

## Laboratory Technicians and Technologists

Medical laboratory **technologists** (scientists) and medical laboratory **technicians** collect samples and perform tests to analyze body fluids, tissue, and other substances. Medical laboratory **technologists** perform complex medical laboratory tests; medical laboratory **technicians** perform routine medical laboratory tests.

**Duties** Medical laboratory technologists and technicians typically do the following:

- Analyze body fluids, such as blood, urine, and tissue samples, and findings
- Study blood samples for use in transfusions
- Operate laboratory equipment, such as microscopes and cell counters
- Use equipment and instruments capable of performing a number of tests at the same time
- Log data from medical tests and enter results into a patient's medical record
- Discuss results and findings of laboratory tests and procedures with physicians
- Supervise or train medical laboratory technicians

Both **technicians and technologists** perform tests and procedures that physicians or other healthcare personnel order. However, **technologists** perform more complex tests and laboratory procedures than **technicians** do. For example, **technologists** may prepare specimens and perform manual tests that based on detailed instructions, whereas **technicians** perform more automated routine tests.

**Technicians** usually work under the general supervision of **technologists** or laboratory managers.

**Technologists** in small laboratories perform many types of tests; in large laboratories, they generally specialize. The following are examples of types of specialized medical laboratory **technologists**:

- **Blood bank technologists, or immunohematology technologists**, collect blood, classify it by type, and prepare blood and its components for transfusions.
- **Clinical chemistry technologists** prepare specimens and analyze the chemical and hormonal contents of body fluids.
- **Cytotechnologists** prepare slides of body cells and examine these cells with a microscope for abnormalities that may signal the beginning of a cancerous growth.
- **Immunology technologists** examine elements of the human immune system and its response to foreign bodies.
- **Microbiology technologists** examine and identify bacteria and other microorganisms.
- **Molecular biology technologists** perform complex protein and nucleic acid tests on cell samples.

Like **technologists**, medical laboratory **technicians** may work in several areas of the laboratory or specialize in one particular area. For example, histotechnicians cut and stain tissue specimens for pathologists, who are doctors who study the cause and development of diseases at a microscopic level.

**Technologists and technicians** often specialize after they have worked in a particular area for a long time or have received advanced education or training in that area.

**Work Environment** Top industries that employed **technologists and technicians** in 2012:

Hospitals	50%
Laboratories	17
Physician Offices	10
Schools	5

**Work Schedules** **Technologists and technicians** who work in facilities that operate around the clock, such as hospitals and some independent laboratories, may work evening, weekend, or overnight hours.

Medical laboratory personnel work with infectious specimens or with materials that produce fumes. When they follow proper methods to control infection and sterilize equipment, few hazards exist. They wear protective masks, gloves, and goggles for their safety and protection.

**Education and Training** Universities and hospitals offer medical technology programs. An entry-level job for **technologists** usually requires a bachelor's degree in medical technology or life sciences. A bachelor's degree program in medical laboratory technology includes courses in chemistry, biology, microbiology, mathematics, and statistics, as well as courses in clinical laboratory skills, management, and education.

Sometimes courses are at a hospital-based program that students attend during their senior year of college. College graduates who major in other sciences and meet a program's prerequisites, such as having completed required courses in biology and chemistry, also may apply to a medical laboratory science program.

Medical laboratory **technicians** often complete an associate's degree program in clinical laboratory science. A limited number of 1-year certificate programs are available from hospitals for those who already have a degree in a related field, such as nursing. The Armed Forces and vocational or technical schools also may offer certificate programs for medical laboratory technicians. The **technician** coursework addresses the theoretical and practical aspects of each of the major laboratory disciplines. **High school students who are interested in pursuing a career in the medical laboratory sciences should take courses in chemistry, biology, and mathematics.**

**Licenses and Certification** NJ does not require laboratory personnel to be licensed or registered. Although certification is not required to enter the occupation in all cases, employers typically prefer to hire certified **technologists and technicians** from a recognized authority like the American Society for Clinical Pathology (ASCP). If you look at most job postings for lab **technicians** in New Jersey, you'll find that practically every one requires that you already have certification from the ASCP or some equivalent like the NCA.

**Technologists and technicians** can obtain a general certification or a certification in a specialty, such as cytotechnology or medical biology. Most credentialing institutions require that **technologists** complete an accredited education program in order to qualify to sit for an examination.

### **Important Qualities**

- **Ability to use technology:** Must understand how to operate complex machinery.
- **Detail oriented:** Must follow exact instructions from physicians in order to perform correct tests or procedures.
- **Dexterity:** Requires skill while working with one's hands; works closely with needles and precise laboratory instruments; must be able to handle these tools effectively.
- **Physical stamina:** May work on one's feet for long periods while collecting samples; may need to lift or turn disabled patients to collect samples for testing.

**Pay** The median annual wage for **technologists** was \$57,580 in May 2012. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$39,580, and the highest 10 percent earned more than \$78,900.

The median annual wage for **technicians** was \$37,240 in May 2012. The lowest 10 percent earned less than \$24,790, and the highest 10 percent earned more than \$57,710.

**Job Outlook** Employment of **technologists is projected to grow 14 percent** from 2012 to 2022, about as fast as the average for all occupations. Employment of **technicians is projected to grow 30 percent** from 2012 to 2022, much faster than the average for all occupations.

An increase in the aging population will lead to a greater need to diagnose medical conditions, such as cancer or type 2 diabetes, through laboratory procedures. **Technologists and technicians** will be in demand, to use and maintain the equipment needed for diagnosis and treatment.

**SOURCE:** Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook, 2014-15 Edition*, Medical and Clinical Laboratory Technologists and Technicians, on the Internet at <http://www.bls.gov/ooh/healthcare/medical-and-clinical-laboratory-technologists-and-technicians.htm> (visited February 05, 2014).

Local Schools:

**Technician-** Rutgers and Thomas Edison College

**Technologist-** Cumberland County College

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