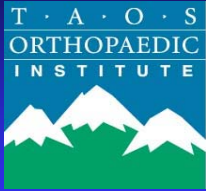
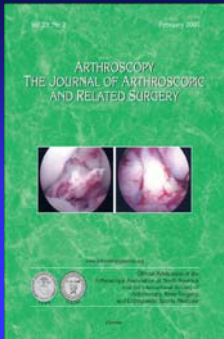


HOW TO GET HAPPILY PUBLISHED

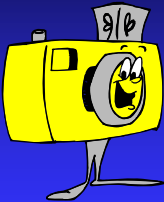


JAMES H. LUBOWITZ, MD
TAOS, NEW MEXICO, USA


Assistant Editor
ARTHROSCOPY:
THE JOURNAL
OF
ARTHROSCOPIC
AND RELATED
SURGERY



HOW TO GET HAPPILY PUBLISHED




- WHAT YOU NEED TO KNOW




YOU NEED

- CLEAR HYPOTHESIS




YOU NEED

- METHODS ADDRESS PURPOSE




YOU NEED

- STATISTICAL POWER




YOU NEED

- CONCLUSION BASED UPON RESULTS




THAT'S IT

- CLEAR HYPOTHESIS
- METHODS ADDRESS PURPOSE
- STATISTICAL POWER
- CONCLUSIONS BASED UPON RESULTS




CLEAR HYPOTHESIS

- PURPOSE OF STUDY: ANSWER A QUESTION
- **HYPOTHESIS: WHAT YOU THINK THE ANSWER WILL BE**




EXAMPLE

- **CONTROVERSIAL QUESTION**
 - ◆ Is knee arthroscopy beneficial for arthritis?
- **PURPOSE:** Answer question.
- **HYPOTHESIS:** Knee arthroscopy is of benefit.




LOCATION OF HYPOTHESIS

- **INTRODUCTION**




WHAT ELSE IS INTRODUCTION?

- **IDENTIFY CONTROVERSY**
- **SHORT REVIEW**
- **PURPOSE**
- **HYPOTHESIS**




QUIZ

- DEFINE HYPOTHESIS?




QUIZ

- DEFINE HYPOTHESIS?
- BEFORE YOU START STUDY:
 - ◆ WHAT YOU THINK THE CONCLUSION WILL BE.




CONCLUSION BASED UPON RESULTS

- EASY
 - ◆ TWO POSSIBILITIES
- HYPOTHESIS
 - ◆ SUPPORTED BY RESULTS
 - ◆ NOT SUPPORTED BY RESULTS




THAT'S IT

- CONCLUSION
 - ◆ HYPOTHESIS SUPPORTED
 - ◆ HYPOTHESIS NOT SUPPORTED




QUIZ

- CONCLUSION
 - 1) HYPOTHESIS SUPPORTED OR NOT SUPPORTED
 - 2) **WHAT ELSE?**



QUIZ

- CONCLUSION
 - 1) HYPOTHESIS SUPPORTED OR NOTSUPPORTED
 - 2) **WHAT ELSE?**
NOTHING ELSE
(STOP)




METHODS ADDRESS PURPOSE





METHODS ADDRESS PURPOSE

- RESULTS COME FROM METHODS
- OBVIOUS




METHODS ADDRESS PURPOSE

- RESULTS COME FROM METHODS
- BAD METHODS
 - ◆ FATAL FLAW
 - ◆ CAN NOT PUBLISH




METHODS ADDRESS PURPOSE

- METHODS
 - ◆ MOST IMPORTANT
 - ◆ EVERYTHING ELSE EDITOR CAN FIX!




METHODS

- REPRODUCIBLE
 - ◆ COOKBOOK




METHODS

- REPRODUCIBLE
 - ◆ COOKBOOK
 - ◆ SOMEONE ELSE CAN EXACTLY REPEAT STUDY




METHODS

- TWO IMPORTANT ISSUES
 - ◆ TYPE OF STUDY
 - ◆ LEVEL OF EVIDENCE
 - ◆ BIAS




LEVEL OF EVIDENCE

- FIVE LEVELS



LEVEL OF EVIDENCE

- LEVEL 5
 - ◆ EXPERT OPINION



LEVEL 4

- CASE SERIES
- PROSPECTIVE
 - ◆ THE BEST
 - ◆ TAKES LONGER
- ◆ RETROSPECTIVE
 - ◆ LOOK BACK
 - ◆ RISK BIAS




LEVEL 4

- CASE SERIES



LEVEL 4

- CASE SERIES **PROBLEM**




LEVEL 4

- CASE SERIES PROBLEM
 - ◆ NO CONTROL GROUP




LEVEL 4

- CASE SERIES PROBLEM
 - ◆ NO CONTROL GROUP
 - ◆ HOW DO YOU KNOW RESULTS ARE BETTER THAN OTHER TREATMENT?



LEVEL 4

- CASE SERIES PROBLEM
 - ◆ NO CONTROL GROUP
 - ◆ HOW DO YOU KNOW RESULTS ARE BETTER THAN OTHER TREATMENT?
 - ◆ *OR NO TREATMENT?*



LEVEL 2 AND 3

- COMPARATIVE STUDY
 - ◆ COMPARES 2 GROUPS
 - ◆ CONTROL GROUP
- TREATED
 - ◆ SAME TIME
 - ◆ SAME INSTITUTION




LEVEL 3

- RETROSPECTIVE
 - ◆ COMPARATIVE STUDY



LEVEL 3

- RETROSPECTIVE
 - ◆ COMPARATIVE STUDY
 - ***IF YOU CHOOSE TO DO A RETROSPECTIVE STUDY INCLUDE A CONTROL GROUP




LEVEL 2

- PROSPECTIVE
 - ◆ COMPARATIVE STUDY




LEVEL 1

- RANDOMIZE = DIVIDE BY CHANCE
- LEVEL 1 STUDY
 - ◆ RANDOMIZED CONTROLLED TRIAL
 - ◆ THE BEST
 - ◆ RANDOMIZATION LOWERS RISK OF BIAS



LEVEL 1


- QUIZ
 - ◆ WHAT TYPE OF STUDY IS LEVEL 1 EVIDENCE?



LEVEL 1

- QUIZ
 - ◆ WHAT TYPE OF STUDY IS LEVEL 1 EVIDENCE?

 - ◆ RANDOMIZED CONTROLLED TRIAL




BIAS

- BIAS IS BAD
- BIAS = SYSTEM INTRODUCES ERROR
- BIAS = RESULTS CAN'T BE TRUSTED



PERFORMANCE BIAS

- WHO DOES SURGERY?
 - ◆ SINGLE SURGEON
 - ◆ MULTIPLE SURGEONS




REPORTING BIAS

- VALIDATED OUTCOME MEASURES
 - ◆ ALLOWS COMPARISON TO OTHER PUBLICATIONS




REPORTING BIAS

- PRIMARY OUTCOME MEASURE
 - ◆ MEASURE OF HYPOTHESIS
 - EXAMPLE = ACL
 - ◆ IKDC SCORE




TRANSFER BIAS

- PATIENTS LOST TO FOLLOW-UP
 - ◆ KEEP TRACK
 - ◆ 24 MONTHS




SELECTION BIAS

- PATIENT GROUPS HAVE DIFFERENT PROGNOSIS
 - ◆ EXAMPLE
 - ◆ MENISCUS REPAIR
 - YOUNG PATIENTS
 - ◆ MENISCECTOMY
 - OLD PATIENTS




PREVENT SELECTION BIAS

- ◆ RANDOMIZE (LEVEL 1)
- ◆ STRICT
 - ◆ INCLUSION CRITERIA
 - ◆ EXCLUSION CRITERIA





METHODS MOST IMPORTANT

- HOW TO GET HAPPILY PUBLISHED?
 - ◆ GET ADVICE ON METHODS BEFORE
 - ◆ PROSPECTIVE STUDY
 - ◆ BEFORE STARTING STUDY
 - ◆ RETROSPECTIVE STUDY
 - ◆ BEFORE YOU COLLECT DATA




METHODS ADDRESS PURPOSE

- NOT EASY
- GET ADVICE




STATISTICAL POWER

- STATISTICS = METHODS
 - ◆ *STATISTICAL METHODS*
- GET ADVICE
- GET A STATISTICIAN
 - ◆ BEFORE



STATISTICAL POWER

- POWER = ENOUGH PATIENTS TO ANSWER QUESTION
- NOT ENOUGH POWER = BETA ERROR




BETA ERROR

- NOT ENOUGH POWER
- NOT ENOUGH PATIENTS




BETA ERROR

- NOT ENOUGH POWER
 - ◆ “RESULT = NO SIGNIFICANT DIFFERENCE”
 - ◆ MAYBE WRONG
 - ◆ MORE PATIENTS REQUIRED TO SHOW DIFFERENCE



PREVENT BETA ERROR

- NO DIFFERENCE BETWEEN GROUPS?
 - ◆ NEED ENOUGH PATIENTS
 - ◆ NEED STATISTICAL POWER
 - ◆ POWER ANALYSIS
 - REQUIRED




DIFFERENCE BETWEEN GROUPS?

- YES DIFFERENCE?
 - ◆ $P < 0.05$
- NO DIFFERENCE?
 - ◆ PREVENT BETA ERROR
 - ◆ POWER ANALYSIS




STATISTICAL POWER

- NOT EASY FOR ME
- EASY FOR STATISTICIAN
 - ◆ GET ADVICE
 - ◆ BEFORE



WHAT ELSE?

- RESULTS
 - ◆ EVERYTHING IN METHODS MUST BE REPORTED
 - ◆ EASY
 - ◆ FIGURES AND TABLES
 - ◆ SELF-EXPLANATORY LEGENDS




WHAT ELSE?

- **DISCUSSION**
 - ◆ EXPLAIN MEANING OF RESULTS
 - ◆ COMPARE/CONTRAST OTHER STUDIES
 - ◆ STATE LIMITATIONS
 - ◆ BIAS
 - ◆ CONCLUSION



WHAT ELSE?

- ABSTRACT
- TITLE
- REFERENCES



QUESTIONS?
jlubowitz@kitcarson.net