



AI in Learning Series:

Study Strategies with NotebookLM

Part I – Principles of Productive AI Use

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Quick Poll: Have you used AI to help study this week?

Have you tried AI for studying?

Summarizing lectures? Creating practice questions? Explaining difficult concepts?

Was it helpful?

Did it enhance your understanding? Save time? Create confusion?

Which tools have you used?

ChatGPT? NotebookLM?
Course-specific AI assistants?
Other platforms?

Share your experience

What worked well? What didn't?
Any surprising discoveries? How much did it hallucinate or make mistakes?





Principle #1: Focus on Foundations, Not Tools

AI is evolving far too fast to master every tool. Focus first on effective learning strategies. Talk with others and follow quality channels and school recommendations for effective apps.

Prioritize Core Learning Strategies:

Focus on strategies like active recall, spaced repetition, and metacognition—these principles remain effective regardless of which AI tools or platforms are trending.

Use AI as a Means, Not the Goal:

Evaluate each tool (like NotebookLM, ChatGPT, Anki, etc.) by how well it supports your learning objectives, not by its novelty or feature set.



Principle #2: Distinct Needs, Distinct Uses – Professionals vs. Students

Professionals use AI for...

- Streamlining tasks
- Achieving performance goals

Students use AI for...

- Active practice
- Achieving learning goals

Watch Out

In some cases, when students use AI the same way professionals do, it can short-circuit the learning process and lead to shallow understanding or poor long-term outcomes.

Principle #3: Don't Skip the Struggle

Learning with AI Is Like Triathlon Training



Goal: Get There Faster?

Using power-boost shoes could help you reach the finish line faster, but it won't make you a stronger or better runner — and they're not allowed in triathlons.



Goal: Build Endurance?

Requires consistent effort and structured practice to build the endurance, strength, and technique needed to compete effectively.

- ❑ Effective learners balance productive struggle with **intentional AI support**. In learning — as in training — *the hard parts are often the point*.



Principle #4: Match AI Use to Your Learning Goals

Ask First

What is my learning goal?

Support Not Replace

Use AI only where it *supports* the goal, not where it replaces key learning tasks.

Example

Goal: Reinforcing concepts from a large amount of study material.

Use AI: For actively learning the content (e.g., create quizzes to test your knowledge).

Avoid AI: For answering questions and helping you memorize answers to questions about the content you loaded.





Key Takeaways

1 Focus on Foundations, Not Tools

Build core knowledge and skills rather than chasing every new AI platform.

2 Distinct Needs, Distinct Uses

Professionals optimize for performance while students should prioritize learning outcomes.

3 Don't Skip the Struggle

Like triathlon training, effective learning requires productive struggle to build cognitive strength.

4 Match AI Use to Learning Goals

Ask what your goal is first, then use AI only where it supports rather than replaces key learning.



Discussion Checkpoint: Reflect and Apply

Reflect

What's one way you've used AI recently in your studies?

Evaluate

Did it help you learn or just work faster?

Share

What strategies worked best?



AI in Learning Series: **Study Strategies with NotebookLM**

Part II – Applying What You've Learned

Meet NotebookLM – A Powerful Study Companion



Upload and Organize Sources

Import lectures, articles, and textbooks; keep your notes structured and accessible.



Summarize Content and Create Study Guides, Podcasts, FAQs, Mindmaps and more.

Generate concise summaries and audio content to reinforce learning.



Produce Quizzes and Ask Questions

Test your knowledge with auto-generated quizzes and organize your [spaced repetition](#) and [interleaving](#) efforts.

NotebookLM Video Guide

Step-by-Step Guide





Example Use: Generate Anki Flashcards

Transform Content

Convert dense lectures into high-yield flashcards using specialized prompts.

Create Cloze Deletions

Generate fill-in-the-blank cards for pathways and anatomical relationships.

Export to Anki

Save as CSV files for direct import, creating cards 10x faster.

Example prompt:

Create a deck of flashcards from the following text. The questions should be specific and the answers should be concise. Format the output as 'Question:\nAnswer:\n'



Example Use: Self-Quizzing with AI Feedback

Custom Questions

Generate practice tests focused on your specific needs.

- Board-style clinical vignettes
- System-specific reviews

Detailed Explanations

Receive comprehensive feedback on every answer.

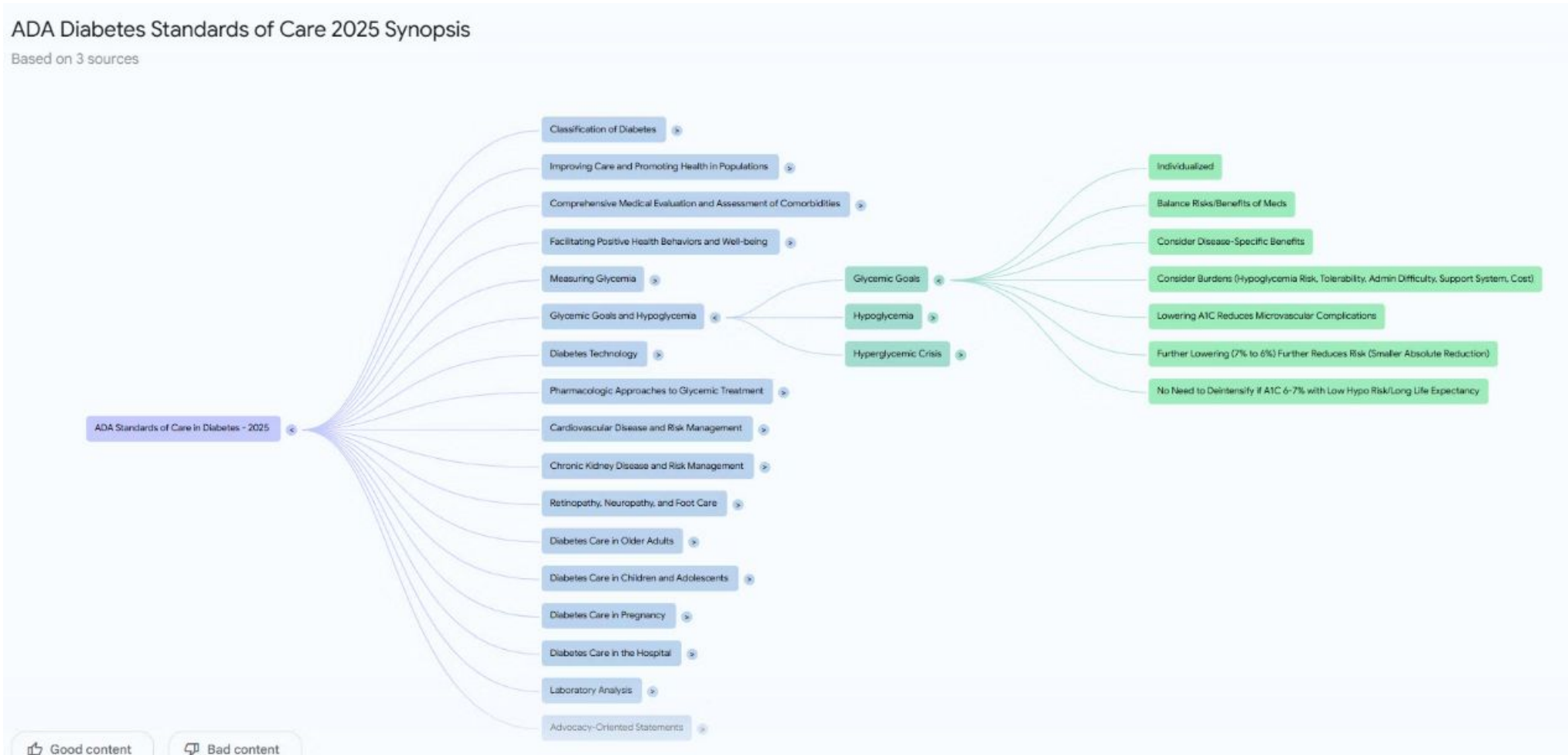
- Pathophysiology connections
- Clinical correlations

Gap Analysis

Track weak areas for targeted review sessions.

- Performance metrics
- Improvement suggestions

Example Use: Building Concept Maps & Pathways



Visualize Relationships

Connect related medical concepts into meaningful structures.



Export Visuals

Save maps for comprehensive exam preparation.



Create Hierarchies

Organize pathophysiology concepts from general to specific.

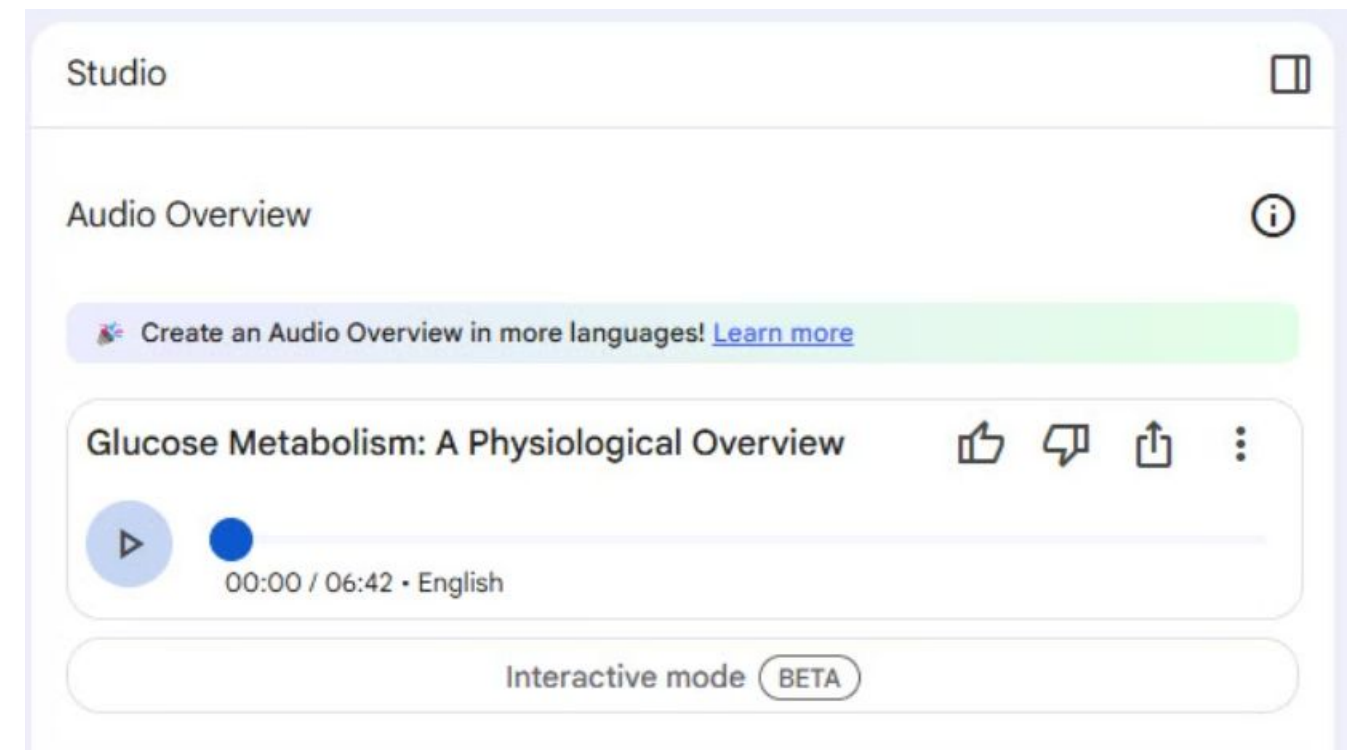


Link Presentations

Connect symptoms to underlying disease mechanisms.

Create a Podcast

- Review difficult material in a unique way.
- Keep topics very narrow.
- Better for review than initial learning.
- Review on the go.



5 Advanced NotebookLM Study Techniques



Socratic Questioning Practice

Ask NotebookLM to quiz you using Socratic questioning (e.g., “Ask me about this mechanism using Socratic questioning.”).



Teach-Back Summaries

After studying a topic, write your own summary, upload it, and ask NotebookLM to act as a “junior student” and challenge your explanation.



Gap Identification

Upload appropriate source material and ask NotebookLM what concepts might be missing or underexplained based on the uploaded source.



Active Recall Generator

Generate open-ended questions rather than multiple choice and then request feedback on your answers. Strengthens deeper retrieval practice versus passive recognition.



Step-by-Step Mechanism Checks

Walk through a biochemical or physiological pathway, and ask NotebookLM to point out where your logic might break down based on your notes.



Quick Poll: Share one idea you have about using NotebookLM in your current study workflow.

**How are you using
NotebookLM?**



Guidelines for MSU Students Using Generative AI

- 1  **Check Before You Use**
 - Review your syllabus and assignment rules.
 - Ask your instructor or supervisor if unsure — before deadlines.
- 2  **Use AI Ethically & Transparently**
 - Maintain academic and research integrity.
 - Cite AI sources when used.
 - Your work = your responsibility.
- 3  **Protect Your Privacy**
 - Don't share personal info or login credentials.
 - Use trusted platforms and follow MSU data guidelines.
- 4  **Understand AI's Limits**
 - AI can produce inaccurate, biased, or misleading content.
 - Treat AI as a tool to support learning — not replace it.

 **Be sure to check the [MSU Generative Artificial Intelligence \(AI\) Reminders and Guidance for Students](#) page for more information and details on these guidelines before uploading anything into an AI driven system.**