

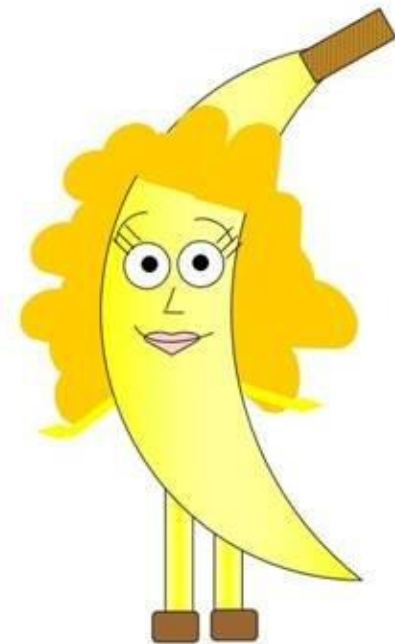
# PRACTICAL PROMPTING FOR CLINICAL & CLASSROOM INSTRUCTION

*Center for Faculty  
Excellence*

*University of North  
Carolina at Chapel  
Hill*

# DANA RIGER, PH.D.

- Clinical Associate Professor of HDFS
- CFE Faculty Fellow for GenAI



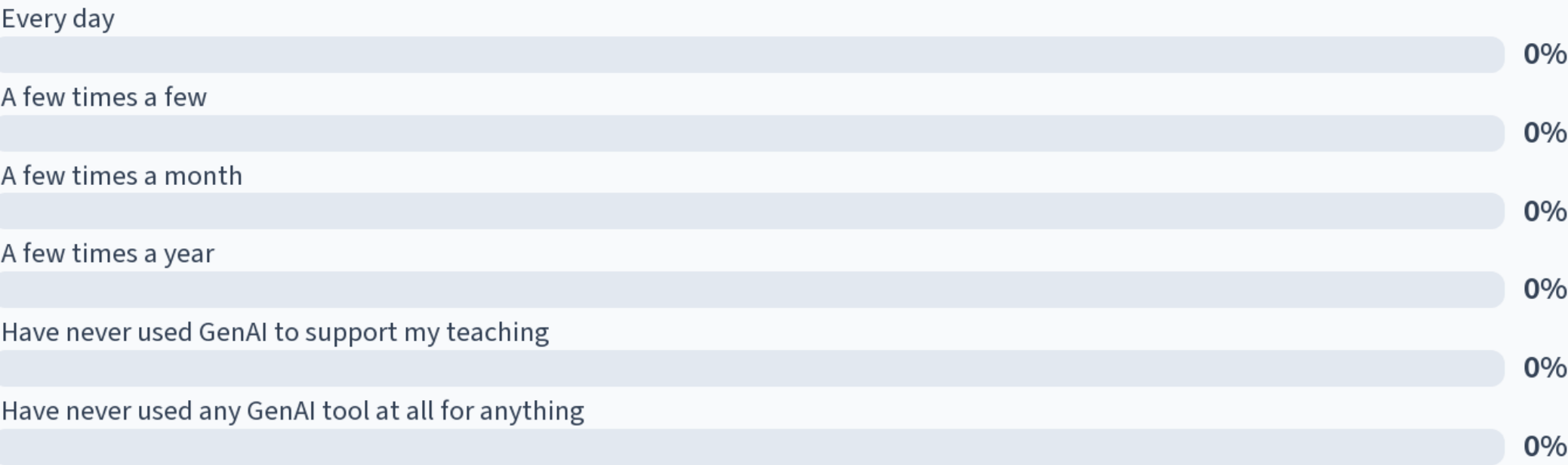
**Dana Banana**

# OBJECTIVES

- ❑ Effectively prompt AI to generate high-quality teaching materials
- ❑ Transform existing educational content into active-learning activities
- ❑ Apply AI tools to answer clinical or educational questions responsibly

# How often are you using GenAI tools to support your teaching?

0



What challenges have you encountered when trying to use GenAI to support your teaching?

 0

Nobody has responded yet.

Hang tight! Responses are coming in.

# GENAI TOOLS

- Diverse datasets, safety alignment strategies, and design philosophies **can produce very different outputs** across tools, making it important to adapt prompting styles to each model's strengths, limitations, and failure modes
- Multimodal tools: [ChatGPT](#), [Claude](#), [Gemini](#), [UNC Microsoft Copilot](#)

Give me academic articles to support the claim that "Preventable diseases are the fault of the individual, not the healthcare system"



Copilot

Here are  
diseases

1. Effectiveness of  
Reciprocity  
patient  
man
2. Medical  
Ethics  
prevention  
main
3. Taking  
hold  
prevention

These are  
between  
specific

## Academic Articles Supporting Individual Responsibility for Preventable Diseases

The claim that preventable diseases (e.g., many chronic conditions like type 2 diabetes, heart disease, and certain cancers) stem primarily from individual behaviors rather than systemic healthcare failures is a topic of ongoing ethical and public health debate. While many sources emphasize multifaceted causes—including social determinants and systemic barriers—several scholarly works argue or provide evidence that personal choices (e.g., diet, exercise, smoking) play a dominant role in disease prevention, and that individuals bear significant responsibility for adopting modifiable behaviors to avoid burdening healthcare systems. Below, I highlight key academic articles that support this perspective, focusing on those that stress personal agency, ethical duties, or empirical links between individual actions and reduced disease risk. I've included summaries, relevant quotes, and access links where available.

### 1. Personal Responsibility for Health? A Review of the Arguments and the Evidence at Century's End

- **Authors:** David Mechanic
- **Publication:** Health Education & Behavior (1999)
- **Summary:** This review synthesizes historical and empirical evidence showing that personal behaviors, such as smoking cessation and physical activity, are primary drivers of preventable chronic diseases. It argues for balanced ecological approaches but underscores individual accountability as foundational, warning against over-relying on systemic fixes when behaviors are controllable.
- **Supporting Quote:** "The paper then makes the case for more balanced, ecological approaches that stress *individual responsibility for health within the context of broader social responsibility*."
- **Access:** [PubMed](#)

### 2. Personal Responsibility and Lifestyle Diseases

- **Authors:** Klemens Kappel and Caspar Paludan
- **Publication:** Journal of Medical Ethics (2016)
- **Summary:** The article examines philosophical frameworks for holding individuals accountable for

Model	Design Philosophy	Data Sources	Guardrails	Stance
Claude	Constitutional AI: moral alignment, harm prevention, cooperative reasoning	Mix of web data, curated data, RLHF, “Constitution” of ethical principles	Hard-coded refusals for anything that risks harm, bias, or pseudoscience	<b>Ethics-first:</b> prioritizes social safety and moral correctness over completeness
Copilot	Productivity and retrieval: integrate AI reasoning with web search and Microsoft Graph data	Live Bing search results, academic indexes, public web, and enterprise content	Content filters for hate, violence, sexual, misinformation	<b>Search-literal:</b> retrieves and summarizes what matches the query, even if low-quality or speculative
Gemini	Knowledge synthesis emphasizing accuracy, consensus, and scientific literacy	Google Scholar, licensed academic data, web text, YouTube transcripts, code, multimodal datasets	Filters prioritize scientific consensus and factual accuracy	<b>Consensus-moderation:</b> acknowledges complexity, emphasizes mainstream scientific position
ChatGPT	Contextual reasoning, transparency, and balanced critical analysis	Broad web text, books, academic sources, code, multimodal datasets; tuned via RLHF and domain feedback	Safety filters + “constitutional” reinforcement learning; allows qualified discussion of sensitive topics	<b>Evidence-based synthesis:</b> analyzes multiple interpretations, cites peer-reviewed work, clarifies misuse risks
Grok	Assistant with fewer restrictions, real-time web integration, witty tone	Mix of web data, real-time social media (via X )+ standard LLM corpora	Promoted as less restricted; controversies about harmful outputs exist	<b>Open-but-edgy:</b> more willing to answer controversial queries; less emphasis on safety/filtering



# PROMPTING STRATEGIES

- More **structured prompting** (audience, purpose, constraint) for tools with stricter safety filters reduces unnecessary safety refusals
  - *For an undergraduate human sexuality course, create a quiz question assessing students' understanding of normative childhood sexual development, specifically how young children may engage in genital touching as a form of self-soothing. The question must use educational, developmentally accurate language.*
- More **directive prompting** (explicit requests, specificity, etc.) for tools that default to vagueness force the model into precision
  - *Explain 3 **specific neural mechanisms** by which chronic stress affects memory. Name each, describe how it works, and indicate whether evidence comes from meta-analyses, observational studies, or expert consensus.*
- More **open-ended prompting** for tools designed for creative optimization let the model vary in style, format, and tone
  - *Generate five conceptually different metaphors that explain neuroplasticity, ranging from poetic to humorous to scientific. Each metaphor should feel like it comes from a different genre or creative tradition.*
- More **iterative prompting** (breaking the task into steps allows correction between stages) compensates for the tool's weaker precision

# AI PROMPTING OR “PROMPT ENGINEERING”

- Providing instructions, questions, or context to guide AI toward generating a specific output
- Effective prompts are clear, specific, and detailed: state the task, provide context, define the output format, give examples, ask AI to take on personas:
  - **Vague:** Give me a few discussion questions for grand rounds on heart failure
  - **Clear:** Act as a cardiology attending preparing for grand rounds on systolic heart failure. Generate 5 discussion questions that will engage PGY-1 internal medicine residents. Each question should focus on clinical reasoning or management decisions and include a brief rationale for why it's important. For example: 'What is the role of beta-blockers in HFrEF management, and why do they improve survival?'

## Give me a few discussion questions for grand rounds on heart failure

Here are **grand-rounds–level discussion questions on heart failure** that invite nuance, current evidence, and clinical reasoning.

### 1. Pathophysiology & Diagnosis

- How should clinicians distinguish between symptoms driven primarily by congestion versus impaired forward flow, and how does this distinction meaningfully change management priorities in acute decompensated heart failure?
- Given the rising recognition of HFpEF as a systemic syndrome of multi-organ dysfunction, what diagnostic criteria or biomarkers (e.g., natriuretic peptides, echocardiographic parameters, comorbidity profiles) should *actually* define HFpEF in clinical practice today?

### 2. Advanced Therapies & Threshold Decisions

- What are the most ethically and clinically relevant decision points for referring a patient for LVAD evaluation, particularly when quality-of-life markers and physiologic indicators do not align?
- How should clinicians weigh age, frailty, psychosocial stability, and caregiver support in determining candidacy for advanced therapies, given increasing evidence that these factors may predict outcomes more strongly than ejection fraction alone?

### 3. Pharmacologic Management

- In HFrEF, quadruple therapy is now standard—ARNI, beta-blocker, MRA, and SGLT2 inhibitor. What are the biggest barriers to *actual* implementation in real-world practice, and which strategies have the best evidence for overcoming inertia?
- How should clinicians balance aggressive initiation/titration of guideline-directed medical therapy (GDMT) with patient-specific risks such as hypotension, renal impairment, or polypharmacy?

### 4. Social Determinants & Equity

- How do housing instability, food insecurity, and medication access meaningfully shape hospitalization risk and adherence in heart failure, and what models of care (e.g., CHW interventions, remote monitoring, multidisciplinary clinics) show the strongest evidence for reducing disparities?
- What are the unintended equity consequences of relying on guideline-driven algorithms (e.g., for ICD implantation or prognostication tools like Seattle Heart Failure Model) that were validated in predominantly white, insured populations?

### 5. Prognostication & Communication

- What are the most reliable clinical indicators of transition into end-stage heart failure, and how should clinicians discuss prognosis when models and biomarkers vary widely in predictive performance?
- How do teams navigate conversations about de-escalation, hospice, or code status when heart failure has a fluctuating trajectory with intermittent recovery? What communication frameworks help clinicians avoid premature pessimism or unrealistic optimism?

### 6. Care Models & Technology

- What is the current evidence on remote hemodynamic monitoring (e.g., CardioMEMS), telehealth follow-up, and AI-driven risk prediction, and where are these tools most likely to improve outcomes rather than contribute noise?
- As we see an increase in HF hospitalizations driven by obesity, diabetes, and HFpEF, how should care delivery evolve to manage heart failure as a chronic metabolic disease rather than a primarily cardiocentric problem?

**Act as a cardiology attending preparing for grand rounds on systolic heart failure. Generate 5 discussion questions that will engage PGY-1 internal medicine residents. Each question should focus on clinical reasoning or management decisions, and include a brief rationale for why it's important. For example: 'What is the role of beta-blockers in HFrEF management, and why do they improve survival?'**

Here are **five attending-level discussion questions** designed specifically to engage **PGY-1 internal medicine residents** with clinical reasoning and real-world management considerations in **systolic heart failure (HFrEF)**. Each includes a concise rationale to guide teaching.

1. **"When a patient presents with acute decompensated HFrEF, how do you decide whether to start, hold, or continue beta-blockers during hospitalization?"** Rationale: Residents often struggle with when beta-blockade is helpful versus harmful in the acute setting. Understanding hemodynamics (shock, bradycardia, volume overload) helps residents manage transitions of care safely and avoid reflexively discontinuing life-prolonging therapy.
2. **"A patient with new HFrEF (EF 25%) is hemodynamically stable. In what order should you initiate guideline-directed therapy (ARNI/ACEi, beta blocker, MRA, and SGLT2 inhibitor), and why?"** Rationale: Early PGY-1 learners frequently default to outdated stepwise treatment. This question reinforces that contemporary data support rapid, parallel initiation and helps them reason through contraindications, expected side effects, and monitoring strategies.
3. **"A patient with HFrEF and worsening renal function returns to clinic: how do you decide whether to adjust diuretics, RAAS inhibitors, or both?"** Rationale: Residents must learn to distinguish pre-renal azotemia from true RAAS-inhibitor-related kidney injury, and how to titrate diuretics safely. This is a core skill in ambulatory HF management and prevents unnecessary withdrawal of mortality-reducing therapies.
4. **"Your patient's blood pressure is 92/58 on triple therapy. How do you determine whether to tolerate this BP or modify medications?"** Rationale: HFrEF care requires understanding permissive hypotension, prioritizing therapies with mortality benefit, and recognizing symptoms that matter more than numbers. This question strengthens reasoning around optimizing GDMT in real life.
5. **"A 55-year-old with HFrEF asks whether they need an ICD. What factors guide your decision to refer for device therapy?"** Rationale: Residents often know ICDs reduce sudden cardiac death but may not know timing ( $\geq 3$  months on optimized GDMT), EF thresholds, functional class, competing risks, or how non-ischemic vs. ischemic disease influences decisions. This builds comfort with longitudinal management and patient counseling.

# PROMPTING TIPS

- Update your memory settings and systems-level instructions to improve prompting efficiency



General



Notifications



Personalization



Apps &amp; Connectors



Schedules



Orders



Data controls



Security



Parental controls



Account

## Personalization

### Base style and tone

Default

Set the style and tone of how ChatGPT responds to you. This doesn't impact ChatGPT's capabilities.

### Custom instructions

When making any empirical claim, clearly state the type of evidence that supports it without inventing or fabricating specific citations, authors, or journals. If a claim lacks strong empirical support, label it explicitly as speculative, theoretical, or based on expert opinion. Do not imply a level of evidence that doesn't exist. Keep all responses concise, accurate, and free of filler.

## About you

### Nickname

What should ChatGPT call you?

Cancel

Save

## Saved memories



ChatGPT remembers and automatically manages useful information from chats, making responses more relevant and personal. [Learn more](#)

 Search memories



Prefers that all test or quiz questions generated be interesting and rigorous, with all incorrect answer choices being somewhat plausible. Questions should not make the correct answer obvious, and someone without content expertise should not be able to easily guess the right answer.

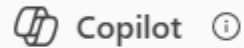
Wants the assistant to always check citations for accuracy before providing them and avoid hallucinating or making up citations.

Danna prefers that I do not ask if she needs anything else; she will let me know if she wants something. She has explicitly asked that this preference be remembered.

Danna prefers that I do not say 'you're welcome' unless she explicitly says 'thank you' first.

Danna prefers that I do not ask if she needs anything else; she will let me know if she wants something.

Give me a record of the articles I've asked you to remember for  
EDUC 375 and EDUC 181



Here's the record of the articles you asked me to remember:

### EDUC 375 Articles

1. **Brink (2020)** – *Psychology of Kink: A Survey Study into the Relationships of Trauma and Attachment Style with BDSM Interests*
2. **Al-Faham et al.** – *Intersectionality: From Theory to Practice*
3. **Whittle & Butler** – *Sexuality in the Lives of People with Intellectual Disabilities*

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### EDUC 181 Articles

1. **Papero et al. (2018)** – *Natural Systems Thinking and the Human Family*
2. **Colegrove** – *Working with Diverse Families*
3. **Jurgen Herbst** – *The Yale Report of 1828*

Would you like me to **export this list into a formatted document (Word, PDF, or Markdown)** for easy reference? Or keep it as a quick-access note for future conversations?



# REFLECT

- Reflect on a recent teaching task or challenge you've used AI for:
  - What output did you actually want?
  - Where did the tool fall short?
  - What system or memory instructions could prevent that mismatch in the future?

# PROMPTING PATTERNS

- **Role + Audience + Task:** *Act as a cardiology attending teaching PGY-1 residents. Create a 5-minute teaching script on the JVP exam.*
- **Format Transformation:** *Convert these lecture bullets into a brief teaching module with objectives, a short explanation, 3 discussion questions, and 1 short case example.*
- **Progressive Refinement:** *Make this shorter. Add clinical pearls. Rephrase at an MS2 level.*
- **Feeding It Material:** *Here is my slide/report/paper. Rewrite it as a microlearning module and create 5 discussion questions based on the content.*

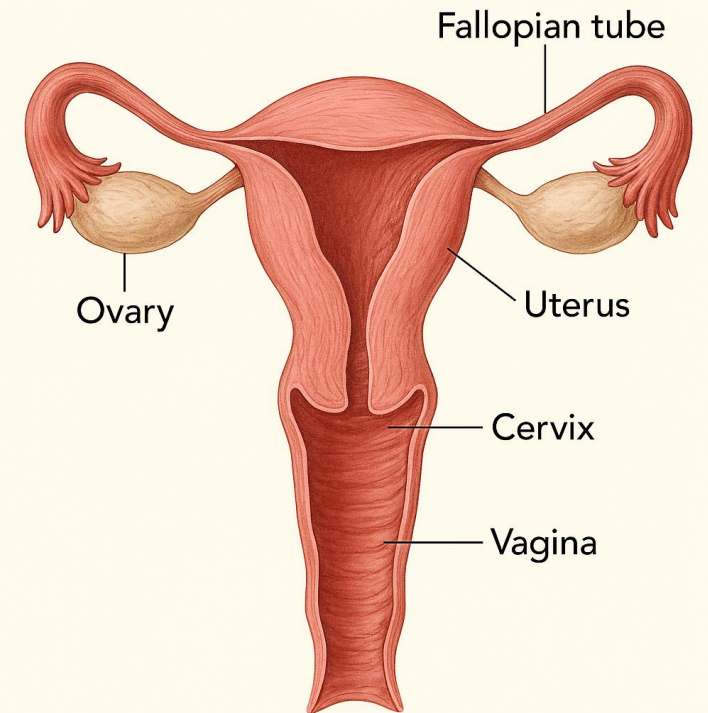
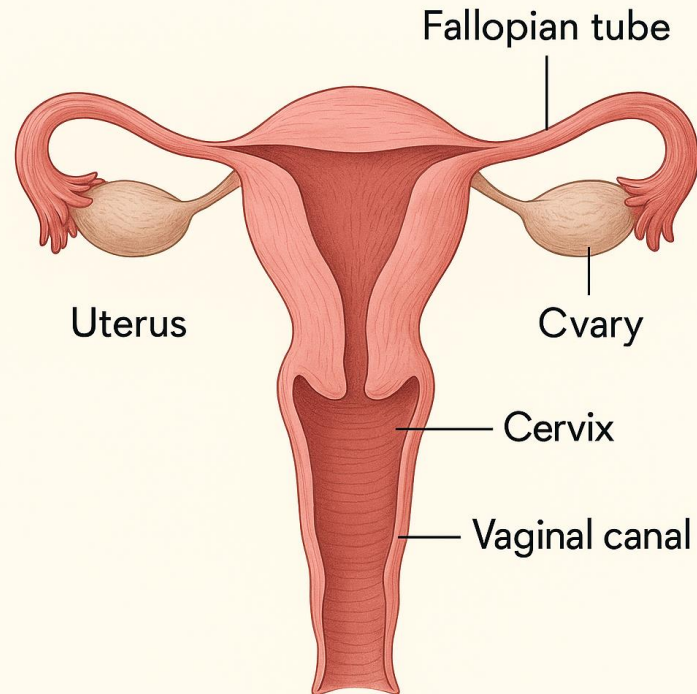
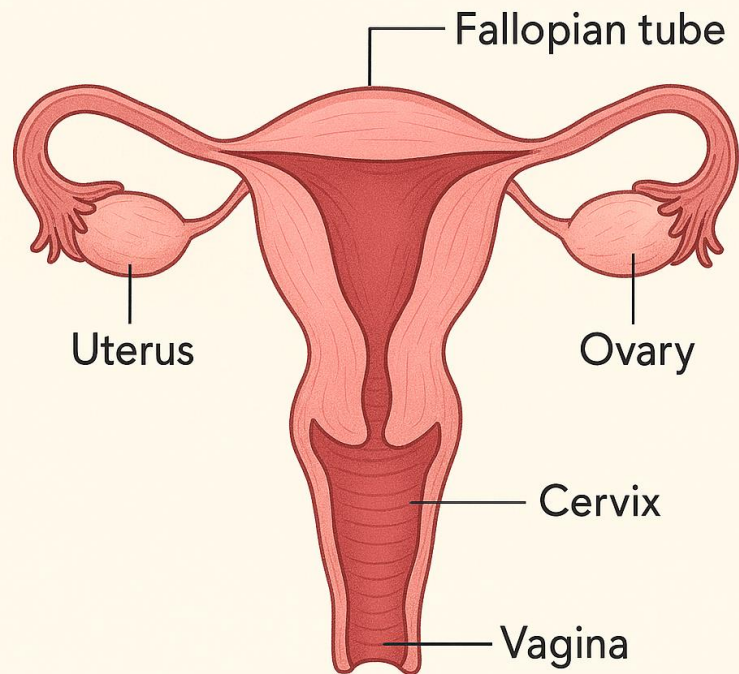
# CASE STUDIES

- **Case Generation:** *Generate a focused case on acute abdominal pain for fellows. Include HPI, PMH, meds, exam, and branching questions.*
- **Case Variation:** *Give me 3 variants: mild, moderate, severe. Each should shift the teaching point.*
- **Active Learning:** *Turn this case into a small-group activity with progressive disclosure.*
- **Assessment Questions:** *Write 3 questions I could ask residents at the bedside to assess clinical reasoning.*
- **Images:** *Generate a simple teaching diagram illustrating the difference between upper and lower motor neuron lesions.*

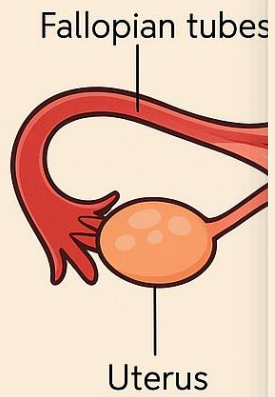
# IMAGE GENERATORS

- Multimodal tools use a variety of image generators: Midjourney, DALL-E, Stable Diffusion, [Nano Banana](#), *Mermaid syntax* (for diagrams, in Claude)
  - [Adobe Creative Cloud](#) (accessible to UNC faculty, staff and students)
  - Text-to-image, text-to-video, generative editing, etc. (Firefly, Photoshop, Premier)
  - Diagrams, short animations, infographics

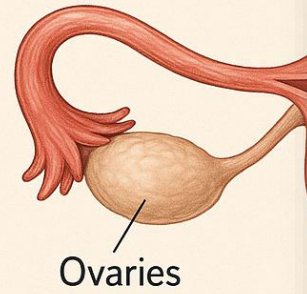
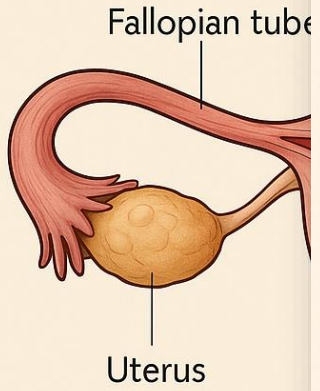
"Regenerate the image so that it depicts the uterus, fallopian tubes, ovaries, cervix, and vagina with realistic tissue colors and textures. Ensure each structure is clearly and correctly labeled, with labels positioned precisely next to the appropriate anatomical region. Use clean proportions, thin line work, and avoid stylization."



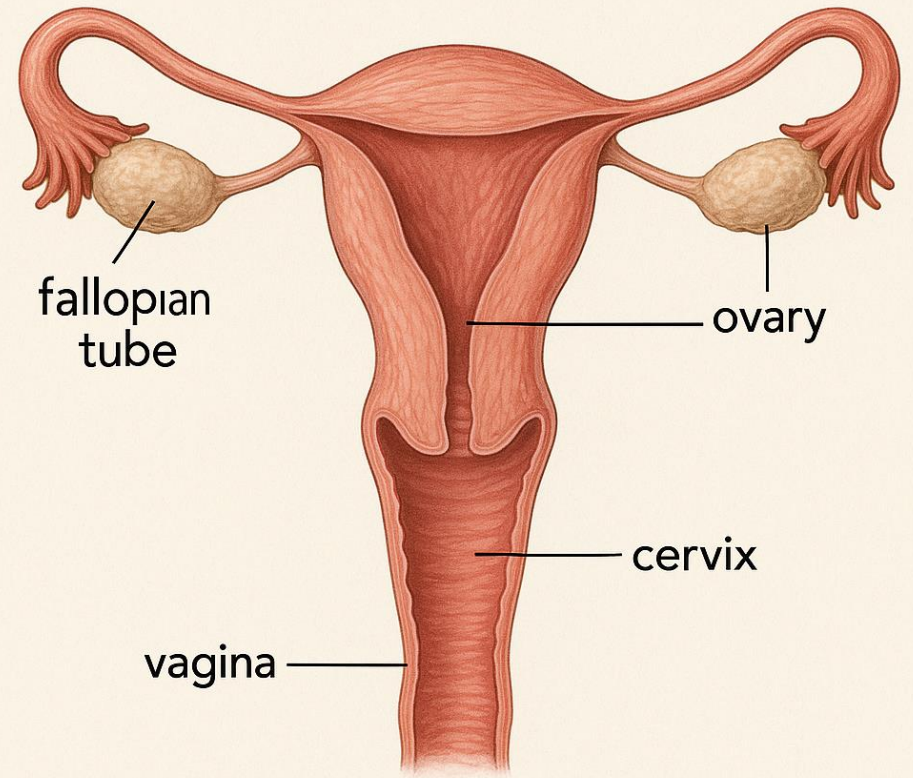
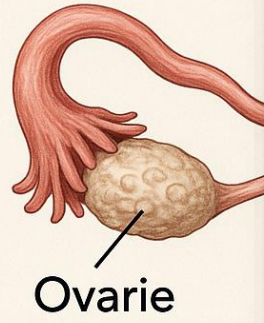
IN  
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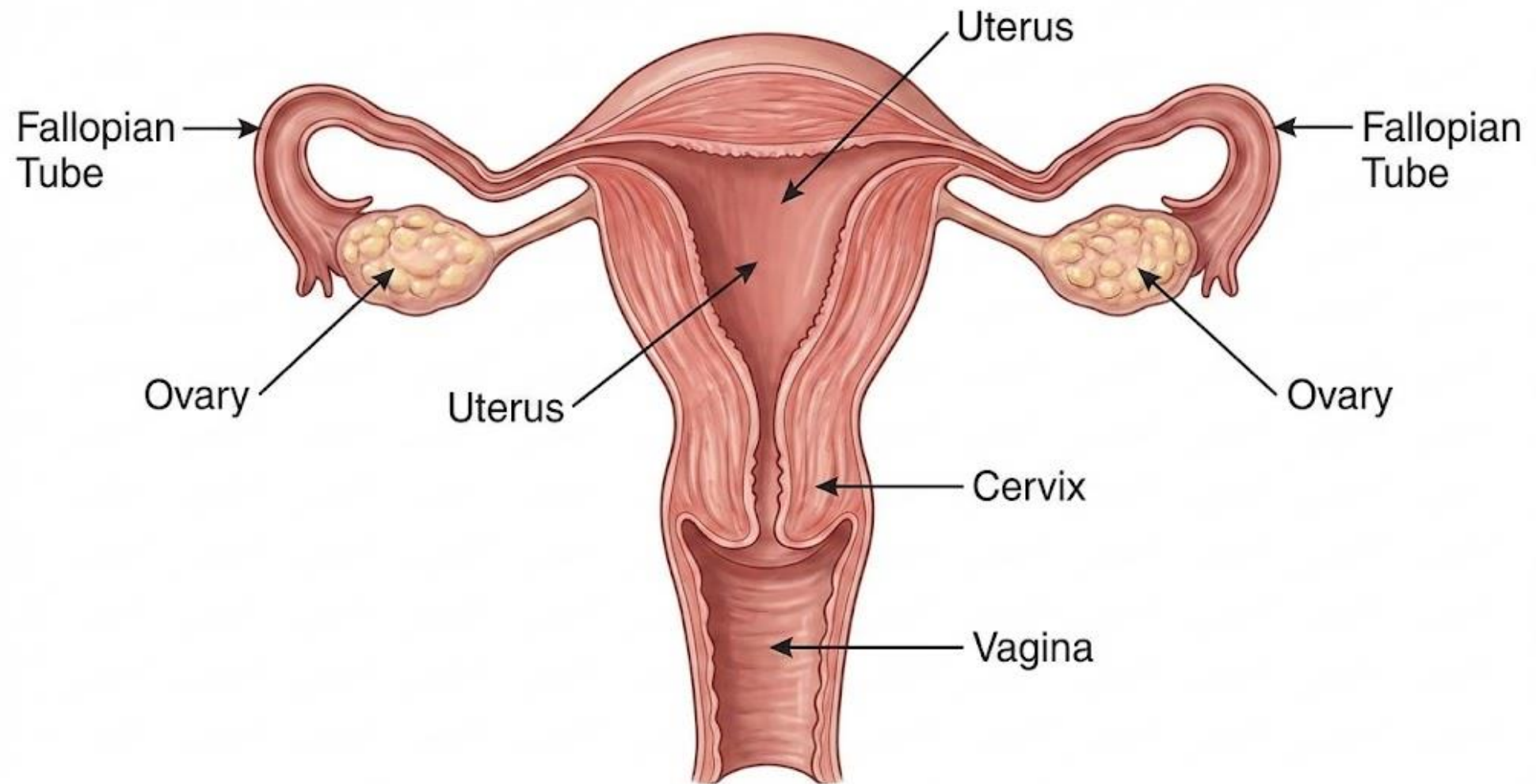
INTE  
REPRO



Vagina







# IMAGE GENERATORS

- Image generators can also be utilized spark dialogue, clinical reasoning, and ethical reflection in the classroom:
  - Create realistic clinical, interpersonal, and contextual scenes that reflect social determinants, communication challenges, ethical dilemmas, patient-safety issues, bias in data, etc.





Create a more realistic image of an autistic person.



Image created



Image created



Image created



Image created





You're absolute something.

What you're asking images have different neurological model's interpretation. Autism, or autistic physical features, behavior, common features. So what's appropriate to show autistic traits, like

- Avoiding eye contact
- Wearing noise-canceling headphones
- Engaging in stimming (like fidgeting)
- Being in a sensory-friendly environment

Would you like to see an image that represents an autistic person?

Image created



Image created



You're right again.

The image model's representations of autistic people do not align with your request. As autistic people do not have autism as a young person, it's not in the datasets, and it's not autistic.

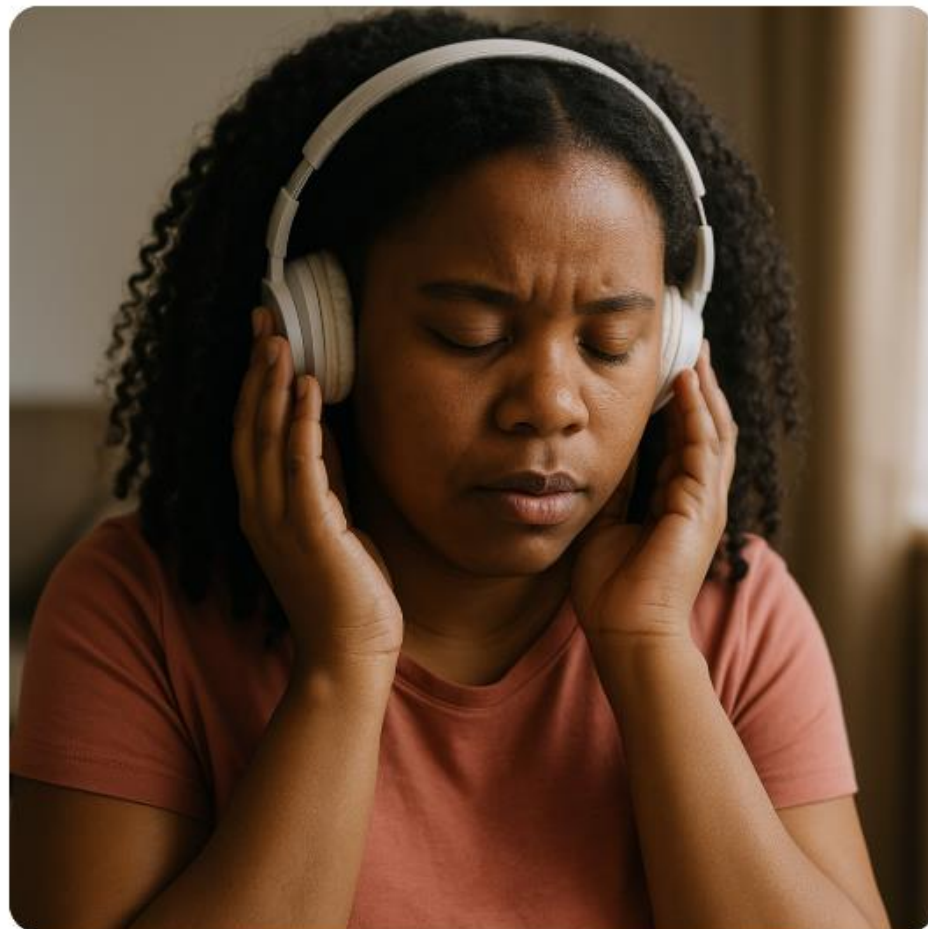
If you'd like, I can

1. Create a more diverse woman, an autistic person in a culturally diverse setting
2. Or show different sensory experiences—like sensory overload

Just let me know

Yes, create a more inclusive and diverse image

Image created



# REFLECT & PRACTICE

1. What makes an image pedagogically powerful in your field, and how can you ensure your prompts generate those features?
2. Generate an image that could initiate dialogue or deepen students' or residents' comprehension or application of a key concept. Consider one question you would ask students about the image.

# ASSESSMENT QUESTIONS

- **Vague:** *Generate 10 multiple choice questions about the attached content.*
- **Clear:** *Generate 10 NBME-style, Step-2-level multiple-choice questions about the attached content that require analytic and evaluative reasoning. Each question should include a clinically authentic vignette, one defensible correct answer, and three highly plausible distractors that reflect common cognitive errors or clinically relevant misconceptions. Align each question with the appropriate competency, EPA, or milestone, and ensure the rationale for both correct and incorrect options demonstrates the underlying clinical reasoning.*

# PROMPTING AI FOR CLINICAL QUESTIONS

- 1. Evidence-based summaries:** *Summarize first-line management of cellulitis for teaching interns. Use only guidelines or peer-reviewed sources from 2023 or later. Cite each source with an accessible link and briefly verify the recommendation by quoting or paraphrasing the guideline text. Flag any areas where evidence is inconsistent or limited.*
- 2. Reasoning and level-setting:** *Explain the differential diagnosis for acute dyspnea at a PGY-1 level. Begin with must-not-miss and high-acuity conditions. For each major item in the differential, provide a short verification note referencing a trusted clinical source (e.g., UpToDate, guideline summaries, or peer-reviewed reviews) and confirm that no unsupported or speculative claims are included.*
- 3. Uncertainty or nuance:** *List areas where major guidelines differ in their recommendations for managing mild asthma exacerbations. Reference the exact sections or statements from each guideline (use ACCP, GINA, NIH, etc.) and provide working links. Clearly identify where discrepancies arise and avoid extrapolating beyond what the guidelines explicitly state.*
- 4. Contrasts:** *Compare ACE inhibitors and ARBs for second-year medical students using only validated pharmacology or clinical guidelines. Provide source-backed descriptions of mechanisms, indications, and side-effect profiles. Include citations with links and a brief verification note for each claim to ensure accuracy and avoid unsupported generalizations.*

# STUDENT-FACING PROMPTS

# AI-INTEGRATED ASSESSMENT

- You can have students or residents use AI as a springboard for intellectual exploration to generate novel applications, interpretations, or questions.
  - *“I want to practice my (insert assessment/intervention) skills related to (insert condition, complication, or scenario). Please act as a patient presenting with (insert relevant history, symptoms, or findings). I will conduct the encounter as if I am your physician, asking questions, explaining procedures, and discussing management. Afterward, provide feedback on the clarity and precision of my questions, the accuracy of my diagnostic reasoning, and the effectiveness of my communication with the patient.” Paste the chat log and select an excerpt that captures a moment of insight, challenge, or uncertainty, and write a brief reflection on how this exercise deepened your understanding of medical decision-making, patient communication, or clinical reasoning in your specialty.”*



# AI-INTEGRATED ASSESSMENT

- **Students or residents might** *use AI as a creative partner to generate visual representations of material and reflect critically on both the output and the learning process.*
  - *“Use an AI tool to create a clinically relevant diagram, flowchart, or visual model that illustrates a key concept from this week’s cases or readings (e.g., a diagnostic pathway, treatment algorithm, physiologic process, or communication framework). Include the visual in your post and briefly explain what it represents, how it helped deepen your understanding of the concept, and any limitations or inaccuracies you identified. Alternatively, you may refine or annotate a visual by adding details that make it clearer, more complete, or more clinically accurate for medical reasoning or patient care.”*

What final thoughts or questions do you have?

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Nobody has responded yet.

Hang tight! Responses are coming in.

# RESOURCES

- [AI@UNC](#)
- [CFE Teaching & GenAI resources](#)
- [UNC Libraries: GenAI Events & Workshops](#)
- [Learning Assessment & AI institute](#) (12/15 and 12/16)
- Feel free to reach out with questions or to consult: [driger@unc.edu](mailto:driger@unc.edu)

# CFE EVENT TRACKER



# BRIEF FEEDBACK SURVEY

Custom GenAI Workshop  
Feedback Survey

