



*The Global Resource
for Nutrition Practice*

PEN: Practice-based Evidence in Nutrition®

PEN® Student Assignment Guide

May 2015

Table of Contents

1.1	What is PEN®?	3
1.2	Purpose of this Guide and Overview of Assignment Process	3
1.3	What is a Knowledge Pathway? – Definition and Scope	4
2.0	Assignments	6
2.1	Assignment A – Evaluate Third Party Tools and Resources	6
2.1.1	<i>Evaluating Third Party Tools and Resources</i>	7
2.1.3	<i>Completing Assignment</i>	7
2.2	Assignment B - Develop or Update a PEN® Client Handout	8
2.2.1	<i>Health Literacy - what it is and why it is important</i>	9
2.2.2	<i>Checks for Clear Writing</i>	9
2.2.3	<i>Clear Writing Tips</i>	10
2.2.4	<i>Process for Writing Client Handouts</i>	10
2.3	Assignment C – Write up “News-making Evidence” for PEN® Home Page	13
2.3.1	<i>Overview of the Issue (will more often be for Article Analysis)</i>	14
2.3.3	<i>Conclusion - what should we be recommending to our clients?</i>	15
2.3.4	<i>Link to any PEN® relevant PEN® Content</i>	16
2.3.5	<i>Write content for Social Media</i>	16
2.4	Assignment D – Synthesize the Evidence to Answer Practice Questions	17
2.4.1	<i>Criteria for Inclusion of Materials in a Knowledge Pathway</i>	18
2.4.2	<i>Searching the Literature</i>	18
2.4.3	<i>Practice Categories</i>	18
2.4.4	<i>Question Sub-Categories</i>	19
2.4.5	<i>Key Practice Points (KPPs)</i>	19
2.4.6	<i>Evidence</i>	21
2.4.7	<i>Grading the Evidence</i>	23
2.4.8	<i>Comments</i>	24
2.4.9	<i>Rationale</i>	24
2.4.10	<i>Writing a Background</i>	24
2.4.11	<i>Writing a Toolkit</i>	25
2.4.12	<i>Evidence Summary</i>	25
2.4.13	<i>Related Knowledge Pathways</i>	25
2.4.14	<i>Other links</i>	25
2.4.15	<i>Glossary</i>	25
2.4.16	<i>Social Media Posts</i>	25
2.4.17	<i>Review Process of PEN® Content</i>	26
2.4.18	<i>Editing</i>	26
2.4.19	<i>Specific to revising a practice question or Knowledge Pathways</i>	26
2.5	Assignment E – Applied Master’s Thesis / Project	28
Appendices		31
Appendix 1	Intellectual Property (IP) & Declarations of Affiliation (DAI) and Interests Waivers	32
Appendix 2	Integrated Competencies According to Assignments	38
Appendix 3	PEN® Client Handout Template	42
Appendix 4	Handout Feedback - Sample Form	45
Appendix 5	News-making Evidence Templates	46

Forward

1.1 What is PEN®?

Practice-based Evidence in Nutrition® [PEN] is an evidence-based decision support service developed by Dietitians of Canada (DC) and launched in the fall of 2005. Thought leaders from the dietetic profession, knowledge translation and evidence-based decision-making and technology were consulted and engaged in the conceptualization, design and implementation of PEN. Review the impressive list of contributors at <http://www.pennutrition.com/contributors.aspx>.

Designed to support busy dietitians and other health professionals to keep pace with the vast amount of food and nutrition research available, PEN® enables them to be knowledge managers through ready online access to trusted and credible practice guidance based on questions arising in everyday nutrition practice.

Recognized authorities on each topic addressed in the PEN® system, identify the relevant literature from filtered and original sources and critically appraise, grade and synthesize that literature into key practice points which answer the practice questions. Additionally, client resources and other tools that are congruent with the evidence are included in PEN® to support practice, along with backgrounds, evidence summaries and toolkits.

The PEN® database is dynamic, constantly being updated in response to new practice questions submitted by users and new evidence that directs a change in current practice. The PEN® service is available as an individual or group license or through a site license for larger groups. A customized application has also been designed to support dial-a-dietitian contact centres (CC-PEN®). PEN® currently serves as the knowledge repository for three provincial dietitian contact centres (British Columbia, Manitoba and Ontario; each providing support to PEN® through contractual collaborative agreements). The PEN service is now governed by a collaborative partnership comprised of the British Dietetic Association, the Dietitians Association of Australia and Dietitians of Canada. Other national dietetic associations have joined as partners including Dietitians New Zealand, the Irish Nutrition and Dietetic Institute and The Association for Dietetics in South Africa.

1.2 Purpose of this Guide and Overview of Assignment Process

The PEN® team has worked with many students since its launch in 2005. Dietetic and nutrition undergraduate and graduate students, dietetic interns/stagiaires and practicum students have used various elements of the “PEN®- approach”. Our goal is to partner with dietetic educators to provide meaningful student learning experiences which build critical skills they will use in their future practice and which can enhance PEN® content. **It is helpful for students to have access to PEN® prior to working on an assignment.** They can sign up for a free two week trial if they don't have current access: http://www.pennutrition.com/subscribe_dc.aspx?c=1 and we can arrange to extend that for a period of time while they are completing their assignment.

Expected outcomes:

- formative learning in the areas of health literacy, evidence-based practice cycle, nutrition care or health promotion topics and research concepts including critical appraisal and epidemiology relevant to dietetic practice
- skill development in the areas of project management, creating systematic literature searches using PICO question format, critical appraisal of research, synthesis of evidence, writing for consumers and social media
- achievement of enabling learning objectives and practice competencies
- contribution to practical guidance and tools for the international dietetics community.

Based on these experiences and incorporating the new [Integrated Competencies for Dietetic Education and Practice](#) (ICDEP), PEN® has prepared this guide for educators and students called: **PEN® Student**

Assignment Guide. This guide contains details of the evidence-based approach, assignment guidelines and examples of the formative learnings, the enabling outcomes, performance indicators and the potential competencies to be achieved along with PEN[®] tools and resources (TRs) to use in developing various PEN[®] knowledge objects. **Purple text boxes** are action items for university instructors and internship coordinators and **yellow text boxes** are action items for students.

Depending on the quality of the completed assignments the content developed will either be added to the PEN[®] database or be used as a base for further development of PEN[®] content.

University instructors and internship coordinators are asked to contact the PEN[®] team as early as possible to indicate their interest in having students complete one of the PEN[®] assignments and to get guidance on assignment topics.

Updating PEN[®] Content - Practice Questions, Backgrounds or News-making Evidence:

PEN[®] Content Manager

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Updating or creating PEN[®] Tools and Resources and Client Handouts:

PEN[®] Resource Managers

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***Contact us early.** PEN[®] projects will be confirmed on a first-come,

For purposes of this guide, unless specified, the term student will mean: dietetic/nutrition undergraduate and graduate students, dietetic interns/stagiaires, and practicum students

1.3 What is a Knowledge Pathway? - Definition and Scope

The PEN[®] service was designed using a knowledge pathway (KP) approach, each KP being related to a topic from the broad scope of the dietetics field (clinical, consulting, education, food service management, community nutrition, professional issues etc). Academics, practitioners and students develop content for KPs according to a prioritized list and time line.

A KP consists of succinct guidance statements and practice recommendations synthesized from the literature, supported by more detailed levels of carefully selected references, practice guidelines and position papers. It provides the flexibility to enable the busy practitioner to quickly find the short

answer to a specific question, as well as to “drill down” to review the evidence in more detail, when time permits.

A KP contains both professional and client appropriate Tools and Resources (TR) e.g. links to electronic publications, databases, tables, calculators, algorithms, as well as client education tools and PEN® client handouts when applicable. Each KP grows in breadth and depth over time as evidence that informs practice changes. In addition, new KPs can be easily added as the need and interest for those topics arises.

Students unfamiliar with PEN® should spend time browsing the site. Start from the [PEN® home page](http://www.pennutrition.com) at: www.pennutrition.com. You can take a guided self-study tour (PEN® Orientation Tutorial) and view the PEN® webinar: Producing PEN® Pros: 10 Tips and tools to power your practice found at: <http://www.pennutrition.com/pencommunity>. Students might also find it helpful to watch a short PEN® Prezi: <http://www.pennutrition.com/pencommunity>

Note: For the Prezi - click on the “play” button (triangle) located on the black bar in the lower left-hand side of the Prezi. Select rectangle on the lower right-hand side of the Prezi for full screen view and select “play” button (triangle) so the slides will self-advance. [If you select play, and then full-screen mode, the slides will not self-advance].

All of the assignments in this guide are developing content within a KP, including revising or developing a PEN® client handout, or for the PEN® database. It is important for students to be familiar with the evidence-based practice cycle before beginning any of the assignments.

Before starting their assignment students are asked to read from the PEN® Writers Guide:
<http://www.pennutrition.com/resources/PEN%20Writers%20Guide%20New%20March%2028%202015.pdf>

- Using the Evidence-based Practice Cycle Section 3
- Plagiarism Guidelines Appendix 10

There are other tools that are linked or can be found in the Appendices to assist the student in selecting and synthesizing the information for the KP and to help them make appropriate evidence-based decisions. These tools will be noted in the specific assignments.

University instructors and internship coordinators must have student's sign [both Intellectual Property \(IP\) & Declarations of Affiliation \(DAI\) and Interests Waivers \(Appendix 1\)](#) once the details of the assignment are finalized. Signed waivers are returned to the person identified in the Assignment Tables.

2.0 Assignments

2.1 Assignment A - Evaluate Third Party Tools and Resources

Evaluate tools and resources (TRs) from sources external to PEN® (third party) for addition to Knowledge Pathways (KP). This requires reading suggested information on health literacy and completion of the PEN® Guidelines for Third Party Tools and Resources Approval

http://www.pennutrition.com/resources/PEN_resources/PEN%20Writer%20Training%20Modules/PENGuidelinesforToolResourceApprovalNov2013.pdf

Tools and resources can include written materials, websites and videos for clients and health professionals.

This could be a university course assignment or an internship program assignment. See Appendix 2 for the practice competency areas where this assignment can contribute to the student's formative learning and evaluation. In some areas, assignments provide opportunities for achievement of enabling learning outcomes contributing to the student's summative assessment of the practice competence.

Students should read the [PEN® Health Literacy KP](http://www.pennutrition.com/KnowledgePathway.aspx?kpid=19266):
<http://www.pennutrition.com/KnowledgePathway.aspx?kpid=19266>
 and refer to the two articles in PEN eNews on Health Literacy in Your Practice:
 Part I - <http://www.pennutrition.com/pdf/NewsletterSept2011.pdf>
 Part II - <http://www.pennutrition.com/enews.aspx?id=4>

Role of University/Internship	Role of PEN® Team	Role of Student/Intern
<ol style="list-style-type: none"> 1. Identify students to work on topics. 2. Contact PEN® Resource Managers for suggested TRs to evaluate. 3. Assign student the TRs to be evaluated. 4. “Distribute” PEN® Student Assignment Guide A to students. 5. Ensure students sign the IP & DAI Waivers and return them to: PEN® Resource Managers 6. Review and assess the work and mentor assignment completion as needed. 	<ol style="list-style-type: none"> 1. Provide guidelines and evaluation templates for TRs - see PEN® Student Assignment Guide A for assignment guidelines. 2. Provide priority topics / resources to evaluate: written resources e.g. client / consumer handouts, videos and websites. 3. Act as a contact for the student / professor / internship director. Based on the needs of PEN®, determine the best approach to assignments i.e. topic, pairing or grouping of students, assignment scope. 4. Provide general feedback on students work to university instructor / internship coordinator. 	<ol style="list-style-type: none"> 1. Evaluate assigned TR(s) using the PEN® Student Assignment Guide A and recommended readings. Complete the Guidelines for Third Party TR Approval 2. Be respectful of commitment dates and communicate if changes are needed. 3. TRs to be assessed against and must agree with the related evidence in PEN®. 4. Sign IP & DAI Waivers and return to university course professor or internship coordinator.

2.1.1 Evaluating Third Party Tools and Resources

There are a number of different kinds of third party resources that can be assigned for review (see below). Tools and Resources fit under a number of different categories. Examples include fact sheets, quizzes and interactive tools, practice guidelines, reports, newsletters, websites, videos, etc. PEN[®] is looking to include the very best tools on a particular subject, not an exhaustive collection of every client or professional tool on a particular subject. Before including a TR, reviewing it against the [PEN[®] Guidelines for Third Party TR Approval](#) helps to determine the appropriateness for PEN[®].

Third party TRs are located in three main areas in PEN[®]:

- Related TRs section attached to each KP. These resources can be for clients or professionals.
- KP Background - TRs specific to health professionals found under “Key Resources for Professionals”
- KP Toolkit or Practice Guidance Summary - TRs specific for clients/patients found under “Nutrition Education Materials”

2.1.2. Topics for this Assignment

PEN[®] Resource Managers will provide a topic area and/or list of TR topics that need to be developed or reviewed to interested university instructors or internship coordinators.

2.1.3 Completing Assignment

Evaluate the TR by completing the [Guidelines for Third Party TR Approval](#).

Note: For consumer information sheets, in addition to being consistent with the evidence described in the KP, the consumer TRs should not promote any specific products or include corporate logos or promotion. However, sometimes this can be helpful information for consumers and the criteria for brand inclusion should be followed as outlined in the [PEN[®] Guidelines for Third Party TR Approval](#). Ideally, the consumer fact sheets should be visually appealing, plain language should be used and the reading level should be between grade 5 and 9. See PEN[®] [Nutrition Education Print Resource Development KP](#) available at: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=366> for more details.

Make a Conclusion

Do you recommend this resource be added/maintained on PEN[®]? Yes No (If no, please provide reasons)

The student(s) may be able to see the final product as posted on PEN[®], understanding that sometimes situations occur where materials cannot be posted such as broken links, change in evidence, copyright not obtained etc. Also, products may go through other reviews and edits so may look different from the submitted assignment.

If through this assignment the student finds the TR meets the approval criteria, please provide the following information:

Title: Tool name

Description: (include the publisher name in the description and if the resource is for a professional, consumer/patient or both.

For example: This Health Canada fact sheet provides information for consumers on calcium requirements)

URL: If a book, provide the ISBN

Developer/Publisher:

Country of Origin - note if specific to a country (e.g. Canada, United Kingdom, Australia, New Zealand) please specify or if applicable to an international population.

Other languages - If there are other languages please include links to these as well.

2.2 Assignment B - Develop or Update a PEN[®] Client Handout

Develop or update a PEN[®] Client Handout using the evidence in PEN[®] and clear writing principles as described below. The handout developed or updated will be added to its related Knowledge Pathway (KP) and to the appropriate [PEN[®] Handout collection](#) in PEN[®], understanding that handouts may look different from the submitted assignment as they may go through further reviews by other professionals and clients.

This could be a university course assignment or an internship program assignment. See Appendix 2 for the practice competency areas where this assignment can contribute to the student’s formative learning and evaluation. In some areas, assignments provide opportunities for achievement of enabling learning outcomes contributing to the student’s summative assessment of the practice competence.

Before giving students this project, university instructors and internship coordinators interested in having students complete this project should contact the PEN[®] Resource Managers: jane.bellman@dietitians.ca or kerri.staden@dietitians.ca. They will provide a list of the PEN[®] client handouts needing to be developed or revised.

Role of University/Internship	Role of PEN [®] Team	Role of Student/Intern
<ol style="list-style-type: none"> 1. Identify students to work on topics; this might be a class assignment 2. Contact PEN[®] Resource Managers for handout topics for development. 3. Assign student the client handout topic to develop. 4. “Distribute” PEN[®] Student Assignment Guide B to students / interns. 5. Get students to sign the IP & DAI Waivers and return them to: PEN[®] Resource Managers. 6. Review and assess the work and mentor assignment completion as needed. 	<ol style="list-style-type: none"> 1. Provide guidelines for developing or updating a PEN[®] Client Handout, taking into consideration health literacy information - see PEN[®] Student Assignment Guide B for guidelines and assignment details. 2. Provide priority PEN[®] Client Handout topics to develop or update. 3. Act as a contact for the student / professor / internship director. Based on the needs of PEN[®], determine the best approach to assignments i.e. topic, pairing or grouping of students, assignment scope. 4. Provide general feedback on students work to university instructor / internship coordinator. 	<ol style="list-style-type: none"> 1. Use PEN[®] guidelines and checklists in PEN[®] Student Assignment Guide B to develop or updated assigned PEN[®] Client Handout topic. 2. Read PEN[®] KP on Health Literacy and articles in PEN eNews and Nutrition Education Resource Development KP. 3. Be respectful of commitment dates and communicate if changes are needed. 4. Handout content must be assessed against and agree with the related evidence in PEN[®]. 5. Sign IP & DAI Waivers and return to university course professor or internship coordinator.

Registered Dietitians often provide written information/handouts to their clients. Written handouts supplement verbal or auditory delivery of information, although there may be some cases where the handout is the sole source of information. Handouts help to empower clients to be active participants in their health care^{1,2}. They also:

¹ Sudore R, Schillinger D. Interventions to improve care for patients with limited health literacy. J Clin Outcomes Manag . 2009;16(1):20-29. Abstract available from: <http://www.ncbi.nlm.nih.gov/pubmed/20046798>

- reinforce verbal learning
- increase awareness or knowledge
- develop or enhance skills
- change a health behaviour
- decrease anxiety.

PEN[®] provides a number of client handouts, in a variety of languages, that dietitians can use with their clients. Students can develop or revise these evidence-based client materials for PEN[®]. Through this process students will specifically gain:

- professional development in the area of health literacy³,
- experience in tool development that will help clients overcome health literacy barriers, including plain language and design, to make healthy food choice decisions⁴,
- achieve valuable communication, professional and education dietetic competencies - see **Appendix 2** for proposed competencies to be achieved by this assignment.

2.2.1 Health Literacy - what it is and why it is important

The biggest strides are made in overcoming health literacy barriers when health professionals are adequately educated on health literacy and when organizations incorporate broad system clear language strategies.

Students should read the PEN[®] Health Literacy KP:
<http://www.pennutrition.com/KnowledgePathway.aspx?kpid=19266>
 and refer to the two articles in PEN eNews on Health Literacy in Your Practice:
 Part I - <http://www.pennutrition.com/pdf/NewsletterSept2011.pdf>
 Part II - <http://www.pennutrition.com/enews.aspx?id=4>

2.2.2 Checks for Clear Writing⁵

Written handouts must **target the clients** who will use/read them. The information should:

- only include what the client needs to know, tips and ideas for behaviour change or calls to action
- address questions a client/user/caller might ask
- be culturally appropriate and reflects the country's diversity
- be written in clear language
- provide contact information where follow-up questions can be answered
- be consistent with PEN[®] /Portal evidence and resources
 - content found within PEN[®]/Portal approved resources
 - evidence interpreted correctly and communicated accurately

Handouts help clients learn about how to prevent and/or manage their nutrition condition and provide healthy eating advice. They are not books or resources that cover the entire condition and all medical and social aspects. Important information to include is:

² Johnson A, Sandford J, Tyndall J. Written and verbal information versus verbal information only for patients being discharged from acute hospital settings to home. Cochrane Database Syst Rev. 2003;(4):CD003716. Abstract available from: <http://www.ncbi.nlm.nih.gov/pubmed/14583990>

³ Rootman, I. & Gordon-El-Bihbety, D. A vision for a health literate Canada: Report on the Expert Panel on Health Literacy. Ottawa, ON: Canadian Public Health Association; 2008. www.cpha.ca/en/portals/h-l/panel.aspx

⁴ Boehl, T. Linguistic issues and literacy barriers in Nutrition. Journal of the American Dietetic Association. 2007;107(3):380- 83.

⁵ Adapted from PEN Client Handout Writers Guide, 2012

- an overview of the issue or condition as it relates to nutrition
- specifics or scope of the diet
- food lists - foods allowed and those to avoid.

Students should read the PEN® [Nutrition Education Resource Development KP](http://www.pennutrition.com/KnowledgePathway.aspx?kpid=366) at <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=366> before starting this assignment.

Developing or updating PEN® client handouts using the evidence in PEN® requires the student to understand clear writing for consumers.

2.2.3 Clear Writing Tips

- Organization:
 - use headings/titles and subtitles that are clear and flow from one idea to the next
 - provide an appropriate amount of white space (leave space in between paragraphs, space lines and paragraphs consistently)
 - use bullets to highlight key messages and to avoid large blocks of print.
- Flow:
 - present ideas in a sequence that makes sense to the reader
 - content from simple to complex
 - follow a logical order - positive to negative, general to specific and most to least important.
- Structure
 - paragraphs:
 - limit paragraph length to three or fewer sentences
 - convey one important topic or concept per paragraph
 - start each paragraph with a strong sentence that emphasizes the topic
 - have short sentences (about 10 words per sentence). Use heading to break up main points
 - use concrete examples to clarify ideas
 - avoid extra words, such as “please” and avoid using jargon or slang
 - for print, use highlighting techniques such as bold, italics and underlining to emphasize important aspects of the information, but do not overuse these. Avoid using all capital letters
 - add illustrations to give context. These should not interrupt normal reading patterns. Any captions provided should be easy to read
 - use urls that are directly related to the subject, are credible and preferably national.
- Writing Style:
 - positive conversational tone
 - speak to the reader; use 'you' and in an active voice
 - use words rather than symbols ('chicken and fish' rather than 'chicken/fish')
 - use the present tense
 - use familiar, everyday words with three or fewer syllables unless unavoidable
 - use consistent terms throughout ('doctor' or 'physician' not both)

2.2.4 Process for Writing Client Handouts

Start with determining and researching the topic area, writing an outline if a new handout and checking in with the PEN[®] Resource Managers, and then the content followed by formatting into the client handout template (**Appendix 3**).

A. Topic Area

- PEN[®] Resource Managers will provide a list of handouts topics that need to be developed or revised to interested university instructors or internship coordinators. Refer to Contact Information for PEN[®] Resource Managers above.

B. Content

- Base content within a client handout on the evidence within PEN[®].
- When handouts are developed or revised, provide references for key information in the handouts via inserting comments in the WORD document and attesting to where the information was located in PEN[®].
- Websites should not appear within the body of the document unless referring to a national organization, such as Health Canada's Canada Food Guide. Handouts are available both nationally and internationally and some provincial websites may not be acceptable to use in all situations.
- Content should be focused on need to know information that is relevant to readers.
- Clearly state all key messages/bottom line messages regarding the topic
- New words can be added to the [PEN[®] Glossary](#) as necessary

C. Format

The handout template (**Appendix 3**) provides the categories and format of a PEN[®] client handout. The last page of the template allows one to add a chart in landscape format. Handouts should be as short as possible, focusing on the need to know information related to nutrition care and healthy eating. In-depth topic areas may require more than one handout. This is determined in the outline phase and can be discussed with the PEN[®] Resource Managers.

The handout template (**Appendix 3**) should be used when drafting the handout, so that the style and titles from the handouts are applied. These are:

- **Introduction (although the term 'introduction' is not used in the template)**
 - Briefly covers the condition/subject matter. The introduction should be succinct and cover only relevant information for the client. It does not have the actual title of Introduction.
- **Steps You Can Take**
 - Provides dietary steps that the client needs to take to manage their condition. Include practical tips to achieve the goal.
- **Special Considerations (optional)**
 - Includes important nutritional information on the topic.
- **Additional Resources**

This list should only contain **key resources relevant to the topic**. This can include:

 - Other PEN[®] client handouts and Food Lists
 - Portal/provincial specific based websites or handouts
 - Canadian/national resources (i.e. Health Canada)
 - International resources are not ideal unless deemed essential

D. Layout, Design and Tone

- Font size: default within the handout template (**Appendix 3**)
- Reading level: as a guideline: grade 5-9
- Follow the principles of plain language/clear writing above. Use the Checklist for patient Education Material in ['Writing Health Information for Patients and Families'](#): page 106
- Illustrations can be imported and can only be included if they enhance the written description. Need to ensure illustrations copyright applies to outside Canada.

- Black font only
- Tone: Clear, concise and friendly
- Correct use of metric measurement equivalents and alcohol equivalent measures See [PEN[®] Writers Guide Appendix 12](#).

E. Time line for developing new or reviewing current handouts.

General timeframe for developing or revising a handout once student has the topic, noting at each step a check-in with the PEN[®] Resource Managers is recommended before proceeding to the next step:

- Student to research the topic area and other resources that exist on the topic - 2-3 weeks depending on concentrated time to do this during education
- Create a draft outline of fact sheet - 3 weeks, again depending on concentrated time to do this during education, noting references
- Using Handout Feedback - Sample Form (**Appendix 4**) obtain dietitian feedback - 2-3 weeks
- Using Handout Feedback - Sample Form (**Appendix 4**) obtain client feedback 2-3 weeks
- Update handout. If major revisions, obtain dietitian and possibly client feedback again
- A final version of the handout, along with the version with comments on references used to attest to the information in the handout can be sent to one of the PEN[®] Resource Managers (or this can be done through the Internship Coordinator). In addition, for handout updates or revisions, tracked changes should be sent to the PEN[®] Resource Manager.

F. Revisions and Updates

- Your handout will need to be reviewed by both practicing dietitians and clients with the nutrition condition. Information that has been developed from the client's perspective and is evidenced-based will provide the best resource. Ways to obtain client information includes a survey (**Appendix 4** for Sample Feedback Form), interview or through focus groups with clients to get their and possibly their family's feedback. The key questions to ask are:
 - Are the words easy to read?
 - Is the information clear?
 - Was the information helpful?
 - Does the material answer the client's questions?
 - Would they like more or less information?

The handout can be focus tested at various stages in the handout development, at the beginning to find out what key information is important to the dietitian and the client and after the draft handout is developed or revised.

G. Key Grammar Tips

Refer to separate Additional Style items, in PEN[®] Style Guide in the [PEN[®] Writers Guide Appendix 20](#), under **Key Grammar Tips** for information on: apostrophes, capitalization, use of e.g./i.e.; that/which; and who/whom, hyphens, lists, numbers, percentages, spelling and subscript(s).

H. Editorial Process (adapted from *PEN[®] Style Guide*)

Note that once your handout is developed and provided to PEN[®], it will be further reviewed by the PEN[®] Team and participating portals and may undergo further edits to conform to the PEN[®] style and space limitations. The PEN[®] Resource Managers/administers reserve the right to make editorial changes.

2.3 Assignment C - Write up “News-making Evidence” for PEN® Home Page

Writing a “News-making Evidence” piece for the PEN® Home Page requiring critical appraisal skills and writing for social media.

This could be a university course assignment or an internship program assignment. See Appendix 2 for the practice competency areas where this assignment can contribute to the student’s formative learning and evaluation. In some areas, assignments provide opportunities for achievement of enabling learning outcomes contributing to the student’s summative assessment of the practice competence.

University instructors and internship coordinators interested in having students complete this project should contact the PEN® Content Manager: beth.armour@dietitians.ca

Role of University/Internship	Role of PEN® Team	Role of Student/Intern
<ol style="list-style-type: none"> 1. Identify students to work on topics; this might be a course assignment. 2. Based on discussions with or suggestions from the PEN® Content Manager assign student the topic / article to be evaluated and developed for “News-making Evidence” section of PEN® 3. “Distribute” PEN® Student Assignment Guide C to students. 4. Get students to sign the IP & DAI Waivers and return them to: PEN® Content Manager. 5. Review and assess the work and mentor assignment completion as needed. 	<ol style="list-style-type: none"> 1. Provide guidelines for writing up a “News-making Evidence” submission - see PEN® Student Assignment Guide C for assignment guidelines and examples. 2. Provide or discuss priority topics / articles to evaluate. 3. Act as a resource for the student / professor / internship director. 4. Provide feedback on student’s work to university instructor / internship coordinator or directly to student. 	<ol style="list-style-type: none"> 1. Use PEN® guidelines and review examples in PEN® Student Assignment Guide to write up, in a timely manner, a posting for “News-making Evidence” section. 2. Draft a Twitter tweet, Facebook and LinkedIn posts to complement the “News-making Evidence” content. 3. Add to PEN® ‘Evidence Clip’ or Article Analysis template (Appendix 5) 4. Be respectful of commitment dates and communicate if changes are needed. 5. Sign IP & DAI Waivers and return to university course professor or internship coordinator.

“News-making Evidence” (NME) is a feature on the [PEN® home page](http://www.pennutrition.com/NewsMakingEvidence.aspx) <http://www.pennutrition.com/NewsMakingEvidence.aspx> and it is meant to highlight, interpret, and present the evidence to support or refute nutrition related stories or journal articles that have made the news. Some of the topics we have covered:

- **Article Analysis:** [Red Meat Consumption and Mortality](#)
- **Evidence Clip:** [Is ‘Cleansing’ Healthy?](#)
- **Other:** The Canadian Task Force on Preventive Health Care, Public Health Agency of Canada has released new guidelines for the prevention and management of childhood overweight and obesity. The guidelines focus on growth monitoring and behavioural interventions involving family members. Guidelines available from: <http://www.cmaj.ca/content/early/2015/03/30/cmaj.141285>. Podcast available from: <http://www.cmaj.ca/content/early/2015/03/30/cmaj.141285/suppl/DC2>.

2.3.1 Overview of the Issue (will more often be for Article Analysis)

Indicate where the issue has come up in the media - TV, newspaper, social media etc, why it has come up - was it a TV show tackling the issue, release of a new study etc., if applicable include a link to the PubMed article abstract which is at the center of the issue.

Example

“A recent media report claimed that one serving of red meat may lead to early death. This report was based on a study (<http://www.ncbi.nlm.nih.gov/pubmed/22412075>) on red meat consumption and mortality that was recently published in the Archives of Internal Medicine.

This cohort study included 27,698 men, assessed between 1986 and 2008, and 83,644 women, assessed between 1980 and 2008. The study authors concluded that beef consumption is associated with an increased risk of total, cardiovascular disease and cancer mortality and that the substitution of other healthy protein sources for red meat are associated with a lower mortality.

In a cohort study researchers are able to determine associations between various factors. However, the study design does not allow cause-effect relationships to be determined. So, while the media headline is that red meat intake causes early death, that is not an accurate interpretation of the literature published. A closer look at the research highlights other methodological issues, which may complicate a simple interpretation of the data. This study does have a number of strengths including a large size, long-term follow up, and collection of data on a number of influencing variables. But, the media report of this article does not correctly portray the study results and should not be used to guide or to influence practice.”

2.3.2 Complete an evidence analysis of the study - example:

Evidence Analysis to the Article: Red Meat Consumption and Mortality

Pan A, Sun Q, Bernstein AM, Schulze MB, Manson JE, Stampfer MJ et al. Red meat consumption and mortality: results from 2 prospective cohort studies. Arch Intern Med. 2012 Apr;172(7):555-63. Abstract available from: <http://www.ncbi.nlm.nih.gov/pubmed/22412075>

The study quoted in the headline is a cohort study, a kind of observational study where researchers are able to determine associations between various factors. However, the study design is not set up to be able to determine a cause effect relationship. So, while the media headline is that red meat intake causes early death, that is not an accurate interpretation of the literature published.

A closer look at the research highlights other methodological issues that may complicate a simple interpretation as was published in the various headlines.

The diet was assessed using a Food Frequency Questionnaire that had measurement errors (which the study authors acknowledge), which was changed over the course of the study. FFQs are troubled with recall bias - who can remember what they ate yesterday, let alone every 4 years? It does not appear that the FFQ assessed for different cuts of red meat of which there is a range of cuts varying in levels of fat and saturated fat. It also does not appear that food preparation methods were clearly assessed in the FFQ. This is important especially as it relates to methods like BBQing that are shown to increase the development of HCAs (Heterocyclic amines).

Association does not imply causation. The headline implies that the high consumption of red meat caused cancer or CVD mortality. Cohort studies are observational and are able to determine associations, but not causation. There may have been some underlying factor leading

to these findings. There are examples of studies where relationships observed in cohort studies did not result in a causal association when evaluated in a randomized controlled trial.

Our lifestyle and dietary intake is made up of many components. The study found that those people with the highest intake of red meat also tended to be less healthy as assessed by other measures. For example men and women with higher intakes of red meat were less likely to be physically active, were more likely to be current smokers, to drink alcohol, to have a higher body mass index, higher intake of total energy, lower intakes of whole grains, fruits and vegetables. While the investigators statistically controlled for these factors in their multi-variate analysis it does point out that other negative behaviours/characteristics were associated with meat intake (and then the latter was associated with the increased risk of earlier death) - so it speaks to the point that there are likely other confounders that could be the underlying cause besides meat (like stress or other lifestyle choices). The investigators could not control for everything that increases risk of early death in their statistical analysis.

Was the follow up period of 28 years adequate enough to detect differences in cancer and CVD outcomes based on exposure to red meat? With a large sample size, statistical power is large. The absolute numbers are still relatively low. This highlights the issue of statistical versus clinical significance.

The study population included health professionals - so the study has questionable generalizability.

Of course, we need to acknowledge that this study did have many strengths - such as its large size, long term follow up, collection of data on a number of influencing variables.

2.3.3 Conclusion - what should we be recommending to our clients?

(include other supportive information if relevant) - example:

Over the years, our consumption of meat has changed. Today, we are recommending smaller amounts of meat, more meat alternatives, more vegetables and fruits, and more whole grains, nuts and seeds.

Our national dietary guidance recommends having meat alternatives often, eating fish 2 servings/week, and to select lean meats and alternatives, prepared with little or no fat.

We should limit our red meat consumption to 500 grams per week and avoid processed meat. Instead of red meat, choose other foods from Meat and Alternatives group: chicken, fish, beans, lentils, eggs, nuts, seeds, nut butters.

We hope this analysis has helped you with your own analysis of this study. Thank you for your interest in evidence-based dietetic practice.

Students must keep in mind that PEN® is an international tool and when referring to dietary guidelines, food guides, labeling issues, etc., to include those from the UK, Australia, New Zealand and South Africa. [See International Guideline Collections](http://www.pennutrition.com/international_guidelines_collection.aspx) http://www.pennutrition.com/international_guidelines_collection.aspx on the PEN® home page.

2.3.4 Link to any PEN[®] relevant PEN[®] Content

See NME home page <http://www.pennutrition.com/NewsMakingEvidence.aspx> for other examples.

See PEN[®] resource: What is a Food Guide Serving: Meat and Alternatives:
<http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3127&trid=8556&trcatid=9>

2.3.5 Write content for Social Media

Provide a short, succinct teaser about the NME content you have written that can be used for a tweet (Twitter) and a post on the PEN[®] Facebook wall. Here are examples:

Twitter tweet (maximum 140 characters):

Friends asking you about the recent study on Red Meat? Read PEN[®]'s evidence analysis on article that created the buzz about red meat...

OR

Chitosan has questionable significance in weight loss among overweight or obese adults. For more info, see:

<http://www.pennutrition.com/index.aspx?ReturnURL=%2fKnowledgePathway.aspx%3fkpid%3d15325%26pqcatid%3d146%26pqid%3d18733>

Facebook / LinkedIn post (no maximum length but want something informative but short and easy to read):

PEN: Practice-based Evidence in Nutrition[®] I have just posted a note that provides an evidence analysis of the study you highlighted. Read our note at:

<http://www.facebook.com/PENNutrition?sk=notes>

OR another Facebook post example:

Are chitosan supplements safe for weight loss among overweight or obese adults?

While chitosan supplements appear to be well tolerated in most people, the potential does exist for interference with warfarin, for shellfish allergy and, as with most ocean-derived products, for heavy metal contamination. Chitosan is often derived from shrimp, lobster and crab exoskeleton.

For more information, see:

<http://www.pennutrition.com/KnowledgePathway.aspx?kpid=15325&pqcatid=146&pqid=18733>

2.4 Assignment D - Synthesize the Evidence to Answer Practice Questions.

Answering new individual questions or updating existing questions requires the students to use the evidence-based practice cycle in the [PEN[®] Writers Guide](#) Section 3 as a guide to answering the practice questions. The number of questions they will be able to answer and if they are new questions or updating existing ones will depend on the objectives for the assignment and the length of time they have to complete it.

This could be a university course assignment (one question), or an internship program assignment (several questions). See [Appendix 2](#) for the practice competency areas where this assignment can contribute to the student’s formative learning and evaluation. In some areas, assignments provide opportunities for achievement of enabling learning outcomes contributing to the student’s summative assessment of the practice competence.

Before starting this assignment, students are reminded to read: [PEN[®] Writers Guide](#):

<http://www.pennutrition.com/resources/PEN%20Writers%20Guide%20New%20March%2028%202015.pdf>

- Using the Evidence-based Practice Cycle (Section 3)

Role of University/Internship	Role of PEN [®] Team	Role of Student/Intern
<ol style="list-style-type: none"> 1. Identify students to work on PEN[®] priority topics / questions, may be a course assignment. 2. Assign students key practice question(s) to be revised or developed or Background topic to be developed. Revising an existing question, answering a new one or developing a Background document will depend on the time available for this activity. 3. “Distribute” PEN[®] Student Assignment Guide D to students. 4. Get students to sign the IP & DAI Waivers and return them to: PEN[®] Content Manager. 5. Review and assess the work and mentor content development. 	<ol style="list-style-type: none"> 1. Provide guidelines for revising or developing an answer to a practice question - see PEN[®] Student Assignment Guide D for guidelines and assignment details. 2. Provide list of PEN[®] priority practice questions needing revision or developing. 3. Act as a resource for the student / professor / internship director. 4. Provide feedback on student’s work to university instructor / internship coordinator or directly to student. 	<ol style="list-style-type: none"> 1. Use PEN[®] assignment guidelines, tools, templates in the PEN[®] Student Assignment Guide D to search for new literature and revise assigned practice question or develop answer to a new practice question in a timely manner. 2. Commitment to revise based on feedback. 3. Be respectful of commitment dates and communicate if changes are needed. 4. Sign IP & DAI Waivers and return to university course professor or internship coordinator.

University instructors and internship coordinators interested in having students complete this project should contact the PEN[®] Content Manager: beth.armour@dietitians.ca

Students should use the Knowledge Pathway (KP) template in the PEN[®] Writers Guide **Appendix 4a and 4b** and the PEN[®] Style Guide in the PEN[®] Writers Guide **Appendix 20** to help create their content in a standardized way. The PEN[®] Style Guide includes plain language tips, acceptable fonts, key grammar tips, spelling and the correct way to cite pathway references among many other important format issues. **As one reviews the following section having the template (Appendix 4a or 4b handy will be helpful.**

2.4.1 Criteria for Inclusion of Materials in a Knowledge Pathway

To be included in a knowledge path, materials must meet the following criteria:

- Accuracy - Information contained in the knowledge path selections must be accurate, verifiable, and peer reviewed.
- Authority - selections must be from an authoritative source. Where recommendations rely on expert opinion this too must be clearly stated so that practitioners understand the strength of the evidence supporting a particular guidance statement.
- Objectivity - selections must be science-based, evaluated and graded according to recognized standards of evidence. See Evidence Grading Checklist in the PEN[®] Writers Guide **Appendix 5**.
- Currency - the most recent evidence from peer reviewed articles or websites where content is reviewed at least annually should be used. An older item may be considered if no newer information or research exists or it sets the foundation for future research (e.g., a Surgeon General's report) or stands the test of time. Knowledge pathways will be reviewed and updated on a regular basis ensuring the PEN[®] service is dynamic and up-to-date.
- Scope - selections must specifically address the knowledge path topic and, where appropriate, should encompass the continuum of health promotion/protection; disease prevention; treatment/intervention; rehabilitation and support. Resources that describe and/or evaluate programs and/or discuss "lessons learned" are particularly helpful to the professional community of practice and should be included in each knowledge path. Succinct practice statements will have embedded links to more detailed information allowing users to dig into the information for more detail.
- Access - websites and other electronic resource selections must be easily accessible (i.e. no charge) and navigable. If not and the selection is essential to the path, we'll add navigational tips for the user. Any instance where a web site or reference requires a fee to access it, it must be discussed with the project coordinator and every effort will be made to identify an alternate resource.
- Language - while the content of PEN[®] is available only in English, if there are resources available in other languages that meet the above criteria and are in accordance with the evidence then they should also be included as a link or a PDF file.

2.4.2 Searching the Literature

Ensuring that all relevant literature has been found to answer the question is critical. See the PEN[®] Writers Guide **Appendix 8** for some guidelines on creating a search strategy. In **Appendix 9** you will find some suggested sources of evidence for both background and foreground questions.

2.4.3 Practice Categories

(Note: only applicable if you are creating a new KP; adding to or updating an existing KP will already have this determined)

There are 4 practice categories for KPs: Population Health / Lifecycle, Health condition / Disease, Food / Nutrients, Professional Practice

Some topics may fit into more than one practice category e.g., Healthy Weights / Obesity will likely fit into both the Population Health / Lifecycle (obesity prevention) and the Health Condition / Disease (treatment of obesity). Contrast this with Celiac Disease. Here, there is likely not a Population Health / Lifecycle component and screening, therapy and counseling etc. could all be addressed under the Health Condition / Disease practice category. To view the current PEN[®] KPs classified under the 4 practice categories, go to <http://www.pennutrition.com/TOC.aspx>. Select the practice category that most closely suits your KP and focus on the sub-categories to organize your questions.

2.4.4 Question Sub-Categories

Health Promotion / Prevention - questions in this category relate to efficacy of health promotion or disease prevention activities or interventions; content may define or illustrate population health approaches including capacity building social marketing, etc.

Assessment / Surveillance - who should be assessed or screened, when, how, and why are the types of questions addressed here (they should be grounded in evidence and ideally tied to outcomes, not simply common or desirable practice)

Intervention - questions relating to effective program planning as well as nutrition interventions or therapy would be addressed in this sub-category

Evaluation / Outcome Indicators - questions in this section might relate to cost effectiveness, best practices, evaluation strategies, outcomes of interventions or validity of particular outcome measures

Education - questions addressing effectiveness of specific types of education/counselling or education programming would be addressed in this sub-category

2.4.5 Key Practice Points (KPPs)

Authors should carefully develop KPPs. Generally there will be two parts to the KPP: Evidence Synthesis and Practice Guidance. Supporting research and/or evidence is provided in the Evidence Statements and additional details are provided in the Comments or Rationale sections. If the Evidence Synthesis is very practical, e.g. where there is a lack of scientific evidence and expert opinion is used, there may not be a need for the Practice Guidance section.

- Evidence Synthesis (ES) should consist of clear statements reflecting the evidence used to answer the question. Simple language should be used when possible. Supporting research and/or evidence is provided in the Evidence Statements. When crafting the ES, consider including the following information (as summarized from the evidence):
 - study design
 - population (if guidance targets a specific group, e.g. age, gender)
 - key conclusion/answer to the practice question - specify amounts if applicable e.g. x amount of a supplement daily
 - limitations of the evidence may be included if critical, in this case they would also be included in the evidence statements
 - future research needed/suggested if critical to clarify or enhance the understanding of the issue (either here or in the Comments section).

Evidence syntheses are given a Grade of Evidence using the PEN[®] Evidence Grading Checklist (Appendix 5). Note that if conclusions in the evidence synthesis have more than one grade of evidence, the grade should be indicated after each conclusion.

In some cases, rewording the question to include the population supported by the evidence may be warranted.

Information from the Evidence Synthesis section will be used in the Evidence Summary.

- Practice Guidance (PG) includes the more practical information needed to answer the practice question and guide practitioners. Its content can be derived from the Evidence Synthesis, Evidence Statements, Comments and Rationale sections but every effort should be made to use clear and simple language. It will usually indicate what to consider in discussion with clients. A grade of evidence is not applied to this section. The PG can include:
 - context for the topic / issue (can include brief rationale or reasoning)
 - recommendation/conclusion
 - Some information from the Evidence Synthesis may be repeated here.
 - A few words to reflect the quality of the evidence informing practice guidance (e.g. “limited evidence suggests...”). Use wording consistent with PEN’s Evidence Grading Checklist (Appendix 5)
 - additional practical information such as risk/benefit ratio, convenience and burden, costs, nutrient information, patients’ value and preferences, health status, comorbidities, lifestyle, culture etc.
 - links to standard international collections (http://www.pennutrition.com/international_guidelines_collection.aspx) that help guide practice, as appropriate to the topic, such as Healthy Eating Guidelines and Dietary Reference Values.

Information from the Practice Guidance section will be used in the Toolkit.

When discussing specific nutrient requirements or healthy eating guidelines in a KPP and there are known partner country differences, link PEN® users to the appropriate collection in the International Guideline Collections:

http://www.pennutrition.com/international_guidelines_collection.aspx

Examples of clear, succinct KPP’s incorporating one of the International Guideline Collections:

Observational studies have evaluated a number of foods, nutrients or dietary factors and risk of developing rheumatoid arthritis (RA); however most results have been inconclusive. At the present time, no specific food, nutrient or dietary factor is recommended to consume or avoid to decrease the risk for developing RA. It is recommended that all individuals should strive to meet their nutritional needs by following [Healthy Eating Guidelines](#).

Students must keep in mind that PEN® is an international tool and when referring to dietary guidelines, food guides, labeling issues, etc., to include those from the UK, Australia, New Zealand and South Africa. [See International Guideline Collections](#)
http://www.pennutrition.com/international_guidelines_collection.aspx on the PEN® home page.

2.4.6 Evidence

Be as succinct as possible when summarizing and critically appraising the evidence (systematic reviews, primary research, position papers, guidelines etc.) into evidence statements. Include the following information:

- type of publication e.g. review, study, practice guideline
- year - not required but if the evidence is a systematic review include the dates of the literature reviewed; better to use the actual year than an adjective such as “recent”; if the evidence is from several Clinical Practice Guidelines (CPG) from different countries and different years then indicate the year of publication of the CPG.
- population studied - including key inclusion/exclusion criteria relevant to the question
- number of subjects - refer to them as subjects, clients, individuals, **not** patients
- methods and interventions
- main findings - include odds ratio (OR), relative risk (RR), hazard ratio (HR) etc and Confidence Intervals (CI) when appropriate e.g. when the question relates to risk. Only need to report on those that are relevant / primary outcomes relating to the practice question.
- author's main conclusions
- limitations noted in the cited article - should be distinguished from those identified by the PEN[®] author. Ensure the reference number is at the end of the sentence where the article author's limitations are discussed. A transitional statement or phrase can help, e.g. The following limitations have been identified by the author of the study.... and additional limitations to note are.....
- conflict of interest - comment if obvious e.g. identified by the author of a systematic review. Since it is not mandatory for authors to report conflict of interest in all publications, it is not always possible to establish whether or not conflict of interest is present).
- source of bias - e.g. if there is only one research group who has published all of the evidence
- the number of the reference in brackets is to be used, not the author's name and publication year

Evidence statements are not just a summary or a paraphrase of the article abstract. Students should summarize, in their own words, the study and results and put them into context for the reader using their critical appraisal skills. This contextualization can occur through the evidence statement, the comments section, and rationale.

Students are reminded to read: Plagiarism Guidelines Appendix 10 in the [PEN[®] Writers Guide](http://www.pennutrition.com/resources/PEN%20Writers%20Guide%20New%20March%2028%202015.pdf)
<http://www.pennutrition.com/resources/PEN%20Writers%20Guide%20New%20March%2028%202015.pdf>

Occasionally, an evidence summary table can be attached to the knowledge pathway as a tool if the data and topic area necessitate it (e.g. large body of controversial evidence, with some similarities in study design). A standard table with basic headings should be used. Columns/headings can be added as needed. The decision to use an evidence summary table should be discussed with your PEN[®] team mentor.

Example:

Ref #	Study design	Population	Baseline measures	Interventions/ Treatment/ exposure	Comparisons/ control	Outcomes	Comments / Limitations
1	Multi-center, randomized, controlled, open trial.	129 F, 98 M, BMI= \sim 26 kg/m ² , \sim 65 years, generally healthy	\leq 1.5 servings/day dairy products, 690 \pm 234 mg/day	Regular diet plus 3 8-oz servings low fat milk daily = -1404 \pm 296 mg/day Ca ²⁺ 12 wks	. Regular diet (control) = -690 \pm 234 mg/day Ca ²⁺	Wt \uparrow over time both groups, but significantly more weight gain with extra milk (-0.6 kg).	Intake was \sim 100 kcal/day more with extra milk ingestion as per 3-day food diaries at BL, weeks 8 & 12. Good compliance as per daily milk intake logs. No intention to treat analysis reported.

Table abbreviations

\sim = approximately, **BL**= baseline, **BMI**= body mass index, **Ca²⁺** = calcium, **F**= female, **g**= gram, **kcal**= calorie(s), **kg**= kilogram, **M**= male, **m**= meter, **mg**= milligram, **oz**= ounce, **PA**= physical activity, **RCT**= randomized controlled trial, **wks**= weeks, **wt**= weight

References

1. Barr SI, McCarron DA, Heaney RP, Dawson-Hughes B, Berga SL, Stern JS, et al. Effects of increased consumption of fluid milk on energy and nutrient intake, body weight, and cardiovascular risk factors in healthy older adults. *J Am Diet Assoc.* 2000;100(7):810-7. Abstract available from: <http://www.ncbi.nlm.nih.gov/pubmed/10916520>

Examples of clear succinct evidence statements:

Systematic Review (example)

- a. A systematic review (including studies published up to 2003) examining the role of diet or biological markers in the development of rheumatoid arthritis (RA) identified 11 studies (14 articles): five case-control and three cohort studies of diet, and three case-control studies of serum biomarkers (1). The authors summarize results of specific foods or nutrients and their association with RA as follows:
 - a. Oils and fish: Three case control studies were identified. Two studies found that higher consumption of fish was associated with decreased RA risk; however in one study of U.S. women this was found for broiled or baked fish only and the association was stronger in cases who tested positive for rheumatoid factor (seropositive RA) compared to negative cases (2). Two studies from Greece reported that higher olive oil consumption was associated with reduced risk of RA.
 - b. Fruits, vegetables and antioxidant vitamins: Two case-control and one cohort study were identified, which showed that higher intakes of fruit, cooked vegetables and cruciferous vegetables were associated with reduced RA risk. In two of these studies, beta-cryptoxanthin and vitamin C were also found to be protective.
 - c. Coffee, tea and caffeine: Three cohort studies found mixed results, with one study from Finland showing coffee consumption was associated with an increased RA risk in individuals with seropositive RA; however the Iowa Women's Health Study of 55-69 year-old women showed an increased RA risk with decaffeinated coffee, but not caffeinated coffee and decreased RA risk associated with high tea consumption (3). The Nurses' Health Study, found no association between coffee, decaffeinated coffee, tea or caffeine and RA risk (4).
 - d. Alcohol: Two case-control and one cohort study were identified all conducted in women. Results from, one case-control in the Netherlands showed a protective effect of alcohol on RA (highest intake compared to no alcohol); however the other two studies, both from the U.S. showed no significant association between alcohol intake and risk of developing RA.
 - e. Other food groups / nutrients: One cohort study found no association between calcium intake and RA; however a case-control study showed an inverse association between calcium and phosphorus intake as well as energy intake and RA risk (2). This latter study

also reported a negative association between protein and meat intake and RA risk, but no association with other macronutrients or dairy foods (2).

- f. Biomarker studies: Three studies found lower levels of antioxidant nutrients (beta-carotene, retinol, alpha-tocopherol, and selenium) in individuals with RA compared to controls. Two studies from Finland report lower serum levels of alpha-tocopherol, beta-carotene and selenium in new cases of RA collected prior to symptom onset.

The authors of the review conclude that evidence for an effect of diet in the etiology of RA is limited, acknowledging weaknesses in the identified studies (1).

Individual Study (example)

- a. The Nurses' Health Study included 82,063 women and identified 546 cases of RA during follow-up (1980-2002) (7). Evaluation of diet (in particular, sources of protein and iron) found no association between RA and any measure of protein or iron intake, or of red meat, poultry and fish intake and RA risk. Similarly evaluation of data from the Nurses' Health Study and Nurses' Health Study II cohorts (over 180,000 women followed from 1980-2002) showed no association with vitamin D intake (8) or antioxidant intake (vitamins A, C, and E and alpha-carotene, beta-carotene, beta-cryptoxanthin, lycopene, lutein, and zeaxanthin from foods and supplements) (9) and risk of RA. The Women's Health Study of 39,144 health professionals followed from 1992-2004, randomized women to receive low-dose aspirin and vitamin E (600 IU/day) or placebo for primary prevention of cardiovascular disease and showed no difference between vitamin E or placebo group in risk of developing RA (10). There were also no significant risk reductions in either seropositive or seronegative RA cases (10).

Students can find research-related glossary items in the Research Terms resource in the Research Methods KP at:
<http://www.pennutrition.com/KnowledgePathway.aspx?kpid=14732&trcatid=ALL&trid=18322>

2.4.7 Grading the Evidence

Using the Evidence Checklist in the [PEN[®] Writers Guide Appendix 5](#) and the Center for Health Evidence worksheets: Users Guides to the Medical Literature in [Appendix 9](#) appraise your materials to establish the quality of the evidence related to your questions.

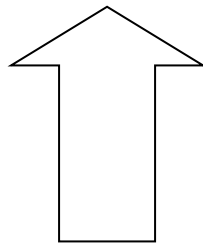
From time-to-time there may be a situation where there is no evidence to support a known fact. In this case we refer to the fact as a truism which is defined as “an un-doubted or self-evident truth” (Source: <http://www.merriam-webster.com/dictionary/truism>). An example may be “Boiling water coming into direct contact with human skin will burn the skin.” Even though, the only evidence available for this may be case reports and anecdotes, the physiological rationale and basic science would support this as a truism and warrant a higher evidence grade.

Take the following scale into consideration when doing your appraisal:

Research Ratings Scale

Hierarchy of Study Designs (CHE - Evidence-Based Decision Making Tutorial 2009)

Results may be more valid or believable



- N of 1 randomized controlled trials
- Randomized control trials
- Cohort studies
- Case-Control studies
- Cross-sectional analytic studies
- Ecological studies
- Case series
- Case reports

Results may be less valid or believable

2.4.8 Comments

Include relevant information to support the KPP that does not belong in the evidence statements, Statements should be referenced and these references become part of the main reference list for the question. Example - if the question is about chromium the comment might include sources of chromium in foods, different valances of chromium - food versus chemical and industrial; length of trials and lack of clarity on safety.

2.4.9 Rationale

This section allows explanation of the proposed or known mechanisms of action, reasoning behind research hypotheses and explanations for theories. It should be referenced and these references become part of the main reference list for the question.

Example:

KPP

In adults, data from observational studies suggest that low vitamin D status is associated with a greater risk of CVD; however clinical trials have not demonstrated a beneficial effect of vitamin D supplementation on clinical CVD outcomes. Additional research is required to examine whether a protective effect on CVD exists for vitamin D with consideration given to the dosage of vitamin D supplement used and the population studied (e.g. individuals with vitamin D insufficiency or individuals at increased risk of CVD).

Rationale

Several mechanisms have been suggested whereby vitamin D may affect risk for cardiovascular outcomes: vitamin D "regulates the renin-angiotensin system, suppresses proliferation of vascular cell smooth muscle, improves insulin resistance and endothelial cell-dependent vasodilation, inhibits anticoagulant activity and myocardial cell hypertrophy, and may modulate macrophage activity and cytokine generation" (2).

2.4.10 Writing a Background

PEN[®] subscribers have indicated they find background materials very valuable especially if they are new to the topic area. Templates have been developed to guide the development of backgrounders depending on whether the topic is clinical, lifecycle or other. See Appendix 15 and 16 in the [PEN[®] Writers Guide](#).

There is a section in the Background for definitions. These should be definitions that we don't want in the glossary e.g. if there is one definition in one disease and a slightly different one in another or if the term is commonly used in another topic we don't want a multitude of

underlining in a KP. Please check the glossary before adding words to the Background as we don't want to duplicate definitions. Even if a term is in the Glossary you may have a better or different reference for the term which could be useful to add to the Glossary. Make certain to include the complete reference for the definition.

2.4.11 Writing a Toolkit

For each KP there will be a brief summary / overview / roll-up of the key practice points and relevant background material, written as educational guidelines for the practitioner to use with clients / consumers. If writing a Toolkit is part of your assignment you are encouraged to spend a little time viewing a variety of [Toolkits http://www.pennutrition.com/Toolkits.aspx](http://www.pennutrition.com/Toolkits.aspx) so that you can familiarize yourself with the style required. A template has been created to assist you in developing your Toolkit. See Appendix 17 in the [PEN- Writers Guide - Toolkit Template](#).

To save time, you may want to write this tool after you receive feedback from the reviewers to ensure you are working with final approved content.

2.4.12 Evidence Summary

For each KP there will be, when applicable, a brief summary / overview / roll-up of the key practice points in each of the four levels of evidence. This is written by a member of the PEN[®] team once all of the content is finalized and ready for posting in PEN[®].

2.4.13 Related Knowledge Pathways

Provide a list of PEN[®] topics or KPs that may contain additional information that is related to this issue/topic.

2.4.14 Other links

This could be websites, Partner Networks/Interest Groups, Communities of Practice, on-line courses. Recommended websites should be credible, preferably national in scope, be directly related to the knowledge pathway and free of advertising. If there is more than one general website recommended, then a separate Related Tools & Resources called Web Links should be developed. See Appendix 15 and Appendix 16 - Background templates for details on creating this Tool & Resources in the [PEN[®] Writers Guide](#).

2.4.15 Glossary

Provide definitions of key terminology used in the pathway that a dietitian may be unfamiliar with. Include the reference used for the definition.

2.4.16 Social Media Posts

Students are asked to provide a short, succinct teaser about the PEN[®] content you have written that can be used for a tweet (Twitter) and a post on the PEN[®] Facebook wall. Here are examples:

Twitter tweet (maximum 140 characters):

Chitosan has questionable significance in weight loss among overweight or obese adults. For more info, see:

<http://www.pennutrition.com/index.aspx?ReturnURL=%2fKnowledgePathway.aspx%3fkpid%3d15325%26pqcatid%3d146%26pqid%3d18733>

Facebook post (no maximum length but want something informative but short and easy to read):

Are chitosan supplements effective for weight loss among overweight or obese adults?
Any effect of chitosan on weight loss is of questionable clinical significance. For more information, see: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=15325&pqcatid=146&pqid=18733>

Or

Are chitosan supplements safe for weight loss among overweight or obese adults?

While chitosan supplements appear to be well tolerated in most people, the potential does exist for interference with warfarin, for shellfish allergy and, as with most ocean-derived products, for heavy metal contamination. Chitosan is often derived from shrimp, lobster and crab exoskeleton.

For more information, see:

<http://www.pennutrition.com/KnowledgePathway.aspx?kpid=15325&pqcatid=146&pqid=18733>

2.4.17 Review Process of PEN® Content

External Review

Once the PEN® content has been drafted, the student should review the PEN® Writer's Checklist Appendix 2 in the [PEN® Writers Guide](#) to make certain the content is ready for review. A PEN® team member will be assigned as a contact for your assignment and will provide preliminary feedback.

When it is determined that the content is ready for external review, the PEN® team member will send out the content in a WORD document to identified external reviewers. Reviewers, with expertise in the topic area, both from academia and practice are identified by the PEN® team. This is a critical stage in the KP development and answering practice questions as it adds credibility to what is written in PEN®. The PEN® team member will ensure that the WORD document contains information on the reviewers, including email address and country of origin. To see what reviewers are looking for, see Guidelines for KP Reviewers in the [PEN® Writers Guide Appendix 3](#).

2.4.18 Editing

Once the reviewers' feedback has been incorporated, the MS WORD document is ready for the PEN® Editor who ensures that the content is consistent, grammatically correct and that it reads well. From the [PEN® Writers Guide](#), the PEN® Editor also checks for plagiarism (see **Appendix 10** -Plagiarism Guidelines), the use of abbreviations (e.g. see **Appendix 12** for Metric System Equivalentents for Units of Measure) and formatting and style (see **Appendix 20** - PEN® Style Guide). The PEN® team member who is mentoring the writing of the content will discuss any issues or clarifications needed with you.

2.4.19 Specific to revising a practice question or Knowledge Pathways

On a regular basis, frequency depends on volume of new research on the topic, or at least every two to three years each KP is revised. Your assignment may involve revising an entire existing KP or several questions in an existing KP. Revision involves:

- obtaining an MS WORD document of the content to be revised, this will be created by a member of the PEN® team. The document includes the KP content and any related questions or just the questions to be revised. The PEN® Editor will add comments to the related questions section indicating which questions will need to be reviewed for consistency with your updated content. The student is to flag any inconsistencies of the related questions with the PEN® team mentor.

- reviewing existing questions, **Note:** if the student would like to eliminate a PQ or change the wording of the PQ (the question itself, not the content), there needs to be dialogue and approval from the PEN[®] team member who is mentoring them in revising the KP since some questions are linked to more than one KP.
- searching for and incorporating new literature on the topic into the KPPs and Evidence Statements
- if reviewing a KP, there may be new questions on the topic to answer
- if reviewing a KP, reviewing tools and resources, recommending removal of those that no longer match the evidence and recommending new ones
- updating the Background document and Toolkit

2.5 Assignment E - Applied Master's Thesis / Project

This assignment may involve creating new content for PEN[®] or completing a special project related to the PEN[®] Service. In both cases, students must familiarize themselves with PEN[®].

This is a university course project. See Appendix 2 for the practice competency areas where this assignment can contribute to the student's formative learning and evaluation. In some areas, assignments provide opportunities for achievement of enabling learning outcomes contributing to the student's summative assessment of the practice competence.

Before starting this assignment, students are reminded to read: [PEN[®] Writers Guide](http://www.pennutrition.com/resources/PEN%20Writers%20Guide%20New%20March%2028%202015.pdf):
<http://www.pennutrition.com/resources/PEN%20Writers%20Guide%20New%20March%2028%202015.pdf>

- Using the Evidence-based Practice Cycle pg 8-12

Role of University/Internship	Role of PEN [®] Team	Role of Student/Intern
<ol style="list-style-type: none"> 1. Identify students needing a topic. 2. Assign student Knowledge Pathway topic for questions and Background document or special project topic. 3. Meet with student to discuss progress and compliance with timelines agreed upon with PEN[®] Content Manager / PEN[®] Director. 4. If needed, with the PEN[®] Content Manager, identify an advisor (from practice with a Master's degree) on the thesis team. 5. "Distribute" PEN[®] Student Assignment Guide to students. 6. Ensure students sign the IP & DAI Waivers and return them to: PEN[®] Content Manager. 7. Review and assess the work and mentor content development. 	<ol style="list-style-type: none"> 1. Provide list of topics needing Knowledge Pathway (KP) content development - should be an area of research interest for the university or discuss project topics of interest to the PEN[®] service. 2. Provide assignment guidelines and PEN[®] Student Assignment Guide for the process of developing the KP or completing the special project. 3. Agree on development timeline. 4. Help to link student to practitioners for question development and feedback on KP content drafts or to other PEN[®] team members for feedback on special projects. 5. If needed, with the University person, identify an advisor (from practice with a Master's degree) on the thesis team. 6. Act as a resource for the student and professor. 	<ol style="list-style-type: none"> 1. Use PEN[®] templates and PEN[®] Student Assignment Guide to write content of KP or to complete special project. 2. Define practice questions for topic area based on feedback from practitioners or define special project outline. 3. Draft KP or project in a timely manner. 4. Obtain feedback on content from practitioners and experts. 5. Commitment to revise based on feedback. 6. Be respectful of commitment dates and communicate if changes are needed. 7. Sign IP & DAI Waivers and return to the university course professor.

Special Project

Depending on the interest of the student and the needs of PEN[®] a special project topic can be discussed with the Dr. Jayne Thirsk, the PEN[®] Director. Written assignment guidance and PEN[®] tools to use will be dependent on the project. Appropriate PEN[®] team members will be involved in designing and supporting this type of project. Examples of projects which have been completed are:

- two PEN[®] evaluation project
- development of a framework for assessing the PEN[®] social media plan.

University instructors interested in having students complete a special project should contact the PEN[®] Director: jayne.thirsk@dietitians.ca

PEN[®] Content

Answering new individual questions or updating existing questions requires the students to use the evidence-based practice cycle in the [PEN[®] Writers Guide Appendix 3](#) as a guide to answering the practice questions. The number of questions they will be able to answer and if they are new questions or updating existing ones will depend on what is agreed upon between the university and the PEN[®] team.

University instructors and internship coordinators interested in having students complete this project should contact the PEN[®] Content Manager: beth.armour@dietitians.ca

If the project is developing PEN[®] content then assignment guidelines and the PEN[®] tools to use will be the same as Assignment D - Synthesize the evidence and create practice recommendation for practice questions.

Students will use the same assignment guidance and PEN[®] tools as used in Assignment D: Synthesize the evidence and create practice recommendation for practice questions.

2.6 Assignment F - Special Topics / Directed Studies

Answering new individual questions, updating existing questions or developing a special topic requires the students to use the evidence-based practice cycle in the [PEN® Writers Guide](#) Section 3 as a guide to their work. The number of questions they will be able to answer or the special topic they will develop will depend on the objectives for the assignment and the length of time they have to complete it.

This could be a university course assignment or might be an internship assignment e.g. writing up a dietary management or a case study. See Appendix 2 for the practice competency areas where this assignment can contribute to the student’s formative learning and evaluation. In some areas, assignments provide opportunities for achievement of enabling learning outcomes contributing to the student’s summative assessment of the practice competence.

Before starting this assignment, students are reminded to read: [PEN® Writers Guide](#):
<http://www.pennutrition.com/resources/PEN%20Writers%20Guide%20New%20March%2028%202015.pdf>

- Using the Evidence-based Practice Cycle pg 8-12

Role of University/Internship	Role of PEN® Team	Role of Student/Intern
<ol style="list-style-type: none"> 1. Identify students needing a topic. 2. Assign student key practice question(s) to be answered and Background or other topic to be developed. 3. Meet with student once a week or normal frequency, to discuss progress and compliance with timelines agreed upon with PEN-Content Manager. 4. “Distribute” PEN® Student Assignment Guide F to students. 5. Ensure students sign the IP & DAI Waivers and return them to: PEN-Content Manager. 6. Review and assess the work and mentor content development 	<ol style="list-style-type: none"> 1. Provide practice questions or special topic needing answering or development. 2. Student should be able to pick an area of interest from a list generated by PEN®. 3. Provide assignment guidelines and PEN® Student Assignment Guide F for the process of developing the KP or special topic development 4. Act as a resource for the student and professor. 	<ol style="list-style-type: none"> 1. Use PEN® templates and PEN® Student Assignment Guide to answer assigned practice questions and develop Background document or special topic. 2. Draft response to questions, background content or special topic and suggest relevant resources in a timely manner. 3. Commitment to revise based on feedback. 4. Be respectful of commitment dates and communicate if changes are needed. 5. Sign IP & DAI Waivers and return to the university course professor.

If the project is developing PEN® content then assignment guidelines and the PEN® tools to use will be the same as Assignment D - Synthesize the evidence and create practice recommendation for practice questions. If it is a special topic then guidelines will be developed with the appropriate PEN® team member.

Appendices

Appendix 1 Intellectual Property (IP) & Declarations of Affiliation (DAI) and Interests Waivers

ASSIGNMENT OF INTELLECTUAL PROPERTY AND INTELLECTUAL PROPERTY RIGHTS AND WAIVER OF MORAL RIGHTS PEN® Student Version

TO: DIETITIANS OF CANADA

WHEREAS Dietitians of Canada ("DC") has provided a type of experience for length and dates for name of student/intern, name and location of university / internship to what the assignment will achieve or contribute to e.g. research component, meeting certain practice competencies.

WHEREAS name of student, has contributed to the Works outlined in Schedule A;
AND WHEREAS the Assignor intends that this assignment supersede any other assignment as between the Assignor and DC in respect of the subject matter of this assignment of intellectual property and intellectual property rights and waiver of moral rights ("Assignment and Waiver");

NOW THEREFORE, for the payment of \$1.00 and other good and valuable consideration, the receipt and adequacy of which is acknowledged, the Assignor agrees as follows:

1. The Assignor represents and warrants that, in respect of the Works, the Assignor has not infringed, violated or misappropriated the rights of any other person.
2. The Assignor hereby:
 - a. irrevocably sells, assigns, transfers, sets over and conveys to and in favour of DC all of the Assignor's worldwide right, title and interest in and to the Works and Intellectual Property Rights therein; and
 - b. irrevocably and unconditionally waives in favour of DC any author, moral or similar rights that the Assignor has or holds in the Works or in any part thereof.
3. This assignment and transfer shall be an irrevocable and absolute assignment to and for the sole and exclusive benefit of DC. This Assignment and Waiver is in addition to any other assignment, or similar instrument entered into, by the Assignor to and in favour of DC. If there is a conflict between this Assignment and Waiver and any other assignment or instrument between the Assignor and DC, this Assignment and Waiver shall rank in priority to any such other assignment or instrument.
4. This Assignment and Waiver shall enure to the benefit of DC and its successors and assigns and be binding upon DC and the Assignor and the Assignor's heirs, assigns, successors in interest, administrators and legal representatives, as applicable.
5. The Assignor shall execute all such further assignments and other documents, and shall do all such further acts and things as may be necessary or desirable in the opinion of DC from time to time in order to more effectively complete the assignment and transfer to DC contemplated hereunder.
6. This Assignment and Waiver shall be governed by and construed and enforced in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein, without regard to any principles of conflicts of law. In the event of any litigation to enforce the terms of this Assignment and Waiver, the parties hereto irrevocably consent to the exclusive jurisdiction of the Courts of Ontario with the venue being the Courts of Ontario in the City of Toronto, Ontario, Canada.
7. This Assignment and Waiver may be executed either by original signature, or by facsimile signature, or by PDF signature attached to an email.

8. **IN WITNESS WHEREOF** the Assignor has executed this Assignment and Waiver as of the **day of**
the month of the year.

Assignor Signature (i.e. student):

Assignor Name(print):

Witness Signature:

Witness Name (print):

Schedule "A"
Definitions

1 "Intellectual Property Rights" means any:

- a) intellectual property rights provided in Canada under copyright law (including moral rights), trade-mark law, patent law, industrial design law or any other Law applicable to the Agreement, which may provide rights in:
 - i. any software and works (including, without limitation, any literary works) and compilations of works of any kind, word and design marks and other distinguishing features associated with wares and services, inventions, business methods, developments and industrial designs, as applicable, whether registered or unregistered, and any confidential information and trade secrets, or
 - ii. the expression or use of any of the foregoing;
- b) rights in and to any application, registration, licence, sub-licence, assignment, waiver, agreement or any other instrument or document that evidences any rights set out in subsection 1(a) above; and
- c) rights to enforce the rights and obtain remedies for any violation of any of the rights set out in subsections 1(a) and (b) above.

2. "Law" means any law, statute, code, ordinance, decree, rule, regulation, bylaw, statutory rule, principle of law, published policy and guideline, judicial or arbitral or administrative or ministerial or departmental or regulatory judgment, order, decision, ruling or award, including general principle of common and civil law, and terms and conditions of any grant of approval, permission, authority or licence of and any agreement with any governmental authority.

3. "person" means any individual, corporation, partnership, limited liability company, proprietorship, association, trust or other legal entity other than the Assignor.

"Works" means any and all materials, content and work products that have been conceived, created, written, made, produced, reduced to practice or developed by the Assignor pursuant to or in connection with the provision of the Services, including all information, software, specifications, flow charts, plans, drawings, designs, records, manuals, procedures, data and databases, reports and other documentation in all formats, whether complete or not, all of which are described below:

Description of the PEN[®] assignment / project including the topic and the knowledge objects involved.

Timeline - with specific dates

Work is to be completed following the PEN[®] student assignment guidelines and processes outlined in the PEN[®] Student Assignment Guide, and using the recommended format in the PEN[®] Style Guide. Completed checklists associated with the various assignments are to be submitted as well.

Reminders:

- The PEN[®] content being developed, including Key Practice Points (KPPs) and evidence statements that answer defined practice questions must be in one's own words. Plagiarism is not acceptable and we ask that you review the Plagiarism section in the PEN[®] Guidelines for Developing a Knowledge Pathway.
- Assurance is needed that content of the Knowledge Pathway, including evidence-based answers to practice questions submitted to PEN[®] have not have been published, submitted or accepted for publication elsewhere. Evidence-based answers must be based on a synthesis of the most recent scientific literature. However, answers adapted from work published elsewhere, (e.g., systematic reviews, technical reviews etc.) may be considered with proper referencing of the document of origin. When submitting a Knowledge Pathway or an evidence-based answer to a

practice question, the author should always make a full statement to the PEN Director about all submissions and prior reports that might be regarded as prior or duplicate publication of the same or very similar work. Copies of such material should be included with the submitted PEN documents.

- PEN Authors and reviewers are asked to declare any potential conflicts of interest. “A conflict of interest occurs where, in the mind of a reasonable person, a dietitian has a personal interest that could improperly influence their professional judgment” (*from: The Jurisprudence Handbook for Dietitians in Ontario p 100*)

Please complete PEN® Declaration of Affiliations and Interests form.

Student Initials (indicates the specifics of the Works section have been read) _____

**Declaration of Affiliations (DAI) and Interests Form
Practice-based Evidence in Nutrition**

Name: _____

I have reviewed my current activities and those of recent years, particularly as they relate to the ***Affiliations and Interests Checklist*** - next page. I have also considered the activities of my spouse and immediate family members in so far as they could be viewed to affect my impartiality.

I would like to bring the following to the attention of PEN: Practice-based evidence in Nutrition:

Enter text here

I hereby certify that I am not in a position of real, potential or apparent conflict of interest except as disclosed above.

If before the PEN[®] content I am developing or reviewing has been completed there are any changes in circumstances that may place me in a position of real, potential or apparent conflict of interest I will inform the Director.

Declaration of DC's Right to Provide Personal Contact Information in PEN[®] System

I agree to have my email address indicated in the Pathway contributors section of PEN[®] so that subscribers may contact me if they have specific questions related to the questions I have answered.

Signature _____

Date _____

Once signed please return it to: _____

- adapted from the Office of the Canadian Task Force on Preventative Health Care

Affiliations and Interests Checklist

In reviewing your activities (and those of your spouse and immediate family members) to determine whether they affect your impartiality or create a real, potential or apparent conflict of interest, among other things, consider the following:

- Investments in a business enterprise (Other than mutual funds or Registered Savings Plans)
- Retirement Savings Plans that are not self-directed);
- Participation as investigator in clinical trials of relevance to the knowledge pathway;
- Previous, present and potential Contracts, Grants and/or Contributions;
- Pending negotiations regarding potential contracts;
- Honoraria and other sources of personal income;
- Gifts and hospitality of significant value;
- Travel sponsorship;
- Promotion of a product(s) of relevance to the knowledge pathway;
- Publications;
- Public statements;
- Lobbying activities;
- Membership in special interest groups;
- Expert testimonies in court;
- Any interest or activity, which may create a reasonable apprehension of bias.

Appendix 2 Integrated Competencies According to Assignments

Integrated Competencies and Performance Indicators for Dietetic Education and Practice seen to be potentially achievable by students / interns when completing PEN[®] projects.

Note: / at the top of the box indicates all performance indicators listed could be assessed.

Assignment A - Students / Interns - evaluate third party tools and resources for addition to Knowledge Pathways (1 week)

Assignment B - Students / Interns to develop or update PEN[®] Client Handout (2 weeks)

Assignment C - Students / Interns to write up “News Making Evidence” item (2 week)

Assignment D - Students / Interns - key practice question(s) to be revised or developed or Background topic to be developed.

Assignment E - Applied Master’s Thesis / Project - develop or revise a KP. (over approx. 4-6 month time period)

Assignment F - Directed Studies Course - key practice question(s) to be answered and Background to be developed or other PEN[®] related Project - mutually agreed upon with the PEN[®] team.

Professional Practice Competencies	PEN [®] Assignments					
Performance Indicators	A	B	C	D	E	F
1.02 Comply with regulatory requirements relevant to dietetic practice a. Comply with applicable regulatory requirements b. Recognize non-compliance with bylaws and regulations c. Recognize non-compliance with regulatory standards of practice and code of ethics g. Recognize lack of maintenance of professional boundaries	/	/	/	/	/	/
1.03 Practice according to organizational requirements a. Provide services in compliance with designated role within organization b. Comply with applicable policies and directives	/	/	/	/	/	/
1.04 Practice within limits of individual level of professional knowledge and skills a. Reflect upon and articulate individual level of professional knowledge and skills b. Recognize situations beyond personal capacity c. Address situations beyond personal capacity by consultation, referral, or further learning	/	/	/	/	/	/
1.05 Address professional development needs a. Self-assess to identify learning needs	/	/	/	/	/	/

Professional Practice Competencies	PEN Assignments					
Performance Indicators	A	B	C	D	E	F
1.06 Use a systematic approach to decision making a. Apply ethical principles to decision making e.g. no plagiarism b. Assess relevant evidence and best practice information e. Make and justify decisions f. Take responsibility for decisions and actions	✓	✓	✓	✓	✓	✓
1.07 Maintain a client-centered focus b. Consider clients abilities and resources c. Integrate client perspectives into practice activities (focus testing) d. Identify services and resources relevant to client demographics and needs	✓	✓	✓			
1.08 Manage time and workload effectively a. Prioritize professional activities b. Meet deadlines	✓	✓	✓	✓	✓	✓
1.09 Use technologies to support practice. a. Use technology to communicate b. Use technology to seek and manage information c. Use applications related to dietetics	✓	✓	✓	✓	✓	✓
1.11 Assess and enhance approaches to dietetic practice (from the literature) a. Assess effectiveness of approaches to practice b. Reflect on effectiveness of practice c. Seek new knowledge that may enhance or support practice d. Identify ways to enhance practice	✓	✓	✓	✓	✓	✓

Communication and Collaboration Practice Competencies	PEN Assignments					
Performance Indicators	A	B	C	D	E	F
2.01 Select appropriate communication approaches a. Identify opportunities and barrier affecting communication b. Select appropriate communications technique c. Select appropriate terminology	✓	✓	✓	✓	✓	✓
2.02 Use effective written communication skills a. Ensure that written material facilitates communication b. Write clearly and concisely, in a manner responsive to the needs of the reader(s) c. Write in an organized and logical fashion	✓	✓	✓	✓	✓	✓

Communication and Collaboration Practice Competencies	PEN Assignments					
Performance Indicators	A	B	C	D	E	F
d. Provide accurate and relevant information						
2.03 Use effective oral communication skills	✓	✓	✓	✓	✓	✓
a. Speak clearly and concisely, in a manner responsive to the needs of the listener(s)						
b. Use appropriate tone of voice and body language						
c. Recognize and respond appropriately to non verbal communication						
2.04 Use effective interpersonal skills						
b. Communicate in a respectful manner	✓	✓	✓	✓	✓	✓
d. Establish a rapport	✓	✓	✓	✓	✓	✓
e. Apply counselling principles - Client handout development	✓		✓			
f. Apply principles of negotiation and conflict management	✓	✓	✓	✓	✓	✓
g. Seek, respond to and provide feedback	✓	✓	✓	✓	✓	✓
2.05 Contribute to the learning of others	✓	✓	✓	✓	✓	✓
a. Recognize opportunities to contribute to the learning of others						
c. Select and implement appropriate educational strategies						
d. Select learning resources						
e. Develop learning resources						
2.06 Contribute productively to teamwork and collaborative processes - only if a group project	✓	✓	✓	✓	✓	✓
a. Contribute dietetics knowledge in collaborative practice						
b. Draw upon the expertise of others						
c. Contribute to shared decision making						
d. Facilitate interactions and discussions among team members						

Nutrition Care Practice Competencies	PEN Assignments					
Performance Indicators	A	B	C	D	E	F
3.02 Develop nutrition care plans				✓	✓	✓
b. Identify appropriate nutrition interventions - Toolkit/PGS						
i. Develop client education plans - Toolkit/PGS						

Health Promotion Practice Competencies	PEN Assignments					
Performance Indicators	A	B	C	D	E	F
4.01 Assess food and nutrition related issues of groups, communities and	✓	✓	✓	✓	✓	✓

Health Promotion Practice Competencies	PEN Assignments					
Performance Indicators	A	B	C	D	E	F
populations c. Obtain and interpret food and nutrition surveillance, monitoring and intake data e. Obtain and interpret information relating to determinants of health f. Obtain and interpret information related to food systems and food practices g. Identify relevant group, community or population assets and resources						

Management Practice Competencies	PEN Assignments					
Performance Indicators	A	B	C	D	E	F
5.02 Assess strengths and needs of programs and services related to dietetics a. Analyze goals, objectives and activities with reference to strategic planning principles b. Identify relevant assessment information	✓	✓	✓	✓	✓	✓
5.02 Manage programs and projects a. Identify appropriate goals and objectives for programs and projects b. Identify strategies to meet goals and objectives for programs or projects c. Develop activity plan for programs or projects	✓	✓	✓	✓	✓	✓

Header One Document Name

SUB HEADER ONE

Header Two

SUB HEADER TWO

Example Recipe

8 oz	Marquee selectus non provisio	250 g
3 cups	Quote meon an estimate	750 mL
1 cup	Sic tempus fugit esperanto	250 mL
½ cup	Glorious baklava ex librus	125 mL
2 Tbsp	Non sequitur condominium	50 mL

Header Three

» **Sub heading**

Non bolded text

» **Sub heading**

Non bolded text

Header Two

SUB HEADER TWO

Non bolded

<i>Column Title 1</i>	<i>Column Title 2</i>
Chart item one	...1.1.1.1 Non bolded text
Chart item two	...1.1.1.2 Non bolded text
Chart item three	...1.1.1.3 Non bolded text



Steps you can take

Non bolded, non italicized text

Header Two

Non bolded text

Highlight text for an important “tip”/other standout information. Can be bolded.

Header Two

Non bolded text



Additional Resources

Non bolded intro text

» Health Canada, “Mercury and Fish”

http://www.hc-sc.gc.ca/fnan/securit/chem-chim/environ/mercure/merc_fish_qa-poisson_qreng.php

» Non bolded text



Notes

DISTRIBUTED BY:

Appendix 4 Handout Feedback - Sample Form

After reviewing the handout please answer the following questions.

Circle one choice for each question:

The handout provides information I need to know to manage my diet. Yes No Unsure
Comments

The print size and font made the handout easy to read Yes No Unsure
Comments

I understood the information in the handout. Yes No Unsure
Comments

What I like the most in the handout is:

What I like the least about the handout is:

What information needs to be added or changed in this handout?

Do you have other suggestions on how to improve the handout?

Thank you for your feedback

Appendix 5 - News-making Evidence Templates

Article Analysis

Article/Topic Title

Study Overview

Evidence Analysis

The Bottom Line

See Additional Content: (Link to any related PEN[®] content)

References

Contributors (include credentials)

Suggested format: Authored by Jane MEd, RD and reviewed by Kerri, RD

Authors should also submit suggested keywords.

Evidence Clip

Topic Title

Topic Overview

Evidence Analysis

The Bottom Line

See Additional Content: (Link to any related PEN[®] content)

References

Contributors (include credentials)

Suggested format: Authored by Heather MSc RD and reviewed by Beth MEd RD.

Authors should also submit suggested key words.