MITE MONTHLY TEACHING TIP

Cutting Through the Jargon

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Introduction

Physiology and how the body works is absolutely fascinating, but sometimes these amazing concepts can be buried under a mountain of boring jargon and terminology because medicine has its own language that can be difficult to navigate. While this medical terminology is crucial for precision and a shared language for information organization, it can become detrimental for a new learner trying to use it to actually learn real concepts. It can obscure the key universal concepts underneath, dull a new learner's curiosity and passion, cause a false sense of security in their knowledge base, and make it difficult to communicate with patients. It often causes new learners in the clinical setting to barely stay afloat by memorizing and regurgitating jargon on a daily basis to mimic true understanding. Over time, this can lead to a shaky foundation that can quickly fall apart anytime they are asked to solve a new problem that does not fit the algorithm. It also makes it much more difficult for clinicians to translate information to patients because they never had enough practice actually learning concepts in plain language first instead of complex, convoluted medical jargon.

I've found two core principles helpful when teaching physiology concepts to new learners:

1. Cognitive load theory

Working memory is limited, and every undefined term adds extraneous load, which spends mental capacity without producing learning. Experts can often find it hard to recognize which words confuse novices and need careful definition before they are used in teaching. Try to introduce key concepts in plain English or pictures intuitively first before eventually translating them into medical terminology.

2. Shoshin (empty the cup)

Shoshin is the Zen idea of "beginner's mind." For teachers, emptying your own cup lets you see the physiology as a novice does and sometimes learn new things along the way yourself as you ask questions to satisfy your curiosity. Emptying the learner's cup and setting aside memorized lists for a moment also leaves room for curiosity.

What It Looks Like

> Let's take something like **"ADH-dependent hypotonic hyponatremia in the setting of hypervolemia and CHF"** or **"Syndrome of inappropriate ADH secretion."** A nephrologist who has been practicing for many years and is fluent in this language can often forget how absurd and foreign these words sound to a new learner.

Anyone trying to learn this disease through articles and textbooks will find it very difficult to actually get to the heart of what matters and may just regurgitate these phrases without understanding the "why" behind everything. Put yourself in the shoes of a brand-new learner who does not have the burden of having to memorize terminology for tests yet but is simply learning how salt and water work in living things. You would probably ask a ton of questions like:

- How much water is in the human body? How is it all divided?
- If water can move in and out of the cells freely, what keeps things the way they are instead of causing cells to swell and shrink all the time?
- How did multicellular life develop an entire system to keep its outside environment so stable?
- How does our body "know" how much water and salt to get rid of and when to conserve them? What sensors do we have, what do they sense, and how do they work?

- How much water can I drink before it's dangerous for me? What happens when I drink 2 liters of distilled water compared to 2 liters of sea water?
- Why do the kidneys get the signal to actively reabsorb water in heart failure even when there is too much total body water?
- Why is normal saline "normal" when it has 154 mEq/L of sodium but my normal sodium is 140 mEq/L? Actually, what even *is* a milliequivalent?

While these questions initially may seem silly or "too basic," they open up the door to layering much more complex concepts such as effective circulatory volume, sensors, response to different types of IV fluids, shock, response to diuretics, and AKI.

Key Take-Aways

1. **Empty the cup, then spark curiosity:** Open with a puzzle instead of a definition: "Why can't I live off of sea water?" Let learners guess before giving the mechanism. A curiosity gap creates the "need to know" that the explanation then fills.
2. **Concept first, vocabulary second:** Start with the big idea (gradients, homeostasis, structure–function). Introduce the technical term only once learners understand what it describes.
3. **Define it:** Every acronym and eponym either gets a plain-language definition the first time you use it or comes off the slide.
4. **Chunk and sequence:** Teach one piece at a time, moving from simple to complex, with prerequisites first.
5. **Use familiar analogies and stories:** A good analogy (the heart as a pump, the kidney as a filter-and-reclaim plant) gives new information something familiar to attach to.
6. **Run the "translate it" test:** Ask learners to explain the mechanism as they would to a patient or family member. If they can't say it simply, they don't yet understand it. Medical students who practiced plain-language translation improved in medical accuracy, not just in communication.

Conclusion

If you can't explain it simply, the learner can't learn it simply. **Cut the jargon, find the heart of the physiology, and then give it its proper name.**

- **Best used:** When introducing new physiology, with early learners, at the bedside, during short teaching moments, and whenever you see blank stares.
- **Best practices:** Plan the one core concept you want learners to leave with. Open with it in plain language. Then layer in terminology, numbers, and nuance.
- **Pitfalls:**
  - **Expertise reversal:** Heavy simplification helps novices but can bore or slow advanced learners, so add complexity as expertise grows.
  - **Oversimplification:** Analogies have limits, so say where an analogy breaks down.
  - **Skipping the vocabulary altogether:** Learners still need the professional language for boards, charting, and talking with colleagues. Jargon isn't the enemy; undefined jargon is.
- **Opportunity:** Plain-language teaching also models the skill learners need most when talking with patients.

References

1. Bittner A, Jonietz A, Bittner J, Beickert L, Harendza S. Translating medical documents into plain language enhances communication skills in medical students: a pilot study. *Patient Educ Couns.* 2015;98(9):1137-1141.
2. Dyche L, Epstein RM. Curiosity and medical education. *Med Educ.* 2011;45(7):663-668.
3. Epstein RM. Mindful practice. *JAMA.* 1999;282(9):833-839.
4. Herrera J, Vujovic P. Rethinking physiology teaching: evidence and theory-informed strategies for interactive physiology education. *Adv Physiol Educ.* Published online December 9, 2025.
5. Kalyuga S, Ayres P, Chandler P, Sweller J. The expertise reversal effect. *Educ Psychol.* 2003;38(1):23-31.
6. Michael J, McFarland J. Another look at the core concepts of physiology: revisions and resources. *Adv Physiol Educ.* 2020;44(4):752-762.
7. van Merriënboer JJG, Sweller J. Cognitive load theory in health professional education: design principles and strategies. *Med Educ.* 2010;44(1):85-93.
8. Young JQ, Van Merriënboer J, Durning S, Ten Cate O. Cognitive load theory: implications for medical education: AMEE Guide No. 86. *Med Teach.* 2014;36(5):371-384.