

# Smartphone Apps for Orthopaedic Surgeons

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# Disclosures

- No conflicts of interest

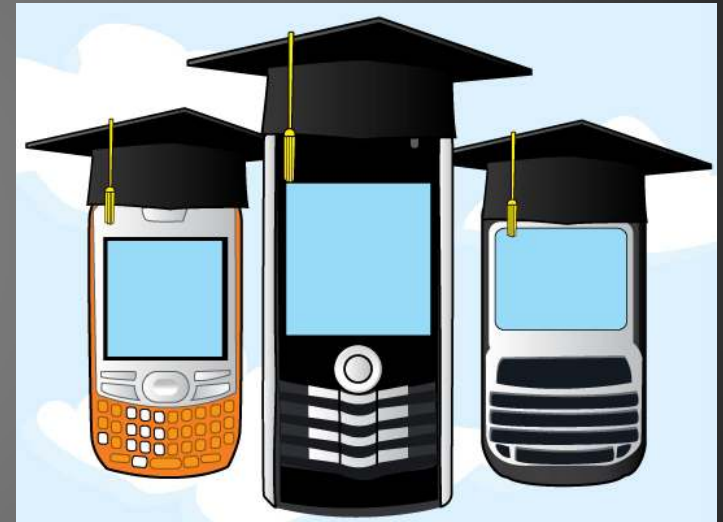
# Background

- 2001/2002: Development of smartphones
  - Blackberry and Palm
  - Capable of web-browsing and wifi
- 2007: iPhone expanded possibilities
- 2010: Increase in Android phones



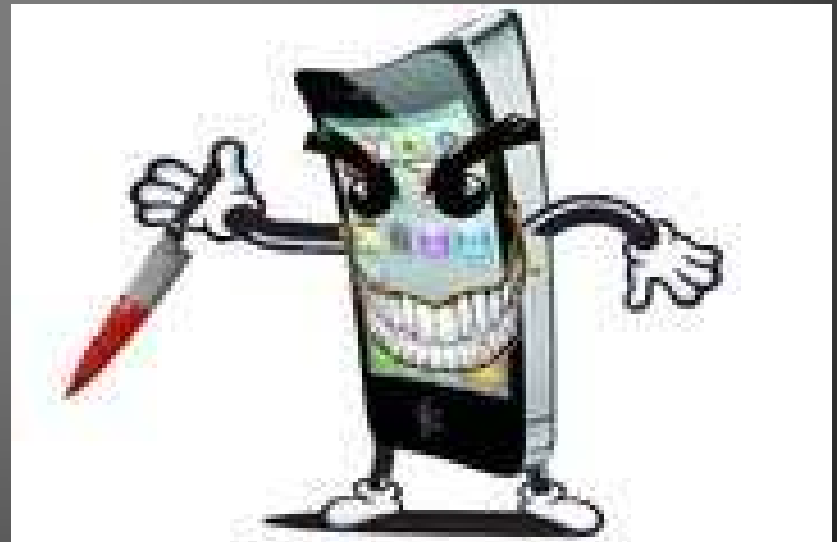
# Strengths

- Portable, ubiquitous, and fast
- Limitless “app” potential
- Internet/Wifi
- Audio/Video
- Dual cameras
- Voice recognition
- Immense storage capacity
- Inexpensive device and inexpensive apps



# Weaknesses

- Security concerns
- Content/validity regulation
- Small/inefficient



# Purpose

- 1) Survey smartphone apps currently available
- 2) Survey surgeons/residents nationwide regarding smartphone use

# Methods

- Smartphone survey
  - Reviewed iPhone & Android app stores
  - Summarized reviews, cost, type of app
- Surgeon survey
  - Emailed 353 ACGME orthopaedic programs
  - 10 question survey

## Appendix 1. Mobile technology in Orthopaedic Surgery

Thank you for completing this 1-minute survey. Responses are anonymous and results will be publicly available once the survey is complete. \* Required

### 1. Please select your level of training.\*

If you do not meet any of these criteria, please do not complete this survey.

<input type="checkbox"/> Medical Student	<input type="checkbox"/> Orthopaedic Surgeon - Completed training within 3 years
<input type="checkbox"/> Orthopaedic Resident	<input type="checkbox"/> Orthopaedic Surgeon - Completed training within 3-15 years
<input type="checkbox"/> Orthopaedic Fellow	<input type="checkbox"/> Orthopaedic Surgeon - Completed training > 15 years ago
<input type="checkbox"/> Nonphysician Orthopaedic Staff	<input type="checkbox"/> Other:

### 2. Please select the best answer regarding your specialty of training.\*

<input type="checkbox"/> General Orthopaedics	<input type="checkbox"/> Foot & Ankle
<input type="checkbox"/> Spine	<input type="checkbox"/> Sports Medicine
<input type="checkbox"/> Trauma	<input type="checkbox"/> Arthroplasty / Joint Reconstruction
<input type="checkbox"/> Upper Extremity / Hand	<input type="checkbox"/> Tumor / Oncology
<input type="checkbox"/> Pediatrics	<input type="checkbox"/> Other:

### 3. Is your primary mobile phone a "smartphone" capable of installing "apps"?

(i.e., iPhone, Android, etc.)

Select one:  Yes  No  I don't know

Please complete the following questions only if you answered "yes" to owning a smartphone.

### 4. What operating system does your smartphone run?

<input type="checkbox"/> iPhone OS (iPhone, any version)	<input type="checkbox"/> Windows Mobile OS (ie, HTC Touch, HTC tile)
<input type="checkbox"/> Android OS (ie, HTC Droid, Samsung Galaxy)	<input type="checkbox"/> Symbian (ie, Nokia brand phones)
<input type="checkbox"/> BlackBerry OS (ie, BlackBerry, any version)	<input type="checkbox"/> Palm OS (ie, Treo, Pre, Prio)
<input type="checkbox"/> Other:	

### 5. Do you currently use smartphone "apps" in your orthopaedic practice?

Select one:  Yes  No  I don't know

5-a. If you answered "yes" above, please list some of the "apps" you find most useful:

### 6. Would you like to see more orthopaedic-related "apps" available on your mobile device?

Select one:  Yes  No  I don't know

### 7. Were you aware that the AAOIS has a free iPhone app?

If you do not have an iPhone, please skip Questions 7 and 7-a.

Select one:  Yes  No  I don't know

### 7-a. If you answered "yes" above, have you downloaded the AAOIS app to your mobile device?

Select one:  Yes  No  I don't know

### 8. Please select the categories of "apps" you would find most useful:

(Select all that apply)

<input type="checkbox"/> General Knowledge	<input type="checkbox"/> Coding & Billing
<input type="checkbox"/> Textbooks / Reference	<input type="checkbox"/> Patient Education Materials
<input type="checkbox"/> Techniques / Guides	<input type="checkbox"/> Patient Record Keeping
<input type="checkbox"/> Clinical Exam Tests & Findings	<input type="checkbox"/> CME / Board Study Material
<input type="checkbox"/> Classifications / Treatment Algorithms	<input type="checkbox"/> Industry-Sponsored Device Information
<input type="checkbox"/> Current News / Updates	<input type="checkbox"/> Other:

### 9. How much would you be willing to pay for an orthopaedic "app" that saves you 5-10 minutes/day or 30 minutes/week in your clinical practice?(US dollars)

Answer: \_\_\_\_\_

### 10. Please share any additional comments here:

Thank you for completing this survey.



### 1. Please select your level of training. \*

If you do not meet any of these criteria, please do not complete this survey.

<input type="checkbox"/> Medical Student	<input type="checkbox"/> Orthopaedic Surgeon - Completed training within 5 years
<input type="checkbox"/> Orthopaedic Resident	<input type="checkbox"/> Orthopaedic Surgeon - Completed training within 5-15 years
<input type="checkbox"/> Orthopaedic Fellow	<input type="checkbox"/> Orthopaedic Surgeon - Completed training > 15 years ago
<input type="checkbox"/> Nonphysician Orthopaedic Staff	<input type="checkbox"/> Other:

### 4. What operating system does your smartphone run?

<input type="checkbox"/> iPhone OS (iPhone, any version)	<input type="checkbox"/> Windows Mobile OS (ie, HTC Touch, HTC Tilt)
<input type="checkbox"/> Android OS (ie, HTC Droid, Samsung Galaxy)	<input type="checkbox"/> Symbian (ie, Nokia brand phones)
<input type="checkbox"/> Blackberry OS (ie, Blackberry, any version)	<input type="checkbox"/> Palm OS (ie, Treo, Pre, Pixi)
<input type="checkbox"/> Other:	

8. Do you currently use smartphone "apps" in your orthopaedic practice?  
Select one: Yes No I don't know

### 8. Please select the categories of "apps" you would find most useful:

(Select all that apply)

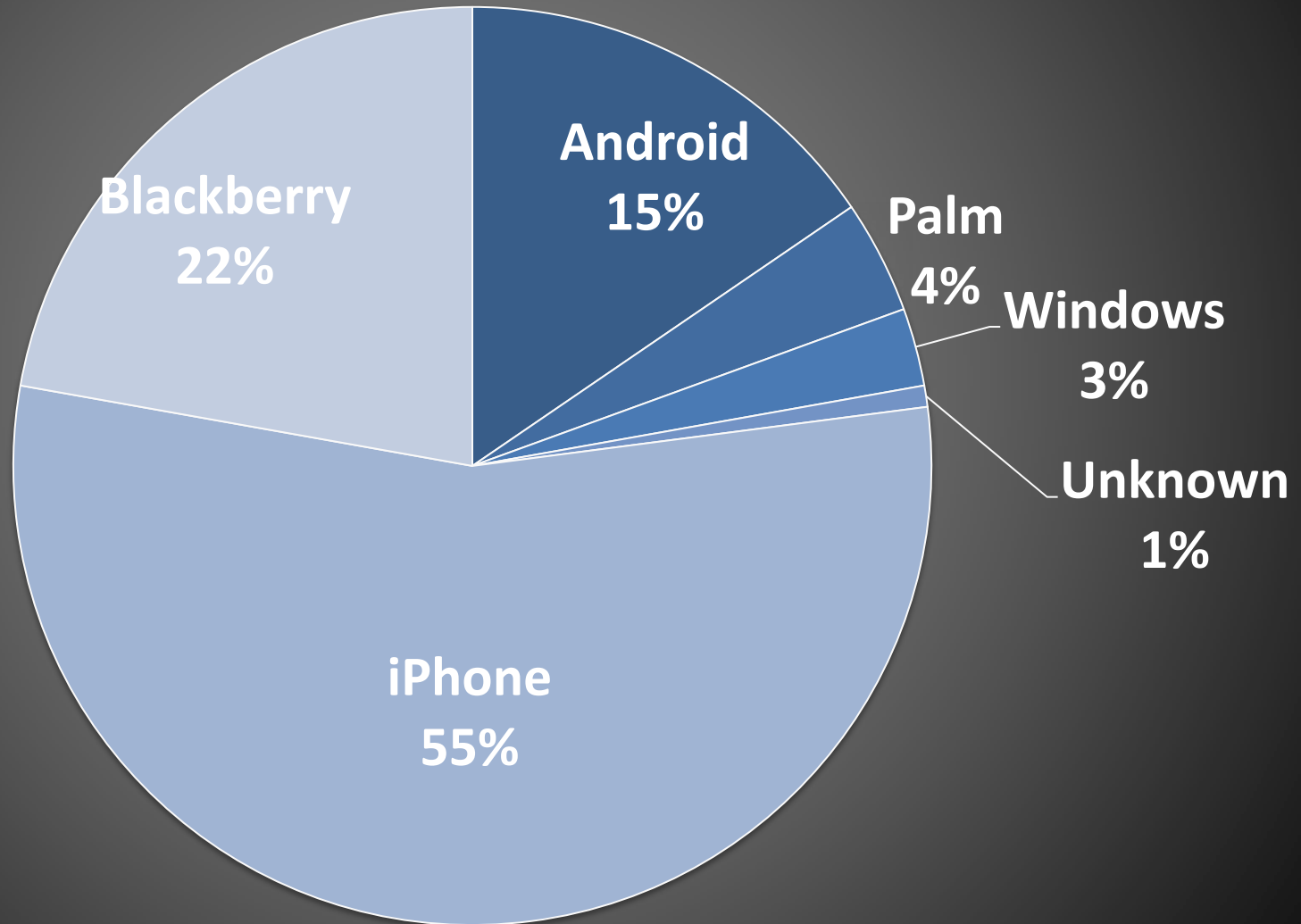
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Answer: \_\_\_\_\_

# Smartphone Used by Respondents



# Results

- 476 total responses

Type of practitioner	# of responses	# with a smartphone	# using apps	Desire for more apps	\$ to pay?
Resident	319	273 (86%)	162 (59%)	156 (96%)	\$24.93
Fellow	12	9 (75%)	4 (44%)	4 (100%)	\$19.99
Attending					
< 5 years	24	21 (88%)	10 (48%)	10 (100%)	\$14.72
5-15 years	44	40 (91%)	14 (35%)	13 (93%)	\$32.57
>15 years	68	51 (75%)	22 (43%)	20 (91%)	\$67.15
Other	9	7 (78%)	2 (29%)	2 (100%)	\$30.20
Total	476	401 (84%)	214 (53%)	205 (96%)	\$29.87

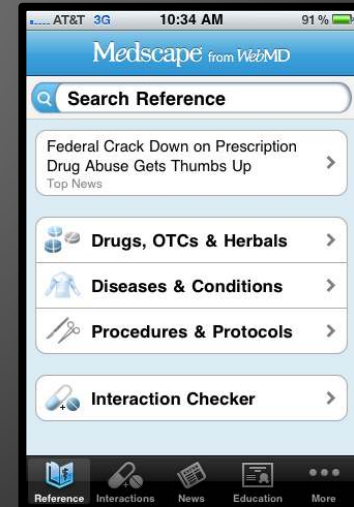
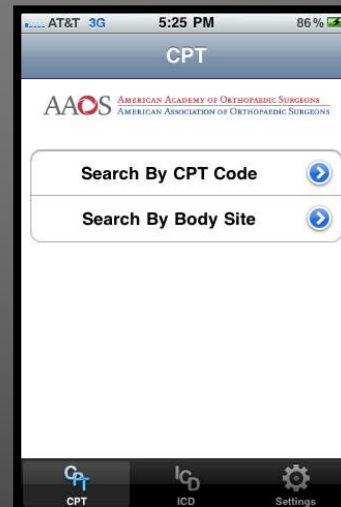
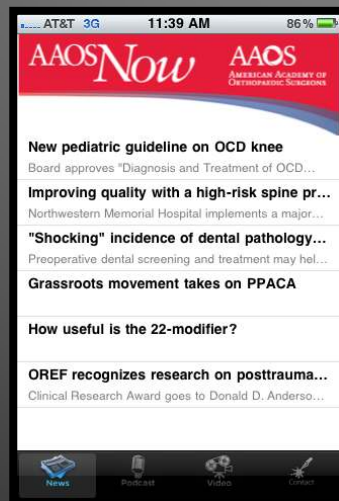
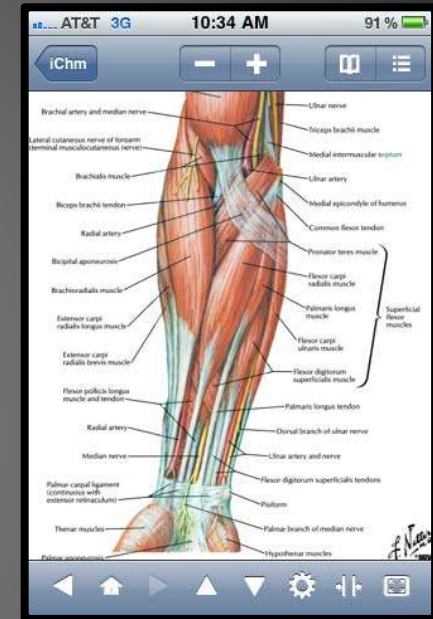
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# Most Useful Apps

- ePocrates (133 mentions)
- Billing/Coding (21 mentions)
- Medscape (13 mentions)
- Netter's (10 mentions)
- AAOS Now (7 mentions)



# Survey of App Stores (April 2011)

- 61 apps in Apple iTunes (iPhone)
  - 50% with less than 5 reviews
  - 52% “clinical”
  - 26% “educational”
  - 11% “industry/news”
- 13 apps in Android Store
  - 8 duplicates of iPhone apps



# Popular Apps in 4/11 vs. 8/10

Name	Price	Release Date	Rating	Rank (4/11)	Rank (8/10)
<b>iOrtho*</b>	free	9/3/2010	1.5	1	1
<b>SpineDecide</b>	\$4.99	3/2/2011	3.5	2	--
<b>Orthopedics Hyperguide</b>	free	1/4/2011	2.5	3	3
<b>Scoligauge</b>	\$0.99	3/7/2011	3	4	2
<b>Mobile Coder Orthopedics</b>	free	3/14/2011	2.5	5	7
<b>Smith &amp; Nephew Mobile</b>	free	12/19/2010	3	6	4
<b>CORE - Clinical Orthopedic Exam*</b>	\$39.99	12/16/2010	4.5	7	5
<b>SLIC</b>	free	1/29/2010	2.5	8	6
<b>OrthoFind</b>	free	11/29/2010	2.5	9	8
<b>AAOS Now*</b>	free	3/7/2010	4	10	11
<b>iSpineCare</b>	\$59.99	12/21/2010	4	11	13
<b>Mobile Coder Foot &amp; Ankle</b>	free	3/9/2011	3	12	--
<b>Mobile OMT Upper Extremity</b>	29.99	1/10/2011	5	13	--
<b>OrthoAnatomy – Brancel*</b>	\$2.99	2/8/2011	3	14	15
<b>AO Surgery Reference</b>	free	2/23/2011	4	15	--
<b>KneeDecide MD</b>	\$4.99	2/8/2011	4.5	16	--
<b>ShoulderDecide MD</b>	\$4.99	2/9/2011	5	17	--

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ePocrates

AAOS Code X-Lite

OrthoScore

AO Classification

# Most Requested Types of Apps



- Textbook/Reference



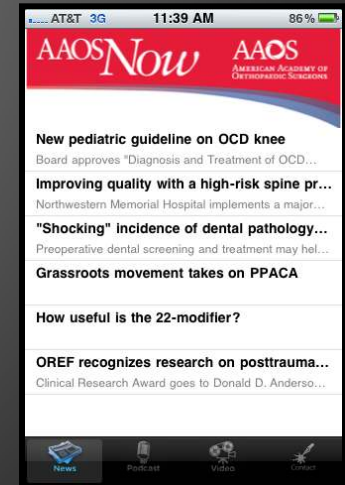
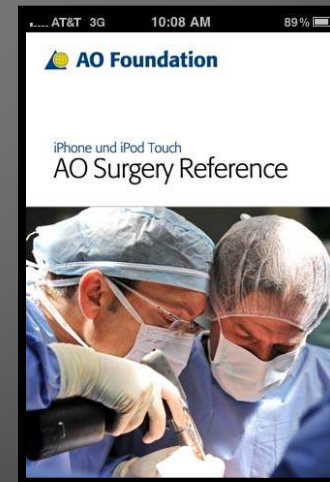
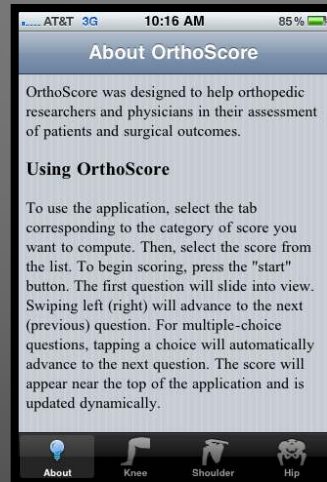
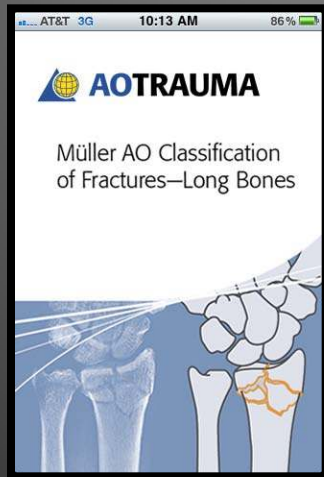
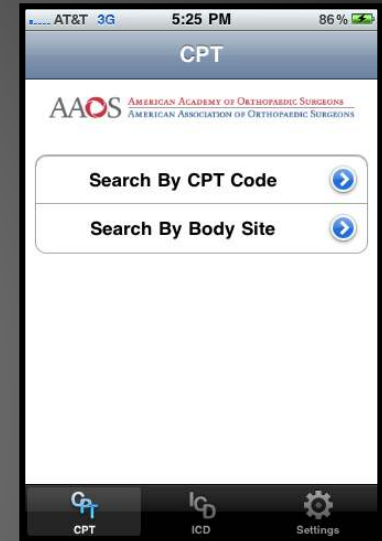
- Techniques/Guides



- OITE/Board Review



- Billing/Coding



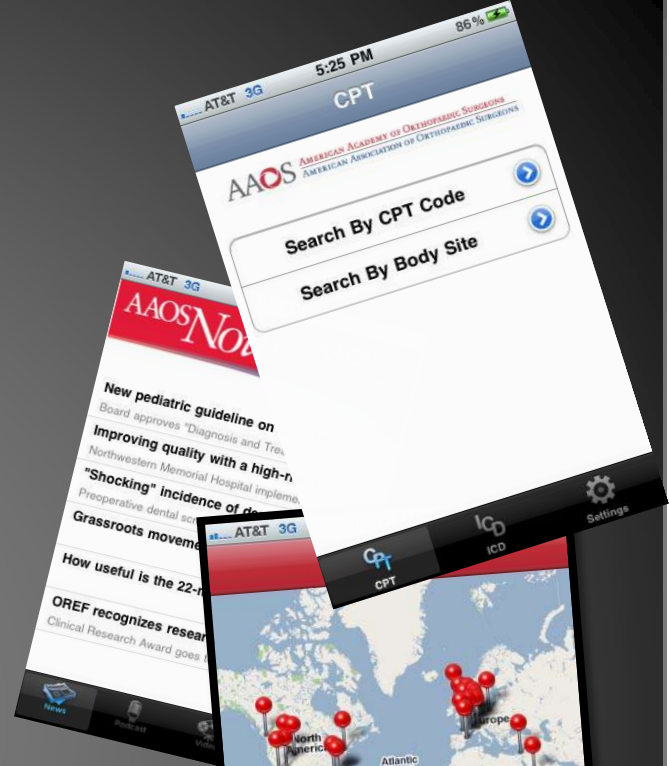
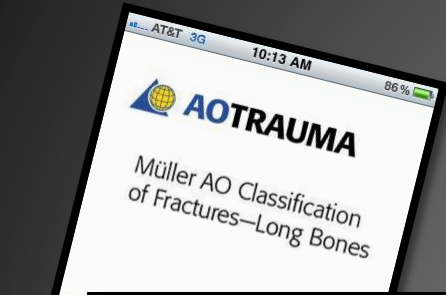
# Future Studies

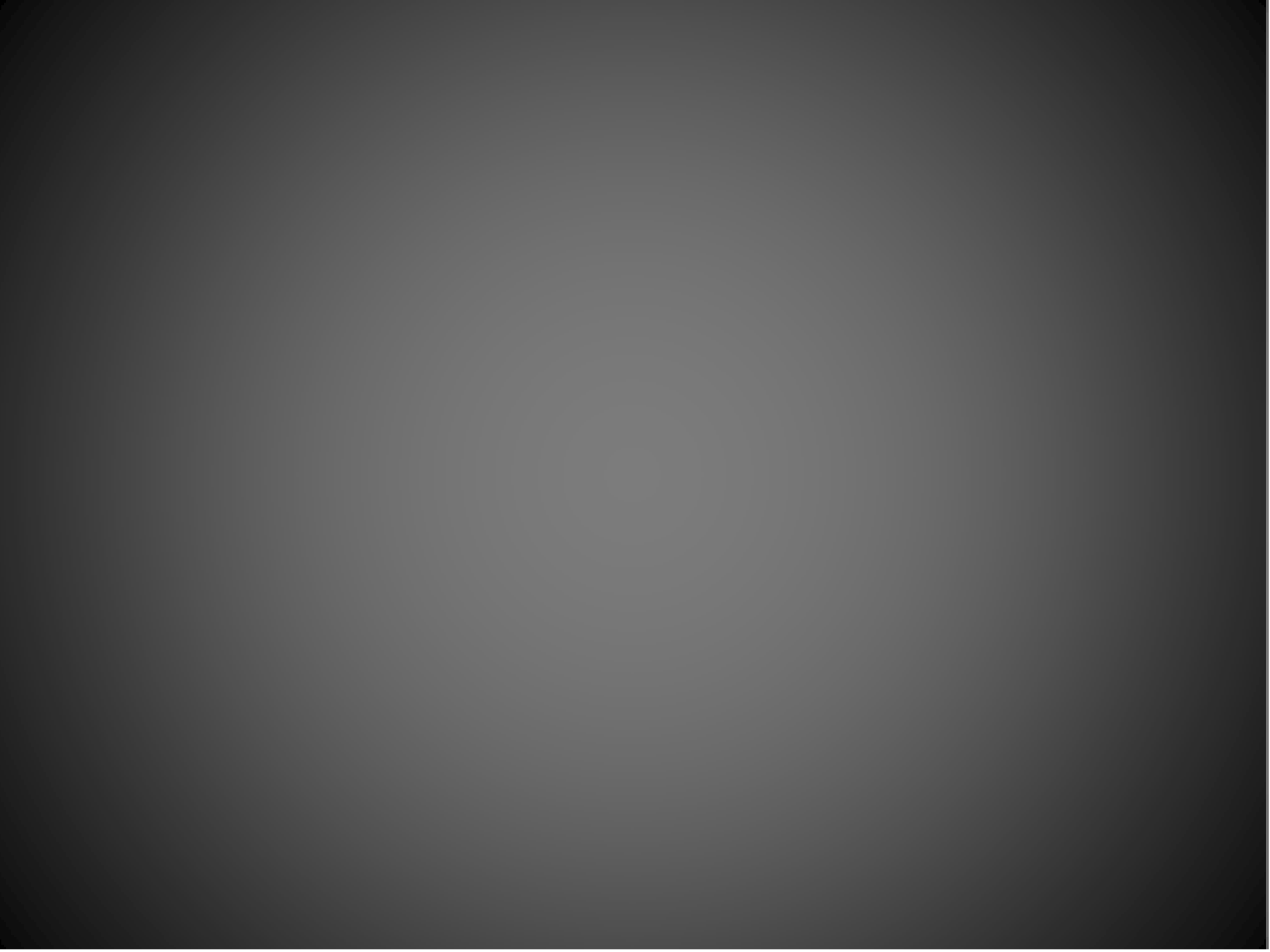
- Clinical correlation with app use
- OITE/Board correlation with app use
- Monitor changes in app/smartphone use

**THANK YOU!**

# Apps Demo:

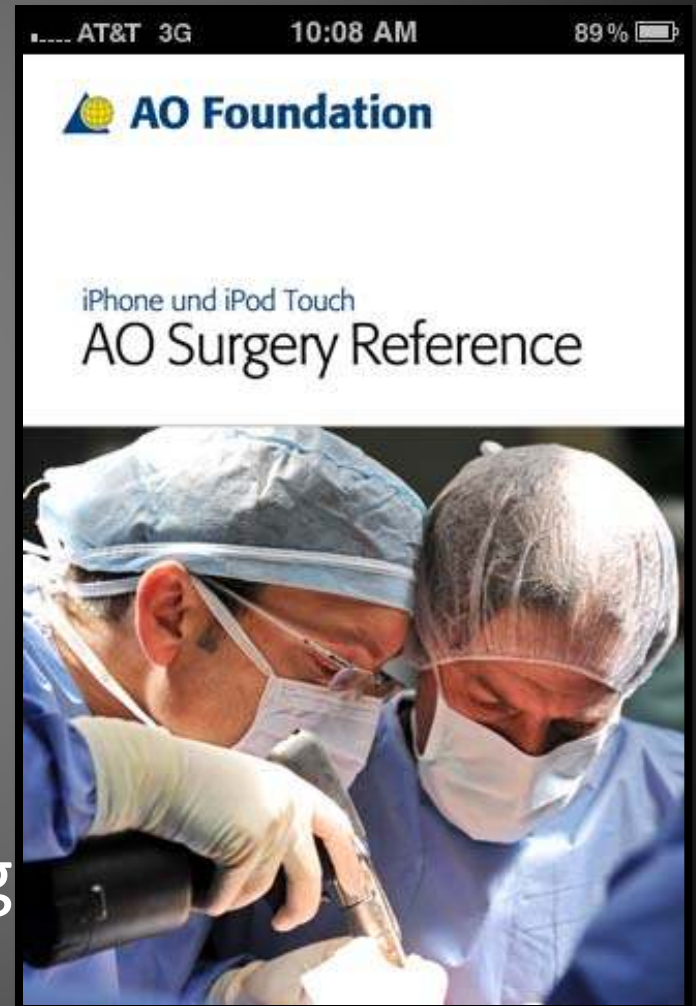
AO Surgery  
AAOS Code X-Lite  
Epocrates  
(Ortho Score)  
(Ortho Event)  
(AO Classification)  
(AAOS Now)





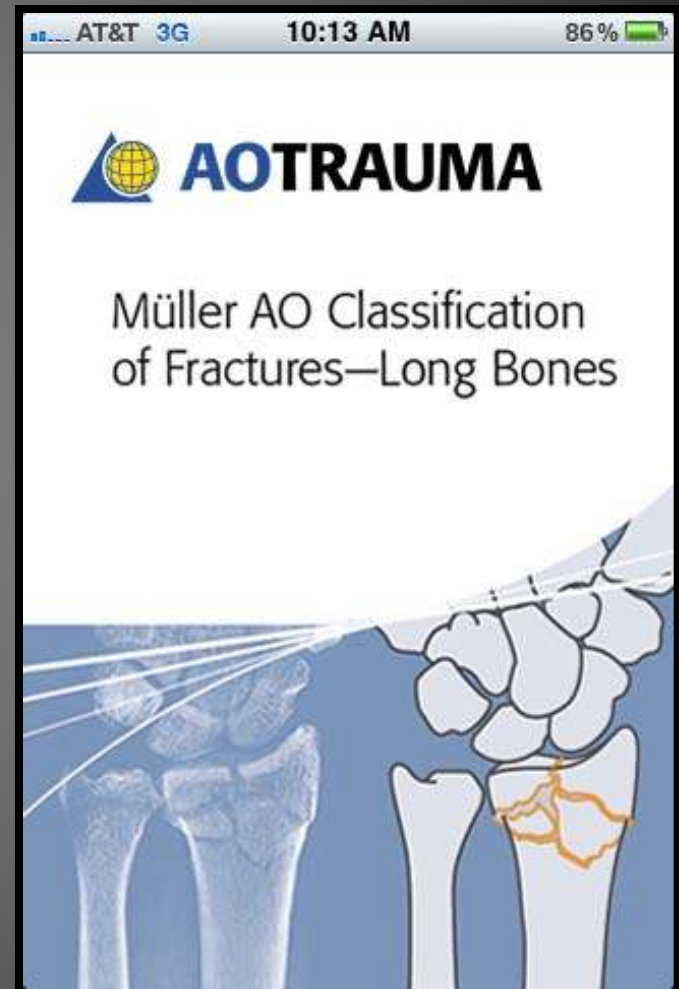
# AO Surgery

- AO Foundation
- Comprehensive
  - Diagnosis
  - Decision
  - Preparation/Approach
  - Fixation
  - Aftercare
- Images and Further Reading



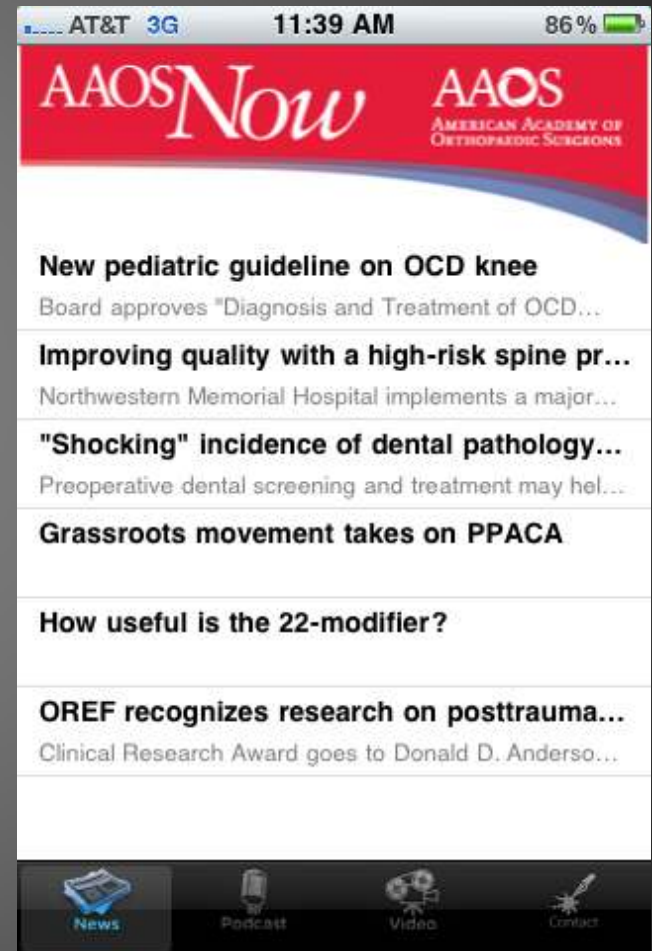
# AO Classification

- AO Foundation
- Muller Classification
  - (1) Humerus
  - (2) Radius/Ulna
  - (3) Femur
  - (4) Tibia/Fibula
- Images/Diagrams



# AAOS Now

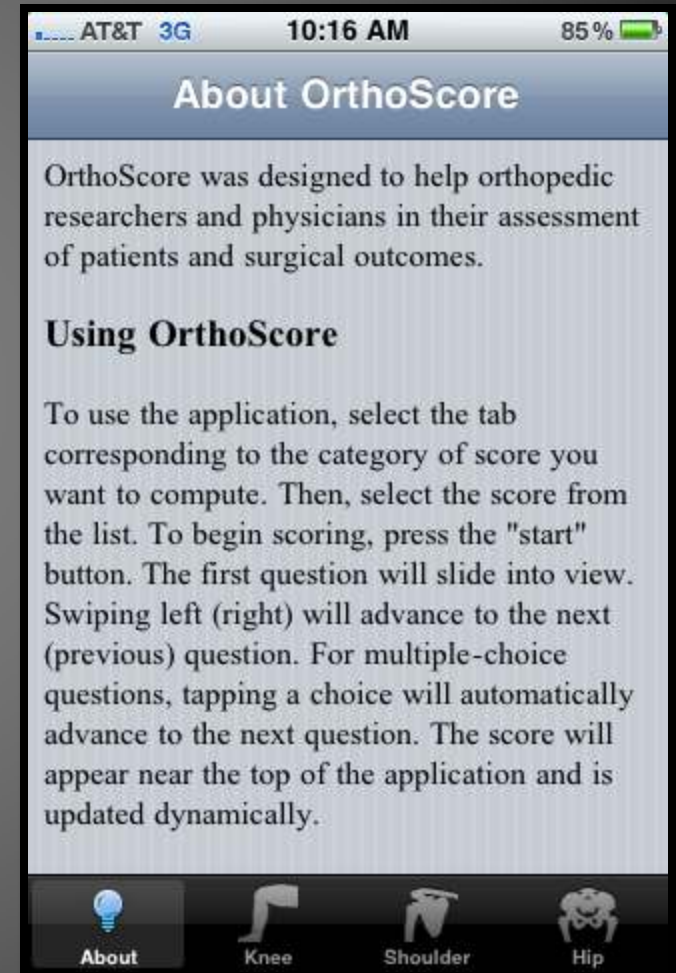
- AAOS
- News/Updates
- Podcasts
- Video





# OrthoScore

- Medical Student
- Knee
  - Cincinnati Knee Scale
  - IKDC
  - Lysholm
- Shoulder
  - ASES
  - Constant Shoulder Score
- Hip
  - Modified Harris Hip Score
  - Hip Outcome Score
  - HOS Sports Subscale



# OrthoEvent

- Conferences/Meetings
- Categorize by specialty
- Provides contact info



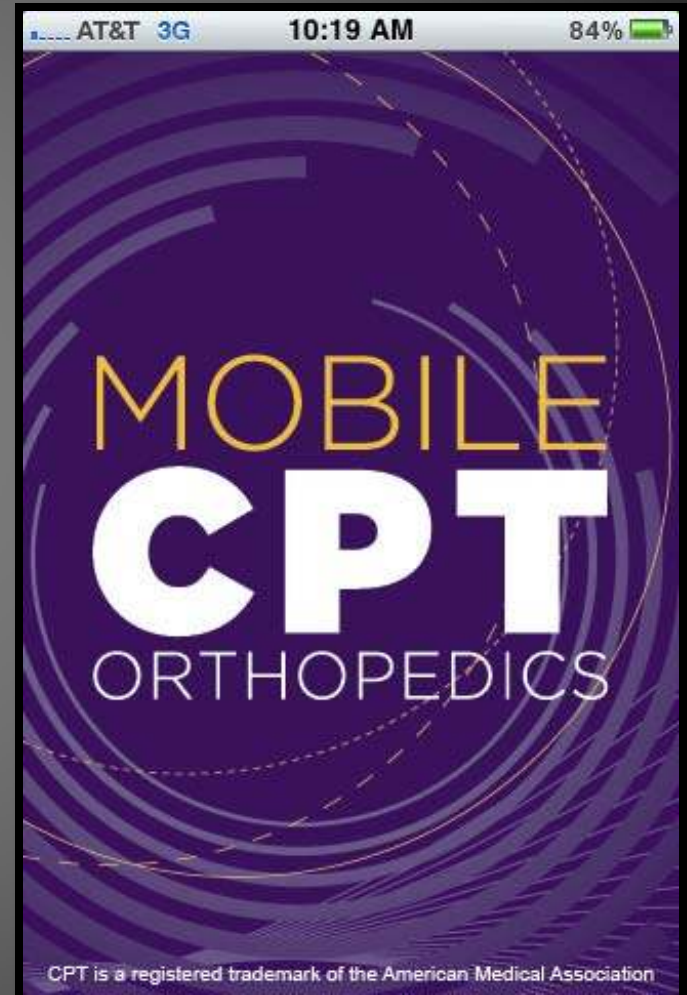
# ePocrates

- ePocrates Essentials
- Abundance of data
- Free/Paid versions
- Drug reference
- Drug interactions/dosing
- Pill ID
- Calculator



# Mobile CPT Coder

- Psygo LLC
- Paid version \$80
- Lite version
  - Hip



# Dragon Dictation

- Nuance / Dragon
- Dictation/eScripton

