

A history of orthopedics

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Orthopedic Surgery: A Comprehensive History and Overview**

How Long Has Orthopedic Surgery Been Around?

The origins of orthopedic surgery trace back to ancient times, with evidence of surgical interventions for bone fractures and dislocations dating back to the Stone Age. However, the modern field of orthopedics emerged in the 19th century.

Where Does the Word Orthopedic Come From?

The term "orthopedic" derives from the Greek words "orthos" (straight) and "paidos" (child). It originally referred to the treatment of deformities in children.

Who Are the Fathers of Orthopedics?

- **Nicolas Andry:** In 1741, he published the first book specifically devoted to orthopedic surgery, "Orthopedia."
- **Jean-André Venel:** A Swiss surgeon who made significant advances in the treatment of fractures and dislocations.

What is the Concept of Orthopedics?

Orthopedics is the medical specialty focused on the diagnosis, treatment, and prevention of disorders of the musculoskeletal system, including bones, joints, muscles, tendons, and ligaments.

What is Orthopedic History?

The history of orthopedics encompasses centuries of advancements, including:

- Trephination (skull drilling) in ancient Egypt
- Bone setting techniques in medieval times
- The development of anesthesia and antiseptic surgery in the 19th century
- The advent of x-rays and other imaging modalities
- The rise of specialized orthopedic implants and devices

Who Made the First Surgery?

The earliest surgical interventions likely occurred in ancient Egypt or Mesopotamia, performed by priests or healers.

What is Another Name for Orthopedics?

Musculoskeletal surgery

What is the Highest Degree in Orthopedic Surgeon?

Doctor of Medicine (M.D.) or Doctor of Osteopathic Medicine (D.O.) with additional fellowship training in orthopedic surgery.

What is the Difference Between Orthotic and Orthopedic?

- Orthotics: Devices or appliances worn to support or correct musculoskeletal disorders (e.g., braces, insoles)
- Orthopedic: Relating to the diagnosis and treatment of musculoskeletal disorders

What is the Symbol of Orthopedics?

The caduceus, a winged staff with two entwined serpents, is often used as a symbol of orthopedics.

What is an Orthopedic Problem?

Any disorder or injury that affects the musculoskeletal system, such as:

- Fractures

- Dislocations
- Arthritis
- Muscle strains
- Tendonitis

Who is Jones Fracture Named After?

Sir Robert Jones, a British orthopedic surgeon who described the fracture in 1902.

What is the Root Meaning of Orthopedics?

"Straightening of children"

What is the Importance of Orthopedics?

Orthopedics plays a vital role in maintaining mobility, function, and quality of life by treating musculoskeletal disorders that can affect people of all ages.

What is the Medical Term for Orthopedics?

Musculoskeletal surgery

Who Discovered Orthopedics?

No single individual is credited with discovering orthopedics, as it evolved gradually from ancient healing practices.

What is Orthopedic Wikipedia?

Orthopedic Wikipedia is a free online encyclopedia dedicated to providing comprehensive information on all aspects of orthopedics.

What Year Did They Start Doing Surgery?

Surgical interventions likely began in the Stone Age, around 10,000 BC.

How Long Was the Longest Surgery in History?

The longest surgery on record reportedly lasted 17 hours and 30 minutes, performed by a team of surgeons in France in 2022.

What is the Hardest Orthopedic Surgery to Perform?

Complex spinal surgeries, such as spinal fusion or spinal cord decompression, are among the most technically challenging orthopedic procedures.

What is the Most Performed Orthopedic Surgery?

Total knee replacement and total hip replacement are the most common orthopedic surgeries worldwide.

What is the Oldest Known Surgery?

Trephination, the drilling of holes in the skull, is the oldest known surgical procedure, with evidence dating back to the Neolithic period.

Who is the Father of Modern Surgery?

Joseph Lister, a Scottish surgeon who developed the principles of antiseptic surgery in the 19th century.

What is the Biggest Surgery in the World?

The biggest surgery in the world is considered to be a whole-body transplant, which involves the replacement of all major organs, including the heart, lungs, kidneys, liver, and digestive system.

What is the Riskiest Surgery Ever?

The riskiest surgery ever performed is arguably the first human heart transplant, which was successfully carried out in 1967.

What is the Most Expensive Surgery?

Whole-body transplants are among the most expensive surgical procedures, with costs exceeding millions of dollars.

Who Was the Fastest Surgeon in History?

Dr. Amjad Ali, a Pakistani surgeon who reportedly performed over 1,000 successful surgeries in a single day.

What is the Hardest Bone to Fix?

The talus, a small bone in the ankle, is considered one of the hardest bones to fix due to its complex shape and limited blood supply.

What is the Most Painful Surgery?

Open heart surgery is generally considered the most painful surgical procedure, due to the extensive incisions and manipulation of the heart and surrounding structures.

What is the Hardest Surgeon to Become?

Neurosurgery and cardiothoracic surgery are among the most competitive and challenging surgical specialties to enter due to their rigorous training requirements and extensive knowledge base.

What is the corrosion protection of austenitic stainless steels? Molybdenum is added to austenitic stainless steels to enhance resistance to pitting corrosion. This molybdenum addition is 3% to 4% by weight in grade 347 and 2% to 3% in grade 316. Niobium is added as a stabilizer in the content in order to minimize the likelihood of intergranular corrosion.

What is the corrosion allowance for austenitic stainless steel? The low alloy steel components which consist of primary side primary boundary are covered with austenitic stainless steel or nickel base alloy. For the primary side, we consider the corrosion allowance of 2 mils or 0.03 mpy (0.053 mm or 0.0008 mm/year) for austenitic stainless steel and nickel base alloy cladding.

What is the corrosion behavior of austenitic stainless steel? The austenitic stainless steel and nickel-based electrodes had corrosion potentials between ?215 mV and ?385 mV, while the base material and HAZ had corrosion potentials ranging from ?510 mV to ?570 mV.

How to mitigate galvanic corrosion between carbon and stainless steel? Options to Reduce Galvanic Corrosion Risk Options include: Insulating dissimilar materials using non-conductive material coatings, greases, paints, treatments, or primers. Optimal protection is offered by insulating both materials.

What are the problems with austenitic stainless steel? Austenitic stainless steel offers easy weldability; however, it is susceptible to hot cracking, pitting corrosion, weld distortion, and loss of corrosion resistance.

What is the treatment for stainless steel corrosion? Passivation treatments Exposure to air is the natural, primary passivation treatment for stainless steel. This exposure produces a thin, durable chromium oxide film that forms rapidly on the alloy surface and gives stainless steel its characteristic “stainless” quality.

What is the corrosion allowance as per ASME? 3 Sample Wall Thickness Calculations. Corrosion allowance (CA) = 1/16 in.

How can you tell if stainless steel is austenitic? So the “magnet test” is to take a magnet to your stainless steel cookware, and if it sticks, it's “safe”—indicating no nickel present—but if it doesn't stick, then it's not safe, and contains nickel (which is an austenite steel).

How much corrosion is acceptable? The corrosion rate can be also calculated in MMY, means Millimeter per year. In an open water system a corrosion rate of around 1 MPY is normal. Having corrosion rate of around 10, you should take action.

How do you remove corrosion from stainless steel?

How do you stabilize austenitic stainless steel? Stabilization consists in reheating the Cb- or Ti-treated steels within the temperature range 1,550° to 1,800° F, usually at about 1,600° F. At these temperatures, the precipitation of titanium and columbium carbides within the austenitic grains is facilitated.

What will cause stainless steel to corrode? Stainless steel is naturally corrosion-resistant, but it is not immune to rust. While it is less prone to rusting than conventional steels, exposure to damaging chemicals, saline, grease, moisture, or heat for extended periods of time can cause corrosion.

What is the best coating to prevent galvanic corrosion? Galvanized Steel Protection: Use galvanized steel coated with a zinc layer to protect against corrosion. The zinc acts as a sacrificial anode, corroding in place of the steel, thus providing an additional layer of defense against rust and galvanic corrosion.

Can you reverse galvanic corrosion? These layers of corrosion can be largely removed through the electrochemical reduction of silver sulfide molecules: the presence of aluminium (which is less noble than either silver or copper) in the bath of sodium bicarbonate strips the sulfur atoms off the silver sulfide and transfers them onto and thereby corrodes ...

How will you control corrosion in stainless steel? If stainless steel is left sitting out for an extended period of time, corrosion can occur from the moisture in the air. So, the oil acts as a barrier to prevent moisture from sitting for a long time, creating oxidation. Oil is an excellent alternative to the other methods, but it's not permanent.

Is austenitic stainless steel corrosion resistant? The family of austenitic stainless steels is, by far, the most widely used of the stainless alloys in industrial markets. That is because corrosion resistance provided by austenitics is generally the best of all standard stainless types.

How is stainless steel protected from corrosion? The chromium in stainless steel reacts with oxygen in the air to produce a protective chromium oxide layer across the surface. Although very thin, this layer is what protects the metal from corrosion.

How corrosion resistant is 304 stainless steel? Is 430 or 304 grade stainless steel rust proof? All grades of stainless steel resist corrosion, but grade 304 is particularly rustproof because of its high nickel content. This addition to the alloy makes grade 304 considerably more expensive than grade 430 stainless steel, however.

How corrosion resistant is 316 stainless steel? While 316 comes in second in terms of quantities sold, it offers vastly superior corrosion resistance to chlorides and acids. This makes it popular for a wide range of environments—including: Medical equipment and implants. Foodservice, processing, and preparation environments.

The Experience Team of One: A Research and Design Survival Guide for UX Professionals

Q: What is the concept of "the experience team of one"?

A: The experience team of one is a concept that recognizes that UX professionals often work in isolation or with limited resources. This framework provides a practical guide for UX designers to conduct research and design effectively on their own.

Q: How can UX professionals apply the principles of this framework?

A: The framework emphasizes a people-centric approach that involves actively engaging users throughout the design process. It recommends conducting user research, using co-creation techniques, and iterating on designs based on user feedback.

Q: What are the key steps involved in user research for a single UX professional?

A: User research should focus on understanding user needs, pain points, and motivations. This can be achieved through interviews, surveys, observational studies, and usability testing. It's important to prioritize user engagement and gather qualitative and quantitative data.

Q: How can UX professionals design effectively as a team of one?

A: Effective design involves adhering to a user-centered design process. This includes sketching and prototyping, creating low-fidelity designs, and iterating based on user feedback. It's also crucial to use tools and techniques such as wireframing, prototyping, and usability testing to refine designs.

Q: What are the benefits of working as an experience team of one?

A: The team of one concept empowers UX professionals to take ownership of the design process and make quick decisions. It fosters creativity, allows for greater flexibility, and ensures that user needs are met effectively. By navigating the challenges and embracing the opportunities of this unique role, UX professionals can deliver exceptional user experiences even as solo practitioners.

What is applied mathematics in computer science? concentration in Applied Math-Computer Science provides a foundation of basic concepts and methodology of mathematical analysis and computation and prepares students for advanced work

in applied mathematics, computer science, and data science.

How math is applied in computer games? 3D Graphics and Rendering: In modern gaming, stunning visuals are a hallmark of success. Mathematics, particularly linear algebra, and geometry, plays a vital role in 3D graphics rendering. Transformations, such as scaling, rotation, and translation, position objects in the virtual world.

Is applied math hard? In fact, although a degree in Applied Mathematics may appear arduous to the uninitiated, the reality is that, given the right tools and guidance, it can be an accessible and absorbing area of study.

What is the difference between math and applied math? Mathematics focuses on abstract concepts and theoretical problems, while applied mathematics emphasizes solving real-world problems using mathematical techniques. This comprehensive guide helps readers understand the differences and make an informed decision about their career path.

How is math applied in computer? It is used in an array of computer science areas, including creating graphs or visuals, simulations, problem-solving applications, coding in applications, creating statistic solvers, and the design and analysis of algorithms.

What is the use of computer based math programs? Computer-based math programs allow teachers to assign different practice skills to different students so that, within a classroom, students might be working on twenty different math concepts simultaneously.

How is math involved in computer programming? Many programming tasks involve using standard arithmetic, and almost every program that has been written uses addition, subtraction, multiplication, and division. Many computer programmers will run into simple issues that are solved using algebra. A computer science degree necessitates passing numerous math courses.

Is applied math the same as calculus? Calculus is the fundamental component of both applied and pure mathematics. In applied mathematics, calculus helps in solving problems related to mechanics. Pure mathematics uses calculus to find tangent lines of arbitrary geometries and calculate areas of different figures.

Do applied math majors make money? While ZipRecruiter is seeing annual salaries as high as \$94,500 and as low as \$22,500, the majority of Applied Mathematics salaries currently range between \$45,000 (25th percentile) to \$70,000 (75th percentile) with top earners (90th percentile) making \$85,000 annually across the United States.

What is the hardest math in college?

What is an example of applied math? Some of the examples can be listed as follows: Probability. Game Theory. Operation Research. Optimization Techniques.

Is applied math a BA or BS? This major is intended for students who wish to study mathematics with an eye towards applications of mathematics in the physical sciences, technology, data analysis, and so on. There is no distinction between the BA and BS degrees.

What is applied math good for? Applied Mathematics has a profound impact on our daily lives. Whether it is weather forecasts, search engines, climate research, secure online shopping, or movie recommendations, none of these would work the way they do without algorithms and tools from the mathematical sciences.

What are examples of applied math?

Is pure or applied math better for computer science? For instance, an applied math degree or certification focus can often be more suitable for a career in software development.

What is the difference between CS and applied computer science? However, computer science focuses more on the theoretical aspects of computation, while computer applications focus on using computing technologies to solve practical problems. So, which one should you study? To pursue a career in software engineering or research, you should study computer science.

Can you get a computer science job with an applied math degree? There are a wide variety of software engineering jobs. Some of them require quite a bit of mathematics. Oddly enough that was exactly the type of job that I got after graduating with a degree in applied mathematics. Having a minor in computer

science is a good addition for someone getting a degree in applied math.

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