Walking Through the Research Process
Using Library Resources

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Objectives

• Describe the research process
• Describe the PICO question format
• Outline strategies for searching PubMed and CINAHL to find research articles
• Organize research using a citation manager
• Describe how to evaluate a research article and the levels of evidence
What is Nursing Research?

• A systematic process of inquiry that uses rigorous guidelines to produce unbiased, trustworthy answers to questions about nursing practice.

Research May Be Used To:

- Change nursing care processes
- Influence organizational policies and procedures
- Create or enhance patient care management tools
- Formulate more effective care decisions regarding individual patient needs
Research Process

1. Define a research problem/formulate a question
2. Find the evidence/literature search
3. Analyze/Appraise evidence
4. Organize your research
5. Determine research design
6. Data collection/analysis
7. Publish/translate research into practice
Research Process

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Sources of Research Questions

- Clinical practice
- Educational experience
- Patient feedback
- Professional literature
- Performance improvement/QI
Define Your Question

• #1: What type of question is it?
  – Diagnosis
  – Prognosis
  – Therapy
  – Prevention
  – Education
#2: Create an answerable question using the PICO framework

**P** Patient or Problem

**I** Intervention, prognostic factor, exposure

**C** Comparison

**O** Outcomes
PICO Example

- **Initial question**: Is there an association between chocolate intake and heart failure in women?

- **Reformulated question**: In middle-aged and elderly Swedish women, is chocolate intake associated with the risk of incident heart failure hospitalization or mortality?
PICO

PATIENT/PROBLEM – middle-aged and elderly Swedish women

INTERVENTION – chocolate intake

COMPARISON, IF ANY – no chocolate intake

OUTCOME – incident HF hospitalization or mortality
Original Articles

Chocolate Intake and Incidence of Heart Failure
A Population-Based Prospective Study of Middle-Aged and Elderly Women

Elizabeth Mostofsky, MPH, Emily B. Levitan, ScD, Alicja Wolk, DrMedSci and Murray A. Mittleman, MD, DrPH

Author Affiliations

Correspondence to Murray A. Mittleman, MD, DrPH, Cardiovascular Epidemiology Research Unit, Department of Medicine, Beth Israel Deaconess Medical Center, 375 Longwood Ave. Room 423. Boston. MA 02115. E-mail
Understand Your Question

• **#3: Is this a background or foreground question?**

  • **Background:** General knowledge
    – Ex: What causes hypertension?
    – Ex: What therapies are commonly used to treat hypertension?

  • **Foreground:** Specific knowledge that could directly inform clinical decisions
    – Ex: Can a regular intake of chocolate high in favanol content lower blood pressure?
Research Process

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Resources for Background Questions

• Reliable textbook
  – HealthLinks eBooks page: 1400+
    healthlinks.washington.edu/textbooks
  – HEAL-WA eBooks: 70+
    heal-wa.org/ebooks

• UptoDate
  – Online text with concise, comprehensive up-to-date reviews of clinical topics in multiple specialties
Browse eBooks

Browse or search for a specific Health-related eBook Resource. For eBook Resources in other subjects go to the UW Libraries Home page.

FIND AN EBOOK RESOURCE

Search by title:

Go

FIND EBOOKS BY SPECIALTY

AIDS/HIV

Go

MORE TEXTBOOK INFORMATION ...

- **UW Libraries Catalog**
  University of Washington holdings.

- **New Books List for the Health Sciences Library**

- **Electronic Resources Usage Guidelines**
  What can you copy and share and what are your options when using electronic journals and databases.

- **NetLibrary FAQ**

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**EBOOKS ALL** (1379 FOUND OF 1396 TOTAL)

**A B C D E F G H I J K L M N O P Q R S T U V W X Y Z (all)**

- **10 Health Questions About the 10**
  (WHO/Europe Publications) 2004

- **10 Health Questions About the 10**
  (WHO/Europe Publications) 2004

- **10 Health Questions About the New EU Neighbours**
  (WHO/Europe Publications) 2006

- **10th Report on Carcinogens**
  (Knovel) 2002

- **2004 Surgeon General's Report - The Health Consequences of Smoking**
  Updates on diseases and estimates on the burden of disease associated with smoking.

- **5 Minute Clinical Consult**
  (Books@Ovid) 18th edition.

- **5 Minute Sports Medicine Consult**
  (Books@Ovid) 1st edition.

- **5-Minute Infectious Diseases Consult**
  (Books@Ovid) 1st edition.

- **5-Minute Obstetrics and Gynecology Consult**
  (Books@Ovid) 1st edition.

- **5-Minute Orthopaedic Consult**
  (Books@Ovid) 2nd edition.

- **5-Minute Urology Consult**

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Overview of the therapy of heart failure due to systolic dysfunction
Treatment of acute decompensated heart failure: General considerations
Evaluation of the patient with suspected heart failure
Treatment and prognosis of diastolic heart failure
Treatment of acute decompensated heart failure: Components of therapy
Evaluation of the patient with heart failure or cardiomyopathy
Epidemiology and causes of heart failure
Pathophysiology of acute decompensated heart failure
Heart failure self management
Prognosis of heart failure
Treatment of acute decompensated heart failure in acute coronary syndromes
Cardiorenal syndrome: Definition; prognosis; and pathophysiology
Ventricular arrhythmias in heart failure and cardiomyopathy
Rationale for and clinical trials of beta blockers in heart failure due to systolic dysfunction
Evaluation and management of asymptomatic left ventricular systolic dysfunction
Predictors of survival in heart failure due to systolic dysfunction
Secondary and primary prevention of sudden cardiac death in heart failure and cardiomyopathy
Use of beta blockers in heart failure due to systolic dysfunction
Genetics of dilated cardiomyopathy
Treatment of hypertension in patients with heart failure
Clinical manifestations and diagnosis of diastolic heart failure
<table>
<thead>
<tr>
<th>Reference</th>
<th>Access the full text of this article</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure 2008: the Task Force for the Diagnosis and Treatment of Acute and Chronic Heart Failure 2008 of the European Society of Cardiology. Developed in collaboration with the Heart Failure Association of the ESC (HFA) and endorsed by the European Society of Intensive Care Medicine (ESICM). AD PMID 22778143</td>
</tr>
</tbody>
</table>
Resources for Foreground Questions

- Search for evidence-based resources
- Search for primary research articles

![Evidence Pyramid Diagram]

- MetaSearch Engines: ex. TRIP
- Systematic Reviews, Meta-Analyses: ex. Cochrane
- Evidence Summaries, Evidence Guidelines: ex. DynaMed, Nursing Reference Center, NGC
- Randomized Controlled Trials (RCTs), Cohort Studies, Qualitative Studies: ex. MEDLINE/PubMed, CINAHL
- Background Information, Expert Opinion: ex. Textbooks, UptoDate
## CINAHL vs. PubMed

<table>
<thead>
<tr>
<th>CINAHL</th>
<th>PubMed</th>
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</thead>
<tbody>
<tr>
<td>Coverage: 1982+</td>
<td>Coverage: late 1940’s+</td>
</tr>
<tr>
<td>Indexes 1700 journals</td>
<td>Indexes 5000 journals</td>
</tr>
<tr>
<td>Focuses on nursing and allied health literature</td>
<td>Focuses on biomedical literature</td>
</tr>
<tr>
<td>CINAHL Thesaurus with more nursing terms</td>
<td>Uses MeSH as its controlled vocabulary</td>
</tr>
<tr>
<td>Has peer-reviewed limit</td>
<td>No peer-reviewed limit</td>
</tr>
<tr>
<td>Includes cited references at end of many refs</td>
<td>No cited references</td>
</tr>
</tbody>
</table>
CINAHL or [CINAHL Plus]

- Cumulative Index to Nursing and Allied Health Literature
- Provides coverage from 1982 [1937] to date, of nursing and 17 allied health disciplines literature
- 1700+ [3800+] journals indexed including virtually all English-language nursing journals
- Search with text words and thesaurus terms
- Can easily search for Research articles
Enter search terms

Searching: **CINAHL Plus with Full Text**

- **chocolate**
- **AND**
- **heart failure**
- **AND**

**Search Options**

- **Limit your results**
  - Abstract Available
  - Published Date from
    - Month
    - Year:  to 
    - Month
    - Year:
  - English Language

**References Available**

- Author
- Publication
- Peer Reviewed
CINAHL Publication Type Limits

- Clinical trial
- Critical path
- Practice guidelines
- Research
- Standards
- Systematic review
1. **Chocolate reduces heart failure hospitalization.**
   American Nurse Today, 2010 Aug; 5 (8). (1p) (journal article) ISSN: 1930-5583 CINAHL AN: 2010852097
   Database: CINAHL Plus with Full Text
   ![Add to folder](check_for_full_text.png)

2. **Chocolate consumption and mortality following a first acute myocardial infarction: the Stockholm Heart Epidemiology Program.**
   (includes abstract); Janszky I; Mukamal KJ; Ljung R; Ahnve S; Ahlbom A; Hallqvist J; Journal of Internal Medicine, 2009 Sep; 266 (3): 248-57 (journal article - research) ISSN: 0954-6820 PMID: 19711504 CINAHL AN: 2010382209
   Abstract: OBJECTIVES: To assess the long-term effects of chocolate consumption amongst patients with established coronary heart disease. DESIGN: In a population-based inception cohort study, we followed 1169 non-diabetic patients hospitalized with a confirmed first acute myocardial infarction (AMI) between 1992 and 1994 in Stockholm County, Sweden, as part of the Stockholm Heart Epidemiology Program. Participants self-reported usual
Chocolate consumption and mortality following a first acute myocardial infarction: the Stockholm Heart Epidemiology Program.

(includes abstract); Janszky I; Mukamal KJ; Ljung R; Ahnve S; Ahlbom A; Hallqvist J; Journal of Internal Medicine, 2009 Sep; 266 (3): 248-57 (journal article - research) ISSN: 0954-6820

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Subjects: Cacao; Diet; Myocardial Infarction; Myocardial Infarction; Aged: 65+ years; Middle Aged: 45-64 years; Female; Male

Database: CINAHL Plus with Full Text
PubMed

- MEDLINE (1940’s+) is included on PubMed
- Indexes 5,000 biomedical journals
- Covers all aspects of biosciences and healthcare
- 75%-80% of citations have abstracts
- Updated 5x/week
- Search with text words or MeSH (thesaurus) terms
Mostofsky E, Levitan EB, Wolk A, Mittleman MA.
PMID: 20713904 [PubMed - indexed for MEDLINE]
Related citations

Zielinsky P, Piccoli AL Jr, Manica JL, Nicoloso LH.
PMID: 20136615 [PubMed - indexed for MEDLINE]
Related citations

3. Chocolate consumption and mortality following a first acute myocardial infarction: the Stockholm Heart Epidemiology Program.
PMID: 19711504 [PubMed - indexed for MEDLINE]
Related citations

4. The anti-inflammatory properties of cocoa flavanols.
Selmi C, Mao TK, Keen CL, Schmitz HH, Eric Gershwin M.
PMID: 16794453 [PubMed - indexed for MEDLINE]
Related citations
Chocolate consumption and mortality following a first acute myocardial infarction: the Stockholm Heart Epidemiology Program.


Department of Public Health Sciences, Karolinska Institute, Stockholm, Sweden. imre.janszky@ki.se

Abstract
OBJECTIVES: To assess the long-term effects of chocolate consumption amongst patients with established coronary heart disease.

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PMID: 19711504 [PubMed - indexed for MEDLINE]

Related citations
- Coffee consumption and mortality after acute myocardial infarction: the Stoc [Am Heart J. 2009]
- Increased risk and worse prognosis of myocardial infarction in patients with [Brain. 2009]
- Chocolate intake and incidence of heart failure: a population-based prosp [Circ Heart Fail. 2010]
- Review Potential survival gains in the treatment of myocardial infarction. [Heart. 2009]
- Review Meta-analysis of adverse cardiovascular outcomes as [Am J Cardiol. 2009]

Cited by 1 PubMed Central article
Polyphenols from cocoa and vascular health-a critical review. [Int J Mol Sci. 2009]

All links from this record
Related Citations
Cited in PMC

Recent activity
Ask your librarian for help

- **Literature searching**: your librarian can work with you to create a focused search
  - Sometimes this takes *several iterations* because you will discover new information and ideas
  - You may need to *revise* your research question
  - You need to *think critically* about the search
Locating eJournals

- Check with your library for access to full-text eJournals

- **UW Staff/Students**: use the Proxy service to access full-text eJournals from off-campus

- **Non-UW**: use HEAL-WA.org
  - Includes *CINAHL* and *MEDLINE* links to full-text articles
  - A-Z Journals: 2,600 full-text journals
Access to some eJournals may be unavailable at this time. We are currently going through the renewal process and as access is updated and changed, the journals may temporarily become unavailable. Please use the UW Libraries catalog to search for these journals until further notice.
Resources for Foreground Questions

- Evidence Summaries
Search for Evidence Summaries

• **DynaMed**
  – Evidence-based clinical resource providing summaries of 3500+ diseases and conditions

• **Nursing Reference Center**
  – Comprehensive point-of-care resource for nurses that includes Evidence-based Care Sheets

• **Natural Standard**
  – Provides high quality, evidence-based information on herbs, vitamins, diets, complementary practices (modalities), and medical conditions
DynaMed

- Provides summaries of the best evidence for over 3,500 clinical topics
- Can quickly browse and find key recommendations
- Updated daily
- Links out to full-text articles
- Download available for PDA and iPhones
| Dietary recommendations for cardiovascular disease prevention |
| Hypertension alternative treatments |
| Bulk-Forming Laxatives Rx |
| Migraine in adults Tx Dx |
| Hyperoxaluria Tx Dx |
| Doxycycline Rx |
| Headache Tx Dx |
| Phenelzine Rx |
| Gastroesophageal reflux disease (GERD) Tx Dx |
| Migraine prophylaxis - alternative therapies |
| Bupropion Rx |
| Ritonavir Rx |
| Potassium Iodide Rx |
| Carcinoid heart disease Tx Dx |
| Cyclic vomiting syndrome Tx Dx |
| Lipid-lowering pharmacotherapy overview |
| Contact dermatitis Tx Dx |
| Endometriosis Tx Dx |
| Carcinoid tumors Tx Dx |
| Enuresis Tx Dx |
| Chloroquine Rx |
| Charcoal, Activated Rx |
| Mefloquine Rx |
| Tranylcypromine Rx |
| Senna Rx |
| Iodoquinol Rx |
| Gonococcal urethritis Tx Dx |
Dietary recommendations for cardiovascular disease prevention – DynaMed

Chocolate:
- flavonoid content of chocolate may reduce risk of cardiovascular mortality (level 2 [mid-level] evidence)
  - based on meta-analysis within review of 136 studies
  - Reference - Nutrition & Metabolism 2006 Jan 3;3(1):2 full-text
- up to 2 chocolate servings/week associated with decreased risk for heart failure in women (level 2 [mid-level] evidence)
  - based on prospective cohort study in Sweden
  - 31,823 women aged 48-83 years without baseline diabetes, history of heart failure or myocardial infarction completed food questionnaire and were followed for 9 years
  - 1.3% (419 women) hospitalized for or died from heart failure
  - adjusted risk for heart failure compared to no regular chocolate intake (p for trend = 0.0005)
    - rate ratio (RR) 0.74 (95% CI 0.58-0.95) with 1-3 servings of chocolate/month
    - 0.68 (95% CI 0.5-0.93) with 1-2 servings/week
    - 1.09 (95% CI 0.74-1.62) with 3-6 servings/week
    - 1.23 (95% CI 0.73-2.08) with ≥ 1 servings/day
  - Reference - Circ Heart Fail 2010 Aug 16 early online
  - DynaMed commentary -- type of chocolate not recorded
- ≥ 1 serving of chocolate weekly may reduce cardiovascular events in older women (level 2 [mid-level] evidence)
  - based on prospective cohort study
  - 1,216 older women (age range not reported) who were originally recruited for a randomized trial of supplements completed baseline dietary questionnaires and were followed for 9.5 years
  - 1 serving defined as 25-50 g chocolate containing 5%-15% cocoa
  - 52% reported consuming ≥ 1 serving of chocolate per week
  - comparing women consuming ≥ 1 serving of chocolate per week vs. < 1 serving per week
    - atherosclerotic vascular disease events in 20.7% vs. 27.3% (p 0.01)
    - ischemic heart disease events in 10.2% vs. 15.2% (p = 0.01)
    - heart failure in 2.8% vs. 6% (p = 0.01)
  - Reference - Arch Intern Med 2010 Nov 8;170(20):1857
- higher cocoa intake associated with lower all-cause mortality, cardiovascular mortality, systolic blood pressure and diastolic blood pressure (level 2 [mid-level] evidence)
  - based on 15-year follow-up of 470 elderly men free of chronic diseases at baseline
Nursing Reference Center

- Evidence-based summaries
  - Diseases & Conditions
  - Evidence-based Care Sheets
  - Quick Lessons
  - Information about drugs and medications
  - Skills & Procedures
  - Patient Education
  - CE
Browse for: heart failure in All

Alphabetical  Relevancy Ranked

Page: Previous  Next

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

- Heart Failure and Alcohol
- Heart Failure and Anemia
- Heart Failure and Atrial Fibrillation
- Heart Failure and Auricular Fibrillation
- Heart Failure and B-Type Natriuretic Peptide
- Heart Failure and Cognitive Impairment
- Heart Failure and Diabetes
- Heart Failure and Hypertension
- Heart Failure and Kidney Disease
- Heart Failure and Lung Diseases
- Heart Failure and Nutrition
- Heart Failure and Palliative Care
- Heart Failure and Sleep Disorders
- Heart Failure in Blacks

Key Content

Diseases & Conditions includes:

- Quick Lessons
  Clinically-organized nursing overviews that are designed to map the nursing workflow

- Evidence-Based Care Sheets
  Evidence-based summaries on key topics incorporating the best available evidence through rigorous systematic surveillance
Heart Failure and Nutrition

Quick Lesson

By: Patricia G. Kellicker, BSN; Tanja Schub, BS
Edited by: Diane Pravikoff, RN, PhD, FAAN
Cinahl Information Systems

Description/Etiology
Heart failure (HF) is a progressive clinical syndrome in which the heart fails to pump a sufficient supply of blood throughout the body due to a functional or structural disorder. HF can be classified as left-sided or right-sided, acute or chronic, and systolic or diastolic. Systolic dysfunction causes the heart to lose its ability to contract and pump sufficient blood per beat, whereas diastolic dysfunction inhibits the heart's ability to relax and fill with an adequate amount of blood prior to each contraction. HF is the endpoint of several types of cardiovascular disease. Although it may be treated with drugs or heart transplantation, HF is often fatal (see Quick Lesson About...Heart Failure: an Overview).

Cardiac cachexia (CC), a common complication of HF is a complex series of biochemical interactions within the body that result in a loss of lean muscle mass, fat, and bone. CC is diagnosed when weight loss > 7.5% of the previous normal weight is observed over a period of 6 months. HF may lead to cardiac cachexia as a result of:

- increased caloric requirements; patients with severe HF have an 18% increased energy expenditure at rest
  - Patients with severe HF have elevated levels of tumor necrosis factor (TNF) and other inflammatory cytokines, which increase the metabolic rate of tissues
  - HF often requires an increased respiratory effort that causes an increase in body temperature, both of which burn more calories
- nausea and decreased appetite, which can occur when the liver and intestines swell due to obstructed blood flow
- inadequate nutrient absorption because of intestinal edema

Sodium restriction is the primary dietary recommendation for treatment of HF to minimize fluid overload. A low-sodium diet (i.e., maximum 2–3 g/day) reduces fluid retention and peripheral and pulmonary edema. It is important, however, to consider the overall dietary composition in patients with HF. Caloric and nutrient deficiencies are common in this patient population as a result of reduced food intake, loss of key nutrients due to diuretic therapy (e.g., potassium, magnesium, thiamine), and altered gastrointestinal absorption of nutrients. Malnutrition in patients with HF may also result from metabolic impairment of cardiac and
Synonyms/Common Names/Related Substances:

- Anandamide, black chocolate (BC), *Butyrum cacao*, cacahuatl (Nahuatl), cacao (Brazilian Portuguese, English, Spanish), cacao bean husk extract, cacao tree, cacaoboom (Dutch), cacaeiro (Brazilian Portuguese), cacaoyer (French), cacaueiro (Brazilian Portuguese), caffeine, carboxylic acids, catechin, CBC, CBH, chiclati (Nahuatl), chocol (Mayan), chocolate flavonoids, chocolate milk, chocolate tree, cocoa bean, cocoa bran, cocoa butter, cocoa husk, cocoa oil, cocoa powder, cocoa tree, CocoaVia®, dark chocolate, Dutch chocolate, epicatechin, FCMC, fiber, flavan-3-ols, flavanols, flavonoids, granos de cacao (Spanish), harilik kakaopuu (Estonian), hot chocolate, inulin, isomalt, kakao (Danish), Kakao (German), kakaö(fa) (Hungarian), Kakaoboom (German), Kakaopflanze (German), kakaotræ (Danish), kakaowiec (Polish), kakav (Slovenian), kawkaw (Mayan), ke ke (Chinese), lipids, methylxanthine alkaloids, methylxanthines, milk chocolate, N-linoleylethanolamine, N-oleylethanolamine, oleic acid, oligofructose, palmitic acid, phenylethylamine, phytotoxins, phytochemicals, phytosterols, polyphenols, procyandin oligomers, procyanidins, purine alkaloids, saturated fatty acids, sorbitol, stearic acid, Sterculiaceae (family), stimulant drug, sucrose, *Theobroma cacao* L., theobromine, white chocolate, xocoati (Mayan, Nahuatl), xocolati (Mayan, Nahuatl).

**NOTE:** This monograph covers *Theobroma cacao*, cacao, cocoa products, and chocolate.

**Clinical Bottom Line/Effectiveness**

**Brief Background:**

- Cocoa and chocolate are derived from the cacao bean (*Theobroma cacao*). Cocoa products have been considered delicacies for thousands of years and have recently been recognized as a significant source of a number of bioactive constituents with promising salutary effects, such as the catechin and procyanidin families of antioxidant polyphenolic compounds.

- Traditionally, cocoa formulations have been used as antiseptics, diuretics, ECBs, emmenagogues, and parasiticides, as well as to treat alopecia, burns, cough, dry lips, eye problems, fever, diarrhea, listlessness, malaria, nephrosis, parturition, rheumatism,
Clinical Bottom Line/Effectiveness

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- Traditionally, cocoa formulations have been used as antiseptics, diuretics, astringents, emmenagogues, and parasitocides, as well as to treat alopecia, burns, cough, dry lips, eye problems, fever, diarrhea, listlessness, malaria, nephrosis, parturition, rheumatism, snakebite, and wounds. Cocoa butter has also been used to treat wrinkles on the skin, to prevent stretch marks (particularly during pregnancy), and as a compounding base for various pharmaceutical preparations, including rectal suppositories.

- Many health benefits associated with cocoa products have been examined clinically. Chocolate flavonoids, found in the highest amounts in dark chocolate, exhibit antioxidative and cardioprotective properties, inhibit platelet activity, and activate endothelial nitric oxide synthase. Cocoa formulations have also been studied for their therapeutic efficacy in the treatment of coronary artery disease, hypercholesterolemia, skin conditions, vascular disorders, and pediatric constipation, as well their ability to heal wounds, repel insects, and lower blood pressure. Chocolate cravings have also been examined in human studies.

- Currently, high-quality human trials supporting the use of chocolate for any indication are lacking. Complicating recommendations of chocolate intake are the varying flavonoid contents of commercial cocoa products. Fermentation, roasting, and alkalinizing during manufacturing may lead to losses of beneficial flavonoid compounds. Additional clinical studies using strictly characterized cocoa are necessary to elucidate any relationship between therapeutic efficacy and flavonoid content.

Quality of Scientific Evidence:

<table>
<thead>
<tr>
<th>Indication</th>
<th>Evidence Grade</th>
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<tbody>
<tr>
<td>Antioxidant</td>
<td>C</td>
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<tr>
<td>Anti-platelet effects</td>
<td>C</td>
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<tr>
<td>Cardiovascular health</td>
<td>C</td>
</tr>
<tr>
<td>Constipation</td>
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Resources for Foreground Questions

- Systematic Reviews

![Evidence Pyramid Diagram](image)
A *Systematic review*: is a literature review focused on a single question which tries to identify, appraise, select and synthesize all high quality research evidence relevant to that question.

*Meta-analyses*: are systematic reviews that combine the results of several studies using quantitative statistics.
Cochrane Database of Systematic Reviews

- Widely regarded as the “gold standard” of evidence-based information
- Extensive systematic reviews and complex synthesis
- Very focused, specific questions
- Includes full-text reviews and protocols
- Cochrane Abstracts indexed in PubMed and CINAHL
Search Results

There are 2 results out of 6405 records for: "chocolate in Title, Abstract or Keywords in Cochrane Database of Systematic Reviews"

1. Effect of chocolate on blood pressure
   Karin Ried, Thomas R Sullivan, Peter Fakler, Oliver R Frank, Nigel P Stocks
   December 2010
   New Protocol

2. Effects of restricted caffeine intake by mother on fetal, neonatal and pregnancy outcome
   Shayesteh Jahanfar, Halimah Sharifah
   March 2010
   Review
Authors’ conclusions
There is insufficient evidence to confirm or refute the effectiveness of caffeine avoidance on birthweight or other pregnancy outcomes. There is a need to conduct high-quality, double-blinded RCTs to determine whether caffeine has any effect on pregnancy outcome.
Research Process

- Define a research problem/formulate question
- Find the evidence/literature search
- Analyze/Appraise evidence
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- Determine research design
- Data collection/analysis
- Publish/translate research into practice
How to Scan a Research Article

• **First, read:**
  – TITLE, ABSTRACT, and INTRO
  – Section and Sub-Section HEADINGS
  – CONCLUSIONS

• **Second, look at:**
  – Discussion
  – References
  – Graphs, tables

• **Third, read entire article if interested in more details**
Appraising the Evidence Q’s

- Given my clinical question, what is the appropriate study design?
- Is this study (or review) valid?
- Are the results significant (important)?
  - Number Needed to Treat (NNT)
- Are the patients in those studies similar to mine?
- Is the treatment setting similar to mine?
Steps to Appraising Evidence Resources

• Determine the level of evidence
• Use a critical appraisal guide
• Create a study evaluation table
## Levels of Evidence and Grades of Recommendations

<table>
<thead>
<tr>
<th>Grade of recommendation</th>
<th>Level of evidence</th>
<th>Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1a</td>
<td>Systematic review of randomized controlled trials</td>
</tr>
<tr>
<td></td>
<td>1b</td>
<td>Individual randomized controlled trial</td>
</tr>
<tr>
<td>B</td>
<td>2a</td>
<td>Systematic review of cohort studies</td>
</tr>
<tr>
<td></td>
<td>2b</td>
<td>Individual cohort study</td>
</tr>
<tr>
<td></td>
<td>3a</td>
<td>Systematic review of case-control studies</td>
</tr>
<tr>
<td></td>
<td>3b</td>
<td>Individual case-control study</td>
</tr>
<tr>
<td>C</td>
<td>4</td>
<td>Case series</td>
</tr>
<tr>
<td>D</td>
<td>5</td>
<td>Expert opinion without explicit critical appraisal or based on physiology or bench research</td>
</tr>
</tbody>
</table>
Appraisal Guides

• CEBM (Oxford) Critical Appraisal Sheets

• CEBM (Toronto) Critical Appraisal Worksheets
  – http://ktclearinghouse.ca/cebm/practise/ca/work_sheets
### 1a. R - Was the assignment of patients to treatments randomised?

<table>
<thead>
<tr>
<th>What is best?</th>
<th>Where do I find the information?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centralised computer randomisation is ideal and often used in multi-centred trials. Smaller trials may use an independent person (e.g., the hospital pharmacy) to “police” the randomization.</td>
<td>The <strong>Methods</strong> should tell you how patients were allocated to groups and whether or not randomisation was concealed.</td>
</tr>
</tbody>
</table>

This paper: Yes [x] No [ ] Unclear [ ]

Comment: 

### 1b. R - Were the groups similar at the start of the trial?

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>If the randomisation process worked (that is, achieved comparable groups) the groups should be similar. The more similar the groups the better it is. There should be some indication of whether differences between groups are statistically significant (e.g., p values).</td>
<td>The <strong>Results</strong> should have a table of “Baseline Characteristics” comparing the randomized groups on a number of variables that could affect the outcome (e.g., age, risk factors etc). If not, there may be a description of group similarity in the first paragraphs of the <strong>Results</strong> section.</td>
</tr>
</tbody>
</table>

This paper: Yes [x] No [ ] Unclear [ ]

Comment:

### 2a. A - Aside from the allocated treatment, were groups treated equally?

<table>
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<tr>
<td>Apart from the intervention the patients in the different groups should be treated the same, e.g., additional treatments or tests.</td>
<td>Look in the <strong>Methods</strong> section for the follow-up schedule, and permitted additional treatments, etc and in <strong>Results</strong> for actual use.</td>
</tr>
</tbody>
</table>

This paper: Yes [x] No [ ] Unclear [ ]

Comment:

### 2b. A - Were all patients who entered the trial accounted for? - and were they analysed in the groups to which they were randomised?

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<td>Losses to follow-up should be minimal – preferably less than 20%. However, if few patients have the outcome of interest, then even small losses to follow-up can bias the results. Patients should also be analysed in the groups to which they were randomised – “intention-to-treat analysis”.</td>
<td>The <strong>Results</strong> section should say how many patients were <strong>accounted</strong> (e.g., Baseline Characteristics table) and how many patients were actually included in the analysis. You will need to read the results section to clarify the number and reason for losses to follow-up.</td>
</tr>
</tbody>
</table>

This paper: Yes [x] No [ ] Unclear [ ]

Comment:

### 3. M - Were measures objective or were the patients and clinicians kept “blind” to which treatment was being received?

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<tr>
<td>It is ideal if the study is ‘double-blinded’ – that is, both patients and investigators are unaware of treatment allocation. If the outcome is objective (e.g., death) then blinding is less critical. If the outcome is subjective (e.g., symptoms or function) then blinding of the outcome assessor is critical.</td>
<td>First, look in the <strong>Methods</strong> section to see if there is some mention of masking of treatments, e.g., placebo with the same appearance or sham therapy. Second, the <strong>Methods</strong> section should describe how the outcome was assessed and whether the assessor's were aware of the patients' treatment.</td>
</tr>
</tbody>
</table>

Comment:
Create a study evaluation table

**Evaluation Table Template**

A. The column headings for the evaluation table. Copy and paste this header into a text document.

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Conceptual Framework</th>
<th>Design/Method</th>
<th>Sample/Setting</th>
<th>Major Variables Studied (and Their Definitions)</th>
<th>Measurement</th>
<th>Data Analysis</th>
<th>Findings</th>
<th>Appraisal: Worth to Practice</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

B. A description of each column’s content. Put the data extracted from the studies in the correct column.

<table>
<thead>
<tr>
<th>(Put citation here.)</th>
<th>(Theoretical basis for study goes here.)</th>
<th>(Describe design and how study was carried out.)</th>
<th>(This column contains number and characteristics of patients; attrition rate and why.)</th>
<th>(List and define independent and dependent variables.)</th>
<th>(Here go scales used to measure outcome variables, including name and author of scale and data on validity and reliability.)</th>
<th>(Put statistics used to answer clinical question here; but don’t need to include all.)</th>
<th>(These are statistical or qualitative findings—there should be a finding for every statistical test in previous column.)</th>
<th>(Describe strengths and limitations of study; risk or harm if study intervention or findings are implemented; feasibility of use in your practice. Remember: level of evidence + quality of evidence = strength of evidence and confidence to act.)</th>
</tr>
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Research Process

1. Define a research problem/formulate question
2. Find the evidence/literature search
3. Analyze/Appraise evidence
4. Determine research design
5. Data collection/analysis
6. Organize your research
7. Publish/translate research into practice
Use a Citation Manager

• Examples: RefWorks or EndNote
• Why should I use this?
  – Save references
  – Keep track of references and articles
  – Create bibliographies quickly and easily
<table>
<thead>
<tr>
<th>Ref ID</th>
<th>Title</th>
<th>Authors</th>
<th>Source</th>
</tr>
</thead>
</table>
References


This is a test document (Janszky et al., 2009)

References

Chocolate consumption and mortality following a first acute myocardial
infarction: the Stockholm Heart Epidemiology Program

Last Imported Folder (4 references)

<table>
<thead>
<tr>
<th>Cite View</th>
<th>Author</th>
<th>Year</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Janszky, I.</td>
<td>2009</td>
<td>Chocolate consumption and mortality following a first acute myocardial infarction: the Stockholm Heart Epidemiology Program</td>
</tr>
<tr>
<td></td>
<td>Mostofsky, E.</td>
<td>2010</td>
<td>Chocolate intake and incidence of heart failure: a population-based prospective study of middle-aged and elderly women</td>
</tr>
<tr>
<td></td>
<td>Selmi, C.</td>
<td>2006</td>
<td>The anti-inflammatory properties of cocoa flavanols</td>
</tr>
<tr>
<td></td>
<td>Zielinski, P.</td>
<td>2010</td>
<td>New insights on fetal ductal constriction: role of maternal ingestion of polyphenol-rich foods</td>
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Research Process

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- Determine research design
- Data collection/analysis
- Publish/translate research into practice
Determine Research Design

• Select a design appropriate for nature of the question
  – Quantitative research
  – Qualitative research
  – Mixed methods: both quantitative and qualitative

• And the time dimension
  – Retrospective study: uses secondary data already collected
  – Prospective: conducted by researcher; real-time process to collect primary data for this study
  – Longitudinal: conducted over time
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7. Data collection/analysis
Data Collection/Analysis

- Design a **sampling** plan detailing how subjects are recruited and assigned to groups, and how many needed.
- **Collect** data with appropriate data collection protocols and reliable/valid methods: physiologic and psychometric; questionnaires; interviews; focus groups, observation, etc.
- **Analyze and report** data with techniques appropriate for type of data collected and that will answer the question: e.g., statistical tests, standard error, bar chart, scatter plots, mean, median, etc.
Research Process

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2. Find the evidence/literature search
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4. Organize your research
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6. Data collection/analysis
7. Publish/translate research into practice
Dissemination of Research

- Communicate your findings
- Conference presentations
- Posters
- Practice guidelines
- Publish! Publish! Publish!
Translate Research into Practice

• **Apply** the findings to your clinical practice along with your clinical expertise and patient’s values and preferences

• **Evaluate** the outcomes of your practice decisions or changes based on evidence

  - [http://journals.lww.com/ajnonline/pages/collectiondetails.aspx TopicalCollectionId=10](http://journals.lww.com/ajnonline/pages/collectiondetails.aspx TopicalCollectionId=10)
Additional Resources

• Tutorials
  – http://healthlinks.washington.edu/howto/pubmed/
  – http://healthlinks.washington.edu/howto/connect/

• Resource for Non-UW
  – http://heal-wa.org/
For more information...

- **Affiliated with UW**, contact the *nursing library liaison*:
  Janet G Schnall, MS,AHIP
  206.543.7474
  schnall@u.washington.edu

- **At HMC**, contact the *HMC librarian*:
  Amy Harper, MLIS
  206.744.7744
  alharper@u.washington.edu

- Or, contact your institution’s librarian
Walking Through the Research Process Using Library Resources

PowerPoint presentation located:
healthlinks.washington.edu/hsl/liaisons/harper/hmc2011.ppt