



# 40 YEARS OF CHANGE

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# RESIDENCY TEACHES LIFELONG LEARNING

- 1984 attended medical school (AIDS was hot topic)
- 1988 Orthopaedic residency (widespread adoption of arthroscopy)
- 1993 Began practice in Bismarck, ND (only one MRI in central ND, Ed Schaffer was governor)

# WHAT HAS CHANGED OVER 40 YEARS?

- Population Dynamics

- Obesity
- Diabetes
- Public health
- Bureaucracy of medicine
- Pain management
- Fellowship training

- Technology

- Medical
- Surgical
- Ownership
- EMR
- Implant design
- Computers/Robots

# OBESITY

- 1984

- 15% of population
- 5.9 million diabetics
- 236 million Americans

- 2025

- 40% of population
- 15.8 million diabetics
- 340 million Americans



# BMI >40 RISK TO SURGICAL PROCEDURES

- Odds Ratio for PJR Complication

- DVT 3x
- PE 3X
- Wound dehiscence 4.5X
- Prosthetic joint infection 2.5-3.5x
- Death 5x

- 30% of Americans over age 60 have diabetes!
- 20% of all Native Americans have Diabetes (70% over age 60)



# SHOULD ELECTIVE SURGERY BE OFFERED TO MORBIDLY OBESE

- Humanitarian considerations
- Complications are not common
- Estimated that you would deny surgery to 12 obese patients for every serious complication avoided
- Risk to surgeon and supportive staff

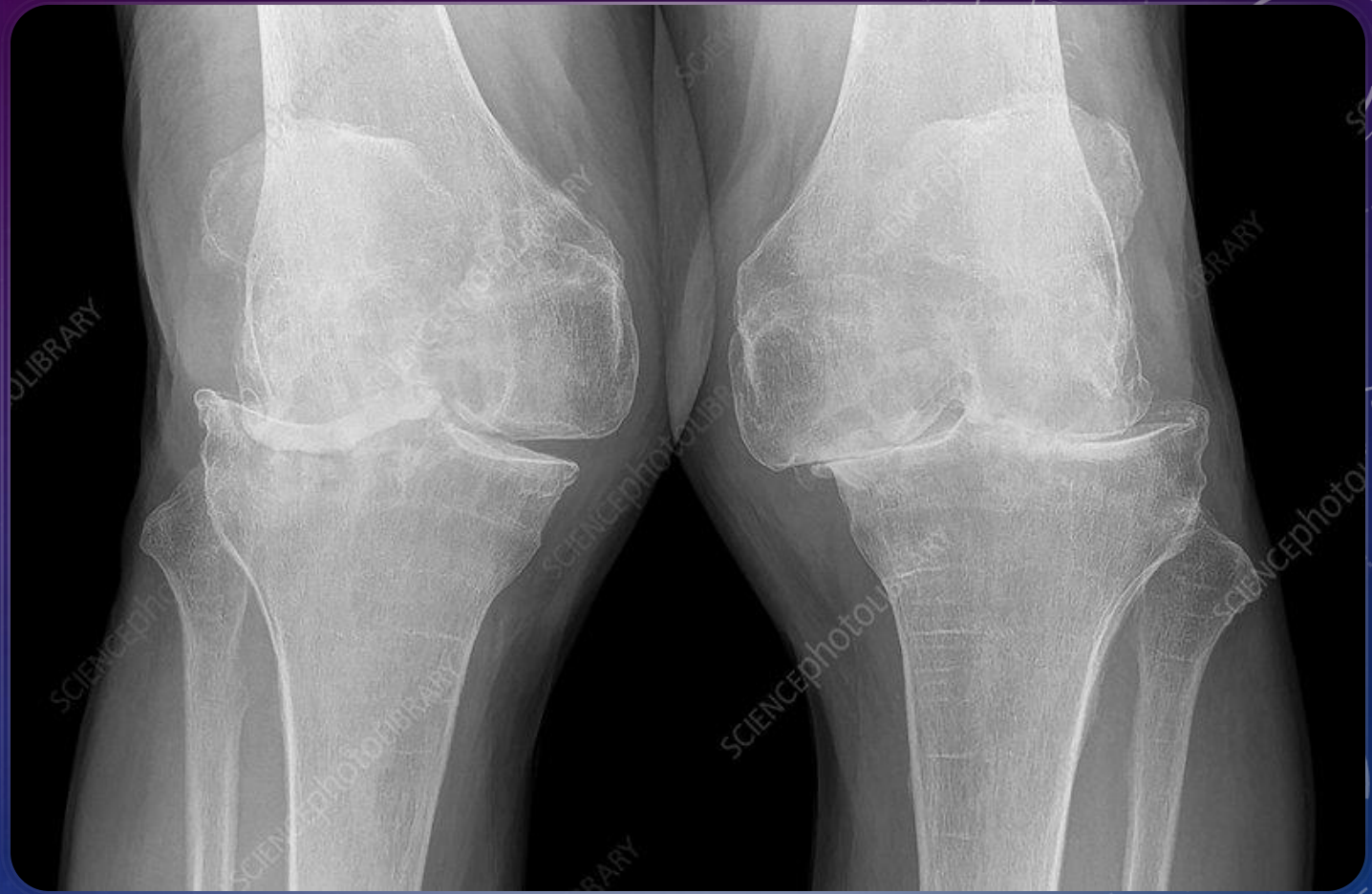


CAN WE DO IT/SHOULD WE DO IT?



# WHAT ARE ANSWERS?

- Comprehensive approach



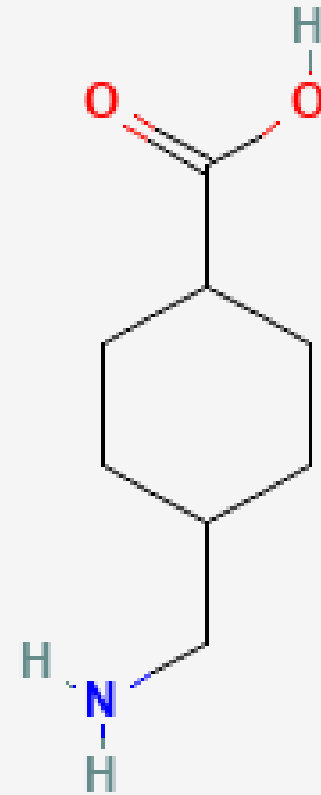


# COMPREHENSIVE PROGRAM MULTI SPECIALTY

- Primary Care
  - Must be willing to address patient's weight
  - Pay models need addressing
  - Follow-up for chronic disease
- Behavioral Psychologists
- Dietitian
- Fad diets/ Atkins diet are not the answer
- Weight loss clinics/programs
- Medication/GLP ones
- Specialty surgeon involvement
  - Weight loss surgeon
  - Orthopedic surgeon
- Family support and involvement
- Exercise

# #1 MEDICAL ADVANCEMENT

- Tranexamic acid (TXA)
- Antifibrinolytic Agent. The physiologic effect of tranexamic acid is by means of Decreased Fibrinolysis.
- Does not cause clots.

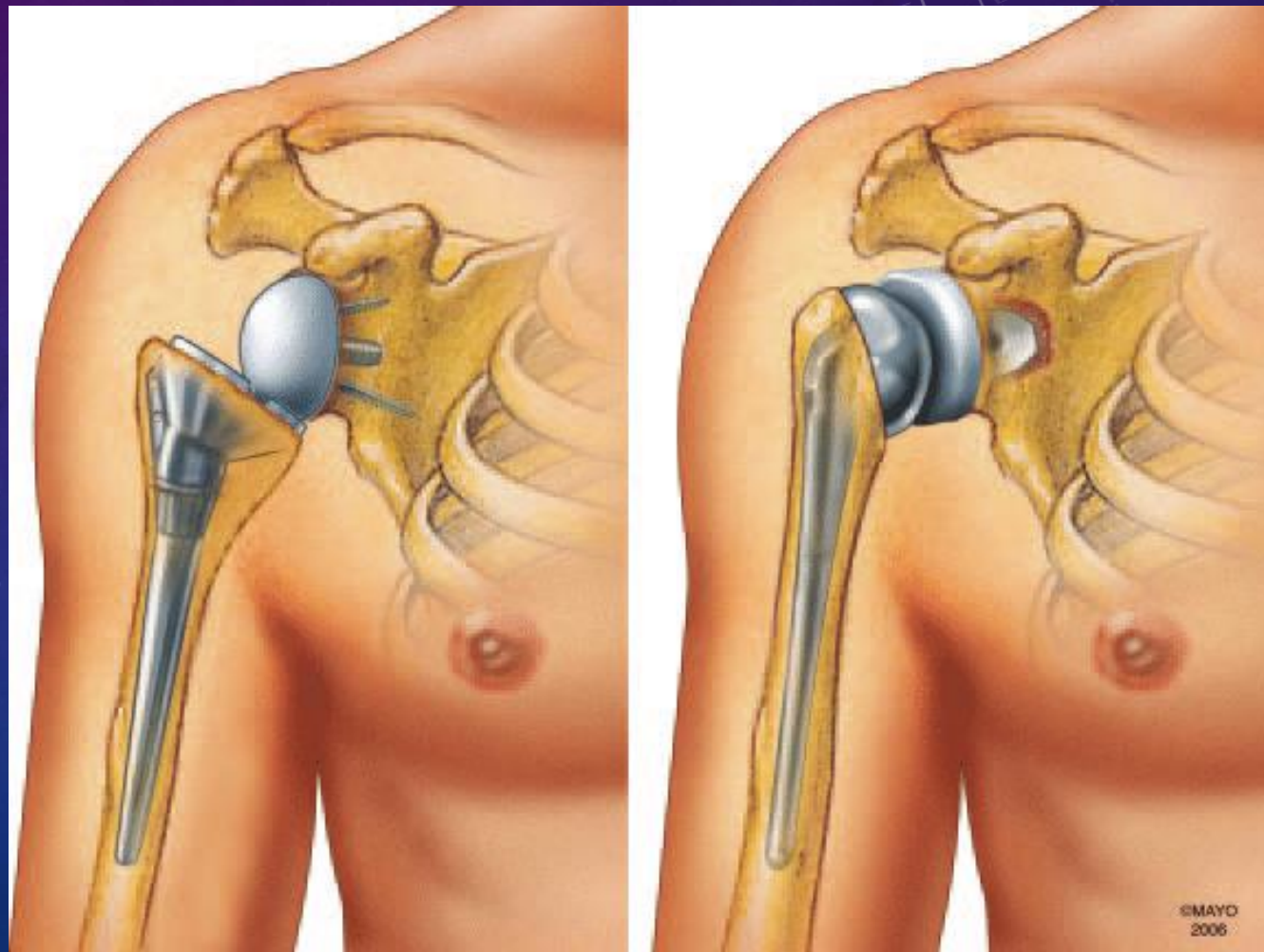




# SINCE WE'VE BEGAN USING TXA...

- Blood transfusions for prosthetic joint replacements are almost nonexistent. Prior to TXA, the transfusion rate was around 30% or even higher in some instances.
- We have eliminated patient specific blood donation and autologous donation of blood prior to surgery
- TXA has allowed us to operate on patients that previously would've been in a very high-risk category such as those with hemophilia, severe liver disease, and other diseases or medication affecting the patient's ability to clot and stop bleeding at the time of surgery
- Transfusions are not benign. The infection rate after a transfusion is approximately three times higher than a patient that does not need a transfusion. Clearly, transfusions directly affect the immune system in a negative way.

# #1 REVERSE DELTA SHOULDER ARTHROPLASTY





# HIGHLY CROSS-LINKED POLYETHYLENE

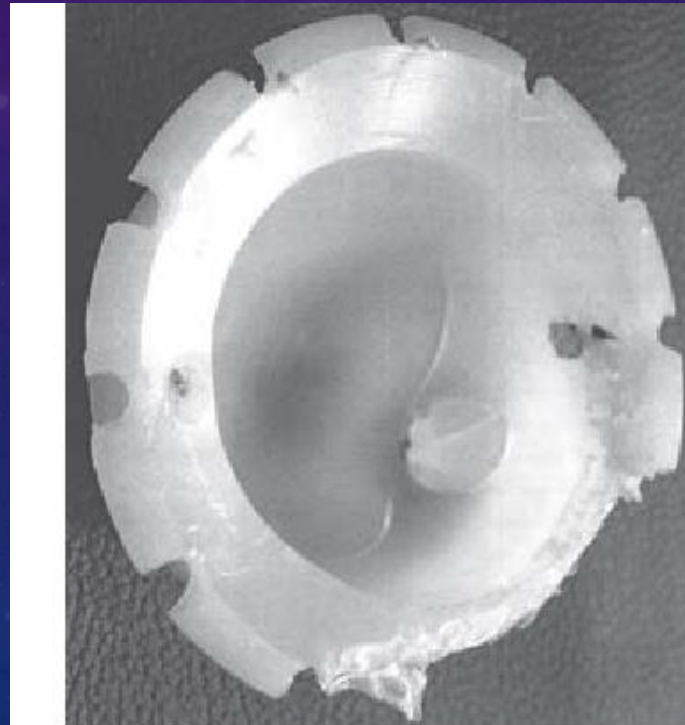


Fig. 3. Polyethylene wear in an acetabular

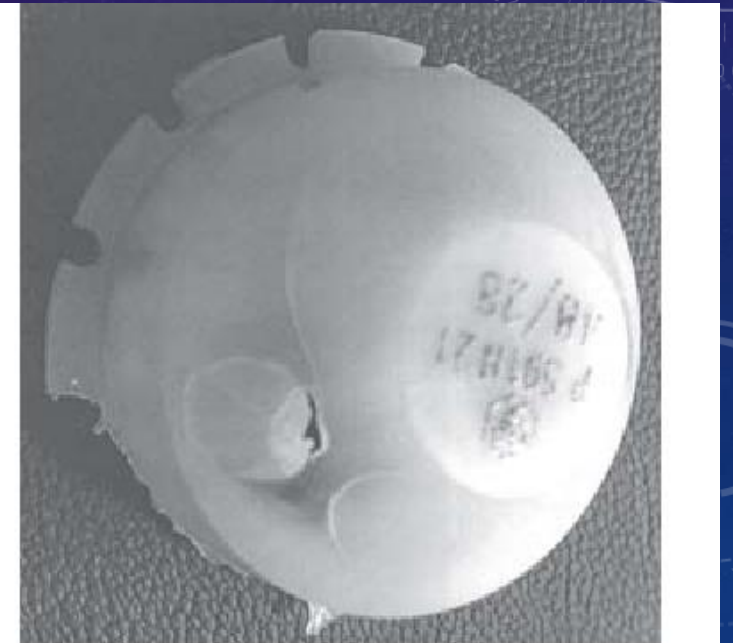
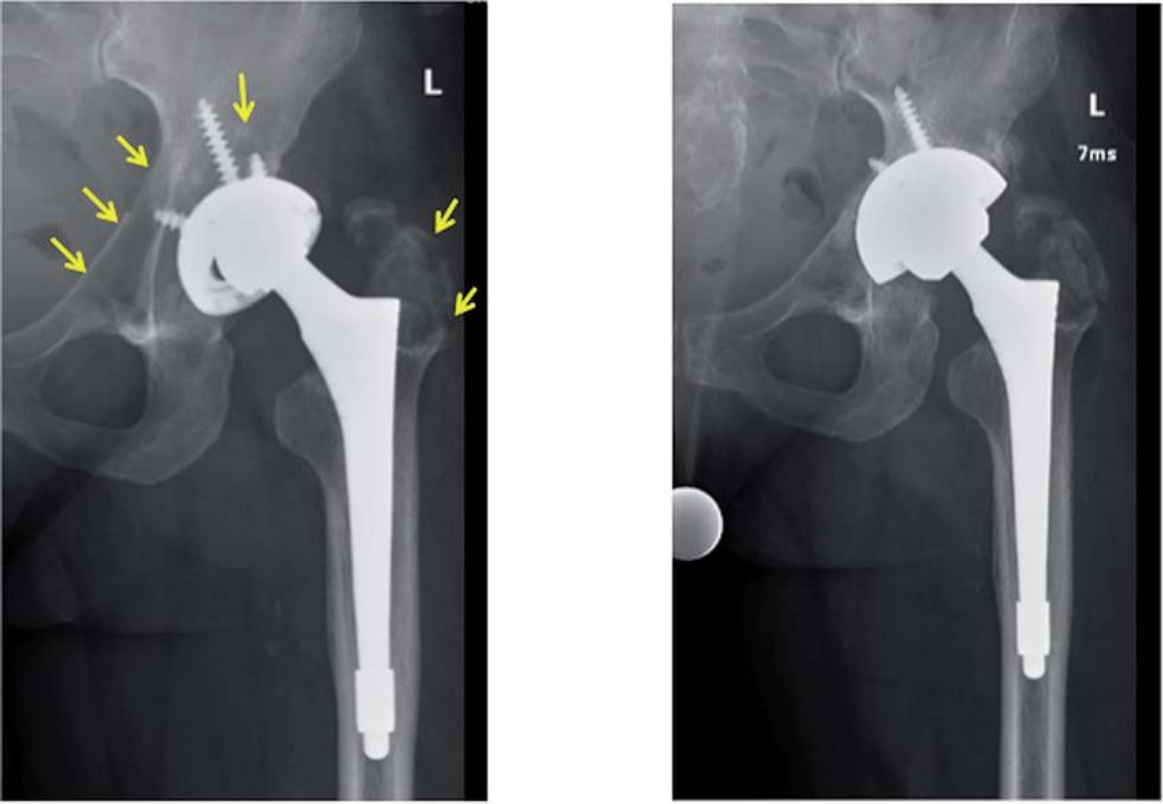


Fig. 4. Worn polyethylene acetabular cup –  
extracted at revision

# POLY WEAR AND OSTEOLYSIS





## LENGTH OF STAY

- 2000

- TJA 4 days
- Always hospitalized
- Sick patient
- CPM machine, 2-3 X/week PT

- 2025

- TJA <1 day
- Only 1/3 hospitalized
- Not sick patient
- Most PT done at home
- Costs half as much



Patient satisfaction scores are generally better in outpatient setting

# EMR

## Good

- Easy access to records
- Consolidated records
- Transportable
- Ease in data collection for research
- Readability
- Patient safety?
- Reduce plant size for record storage

## Bad

Cost: Many small community hospitals went under due to cost burden. 30M for SAMC prompted sale to CHI, require multiple off site backup systems/servers/cloud

Ongoing cost: yearly fees

Cyber security: Malware, stolen patient sensitive data by the thousands, ransomware, etc...

# OLD GUY THAT DOESN'T LIKE NEW TECHNOLOGY

- Here's some real facts about EMR:
  - Epic systems has become all but a monopoly in the EMR field for hospitals.
  - Judy Faulkner (EPIC founder) is one of the richest women in America had a net worth of almost \$10 billion.
  - During the Obama administration, when most of the legislation went through regarding mandatory EMR use, Judy Faulkner and the Epic Company was only second to the teacher's union on money spent lobbying in Washington DC.
  - The ongoing cost of EMR's are often downplayed when compared to the old traditional way of storing medical records. They failed to truly reveal the cost of ongoing and renewing licensure, the cost of IT personnel, the cost of new hardware updates, and the overall cost of the system when these newer technologies fail from time to time, the entire system shuts down when these EMR's fail



# UNH CYBER ATTACK

\$2,300,000,000

Ransomware Payment

## UnitedHealth Offers Detail On Change Hack

BY JAMES RUNDLE

Hackers stole sensitive information belonging to around 190 million people in a cyber-attack on a **UnitedHealth Group** subsidiary last year that roiled the U.S. healthcare industry, the company said Friday.

The final estimate is far greater than previous guesses from the healthcare giant, whose Change Healthcare unit was crippled by the attack for weeks, halting vast amounts of insurance payments to providers. Andrew Witt, the company's chief executive, said in congressional testimony in May that UnitedHealth expected around one-third of Americans to be affected by the breach. The final figure represents well over half of the U.S. population.

"The vast majority of those people have already been provided individual or substitute notice. The final number will be confirmed and filed with the Office for Civil

such as claims numbers and account balances.

Social Security numbers and financial and banking information also were compromised in some "rare" cases, UnitedHealth has said. The company said it hasn't seen signs that electronic medical record databases were among the hacked material.

The cyberattack on Change, which operates the largest U.S. clearinghouse for medical payments in the U.S., sent healthcare providers scrambling to find ways to bill insurers in the weeks and months following the Feb. 21, 2024, attack.

Hackers were inside Change's systems undetected for over a week before launching their attack, allowing them to steal potentially vast amounts of data. The attackers broke in by using compromised credentials on an application that allows remote access for staff, which wasn't protected by multifactor authentication, a security prote

### 190M

Estimated number of people whose information was stolen in the attack

# THE OLD GUY'S OPINION ABOUT EMR'S

- They have dumbed down medical providers as many systems we require the provider to function as a transcriptionist, scribe and data entry person. Pennywise and dollar foolish policies decided upon by hospital administrators and not by caregivers.
- They have made medical providers lazy as most notes in the medical record are not worth reading. Most of them are cut and pasted notes either from other providers, radiologist, lab reports, and these notes don't even discuss the patient's current medical status or what's different today than the day before or what the plan of treatment is.
- The medical record may be a medical legal document, but its main purpose is to communicate to other providers to let them know what's wrong with the patient and what you're doing to treat the patient. Critically read most of the EMR entries and they do not address these fundamental items. Most notes from medical providers don't even address a medical plan going forward.
- EMR's have the potential for a negative patient experience, especially when the caregiver is entering data as they are working with the patient. Attention is directed towards the computer screen rather than making eye contact with the patient.



# APP'S

- I was the first
- Met with much skepticism by my partners
- Extend limited resources (physician extender)
- Allow me to focus on what's important, what I trained for.
- Free me from institutional burdens, such as discharge summaries, patient phone calls, routine medication refills, and provide continuity of care when I'm unavailable or gone. They also function as a trusted and reliable and knowledgeable assistant in the surgical suite
- Used in the right setting, these highly compensated individuals can be a net positive income to a medical facility as they can bill for most of their services.

PA/NP

MD/DO



# ROBOTICS AND CAS



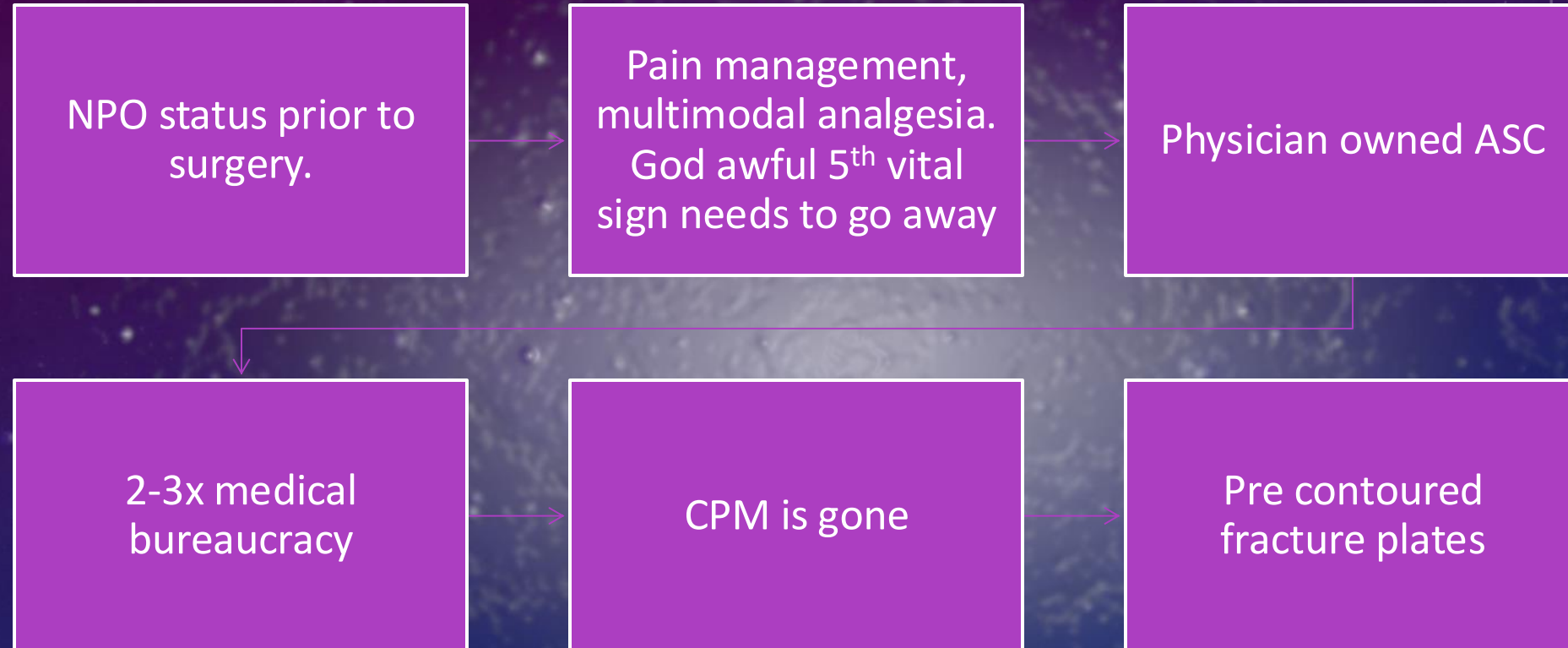
# THINGS TO REMEMBER ABOUT ROBOTICS AND CAS

- They are tools. They don't replace a surgeon.
- Their marketing tools for the companies that make them. They're used by companies to gain market share.
- They are valuable at reducing outliers for routine and complex surgeries
- The robots you see for orthopedics just guide the surgeon. They don't do anything on their own, unlike robotics in other fields, such as the auto industry.

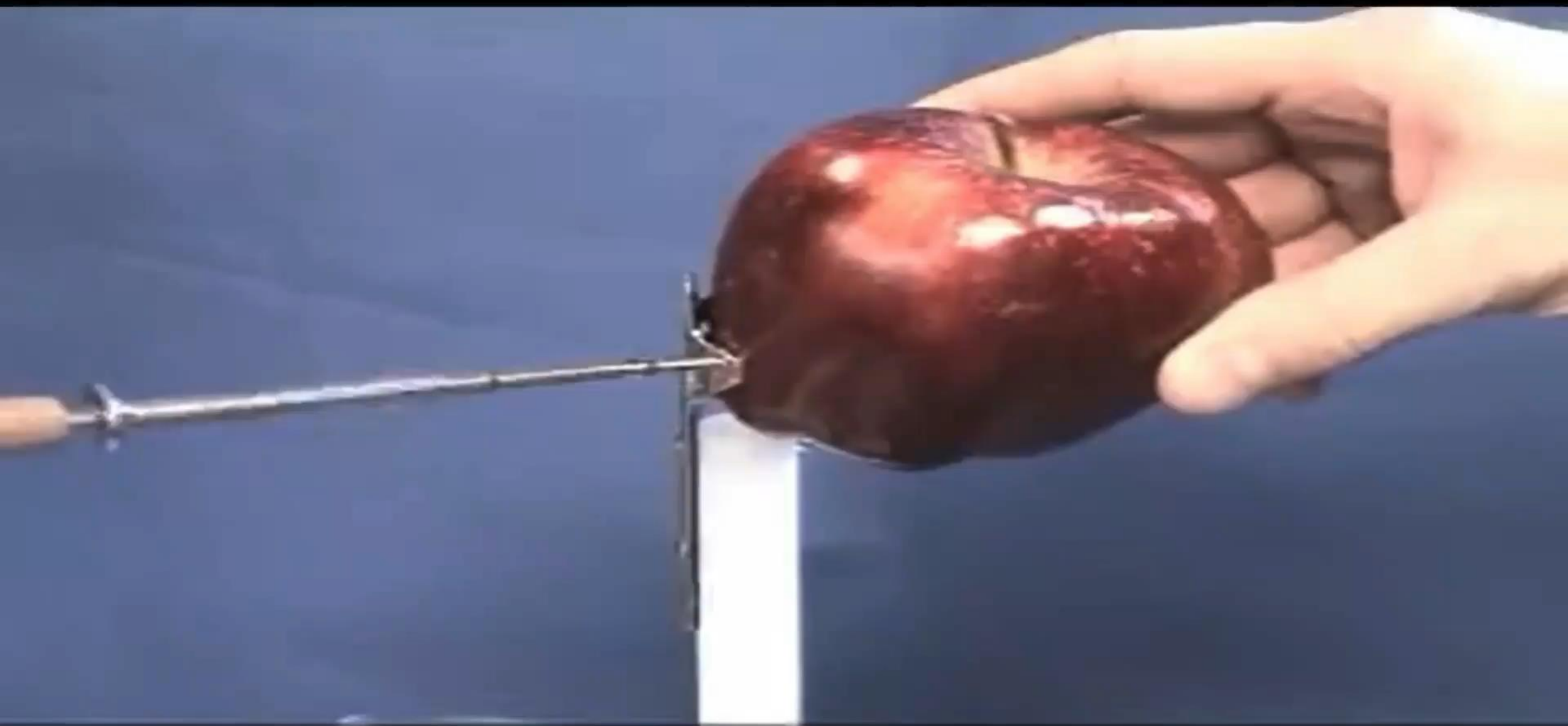


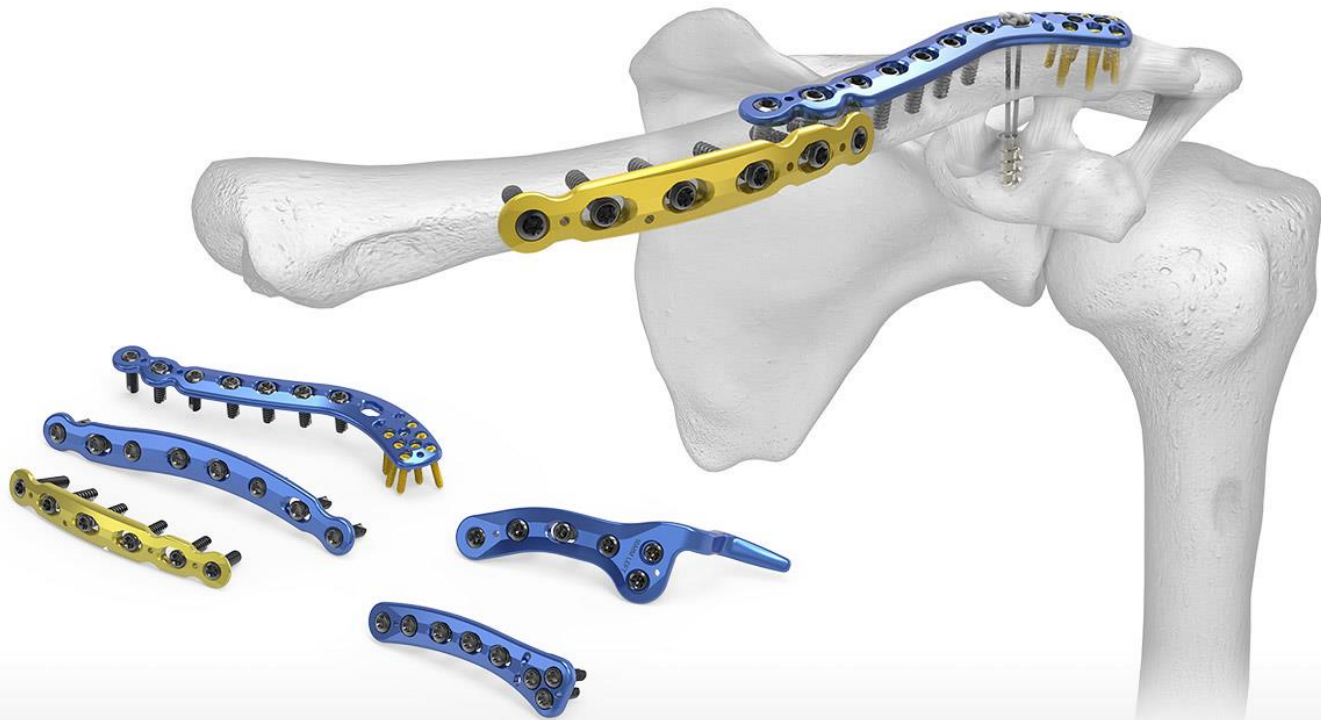


# MORE CHANGES









# BUREAUCRACY IN MEDICINE

## 2025

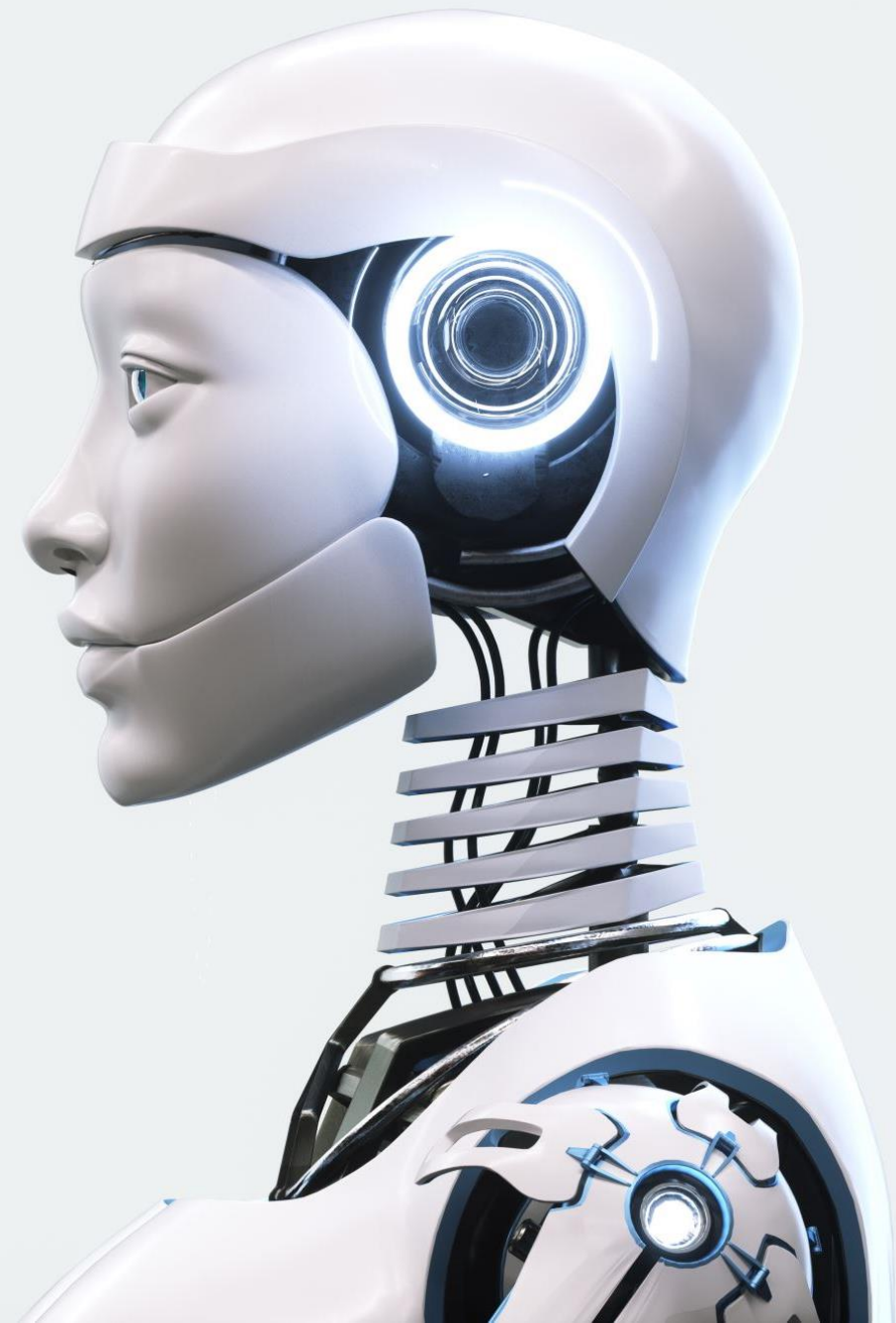
- Insurance hired nurses question physician decisions
- Insurance companies police doctors
- Pay for performance models
- AJR for data collection and research
- 13 employees per physician to function at the Bone And Joint Center efficiently
- UND has more women medical students than men for eight years running?
- Academic research, highly tainted and influenced by industry

## 1990's

- Gatekeeper model
- State medical societies and state medical boards, police doctors
- Fee for service
- No national registry
- 6 employees per physician at the Bone And Joint Center to function efficiently
- Less than five students per class were women at UND in the early '90's
- Academic research was largely independent of industry







# NEXT 40 YEARS IN MEDICINE

- AI will be integral part of all medicine and science and discovery
- With the help of AI, Robots really will be able to do the surgery (with human/surgeon supervision)
- The healthy human microbiome will get more attention and may be the key to the elusive quest of decreasing infection rates at surgery.
- Implant designs and changes will continue, but they won't be revolutionary. Revolutionary changes will come in cartilage growth and restoration, biologic implants versus metal, and a deeper and meaningful focus will be on preventative medicine.
- The human genome is just starting to be explored. Cures in muscular dystrophy, rheumatoid arthritis, gout and other musculoskeletal disease is almost a certainty.



My team

Jade

Jessica

Kelsey



My chat GBT query:

some nicer ways to say someone has a big mouth:

Answer:

- Tends to share information freely.
  - Has a reputation for being outspoken.
  - Doesn't always keep secrets.
  - Is known for their word volume.
- But I love them all and they are good to me!



Danke schön

