2025

# WNF Research Curriculum Guide

## Acknowledgements

The WNF Research Curriculum Guide was compiled based on the WNF Naturopathic Educational Program Guide (2022)[1] and the Naturopathic Education Accreditation Standards Comparison (2023)[2] and consultations with the WNF Research Working Group.

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## Table of Contents

## Naturopathic Education Background

The role of the World Naturopathic Federation (WNF) is to promote the highest in naturopathic educational standards globally. This is accomplished by providing guidance documents on naturopathic educational standards and guidelines for specific aspects of naturopathic curriculum. Please note that the WNF does not approve or accredit naturopathic courses and/or programs.

There are two recognized naturopathic educational programs.

1. Doctorate-level training programs (4,000+ hours), which represents more than 50% of naturopathic educational programs that currently exist.
2. Practitioner-level training programs (2,500 hours)

As outlined in the WNF Naturopathic Educational Program Guide [1], published in 2022, naturopathic programs encompass six curriculum aspects in roughly the following breakdown by hours for each of the two programs.

| Curriculum area | 2500-hour program | 4200-hour program |
|---|---|---|
| Naturopathic history, philosophies, principles, and theories | 300 | 350 |
| Naturopathic medical knowledge | 650 | 1400 |
| Naturopathic modalities, practice and treatments | 950 | 1200 |
| Supervised clinical practice | 500 | 1000 |
| Ethics and business practices | 50 | 100 |
| Research | 50 | 150 |
| Total | 2500 | 4200 |

**Please note that the hours provided are an estimate and that different naturopathic programs will vary slightly. The Guide provides recommendations of hours for a 4200-hour program, but this should be proportional for any 4000+ hour programs, which commonly range from 4000 to 4500+ hours.*

## Aim of the Research Curriculum Guide

The aim of this research curriculum guide is to provide an outline for incorporating research into existing and developing 2500-hour naturopathic programs. It relates to research skills development and use of research in clinical practice.

As per the WNF Naturopathic Educational Program Guide [1], 2500-hour naturopathic programs generally include 50 hours of research as part of their naturopathic curriculum.

In this document, "research" refers to research in general, naturopathic research and research applied to naturopathic and traditional medicines. And "naturopath" refers to naturopaths and naturopathic doctors.

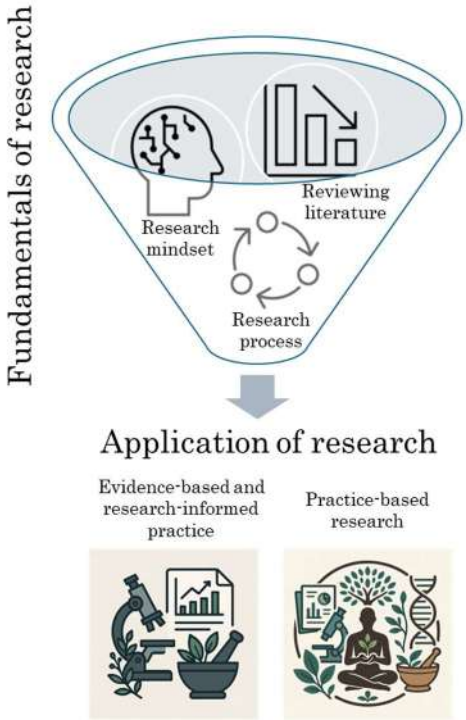
## Purpose of the Research Curriculum Guide

The purpose of this guide is as follows:

- Support enhanced naturopathic educational standards globally.
- Guide the efficient implementation of research into established and developing 2500-hour naturopathic educational programs.
- Facilitate collaboration between naturopathic educational institutions.

## How to use this guide

- The research curriculum includes five key blocks of educational content called Concepts.
- All five Concepts should be included to some degree in a naturopathy educational program, and the hours dedicated to each Concept can be adapted by each educational institution.
- Concepts 1, 2 and 3 are considered to be part of the fundamental research curriculum.
- Concepts 4 and 5 are considered to be part of the applied research curriculum.
- All five Concepts aim at developing the student's competencies, responsibilities and attributes listed below.



## Adapting or modifying research curriculum from this guide

Educators can use this guide to build a research curriculum that suits the unique needs of their institution, students and local profession. These needs may be affected by a number of factors including, but not limited to:

- staffing capacity and skills,
- existence of pre-requisites and other program components,
- entry requirements of students,
- research capacity and activity of the naturopathic profession in their country, and
- potential research pathways for future research training for naturopathic graduates.

Based on these factors and any other requirements for a program, educators can select elements within and across concepts, and develop their research curriculum in an order that best suits their needs.

## Research Curriculum Concepts

The research curriculum includes the following five key blocks of educational content referred to as Concepts.

- Concept 1: Cultivating a scientific and research-oriented mindset
- Concept 2: Understanding key concepts in the research process
- Concept 3: Developing skills in reviewing and interpreting scientific literature
- Concept 4: Applying evidence-based principles in naturopathic practice
- Concept 5: Engaging in practice-based research activities

## Student's Competencies

The main competencies that a naturopathic student should acquire include:

- Demonstrate the ability to ask clinically relevant questions, apply the appropriate methodology and acquire evidence to answer clinically relevant questions (Concept 1)

- Describe and identify research concepts such as bias, chance, confounding, and association, and know how they can influence the validity and reliability of research findings (Concept 2)
  - Describe the strengths and challenges of different sources of evidence and approaches to generating evidence within naturopathic research and practice (Concepts 2 and 3)
  - Discuss how a body of evidence applies to individual patients, and assess how the evidence might be contextualized with patient needs and clinical experience (i.e. critical appraisal) (Concept 4)
  - Identify ways that a clinician can embed research into their practice (case reports, use of outcome measures) and participate in practice-based health research (Concept 5)

## Student's Responsibilities & Attributes

The main responsibilities for students and the attributes associated with embracing research include:

- active participation (i.e. open communication, active listening) necessary to deepen knowledge and to promote the transfer of practical information
- questioning, self-reflection, constructive doubt, discernment
- empathy, non-judgement, respect
- integrity, honesty, humility
- autonomy, curiosity, open-mindedness
- ability to define one's own limits and when to seek advice.

## Research Curriculum Concepts

### Concept 1: Cultivating a scientific and research-oriented mindset

**Description:**

An introduction to foundational concepts and definitions associated with the scientific process and research, how they relate to naturopathy and naturopathic practice.

**Objectives:**

- Understand the philosophy and definition of sciences as "a body of knowledge which is built by answering questions".

- Define 'research' and 'scientific research' as a practical way of finding a reliable answer to a given question.
- Understand the 'scientific and research-oriented mindset' including the required science ethics, scientific ethical principles, and personal and professional values involved.
- Differentiate between 'evidence-based', 'evidence-informed', 'research-based' and 'experience-based' knowledge.
- Understand naturopathy as a traditional system of medicine and as a holistic and complex medical system.
- Understand how knowledge is disseminated, transferred and built to support the naturopathic profession.
- Describe what naturopathic science and research offers to naturopathic clinical practice, including:
    - responding to questions (from patients and health professionals) about the naturopathic profession and individual therapeutic strategies with legitimacy, credibility, safety and rigor;
    - informed and personalized clinical decisions;
    - observation/evaluation of the effectiveness of one's own clinical practices.
- Describe what a naturopath can offer to naturopathic science and research (e.g., documentation of clinical cases (case study, case report, teachings, all type of research publications)).

Resources

- Redmond R, Graham KD, Steel A. "Researching Naturopathy as a Traditional System of Medicine." In: Lloyd I, Steel A, Wardle J, eds. Naturopathy: Practice, Effectiveness, Economics and Safety. World Naturopathic Federation; 2021: Chapter 14, pp. 115–120.
- Steel A, Foley H, D'Souza J, Adams J, Wardle J, Lloyd I. "Research Dissemination by the Global Naturopathic Research Community." In: Lloyd I, Steel A, Wardle J, eds. Naturopathy: Practice, Effectiveness, Economics and Safety. World Naturopathic Federation; 2021: Chapter 16, pp. 128–139.

## Concept 2: Understanding key concepts in the research process

**Description:**

Definition and description of research processes, including established and emerging research methodologies aligned to naturopathic clinical practice.

**Objectives:**

- Describe the scientific stepwise approach (question formulation, hypothesis, methodology, experimentation, data collection, analysis, interpretation, conclusion, discussion)
- Review common research methodologies, frameworks and tools. (The research methodology relates to the nature of the research question)
    - Qualitative
    - Quantitative
    - Trial/pilot trial
    - Observational including case studies and case reports
    - Mixed methods
    - Whole Systems Research (WSR)
    - Patient-reported outcome measures (PROMs)
    - Traditional knowledge translation and Implementation Framework

Consider other research designs and concepts

- Data analysis
- Content analysis
- Doctrinal
- Pragmatic research
- Complex interventions
- Real world outcomes
- Basic science

- Discuss how research impacts the naturopathic profession
    - Traditional knowledge
    - Naturopathic-driven research
    - Clinical research and case studies
    - Research conducted by non-naturopaths
    - Research encompassing the naturopathic profession
- Explore challenges and advancements for naturopathic clinical research
    - Building naturopathic research capacities
    - Recognizing the limitations of the RCT (Randomized Control Trial) model

- Innovating in research design and methodology (e.g person-centred interventions with multiple therapeutic elements, real world outcomes and effectiveness)

**Resources:**


- Researching Naturopathy as a Traditional System of Medicine, Chapter 14, Lloyd I, Steel A, Wardle J (eds)., 2021. Naturopathy, Practice, Effectiveness, Economics & Safety,. Toronto, Ontario. World Naturopathic Federation.
- Challenges and Advancements for Naturopathic Clinical Research. Chapter 15. Lloyd I, Steel A, Wardle J (eds)., 2021. Naturopathy, Practice, Effectiveness, Economics & Safety,. Toronto, Ontario. World Naturopathic Federation.
- Steel A, Gallego-Perez DF, Ijaz N, Gall A, Bangpan M, Dos Santos Boeira L, Schveitzer MC, Chutaputti A, Mahlanza-Langer L, Pillai GKG, Posayanonda T, Sungchol K, Shankar D, Kuchenmüller T. Integration of Traditional, Complementary, and Integrative Medicine in the Institutionalization of Evidence-Informed Decision-Making: The World Health Organization Meeting Report. J Integr Complement Med. 2025 Jan 17:10.1089/jicm.2024.0837. doi: 10.1089/jicm.2024.0837.
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## Concept 3: Developing skills in reviewing and interpreting scientific literature

**Description:**

Practical application of research literature as a source of scientific evidence.

**Objectives:**

- Work with research literature and concepts
- Recognize and evaluate literature and papers such as: internet to scientific paper; causality vs correlation; inference of claims (broken messaging); totality of evidence
- Learn how to use the WNF Health Technology Assessment (HTA) book and other professional books/white papers with practical exercises
- Work with scientific databases (linked to specific professional contexts; paid vs open-access)
- Search with keywords and Medical Subject Headings (MeSH terms)
- Learn how a scientific paper is structured

- Learn how to effectively use reporting guidelines, critical appraisal checklists and quality/bias appraisal tools for implementation of evidence into clinical practice

**Resources:**

- Lloyd, I., Steel, A. & Wardle, J. (eds.) 2021. Naturopathy, Practice, Effectiveness, Economics & Safety, Toronto, Ontario: World Naturopathic Federation. https://worldnaturopathicfederation.org/wp-content/uploads/2021/12/Health-Technology-Assessment-HTA_eBook-1.pdf
- Buccheri R, Sharifi C. Critical Appraisal Tools and Reporting Guidelines for Evidence-Based Practice. Worldviews Evid Based Nurs. 2017 Dec;14(6):463-472.PMID: 28898556. https://pubmed.ncbi.nlm.nih.gov/28898556/
- Harrison J, Reid J, Quinn T, Shenkin S. Using quality assessment tools to critically appraise ageing research: a guide for clinicians. Age and Ageing, Volume 46, Issue 3, May 2017, Pages 359–365, https://academic.oup.com/ageing/article/46/3/359/2654237?login=true
- Critical Appraisal Skills Program (CASP) checklists: https://casp-uk.net/casp-tools-checklists/
- Joanna Briggs Institute critical appraisal tools: https://jbi.global/critical-appraisal-tools
- Equator network: https://www.equator-network.org/

## Concept 4: Applying evidence-based principles in naturopathic practice

**Description:**

Application of research as evidence in naturopathic clinical practice.

**Objectives:**

- Describe 5A's (ask, acquire, appraise, apply, assess)
- Introduce process of evidence-based/informed practice (5 A's) and concept of research-based (evidence-informed) practice.
- Learn how to apply scientific evidence and traditional knowledge in the context of naturopathic care.
- Learn how to navigate shared decision making that integrates clinical experience, patient needs, and evidence.

Resources:

- de Groot M, van der Wouden JM, van Hell EA, Nieweg MB. Evidence-based practice for individuals or groups: let's make a difference. Perspect Med Educ. 2013 Sep;2(4):216-221. doi: 10.1007/s40037-013-0071-2.
- Evidence Based Practice. Health Science Information Consortium. https://guides.hsict.library.utoronto.ca/c.php?g=733337&p=5271553
- Greenhalgh TM, Bidewell J, Crisp E, Lambros A, Warland J, Dermody G (2023). Understanding Research Methods for Evidence-Based Practice in Health, 3rd Edition. ISBN: 978-1-394-17721-9

## Concept 5: Engaging in practice-based research activities

**Description:** Definition of a naturopathic clinician as a researcher - bridging clinical practice and research using naturopathy practice-based research paradigm.

**Objectives:**

- Discuss the different audiences to whom naturopathic research is directed:
    - Clinicians
    - Researchers
    - Policy makers
    - General public
    - Media
    - Lobby groups
    - Funding bodies
- Explore how practicing clinicians can contribute to research - Practice-Based Research Networks (PBRNs).
- Provide resources to support practicing naturopaths to build a research-ready clinical practice.
- Consider practical exercise or evaluation such as conducting a research study (e.g.a case study or a review).
- Understand common outcome measures, tools and principles for valid use.
- Utilize outcome measures with real and hypothetical patients.
- Understand components of generating a publishable case report or contributing outcome-based data from clinical practice.
- Consider discussing the design features, merits and challenges of n-of-1 study and/or Whole Systems Research (WSR) designs in naturopathic medicine.
- Discuss the incorporation of these methodologies into clinical practice.

**Resources:**


- Research Dissemination by the Global Naturopathic Research Community. Chapter 16. Lloyd I, Steel A, Wardle J (eds)., 2021. Naturopathy, Practice, Effectiveness, Economics & Safety,. Toronto, Ontario. World Naturopathic Federation.
- Guidelines to Case Report Writing for Naturopathic Doctors: https://intjnm.com/wp-content/uploads/2012/09/IntJNMCaseReport.pdf
- Lee H, Peng W, Steel A, Reid R, Sibbritt D, Adams J. Complementary and alternative medicine research in practice-based research networks: A critical review. Complement Ther Med. 2019 Apr;43:7-19. doi: 10.1016/j.ctim.2018.12.023. Epub 2019 Jan 2. PMID: 30935558.
- National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Health Care Services; Committee on Implementing High-Quality Primary Care; Robinson SK, Meisnere M, Phillips RL Jr., et al., editors. Washington (DC): National Academies Press (US); 2021 May 4. https://www.ncbi.nlm.nih.gov/books/NBK571805/
- Ijaz N, Rioux J, Elder C, Weeks J. Whole Systems Research Methods in Health Care: A Scoping Review. J Altern Complement Med. 2019 Mar;25(S1):S21-S51. doi: 10.1089/acm.2018.0499. PMID: 30870019; PMCID: PMC6447996.
- Kravitz RL, Duan N, eds, and the DEcIDE Methods Center N-of-1 Guidance Panel (Duan N, Eslick I, Gabler NB, Kaplan HC, Kravitz RL, Larson EB, Pace WD, Schmid CH, Sim I, Vohra S). Design and Implementation of N-of-1 Trials: A User's Guide. AHRQ Publication No. 13(14)-EHC122-EF. Rockville, MD: Agency for Healthcare Research and Quality; January 2014. https://effectivehealthcare.ahrq.gov/products/n-1-trials/research-2014-5


## Glossary

**hypothesis** - testable explanation made as a starting point for further investigation

**method** - specific procedures or techniques used to collect and analyse data to answer research questions or test hypotheses

**methodology** - roadmap that guides how a research question is investigated

**outcome** - result of the research process; answer to the research question

**outcome measures** - specific tool used to collect data for answering research question

**research** - systematic investigation to establish facts and reach new conclusions

**research process** - systematic and organised process for gathering, analysing, and interpreting information to answer research question

**research question** - focused, and concise question that guides a research process and defines what the study aims to investigate and answer

## References


- WNF Naturopathic Educational Program Guide.
- Naturopathic Education Comparison. WNF. https://worldnaturopathicfederation.org/wp-content/uploads/2023/05/Naturopathic-education-comparison-table_final.pdf