

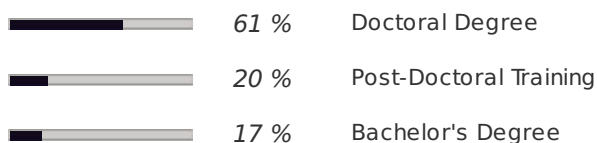
## Medical Scientists, Except Epidemiologists

### Description

Conduct research dealing with the understanding of human diseases and the improvement of human health. Engage in clinical investigation or other research, production, technical writing, or related activities.

### Education

The following is a breakdown of the top three degrees that people in this job possess (each educational level is described in the legend at the end of this document):

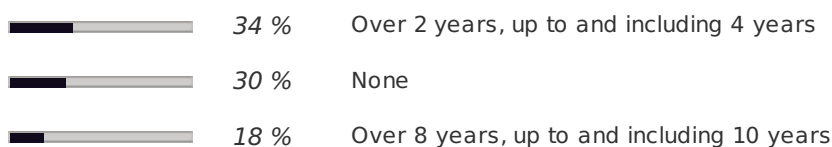


In order to pursue this career, you will need to be educated in one of the following areas:

- Biomedical Sciences, General (CIP = 26.0102)
- Biochemistry (CIP = 26.0202)
- Biophysics (CIP = 26.0203)
- Molecular Biology (CIP = 26.0204)
- Cell/Cellular Biology and Histology (CIP = 26.0401)
- Anatomy (CIP = 26.0403)
- Medical Microbiology and Bacteriology (CIP = 26.0503)
- Immunology (CIP = 26.0507)
- Human/Medical Genetics (CIP = 26.0806)
- Physiology, General (CIP = 26.0901)
- Molecular Physiology (CIP = 26.0902)
- Cell Physiology (CIP = 26.0903)
- Endocrinology (CIP = 26.0904)
- Reproductive Biology (CIP = 26.0905)
- Neurobiology and Neurophysiology (CIP = 26.0906)
- Cardiovascular Science (CIP = 26.0907)
- Exercise Physiology (CIP = 26.0908)
- Vision Science/Physiological Optics (CIP = 26.0909)
- Pathology/Experimental Pathology (CIP = 26.0910)
- Oncology and Cancer Biology (CIP = 26.0911)
- Physiology, Pathology, and Related Sciences, Other (CIP = 26.0999)
- Pharmacology (CIP = 26.1001)
- Molecular Pharmacology (CIP = 26.1002)
- Neuropharmacology (CIP = 26.1003)
- Toxicology (CIP = 26.1004)
- Molecular Toxicology (CIP = 26.1005)
- Environmental Toxicology (CIP = 26.1006)
- Pharmacology and Toxicology (CIP = 26.1007)
- Pharmacology and Toxicology, Other (CIP = 26.1099)
- Biostatistics (CIP = 26.1102)
- Epidemiology (CIP = 26.1309)
- Medical Scientist (MS, PhD) (CIP = 51.1401)

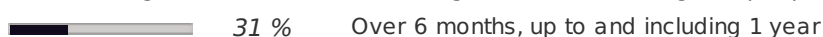
### Experience

The following is a breakdown of the level of related work experience that people in this job possess:



### On-site Training

The following is a breakdown of the length of on-site training that people in this job typically receive:





- 17 % Over 4 years, up to and including 10 years
- 15 % Anything beyond short demonstration, up to and including 1 month

### **On-the-job Training**

The following is a breakdown of the level of on-the-job training that people in this job received:

- 33 % Up to and including 1 month
- 17 % Over 3 months, up to and including 6 months
- 15 % Over 6 months, up to and including 1 year



## Interests

The following is a list of the top three career interests (also known as Holland Codes) that people with this occupation possess, along with their level of importance to this career.

- Investigative (Very high)
- Realistic (High)
- Artistic (High)

## Tasks

Here are the most common tasks and duties for which you would be responsible in this job:

- Conduct research to develop methodologies, instrumentation and procedures for medical application, analyzing data and presenting findings.
- Plan and direct studies to investigate human or animal disease, preventive methods, and treatments for disease.
- Follow strict safety procedures when handling toxic materials to avoid contamination.
- Evaluate effects of drugs, gases, pesticides, parasites, and microorganisms at various levels.
- Study animal and human health and physiological processes.
- Consult with and advise physicians, educators, researchers, and others regarding medical applications of physics, biology, and chemistry.
- Teach principles of medicine and medical and laboratory procedures to physicians, residents, students, and technicians.

## Abilities

To pursue this career, you will need to display the following capacities:

- Oral Comprehension
- Inductive Reasoning
- Written Comprehension
- Oral Expression
- Deductive Reasoning
- Problem Sensitivity
- Written Expression
- Near Vision
- Speech Clarity
- Information Ordering
- Speech Recognition
- Category Flexibility
- Mathematical Reasoning
- Flexibility of Closure
- Selective Attention
- Originality
- Number Facility
- Perceptual Speed
- Fluency of Ideas
- Finger Dexterity



## Knowledge

To pursue this career, it would be helpful to be well-versed in the following subject areas:

- Biology
- English Language
- Mathematics
- Medicine and Dentistry
- Chemistry
- Administration and Management
- Communications and Media
- Education and Training
- Personnel and Human Resources
- Clerical
- Computers and Electronics
- Public Safety and Security
- Physics
- Psychology
- Customer and Personal Service
- Engineering and Technology
- Sociology and Anthropology
- Telecommunications
- Sales and Marketing
- Law and Government

## Skills

The following skills are considered essential to this job:

- Science
- Critical Thinking
- Reading Comprehension
- Complex Problem Solving
- Speaking
- Writing
- Active Listening
- Active Learning
- Monitoring
- Judgment and Decision Making
- Systems Analysis
- Systems Evaluation
- Time Management
- Social Perceptiveness
- Mathematics
- Coordination
- Instructing
- Operations Analysis
- Management of Personnel Resource
- Service Orientation



## Activities

In this job, you will likely spend most of your time engaged in the following activities:

- Getting Information
- Processing Information
- Making Decisions and Solving Problems
- Updating and Using Relevant Knowledge
- Interacting With Computers
- Identifying Objects, Actions, and Events
- Analyzing Data or Information
- Documenting/Recording Information
- Evaluating Information to Determine Compliance with Standards
- Interpreting the Meaning of Information for Others
- Communicating with Persons Outside Organization
- Judging the Qualities of Things, Services, or People
- Communicating with Supervisors, Peers, or Subordinates
- Organizing, Planning, and Prioritizing Work
- Monitor Processes, Materials, or Surroundings
- Establishing and Maintaining Interpersonal Relationships
- Estimating the Quantifiable Characteristics of Products, Events,
- Developing Objectives and Strategies
- Provide Consultation and Advice to Others
- Thinking Creatively

## Job Zone

All occupations are categorized into job zones, based on the level of preparation (experience, education, and training) that is required. There are five job zone categories, with job zone one indicating that little to no preparation is required, to job zone five, where extensive preparation is needed.

**This occupation is categorized as Job Zone Five: Extensive Preparation Needed**

Occupations in this job zone tend to require the following:

### Experience

Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

### Education

Most of these occupations require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

### Training

Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

### Example

These occupations often involve coordinating, training, supervising, or managing the activities of others to accomplish goals. Very advanced communication and organizational skills are required. Examples include librarians, lawyers, aerospace engineers, wildlife biologists, school psychologists, surgeons, treasurers, and controllers.



## Legend:

### Educational Levels

1. **Less than High School:** No schooling or just grade school or some high school courses.
2. **High School Diploma:** Or GED or High School Equivalence Certificate.
3. **Post-Secondary Certificate:** Awarded for training completed after high school (for example, in Personnel Services, Engineering-related Technologies, Vocational Home Economics, Construction Trades, Mechanics and Repairers, Precision Production Trades).
4. **Some College Courses:** Can consist of college preparatory courses or regular courses taken while attending college, but credits attained are not sufficient to get a degree.
5. **Associate's Degree:** An undergraduate degree awarded by a junior, community technical or bachelor's degree-granting college/university. Requires a completion of a two-year course of study.
6. **Bachelor's Degree:** An academic degree awarded for an undergraduate major or course. Requires a completion of a four-year course of study.
7. **Post-Baccalaureate Certificate:** Awarded for completion of an organized program of study; designed for people who have completed a Baccalaureate degree, but do not meet the requirements of academic degrees carrying the title of Master.
8. **Master's Degree:** An academic degree awarded to people who, in addition to achieving a bachelor's, have taken additional courses or completed a research study in a specific field or subject area. Requires an additional one to three years of study.
9. **Post-Master's Certificate:** Awarded for completion of an organized program of study; designed for people who have completed a Master's degree, but do not meet the requirements of academic degrees at the doctoral level.
10. **First Professional Degree:** Awarded for completion of a program that: requires at least 2 years of college work before entrance into the program, includes a total of at least 6 academic years of work to complete, and provides all remaining academic requirements to begin practice in a profession.
11. **Doctoral Degree:** An academic or professional degree awarded for the completion of advanced graduate study beyond a Master's degree. Requires an additional two to four years of study.
12. **Postdoctoral Training:** Consists of advanced academic research completed after doctoral studies. Generally done within five years of the completion of a Doctoral Degree in order to deepen a person's knowledge of a particular subject, hone skills, and publish academic papers.