Ancient Origins

- 5000 BC - A Sumerian text of this date describes “tooth worms” as the cause of dental decay.

- 2600 BC - Death of Hesy-Re, an Egyptian scribe, often called the first “dentist.” An inscription on his tomb includes the title “the greatest of those who deal with teeth, and of physicians.” This is the earliest known reference to a person identified as a dental practitioner.

- 1700-1550 BC - An Egyptian text, the Ebers Papyrus, refers to diseases of the teeth and various toothache remedies.

- 500-300 BC - Hippocrates and Aristotle write about dentistry, including the eruption pattern of teeth, treating decayed teeth and gum disease, extracting teeth with forceps, and using wires to stabilize loose teeth and fractured jaws.

- 100 BC - Celsus, a Roman medical writer, writes extensively in his important compendium of medicine on oral hygiene, stabilization of loose teeth, and treatments for toothache, teething pain, and jaw fractures.

- 166-201 AD - The Etruscans practice dental prosthetics using gold crowns and fixed bridgework.

The Beginnings of A Profession—Middle Ages

- 500-1000 - During the Early Middle Ages in Europe medicine and surgery, including dentistry, is generally practiced by monks, the most educated people of the period.

- 700 - A medical text in China mentions the use of “silver paste,” a type of amalgam.

- 1130-1163 - A series of Papal edicts prohibit monks from performing any type of surgery, bloodletting or tooth extraction. Barbers often assisted monks in their surgical ministry because they visited monasteries to shave the heads of monks and the tools of the barber trade—sharp knives and razors—were useful for surgery. After the edicts, barbers assume the monks’ surgical duties: bloodletting, lancing abscesses, extracting teeth, etc.

- 1210 - A Guild of Barbers is established in France. Barbers eventually evolve into two groups: surgeons who were educated and trained to perform complex surgical operations; and lay barbers, or barber-surgeons, who performed more routine hygienic services including shaving, bleeding and tooth extraction.

- 1400s - A series of royal decrees in France prohibit lay barbers from practicing all surgical procedures except bleeding, cupping, leeching, and extracting teeth.

- 1530 - The Little Medicinal Book for All Kinds of Diseases and Infirmities of the Teeth (Artzney Buchlein), the first book devoted entirely to dentistry, is published in Germany. Written for barbers and surgeons who treat the mouth, it covers practical topics such as oral hygiene, tooth extraction, drilling teeth, and placement of gold fillings.

- 1575 – In France Ambrose Pare, known as the Father of Surgery, publishes his Complete Works. This includes practical information about dentistry such as tooth extraction and the treatment of tooth decay and jaw fractures.

The Development of a Profession—18th Century

- 1723 - Pierre Fauchard, a French surgeon publishes The Surgeon Dentist, A Treatise on Teeth (Le Chirurgien Dentiste). Fauchard is credited as being the Father of Modern Dentistry because his book was the first to describe a comprehensive system for the practice of dentistry including basic oral anatomy and function, operative and restorative techniques, and denture construction.
• 1746 - Claude Mouton describes a gold crown and post to be retained in the root canal. He also recommends white enameling for gold crowns for a more esthetic appearance.

• 1760 - John Baker, the earliest medically-trained dentist to practice in America, immigrates from England and sets up practice.

• 1760-1780 - Isaac Greenwood practices as the first native-born American dentist.

• 1768 - 1770 Paul Revere places advertisements in a Boston newspaper offering his services as a dentist. In 1776, in the first known case of post-mortem dental forensics, Revere verifies the death of his friend, Dr. Joseph Warren in the Battle of Breed’s Hill, when he identifies the bridge that he constructed for Warren.

• 1789 – Frenchman Nicolas Dubois de Chemant receives the first patent for porcelain teeth.

• 1790 - John Greenwood, son of Isaac Greenwood and one of George Washington’s dentists, constructs the first known dental foot engine. He adapts his mother’s foot treadle spinning wheel to rotate a drill.

• 1790 - Josiah Flagg, a prominent American dentist, constructs the first chair made specifically for dental patients. To a wooden Windsor chair, Flagg attaches an adjustable headrest, plus an arm extension to hold instruments.

Advances in Science and Education—19th Century

• 1801 - Richard C. Skinner writes the Treatise on the Human Teeth, the first dental book published in America.

• 1825 - Samuel Stockton begins commercial manufacture of porcelain teeth. His S.S. White Dental Manufacturing Company establishes and dominates the dental supply market throughout the 19th century.

• 1832 - James Snell invents the first reclining dental chair.

• 1833-1850 - The Crawcours (two brothers from France) introduce amalgam filling material in the United States under the name Royal Mineral Succedaneum. The brothers are charlatans whose unscrupulous methods spark the “amalgam wars,” a bitter controversy within the dental profession over the use of amalgam fillings.

• 1839 – The American Journal of Dental Science, the world’s first dental journal, begins publication.

• 1839 - Charles Goodyear invents the vulcanization process for hardening rubber. The resulting Vulcanite, an inexpensive material easily molded to the mouth, makes a excellent base for false teeth, and is soon adopted for use by dentists. In 1864 the molding process for vulcanite dentures is patented, but the dental profession fights the onerous licensing fees for the next twenty-five years.

• 1840 - Horace Hayden and Chapin Harris found the world’s first dental school, the Baltimore College of Dental Surgery, and establish the Doctor of Dental Surgery (DDS) degree. (The school merges with the University of Maryland in 1923).

• 1840 - The American Society of Dental Surgeons, the world’s first national dental organization, is founded. (The organization dissolves in 1856.)

• 1841 - Alabama enacts the first dental practice act, regulating dentistry in the United States. The act called for the assignment of a dentist to the state’s medical board in order to grant licenses for practicing dentistry in the state, however, the act was never enforced, few dentists are ever assigned a seat on the medical board and only a couple of dental licenses are ever granted during the forty years it was on the books.

• 1846 – Dentist William Morton conducts the first successful public demonstration of the use of ether anesthesia for surgery. The previous year Horace Wells, also a dentist, had conducted a similar demonstration that was regarded a failure when the patient cried out. Crawford Long, a physician, later claims he used ether as an anesthetic in an operation as early as 1842, but he did not publish his work.
1855 - Robert Arthur originates the cohesive gold foil method allowing dentists to insert gold into a cavity with minimal pressure. The foil is fabricated by annealing, a process of passing gold through a flame making it soft and malleable.

1859 - Twenty-six dentists meet in Niagara Falls, New York, and form the American Dental Association.

1864 - Sanford C. Barnum develops the rubber dam, a piece of elastic rubber fitted over a tooth by means of weights. This simple device isolates the tooth from the oral cavity, a troublesome problem for dentists.

1866 - Lucy Beaman Hobbs graduates from the Ohio College of Dental Surgery, becoming the first woman to earn a dental degree.

1867 - The Harvard University Dental School, the first university-affiliated dental institution, is founded. The school calls its degree the Dentariae Medicinae Doctorae (DMD), creating a continuing semantic controversy (DDS vs. DMD).

1869 - Dr. Robert Tanner Freeman, graduating from Harvard University Dental School, becomes the first African-American to earn a dental degree.

1871 - James B. Morrison patents the first commercially manufactured foot-treadle dental engine. Morrison’s inexpensive, mechanized tool supplies dental burs with enough speed to cut enamel and dentin smoothly and quickly, revolutionizing the practice of dentistry.

1871 - The American George F. Green receives a patent for the first electric dental engine, a self-contained motor and handpiece.

1877 - The Wilkerson chair, the first pump-type hydraulic dental chair, is introduced.

1880s - The collapsible metal tube revolutionizes toothpaste manufacturing and marketing. Dentifrice had been available only in liquid or powder form, usually made by individual dentists, and sold in bottles, porcelain pots, or paper boxes. Tube toothpaste, in contrast, is mass-produced in factories, mass-marketed, and sold nation-wide. In twenty years, it becomes the norm.

1883 - The National Association of Dental Examiners is founded by the members of the dental boards of several states in order to establish uniform standards in the qualifications for dental practitioners, the administration of dental boards overseeing licensing and the legislation of dental practice acts.

1885 - The first female dental assistant is employed by C. Edmond Kells, a prominent New Orleans dentist. Her duties include chair-side assistance, instrument cleaning, inventory, appointments, bookkeeping, and reception. Soon “Lady in Attendance” signs are routinely seen in the windows of 19th century dental offices. The American Dental Assistants Association is founded in 1924 by Juliette Southard and her female colleagues.

1887 - Stowe & Eddy Dental Laboratory, the first successful industrial-type laboratory in the U.S., opens in Boston, marking the ascendancy of the modern commercial dental laboratory. The earliest known dental laboratory in the U.S. was Sutton & Raynor which opened in New York City around 1854.

1890 - Ida Gray, the first African-American woman to earn a dental degree, graduates from the University of Michigan School of Dentistry.

1890 - Willoughby Miller an American dentist in Germany, notes the microbial basis of dental decay in his book Micro-Organisms of the Human Mouth. This generates an unprecedented interest in oral hygiene and starts a worldwide movement to promote regular toothbrushing and flossing.

1895 - Wilhelm Roentgen, a German physicist, discovers the x-ray. In 1896 prominent New Orleans dentist C. Edmond Kells takes the first dental x-ray of a living person in the U.S.
• 1899 -Edward Hartley Angle classifies the various forms of **malocclusion**. Credited with making orthodontics into a dental specialty, Angle also establishes the first school of orthodontics (Angle School of Orthodontia in St. Louis, 1900), the first orthodontic society (American Society of Orthodontia, 1901), and the first dental specialty journal (*American Orthodontist*, 1907).

**Innovations in Techniques and Technology—The 20th Century**

- 1903 - **Charles Land** devises the **porcelain jacket crown**.
- 1905 - **Alfred Einhorn**, a German chemist, formulates the local anesthetic procain, later marketed under the trade name **Novocain**.
- 1907 - **William Taggart** invents a “lost wax” **casting machine**, allowing dentists to make precision cast fillings.
- 1908 - **Greene Vardiman Black**, the leading reformer and educator of American dentistry, publishes his monumental two-volume treatise *Operative Dentistry*, which remains the essential clinical dental text for fifty years. Black later develops techniques for filling teeth, standardizes operative procedures and instrumentation, develops an improved amalgam, and pioneers the use of visual aids for teaching dentistry.
- 1910 - The first formal training program for **dental nurses** is established at the Ohio College of Dental Surgery by **Cyrus M. Wright**. The program is discontinued in 1914 mainly due to opposition by Ohio dentists.
- 1911 - The **U.S. Army Dental Corps** is established as the first armed services dental corps in the U.S. The **Navy** institutes its Dental Corps in 1912.
- 1913 - **Alfred C. Fones** opens the Fones Clinic For Dental Hygienists in Bridgeport, Connecticut, the world’s first oral hygiene school. Most of the twenty-seven women graduates of the first class are employed by the Bridgeport Board of Education to clean the teeth of school children. The greatly reduced incidence of caries among these children gives impetus to the dental hygienist movement. Dr. Fones, first to use the term “**dental hygienist**,” becomes known as the Father of Dental Hygiene.
- 1917 - **Irene Newman** receives the world’s first **dental hygiene license** in Connecticut.
- 1930 - The **American Board of Orthodontics**, the world’s first dental **specialty board**, is founded.
- 1930-1943 - **Frederick S. McKay**, a Colorado dentist, is convinced that brown stains (mottling) on his patients’ teeth are related to their water supply. McKay’s research verifies that drinking water with high levels of naturally occurring fluoride is associated with low dental caries and a high degree of mottled enamel. By the early 1940s, **H. Trendley Dean** determines the ideal level of fluoride in drinking water to substantially reduce decay without mottling.
- 1938 - The **nylon toothbrush**, the first made with synthetic bristles, appears on the market.
- 1937 - **Alvin Strock** inserts the first Vitallium dental **screw implant**. Vitallium, the first successful biocompatible implant metal, had been developed a year earlier by Charles Venable, an orthopedic surgeon.
- 1945 - The **water fluoridation** era begins when the cities of Newburgh, New York, and Grand Rapids, Michigan, add sodium fluoride to their public water systems.
- 1948 - President **Harry S. Truman** signs the Congressional bill formally establishing the **National Institute of Dental Research** and initiating federal funding for dental research. Dr. H. Trendley Dean is appointed its first director. The Institute is renamed the National Institute of Dental and Craniofacial Research in 1998.
- 1950s - The first **fluoride toothpastes** are marketed.
- 1949 - **Oskar Hagger**, a Swiss chemist, develops the first system of **bonding** acrylic resin to dentin.
• 1955 - **Michael Buonocore** describes the **acid etch technique**, a simple method of increasing the adhesion of acrylic fillings to enamel.

• 1957 - **John Borden** introduces a high-speed air-driven contra-angle handpiece. The Airotor obtains speeds up to 300,000 rotations per minute and is an immediate commercial success, launching a new era of **high-speed dentistry**.

• 1958 - A **fully reclining dental chair** is introduced.

• 1960s - Sit down, **four-handed dentistry** becomes popular in the U.S. This technique improves productivity and shortens treatment time.

• 1960s - **Lasers** are developed and approved for soft tissue work, such as treatment of periodontal disease.

• 1960 - The first commercial **electric toothbrush**, developed in Switzerland after World War II, is introduced in the United States. A cordless, rechargeable model follows in 1961.

• 1962 - **Rafael Bowen** develops Bis-GMA, the thermoset resin complex used in most modern **composite resin** restorative materials.

• 1980s - **Per-Ingvar Branemark** describes techniques for the **osseointegration of dental implants**.

• 1989 - The first commercial home **tooth bleaching** product is marketed.

• 1990s - New tooth-colored restorative materials plus increased usage of bleaching, veneers, and implants inaugurate an era of **esthetic dentistry**.

• 1997 - FDA approves the **erbium YAG laser**, the first for use on dentin, to treat tooth decay.

• 1998 - The National Institute of Dental Research is renamed **National Institute of Dental and Craniofacial Research** to more accurately reflect the broad research base that it has come to support.