Writing & Researching for your Literature Review

Renée McCallum
Writing Services Coordinator (SLC)
researchcommons.sfu.ca

Elyse Neufeld
Life Sciences Librarian
(Biology, BPK, MBB)
www.lib.sfu.ca
Overview

- Preparedness
- What is a literature review?
- What is a literature search?
- Research strategies
- Research tools & services
- Reading & note-taking strategies
- Critical writing & writer’s voice
- Help at SFU Library
Survey

**Academic discipline**

**Program**
- Masters or PhD?

**Stage in writing process**
- Barely started? Roughly mid-way, but you’ve hit an obstacle? Obstacle with the writing/structure? Obstacle with the research: not enough/too much?
How prepared are you?
Break large tasks into smaller ones – instead of a BIG literature review, break it down into its parts

- Set goals
- Deadlines/completion dates
What is a literature review?

- A piece of **discursive prose**, *not* a list describing or summarizing one piece of literature after another

- **Organize** into sections: present themes or identify trends

- It is not a list all the material published: **synthesize and evaluate** the material

[www.writing.utoronto.ca/advice/specific-types-of-writing/literature-review](http://www.writing.utoronto.ca/advice/specific-types-of-writing/literature-review)
Purpose of a literature review

- Establish the **foundation** for and gives **validity** to your research question
- Provides necessary **background/precedent/history** to situate your research question
- Search for relevant **work by others**
- Identify pertinent **theories**
- Just generally to read about the subject

- Think of research within any given field as a large, complicated **jigsaw puzzle**
Writing a literature review allows you to gain and demonstrate skills in two areas:

1. **Information seeking**

2. **Critical appraisal**
- **Introduction** of the context
- **Conclusion** or recapitulation of the main points covered
- For systematic reviews, trend towards including information about **how the literature was searched** (database, keywords, time limits)
- Can be a distinctive **chapter or a set of chapters**
- **Titles vary** and can often be topic related instead of being called the “Literature Review”
- Usually **near the beginning** of the thesis
- Should create an **outline** of your research and your thesis
What might my literature review look like?
What is a literature search?
A literature search is...

- **Systematic**
- **Thorough**
- **Includes all types of literature**
- **Ongoing**
Why do a literature search?

- Find sources to **cite** in your literature review
- Identify the **context** for your work
- Give you ideas for your **focus**
- Help you choose an experimental & analytical **methodology**
- Extend your understanding of **key concepts**
- Identify key **people, organizations and publishers**
Research takes time

- Not everything is online & available via Google
- Internet users expect immediate results
- Finding “the perfect source”
Step #1:
Planning your record-keeping
## Keeping a search log

<table>
<thead>
<tr>
<th>Date</th>
<th>Database</th>
<th>Terms used</th>
<th>Results</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct 15, 2013</td>
<td>Web of Science</td>
<td>(didanosine OR dideoxyinosine OR “Videx EC” OR “Videx Pediatric”) AND synthesis</td>
<td>144</td>
<td>Search alert set up. Relevant articles saved to Thesis folder.</td>
</tr>
<tr>
<td></td>
<td>Fast Search</td>
<td>didanosine synthesis (limited results to peer-reviewed journal articles in English)</td>
<td>8643</td>
<td>Saved 11 citations to Zotero.</td>
</tr>
<tr>
<td>Nov 1, 2013</td>
<td>Reaxys</td>
<td>Searched by chemical name for didanosine; limited to conference papers</td>
<td>9</td>
<td>Saved all citations to Zotero.</td>
</tr>
<tr>
<td></td>
<td>SciFinder</td>
<td>Searched “Research Topic” for both of the concepts “didanosine” and “synthesis”</td>
<td>1070</td>
<td>Results were too broad; narrowed results (see below).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>categorized results by:</td>
<td>88</td>
<td>Saved search and set up search alert. Relevant articles saved to Zotero.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Synthetic chemistry &gt; Prepared substances &gt; Didanosine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Synthetic chemistry &gt; Purified substances &gt; Didanosine</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In most databases, you can create an account & **save your search history**.

**WEB OF SCIENCE™**

![Saved Searches Table](image)
Citation management software

- Access and manage your sources online, all in one place
- Drag & drop PDFs into your library
- Automatically generate bibliographies and in-text citations within MS Word
- Work in groups & share your sources

*RefWorks*

*Zotero*

*Mendeley*
Gait Speed and Survival in Older Adults

Stephanie Studenski, MD, MPH
Subhash Perera, PhD
Kushang Patel, PhD
Caterina Rosano, MD, PhD
Kimberly Faulkner, PhD
Marco Inzitari, MD, PhD
Jennifer Bruce, PhD
Julie Chandler, PhD
Peggy Cervero, PhD
Elizabeth Barrett-Connor, MD
Michael Nevitt, PhD
Marjolein Visser, PhD
Stephen Krivchikov, PhD
Stefania Badinelli, MD
Tamara Harris, MD
Anne B. Newman, MD
Jane Cauley, PhD
Luigi Ferrucci, MD, PhD
Jack Guralnik, MD, PhD

Context: Survival estimates help individualize goals of care for geriatric patients, but life tables fail to account for the great variability in survival. Physical performance measures, such as gait speed, might help account for variability, allowing clinicians to make more individualized estimates.

Objective: To evaluate the relationship between gait speed and survival.

Design, Setting, and Participants: Pooled analysis of 9 cohort studies (collected between 1986 and 2000), using individual data from 34,485 community-dwelling older adults aged 65 years or older with baseline gait speed data, followed up for 6 to 21 years. Participants were a mean (SD) age of 73.5 (5.9) years; 59.6% women; and 79.8% white; and had a mean (SD) gait speed of 0.92 (0.27) m/s.

Main Outcome Measures: Survival rates and life expectancy.

Results: There were 17,528 deaths; the overall 5-year survival rate was 84.8% (confidence interval [CI], 79.6%–88.8%); and 10-year survival rate was 59.7% (95% CI, 46.5%–70.6%). Gait speed was associated with survival in all studies (pooled hazard ratio per 0.1 m/s, 0.88; 95% CI, 0.87–0.90; P <.001). Survival increased across the full range of gait speeds, with significant increments per 0.1 m/s. At age 75, predicted 10-year survival across the range of gait speeds ranged from 19% to 87% in men and from 35% to 91% in women. Predicted survival based on age, sex, and gait speed was as accurate as predicted based on age, sex, use of mobility aids, and self-reported function or age, sex, chronic conditions, smoking history, blood pressure, body mass index, and hospitalization.

Conclusion: In this pooled analysis of individual data from 9 selected cohorts, gait speed was associated with survival in older adults.
Step #2: Developing a search strategy
Developing a search strategy

Topic:  

If your topic is too broad...

Consider the “how?” or the “why?”:
- *how* gait speed can predict survival rates

Consider the “who?” “what?” “where?” and “when?”:
- *how* gait speed can predict survival rates *in older adults*
Developing a search strategy

Write your topic as a question or a statement:
How is gait speed related to survival rates in older adults?

Identify the key concepts:
- gait speed
- survival rates

Identify related terms:
- gait speed → walking speed, gait performance, others?
- survival rate → survival analysis, survivorship, others?
Developing a search strategy

Combine related terms with OR, then combine concepts with AND:

\[
\text{gait speed OR gait performance OR walking speed AND}
\]

\[
\text{survival rate OR survival analysis OR survivorship}
\]
Step #3: Selecting a search tool
Where to start

GENERAL

encyclopedia articles, textbooks, handbooks

SPECIFIC

books, review articles

research articles, conference proceedings
Why use an encyclopedia?

Balance, Posture and Gait

M. Woollacott
University of Oregon, Eugene, OR, USA

Introduction

Balance, posture, and gait in older adults has become a priority in the health-care field because data indicate that falls are a major threat to independence in older adults and an important contributor to fatalities. For example, it has been shown that nearly one-third of adults over the age of 75 experience at least one fall per year, and 6% of these adults sustain fractures as a result. Research on balance and gait in the older adult has focused on (a) determining whether there are specific neural and musculoskeletal subsystems that show a decline with aging and (b) creating effective measures for the prevention and the rehabilitation of decline in balance function with aging. Several approaches have been used in the past to study balance and locomotor skills in the elderly from both a research and a clinical perspective. Traditionally, balance control was studied from a reflex perspective, and global methods of measuring balance were used. Since the 1990s, researchers have begun a systems approach to the study of balance in the older adult. This approach has the advantage of allowing clinicians and researchers to assess whether there is a decline in identified subsystems contributing to balance and gait.

Further reading

Further Reading


Horak et al. (1989) F.B. Horak, C.L. Shupert, A. Mika Components of postural dyscontrol in the elderly Neurobiology of Aging, 10 (1989), pp. 727-738


Studenski (1998) S. Studenski
Finding background info

Research guides
(for recommended sources)
Finding background info (and books)

- **Catalogue**
  search for your topic & add:
  (encyclopedia or handbook)
Finding a database
(to search for review & research articles)

- **Library Search**
  (when you know the name)

- **Journal articles & databases**
  (for the complete list)

- **Research guides**
  (for recommendations)
Interlibrary Loan

**Free** service for SFU students.

- 1-3 days for articles
- 4-8 days for books
- 14+ days for items from outside of Canada
Step #4: Searching
Narrow your search results

- Add in new concepts with **AND**
  
gait speed AND survival rate AND older adults

- Use **quotation marks**
  
  "gait speed"

- Use **limiters** to refine your search
  
  - Limit by publication year, limit by content type
  
  - Sort by relevance, sort by times cited
Expand your search results

- Add related terms with **OR**
  (gait speed OR gait performance OR walking speed)

- Use **truncation**
  `surviv*` for survival, survivorship, survive, survivor

- Use broader keywords
  `mortality` instead of `survival rate`
Subject headings

a.k.a. subject terms, subject descriptors, controlled terms

Fast gait speed and self-perceived balance as valid predictors and discriminators of independent community walking at 6 months post-stroke - a preliminary study.

Authors: Rosa, Marlene Cristina¹
Marques, Alda²
Demain, Sara³
Metcalf, Cheryl D.³

Source: Disability & Rehabilitation Journal

Language: English

Subject Terms: *LEG -- Physiology
*WALKING
*DISEASES
*STROKE
*EQUILIBRIUM (Physiology)
*GAIT in humans
*MUSCLE strength
*PERCEPTION
*SELF-evaluation
*EVALUATION
*PROGNOSIS
*COMMUNITIES
*CONFIDENCE intervals
*LONGITUDINAL method
*RESEARCH -- Finance

Scope Note

Here are entered general works on the process used to determine the cause of a problem or dysfunction, especially a medical issue. Use only if a narrower term does not apply (e.g., "Endoscopy," "Patient monitoring" or "Physical diagnosis"). [EPC]

Used for

DIAGNOSIS of diseases
DISEASES -- Diagnosis
DISEASES -- Identification
DISEASES -- Testing
EXAMINATIONS, Medical
EXAMINATIONS, Medical (Diagnosis)
MEDICAL diagnosis
MEDICAL examinations (Diagnosis)
MEDICAL tests (Diagnosis)
Citation chaining

- Use **cited articles** to get more background
- Use **citing articles** to get updates/criticism

WEB OF SCIENCE™

Google scholar

[HTML] Lower extremity function and subsequent disability consistency across studies, predictive models, and value of **gait speed** alone compared with the Short ... JM Guralnik, L Ferrucci... - The Journals ..., 2000 - biomedgerontology.oxfordjournals. ... ... It should be noted that these **gait speeds** are lower than those measured in many previous studies of **gait speed** and aging (24). Most of those studies, performed in **gait** laboratories, made measurements after subjects reached their full **speed**, as opposed to the ... Cited by 1123 Related articles All 6 versions Save More
Why *do* we reference?

- Avoid plagiarism
- Demonstrate allegiance, acknowledge & respect
- Compare/contrast
- Support & give credibility to your arguments
- Point to further reading
Step #5:
Reviewing your search results
Eligibility criteria

- **Inclusion criteria** establish boundary of what is relevant.
- **Exclusion criteria** are characteristics that would exclude a source from further consideration.

1. **Search results**
2. **Identify duplicates**
3. **Scan titles & abstracts**
4. **Review the full-text**
5. **Extract relevant information**
Analyze your sources with NVivo

- Helps you analyze your literature (annotate sources, highlight key points, uncover trends)
- Works with your citation software
- Free download for SFU graduate students

NVivo 2-Day Training Workshop
March 27-28 (9am-4pm)
How can I stay up-to-date?
Email alerts

**Search** alerts
(available in most databases)
- Topic search
- Author search
- Journal search

**Table of Contents** alerts
(available at publisher’s website)
Gait Speed and Survival in Older Adults

By: Studenski, S (Studenski, Stephanie)[1]; Perera, S (Perera, Subashan)[1]; Patel, K (Patel, Kushang)[5]; Rosano, C (Rosano, Caterina)[2]; Faulkner, K (Faulkner, Kimberly)[4]; Inzitari, M (Inzitari, Marco)[7,8]; Brach, J (Brach, Jennifer)[3]; Chandler, J (Chandler, Julie)[9]; Cawthon, P (Cawthon, Peggy); Connor, EB (Connor, Elizabeth Barrett)[11]...More

JAMA JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION
Volume: 305 Issue: 1 Pages: 50-58
DOI: 10.1001/jama.2010.1923
Published: JAN 5 2011
View Journal Information

Abstract
Context Survival estimates help individualize goals of care for geriatric patients, but life tables fail to account for the great variability in survival. Physical performance measures, such as gait speed, might help account for variability, allowing clinicians to make more individualized estimates.

Objective To evaluate the relationship between gait speed and survival.

Design, Setting, and Participants Pooled analysis of 9 cohort studies (collected between 1986 and 2000), using individual data from 34,485 community-dwelling older adults aged 65 years or older with baseline gait speed data, followed up for 6 to 21 years. Participants were a mean (SD) age of 73.5 (6.1) years, with 91% female. Mean (SD) follow-up time was 11.0 (4.1) years.

Conclusion A faster gait speed is associated with a longer life span. These findings add to the larger body of evidence regarding the importance of physical performance as a predictor of survival in older adults.

Citation Network

452 Times Cited
67 Cited References
View Related Records

Create Citation Alert
(data from Web of Science™ Core Collection)

All Times Cited Counts
462 in All Databases
452 in Web of Science Core Collection
193 in BIOSIS Citation Index
2 in Chinese Science Citation Database
0 in Data Citation Index
8 in SciELO Citation Index

Highly Cited Paper
How do I read effectively?

At different stages in the research process, we read for different reasons.

Reading is exploring
Reading is focused
Reading & note-taking strategies

- Keep notes on **themes** or **categories** that are emerging
- Note how other researchers **classify** their data, literature, etc.
- What are the major **achievements** in the reviewed field?
- The main areas of **debate**
- The outstanding **research questions**
What is the writer’s purpose?
- Historical **background**
- Contemporary **context**
- **Theoretical** underpinnings
- Definitions & discussion of **terminology** used in the research
- Signaling the **gap** in previous research and using this to justify own
- The significance of a **problem** for research
How do I get started with writing?
Choose the type of review to write

How much material is there to review?

- **A short review** focuses on the last few years
  - Limit on the number of words and citations
- **A full review** covers in detail the complexities of the research

Descriptive review vs. integrative review?

Narrative review vs. systematic review?
Content

- What has already been written on the research question(s)?
- Information that has been gathered through research
- Show a thorough understanding of the field (not a ‘laundry list’ of previous studies)
- Build an argument which leads into your research
- Draw on source texts selectively providing support for assertions
- Entering into a dialogue with other researchers in the field (joining a community of researchers in the area)
A successful argument in a literature review:

- Makes connections between *one reference and another*
- Makes explicit links between *your sources and your own work*

It is also important to note:

- *Any contradictory research*
- *Any gaps and/or questions* in the literature
Starting to write

- Identify the **main ideas/points** you want to make
- Begin by formulating an **outline**
- Identify different **sections**
- Organize in a **coherent order** that leads the reader to understand the context and significance of your research question and project
- As you organize, keep track of the **supporting ideas**, **examples**, and **sources** that you will be using for each point
Developing structure

- Transitions between sections are important
- No prescribed uniform structure

Organizational Principles
- Distant to Close
- Chronological
- Comparison & Contrast
Critical writing

- Present logical **arguments** which lead into your conclusions

- Provide sound **evidence** and reasons to support your argument

- **Evaluate, select, organize, and categorize** theories and findings to provide a coherent framework which forms the basis of your research.
Two main ways of presenting your own voice assertively:

1. Taking control of the text and leading your reader through the content

2. Making your own position clear in relation to the source material that you incorporate, and being explicit about how you will be drawing on particular aspects of previous work for your own research
Help at SFU Library

- **Research help** - [www.lib.sfu.ca/help/liaison-librarians](http://www.lib.sfu.ca/help/liaison-librarians)
  Contact your liaison librarian for problems big & small

- **Thesis help** - [researchcommons.sfu.ca](http://researchcommons.sfu.ca)
  David Chokroun, Assistant for Theses

- **Graduate writing help** - [researchcommons.sfu.ca](http://researchcommons.sfu.ca)
  - Read-Ahead Consultation & Writing Consultation Services
  - Write Time, Write Space: Graduate Open Writing Lab
    (Mondays 1:30-4:30)
How was this workshop?

Online survey at: bit.ly/grad-lit-wksp
Thanks for coming!