Use PEN System Content in Course Assignments and Assessments

PEN System Content Overview

The PEN system is an evidence-based decision support resource developed by Dietitians of Canada. It is designed to help dietitians keep pace with food and nutrition research. The PEN system provides knowledge pathways on a variety of topics relevant to everyday practice, where PEN authors identify relevant literature from various sources, and then critically appraise, grade and synthesize that literature into key practice points to answer specific practice questions.

The practice question information is supported with related tools and resources which can be sorted by country, language and type (client or professional), along with practice guidance toolkits for health disease/condition related topics and are based on the nutrition care process terminology (NCPT).

RESOURCE | Learn more

- Visit PEN Terminology and Features to learn more about knowledge pathways
- Watch these 4-5 minute videos:
  - PEN and Knowledge Pathways
  - Getting to Know Knowledge Pathways
  - Introduction to Practice Guidance Toolkits

Assignment Learning Outcome

Students **show how** evidence-based knowledge informs practice recommendations.

Assignment

Educators can use PEN System content to apply evidence-based practice recommendations in course assignments (e.g., case studies, patient simulations) and assessments (e.g., midterms and exams questions).

Process

1. Go to either the general search section in the PEN System on the home page and type in the topic of interest, or go to the PEN System Table of Contents to find the topic information they are looking for a particular assignment or assessment.

2. Once the particular topic is found, review all or some of the parts of the knowledge pathway related to the topic area depending on information need. This may include:

- Background
- Practice questions or their related summary (Summary of Recommendations and Evidence (SRE))
- Related Tools and Resources (client handouts and professional)
- Practice Guidance Toolkit – particularly helpful for case studies

3. After reviewing the information course assignments and assessments can be created.

EXAMPLE #1| Developing a Case Study on Heart Failure (course assignment)

Start with reviewing the Heart Failure Background which can help to provide some information to draw from on the 'typical' presenting symptoms and issues that can be used to develop a case study scenario.

A 65-year-old female with long standing angina is referred to the dietitian by their family doctor for a nutrition assessment. She presents with:

- High blood pressure 170/90
- Shortness of breath, especially on exertion
- Weight 70kg
- Height 170 cm

Most recent blood work (using the Royal College Clinical Lab tests https://www.royalcollege.ca/rcsite/documents/credential-exams/clinical-lab-tests-reference-values-e.pdf to create some normal and abnormal labs for the case study):

- Na 130 mmol/L
- K 4.8 mmol/L
- Albumin 28 g/L
- Creatinine

Social Hx

- married with 3 grown children
- retired librarian
- past smoker

Medications

- Diuretic
- Daily multi-vitamin and mineral supplement

Looking at each of the nutrition care process sections within the Heart Failure practice guidance toolkit. Questions or tasks can be developed for the student from the toolkit information as they complete a case study assignment:

· Nutrition Issues/Concerns related to Heart Failure:

Review Description and Key Nutrition Issues

- o What are the key nutrition issues/concerns for individuals with heart failure?

· Nutrition Assessment

Nutrition Assessment, Monitoring and Evaluation

- o What specific anthropometric measurements would you review? (potential answers could include: height, weight, weight change (% weight change over time))
- o What components would you consider when conducting a comprehensive diet history for your client with heart failure? (potential answers may include: energy intake, food and beverage intake (amount and type of food and drink, meal and snack pattern), bioactive substance intake, macro and micronutrient intake; and then compared to comparative standards)

· Nutrition Diagnosis Section:

Review the Nutrition (and Dietetic) Diagnosis TK section

- o Provide a PES (problem, etiology, signs and symptoms) using some NCP terminology based on the client's presenting condition. (a potential statement could be: Excessive sodium intake related to food and nutrition knowledge deficit concerning food sources of sodium, as evidenced by shortness of breath and exercise intolerance in an individual with heart failure.)

· Nutrition Intervention Section:

Nutrition Intervention TK section

- What are the nutrition goals and recommendations for the management of heart failure? (potential answers including modified diet - sodium restriction to decrease heart failure symptoms and energy level to prevent malnutrition)

· Nutrition Monitoring and Evaluation Section:

Review Nutrition Assessment, Monitoring and Evaluation TK section:

- What would be 2 to 3 indicators measured in the nutrition assessment that would need to be monitored and evaluated for your client? (potential answers including weight change, vital signs – BP and SOB, and amounts and types of foods, motivation and readiness to change and physical activity)

· Additional information can be found using the eNCPT manual, available to DC members and terminology pages. Along with the freely accessible NCP tutorials.

EXAMPLE #2| Developing Midterm or Test Questions (course assessment)

Three sample questions are below, developed by going to the Nutrition Assessment Knowledge Pathway in the PEN System: https://www.pennutrition.com/KnowledgePathway.aspx?kpid=16177 and specifically looking at the practice question: *Which predictive equation is the most accurate for assessing resting energy expenditure (REE) (also referred to as resting metabolic rate [RMR]) in adults with a normal weight and with overweight/obesity?*
https://www.pennutrition.com/KnowledgePathway.aspx?kpid=16177&pqcatid=145&pqid=12057

1. For adults with a normal weight, which predictive equation is the most accurate for assessing resting energy expenditure (REE)?

Answer choices:

[ ] Harris Benedict equation

[ ] Mifflin-St. Jeor (MSJ) equations

[ ] No determined equation

Answer - Mifflin-St. Jeor (MSJ) equations

2. How accurate is the Mifflin-St. Jeor (MSJ) equations in assessing resting energy expenditure (REE) in individuals with obesity verses those who are non-obese?

Answer choices:

[ ] lower

[ ] higher

Answer – Lower

3. Which method results in the least number of errors: [ ] predictive equations [ ] indirect calorimetry when measuring resting energy expenditure (REE) in adults with a normal weight, overweight and obesity?

Answer – Indirect calorimetry

RESOURCE | The PEN Team is here to help!
The PEN Team can support this assignment to use PEN System content in course assignments and assessments in the following ways:

- Help in the selection of PEN content to support learning/training materials.
- Act as a resource for the student / intern /educator.

QUESTIONS?
Contact the PEN Resource Manager at jane.bellman@dietitians.ca