



HISTORY of ANESTHESIA

**A Timeline through the Ages
4004 BC – 2000 AD**

History of Anesthesiology Timeline

| Date | Place | Name | Event |
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| 4004 B.C. | | Old Testament | First Description of anesthesia. "And the Lord God caused a deep sleep to fall on Adam, and he slept; and He took one of his ribs; and closed up the flesh thereof." Genesis |
| 2250 B.C. | Nippur | | Babylonian clay tablet reveals remedy for pain of dental cavities. Cement used was made by mixing henbane seed with gum mastic. |
| 1149 B.C. | Greece | Helen of Troy | According to the Odyssey the daughter of Zeus cast a drug (opium) into wine "to assuage suffering and to dispel anger, and to case forgetfulness of all ills." |
| 1000 B.C. | India | | Wine was used to produce insensibility. |
| 1200 | Italy | Hugues de Lucca | Preparation made of opium, hemlock, henbane and mandragora for anesthetization of patients for minor surgery. To revive them a sponge filled with vinegar was placed under the nose. |
| 1516 | Germany | Peter Angherius | Described the arrow poison used by South American Indians, curare. |

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| 1540 | Germany | Valerius Cordus | Synthesized "sweet vitriol." |
| 1564 | France | Ambroise Pare | Obtained anesthesia (local) by the compression of nerves. |
| 1628 | England | William Harvey | Describes the circulation of blood. |
| 1646 | Italy | Valverdi | The use of freezing mixtures of snow and ice for surgical anesthesia. |
| 1651 | England | Christopher Wren | First experiments with I.V. |
| 1665 | Germany | Johann Elsholtz | First attempt at I.V. anesthesia. |
| 1667 | France | Jean Denis | First transfusion of animal blood to man. |
| 1669 | | Becher | Discovered Ethylene. |
| 1730 | Germany | W. G. Frobenius | "Sweet vitriol" named Ether. |
| 1733 | England | S. Holes | First measured Blood Pressure. |
| 1757 | | Joseph Black | Discovered carbon dioxide. |
| 1776 | Germany | Franz Mesmer | Development of hypnosis. |
| 1774 | England | Joseph Priestley | Discovered "dephlogisticated air") oxygen. |
| 1774 | Sweden | Carl Scheele | Independent discovery of oxygen. |
| 1774 | | Lovisier | Named oxygen. |
| 1776 | England | Joseph Priestley | Prepared nitrous oxide. |

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| 1779 | | Humphrey Davey | Announced anesthetic properties of nitrous oxide. Called it "laughing gas." |
| 1794 | England | Richard Pearson | Use of inhalation ether. |
| 1805 | U.S. | John C. Warren | Inhalation of ether used to relieve last stages of pulmonary inflammation. |
| 1806 | Russia | Friedrich Sertuner | Extracted morphine from opium. |
| 1810 | England | Hickman | Used nitrous oxide in animals. |
| 1817 | England | James Blundell | First human blood transfusion to man. |
| 1824 | England | Henry Hickman | Painless operations carried out on animals after the administration of carbon dioxide. |
| 1828 | France | Poiseuille | Introduced mercury manometer for measuring blood pressure. |
| 1831 | Scotland | Latta | Introduction of the practice of intravenous infusion of saline solution to patients suffering from shock. |
| 1831 | U.S. France Germany | Guthrie Soubeiran Liebig | Discovery of chloroform Discovery of chloroform Discovery of chloroform |
| 1839 | U.S. | Isaac Taylor | Subcutaneous injection of Morphine (James Washington). |

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| 1842 | U.S. | Crawford Long | James Venable submitted to an operation on March 30, 1842, for the removal of a tumor of the neck while he was under the influence of ether. |
| 1842 | U.S. | W. E. Clark | Administration of ether to Mrs. Hobbie for extraction of one of her teeth by Dr. Pope. |
| 1843 | U.S. | Elsworth | Amputation of leg under nitrous oxide. |
| 1844 | U.S. | Horace Wells | Traveling showman Gardner Colton after demonstrating nitrous oxide to Dr. Wells (a dentist) gave nitrous oxide to Wells and another dentist (Dr. Riggs), extracted a wisdom tooth. |
| 1846 | U.S. | Horace Wells | Demonstrated use of nitrous oxide for a tooth extraction. Not a very successful demonstration. At the end of the demonstration when the patient (a medical student) stated that he did feel pain but it was not as much as expected, an attending physician, stated, "A humbug affair." |
| 1846 | U.S. | Charles T. Jackson | Suggested the use of pure ether anesthesia agent to Morton. |

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| <u>1846</u> | U.S. | William Morton | First public demonstration of ether anesthesia at Massachusetts General Hospital on October 16, 1846. |
| 1846 | U.S. | Oliver Wendell Holmes | Suggested the name "anesthesia." |
| 1847 | France | Flourens | Anesthetic actions of chloroform on animals and prepared ethyl chloride. |
| 1847 | Scotland | James Simpson | Introduction of ether analgesia in childbirth. |
| 1847 | England | John Snow | The first physician anesthetist published his book on ether. |
| 1848 | Scotland | James Simpson | Used chloroform in obstetrics and surgery. |
| 1848 | | Hayfelder | Discovered anesthetic properties of ethyl chloride. |
| 1853 | England | John Snow | Successful administration of chloroform to Her Majesty, Queen Victoria, at the birth of Prince Leopold. The physician was Sir James Clark. This event greatly stimulated the use of analgesia in obstetrics. |
| 1853 | Scotland | Alexander Wood | Invention of the hollow needle. |
| 1853 | France | Charles Praves | Invention of the hypodermic syringe. |
| 1857 | | Claude Bernard | Showed that curare acts on the myo-neural junction. |

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| 1860 | Germany | Albert Niemann | The alkaloid of coco leaves obtained in pure form and called cocaine. |
| 1863 | U.S. | C. Colton | Popularization of the use of nitrous oxide, (pure) in dental extractions. |
| 1865 | | Heman | Noted anesthetic action of ethylene. |
| 1865 | England | Lister | Lister treated by means of carbolic acid the compound fracture of James Greenlee's leg - the birth of antiseptic surgery. |
| 1867 | U.S. | S. S. White Dental Co. | Introduction of inhaler covering the nose and mouth. |
| 1868 | U.S. | Edmund Andrews | Introduction of the use of oxygen with nitrous oxide in anesthetic practice. |
| 1868 | Germany | Hering-Breuer | Reflex of the same name. |
| 1868 | U.S. | W. W. Greene | Advocacy of the hypodermic use of morphine during inhalation anesthesia. |
| 1871 | Germany | F. Trendelenburg | Gave anesthetics via a tracheostomy wound, and in 1869 used, a cuffed tracheostomy tube. |
| 1872 | Germany | Heidenhain | Described the antisalivary effects of atropine. |
| 1874 | France | Pierre Ore | Used chloral hydrate I.V. as an anesthetic agent. |
| 1876 | England | J. T. Clover | Introduction of gas-ether sequence in anesthesia. |

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| 1877 | England | J. T. Clover | Introduction of portable inhaler with regulation of ether flow. |
| <u>1877</u> | U.S. | Sr. Mary Barnard | First recorded nurse anesthetist |
| 1878 | Scotland | William Macewan | Introduction of anesthesia produced by tracheal tube inserted through the mouth. |
| 1879 | Germany | Johannes Esmarch | Developed the Esmarch ether mask. |
| 1880 | | Bert | Nitrous oxide under pressure. |
| 1881 | India | Alexander Crombil | Advocacy of the injection of morphine prior to the administration of chloroform. This was probably the first type of preanesthetic medication. |
| 1881 | Germany | F. Trendelenburg | Introduced the head-down tilt with pelvic elevation for abdominal surgery. |
| 1882 | U.S. | S. J. Hayes | An apparatus for generating and applying anesthetic agents was patented. Ether and chloroform mixtures were heated by means of water bath; air, which was pumped through the mixture, was charged with the anesthetic agent. |
| 1882 | Germany | August Von Freund | Discovery and description of cyclopropane. |
| 1884 | Bohemia | Carl Kooler | Expounded the value of cocaine for local anesthesia. |
| 1885 | U.S. | William Halsted | Introduced nerve block |

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| 1885 | France | Daniel Moliere | Reintroduced rectal anesthesia. |
| 1885 | U.S. | J. L. Corning | First recorded instance of successful peridural anesthesia. |
| 1887 | Germany | Semmler | Prepared divinyl ether. |
| 1891 | Germany | Heinrich Quincke | Demonstrated lumbar puncture. |
| 1892 | England | F. Hewitt | Introduced the first practical gas and oxygen apparatus. |
| 1894 | Sweden | H. J. Carlson | Discovery that ethyl chloride produced a sound sleep in some dental patients. |
| 1894 | Germany | August Bier | Successful uses of spinal anesthesia clinically. |
| 1895 | Germany | Alfred Kirstein | First direct vision laryngoscope. |
| 1895 | France | Grehunt | Used ethyl alcohol I.V. as an anesthetic agent. |
| 1895 | Germany | Wilhelm K. von Roentgen | Discovered X-ray. |
| 1897 | U.S. | John Abel | Discovered epinephrine. |
| 1899 | Germany | S. S. White | Gas machine with proportioned gages. |
| 1899 | Germany | Forff | Basis of twilight sleep. Recommendation of injection of combination of scopolamine and morphine. |
| 1899 | U.S. | Rudolph Matas | First employed true spinal anesthesia for surgical operations in the U.S. |

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| 1901 | France | M. Cathelin | Caudal anesthesia. |
| 1902 | U.S. | Charles K. Teter | Introduced the second machine for administration of nitrous oxide and oxygen. |
| 1902 | Germany | E. Fisher and J. Von Mering | Synthesis of barbiturate. |
| 1903 | Holland | Einthoven | Galvanometer for EKG |
| 1904 | | Traube | Surface tension theory of narcosis. |
| 1904 | Germany | Alfred Einhorn | Discovery of procaine (Novocain). |
| 1905 | Russia | Korotkoff | Introduced auscultatory method of blood pressure measurement. |
| 1906 | U.S. | Clark | The Clark gas machine was developed. A central valve with a slot for each gas was used to proportion the gas. |
| <u>1906</u> | U.S. | Alice Magaw | Report on 14,000 cases of open drop anesthesia without a death. |
| 1907 | | Hober | Cell permeability theory of narcosis. |
| 1909 | U.S. | A. E. Guedel | Introduction of self-administration of nitrous oxide in obstetrics and office surgery. |
| 1909 | U.S. | C. A. Elsberg | Successful use of endotracheal insufflation in a human being. |
| 1909 | U.S. | | St. Vincent's Hospital School of Anesthesia opened (first recorded school in U.S). |

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| 1910 | U.S. | E. I. McKesson | Perfection of the first "intermittent flow" nitrous oxide and oxygen anesthesia apparatus with an accurate percentile control for the two gases. Introduction of fractional rebreathing. |
| 1910 | U.S. | W. D. Gatch | Introduction of ether sight-feed apparatus. |
| 1910-11 | U.S. | J. A. Heidbrink | Used reducing valves as flowmeters. |
| 1912 | U.S. | | Ohio Monovalve anesthesia machine patented and put on the market. |
| 1913 | U.S. | James Gwathmey | Introduction of successful narcosis by use of rectal ether and oil. |
| 1914 | U.S. | Richard Von Foregger | Constructed a gas-oxygen machine without a reducing valve. |
| 1914 | Belgium | A. Hustin | Introduced sodium citrate for transfusion of blood. |
| 1915 | U.S. | D. F. Jackson | Use of carbon dioxide absorber for general anesthesia. |
| <u>1915</u> | U.S. | Agatha Hodgins | First formal school of anesthesia. |

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| 1920 | England | I. W. Magill | Development of endotracheal machine. |
| 1920 | U.S. | Gaston Labat | Demonstration of local, regional, and spinal anesthesia for most operations. |
| 1920 | U.S. | Arthur Guedel | Publication: "Signs of Anesthesia." |
| 1921 | Spain | Fedel Pages | Development of epidural anesthesia. |
| 1923 | U.S. | Ralph Waters | Development of soda lime in carbon dioxide absorption. |
| 1927 | U.S. | Ockerblad & Dillon | Used ephedrine in spinal anesthesia. |
| 1928 | U.S. | Brian Sword | Introduced closed circle filter method of anesthesia. |
| 1929 | Canada | Lucas & Henderson | Experimental demonstration of anesthetic properties of cyclopropane. |
| 1929 | U.S. | L. G. Zerfas and colleagues | Report on the intravenous use of Sodium Amytal , which was used more frequently in the U.S. from <u>1929 to 1933</u> than any other I.V. agent. |
| 1930 | U.S. | Waters | Used cyclopropane clinically. |

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| 1930 | U.S. | Waters | Designed the Wisconsin folding laryngoscope which was fabricated in the shop at Wisconsin General Hospital (Wisconsin blade). |
| 1930 | | Long | Absorption theory of narcosis. |
| 1930 | U.S. | C. D. Leake | Suggested use of vinyl ether for anesthesia. |
| 1931 | | | Bernard-Bancroft colloid theory of narcosis. |
| <u>1931</u> | U.S. | Agatha Hodgins | A.A.N.A. organized. |
| 1933 | U.S. | | "Bulletin of National Association of Nurse Anesthetist" began publication. |
| 1933 | U.S. | | First Annual Meeting of the National Association of Nurse Anesthetists, Milwaukee, Wisconsin. |
| 1934 | U.S. | | Chalmers-Francis, et al. v. Dagmar Nelson, et al. (Calif.). |
| 1934 | U.S. | NANA | Recommended curriculum for schools of anesthesia for nurses. |
| 1934 | U.S. | Lundy | First used thiopental clinically. |
| 1936 | U.S. | A. L. Barach | Report on the therapeutic use of helium. |
| 1937 | U.S. | | National Association of Nurse Anesthetists' headquarters moved from Cleveland to Chicago. |

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| 1937 | U.S. | | Formation of the American Board of Anesthesiology, Inc. |
| 1937 | U.S. | A. E. Guedel | Publication of "Inhalation Anesthesia." |
| 1939 | U.S. | | National Association of Nurse Anesthetists name changed to: American Association of Nurse Anesthetists (A.A.N.A.). |
| 1939 | U.S. | Woodbridge, Horton, & Connell | Report on intercoupler. |
| 1939 | U.S. | W. T. Lemmon | Introduction of the continuous method of spinal anesthesia. |
| 1942 | U.S. | | First school visits by A.A.N.A. |
| 1942 | Canada | Griffith & Johnson | Used Curare |
| 1943 | England | Macintosh | Described his curved laryngoscope. |
| 1944 | U.S. | | First Black nurse anesthetists enter A.A.N.A. Dues increased to \$12. |
| 1945 | U.S. | | First National Qualifying Examination by the A.A.N.A. |
| 1947 | U.S. | | First male nurse anesthetists enter A.A.N.A. First A.A.N.A. NewsBulletin published. |
| 1947 | France | Bovet | Synthesized Gallamine |
| 1948 | France | Huguenard | Used Gallamine in clinical trials. |

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| 1949 | U.S. | | Professional liability insurance made available to nurse anesthetists. |
| 1949 | Italy U.S. | Bove Phillips | Described neuro-muscular blocking action of succinylcholine. |
| 1951 | England | Suckling | Isolated Halothane |
| 1951 | Sweden | Thesleff | Used Succinylcholine as a muscle relaxant in anesthesia. |
| 1952 | U.S. | | Accreditation program for schools approved by A.A.N.A. First on-site visit made to Ravenswood Hospital School of Anesthesia for Nurses, Chicago. |
| 1953 | U.S. | Virginia Thatcher | Published first history of nurse anesthetists. (History of Anesthesia with emphasis on the Nurse Specialist). |
| 1955 | U.S. | | U.S. Department of H.E.W. recognizes A.A.N.A. as accrediting agency for schools of nurse anesthesia, (Veterans benefits). |
| 1956 clinically. | England | Michael Johnstone | Used Halothane |
| 1958 | U.S. | Larson | Synthesized Methoxyflurane (Penthrane). |
| 1960 | U.S. | Artusio & Von Poznak | Clinical use of Penthrane at Cornell University. |
| 1963 | U.S. | Ohio Chemical Co. | Synthesized Ethrane. |

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| 1964 | U.S. | Savage & Hewett | Synthesized Pancuronium (Pavulon). |
| 1965 | U.S. | | Male nurse anesthetists drafted for Vietnam War (first time in the history of the U.S. that nurses drafted). |
| 1967 | U.S. | | Pavulon used clinically. |
| 1968 | U.S. | | A.A.N.A.-A.S.A. Joint Statement published. |
| 1968 | England | | Ethrane introduced for clinical use in England. |
| 1969 | U.S. | | Voluntary continuing education for C.R.N.A.s begins. |
| 1972 | U.S. | | Ethrane approved for general use in United States. |
| 1975 | U.S. | | A.A.N.A. Councils on Accreditation, Certification, and Practice formed. |
| 1975 | | R. C. Terrell | Synthesized Forane |
| 1977 | U.S. | | A.A.N.A. members approve mandatory continuing education. A.A.N.A. Council on Re-certification is formed. |
| 1978 | U.S. | | A.A.N.A. purchases office building in Park Ridge, IL |
| 1980 | U.S. | | First A.A.N.A. election by mail ballot. Vecuronium bromide developed. |

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| 1981 | U.S. | | Forane approved for general use in United States. |
| 1982 | | | Atracurium developed. |
| 1985 | Switzerland | | First International Symposium for Nurse Anesthetists held. |
| 1986 | U.S. | | Passage of Medicare direct reimbursement legislation for CRNAs |
| was | | | signed by President Ronald Regan, making nurse anesthesia the first nursing specialty/nonphysician group to be accorded direct reimbursement rights under the Medicare program. |
| 1988 | U.S. | | Direct billing approved for CRNAs by U.S. Congress for Medicare. |
| 1989 | Switzerland | | Formation of the international Federation of Nurse Anesthetists (IFNA). |
| 1989 | U.S. | Marianne Bankhert | Published, Watchful Care: A History of American's Nurse Anesthetists. |
| 1990 | U.S. | | Propofol (Diprivan) Sedative - hypnotic used in Europe for many years, introduced into clinical use in United States. |
| 1992 | U.S. | | Desflurane used clinically. |