

11 Writing a Research Proposal



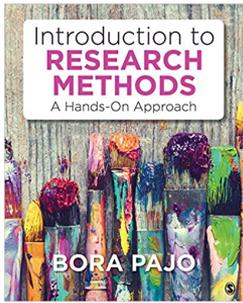
Class Outline

- What is a Research Proposal
- Essential components of a research proposal
- Steps in conceptualizing a research proposal
- Tips and tricks
- Common mistakes

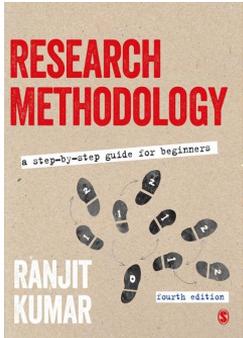


- Title of the research
- Table of contents
- Abstract
- Layperson summary
- Introduction
- Background information and Statement of the research problem (Scientific justification for the study)
- Potential benefits
- Proposed methodology
- Ethical considerations
- Budget
- Timeline
- References
- Appendices

Book References to support Power Points



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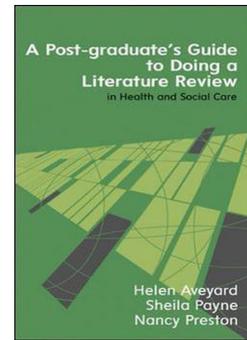
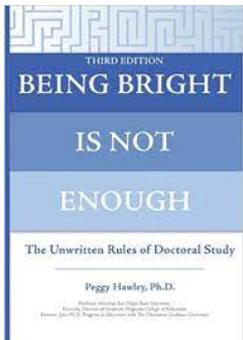
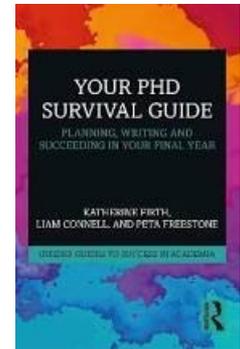
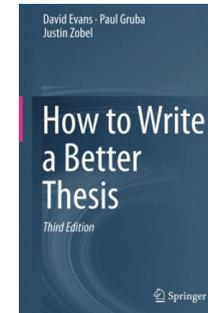
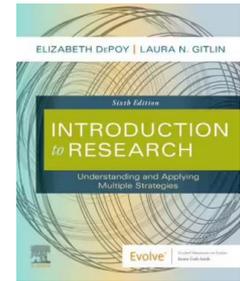
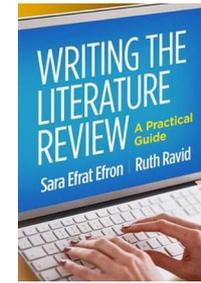
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What is research?

Research is the systematic collection, analysis and interpretation of data to answer a certain question or solve a problem.

- It demands a clear statement of the problem.
- It requires clear objectives and a plan (it is not aimlessly looking for something, hoping for a solution).
- It builds on preexisting data, using both positive and negative findings.
- New data should be *systematically* collected and analyzed to answer the original research objectives.

What is a research proposal?

It is a statement of intent

- It is format and detailed statement of intent of the researcher
- It presents and justifies a plan of action and shows the investigation plan
- It shows you are academically prepared to complete the research
- Audience: peers, supervisors, examiners





What's
the
plan?

What is a research proposal?

- A research proposal is your PLAN
- It describes in detail your study
- Decisions about your study are based on the quality of the proposal
- Its approval from your Institutional Review Board allows you to proceed with the project

Research Proposal – Definitions

- The meaning of *proposal* suggests looking forward, to what the researcher *plans to do in the future*.
- The proposal lays out the problem for research, describes exactly how the research will be conducted, and outlines in precise detail the resources – both factual and instrumental – the researcher will use to achieve the desired results.” *Leedy & Omrod, Practical Research. 8th ed, p. 117, 115.*

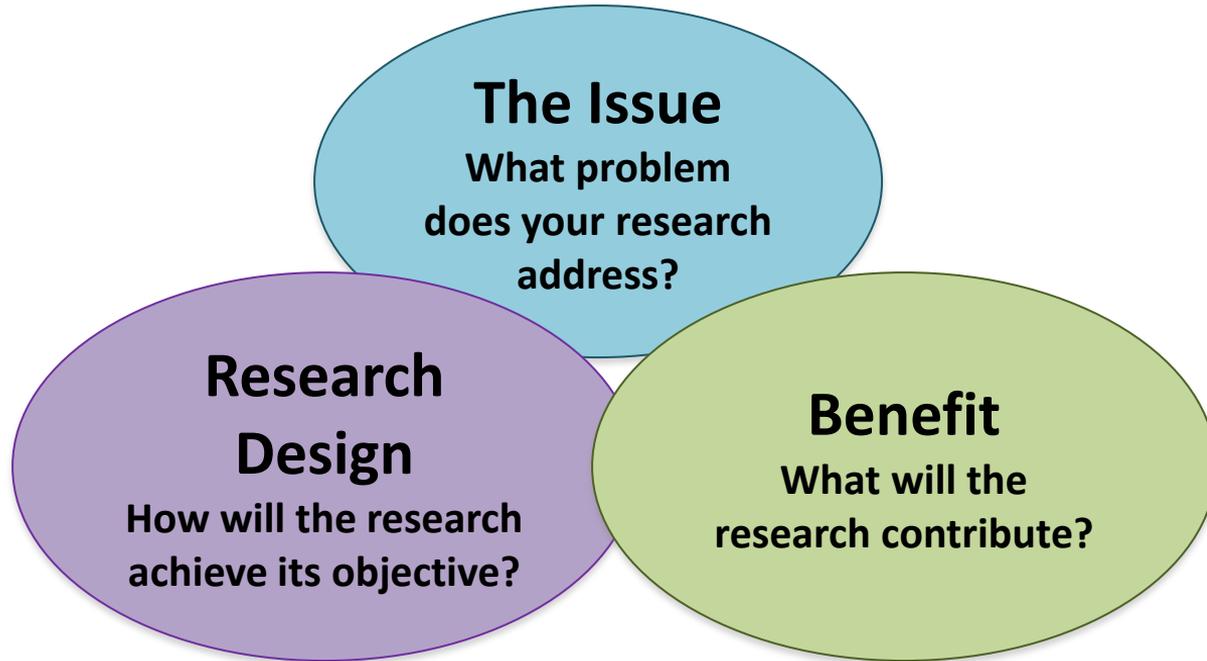
Essentially, to make the reader to understand :-

- What you are going to do
- Rational of the research
- Objectives of the research
- Methodology
- Expected output

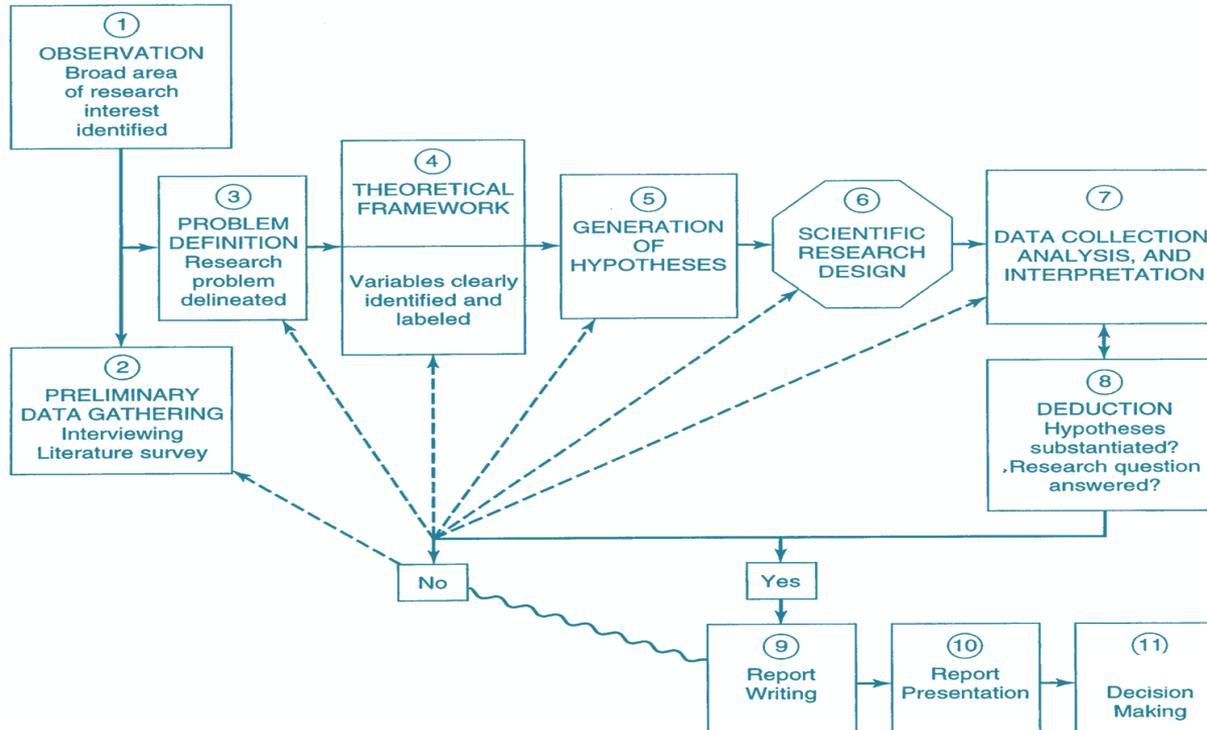
What is a proposal ?

- An outline of the research **problem**
 - A statement of the significance of the problem
 - A review of related studies
 - A discussion of the procedures
 - Methods for data collection and analysis
 - A note about the study's limitations
- A good proposal should consist of the first three chapters of the thesis
 - It should :-
 - **Begin with an Introduction - statement of the problem/background information**
 - **A review of the Literature**
 - **Defining of the Research Methodology**

What are the essential ingredients?



The Research Process.....





Importance of a research proposal?

Contract between you and your committee

- 1.Serves to protect the
student**
- 2.Protects the committee
from the student**

Research proposals make you:

OUTLINE steps in your proposed research

Provide yourself with intellectual **CONTEXT**

JUSTIFY your
research

Be **CREATIVE**

THINK through your experiments

Anticipate
potential
PROBLEMS

Anticipate a
realistic
TIMETABLE

Question to be asked	Steps to be taken	Elements of the step
What is the problem? Why should be studied?	Selection and statement of the problem	<ul style="list-style-type: none"> - Problem identification - Problem prioritization - Justification
What information is already available?	Literature review	<ul style="list-style-type: none"> - Sources - Reviewing
Why do we conduct research? What is the achievement of the research?	Formulation of aim and objectives	<ul style="list-style-type: none"> - Aim, goals - General and specific objectives - Hypothesis
How to carry out the research? How to collect data and information? Wherefrom to collect data and information?	Research methodology	<ul style="list-style-type: none"> - Variables - Types of the research - Data collection techniques - Sampling - Data analysis process, plan - Data processing plan - Data interpretation process, plan

Question to be asked	Steps to be taken	Elements of the step
Who will collect and when?	Work plan	<ul style="list-style-type: none"> - Personnel, manpower - Timetable
How will be monitored? How the research findings will be used?	Research administration plan	<ul style="list-style-type: none"> - Administration - Monitoring - Identification of potential users
What and how much resources are needed? Who will provide the resources ?	Budget Funding Organizations	<ul style="list-style-type: none"> - Humans, materials, money - Fund collection, fund raising
Who will submit? How to submit? Where to submit?	Proposal preparation Proposal presentation Appropriate authority	<ul style="list-style-type: none"> - Researcher - Proposal - Presentation techniques



Steps in conceptualizing a research proposal:



A. Prioritizing and selecting a research topic



B. Review of literature and other existing information



C. Development of a Research Proposal

Prioritizing and selecting a research topic

Criteria for selecting a research topic:

1. **Relevance**: The topic you choose should be a priority problem.

- Questions to be asked include:
 - How large or widespread/depth is the problem?
 - Who is affected?
 - How severe is the problem?

2. **Avoidance** of duplication:

- Before you decide to carry out a study, it is important that you find out whether your topic has been investigated before, either within the proposed study area or in another area with similar conditions.
- If the topic has been researched, the results should be reviewed to explore whether major questions that deserve further investigation remain unanswered.
- If its all been done before and your research question is well answered, another topic should be chosen

- **Urgency of data needed (timeliness):** Is data urgently needed for decision-making or developing interventions at various levels (from community to policy)?
- **Political acceptability of study:** Is the topic acceptable? Or has the topic been the interest and support of the local/national authorities?
- **Feasibility of study:** Look at the project you are proposing and consider the complexity of the problem and the resources you will require carrying out your study. Thought should be given first to manpower, time, equipment and money that are locally available.
- **Ethical acceptability:** We should always consider the possibility that we may inflict harm on others while carrying out research. Therefore, review the study you are proposing and consider important ethical issues such as:
 - How acceptable is the research to those who will be studied?
 - Can informed consent be obtained from the research subjects?
 - Confidentiality of data collected.



Literature review

Why is it important to review already available information when preparing for a research?

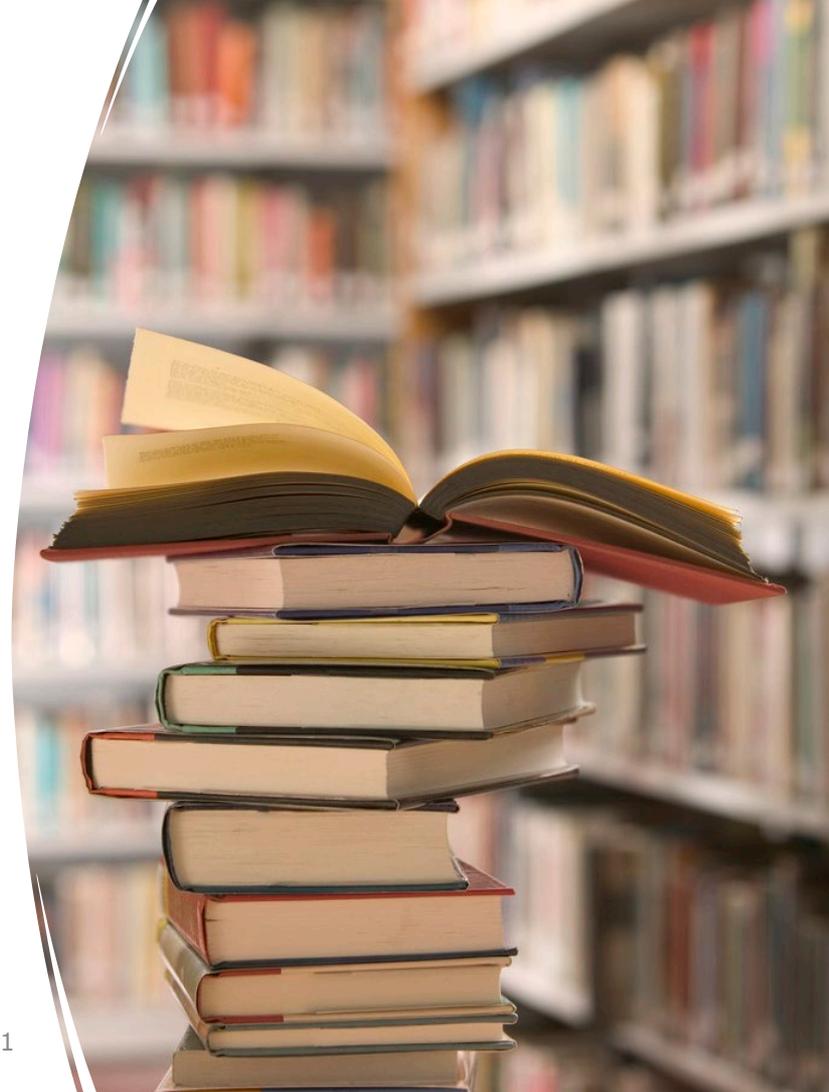
- It prevents you from **duplicating** work that has been done before.
- It helps you to find out **what others have learned** and reported on the problem you want to study. This may assist you in refining your **statement of the problem**.
- It helps you to become **more familiar** with the various research methods that might be used in your study.
- It should provide you with convincing arguments for **why** your particular research project is needed.

Literature review

This is NOT just a summary of literature

Show how your project:

- Literature SUPPORTS your hypothesis
- EXTENDS previous work
- AVOIDS previous mistakes
- IS UNIQUE to previously followed paths

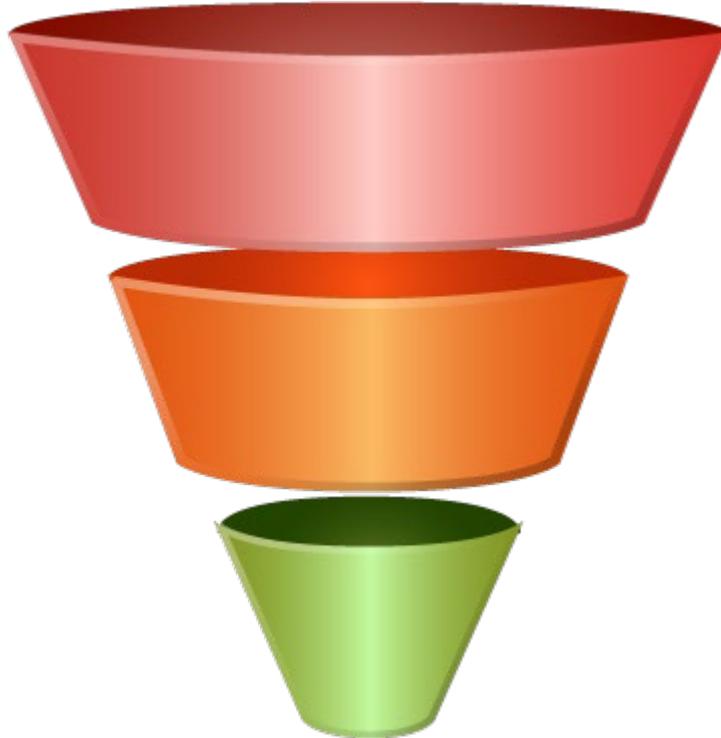


The narrative of a good literature review

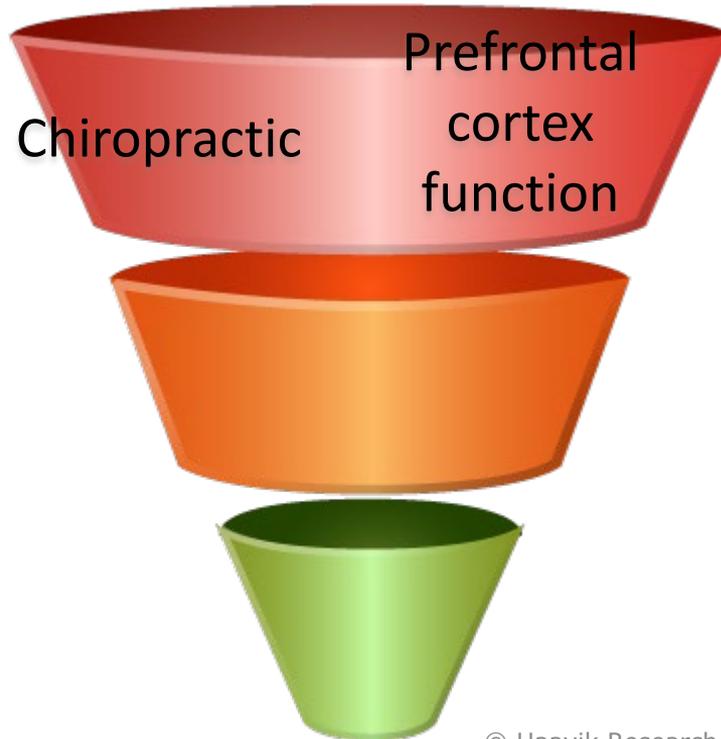
**Reader
knows**



**Reader
doesn't
know**

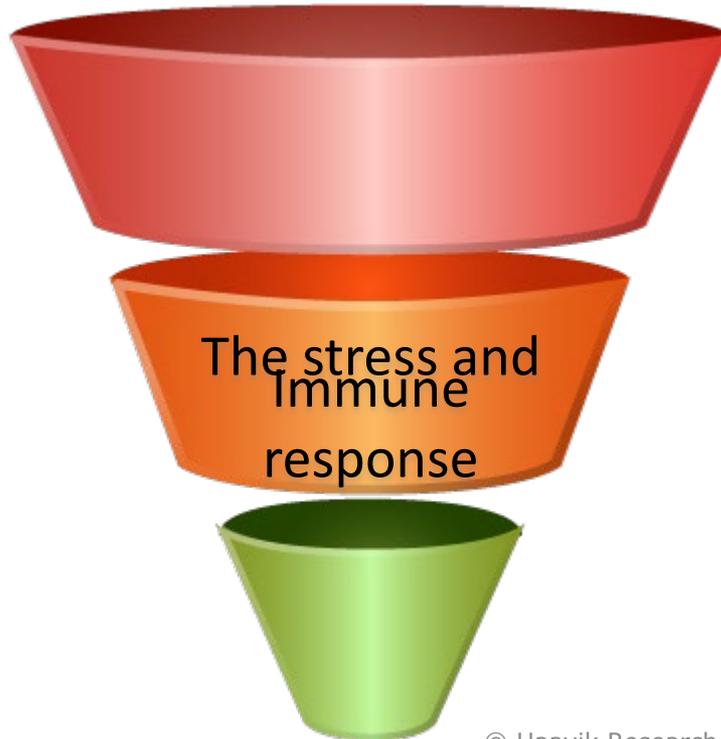


The narrative of a good literature review



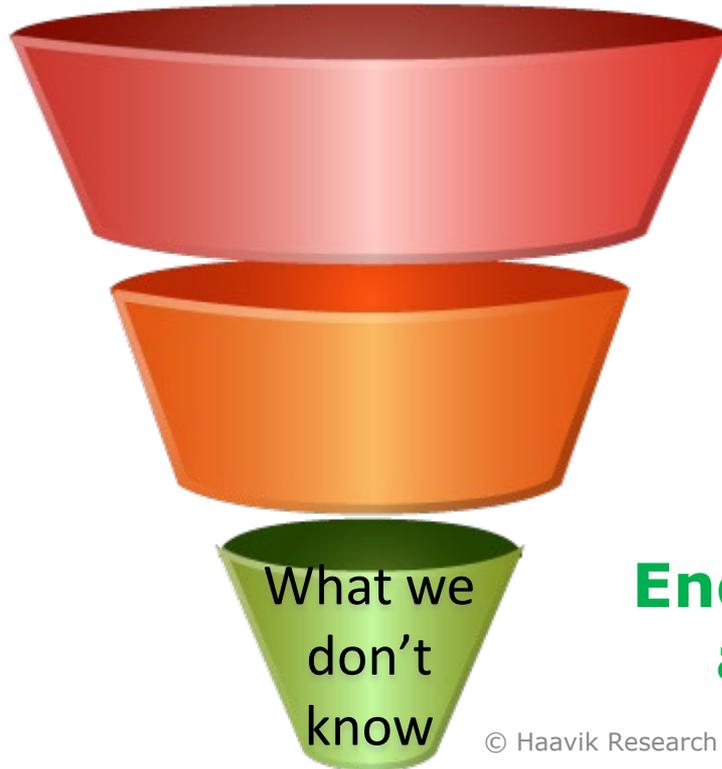
Introduce the field with a broad focus

The narrative of a good literature review



Focus on certain aspects in field of interest

The narrative of a good literature review



End with gap analysis

WRITING A GOOD PROPOSAL

The following three main components determine the success of any proposal.

1) Overall Quality of the Study

- Good research question
- Appropriate research design
- Rigorous and feasible methods
- Qualified research team

2) Quality of the Presentation

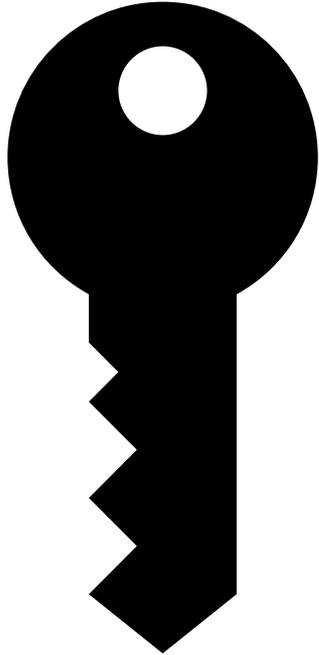
- Clear, concise, well-organized
- Helpful table of contents and subheadings
- Good schematic diagrams and tables
- Neat and free of errors

3) Quality of the Proposal

- Informative title
- Self-sufficient and convincing abstract
- Clear research questions
- Scholarly and pertinent background and rationale
- Relevant previous work
- Appropriate population and sample
- Appropriate measurement and intervention methods
- Quality control
- Adequate sample size
- Sound analysis plan
- Ethical issues well addressed
- Tight budget
- Realistic timetable



Key components to include in a proposal



- **Title of the research**
- **Table of contents**
- **Abstract**
- **Layperson summary**
- **Introduction**
- **Background information and statement of the research problem (Scientific justification for the study)**
- **Potential benefits**
- **Proposed methodology**
- **Ethical considerations**
- **Budget**
- **Timeline**
- **References**
- **Appendices**



Title

Title of the research proposal

- A good title should be short, accurate, and concise
- It should make the central objectives of the study clear to the reader
- It is important to specify what population will be investigated, and where it will be conducted.
 - “The systematic review: An overview”
 - “Transient modulation of intracortical inhibition following spinal manipulation”
 - “Ten simple rules for productive lab meetings”
- Include the names of all investigators

Table of Contents

- A clear well-formatted table of contents page gives the assessors a visual overview of the content of your proposal.



The Abstract

- The abstract should provide a brief summary of the type of study that you are planning (e.g. controlled clinical trial, single-blind outcome study, an investigation of the relationship between.....).
- It should contain a gross outline of the proposed methodology and state the project's objectives to give the assessors an overall view of the project.
- Do not use references in this abstract, and note the word allowance. Do not exceed the word limit.
- It is usual to include 3-5 Keywords at the end of your abstract.
- Make sure you do not include unnecessary detail or information in your abstract.

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AN ABSTRACT TEMPLATE

THESIS (or paper) RESEARCH POINT TITLE

Full Name Of The Researcher

Researcher's Email

Affiliation

Date

Abstract- ① *An opening statement related to your research subject to attract readers.* ② *Introduce the research problem point you investigated.* ③ *State the overall purpose of the study.* ④ *Clarify the basic method you used; analytical/experimental/numerical/CFD/...* ⑤ *Describe rig, software, tools, ...* ⑥ *State major assumptions and conditions.* ⑦ *Major results that are found as a result of your research work; state your observations, values, rates, trends, etc.* ⑧ *Compare your results.* ⑨ *A brief summary of your interpretations and main conclusions.* ⑩ *A nice closing statement containing a recommendation.*

Lay Summary

- The text should be intelligible to a reasonably well-educated lay person, and like the abstract should give a basic overview of the proposed study
- No references
- Describe main objectives and methodology
- Explains your project's significance

This is used by the granting agency in its Newsletter, media releases, when responding to inquiries and for other public information purposes.

Introduction

- Brief paragraph
- This section should convince the reader of the relevance of the study
- It should provide enough background data for an outsider to understand the different aspects of the problem, or the different factors influencing the problem and the context in which it occurs
- Should include the objectives, the research questions, and the hypotheses of your study
- Bullet points are ok

Introduction

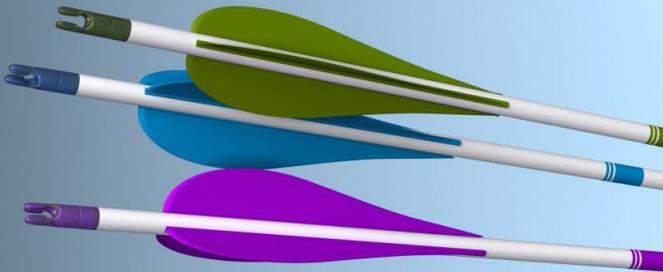
**The Research
Objectives**

**The Research
Question**

**The
Hypotheses**

The Research Objectives

- **Focus on the study, narrowing it down to essentials**
- **Avoid the collection of data which is not strictly necessary for understanding and solving the problem you have identified**
- **Organize the study in clearly defined parts or phases**
- **The general and specific objectives should be included as stated in the proposal**





The research question

- What is the problem to be solved?
 - Clear
 - Focussed
 - Concise
 - Complex
 - Arguable

Research Hypothesis

- A hypothesis can be defined as a prediction or explanation of the relationship between one or more independent variables and one dependent variable.
- It is a logical relationship between two or more variables expressed in the form of a testable statement.
- A hypothesis, in other words, translates the problem statement into a precise, clear prediction of expected outcomes.

Background

- Like your literature review, but smaller!
- Gives credits to those who have laid the groundwork for your research
- Demonstrates your knowledge of the research problem
- Demonstrates your understanding of the theoretical and research issues related to your research question
- Shows your ability to critically evaluate relevant literature information
- Indicates your ability to integrate and synthesize the existing literature
- Convinces your reader that your proposed research will make a significant and substantial contribution to the literature (i.e., resolving an important theoretical issue or filling a major gap in the literature)



Potential benefits

- How will the profession, scientific community, or society in general benefit from your study?
- Discuss what effect positive *or* negative findings might have.



Proposed Methodology

The Method section is very important because it tells your research committee how you plan to tackle your research problem. It will provide your work plan and describe the activities necessary for the completion of your project.

- ✓ The guiding principle is that it should contain sufficient information for the reader to determine whether methodology is sound.
- ✓ Qualitative analysis needs to be more elaborate than what is required for traditional quantitative research.
- ✓ More importantly, the data collection process in qualitative research has a far greater impact on the results as compared to quantitative research.

Proposed methodology

- Describe the research plan (experimental protocol) in detail, so that it would be possible to set up a replication study from reading this plan.
- Explain your methodology in detail, in logical sequence.
- Include a description of your research tools and list your parameters.
- Include copies of questionnaires and data collection forms. These can be attached as appendices.
- Define and discuss your variables in detail!
- Describe and discuss the difficulties that you expect to encounter and explain how you will attempt to overcome these.

Proposed methodology

- Discuss potential confounding variables.
- Describe data collection in detail.
- Define sampling methods and estimated sample size. Justify the estimated sample size (e.g., Power Calculations).
- Illustrate with flow-charts, diagrams and drawings to facilitate understanding, if necessary.
- How do you intend to analyze the results? What statistical or other analytical methods will be used?

Method subheadings

- **Research Design.**
- **Study participants (describe inclusion criteria, how they will be recruited for the study, how many you will require with justification, etc.)**
- **Equipment.**
- **Data collection procedures.**
- **Experimental Protocol.**
- **Data collection and Statistical analysis.**



Ethical Considerations

- In this section you need to discuss any ethical issues/constraints that may be relevant to your proposed research.
- Ethical requirements can be different, so thoroughly check your institutes guidelines.
- As a general guide, research originating in a tertiary institution will be reviewed by the ethics committee of that institution.
- If not, a governmental body will likely do this.



Budget

- **Personnel:** List all personnel required for the project and indicate salary and additional costs.
- **Equipment:** List all items of equipment required. If funds are requested to purchase equipment, explain the need for this. Justify any item of equipment for which the need may not be obvious.
- **Supplies:** List by major types, such as electrodes, electrode tape, skin preparation gels, skin abrading paper, etc., and give the estimated cost of each type.
- **Travel:** Explain the purpose of the proposed travel; give the number of individuals for whom travel funds are required and approximate cost of this travel.
- **Other Costs:** List other expenses by major categories and include explanations.

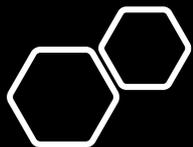


Timeline

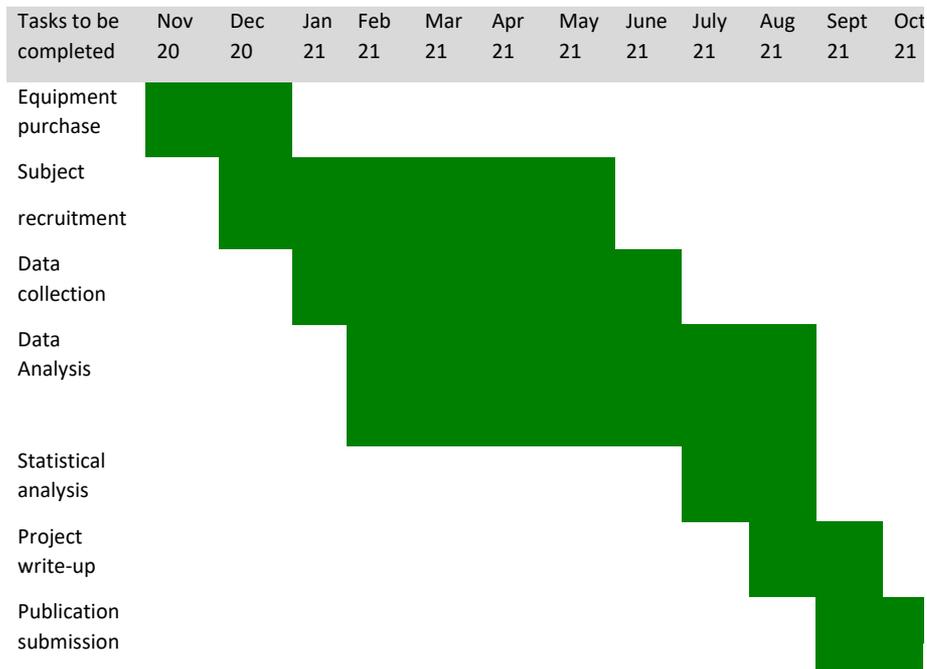
- **Clear expected timelines**
 - Simple table
 - Gantt chart

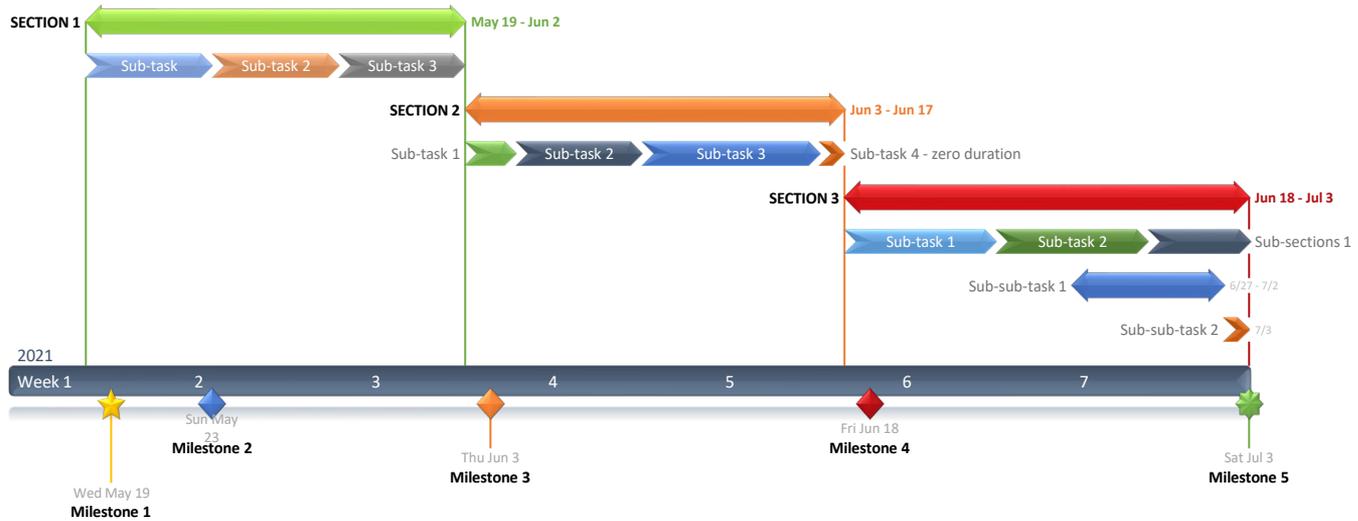
Simple chart

Week:	Date:	To be done
1	10-16 July 13	Pilot testing of instruments
1		Forms and procedures
2		Adjustments to study
2		Printing of forms
3-4		Subject recruitment
3-10		Data collection
5-12		Analysis and evaluation of results
12-16		Unforeseen events
12-16		Report writing
16	26th October 13	Final report submitted



Gantt Charts





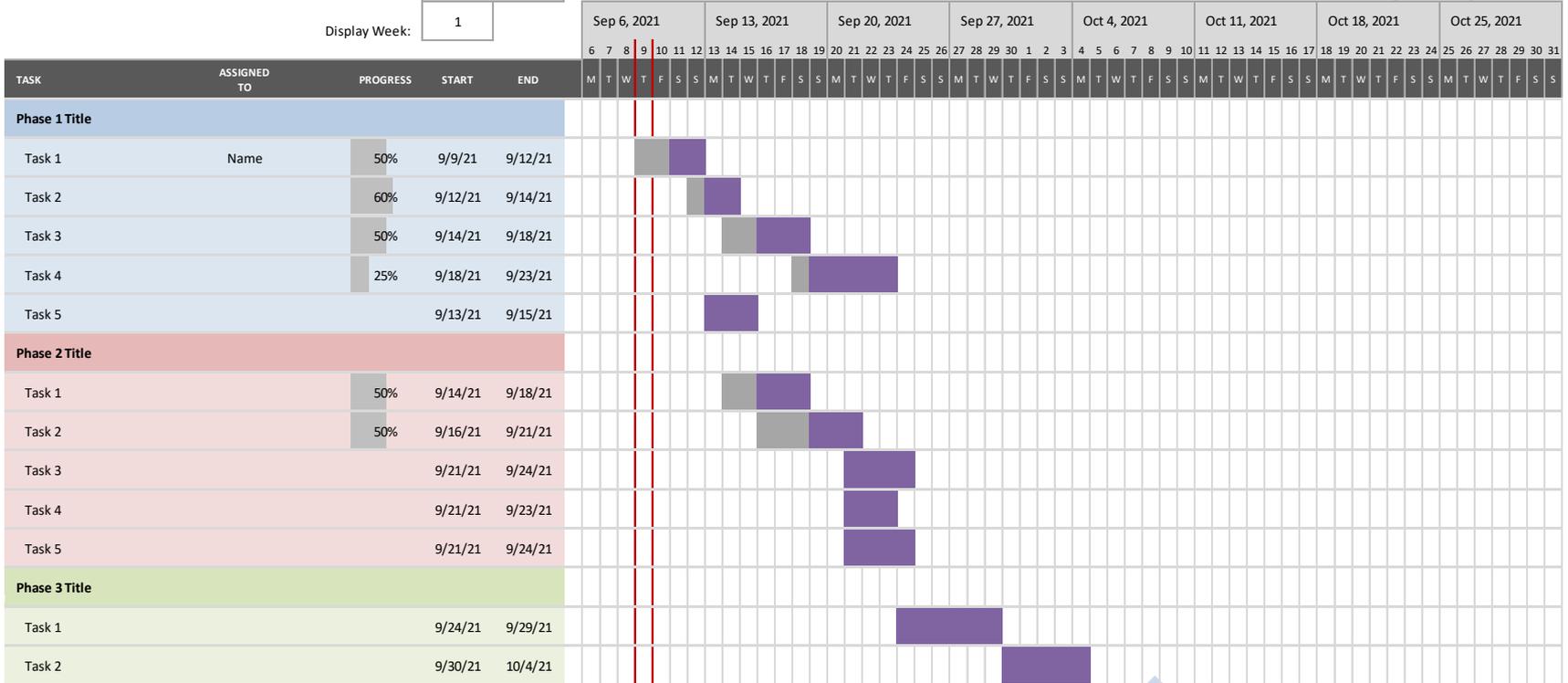
PROJECT TITLE

Company Name
Project Lead

SIMPLE GANTT CHART by Vertex42.com
<https://www.vertex42.com/ExcelTemplates/simple-gantt-chart.html>

Project Start:

Display Week:



References

- Include a working bibliography of key texts that inform your study and methodology
- Check your requirements





References....

- **APA?**
- **Harvard?**
- **Vancouver?**

Reference managers are
CRUCIAL!





Plagiarism

- Reference immediately after mentioning, not at the end of your paragraph
- **ALWAYS** identify your source

Bibliography & Appendices



Participant information or data collection sheets



Your appendices may include Experiment Diagrams, Permissions for Human Subject Testing, etc.



Both bibliographies and required appendices tend to be discipline specific: know what the requirements are.

Tips and Tricks

- Read and read and read
- Take lots of notes
- Talk to supervisors, experts, fellow students
- Write topics and topics
- Get confused, get afraid, start again!
- Write several research questions
- Systematize research questions
- Cut down these in line with your coherent thinking

Common Mistakes

- Not enough provided context to frame research question
- Failure to delineate the boundary of research issue
- Did not cite landmark studies
- Inaccurate theoretical background of the study
- Unfocussed research questions(s)
- Arguments are not coherent or persuasive
- Too detailed or short on major issues
- Too much rambling with no clear-cut sense of direction
- Incorrect citation/references



What to do

- Produce/prepare a professional-looking proposal
- Make it interesting and easy to read
- Make it informative, meaningful
- Use clear headings and sub-headings
- Be concise and precise
- Check spelling and grammar
- Present in format appropriate for your proposal

Thank You



DR. HEIDI HAAVIK

ENLIGHTENING THE
WORLD ABOUT THE
SCIENCE OF CHIROPRACTIC



Introduction to Chiropractic Care

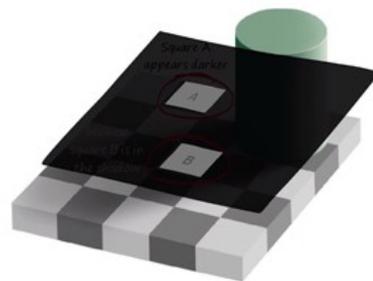
The introduction to chiropractic video series is the perfect way to gain an understanding of why chiropractic care may help you and your family.



The Beginners Guide to Chiropractic

In this first introductory video we explore what chiropractic is all about, and how it works, then we briefly explore the evidence informed effects of chiropractic care.

[View video >](#)



How the Brain Perceives the World

Did you know that your brain and central nervous system are constantly changing? It's quite amazing - from one day to the next your brain is not the same.

[View video >](#)

The Beginners Guide to Chiropractic

The Beginners Guide to Chiropractic

The word chiropractic derives from the Greek words "cheir", meaning hand, and "praktikos" meaning skilled in or concerned with. The origin of the word chiropractic can be traced back to [D.D. Palmer](#) who coined it in 1895 when he founded chiropractic.

Chiropractic care is really about total health and wellbeing

What does a Chiropractor do?

A chiropractor is a healthcare professional who specializes in the health and [function of the spine](#) and nervous system. Because of this focus on the spine, many people think chiropractors can only help with problems such as back pain, [neck pain](#) and [headaches](#). They can often help with these issues but there is much more to chiropractic than just pain.

This is the first video in our animated series "Introduction to Chiropractic". In this video, we outline what a chiropractor does, then we briefly explore the effects of care. It is a perfect one to watch for anyone that is curious about chiropractic care, and how it can help their family.

Video References

1. Rosner AL. Chiropractic Identity: A Neurological, Professional, and Political Assessment. *J Chiropr Humanit* 2016;23(1):35-45.
2. de Souza R, Ebrall P. Understanding wellness in a contemporary context of chiropractic practice. *Chiropr J Aust* 2008;38(1):12-16.
3. Schuster TL, Dobson M, Jauregui M, et al. Wellness lifestyles II: Modeling the dynamic of wellness, health lifestyle practices, and Network: Spinal Analysis. *J Altern Complement Med* 2004;10(2):357-67.
4. Henderson CN. The basis for spinal manipulation: Chiropractic perspective of indications and theory. *J Electromyogr Kinesiol* 2012.
5. Haavik H, Murphy B. The role of spinal manipulation in addressing disordered sensorimotor integration and altered motor control. *J Electromyogr Kinesiol* 2012;22(5):760-76.
6. Haavik Taylor H, Holt K, Murphy B. Exploring the neuromodulatory effects of the vertebral subluxation and chiropractic care. *Chiropr J Aust* 2010;40(1):37-44.
7. Herzog W, Zhang YT, Conway PJ, et al. Cavitation sounds during spinal manipulative treatments. *Journal of Manipulative & Physiological Therapeutics* 1993;16(8):523-6.

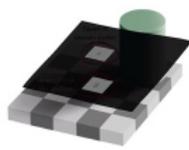




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[View Video >](#)



How the Brain Perceives the World

Did you know that your brain and central nervous system are constantly changing? It's quite amazing – from one day to the next your brain is not the same.

[View Video >](#)



Break the Pain Cycle

Did you know that pain is created in your brain to let you know that something is not ok within your body? Feeling pain is good because it is actually helpful and informative.

[View Video >](#)



Chiropractic Care and Migraines

Did you know that 1 in 6 people in the world experience migraines regularly? The World Health Organisation consider them to be the most debilitating of all neurological disorders.

[View Video >](#)



Chiropractic Affects your Brain

Your brain receives information about your body from the environment and your organs. Did you know that the muscles in your body are also sensory organs?

[View Video >](#)



What is that Pop?

If you have been adjusted before by a chiropractor you may have noticed a strange popping sound. Don't worry – it is just the formation of gas within a joint.

[View Video >](#)



Lower Back Pain

Scientists have worked out that at any one time, over 500,000,000 people around the world are suffering from low back pain and it is now the leading cause of disability worldwide.

[View Video >](#)



Growing Pains

We've all heard of growing pains right? But did you know that what we call growing pains aren't associated with growing? So they're not actually growing pains at all.

[View Video >](#)



Pain and the Immune System

Research studies have shown that the way you feel pain all depends on what's going on for you – and most importantly – what you think and feel about the situation.

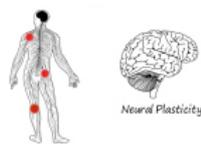
[View Video >](#)



Chiropractic and Headaches

Headaches are a sign that something is not right. Your brain will create for you the sensation of pain if it thinks there is something wrong or if there is a potential problem.

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Pain is Created in Your Brain

Did you know that the scientists now know that the feeling of pain is something your brain decides that you should experience – if it believes that there is a problem?

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Chronic Pain

Chronic pain is the second-most common reason people see a doctor and miss work. More than one-third of people with chronic pain become disabled by their pain to some degree.

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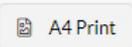
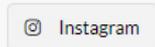
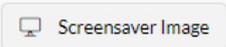
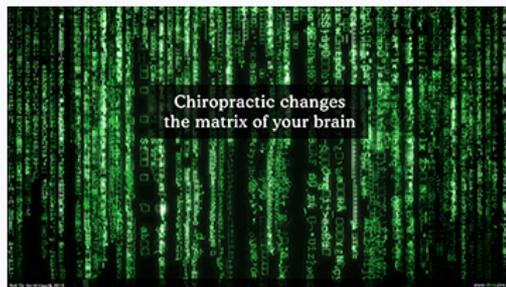
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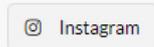


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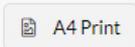
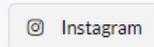
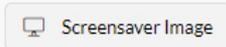
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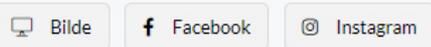
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Chiropractic Research

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Chronic Pain

Chronic pain that has persisted for more than 3 months is no longer protective, nor informative. So, what is chronic pain and what can you do about it?

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Pain is in the Brain

Sometimes pain persists long after tissue damage has actually healed. When pain persists for more than three months we call this chronic pain.

[Read more »](#)



Neck Pain

Up to half the world's population suffers from neck pain at some stage. For some, one big problem is that it just keeps coming back, or becomes chronic.

[Read more »](#)



UNDERSTANDING PAIN



Dr. Kelly Holt

BSc, BSc(Chiro), PGDipHSc, PhD

Dr. Heidi Haavik

BSc(Physiol), BSc(Chiro) PhD

Experiencing pain is normal. Everyone experiences pain now and then.¹ Pain is supposed to be protective to make you stop doing things that may be dangerous.² But chronic pain that has persisted for more than 3 months is no longer protective, nor is it helpful.³ So, what is chronic pain and how do you deal with it if you suffer from it?

PAIN IS CREATED IN THE BRAIN



Dr. Kelly Holt

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Dr. Heidi Haavik

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Did you know that scientists now know the feeling of pain is something your brain decides you should experience if it believes there is some tissue damage in your body?¹ In fact, your brain can decide that you should feel pain even if it only thinks there is a potential threat of tissue damage!!!²⁻⁵

It may seem strange, but it's totally up to your brain to decide whether you should feel pain or not. Your brain may decide you should experience pain even if you have no actual tissue damage yet,⁶ or your brain may not create the feeling of pain for you when tissue damage has actually occurred!^{7,8}

heals the problem.¹ This pain is helpful and informative.¹ If we listen to our body these pain experiences can be a good thing.

But for some people, pain can persist even after the initial injury that caused it has healed.^{9,11,12} And for some people, the pain in these areas that are not injured at all, become non-



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NECK PAIN AND FALLS RISK



Dr. Kelly Holt

BSc, BSc(Chiro), PGDipHSc, PhD

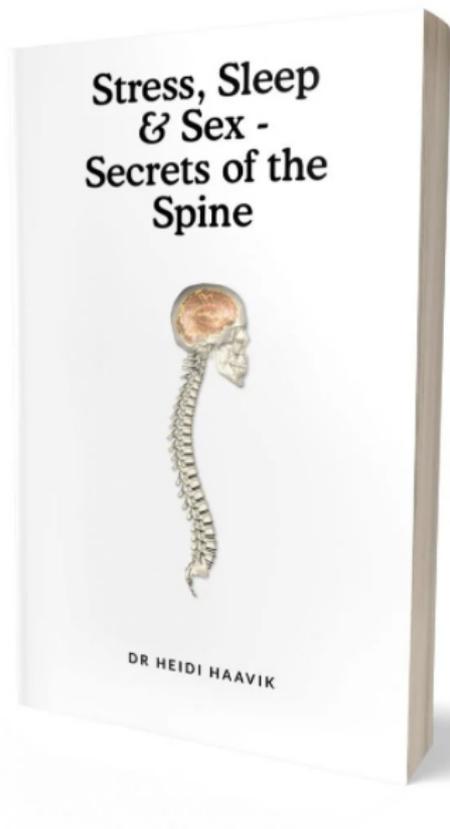
Dr. Heidi Haavik

BSc(Physiol), BSc(Chiro) PhD

Neck pain is very common throughout the world.¹ Up to half of all people around the world suffer from neck pain at some stage each year.²⁻⁵ For some people, one big problem with neck pain is that it just keeps coming back, or becomes chronic, and may even increase their risk of suffering from a fall.^{2,4,6,7}

Scientists know that your brain uses sensory information from your muscles and joints around your spine to help control your balance and posture and to make sure you're moving properly.^{1,2} When your brain takes sensory information and uses it to help guide movements and control muscles we call this sensorimotor function.³ One particular study looked at whether neck pain has an impact on proper sensorimotor function in older people.⁷ In this study, the researchers ran a whole lot of tests of sensorimotor function, like how well the study participants controlled the movement of their eyes and how good their balance was, and they took into account their age and other conditions that they suffered from.





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