Beyond the Stethoscope: Alternative Careers in Health Care
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Skills Developed from a Life Science Degree

When considering a career, it is necessary to identify what skills you can offer as a future employee. Skills can be developed in various different ways - through academic experiences (such as lab work and group projects), through work experiences (such as part-time jobs, internships and volunteering), or through extracurricular activities (such as participating in student clubs and academic associations).

Skills acquired by life science students can be grouped into four categories: investigative, research, quantitative, and analytical. The life science program generally helps students develop the ability to formulate concepts, allowing them to solve practical problems and find better ways of meeting world needs. The following list presents some examples of the skills developed in the life science program.

**Investigative** - identifying problems, defining expected/potential results, testing hypothesis, and gathering facts

**Research** - designing experiments, recording observations, organizing data, and critically analyzing results

**Quantitative** - applying scientific concepts to problems, using laboratory equipment, utilizing statistical tests to predict outcomes, and interpreting test results

**Analytical Skills** - applying critical reasoning to investigate problems and ideas, analysing scientific papers, conceptualize ideas and devise conclusions with supporting arguments

Students, who may not have well-developed technical skills and/or relevant industry-related experiences, should not be discouraged from pursuing a career in health care. While having the necessary technical skills certainly helps, some of them can be developed on the job and through training. Keep in mind that many employers look for students and recent graduates to who can offer transferrable skills (also called soft skills) in addition to their technical skills. Transferrable skills include time management, communication, organization, ability to work unsupervised, and computer proficiency, among others.
## Sample Careers

Below is a non-exhaustive list of sample careers in health care.

<table>
<thead>
<tr>
<th>Clinicians, Service Providers, and Practitioners</th>
<th>Research and Investigative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acupuncturist</td>
<td>Audiologist</td>
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<tr>
<td>Applied Kinesiologist</td>
<td>Biomedical Engineer</td>
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<tr>
<td>Art/Music Therapist</td>
<td>Biostatistician</td>
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<tr>
<td>Athletic Therapist</td>
<td>Biotechnologist</td>
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<tr>
<td>Audiologist</td>
<td>Cardiovascular Technologist</td>
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<tr>
<td>Cardiac Rehabilitation Specialist</td>
<td>Cytotechnologist</td>
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<tr>
<td>Child Life Specialist</td>
<td>Dental Lab Technologist</td>
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<tr>
<td>Clinical Nurse Specialist</td>
<td>Epidemiologist</td>
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<tr>
<td>Dental Assistant</td>
<td>Exercise Physiologist</td>
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<tr>
<td>Dental Hygienist</td>
<td>Food Scientist</td>
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<tr>
<td>Diagnostic Medical Sonographer</td>
<td>Forensic Scientist</td>
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<tr>
<td>Dietitian/Nutritionist</td>
<td>Geriatric Specialist</td>
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<tr>
<td>Electroneurodiagnostic Technologist</td>
<td>Kinesiologist</td>
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<tr>
<td>Eating Disorder Therapist</td>
<td>Medical Affairs Manager</td>
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<tr>
<td>Exercise Physiologist</td>
<td>Medical Anthropologist</td>
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<tr>
<td>Genetic Counsellor</td>
<td>Medical Illustrator</td>
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<tr>
<td>Medical Imaging Technologist</td>
<td>Medical Librarian</td>
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<tr>
<td>Medical Legal Advisor</td>
<td>Medical Sociologist</td>
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<tr>
<td>Midwife</td>
<td>Medical/Health Historian</td>
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<tr>
<td>Neurologist</td>
<td>Medical Writer</td>
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<tr>
<td>Nurse/Nurse Practitioner</td>
<td>Occupational Health and Safety Expert</td>
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<tr>
<td>Occupational Hygienist</td>
<td>Pharmacist</td>
</tr>
<tr>
<td>Occupational Therapist</td>
<td>Pharmacologist</td>
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<tr>
<td>Ophthalmologist</td>
<td>Phlebotomist/Phlebotomy Technician</td>
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<tr>
<td>Optometrist</td>
<td>Psychometrist</td>
</tr>
<tr>
<td>Pedorthist</td>
<td>Public Health Inspector</td>
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<tr>
<td>Pharmacist</td>
<td>Research Assistant</td>
</tr>
<tr>
<td>Physiotherapist</td>
<td>Research Associate</td>
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<tr>
<td>Podiatrist</td>
<td>Research Scientist</td>
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<tr>
<td>Psychological Associate</td>
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<td>Psychologist</td>
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<td>Psychotherapist</td>
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<tr>
<td>Registered Massage Therapist</td>
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<tr>
<td>Social Worker</td>
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<tr>
<td>Speech-Language Pathologist</td>
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<tr>
<td>Therapeutic Recreationist</td>
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<td>Veterinary Technician</td>
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Examples of Specific Careers

Chiropractor

What do they do?
Chiropractors diagnose, treat, and prevent neuromuscular-skeletal disorders. They perform corrective manipulations including adjustments to the spinal column and other joints in order to relieve pain and increase patients’ mobility. Their treatments are designed to encourage the body's natural healing process without the use of surgery or medication.

Common Responsibilities

- Obtaining patients’ detailed medical histories, including previous injuries, surgery, general health, and lifestyle.
- Provide patient care including examining, recording, and performing diagnostic tests; take and analyze x-rays when needed.
- Diagnose related disorders and set up a personalized treatment plan.
- Provide natural treatment of health disorders, such as performing adjustments of the joints using hands or equipment.
- Instruct patients in the use of corrective exercises, lifestyle improvements, and nutrition to aid long-term recovery.
- Refer patients for medical care when needed.

Working Conditions

- Many chiropractors work independently in their own practices or in group clinics with other health professionals. Some work in hospitals and other medical institutions.
- Chiropractors work in close physical contact with their patients and spend most of the workday on their feet.

Educational Requirements

Chiropractors are required to complete a minimum of 3 years’ undergraduate studies with a focus in science. Then, they must complete a 4-5 year long Doctor of Chiropractic (DC) degree form a chiropractic college. The last step is passing a written and practical exam held by the Canadian
Chiropractic Examining Board. Those who want to practice in Ontario must be registered members the College of Chiropractors of Ontario (CCO).

Below is a list of the educational institutions in Canada, which offer Chiropractic programs. Please contact the individual universities for more detailed information on entrance requirements, admission policies, and program content.

- Canadian Memorial Chiropractic College
- Université du Québec à Trois-Rivières

**Compensation**

- Compensation depends on a range of factors, including the chiropractor’s level of experience, the size and location of the clinic, the size of the client base, and whether or not the clients are insured.
- Practitioners are paid per hour or on a commission base (percentage agreement, where the chiropractor would earn a percentage of the fees paid by their patients).
- Chiropractors in Canada earn between $40,500 and $122,000 per year based on a variety of factors, with a median wage of $65,080 (March 2016). In comparison, the median wage in Toronto is $79,700.

**Prospects of Employment and Growth Opportunities**

The Government of Canada’s website Job Bank states that:

- The employment outlook for Chiropractors in Ontario is good for the 2015-17 period. “Employment growth in this occupation is somewhat dependent on consumer spending for alternative methods of health care. Chiropractic services are not an insured service under the Ontario provincial health care plan, and the extent of coverage for chiropractors varies among private health insurance plans. Demand for these professionals is therefore influenced by a patient's ability to pay the full or partial cost for treatment, as well as the patient's comparison of the benefits gained from chiropractic treatment compared to other medical treatments. [...] Demographic changes may increase the demand for these professionals, as the need for treatment of chronic and acute pain may rise with the aging population of the province.”

**Resources and Links**

Below are some resources that may prove helpful in your further search for information about this career.

- Canadian Chiropractic Association - [website](#)
- Ontario Chiropractic Association - website
- Job Bank - Explore Careers by Essential Skills - Chiropractor - website
Audiologist and Speech-Language Pathologist

What do they do?
Audiologists and speech-language pathologists (also called speech therapists) diagnose, evaluate, and treat patients with hearing impairment and with speech, language and voice disorders to help them improve their communication.

Common Responsibilities
Audiologists:
- Evaluate patients’ hearing impairments and balance problems using hearing devices and other special equipment.
- Diagnose related disorders and set up a personalized treatment and rehabilitation plan; they may prescribe or suggest assistive devices, such as cochlear implants.
- Instruct patients of the use of assistive devices and the implementation of prevention and rehabilitation treatments.

Speech-language pathologists:
- Assess patients’ speech, language, cognitive-linguistic abilities and swallowing difficulties by performing various tests.
- Plan and implement relevant treatment programs.
- Monitor and evaluate the patients’ progress and revise the treatment program if needed.
- Conduct research on speech and communication disorders.

Working Conditions
- Many audiologists and speech-language pathologists work independently in hospitals, health care centres, rehabilitation centres, children’s treatment centres, or at a patient’s home. Some may also work in private practices.
- They work alone on one-on-one sessions with their patients.

Educational Requirements
Audiologists and speech-language pathologists are required to complete a 2-3 year long master’s program in audiology, speech-language pathology, or a related field. A PhD is often required for positions in research or academia, especially in university environments.
Some audiologists and speech-language pathologists choose to obtain a professional certification from the Canadian Association of Speech-Language Pathologists and Audiologists (CASLPA), because many employers prefer to hire certified graduates.

Below is a list of the educational institutions in Canada, which offer Audiology programs. Please contact the individual universities for more detailed information on entrance requirements, admission policies, and program content.

- University of British Columbia
- Dalhousie University
- Université d'Ottawa
- Western University
- Université de Montréal

Below is a list of the educational institutions in Canada, which offer Speech-Language Pathology programs:

- University of Alberta
- University of British Columbia
- Dalhousie University
- Université Laurentienne
- Université d'Ottawa
- Université du Québec à Trois-Rivières
- University of Toronto
- Western University
- Université de Montréal
- McGill University
- Université Laval

**Compensation**

- Compensation depends on a range of factors, including the professional’s level of experience, the size and location of the employer, and the size of the client base.
Audiologists in Canada earn between $54,000 and $94,000 per year based on a variety of factors, with a median wage of $71,125 (March 2016).

Speech-language pathologists in Canada earn between $45,650 and $99,200 per year based on a variety of factors, with a median wage of $65,780 (March 2016).

**Prospects of Employment and Growth Opportunities**

The Government of Canada’s website Job Bank states that:

- The employment outlook for Audiologists and Speech-Language Pathologists in Ontario is good for the 2015-17 period. “The aging population is a key driver for the current demand for audiologists. There is also more awareness of communication disorders in infants and children and the role of early intervention efforts by these professionals.”

**Resources and Links**

Below are some resources that may prove helpful in your further search for information about this career.

- College of Audiologists and Speech-Language Pathologists of Ontario - [website](#)
- Speech-Language & Audiology Canada - [website](#)
- Ontario Association of Speech-Language Pathologists and Audiologists - [website](#)
- Job Bank - Explore Careers by Essential Skills - Speech-Language Pathologists and Audiologists - [website](#)
Occupational Therapist

What do they do?
Occupational therapists help individuals with aging, developmental disorders, physical/mental disorders, illnesses/injuries, emotional problems, or aging to independently carry out daily tasks and improve their ability to care for themselves.

Common Responsibilities
- Assess patients’ ability to perform functional or work-related tasks.
- Determine an appropriate treatment plan; this may include physical exercises to increase coordination and strength, as well as activities to improve memory and reasoning abilities.
- Help patients adapt to functional limitations, rebuild lost skills, and restore confidence.
- Provide advice on using adaptive equipment and making patients’ home and workplace more accessible.

Working Conditions
- Many occupational therapists work independently in hospitals, nursing homes, schools, sports organizations, rehabilitation centres, children’s treatment centres, or sometimes at a patient’s home. Some may also work in private practices.
- They work alone on one-on-one sessions with their patients. Occupational therapists spend most of the workday on their feet.

Educational Requirements
Occupational therapists are required to complete a master’s degree in Occupational Therapy, which generally takes 2 years to complete, or an equivalent academic qualification approved by the College of Occupational Therapists of Ontario. In addition, these professionals must complete the National Occupational Therapy Certification Examination.

Below is a list of the educational institutions in Canada, which offer Occupational Therapy programs. Please contact the individual universities for more detailed information on entrance requirements, admission policies, and program content.

- University of British Columbia
- University of Alberta
Compensation

- Compensation depends on a range of factors, such as the professional’s level of experience, and the size and location of the employer.

- Occupational Therapists in Canada earn between $41,000 and $85,000 per year based on a variety of factors, with a median wage of $52,218 (March 2016).

Prospects of Employment and Growth Opportunities

The Government of Canada’s website Job Bank states that:

- The employment outlook for Occupational Therapists in Ontario is good for the 2015-17 period. “Demand for these health professionals has been increasing due to the growing needs of an aging population, higher survival rates from injuries and accidents, higher occurrence of mental health and family problems, and a shift in health care delivery to community-based services. A focus on rehabilitation and keeping seniors active and in their homes is driving demand. Government funding of occupational therapists within Ontario Family Health teams may add to opportunities.”

Resources and Links

Below are some resources that may prove helpful in your further search for information about this career.
▪ Canadian Association of Occupational Therapists - [website](#)
▪ Ontario Society of Occupational Therapists - [website](#)
▪ College of Occupational Therapists of Ontario - [website](#)
▪ Job Bank - Explore Careers by Essential Skills - Occupational Therapist - [website](#)
Cytotechnologist

What do they do?
Cytotechnologists (also called cytology technicians) microscopically examine human cells for anomalies to detect cancer and other illnesses. These professionals play a key role in the fight against cancer.

Common Responsibilities
- Prepare samples of human cells using special equipment and following specified guidelines.
- Microscopically examine the cell samples, looking for abnormalities, such as size, color, shape, composition, and patterns.
- Report the results to a pathologist for final evaluation and diagnosis.

Working Conditions
- Many cytotechnologists work independently in research facilities, hospitals, private laboratories, commercial companies, health clinics, cancer detection centres, and universities.
- They rarely work with patients; however, they interact with other health care professionals.

Educational Requirements
Cytotechnologists are required to complete post-secondary education in medical laboratory science. Programs may vary from 15 months to 4 years. In addition, these professionals must register with the College of Medical Laboratory Technologists of Ontario (CMLTO) if they want to practice in Ontario.

Many cytotechnologists choose to obtain a professional certification by the Canadian Society for Medical Laboratory Science (CSMLS), because most employers prefer to hire certified graduates.

Below is a list of the educational institutions in Canada, which offer related programs. Please contact the individual universities for more detailed information on entrance requirements, admission policies, and program content.

- The Michener Institute for Applied Health Science
- University of Manitoba
- Dalhousie School of Health Sciences
- École Polytechnique de Montréal
Northern Alberta Institute of Technology

Saskatchewan Polytechnic - Kelsey Campus

**Compensation**

- Compensation depends on a range of factors, such as the professional’s level of experience, and the size and location of the laboratory.

- Cytotechnologists in Canada earn a median wage of $58,240 (March 2016).

**Prospects of Employment and Growth Opportunities**

Cytotechnologists fall under the Medical Laboratory Technicians group.

The Government of Canada’s website Job Bank states that:

- The employment outlook for Medical Laboratory Technicians in Ontario is fair for the 2015-17 period. “The Canadian Society for Medical Laboratory Science acknowledges a potential nationwide shortage of medical laboratory technologists due mainly to an aging workforce and an insufficient number of new entrants. Almost all technologists hold permanent positions with their primary employer. Retirements will be a fairly strong contributor to job openings over the next several years as this occupation has an older age profile compared to all other occupations in Ontario.”

**Resources and Links**

Below are some resources that may prove helpful in your further search for information about this career.

- Canadian Society of Cytopathology - [website](#)

- College of Medical Laboratory Technologists of Ontario (CMLTO) - [website](#)

- Canadian Society for Medical Laboratory Science (CSMLS) - [website](#)

- Job Bank - Explore Careers by Essential Skills - Medical Laboratory Technologists - [website](#)
Public Health Inspector

What do they do?

- Public health inspectors (also called environmental health officers) monitor and enforce health regulations by inspecting municipal water systems, restaurants, and other public places in order to protect communities from disease.

Common Responsibilities

- Perform routine or unplanned visits and inspections; investigate inquiries from the public.
- Observe processing operations, inspect equipment, take samples, and perform tests to recognize potential sources of contamination.
- Prepare reports of each inspection’s findings and determine if an establishment operates under the required standards.
- Inform the owners of the inspection’s results.
- If necessary, they educate facility owners and employees on improving sanitary methods and procedures.
- If the inspector determines that an establishment must be closed down, he/she reviews relevant legislation and by-laws before taking action.

Working Conditions

- Many public health inspectors are employed by governmental health departments, food sanitation agencies, and environmental control agencies among others. They usually work at public facilities, such as restaurants, hotels, swimming pools, zoos, schools, and retirement homes.
- Inspectors spend most of their workday on their feet at different locations.
- The use of protective equipment may be needed, as public health inspectors may be exposed to contamination.

Educational Requirements

Public health inspectors are required to complete a bachelor’s degree in environmental health, public health, biology, chemistry, or a related field. While it is not required, some choose to complete a graduate degree, which allows for specialization and may be helpful for career advancement. In addition, these professionals must be certified by the Canadian Institute of Public Health Inspectors (CIPHI) if they want to practice in Ontario.
Below is a list of the educational institutions in Canada, which offer related programs. Please contact the individual universities for more detailed information on entrance requirements, admission policies, and program content.

- Ryerson University
- British Columbia Institute of Technology
- Concordia University College of Alberta
- Cape Breton University
- NB Community College
- First Nations University of Canada

**Compensation**

- Compensation depends on a range of factors, such as the professional’s level of experience, and the size and location of the employer.
- These professionals earn between $37,600 and $88,450 per year, with a median wage of $58,490 in Canada (March 2016).

**Prospects of Employment and Growth Opportunities**

Public health inspectors fall under the Inspectors - Public and Environmental Health and Occupational Health group.

The Government of Canada’s website Job Bank states that:

- The employment outlook for Inspectors - Public and Environmental Health and Occupational Health in Ontario is good for the 2015-17 period. “Employment has grown considerably, almost doubling over the last decade.”

**Resources and Links**

Below are some resources that may prove helpful in your further search for info about this career.

- Canadian Institute of Public Health Inspectors (CIPHI) - [website](#)
- Canadian Food Inspection Agency (CFIA) - [website](#)
- Health Canada - [website](#)
Useful Links

Below is a list of some resources that could be used for further research.

Explore careers:

- **ExploreHealthCareers.org** - get information about a wide variety of careers in health care.
- **PROSPECTS** - browse job profiles in various career areas; match your personality and skills to more than 400 job profiles.
- **Career Cruising** - learn about hundreds of occupation profiles in various career areas; assess your interests and skills to find suitable careers. Login using your UTORid and click on the “Resources” tab.

Gain experience in health care:

- **Summer Internships** - the list was completed by the University of Toronto Faculty of Medicine Research Office
- **Student Opportunities at Health Canada** - Health Canada employs approximately 600 students a year in a variety of program areas across the department.
- **Ontario Internship Program** - the program offers you career development in key professional fields across the Ontario Public Service.
- **World Health Organization** - their PAHO Internship and Practicum Program aims to train individuals entering the field of public health.
- **Government of Canada Specialized Recruitment Programs** - the public service of Canada offers programs for university and college students who want to work for the public service while still in school.
- **Government of Canada Federal Student Work Experience Program** - the program provides full-time students with the opportunity to explore their interests and develop their skills.
Sources

Image used:

Career profiles information obtained from:
- https://www.prospects.ac.uk/job-profiles/chiropractor
- https://www.prospects.ac.uk/job-profiles/healthcare-scientist-audiology
- https://www.prospects.ac.uk/job-profiles/speech-and-language-therapist
- http://www.sac-oac.ca/students/academic-programs
- https://www2.careercruising.com/main
- https://www.coto.org/memberservices
- http://www.caot.ca
- https://www.cma.ca/En/Pages/cytotechnology.aspx
- http://www.csmls.org/Medical-Laboratory-Professionals/How-to-become-a-Medical-Lab-Professional/Education.aspx
- http://explorehealthcareers.org/en/Career/131/Food_Safety_Specialist
- https://www.prospects.ac.uk/job-profiles/environmental-health-practitioner
- http://www.ciphi.on.ca/career

Prospects of employment obtained from:
Compensation information obtained from:

- http://www.payscale.com/research/CA/Job=Chiropractor/Salary
- http://www.payscale.com/research/CA/Job=Audiologist/Salary
- http://www.payscale.com/research/CA/Job=Safety_Officer/Salary