



## Dental Laboratory Technician Overview

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### The Field

Dental laboratory technicians fill prescriptions from dentists for crowns, bridges, dentures, and other dental prosthetics. First, dentists send a specification of the item to be manufactured, along with an impression or mold of the patient's mouth or teeth. With new technology, a technician may receive a digital impression rather than a physical mold. Then dental laboratory technicians, also called dental technicians, create a model of the patient's mouth by pouring plaster into the impression and allowing it to set. They place the model on an apparatus that mimics the bite and movement of the patient's jaw. The model serves as the basis of the prosthetic device. Technicians examine the model, noting the size and shape of the adjacent teeth, as well as gaps within the gumline. Based upon these observations and the dentist's specifications, technicians build and shape a wax tooth or teeth model, using small hand instruments called wax spatulas and wax carvers. The wax model is used to cast the metal framework for the prosthetic device.



After the wax tooth has been formed, dental technicians pour the cast and form the metal and, using small hand-held tools, prepare the surface to allow the metal and porcelain to bond. They then apply porcelain in layers, to arrive at the precise shape and color of a tooth. Technicians place the tooth in a porcelain furnace to bake the porcelain onto the metal framework, and then adjust the shape and color, with subsequent grinding and addition of porcelain to achieve a sealed finish. The final product is a nearly exact replica of the lost tooth or teeth.

In some laboratories, technicians perform all stages of the work, whereas in other labs, each technician does only a few. Dental laboratory technicians can specialize in 1 of 5 areas: orthodontic appliances, crowns and bridges, complete dentures, partial dentures, or ceramics. Job titles can reflect specialization in these areas. For example, technicians who make porcelain and acrylic restorations are called dental ceramists.



### "Cardiovascular Technologist Overview"

Prepared as part of the Sloan Career Cornerstone Center ([www.careercornerstone.org](http://www.careercornerstone.org))

Note: Some resources in this section are provided by the US Department of Labor, Bureau of Labor Statistics.

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## Preparation

Most dental laboratory technicians learn their craft on the job; however, many employers prefer to hire those with formal training. Dental laboratory technicians begin by learning simple tasks, such as pouring plaster into an impression, and progress to more complex procedures, such as making porcelain crowns and bridges. Becoming a fully trained technician requires an average of 3 to 4 years, depending upon the individual's aptitude and ambition, but it may take a few years more to become an accomplished technician. High school students interested in becoming dental laboratory technicians should take courses in art, metal and wood shop, drafting, and sciences. Courses in management and business may help those wishing to operate their own laboratories.

Training in dental laboratory technology also is available through community and junior colleges, vocational-technical institutes, and the Armed Forces. Formal training programs vary greatly both in length and in the level of skill they impart. Programs in dental laboratory technology are accredited by the Commission on Dental Accreditation in conjunction with the American Dental Association. These programs provide classroom instruction in dental materials science, oral anatomy, fabrication procedures, ethics, and related subjects. In addition, each student is given supervised practical experience in a school or an associated dental laboratory. Accredited programs normally take 2 years to complete and lead to an associate degree. A few programs take about 4 years to complete and offer a bachelor's degree in dental technology. Graduates of 2-year training programs need additional hands-on experience to become fully qualified.

Each dental laboratory owner operates in a different way, and classroom instruction does not necessarily expose students to techniques and procedures favored by individual laboratory owners. Students who have taken enough courses to learn the basics of the craft usually are considered good candidates for training, regardless of whether they have completed a formal program. Many employers will train someone without any classroom experience. The following is a list of currently accredited programs in dental laboratory technology.

<b>Arizona</b> <ul style="list-style-type: none"><li>• Pima County Community College</li></ul>	<b>Louisiana</b> <ul style="list-style-type: none"><li>• Louisiana State University School of Dentistry</li></ul>
<b>California</b> <ul style="list-style-type: none"><li>• Los Angeles City College</li><li>• Pasadena City College</li></ul>	<b>Massachusetts</b> <ul style="list-style-type: none"><li>• Middlesex Community College</li></ul>
<b>Florida</b> <ul style="list-style-type: none"><li>• Indian River Community College</li><li>• McFatter Vocational Technical School</li></ul>	<b>New York</b> <ul style="list-style-type: none"><li>• Erie Community College, South Campus</li><li>• New York City College of Technology</li></ul>
<b>Georgia</b> <ul style="list-style-type: none"><li>• Atlanta Technical College</li></ul>	<b>North Carolina</b> <ul style="list-style-type: none"><li>• Durham Technical Community College</li></ul>
<b>Idaho</b> <ul style="list-style-type: none"><li>• Idaho State University College of Technology</li></ul>	<b>Oregon</b> <ul style="list-style-type: none"><li>• Portland Community College</li></ul>
<b>Indiana</b> <ul style="list-style-type: none"><li>• Indiana University Purdue University</li></ul>	<b>Texas</b> <ul style="list-style-type: none"><li>• San Antonio College</li><li>• School of Health Care Sciences-Air Force</li></ul>
<b>Iowa</b> <ul style="list-style-type: none"><li>• Kirkwood Community College</li></ul>	<b>Virginia</b> <ul style="list-style-type: none"><li>• J. Sargeant Reynolds Community College</li></ul>
<b>Kentucky</b> <ul style="list-style-type: none"><li>• Bluegrass Community and Technical College</li></ul>	<b>Washington</b> <ul style="list-style-type: none"><li>• Bates Technical College</li></ul>

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## Day in the Life

Dental laboratory technicians generally work in clean, well-lit, and well-ventilated laboratories. They have limited contact with the public. Salaried laboratory technicians usually work 40 hours a week, but some work part time. At times, technicians wear goggles to protect their eyes, gloves to handle hot objects, or masks to avoid inhaling dust. They may spend a great deal of time standing.



Dental technicians usually have their own workbenches, which can be equipped with Bunsen burners, grinding and polishing equipment, and hand instruments, such as wax spatulas and wax carvers. Some dental technicians have computer-aided milling equipment to assist them with creating artificial teeth.

A high degree of manual dexterity, good vision, and the ability to recognize very fine color shadings and variations in shape also are necessary for dental technicians. An artistic aptitude for detailed and precise work also is important.

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## Earnings

According to the U.S. Department of Labor, Bureau of Labor Statistics, the median hourly earnings of wage-and-salary dental laboratory technicians is about \$15.67. The middle 50 percent earn between \$11.61 and \$20.57 an hour. The lowest 10 percent earn less than \$9.16, and the highest 10 percent earn more than \$26.13 an hour.



In the two industries that employed the most dental laboratory technicians, medical equipment and supplies manufacturing and offices of dentists, median hourly earnings are \$15.09 and \$17.74, respectively.

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## Employment

Dental laboratory technicians hold about 53,000 jobs in the United States. About 55 percent of salaried jobs were in medical equipment and supply manufacturing laboratories, which usually are small, privately owned businesses with fewer than 5 employees.

However, some laboratories are large; a few employ more than 1,000 workers. In addition to manufacturing laboratories, many dental laboratory technicians worked in offices of dentists. Some dental laboratory technicians open their own offices.



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## Career Path Forecast

According to the U.S. Department of Labor, Bureau of Labor Statistics, employment of dental laboratory technicians is expected to grow more slowly than average through 2016, at four percent. During the last few years, demand has arisen from an aging public that is growing increasingly interested in cosmetic prostheses.

For example, many dental laboratories are filling orders for composite fillings that are the same shade of white as natural teeth to replace older, less attractive fillings. However, job growth for dental laboratory technicians will be limited. The overall dental health of the population has improved because of fluoridation of drinking water and greater emphasis on preventive dental care, which has reduced the incidence of dental cavities. As a result, full dentures will be less common, as most people will need only a bridge or crown.

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## Professional Organizations

Professional societies provide an excellent means of keeping current and in touch with other professionals in the field. These groups can play a key role in your development and keep you abreast of what is happening in your field. Associations promote the interests of their members and provide a network of contacts that can help you find jobs and move your career forward. They can offer a variety of services including job referral services, continuing education courses, insurance, travel benefits, periodicals, and meeting and conference opportunities. The following is a partial list of professional associations serving dental laboratory technicians.



- ▶ **Commission on Dental Accreditation, American Dental Association ([www.ada.org](http://www.ada.org))**
- ▶ **National Board for Certification in Dental Technology ([www.nbccert.org](http://www.nbccert.org))**
- ▶ **National Association of Dental Laboratories ([www.nadl.org](http://www.nadl.org))**

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