



Canadian Arthritis  
Patient Alliance

# An Introduction to Research

Presented by the Arthritis Society & Canadian Arthritis Patient Alliance

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## Outline

- ▼ Introduction to research
  - Why it is done
  - Who is involved
  
- ▼ Introduction to knowledge translation
  
- ▼ Introduction to research ethics



# Research



## Research

- ▼ The creation of new knowledge and/or the use of existing knowledge in a new and creative way to generate new concepts, methodologies, and understandings (Higher Education Research Data Collection, 2020)
- ▼ Follows the scientific method of creating a research question, testing the question, making observations, collecting results, and interpreting data (Bhattacharjee, 2012)
- ▼ Research can be qualitative (e.g., interviews, focus groups, etc.) or quantitative (e.g., survey, randomized control trials, etc.) in nature



## Types of Research

### Basic Research

- Experimental or theoretically work
- Generates new ideas and theories, which may not be practically used immediately
- Aimed to improve our understanding of a topic (HERDC, 2020)
- For example, research identifying a new molecule that predicts the risk for developing arthritis

### Clinical Research

- Encompasses research on, or for the treatment of, patients (CIHR, 2019)
- Goal of improving diagnosis and treatment of disease/injury and improving quality of life (CIHR, 2019)
- For example, research on the side effects of a particular drug used to treat arthritis

### Applied Research

- An original investigation that applies and assesses existing knowledge
- Has a specific, practical objective (HERDC, 2020)
- For example, research studying the effects of a peer-mentoring program on children diagnosed with juvenile idiopathic arthritis

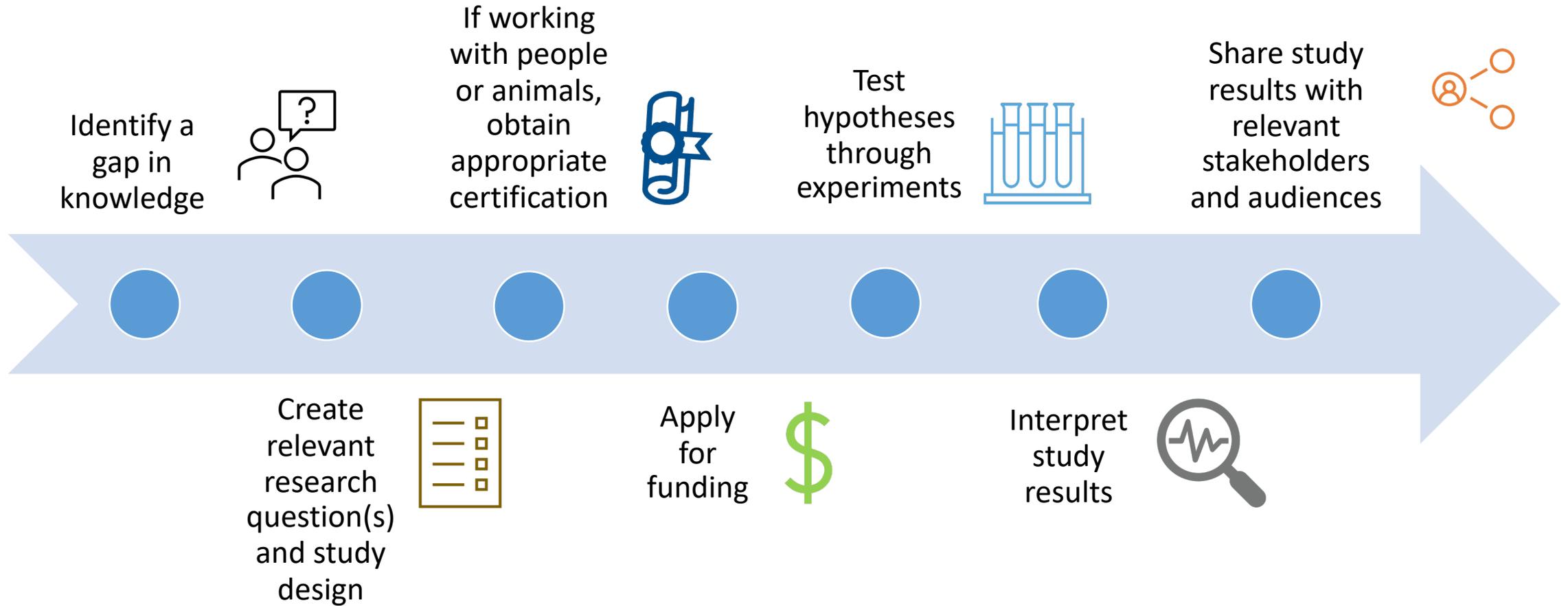


## Why Research is Important

- ▼ To identify a gap in knowledge and address it
- ▼ To advance current knowledge on a particular topic
- ▼ To benefit society through informing policy, healthcare, and educational programs
- ▼ To improve the quality of life of individuals



# The Research Process





# The People Involved in Research



## People Involved in Research

### Researchers

- Scientists
- Clinicians (e.g., physicians, physical therapists, occupational therapists, nurses, etc.)

### Trainees

- Postdoctoral fellows
- PhD students
- Masters students
- Undergraduate and summer students

### Consumers

- People living with arthritis
- Formal caregivers
- Family members and friends



## The Road to Becoming a Researcher

- ▼ Researchers are highly trained professionals within a given research topic(s)
  
- ▼ They receive education and training for many years
  - Post-secondary education
  - Post-graduate education (Masters and/or PhD)
  - Fellowships
  
- ▼ May hold a Masters, PhD, MD, RN, and/or other degree designations



## Research Team Members' Roles

- ▼ There are specific terms or titles used to refer to the members of a research team
  
- ▼ Research teams may include:
  - Principal Investigator(s)
  - Co-Principal Investigator(s)
  - Co-applicants
  - Collaborators and Partners
  - Consumer Collaborators/ Patient Partners
  - Trainees



## Research Team Members' Roles

### Principal Investigator (PI)

- A researcher who holds full/part-time academic appointment at a university or institution
- Their main role is to direct the research program/activities, and to assume all administrative and financial responsibilities for a grant
- There is only one PI for each grant application

### Co-Principal Investigator (Co-PI)

- A researcher who holds full/part-time academic appointment at a university or institution
- Their role is to make a significant contribution in carrying out the proposed research project (for example, research design and analysis)
- Projects can include one or more co-PIs



## Research Team Members' Roles

### Co-Applicant

- A researcher who holds full/part-time academic appointment at a university or institution
- Their role is to contribute to the proposed research project for a specific aspect of the work There is only one PI for each grant application
- Projects can include one or more co-applicants

### Collaborators/Partners

- Collaborator: Individual who makes meaningful contributions to the research project such as: providing samples, data, or resources like equipment, training, stats analyses, etc.
- Partner: participant in the research project who represents industry, government, consumers or other academic groups



## Research Team Members' Roles

### Consumer Collaborators

- A person living with a health condition (e.g., arthritis), or an informal caregiver, such as a family member or friend
- Contributes to a research team by providing their perspectives on living with a health condition (e.g., arthritis) (CIHR, 2019)

### Trainees

- Postdoctoral fellows or trainees working towards their undergraduate, Master's or PhD degree



## Consumer Collaborators

- ▼ Consumer collaborators play a key role in the research continuum (CIHR, 2020):
  - Provide expertise on their unique lived experiences with a health condition and navigating the healthcare system
  - Provide perspective on research priorities and outcomes that are valued by consumers

*Scientists and clinical researchers are experts in their designated fields of research. Patients, however, are experts on their own unique lived experiences and their voices must be valued throughout the research continuum.*



# Knowledge Translation



## Research Team Member Roles

- ▼ **Knowledge translation (KT)** is an umbrella term for the steps involved in taking research findings from the lab into the hands of people and organizations who put them to practical use (CIHR, 2019)
  
- ▼ With end-of-grant KT, the researcher develops and implements a plan for making potential audiences aware of research results. End-of-grant KT can involve more intensive dissemination activities that tailor the research message to specific audiences and can eventually involve moving research into practice (CIHR, 2019)
  
- ▼ Knowledge translation might include:
  - Publishing a research paper, infographic, poster, etc.
  - Presenting research findings at a conference, webinar, etc.
  - Partnering with an organization to create products, policies and/or programs based on the best available scientific findings



## Research Team Member Roles

- ▼ The Canadian Institutes of Health Research's (CIHR's) formal Knowledge Translation definition involves 4 components (CIHR, 2019):
  - **Synthesis** through understanding and combining research findings
  - **Knowledge sharing** with stakeholders, patients, practitioners, and/or policy makers
  - Consumers and researchers share knowledge on the topic so that there is **mutual learning**
  - **Applying knowledge** in an ethically sound way to improve the health of Canadians, providing effective healthcare services and strengthening the healthcare system



# Research Ethics



## Research Ethics

### Definition

- Norms of conduct in the research environment that distinguish between acceptable and unacceptable behaviour. It is the method or perspective for deciding how to act and for analyzing complex issues without harming those involved (Tri-Council Policy Statement, 2018)

### Purpose

- Research ethics serve to promote the aims of research such as objective truths, knowledge, and avoidance of error. Research ethics also promote important moral and social values, and accountability to the public (Tri-Council Policy Statement, 2018)



## Why are Research Ethics Important

- ▼ To ensure the ethical conduct of research involving human participants and animals
  - To ensure respect and dignity for persons involved in experiments is maintained
  - To minimize risk of physical, social, and psychological harm during research studies
- ▼ To ensure academic integrity and honesty as to avoid manipulating results from research studies, creating false data, and copying the work of others (Tri-Council Policy Statement, CIHR, 2018)



## Research Ethics for Research with People

- ▼ Research that involves people must be reviewed by a Research Ethics Board, and the researchers must show their funders that:
  - Research methods and protocols involving human participants must be considered acceptable in accordance with “[Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans \(2018\)](#)”

***The well-being of research participants is of primary importance.***



## Research Ethics for Research with Animals

- ▼ When research involves animals, researchers must show funders that (CCAC, 2020):
  - All animals will be cared for and studied under conditions stated in the “Guide to the Care and Use of Experimental Animals” (Vol 1, 2<sup>nd</sup> edition 1993, revised in 2020)
- ▼ For more information on research ethics for research with animals please view the [CCAC's Training Modules](#)



## Summary about Research

- ▼ Research is undertaken to address gaps in knowledge, to inform policy and to inform educational programming
- ▼ The research team encompasses a variety of people such as established researchers, trainees, consumers, allied health professionals, and more
- ▼ Researchers are highly trained professionals
- ▼ Consumer collaborators are important contributors to the research continuum
- ▼ Knowledge translation is important in putting research to practical use
- ▼ Research ethics ensures academic integrity and no harm to those involved in research



## Additional Information

For further information about research at the Arthritis Society please see the links below:

About Research

<https://arthritis.ca/researchers/>

Research Strategy

<https://arthritis.ca/researchers/research-programs/research-strategy>

Current Research Investments

<https://arthritis.ca/researchers/current-funding-opportunities/competition-results>

*If you have any further questions, please contact us at [research@arthritis.ca](mailto:research@arthritis.ca).*



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