EAL Orientation Tutorial

Module 3: The Evidence Analysis Center Systematic Review Process
(Time: 14 minutes)

Slide Number	Title	Script
1	Module 3: The Systematic Review Process	Welcome to Module 3 of the Evidence Analysis Center Orientation Tutorial. In this module you will learn about the Evidence Analysis Center's systematic review process.
2	Module 3 Objectives	The information in the Evidence Analysis Library has been determined through a systematic process for reviewing nutrition research. In the 1st module, you learned how to locate the summarized evidence available on the EAL. This module will cover the roles of the Evidence Analysis Center team and the Academy's rigorous 5-step systematic review process.
3	Definition	Evidence-based dietetics practice involves the process of asking questions, systematically finding research evidence, and assessing its validity, applicability and importance to nutrition and dietetics practice decisions; and applying relevant evidence in the context of the practice situation including professional expertise and the values and circumstances of patients/clients, customers, individuals, groups, or populations to achieve positive outcomes. The main objective of the Evidence Analysis Library is to provide a resource that Academy members can use to implement evidence-based recommendations in practice. Implementing evidence-based recommendations improves the quality of care and enhances the credibility of the profession.

4	Why Evidence-Based	Why use Evidence-based? In order for dietitians to remain competitive in healthcare, they must incorporate evidence-based practice into their day-to-day practice decisions. Evidence-based practice enhances credibility with other healthcare team members and will help dietitians be more effective and efficient in their practice. Evidence-based practice can improve the quality of healthcare; decrease wide variations in practice; reduce the gap between what is known from research and what happens in real life; and takes advantage of biomedical knowledge.
5	Preparing for the Systematic Review	Let's get started.
6	EAC Framework	In module 2, we covered how the scoping review is the first phase in the evidence analysis process. The project team answers the question "Does literature available justify a need for a systematic review?"
7	From the Scoping Review	Using the results from the scoping review, the project team concluded that the scoping review results indicate that Yes, the available literature justified the need for a systematic review. The scoping review results identified nutrition topics which have not been covered by a recent review or guideline and will use the results to focus the systematic review scope, including to develop the PICO questions.
8	EAC Systematic Review Process	The Evidence Analysis Center systematic review process is a • State-of-the-art method for evaluating food and nutrition questions. • Conducted by a team consisting of topic experts in the field and a project team trained in research analysis protocols. • Meticulous methods and web-based templates are used throughout the process to ensure objectivity, transparency and reproducibility of the process.
9	Members of the Team	The systematic review process includes forming a team comprised of the project manager, lead analyst, a panel of 6-8 topic experts, methodologist, evidence analysts, and a medical librarian experienced with systematic review searches.

10	Expert Panel Responsibilities	Expert panel members are appointed by the Council on Research Workgroup Selection subcommittee. The sub-committee aims for a multidisciplinary team with a balance of clinicians and researchers. Requirements to become an expert panel member include a minimum of 5 years of practice and/or research experience, 3 years of work related to the focus of the project, and either an advanced degree or at least 8 years of experience in the topic area. Visit the Get Involved section which can be accessed from the EAL homepage for volunteer opportunities. Responsibilities of the expert panel include finalizing the evidence analysis questions and search plan, reviewing work completed by the analysts and lead analysts, finalizing and grading content, developing guideline recommendations, and providing final approval on all material. They meet via teleconference calls or webinars – usually twice a month.
11	Patient Advocacy	Including patient advocates in the development of guidelines is relatively new. The Evidence Analysis Center pilot tested the process in 2015 with the development of the COPD guideline. Patient advocate roles are designed to advise the expert panel on how particular therapies will impact the patient population under consideration and they should be closely involved in developing recommendations.
12	Project Leaders	The Project Manager and Lead Analysts facilitate and manage the expert panel and evidence analysis. Communication is key at every step in the evidence analysis process. The medical librarian, experienced with systematic reviews, conducts an extensive literature search and documents the results. The methodologist oversees the entire process.
13	Systematic Review – the process	The process that we are about to review is available on the EAL from the Policy and Process tab.
14	EAC Process	Here, at-a-glance, are the 5 steps in the systematic review process. 1. Formulate the Question; 2. Gather the Research; 3. Appraise the articles; 4. Synthesize the Evidence; and 5. Develop Conclusion Statement and Grade the strength of the supporting evidence.

15	Step 1: Formulate the Question	Let's look at Step 1: Formulate the Research Question
16	Nutrition Care Process	As the expert panel develops evidence analysis questions, they categorize them by steps of the Nutrition Care Process. Steps of the Nutrition Care Process include Nutrition Assessment, Nutrition Diagnosis, Nutrition Intervention, and Nutrition Monitoring and Evaluation.
17	Question Development	Evidence analysis questions are developed in the PICO format. PICO stands for Population, Intervention (procedure, or approach), Comparison, and Outcome. Utilizing the PICO format helps the expert panel develop questions that are neither too broad nor too specific.
18	PICO Chart to Develop Questions	When developing questions in the PICO format, it is helpful to plug them into a PICO table to ensure each component of PICO is included. You can see by this example that the question *How does daily caffeine intake affect the blood pressure of patients with chronic heart failure?* follows the PICO format. Patients with chronic heart failure is the population; daily caffeine intake is the intervention; the comparison is no caffeine intake; and the outcome is – affect blood pressure
19	Intervention Factors	When thinking of nutrition interventions that lead to specific outcomes, there are a variety of factors to keep in mind, including the content, context, and delivery method of the intervention.
20	Step 2: Gather and Classify the Research	Step 2 is – gather and classify the research
21	The Search Strategy	Before beginning a literature search, the expert panel must develop a detailed search plan - the inclusion and exclusion criteria. A medical librarian conducts the actual search using appropriate search terms and multiple databases. The team then reviews the search plan results. They review the articles and determine which articles to include and exclude. Any full-text article that is reviewed and excluded must have a valid reason—all of which is documented and published on the EAL. The entire search process is thoroughly documented.

22	Steps in Identifying Research	Conducting a thorough search of multiple databases is critical. This diagram shows that the initial search is wide. Duplicate articles and articles that don't match the inclusion criteria are excluded in the title screening.
23	PRISMA	The search results are document using PRISMA. The PRISMA checklist is an evidence-based set of items for reporting in systematic reviews. A flowchart is generated that depicts the flow of information through the different phases of a systematic review. It maps out the number of records identified, included and excluded. The final PRISMA chart is included in the article. The PRISMA totals are published in the EAL.
24	Hierarchy of Evidence	As you can see from this image, study designs in ascending level of the pyramid generally exhibit increased quality of evidence and reduced risk of bias. Confidence in causal relations increases at the upper levels. However, it is important to keep in mind that within each type of study design, there is a spectrum.
25	Search Plan & Results for Each Question	As previously indicated, the search is thoroughly documented and available on the EAL. Expand the section titled search plan and results. Listed is the date of the search as well as inclusion and exclusion criteria specifying age of study participants, setting, sample size, acceptable dropout rate, age of the study. The expert panel may decide to specify additional criteria by which articles are appraised. Also included are the total number of hits; databases searched; number of included articles and number of excluded articles.
26	Example Inclusion Criteria	This is an example of an inclusion criteria from the oncology project.
27	Search Plan & Results	The EAL lists articles that are included AND full-text articles that were excluded. Full-text articles that are excluded will have a reason documented.
28	Step 3: Critically Appraise Each Article	Step 3: critically appraise each article
29	Critical Appraisal of Articles	Evidence analysts critically appraise each article using a data extraction template designed to capture specific outcomes which vary based on the topic. They also complete a risk of bias assessment for each study.

30	Risk of Bias	In research, bias occurs when systemic error is introduced into sampling or testing by selecting or encouraging one outcome or answer over others. The tool guides the analyst to recognize various threats that may undermine sound research and that could lead to invalid conclusions. Each article included in the systematic review is critically appraised via double blind assessment. Two evidence analysts complete the risk of bias tool blinded to each other's answers. Disagreements are reviewed by a third party and a consensus is reached.
31	Example DET Worksheet	This is an example of a completed DET worksheet. It includes the study characteristics, study design, research purpose, inclusion and exclusion criteria, funding information plus other relevant information.
32	Step 4: Synthesize the Evidence	Step 4: Synthesize the evidence
33	Evidence Summary	The Lead Analyst reviews the completed worksheets and risk of bias assessment completed by the evidence analysts. Evidence summaries are a synthesis of the evidence into a narrative format and in meta-analysis, when possible. Additionally, a summary table is created to provide information on the studies and outcomes at-a-glance.
34	Meta-analysis	Meta-analysis is conducted when multiple studies report data on an outcome that can be pooled together. Findings are reported in forest plots. Here is an example from the nutritional genomics systematic review.
35	About the Narrative Evidence Summary	The narrative summary should provide an overall summary of the findings of the included studies and their biases, strengths, and limitations
36	Narrative Evidence Summary	Here is an example of a narrative summary. The evidence is synthesized. Summary of findings tables are provided at the end of the narrative.
37	Tables	A Summary of Findings table provides the ability to evaluate the quality of evidence being analyzed in a clear and transparent format considering the number of studies included and the study designs, risk of bias across studies, precision of findings, and other information. Links to the summary tables are available within the evidence narrative.
38	Summary Table	This is an example of a summary of findings table from the preterm infant project.

39	Evidence Summary Bibliography	Expand the Worksheets section, to see a bibliography for each research question and to access more detailed information on each study including risk of bias assessment.
40	Step 5: Develop Conclusion Statement and Grade the Strength of the Supporting Evidence	Step 5: develop conclusion statement and grade the strength of the supporting evidence
41	Conclusion Statement	The Conclusion Statement is the answer to the evidence analysis question. This is why following the PICO format during the question develop process is so important—to be able to provide a concise answer for each question. Conclusion Statements are drafted by the Lead Analyst and reviewed, approved, and graded by the expert panel.
42	Conclusion Grading Table	The expert panel uses this Conclusion Grading Table during the grading process. They consider the quality, consistency, and quantity of studies as well as clinical impact and generalizability when discussing and deciding upon a grade for a conclusion statement.
43	Explanation of Grades	Conclusion Statements are graded by the expert panel to help the user interpret the strength of the evidence. Conclusion Statement grades range from 1-5. The lower the value of the grade, the stronger the evidence. You can download a copy of the grading table from the home page/quick links section of the EAL.
44	Conclusion Statement	This is an example of a published conclusion statement from the pediatric weight management on the EAL. The expert panel assigned a Grade I (Good/Strong) to the strength of the evidence.
45	Publish on the EAL	The final step is to publish all of the content on the Evidence Analysis Library website. All EAL content is free to Academy members. Non-Academy members may subscribe to the EAL.
46	After Evidence Analysis: Next Steps	Once the systematic review is finalized, it may be used to develop Evidence-Based Nutrition Practice Guideline recommendations, position papers, consensus report, presented at meetings, and submitted for publication.
47	Thank You	You have completed Module 3. Please proceed to Module 4, to learn about the development of

		Evidence-Based Nutrition Practice Guidelines. Thank you.