



BDA student event: evidence based practice

Living in an information age

10 hours of Fitbit monitoring produces 3 times more data than is contained in the entire works of Shakespeare

In 2020, >**600,000** articles related to “nutrition” are indexed in PubMed

HOW DO YOU KEEP UP TO DATE?

Google reports **3.8** billion searches per minute

There are **124** peer reviewed nutrition journals published internationally in the field of Nutrition & Dietetics

The background is a solid blue color. It features several large, stylized circular shapes. In the top-left corner, there is a white circle with a blue outline and a solid blue center. In the top-right corner, there is a solid blue circle. In the bottom-left corner, there is a solid blue circle. In the bottom-right corner, there is a white circle with a blue outline and a solid blue center. The text is centered in the middle of the image.

**How do you currently stay up
to date with the evidence base?**

BDA Resources

BDA Food Fact Sheets



Dietetics Today



Specialist Groups



Policy and Position Statements



Online Journal Club (managed by dietitians)

#RDJC

THINK CRITICALLY & DEMAND
EVIDENCE

BDA Resources

Journal of Nutrition and Dietetics



Evidence and Expertise Ezine



BDA Learning Zone



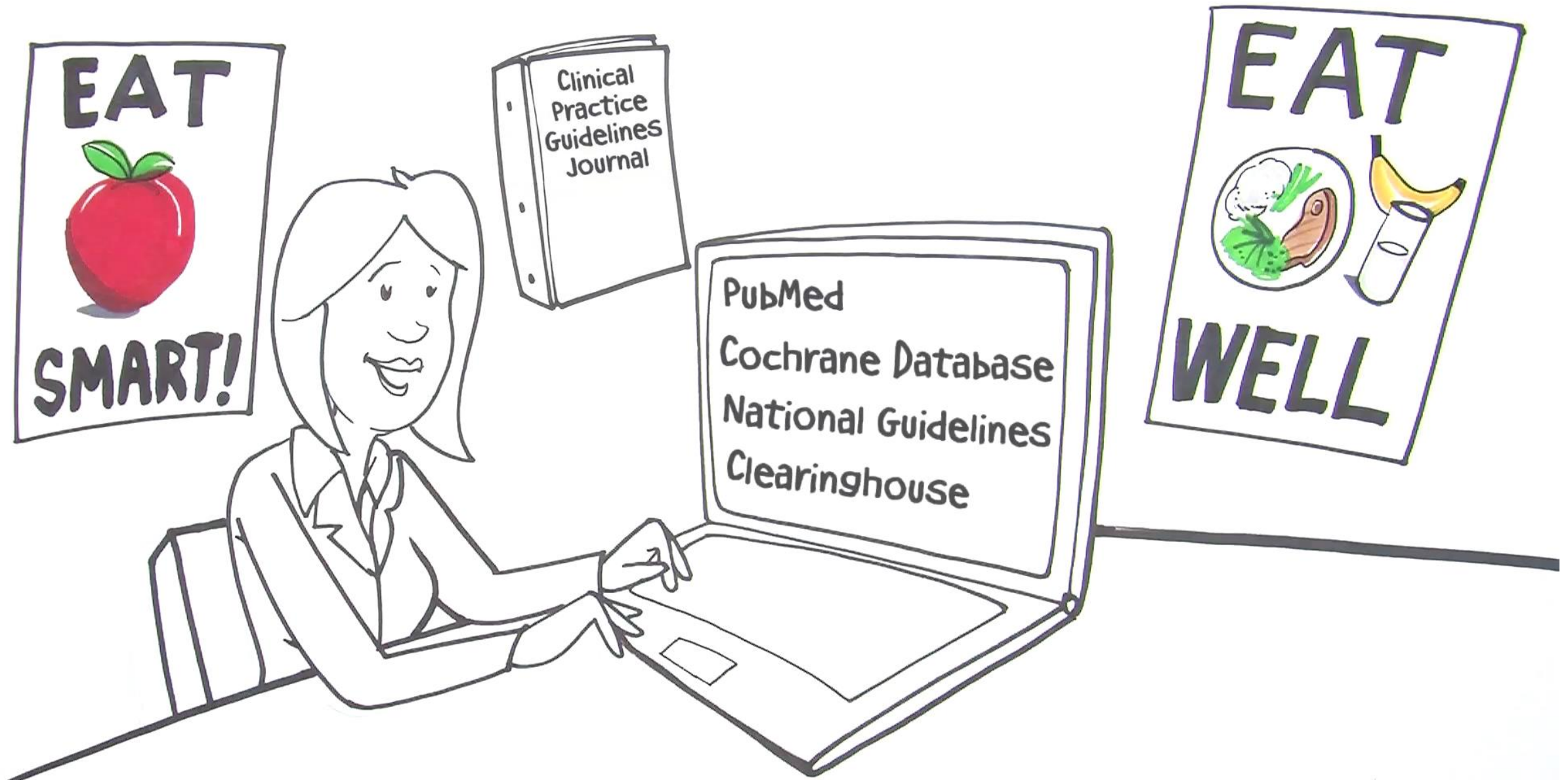
PEN Membership



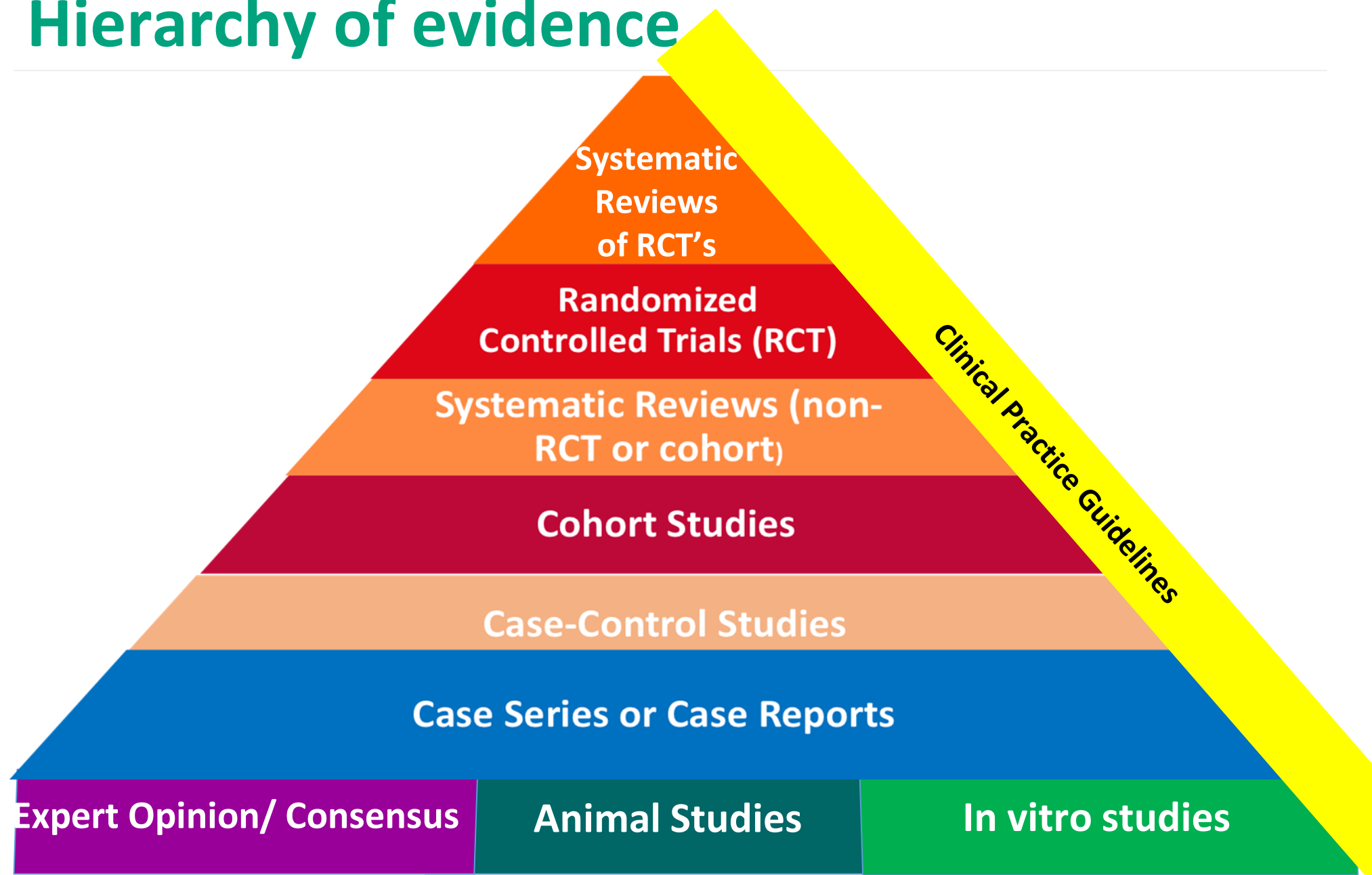
Practice-based Evidence in Nutrition PEN[®] System



What is PEN?



Hierarchy of evidence





PEN[®] Demo



Logging into PEN

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Membership ▾

Practice & Education ▾

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Union ▾

Evidence in Nutrition (PEN®) system is available as one of the BDA/SENr members benefits (PEN can be purchased separately for non-BDA members) to keep you up-to-date with the evidence-base.

The PEN® system condenses and summarises the nutrition and dietetic evidence-base on more than 200 nutrition and dietetic-related topics, and translates this for you into practical information.

Update: 6 May 2020 - some members may receive a 'Access Restricted message' when trying to use PEN via the link below. We are working to get this fixed ASAP, sorry for any inconvenience.

Sign up or Log in

Click below to get access to PEN

Sign up/log in

PEN: Practice-based Evidence in Nutrition®

Curious about the PEN System? As busy practitioners, it can be challenging to keep up-to-date on the latest science in food and nutrition. See how the PEN System can help you be an effective knowledge manager.

START YOUR FREE TRIAL →

Featured PEN Content

Should omega-3 fatty acids (fish or plant-based food or supplements) be recommended for primary or secondary prevention of cardiovascular disease (CVD)? [Learn More](#)



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PEN: Practice-based Evidence in Nutrition®

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Search Knowledge Pathways, practice questions, tools/resources

[SEARCH PEN DATABASE](#)

KEY PEN FEATURES



Featured PEN Content

Does vitamin C supplementation improve immune function, including preventing or treating the common

Search engine



Menu

ADVANCED SEARCH | SEARCH TIPS

381 results for: cardiovascular disease

Sort By



All Results (381)

Cardiovascular Disease Background

Background information regarding cardiovascular disease.

2018-02-01 – Background

Cardiovascular Disease Summary of Recommendations and Evidence

A synthesis of the recommendations and evidence regarding cardiovascular disease and nutrition.

2019-01-07 – Summary of Recommendations and Evidence

Cardiovascular Disease - Chocolate Background

Background information regarding cardiovascular disease and chocolate.

2018-02-12 – Background

Cardiovascular Disease - Chocolate Summary of Recommendations and Evidence

A synthesis of the recommendations and evidence regarding cardiovascular disease and chocolate.

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Does vitamin C supplementation improve immune function, including preventing or treating the common



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tion professionals around the world use PEN.

ur storyboard video shares our story of who we are and how we have grown over time.





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Down Syndrome	✓	✓	✓		✓
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• Eating Together	✓	✓	✓	✓	✓
Infant Nutrition					
• Breastfeeding	✓	✓	✓	✓	✓
Complementary Feeding	✓	✓	✓	✓	✓

Knowledge Pathway

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Cardiovascular Disease

Practice Questions

Click on the Practice Question to view the synthesis of the literature and the practice guidance or recommendation.

Intervention



Q: What nutrition strategies can prevent cardiovascular disease (CVD) in the healthy population (primary prevention)?

Last Updated: 2017-09-25



Q: What is the effectiveness of a Mediterranean-style diet for the primary prevention of cardiovascular disease (CVD)?

Last Updated: 2019-07-19



Q: What is the effectiveness of a Mediterranean-style diet for the secondary prevention of cardiovascular disease (CVD, i.e. adults with established heart disease)?

Last Updated: 2019-07-19



Q: What dietary strategies are recommended to reduce the risk of cardiovascular disease (CVD) in frail older adults? Are dietary restrictions recommended to reduce cholesterol levels for older adults in long-term care facilities?

Last Updated: 2017-10-19



Q: Is a reduced saturated fat diet recommended for primary or secondary cardiovascular disease (CVD) prevention?

Last Updated: 2018-09-28

Navigation menu - takes you to other parts of the pathway

This Knowledge Pathway

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Practice Question and Key Practice Points

- Key Practice Points provide a succinct evidence-based recommendation or “answer” to a dietetics practice question

Each Key Practice Point is graded based on the strength of the evidence used to formulate it

Intervention



Q: What is the effectiveness of a Mediterranean-style diet for the secondary prevention of cardiovascular disease (CVD, i.e. adults with established heart disease)?

Last Updated: 2019-07-19

[Search Strategy](#)

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Key Practice Point #1

Recommendation

For secondary prevention of CVD (i.e. adults with established CVD), advice to follow a Mediterranean-style diet may reduce the risk of CVD mortality but has little to no effect on blood lipid levels or blood pressure.

No adverse effects of a Mediterranean-style diet were identified.

Evidence Summary

For secondary prevention of CVD (for adults with established coronary heart disease), a 2019 Cochrane review identified one trial (Lyon Diet Heart Study) that reported that a Mediterranean diet compared to usual care decreased death due to CVD in a French population. For CVD risk factors, the review reported results from several small RCTs, which found no effect of a Mediterranean-style diet compared to usual care or a low fat diet on blood lipid levels or blood pressure.

Grade of Evidence C

Remarks

Various definitions of a Mediterranean-style diet were included in the interventions in this review, but all comprised dietary advice with at least two core components:

- high monounsaturated/saturated fat ratio (e.g. use olive oil as main cooking ingredient and/or consumption of tree nuts)
- high intake of plant-based foods (i.e. fruit, vegetables, legumes)

The largest secondary prevention study (Lyon Diet Heart Study) from France supplemented participants with canola margarine. The generalizability of the results is limited by the varying formulations of the Mediterranean diet and the countries where the studies were conducted.

[Evidence](#) [Comments](#) [References](#)

Grading evidence

Grading Evidence

Grade A - The conclusion is supported by good evidence.

The evidence consists of results from studies of strong research design for answering the practice question. The results are both clinically important and consistent with minor exceptions at most. The results are free of any significant doubts about generalizability, bias, and flaws in research design.

Grade B - The conclusion is supported by fair evidence.

The evidence consists of results from studies of strong research design for answering the practice question, but there is some uncertainty attached to the conclusion because of inconsistencies among the results from the studies or because of minor doubts about clinical significance, generalizability and/or risk of bias. Alternatively, the evidence consists solely of results from weaker designs for the question addressed, but the results have been confirmed in separate studies and are consistent, with minor exceptions at most.

Grade C - The conclusion is supported by limited evidence or expert opinion.

The evidence consists of results from studies of strong research design for answering the practice question, but there is substantial uncertainty attached to the conclusion because of inconsistencies among the results from different studies or because of serious doubts about clinical significance, generalizability and/or risk of bias. Alternatively, the evidence consists solely of results from a limited number of studies of weak design for answering the question addressed. Finally, the support for a particular recommendation may consist of a consensus statement of informed, respected authorities or descriptive reports of expert panels.

Grade D - A conclusion is either not possible or extremely limited because evidence is unavailable and/or of poor quality and/or is contradictory.

The evidence consists of results from a single study with major design flaws or from studies with highly inconsistent results and/or results that are not generalizable. Alternatively, evidence may be lacking either from authoritative sources or research involving humans.

Note: The quality of the evidence is a major factor determining the grade; however, consideration is given to factors that influence findings, including consistency, impact, generalizability and applicability. In some cases these factors can supersede the evidence base.

[Click here to link to PEN Evidence Grading Checklist](#)



Quality of Evidence Grades:

⊕⊕⊕⊕ High quality evidence

We are very confident that the true effect lies close to that of the estimate of the effect.

⊕⊕⊕⊖ Moderate quality evidence

We are moderately confident in the effect estimate.

⊕⊕⊖⊖ Low quality evidence

Our confidence in the effect estimate is limited: the true effect may be substantially different from the estimate of the effect.

⊕⊖⊖⊖ Very Low quality evidence

We have very little confidence in the effect estimate: the true effect is likely to be substantially different from the estimate of effect.

Strength of Recommendation

Strong recommendation (for or against)

Conditional recommendation (for or against)

Evidence statements – evidence, comments and rationale

Evidence statement - summary of the critically appraised evidence including type of study, population, number of subjects, methods, main findings and study limitations

[Evidence](#) [Comments](#) [References](#)

Evidence

- a. A 2019 Cochrane review examined the effectiveness of a Mediterranean-style diet for the primary and secondary prevention of CVD (1). To be included in the review, the Mediterranean-style diet needed to consist of at least two key components: i) high in monounsaturated/saturated fat ratio (e.g. use of olive oil as main cooking ingredient and/or consumption of tree nuts, ii) high intake of plant-based foods (e.g. fruit, vegetables and legumes. Additional optional components included: iii) low to moderate red wine consumption, iv) high consumption of whole grains and cereals, v) low consumption of meat and meat products and increased consumption of fish, and vi) moderate consumption of milk and dairy products. The primary outcomes included in the review were clinical events (cardiovascular (CV) mortality, all-cause mortality and other non-fatal events); secondary outcomes were CV risk factors (blood lipids, blood pressure (BP) and development of type 2 diabetes). The quality of evidence for each outcome was assessed using GRADE process. Most included studies were at unclear risk of bias but not high risk of bias. Secondary prevention results are summarized:
- Comparing a Mediterranean-style diet intervention versus usual care, two trials (n=706 participants) were included. All participants had CVD, including coronary heart disease (CHD) or had experienced a recent myocardial infarction. Only one study (n=605 participants) included clinical endpoints: the Lyon Diet Heart Study that comprised mostly men (90%) with CHD from France who were given advice to follow a Mediterranean-style diet plus supplemental canola margarine over four years. Based on this study, the Cochrane review reported low quality evidence a Mediterranean-style diet can decrease CVD mortality (RR, 0.35; 95%CI, 0.15 to 0.82) and total mortality (RR, 0.44; 95%CI, 0.21 to 0.92). Low quality evidence from two RCTs, also found no effect of a Mediterranean-style diet on total cholesterol, LDL-C, HDL-C or triglyceride levels. Very low quality evidence from one RCT showed no effect on BP levels.
 - Comparing a Mediterranean-style diet versus another dietary intervention, six trials (n=1731 participants) were included; however, two of the studies (n=1406) were removed from the analysis as the reliability of the studies was drawn into question, leaving only four trials (n=355 participants) included in the analysis of which only two trials could be meta-analyzed. All of the trials recruited patients with CVD. Only one small study from the US (n=101 participants), which compared a Mediterranean-style diet to a low fat diet included clinical endpoints. The Cochrane review reported very low quality evidence for no effect on total cardiac endpoints from this trial (RR, 0.98; 95%CI, 0.40 to 2.41). Very low quality evidence also found no effect of a Mediterranean-style diet on blood cholesterol levels, triglyceride levels or blood pressure.

The authors of the review conclude there is uncertainty regarding effects of a Mediterranean-style diet on both clinical endpoints and CVD risk factors for secondary prevention of CVD (1). A number of trials are ongoing which are needed to contribute to the evidence base.

Practice Guidance Toolkits

PGT organise content into the steps of the Nutrition Care Process:
Assessment
Diagnosis
Intervention
Monitoring and Evaluation

Home > Knowledge Pathways > Health Condition/ Disease > Cardiovascular Disease

Cardiovascular Disease

Practice Guidance Toolkit



Key Nutrition Issues

Disclaimer

Description

Cardiovascular disease (CVD) affects the heart or any of the blood vessels in the body, including those in the heart and brain (1). Coronary artery disease (CAD), or coronary heart disease (CHD) refers to partial or complete blockages in the blood vessels of the heart.

Primary prevention of CVD focuses on strategies to prevent CVD morbidity and mortality in healthy individuals (1).

Secondary prevention of CVD addresses strategies to decrease CVD morbidity and mortality in individuals with a history of CVD and individuals at high CVD risk (which typically includes most people with diabetes as well as many individuals with metabolic syndrome presenting with a constellation of risk factors including: abdominal obesity, hypertension, dyslipidemia and/or impaired glucose tolerance) (2,3).

Lifestyle factors, medical disorders (e.g. diabetes or kidney disease), genetic factors and/or medications can contribute to developing dyslipidemia (4). An individual's risk for a major CVD event is used to establish target blood lipid levels. Nutrition and lifestyle therapy (i.e. smoking cessation, 150 min/week of moderate-to-vigorous-intensity aerobic physical activity) are the cornerstones of prevention and treatment.

See Additional Content:

[Cardiovascular Disease Background](#)

[Cardiovascular Disease – Chocolate Background](#)



Key Nutrition Issues

Nutrition Assessment, Monitoring and Evaluation

Nutrition Diagnosis

Nutrition Intervention

Goals

Cardiovascular Disease Summary of Recommendations and Evidence

Cardiovascular Disease - Dyslipidemia Summary of Recommendations and Evidence

Cardiovascular Disease - Chocolate Summary of Recommendations and Evidence

Nutrition Education and Professional Resources

References

This Knowledge Pathway

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Clinical

- Disease Etiology
- Screening / Diagnosis
- Prevalence
- Symptoms
- Co-Morbidities / Associated Diseases
- Medical Treatment
- Nutrition Care
- Definitions
- Key and additional Resources for Professionals
- References

Non-clinical

- Importance of topic to practice
- Topic overview
- Relevant basic information/background questions
- Regulatory issues
- Key resources for professionals
- Additional resources/readings
- References

The majority are
organised
according to
Grade of
Evidence (newer
ones are
organized by
topic)

Summary of Recommendations and Evidence

★ Cardiovascular Disease

Summary of Recommendations and Evidence

Information in this section pertains to all global PEN[®] partners except where country flags are visible. Click on the flag(s) for country-specific information. If a country flag is not listed, there is no information specific to that country.



This Summary of Recommendations and Evidence synthesizes the Key Practice Point(s) for each Practice Question (PQ) in this Knowledge Pathway. It is organized by the Nutrition Care Process and contains statements or recommendations that have been graded using either the [PEN](#) or [GRADE](#) approaches to critical appraisal. For additional information on the evidence and references, see the PQs in this [Knowledge Pathway](#).

Content

INTERVENTION

1. [Nutrition Strategies and Primary Prevention](#)
 - [Obesity](#)
 - [Primary Prevention and Whole Grains, Fibre and Sugar](#)
 - [Plant-based Diet](#)
2. [Mediterranean Diet Effects on CVD Primary Prevention](#)
3. [Mediterranean Diet Effects on CVD Secondary Prevention](#)
4. [Dietary Strategies for CVD Risk Reduction and Cholesterol Lowering in Older, Frail Adults](#)
5. [Saturated Fat](#)
6. [Free Sugars](#)

Related Tools and Resources

Sort by:

- Audience (professional/consumer)
- Country
- Language

Flags indicate country specific information tool or resource

Home > Knowledge Pathways > Health Condition/ Disease > Cardiovascular Disease

Cardiovascular Disease

Related Tools & Resources

In addition to tools/resources developed specifically by the PEN[®] team (translations and adaptations where available), links to tools/resources are provided where their consistency with the evidence, authoritative source and currency of information believed to be reliable and accurate at the time of publication. Country-specific resources may not be totally consistent with country guidelines and practice.

Audience	Country	Language
All	All	All
Professional	Australia	English
Consumer	Canada	French
	United Kingdom	Chinese
	Europe	Gujarati

10 Minutes to Change Your Life – Time to Get Moving

Last Updated: 2016-03-30 – Handout

A consumer booklet for adults written by the British Heart Foundation on physical activity to prevent heart disease.



Target Audience: Consumer

2016 Canadian Cardiovascular Society Guidelines for the Management of Dyslipidemia for the Prevention of Cardiovascular Disease in the Adult

Last Updated: 2017-07-24 – Practice Guideline

Updated guidelines published in the Canadian Journal of Cardiology on the prevention and management of cardiovascular

Additional features in PEN



Keeping you updated






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PEN CONTENT



New Knowledge Pathway Content

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View a sampling of the latest professional and client tools and resources added to PEN²

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PEN COMMUNITY

TRENDING TOPICS



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Tweets by @pennutrition

 **PEN: Practice-based Evidence in Nutrition**
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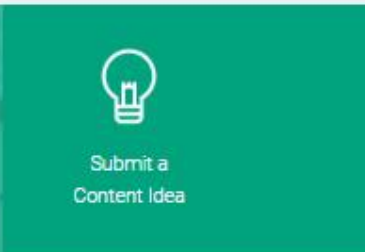
UPDATED: The Summary of Recommendations and Evidence (SRE) on probiotics

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Glossary

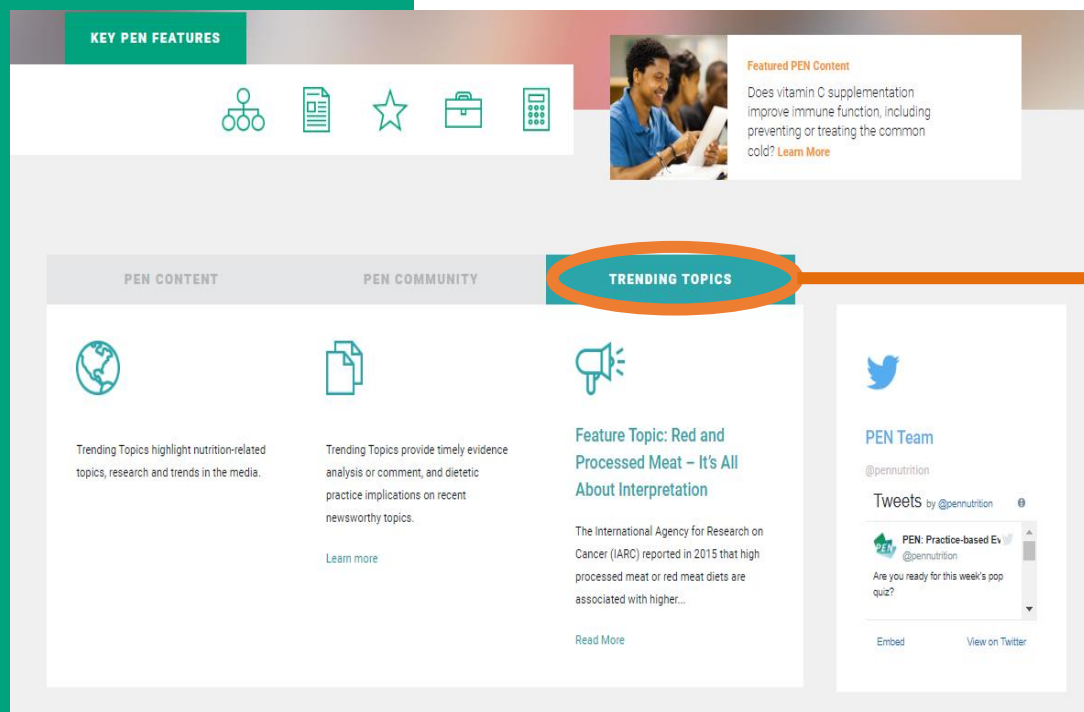
Not sure about a term in PEN content? The PEN Glossary may have the definition that you are seeking.



PEN Video Tutorials

Need to better understand how to use PEN? These quick videos provide an overview and demonstrate the Power of PEN.

Trending Topics



KEY PEN FEATURES

Trending Topics

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Does vitamin C supplementation improve immune function, including preventing or treating the common cold? [Learn More](#)

TRENDING TOPICS

Trending Topics highlight nutrition-related topics, research and trends in the media.

Trending Topics provide timely evidence analysis or comment, and dietetic practice implications on recent newsworthy topics.

[Learn more](#)

Feature Topic: Red and Processed Meat – It's All About Interpretation

The International Agency for Research on Cancer (IARC) reported in 2015 that high processed meat or red meat diets are associated with higher...

[Read More](#)

PEN Team

@pennutrition

Tweets by @pennutrition

PEN: Practice-based Ev

Are you ready for this week's pop quiz?

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Trending Topics

Trending Topics pieces (Article Analyses, Evidence Clips and Other Topics) are published in timely response to recent media and journal articles, position statements, clinical guidelines, etc. Since they are based on the most recent evidence/publications, they may not be consistent with PEN evidence in other PEN content areas. As soon as possible, when this occurs, the PEN content will be reviewed and updated as needed.

Food and Food Packaging and Coronavirus Risk

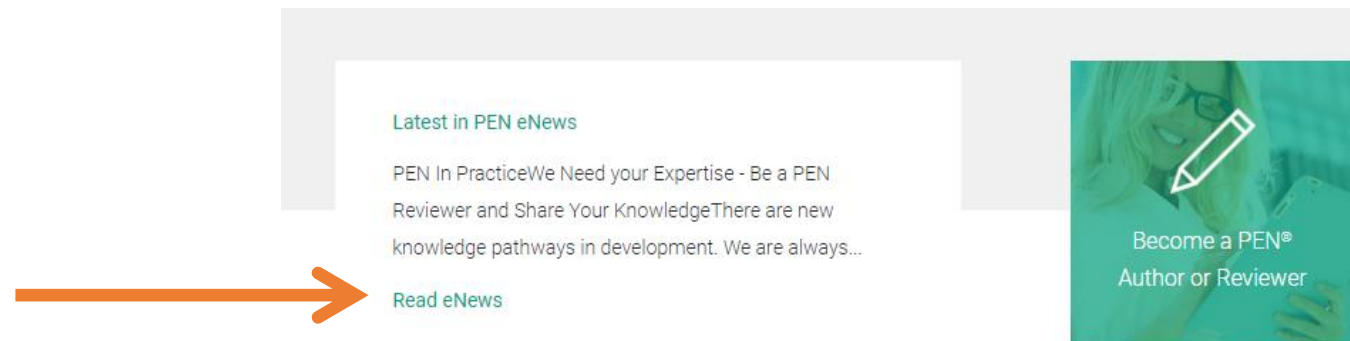
A recent opinion on [SARS-CoV-2 and its Relationship to Food Safety](#) from the International Commission on Microbiological Specifications for Foods and government guidelines report that evidence does not support the concern that food and/or food packaging presents a risk of catching the coronavirus.

Key Points and Practice Recommendations

PEN eNews

Check out past issues of PEN eNews [here](#)

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Using PEN[®] in different practice settings



You're preparing for a cooking demonstration prior to placement

You check out PEN practice question 'Are there any health benefits from eating organic foods?'



You read an article on social media around vitamin D supplements 'curing' Covid-19

You check out PEN Trending Topics and find 'Should I Recommend Vitamin D Supplements to Protect Against COVID-19?'



**Your in clinic on placement
and you come across 'Oral
Allergy Syndrome
' a new condition you haven't
heard of before**



**You check out PEN background information on
allergic diseases**





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For queries related to your PEN account contact globalpen@bda.uk.com

Summary

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- Check out your monthly research ezine, to keep up to date with the latest content from PEN.

