MEDICAL BIOCHEMISTRY PROFILE

GENERAL INFORMATION
(Source: Royal College and Pathway Evaluation Program)

The primary role of the medical biochemist is to study and measure the biochemical abnormalities in human disease. The medical biochemist is trained in the operation and management of hospital biochemistry laboratories and acts as a consultant in all aspects of their use. As an academic specialist, the medical biochemist develops and integrates a basic medical science research program with clinical practice in a field of biochemical interest and maintains an active role as a teacher of clinically-applied biochemistry.

Technology-driven specialties such as medical biochemistry require the physician to have a broad awareness of the field at the time of completion of formal training. But the physician must also be prepared for major changes during the ensuing years of practice that are inevitable and the residency period is the time to acquire skills for life-long learning. In medical biochemistry, role learning must be supplemented by skills in self-directed learning. It requires ability in problem solving, formulation of hypotheses, the ability to do directed information searches and also the ability to critically appraise data.
MEDICAL BIOCHEMISTRY PROFILE

Medical biochemistry involves pathophysiology (requiring a thorough knowledge of normal and abnormal biochemistry and physiology, and the ability to apply this knowledge to the understanding of human disease); consultation; interpreting results (understanding the principles and limitations of biochemical analyses and applying these concepts to the interpretation of test results); analytical methods; and instrumentation.

Once you have completed medical school, it takes an additional 5 years of Royal College-approved residency training to become certified in medical biochemistry. This residency training must include the following:

• 1 year of basic clinical training (including rotations in medicine, pediatrics, obstetrics and surgery)
• 2 years of Royal College-approved residency in medical biochemistry, preferably spent in one university centre (at least one of these two years must be spent in the biochemistry laboratory of a general hospital)
• 1 year of residency that may be either in internal medicine or in pediatrics.
MEDICAL BIOCHEMISTRY PROFILE

For further details on training requirements go to:
http://www.royalcollege.ca/portal/page/portal/rc/credentials/start/routes/traditional_route
Number of physicians and physicians/100,000 population in Medical Biochemistry in Canada, 2015

<table>
<thead>
<tr>
<th>Province/Territory</th>
<th>Physicians</th>
<th>Phys/100k pop'n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Newfoundland/Labrador</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Prince Edward Island</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Nova Scotia</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>New Brunswick</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Quebec</td>
<td>57</td>
<td>0.7</td>
</tr>
<tr>
<td>Ontario</td>
<td>20</td>
<td>0.1</td>
</tr>
<tr>
<td>Manitoba</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>2</td>
<td>0.2</td>
</tr>
<tr>
<td>Alberta</td>
<td>1</td>
<td>0.0</td>
</tr>
<tr>
<td>British Columbia</td>
<td>14</td>
<td>0.3</td>
</tr>
<tr>
<td>Territories</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>CANADA</strong></td>
<td><strong>97</strong></td>
<td><strong>0.3</strong></td>
</tr>
</tbody>
</table>

Source: 2015 CMA Masterfile
Physicians/100,000 population in Medical Biochemistry in Canada, 1995 to 2015

Source: CMA Masterfile
Medical Biochemists by gender and year in Canada, 1995 to 2015

Source: CMA Masterfile
Medical Biochemists by age and gender in Canada, 2015

Gender

- Male: 70%
- Female: 30%

Age Group

- 34 and under: 7%
- 35 - 44: 18%
- 45 - 54: 17%
- 55 - 64: 36%
- 65 and over: 22%

Source: 2015 CMA Masterfile
Medical Biochemists by age and gender in Canada, 2015

- **65 and over**: 3 Female, 17 Male
- **55-64**: 9 Female, 24 Male
- **45-54**: 3 Female, 12 Male
- **35-44**: 7 Female, 9 Male
- **34 and Under**: 3 Female, 3 Male

Source: 2015 CMA Masterfile
Number of Medical Biochemists who retired during the THREE year period of 2012 to 2014

Source: CMA Masterfile – year over year comparisons
Note: “Retired” is based on giving up licence and is therefore excludes those who have retired from clinical practice but are still licensed; it includes physicians who have temporarily given up their licence but may return to practice at a later date.
Total and Ministry funded postgraduate MD trainees in 2014/15 – Medical biochemistry

<table>
<thead>
<tr>
<th>Faculty of Medicine</th>
<th>Ministry funded</th>
<th>Total</th>
<th>Faculty of Medicine</th>
<th>Ministry funded</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memorial U N&amp;L</td>
<td>0</td>
<td>0</td>
<td>McMaster U</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Dalhousie U</td>
<td>0</td>
<td>0</td>
<td>UWO</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U Laval</td>
<td>3</td>
<td>3</td>
<td>NOSM</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U Sherbrooke</td>
<td>3</td>
<td>3</td>
<td>U Manitoba</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U Montréal</td>
<td>0</td>
<td>0</td>
<td>U Sask</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>McGill U</td>
<td>4</td>
<td>7</td>
<td>U Alberta</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>U Ottawa</td>
<td>0</td>
<td>0</td>
<td>U Calgary</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Queens U</td>
<td>0</td>
<td>0</td>
<td>UBC</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>U Toronto</td>
<td>0</td>
<td>0</td>
<td>Canada</td>
<td>16</td>
<td>20</td>
</tr>
</tbody>
</table>

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
First year and exiting postgraduate-MD trainees in 2014/15 – Medical Biochemistry

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
Postgraduate-MD trainees in 2014/15 – Medical Biochemistry

• Total of 1 first year Medical Biochemistry trainees representing 6% of all Medical Biochemistry trainees.

• Total of 16 Medical Biochemistry trainees representing 0.1% of all Ministry funded trainees.

• Total of 3 visa trainees in Medical Biochemistry.

• Total of 6 Medical Biochemistry trainees completed postgraduate training in 2014.

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
The 3 exits in 2013 are all known to be practising in Canada

Source: 2014/15 Annual Census of Post-MD Trainees, CAPER
Stress associated with finding employment at end of residency

- **FM resident**
  - Not stressful: 43%
  - Somewhat stressful: 42%
  - Very stressful: 8%

- **Other spec res**
  - Not stressful: 20%
  - Somewhat stressful: 50%
  - Very stressful: 25%

Source: 2012 National Physician Survey of residents. CFPC, CMA, Royal College
Links to the organizations supplying information for this document

National Physician Survey
http://www.nationalphysiciansurvey.ca

Canadian Medical Association
http://www.cma.ca/pdc

Association of Faculties of Medicine of Canada
http://www.caper.ca/

Royal College of Physicians and Surgeons of Canada
http://www.royalcollege.ca/portal/page/portal/rc/credentials/start/routes/traditional_route

College of Family Physicians of Canada
http://www.cfpc.ca

Canadian Institute for Health Information
http://www.cihi.ca