence of inadequacy.

3. What challenges do dietitians face when trying to use DRIs?

Barriers include applicability, knowledge transfer, technical difficulties, and communication

- Among respondents who worked with clients or patients with specific disease states, 65% reported that they were sometimes uncertain about whether the DRI values were appropriate for their patients or clients.
- Learning how to use the IOM methods for dietary assessment and planning is a challenge. Among the 323 respondents who had consulted information sources on using the DRIs, 64% were uncertain about how to use the methods. One hundred and fifty-eight respondents had not consulted information sources on using DRIs.

- Among those who used a nutrient analysis program, 77% experienced difficulty comparing the “units” of the DRIs to the units in their analysis program (e.g., Retinol Activity Equivalents versus Retinol Equivalents).
- Forty-four percent (44%) of respondents were uncertain about when it was appropriate to start using the DRIs instead of the former Canadian Recommended Nutrient Intakes, released by Health Canada in 1990.
- Almost 40% of respondents had experienced difficulty in deciding whether it was appropriate to use the methods for assessing/planning for individuals versus for a group.
- In their practice, most respondents worked with individuals in their practice rather than with groups. Despite this, almost a third of respondents stated that they had been prevented from applying the DRIs because they weren’t able to obtain an adjusted intake distribution for the groups they worked with.

4. What has facilitated dietitians’ use of DRIs?

Fifty-five percent (55%) of respondents indicated that something had facilitated their use of DRIs in dietary assessment and planning. Their responses are shown in Table 3 below.

Table 3. Facilitators of DRI use*

Facilitator	Percent citing (n)
Online course available through Dietitians of Canada	39.6 % (102)
IOM texts on Applications of DRIs	36.8% (94)
A university course	26.7% (68)
Journal articles	24.7% (63)
Continuing education sessions	24.7% (63)
Chapter on DRIs in a general or clinical nutrition text	17.6% (45)
Other	17.3% (44)

* 255 respondents indicated that something had facilitated their use of DRIs. Total adds up to more than 100% because more than one facilitator could be selected.

5. What do dietitians think about how the % Daily Value should relate to the DRIs?

Respondents were asked their opinions about how (or if) the % Daily Value (%DV) on the Nutrition Facts panel should relate to the DRIs for nutrients required in the diet (e.g. vitamins and minerals), nutrients that most people need to limit (e.g., sodium, saturated and *trans* fat), and energy-yielding macronutrients (e.g., carbohydrates and fat).

For vitamins and minerals, 50% of respondents thought that the %DV should be based on a population-weighted RDA. Twenty-two percent (22%) had no opinion on the issue, 16% thought it should have no consistent relationship to the DRIs, and simply reflect whether a food has more or less of a nutrient, 6% thought it should be based on a population-weighted EAR, and 5% made other suggestions.

For nutrients such as sodium and saturated fat, 53% of respondents thought the %DV should be based (when possible) on the UL. Twenty-two percent (22%) thought it should have no consistent relationship to the DRIs, and simply reflect whether a food has more or less of a nutrient, 16% had no opinion on the issue, and 9% made other suggestions.

For macronutrients such as carbohydrate and fat, 37% thought the DV should be based on the midpoint of the AMDR, 7% thought it should be based on the lower end of the AMDR, and 8% thought it should be based on the upper end of the AMDR. Twenty percent (20%) thought it should have no consistent relationship to the DRIs, 23% had no opinion, and 5% made other suggestions.

6. Other Comments

Seventy-five respondents made additional comments on the DRIs in response to an open-ended question. These comments related to a broad array of topics, including how DRIs are used (or not used) in practice; the need for readily accessible, inexpensive and simple information on DRIs; the need to revise/update DRIs for specific nutrients; and the relationship of the DRIs to the %DV. Selected comments on each of these topics are shown below:

How various individuals have used (or not used) the DRIs in their practice

- *“I have always used the Canada Food Guide as a guideline, because that is a great visual tool to teach healthy nutrition to participants of our program.”*
- *“DRIS are useful for me to make recommendations on intake, both dietary and with vitamin and mineral supplements, to physicians for their patients...”*
- *“I find trying to get people to just eat regularly, eat low fat, high fibre foods without getting into DRIs is the most challenging part of my job. Most clients do not understand anything about DRIs and for that reason I am not going to pay for an online course or use my own time to learn how to use the DRIs based on nutrient analysis. Most clients cannot even keep a written food diary with the amounts of foods that they have eaten...so nutrient analysis is impossible.”*

The need for readily accessible, inexpensive and simple information on DRIs

- *“DRI information needs to be made more accessible to all practicing dietitians. There should be a link on the DC website containing useful, easy-to-use information about the application of DRIs, how to calculate them, how to use them, and how to apply them to different population needs...Not everyone can take the course or attend a conference to access the information.”*
- *“It should be simplified if dietitians are expected to use it.”*
- *“This process is getting too, too complicated...”*
- *“The biggest barrier for me is that I have to pay to learn about this. We are the nutrition experts, and some other entity made these new rules, but we are not given the information freely to promote the health of the nation, but have to pay for it. DC offered courses, but they are time consuming and pricey...”*
- *“If I need to use them, I probably need to attend a hands-on workshop about it.”*
- *“I find webcasts to be an effective, informative method of continuing education. I would appreciate a web cast on the application of DRIs in practice.”*

- *“Make this information readily available in bite-sized pieces. This is key information and should be integrated into our professional workshops, workplace inservice sessions, newsletters and journals in a practical fashion to show RD’s how to apply to everyday practice without the academic details and in depth basis for the recommendations – i.e., short, sweet, and very much to the point.”*
- *“Terminology is very confusing...”*
- *“I feel the onus has been placed on us to just pick them up and start trying to remember values that have changed or units that are different. More support is required to guide RDs to use the DRIs effectively in our practices.”*

The need to revise/update DRIs for specific nutrients

- *“Vitamin D needs to be readdressed”*
- *“Since nutrition is an every-changing science, what is published in a journal one week will be old news within a few months. For instance, new research on vitamin D shows that individuals are not getting enough vitamin D, yet the DRIs recommend an AI for individuals 1-50 years, as 200 IU/day. ...We can’t ignore the mounting research just to support the DRIs.”*
- *“My main concern is that the DRIs be kept up to date with what is new with the research – e.g., should the vitamin D recommendation increase with the new studies recently published? How often will the DRIs be revised?”*

The Daily Value

- *“The Nutrition Facts table information should be based on updated DRI information and not on recommendations from 1983. It’s hard to understand why it is taking so long to implement this change.”*
- *“In my practice I would estimate that 100% of the people that I work with do not know how to use the %DV and in all cases use it incorrectly. I tell them that it would make more sense if it was called % Daily ‘Recommended’ Value. So in your evaluation please keep in mind that the way it is right now is very confusing for people.”*
- *“I am concerned with the public interpretation using the %DV on the Nutrition Facts Panel. The general public and in fact many dietitians have no clue on what age/sex these are based on. For individuals needing to know the exact amount of a nutrient represented only by the %DV on the food label – e.g., Ca for pregnant women. This is a common complaint from my patients; they want to know what the number is for the %DV.”*

Conclusions

Most Canadian dietitians are familiar at some level with the DRIs and have used them in their practice in some capacity. Dietitians who work with individuals do not place primary emphasis on DRIs, preferring to use food-based recommendations and guidance systems or recommendations for individuals with specific health conditions. When DRIs are used for individual assessment or planning, they are generally used appropriately, although the quantitative methodology developed by the IOM for individual dietary assessment has not been adopted. Fewer survey respondents were involved with assessing or planning diets of groups,

and in this setting as well, DRIs were not frequently used. However, when they were used the applications were not appropriate in many cases (e.g., comparing mean intakes to DRIs, rather than assessing usual intake distributions).

It is clear that there is a need for straightforward and accessible communication about when and how to apply the DRIs in dietetic practice. There is also a need for increased access to software programs to obtain adjusted usual intake distributions. If these programs are to be used in practice, they must be user-friendly, easy to learn, and cost effective. Finally, dietitians also have a professional responsibility to develop expertise in this area, and ensure that they use the DRIs appropriately.

APPENDIX 1: E-MAIL MESSAGE REQUESTING PARTICIPATION

Dear Colleague,

RE: Your opinions on dietitians' experiences with the Dietary Reference Intakes

In preparation for the "next round" of Dietary Reference Intakes (DRIs), the Institute of Medicine of the National Academies of Science is holding a workshop in September on the process of developing DRIs. Dietitians of Canada has been asked to provide comments on the uses and purposes of the DRIs from the perspective of its members. To do this, we need information on YOUR experiences with the DRIs.

This brief survey was developed to assess dietitians' uses of the DRIs: Are they actually used in practice, and if so, how? What works and what doesn't work? What barriers are experienced in using them? What has been helpful?

We want to hear from everyone, whether or not you use the DRIs and whether your experiences are positive or negative. Your responses will be anonymous, so feel free to be completely candid -- the DRIs are a "work in progress" and input from dietitians is essential to making them practical tools for nutrition planning and assessment and as user friendly as possible.

This survey will be online from May 16 until May 25. It will take about 10-15 minutes to complete. To begin the survey please [click here](#).

Thank you for your interest and support.

Lynda Corby, MSc, Med, RD, FDC
Director Public Affairs
Dietitians of Canada

APPENDIX II: ONLINE SURVEY

This survey was designed to collect information about dietitians' uses of the Dietary Reference Intakes (DRIs), which include the Estimated Average Requirement (EAR), the Recommended Dietary Allowance (RDA), the Adequate Intake (AI), the Tolerable Upper Intake Level (UL), the Acceptable Macronutrient Distribution Range (AMDR) and the Estimated Energy Requirement (EER).

There are no "right or wrong" answers – we simply want to learn about whether and how you use the DRIs, and what has hindered or helped you.

Have you ever used the Dietary Reference Intakes in any way in your practice (e.g., planning or assessing intakes of individuals or groups)?

Yes (CONTINUE TO PART I BELOW)

No → Why not? Please select all that apply. (AFTER ANSWERING, SCROLL DOWN TO PART VI, QUESTION 34, NEAR THE END OF THE SURVEY)

I'm not involved in planning or assessing intakes of individuals or groups

I haven't had time to learn about how the DRIs apply to my practice

I don't see their applicability to my practice

Other reasons (Please specify in the box below)

PART I. This section of the survey relates to diets of INDIVIDUALS, meaning clients or patients you interact with in individual counseling sessions or in small group education sessions. As long as you are providing *individualized* assessment or advice, that is relevant here. Section IA is on assessing intakes of individuals, and Section IB is on planning intakes for individuals.

IA. INDIVIDUALS: Assessing Diets of Individuals

1. Do you assess diets of individuals in your practice?

No (SCROLL DOWN TO PART IB, QUESTION 8)

Yes (CONTINUE)

2. What method do you use *most frequently* to assess the diet of an individual patient or client? Choose only one answer.

Comparison of a typical day's intake, a diet recall or a food record to Canada's Food Guide

Comparison of a typical day's intake, a diet recall, or a food record to the DRIs after completing nutrient analysis

Comparison of a typical day's intake, diet recall, or food record to disease-specific recommendations (e.g., diabetes, heart disease, etc.)

Another method (Please specify in the box below)

3. Have you ever used the DRIs to assess the diet of an individual patient or client?

Yes (CONTINUE TO QUESTION 4)

No → Why not? Please select all that apply. (AFTER ANSWERING, SCROLL DOWN TO PART 1B, QUESTION 8)

I don't have access to a nutrient analysis program

I don't have time

I think other diet assessment methods provide better information

I'm not familiar with how to apply the DRIs in this regard

Other (Please specify in the box below)

4. Do you use the DRIs to assess the *nutrient adequacy* of an individual's diet (i.e., to assess whether they are getting enough of a nutrient)?

No

Yes → What do you do? Please select all that apply.

Assume their intake meets their needs if it is at or above the Estimated Average Requirement (EAR)

Assume their intake meets their needs if it is at or above the Recommended Daily Allowance (RDA) or Adequate Intake (AI)

Use the equations from the DRI volume on *Applications in Dietary Assessment* to compute the level of confidence that their intake meets their requirement or exceeds the AI

Another method using the DRIs (Please specify in the box below)

5. Do you use the DRIs to assess whether an individual's nutrient intake is *excessive*?

No

Yes → What do you do? Please select all that apply.

Assume their intake is excessive if it is above the Tolerable Upper Intake Level (UL)

Use the equations from the DRI volume on *Applications in Dietary Assessment* to compute the probability that intake is above the UL

Another method using the DRIs (Please specify in the box below)

6. Do you use the Acceptable Macronutrient Distribution Ranges (AMDRs) to assess the diet of individual patients or clients?

No

Yes → What do you do? Please select all that apply.

Assume their intake is appropriate if it falls within the AMDR

Use the equations from the DRI volume on *Applications in Dietary Assessment* to compute the probability that their intake is above the lower AMDR boundary and below the upper AMDR boundary

Another method using the AMDRs (Please specify in the box below)

7. Do you use the Estimated Energy Requirement (EER) to assess the adequacy of the energy intake of individual patients or clients?

No

Yes → What do you do? Please select all that apply.

Compare their energy intake to *tabulated EER* values for individuals in their age/sex category

Compare their energy intake to their *EER calculated using the EER equations*

Another method using the EER (Please specify in the box below)

IB. INDIVIDUALS: Planning Diets for Individuals

8. Do you plan diets for individuals in your practice?

No (SCROLL DOWN TO PART II, QUESTION 15)

Yes (CONTINUE)

9. What method do you use *most frequently* when planning the diet of an individual patient or client? Choose only one answer.

Recommendations for daily intake from Canada's Food Guide

Food intake recommendations for health conditions (e.g., diabetes, heart disease)

Recommendations based on the DRIs

Another method (Please specify in the box below)

10. Have you ever used the DRIs to plan the diet of an individual patient or client?

Yes (CONTINUE TO QUESTION 11)

No → Why not? Please select all that apply. (AFTER ANSWERING, SCROLL DOWN TO PART II, QUESTION 15)

I don't have access to a nutrient analysis program

I don't have time

I think other planning methods are more useful

I'm not familiar with how to apply the DRIs in this regard

Other (Please specify in the box below)

11. Do you use the DRIs to plan for the *nutrient adequacy* of an individual's diet (i.e., to ensure that they will get enough of a nutrient)?

No

Yes → What do you do? Please select all that apply.

Plan for an intake that meets or exceeds the Estimated Average Requirement (EAR)

Plan for an intake that meets but *does not exceed* the Recommended Daily Allowance (RDA) or Adequate Intake (AI)

Plan for an intake that *meets or exceeds* the Recommended Daily Allowance (RDA) or Adequate Intake (AI)

Another method using DRIs (Please specify in the box below)

12. Do you use the DRIs to plan intakes for individuals that are *not excessive*?

No

Yes → What do you do? Please select all that apply.

Plan for an intake that is at or just above the RDA (or AI)

Plan for an intake that is between the RDA (or AI) and the Tolerable Upper Intake Level (UL)

Recommend that intakes from supplements (if used) are below the UL

Another method using DRIs (Please specify in the box below)

13. Do you use the Acceptable Macronutrient Distribution Ranges (AMDRs) to plan the diet of individual patients or clients?

No

Yes → What do you do? Please select all that apply.

Plan for intakes that are within the AMDRs

Another method using the AMDRs (Please specify in the box below)

14. Do you use the Estimated Energy Requirement (EER) to plan for energy intakes of individual patients or clients?

No

Yes → What do you do? Please select all that apply.

Use the *tabulated EER* values for someone in the appropriate age/sex group, and plan the diet accordingly

- Use the *EER equations* to calculate what the individual's energy intake should be, and plan the diet accordingly
- Use the *EER equations* and then subtract (or add) calories to plan for weight loss (or gain)
- Use the *EER equations* to calculate a "ballpark" estimate of energy needs
- Another method using the EER (Please specify in the box below)

PART II. This section of the survey relates to diets of GROUPS. By groups we mean fairly large groups of people for whom you don't tailor your assessment or advice. Examples could include hospital patients who aren't on special diets, students living in university residences, and prison inmates. Part IIA is on assessing intakes of groups, and Part IIB is on planning intakes for groups.

IIA. GROUPS: Assessing Diets of Groups

15. Do you assess diets of groups in your practice?

- No (SCROLL DOWN TO PART IIB, QUESTION 22)
- Yes (CONTINUE)

16. What method do you use *most frequently* when assessing the diet of a group? Choose only one answer.

- Compare the group's intake to the recommendations for daily intake from Canada's Food Guide
- Compare the group's intake to recommendations for specific health conditions (e.g., diabetes, heart disease, etc.)
- Compare the group's intake to the DRIs
- Another method (Please specify in the box below)

17. Have you ever used the DRIs to assess the diet of a group?

Yes (CONTINUE TO QUESTION 18)

No → Why not? Please select all that apply (AFTER ANSWERING, SCROLL DOWN TO PART IIB, QUESTION 22)

I don't have time

I think other diet assessment methods provide better information

I'm not familiar with how to apply the DRIs in this regard

The groups I work with are too small to apply the DRI methods

I don't have access to a nutrient analysis program

I have access to only one recall or record for each person so cannot obtain an adjusted intake distribution

I don't have access to the computer program used to obtain an adjusted intake distribution

Other (Please specify in the box below)

18. Do you use the DRIs to assess the *nutrient adequacy* of a group (i.e., is the group getting enough of a nutrient)?

No

Yes → What do you do? Please select all that apply.

Assume the prevalence of inadequacy is low if mean intake meets or exceeds the Estimated Average Requirement (EAR)

Assume the prevalence of inadequacy is low if mean intake meets or exceeds the Recommended Daily Allowance (RDA)

Assume the prevalence of inadequacy is low if mean intake meets or exceeds the Adequate Intake (AI)

Obtain the usual (adjusted) intake distribution and assume the prevalence of inadequacy is low if the proportion below the EAR is low

Another method using the DRIs (Please specify in the box below)

19. Do you use the DRIs to assess whether a group's nutrient intake is *excessive*?

No

Yes → What do you do? Please select all that apply.

Assume that intake is excessive if the group's mean intake is above the Tolerable Upper Intake Level (UL)

Obtain the usual (adjusted) intake distribution and assume that intake is excessive if the proportion of the group with intakes above the UL is high

Another method using the DRIs (Please specify in the box below)

20. Do you use the Acceptable Macronutrient Distribution Ranges (AMDRs) to assess the diet of groups?

No

Yes → What do you do? Please select all that apply.

Assume their intake is appropriate if the group's mean intake falls within the AMDR

_____ Obtain the usual (adjusted) intake distribution and assume that intake is appropriate if the proportions of the group with intakes below or above the AMDR are low.

_____ Another method using the AMDRs (Please specify in the box below)

21. Do you use the Estimated Energy Requirement (EER) to assess the adequacy of the energy intake of groups?

_____ No

_____ Yes → What do you do? Please select all that apply.

_____ Compare the group's mean intake to the *tabulated EER* for that sex/age group

_____ Calculate the mean EER for individuals in the group using the *EER equations*, and compare it to the group's mean intake

_____ Another method using the EER (Please specify in the box below)

IIB. GROUPS: Planning Diets for Groups

22. Do you plan diets for groups in your practice?

_____ No (SCROLL DOWN TO PART III, QUESTION 29)

_____ Yes (CONTINUE)

23. What method do you use *most frequently* when planning a diet for a group? Choose only one answer.

_____ Recommendations for daily intake from Canada's Food Guide

_____ Food intake recommendations for specific health conditions (e.g., diabetes, heart disease, etc.)

_____ Recommendations based on the DRIs

_____ Another method (Please specify in the box below)

24. Have you ever used the DRIs to plan the diet of a group?

Yes (CONTINUE TO QUESTION 25)

No → Why not? Please select all that apply. (AFTER ANSWERING, SCROLL DOWN TO PART III, QUESTION 29)

I don't have access to a nutrient analysis program

I don't have time

I don't have a baseline usual intake distribution for my group

I think other planning methods are more useful

I'm not familiar with how to apply the DRIs in this regard

Other (Please specify in the box below)

25. Do you use the DRIs to plan for the *nutrient adequacy* of a group's diet (i.e., to ensure that they will get enough of a nutrient)?

No

Yes → What do you do? Please select all that apply.

Plan for a mean intake that meets the Estimated Average Requirement (EAR)

Plan for a mean intake that meets the Recommended Daily Allowance (RDA)

Plan for a mean intake that meets the Adequate Intake (AI)

Plan for a usual intake distribution with a low prevalence of intakes below the EAR

Another method using the DRIs (Please specify in the box below)

26. Do you use the DRIs to plan diets for groups that are *not excessive*?

No

Yes → What do you do? Please select all that apply.

Plan for a mean intake that is at or just above the RDA (or AI)

Plan for a mean intake that is between the RDA (or AI) and the Tolerable Upper Intake Level (UL)

Plan for a usual intake distribution with a low prevalence of intakes above the UL

Another method using the DRIs (Please specify in the box below)

27. Do you use the Acceptable Macronutrient Distribution Ranges (AMDRs) to plan diets for groups?

No

Yes → What do you do? Please select all that apply.

Plan for mean intakes that are within the AMDRs

Plan for a usual intake distribution with a low prevalence of intakes below and above the AMDR

Another method using the AMDRs (Please specify in the box below)

28. Do you use the Estimated Energy Requirement (EER) to plan diets for groups?

No

Yes → What do you do? Please select all that apply.

Use the *tabulated EER* values to determine what the mean intake of the group should be.

Use the *EER equations* to calculate what the mean intake of the group should be

Use the *EER equations* to calculate a “ballpark” estimate of the group’s energy needs

Another method using the EER (Please specify in the box below)

PART III. This section of the survey assesses BARRIERS and FACILITATORS that you may have experienced when trying to using the DRIs.

29. In using (or trying to use) the DRIs in assessing or planning diets for individuals or groups, please indicate whether or not you experienced any of the following barriers.

a. Were you ever uncertain about whether the DRI values were appropriate for your patients or clients with a specific disease state?

Yes

No

Not applicable – I don’t work with patients or clients with specific disease states

b. Were you ever uncertain about how to use the methods outlined in the DRI texts on *Applications in Dietary Assessment* or *Application in Dietary Planning*, or in other information sources on using DRIs?

Yes

No

Not applicable – I haven’t consulted the DRI texts on Assessment or Planning, or other information sources on using DRIs

c. Did you ever have difficulty comparing the “units” of the DRIs (e.g., µg Retinol Activity Equivalents, ...) to the “units” in your nutrient analysis program?

Yes

No

Not applicable – I don’t use a nutrient analysis program

d. When the DRIs were first released, were you uncertain about when it was appropriate to start using them, versus the 1990 Canadian Recommended Nutrient Intakes (RNIs)?

Yes
 No

e. Were you ever prevented from applying methods to use DRIs because you weren't able to determine the adjusted intake distribution for the groups you work with?

Yes
 No

f. Was it ever difficult to decide whether to use the methods for assessing/planning for individuals versus for a group?

Yes
 No

g. Please use the box below to provide further comments on any of the above, or to describe any other barriers you faced when trying to use the DRIs in your practice.

30. Did anything *facilitate* your use of DRIs in assessing or planning diets for individuals or groups?

No
 Yes → Please select all that apply.

- A university course
- Journal articles
- The DRI texts on *Applications in Dietary Assessment* or *Applications in Dietary Planning*
- Continuing education sessions
- A chapter on DRIs in a general or clinical nutrition textbook
- The on-line course on DRIs available through www.dieteticsatwork.com
- Other (Please specify in the box below)

PART IV. Daily Values.

This section relates to the “% Daily Value” (%DV) that expresses information on the Nutrition Facts panel. DVs exist for nutrients that some people:

- may not get enough of (e.g., fibre, iron, calcium, vitamin A)
- may get too much of (e.g., sodium, saturated and *trans* fat), and
- may get too much of or not enough of (e.g., fat and carbohydrate)

Discussions are underway about whether or how the DVs should be based on the DRIs.

31. In my opinion, the %DVs for *vitamins and minerals* (e.g. calcium, iron, vitamin C, vitamin A) should (please select only one answer):

_____ have no consistent relationship to the DRIs, and simply reflect whether a food has more or less of a nutrient (e.g., a food with 25% of the DV for vitamin C contains more than a food with 10% of the DV).

_____ be based on population-weighted RDAs, and thus represent the amount the food contains relative to that needed to meet the needs of almost all individuals (e.g., a food with 25% of the DV for vitamin C provides a quarter of the amount that meets almost everyone’s needs)

_____ be based on population-weighted EARs, and thus represent the amount the food contains relative to that needed to meet the needs of 50% of individuals (e.g., a food providing 25% of the DV for vitamin C provides a quarter of the amount that meets the needs of half the population).

_____ I have no opinion on this issue

_____ represent something else (Please specify in the box below)

32. In my opinion, the %DVs for *sodium, saturated fat and trans fat* should (please select only one answer):

_____ have no consistent relationship to DRIs, and simply reflect whether a food has more or less of a nutrient (e.g., a food with 25% of the DV for sodium has more sodium than a food with 10% of the DV)

_____ be based (when possible) on the UL, and thus represent the amount the food contains relative to the maximum amount considered to be consistent with good health (e.g., a food with 25% of the DV for sodium has a quarter of the maximum amount that should be consumed in a day)

_____ I have no opinion on this issue

_____ represent something else (Please specify in the box below)

33. In my opinion, the %DVs for carbohydrate and fat should (please select only one answer):

- have no consistent relationship to DRIs, and simply reflect whether a food has more or less of a nutrient (e.g., a food with 25% of the DV for carbohydrate has more than a food with 10% of the DV)
- be based on the *lower end of the AMDR*, and thus represent the amount the food contains relative to the lowest amount considered to be consistent with good health
- be based on the *midpoint of the AMDR*, and thus represent the amount the food contains relative to the average amount considered to be considered with good health
- be based on the *upper end of the AMDR*, and thus represent the amount the food contains relative to the highest amount considered to be consistent with good health
- I have no opinion on this issue
- represent something else (Please specify in the box below)

PART V. Please use the box below to add any other comments you have about the use of DRIs by dietitians, or to make suggestions about how barriers to their use could be decreased. If you have no comments, go to PART VI.

PART VI. This section of the questionnaire asks for information about you.

34. What is the highest degree you have completed?

- Bachelor's degree
- Master's degree
- PhD degree

35. When did you obtain your highest degree?

- Less than 5 years ago
- 5-9 years ago
- 10-19 years ago
- 20-29 years ago
- 30 or more years ago

35. In what settings do you practice? Please select all that apply.

- Clinical (Acute, Long Term Care, Residential Care)
- Administrative, (i.e. Sole Charge/Manager/Supervisor/Director)
- Community Health (Primary Healthcare, CPNP/Well Babies, school nutrition)
- Public Health (Population health promotion)
- Education, Research, Teaching
- Business & Industry
- Sales, Marketing, Retail
- Other (please specify in the box below)

36. The DRI online modules available at www.dieteticsatwork.com helped me to understand the DRIs and how to apply them in practice.

- Not applicable (I haven't taken any modules)
- Agree
- Neutral
- Disagree

Thank you very much for your time and opinions. To submit the survey, please click on the button below.

SUBMIT