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MASTERING
THE SYSTEMATIC REVIEW

DAY - 3

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“FROM PILES TO PRECISION: MASTER THE ART OF SYSTEMATIC SCREENING”

TODAY’S FOCUS

- WHAT IS STUDY SCREENING?
- INCLUSION AND EXCLUSION CRITERIA
- THE 2-STEP SCREENING PROCESS:
  - Step 1: Title & Abstract Screening
  - Step 2: Full-Text Screening
- PRISMA FLOWCHART
- AI TOOL: RAYYAN.AI
- ZOTERO ORGANIZATION TIPS
  - Tags, folders, and practical workflow.

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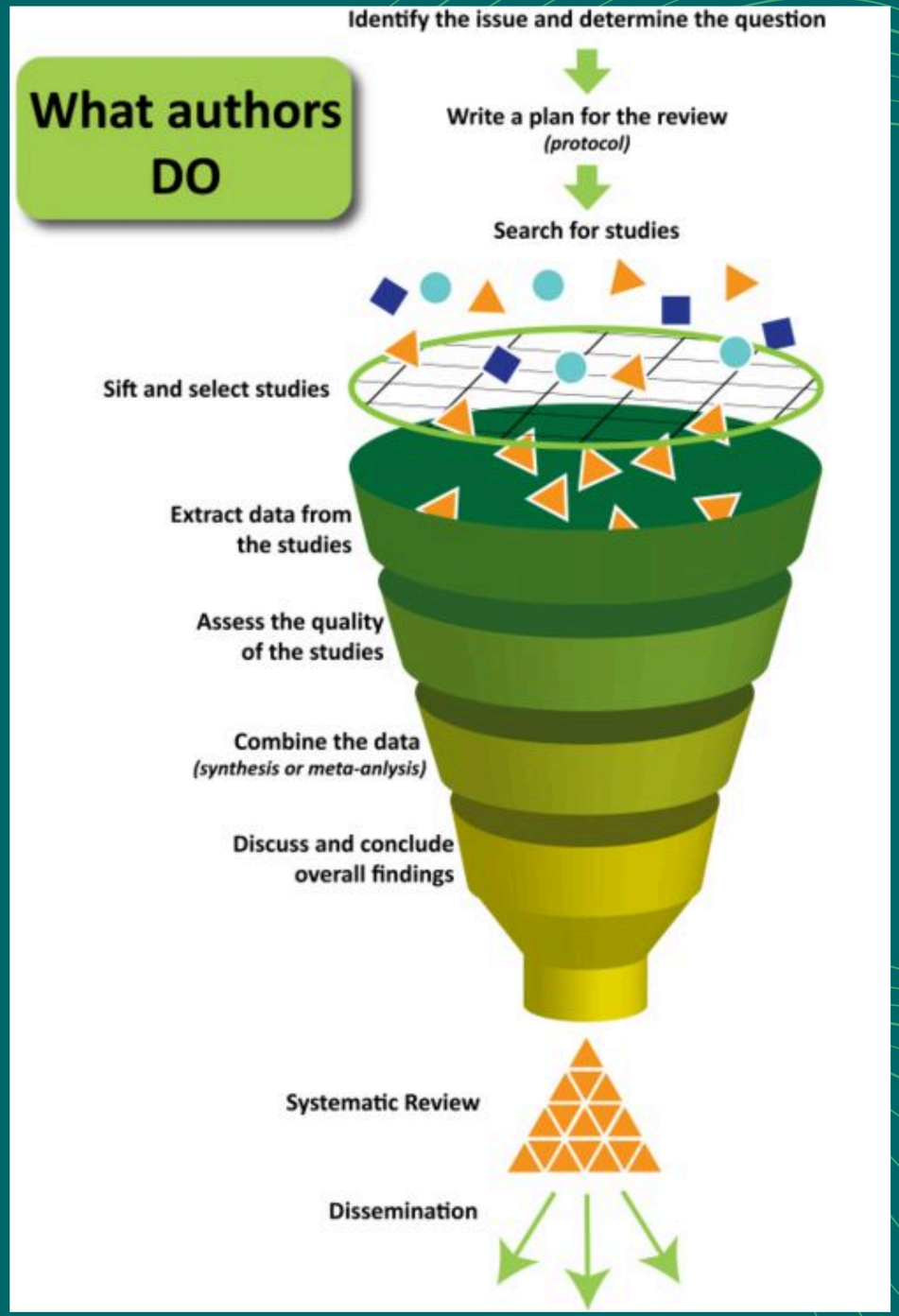

WHERE WE ARE RIGHT NOW IN OUR RESEARCH JOURNEY?

WHAT IS STUDY SCREENING?

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BY DEFINITION!!!

STUDY SCREENING IS LIKE SORTING THROUGH A BIG PILE OF INFORMATION (STUDIES) TO FIND ONLY THE ONES THAT TRULY FIT WHAT YOU'RE LOOKING FOR IN YOUR RESEARCH.

WE WANT TO MAKE AVOCADO TOAST!!

IMAGINE GOING TO GROCERY SHOPPING

1) YOUR AVOCADO TOAST RECIPE = YOUR RESEARCH QUESTION

(It tells you exactly what you're trying to make or find.)

2) YOUR SHOPPING LIST = INCLUSION CRITERIA

(It tells you what kind of studies you need: population, study type, outcome, etc.)

3) THE SUPERMARKET = ALL YOUR SEARCH RESULTS

(Lots of articles from databases—only some are relevant.)

4) SCREENING = PICKING ONLY WHAT YOU NEED FOR YOUR RECIPE

(You skip irrelevant items, just like you exclude studies that don’t match your criteria.)

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CRITERIAS TO CONSIDER WHILE SCREENING

INCLUSION

THESE ARE THE RULES FOR WHAT KIND OF STUDIES YOU WANT TO KEEP — THE STUDIES THAT ARE RELEVANT TO YOUR RESEARCH QUESTION.

EXCLUSION

THESE ARE THE RULES FOR WHAT KIND OF STUDIES YOU WILL REMOVE — THINGS THAT ARE NOT RELEVANT OR USEFUL FOR ANSWERING YOUR RESEARCH QUESTION.

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WHY THESE CRITERIAS ARE IMPORTANT?

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WHY THESE CRITERIAS ARE IMPORTANT?

THEY HELP YOU:

- STAY FOCUSED ON THE RIGHT KIND OF EVIDENCE
- AVOID BIAS
- BE TRANSPARENT AND REPRODUCIBLE
- MAKE SCREENING EASIER AND FASTER
- EXPLAIN YOUR CHOICES CLEARLY IN YOUR PRISMA DIAGRAM AND METHODS SECTION

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STEP- BY-STEP GUIDE TO SET I/E CRITERIA

STEP-1

START FROM YOUR RESEARCH QUESTION

IMPORTANT

STEP-2

BREAK DOWN THE PICO TO CREATE CRITERIA

STEP-3

WRITE THEM CLEARLY AND SIMPLY

STEP-4

USE A TEMPLATE

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TIPS- TO BE AN EXPERT AT SCREENIG

1. **ALWAYS REFER BACK TO THE RESEARCH QUESTION**
   if a study can't help answer it, exclude it.
2. **BE SPECIFIC**
   instead of saying "relevant studies," say "RCTs measuring cholesterol in adults."
3. **AVOID OVER-RESTRICTING**
   don't make criteria so narrow that you miss important studies.
4. **DISCUSS WITH YOUR TEAM**
   sometimes it's hard to decide alone
5. **UPDATE IF NEEDED**
   it's okay to refine your criteria during the review, just document it transparently.

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STEP- BY-STEP GUIDE TO SET I/E CRITERIA

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IMPORTANT

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EXAMPLE- FOR I/E CRITERIA

HOW DOES EXERCISE AFFECT CHOLESTEROL LEVELS IN ADULTS WHO QUIT SMOKING?

1) PICO ELEMENT- POPULATION
2) WHAT TO INCLUDE (INCLUSION)- ADULT (18+)
3) WHAT TO EXCLUDE (EXCLUSION)- CHILDREN, ANIMALS, PREGNANT WOMEN, SPECIFIC DISEASES IF NOT RELEVANT

EXAMPLE- FOR I/E CRITERIA

HOW DOES EXERCISE AFFECT CHOLESTEROL LEVELS IN ADULTS WHO QUIT SMOKING?

1) PICO ELEMENT- INTERVENTION
2) WHAT TO INCLUDE (INCLUSION)- ANY FORM OF EXERCISE
3) WHAT TO EXCLUDE (EXCLUSION)- DIET-ONLY STUDIES, NO INTERVENTION

EXAMPLE- FOR I/E CRITERIA

HOW DOES EXERCISE AFFECT CHOLESTEROL LEVELS IN ADULTS WHO QUIT SMOKING?

1) PICO ELEMENT- COMPARISON
2) WHAT TO INCLUDE (INCLUSION)- WITH OR WITHOUT A CONTROL GROUP.
3) WHAT TO EXCLUDE (EXCLUSION)- STUDIES THAT DON'T COMPARE OR DON'T MENTION EXERCISE AT ALL.

EXAMPLE- FOR I/E CRITERIA

HOW DOES EXERCISE AFFECT CHOLESTEROL LEVELS IN ADULTS WHO QUIT SMOKING?

1) PICO ELEMENT- OUTCOME
2) WHAT TO INCLUDE (INCLUSION)-STUDIES THAT MEASURE CHOLESTEROL
3) WHAT TO EXCLUDE (EXCLUSION)- STUDIES THAT TALK ONLY ABOUT WEIGHT, MOOD, OR UNRELATED OUTCOMES

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EXAMPLE- FOR I/E CRITERIA

HOW DOES EXERCISE AFFECT CHOLESTEROL LEVELS IN ADULTS WHO QUIT SMOKING?

1) PICO ELEMENT- STUDY DESIGN
2) WHAT TO INCLUDE (INCLUSION)- RCTS, COHORT STUDIES
3) WHAT TO EXCLUDE (EXCLUSION)- REVIEWS, EDITORIALS, CASE REPORTS

EXAMPLE- FOR I/E CRITERIA

HOW DOES EXERCISE AFFECT CHOLESTEROL LEVELS IN ADULTS WHO QUIT SMOKING?

1) PICO ELEMENT- LANGUAGE
2) WHAT TO INCLUDE (INCLUSION)- ENGLISH
3) WHAT TO EXCLUDE (EXCLUSION)- NON-ENGLISH (IF TEAM DOESN'T HAVE TRANSLATION ACCESS)

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EXAMPLE- FOR I/E CRITERIA

HOW DOES EXERCISE AFFECT CHOLESTEROL LEVELS IN ADULTS WHO QUIT SMOKING?

1) PICO ELEMENT- TIMEFRAME
2) WHAT TO INCLUDE (INCLUSION)- STUDIES PUBLISHED AFTER 2015
3) WHAT TO EXCLUDE (EXCLUSION)- OLD STUDIES (BEFORE 2015, IF OUTDATED METHODS USED)

THE 2-STEP SCREENING PROCESS (SIMPLE & SYSTEMATIC)

WHAT IS IT?

THIS IS THE PROCESS YOU FOLLOW TO GO THROUGH ALL THE STUDIES YOU FOUND IN YOUR SEARCH, AND DECIDE:

- WHICH ONES ARE WORTH KEEPING
- WHICH ONES SHOULD BE REMOVED

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YOU DO THIS IN- 2STEPS

TITLE & ABSTRACT SCREENING

FULL-TEXT SCREENING

TITLE & ABSTRACT SCREENING

WHAT TO DO:

- LOOK AT THE TITLE AND ABSTRACT ONLY
- DECIDE WHETHER IT LOOKS LIKE IT FITS YOUR INCLUSION CRITERIA
- MARK IT AS:
- ✅ INCLUDE
- ❌ EXCLUDE
- ❓ MAYBE (IF UNSURE)

"GLANCING AT A BOOK COVER AND BLURB TO DECIDE IF YOU WANT TO READ IT."

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WHAT YOU SHOULD FOCUS ON???

- **POPULATION**: WHO IS THE STUDY ABOUT?
- **INTERVENTION**: WHAT WAS DONE?
- **OUTCOME**: ARE THEY MEASURING SOMETHING RELATED TO YOUR QUESTION?
- **STUDY TYPE**: IS IT A STUDY TYPE YOU WANT?

QUICK DECISION: DON'T OVERTHINK HERE. JUST SCREEN FAST, BASED ON WHAT YOU CAN SEE.

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FULL- TEXT SCREENING

WHAT TO DO:

- OPEN THE ENTIRE ARTICLE
- CAREFULLY READ TO CHECK IF IT REALLY MATCHES YOUR INCLUSION CRITERIA
- MARK IT AS:
- ✅ INCLUDE
- ❌ EXCLUDE

FULL-TEXT SCREENING IS LIKE READING THE WHOLE CHAPTER TO SEE IF IT'S REALLY USEFUL FOR YOUR RESEARCH."

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WHAT YOU SHOULD CHECK ON???

- DOES THE FULL ARTICLE MATCH WHAT THE ABSTRACT SAID?
- IS THE STUDY POPULATION THE RIGHT ONE?
- ARE THE OUTCOMES CLEARLY REPORTED?
- IS THE METHODOLOGY APPROPRIATE (E.G., RCT, COHORT)?
- ARE RESULTS EXTRACTABLE FOR DATA ANALYSIS LATER?

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😰 COMMON BEGINNER REACTION

"THERE ARE 100+ FULL ARTICLES. HOW CAN I POSSIBLY READ ALL OF THEM? I DON'T HAVE TIME. I'M NOT EVEN SURE WHAT I'M LOOKING FOR!"

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REASSURE FIRST

- ✅ YOU DON’T NEED TO READ EVERY SINGLE WORD.
- ✅ YOU’RE NOT READING FOR FUN, YOU’RE READING FOR FIT.
- ✅ YOU’RE LOOKING FOR SIGNALS — NOT STORIES.

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"HOW TO READ FULL ARTICLES FOR SCREENING"

ACADEMIC READING.

TARGETED SCREENING

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6-STEP BEGINNER GUIDE TO FULL-TEXT SCREENING

STEP 1

START WITH YOUR INCLUSION/EXCLUSION CRITERIA

STEP 2

SCAN THE KEY SECTIONS ONLY

STEP 3

USE THE QUICK SCREENING CHECKLIST

STEP 4

SET A TIME LIMIT

STEP 5

TAG + RECORD IT

STEP 6

IF UNSURE → MARK AS "MAYBE"

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📝 6-STEP BEGINNER GUIDE TO FULL-TEXT SCREENING

STEP 1

🏁START WITH YOUR INCLUSION/EXCLUSION CRITERIA

HAVE YOUR LIST NEXT TO YOU!
YOU ARE ONLY LOOKING FOR THOSE SPECIFIC THINGS.

- ✅ AGE GROUP?
- ✅ TYPE OF STUDY?
- ✅ INTERVENTION USED?
- ✅ WAS CHOLESTEROL MEASURED?

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6-STEP BEGINNER GUIDE TO FULL-TEXT SCREENING

STEP 2

SCAN THE KEY SECTIONS ONLY

SECTION	WHY IT'S IMPORTANT
TITLE + ABSTRACT (AGAIN)	QUICK REMINDER WHAT IT'S ABOUT
METHODS	CHECK POPULATION, INTERVENTION, STUDY TYPE
RESULTS	CHECK IF OUTCOMES (E.G., CHOLESTEROL) ARE REPORTED
CONCLUSION	CONFIRMS IF THE STUDY MATCHES YOUR GOAL

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6-STEP BEGINNER GUIDE TO FULL-TEXT SCREENING

STEP 3

USE THE QUICK SCREENING CHECKLIST

CHECK		WHAT TO LOOK FOR?
POPULATION	→	ADULTS? SMOKERS? SPECIFIC DISEASE?
INTERVENTION	→	EXERCISE? DIET? SOMETHING ELSE?
OUTCOME	→	CHOLESTEROL MEASURED? HOW?
STUDY DDESIGN	→	RCT, COHORT? NOT A REVIEW OR OPINION?
LANGUAGE	→	ENGLISH?
DATE	→	PUBLISHED WITHIN YOUR TIMELINE?

6-STEP BEGINNER GUIDE TO FULL-TEXT SCREENING

STEP 4

SET A TIME LIMIT

"DON'T SPEND MORE THAN 5–7 MINUTES PER PAPER DURING SCREENING."

USE A TIMER.

IT'S NOT DEEP ANALYSIS — THAT COMES LATER (DURING CRITICAL APPRAISAL).

6-STEP BEGINNER GUIDE TO FULL-TEXT SCREENING

STEP 5

TAG + RECORD IT

USE

- ✅ ZOTERO: TAG AS “INCLUDE”, “EXCLUDE”, “MAYBE”
- ✅ RAYYAN: TAG & COMMENT REASON FOR EXCLUSION

zotero

rayyan

6-STEP BEGINNER GUIDE TO FULL-TEXT SCREENING

STEP 6

💬 IF UNSURE → MARK AS "MAYBE"

DON’T PANIC. IF YOU’RE NOT SURE, JUST MOVE ON AND REVISIT LATER OR ASK A MENTOR.

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BONUS: TOOLS TO SPEED IT UP

AI TOOLS TO ASSIST — BUT NOT REPLACE YOU:

ChatDOC

rayyan

ChatPDF

zotero

👉 UPLOAD PDF → GET SUMMARY OF METHODS, RESULTS, AND OUTCOMES FAST.

✅ USE AI TO SAVE TIME

❌ DON'T RELY ON IT BLINDLY — ALWAYS VERIFY WITH YOUR OWN EYES!

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PRISMA FLOWCHART

WHAT IS THE PRISMA FLOWCHART?

"PRISMA IS YOUR STUDY SELECTION TRACKER — IT SHOWS HOW MANY STUDIES YOU FOUND, REMOVED, AND FINALLY INCLUDED."

🧭 IT HELPS YOU:

- STAY TRANSPARENT
- SHOW OTHERS HOW YOU SELECTED YOUR STUDIES
- AVOID BIAS OR CONFUSION

🧾 IT'S REQUIRED IN ALL SYSTEMATIC REVIEWS TO DOCUMENT YOUR PROCESS CLEARLY AND ETHICALLY.

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🎓 EXPLAIN IT TO BEGINNERS (WITH ANALOGY)

IMAGINE YOU GO SHOPPING WITH A GROCERY LIST. YOU BRING HOME 150 ITEMS. YOU REALIZE:

- 20 WERE DUPLICATES
- 90 WERE SNACKS YOU DIDN'T NEED
- YOU ONLY NEEDED 12 INGREDIENTS FOR YOUR RECIPE

THAT'S EXACTLY WHAT PRISMA TRACKS — WHAT YOU STARTED WITH, WHAT YOU REMOVED, AND WHAT YOU ACTUALLY KEPT.

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THE 4 MAIN STAGES OF THE PRISMA FLOWCHART

PRISMA STAGE	WHAT TO RECORD	SIMPLE EXPLANATION
IDENTIFICATION	HOW MANY TOTAL ARTICLES YOU FOUND + DUPLICATES	"HOW MUCH STUFF DID I COLLECT FROM ALL SOURCES?"
SCREENING	TITLE & ABSTRACT SCREENING – HOW MANY WERE EXCLUDED	"HOW MANY LOOKED WRONG AT FIRST GLANCE?"
ELIGIBLITY	FULL-TEXT SCREENING – HOW MANY WERE REMOVED HERE	"HOW MANY LOOKED GOOD AT FIRST, BUT DIDN'T FIT WHEN I READ THEM?"
INCLUDED	FINAL STUDIES THAT MATCHED ALL CRITERIA	"THESE ARE THE PERFECT MATCH — I'M KEEPING THEM!"

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EXAMPLE- FOR PRISMA FLOWCHART

🔍 YOUR SEARCH RESULT:
YOU SEARCHED PUBMED, SCOPUS, AND GOOGLE SCHOLAR.

PRISMA STAGE	SIMPLE EXPLANATION
IDENTIFICATION	FOUND 150 ARTICLES
DUPLICATES REMOVED	20 WERE REPEATED = 130 LEFT
TITLE/ABSTRACT SCREENING	90 DIDN'T MATCH YOUR TOPIC = 40 LEFT
FULL TEXT SCREENING	28 WERE NOT RELEVANT OR DIDN'T MEET CRITERIA = 12 FINAL STUDIES
FULL TEXT SCREENING	🎉 YOU KEPT 12 STUDIES FOR YOUR REVIEW

IN SUMMARY

"THE PRISMA FLOWCHART IS LIKE THE STORY OF YOUR SELECTION JOURNEY. IT SHOWS HOW YOU WENT FROM CHAOS TO CLARITY — AND PROVES YOUR REVIEW IS CLEAN, TRANSPARENT, AND HIGH QUALITY."

AI TOOL: RAYYAN.AI — YOUR SCREENING ASSISTANT

"RAYYAN IS LIKE HAVING A SMART ASSISTANT FOR SCREENING." rayyan

- UPLOAD ALL YOUR SEARCH RESULTS
- TAG THEM AS INCLUDE, EXCLUDE, OR MAYBE
- WORK TOGETHER WITH YOUR TEAMMATES (WITHOUT INFLUENCING EACH OTHER'S JUDGMENT)

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🛠️ WHAT CAN RAYYAN DO?

FEATURE	WHAT IT MEANS
🔍 AI SUGGESTIONS	RAYYAN SUGGESTS WHETHER TO INCLUDE OR EXCLUDE A STUDY (BASED ON YOUR TAGGING PATTERNS)
🏷️ TAGGING SYSTEM	YOU DECIDE: INCLUDE, EXCLUDE, OR MAYBE
🕶️ BLINDING	YOU WON'T SEE WHAT OTHERS ON YOUR TEAM MARKED UNTIL YOU'RE READY (PREVENTS BIAS)
💬 NOTES/REASONS	YOU CAN ADD REASONS FOR INCLUSION/EXCLUSION (GREAT FOR TRANSPARENCY)
🧠 FILTERS	FILTER PAPERS BY TAGS, AUTHORS, KEYWORDS, ETC.

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BEGINNER ANALOGY

“IT’S LIKE SWIPING LEFT OR RIGHT ON TINDER — BUT FOR RESEARCH PAPERS!”

YOU’RE JUST QUICKLY SAYING: “YES, NO, OR MAYBE” — AND THE TOOL HELPS ORGANIZE EVERYTHING.

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Thank you for having you guys!!!

SEE YOU AT WORKSHOP!!!