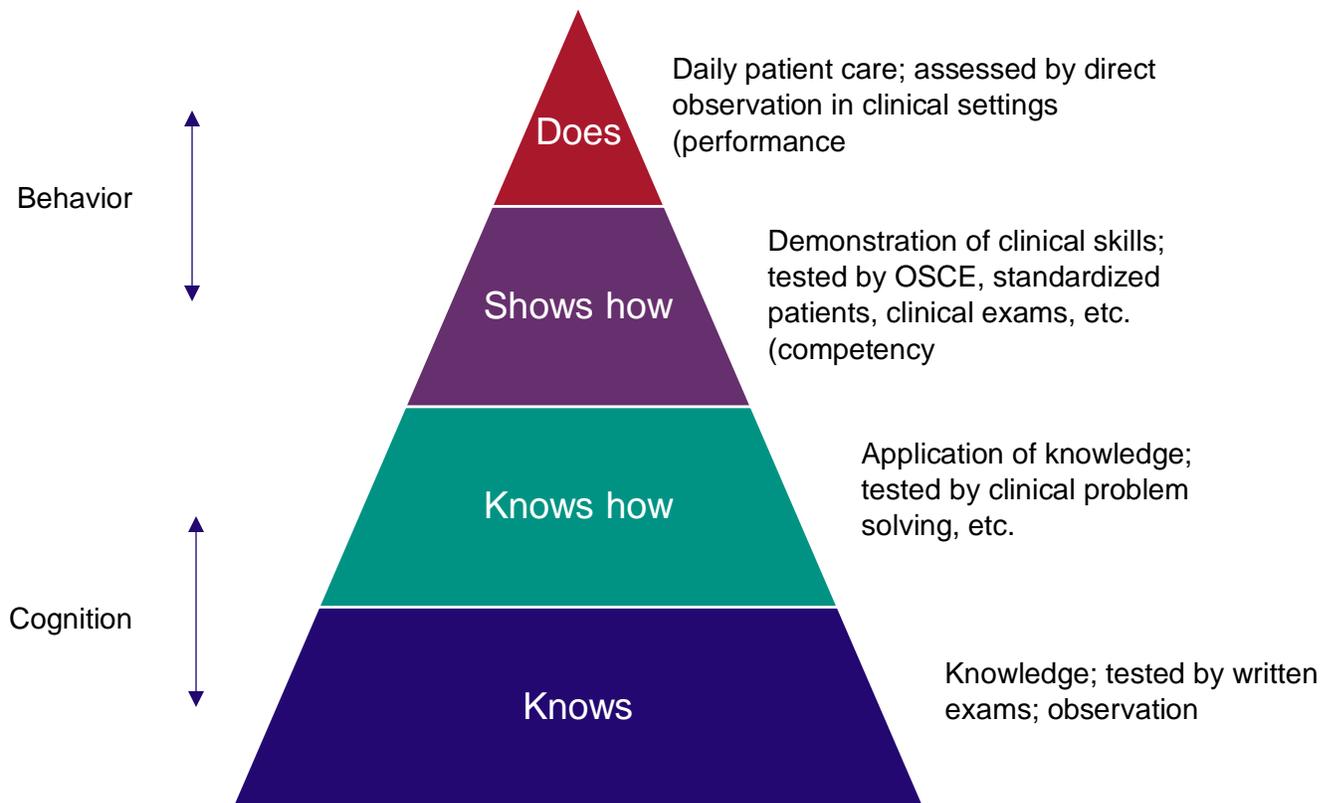


Miller's Pyramid of Assessment

Miller's Pyramid of Assessment provides a framework for assessing clinical competence in medical education and can assist clinical teachers in matching learning outcomes (clinical competencies) with expectations of what the learner should be able to do at any stage (Benedictine University, n.d., p.1).



Adapted from: Leinster, S. (2008). AMEE Guide no. 34: Teaching in the clinical environment, *Medical Teacher*, 30(4), 347-364

Please note: Knows and know how are focused on the development of cognitive skills necessary for clinical competence. Using Bloom's taxonomy for cognitive processes as a guide, there are six levels of learning at which students may be assessed: remember, understand, apply, analyze, evaluate, and create. Therefore, it is recommended that assessments focus on a range of Bloom's levels of learning to promote the foundational knowledge necessary for clinical competence. *Please use this framework as a guide for thinking about assessment in your courses.*

Descriptions and Examples (Benedictine University, n.d, pp 2-3)

1. **KNOWS** (knowledge) forms the base of the pyramid and the foundation for building clinical competence. Assessed using multiple choice questions, short answer questions, observation, as examples.

Examples

- Knowledge of the anatomy of the spine and extremities and associated soft tissues.
- Knows the normal function and pathology of organ systems.
- Knows NMS pathology and appropriate examination procedures.
- Knowledge of the normal radiographic anatomy of the spine, extremities and soft tissue.

2. *KNOWS HOW (competence) uses knowledge in the acquisition, analysis, and interpretation of data and the development of a plan. Assessed using short answer questions, clinical problem-solving exercises and (low stakes) classroom demonstration.*

Examples

- Palpates and assesses spinal motion and joint motion, understand abnormal motion.
- Knows how to, given an internal medicine patient case, determine the appropriate history and physical exam that will lead to a diagnosis.
- Knows how to, given an NMS patient case, determine the appropriate history and physical exam that will lead to a diagnosis.
- Knows how to identify abnormal or pathology on radiographic images.

3. *SHOWS HOW (performance) requires the learner to demonstrate the integration of knowledge and skills into successful clinical performance. Assessed via an OSCE or simulation.*

Examples

- Shows how to properly set up and correct abnormal segmental motion
- Shows how to develop and implement a management plan for a patient for selected internal medicine cases and communicate with stakeholders accordingly.
- Shows how to develop and implement a management plan for a patient for selected NMS cases and communicate with stakeholders accordingly
- Shows how to create an appropriate radiology report and communicate the findings

4. *DOES (action) focuses on methods that provide an assessment of routine clinical performance. Assessed via the student's ability to work independently in a clinical setting.*

Examples

- Perform an appropriate, safe manipulation on a patient, including post assessment.
- Performs a case appropriate history and examination on a patient, leading to diagnosis and management plan for both NMS and non-NMS complaints
- Follows a management plan and performs appropriate re-evaluations to either identify the endpoint of care or provide rationale for further care
- Incorporate the appropriate use of radiological, or other ancillary findings, into patient care

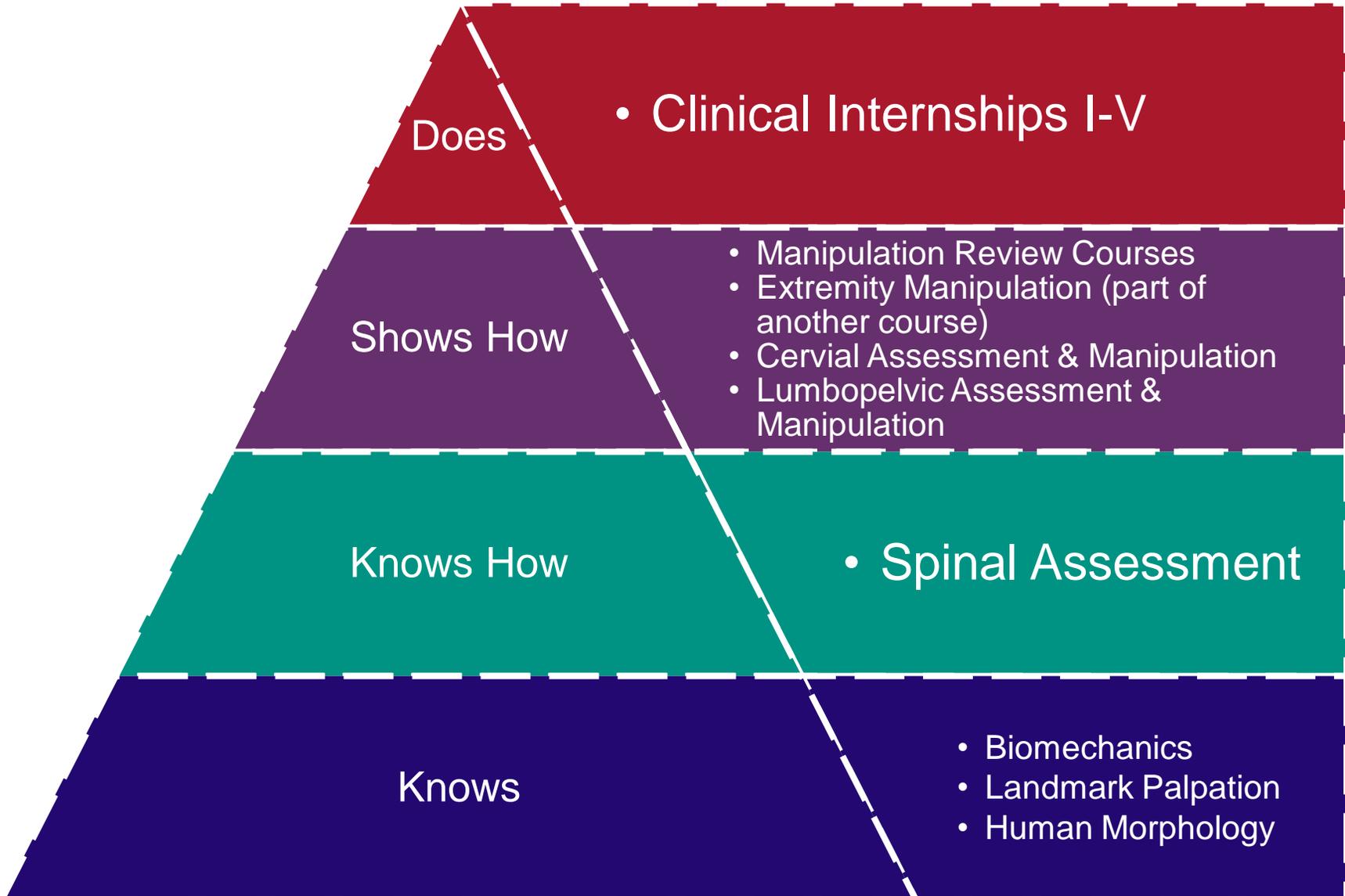
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Benedictine University (n.d.) Miller's Pyramid of Assessment. Retrieved from

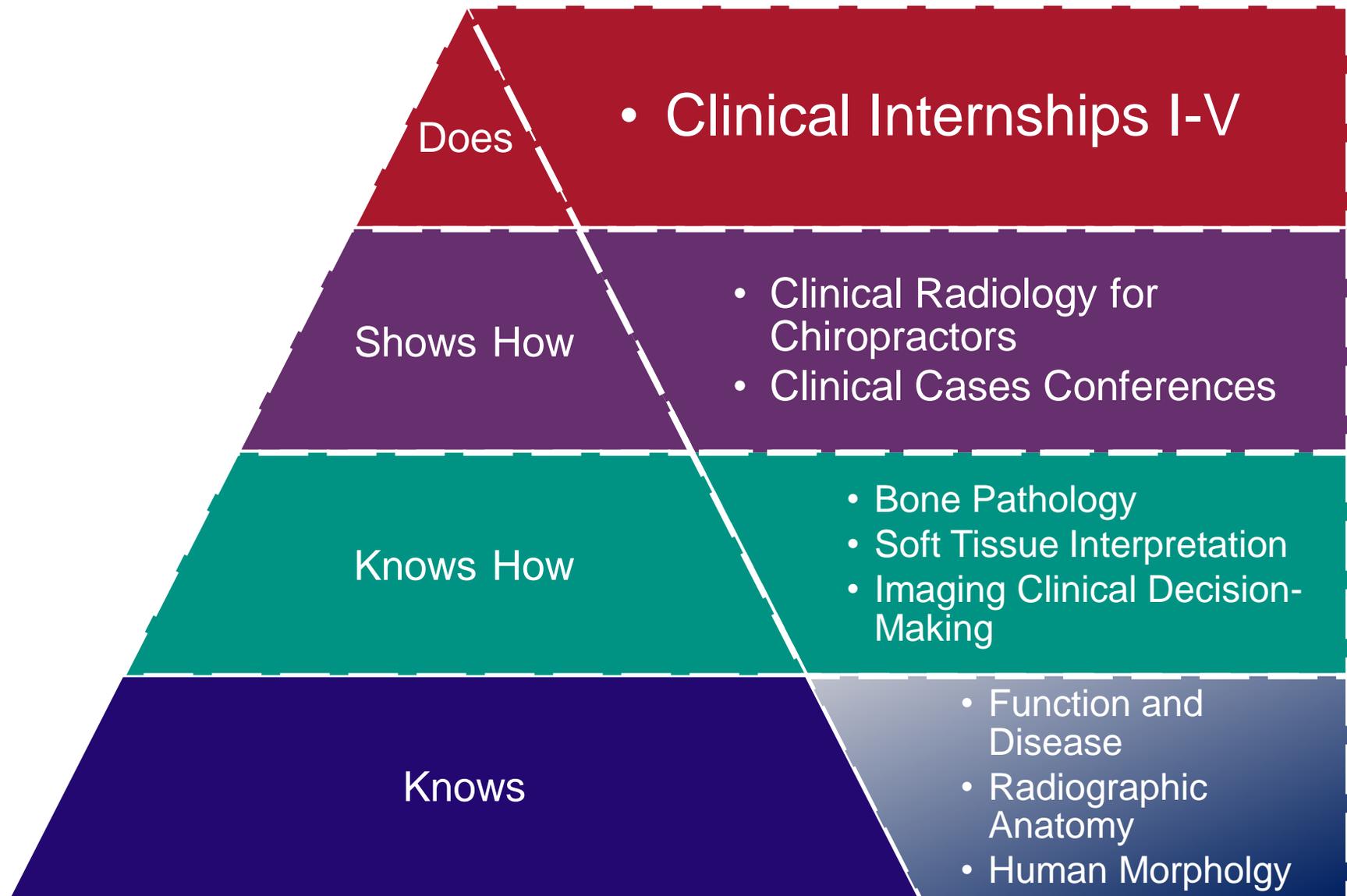
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Miller G.E. (1990). The assessment of clinical skills/competence/performance. *Acad Med*, 65.9, 563-567. doi:10.1097/00001888-199009000-00045

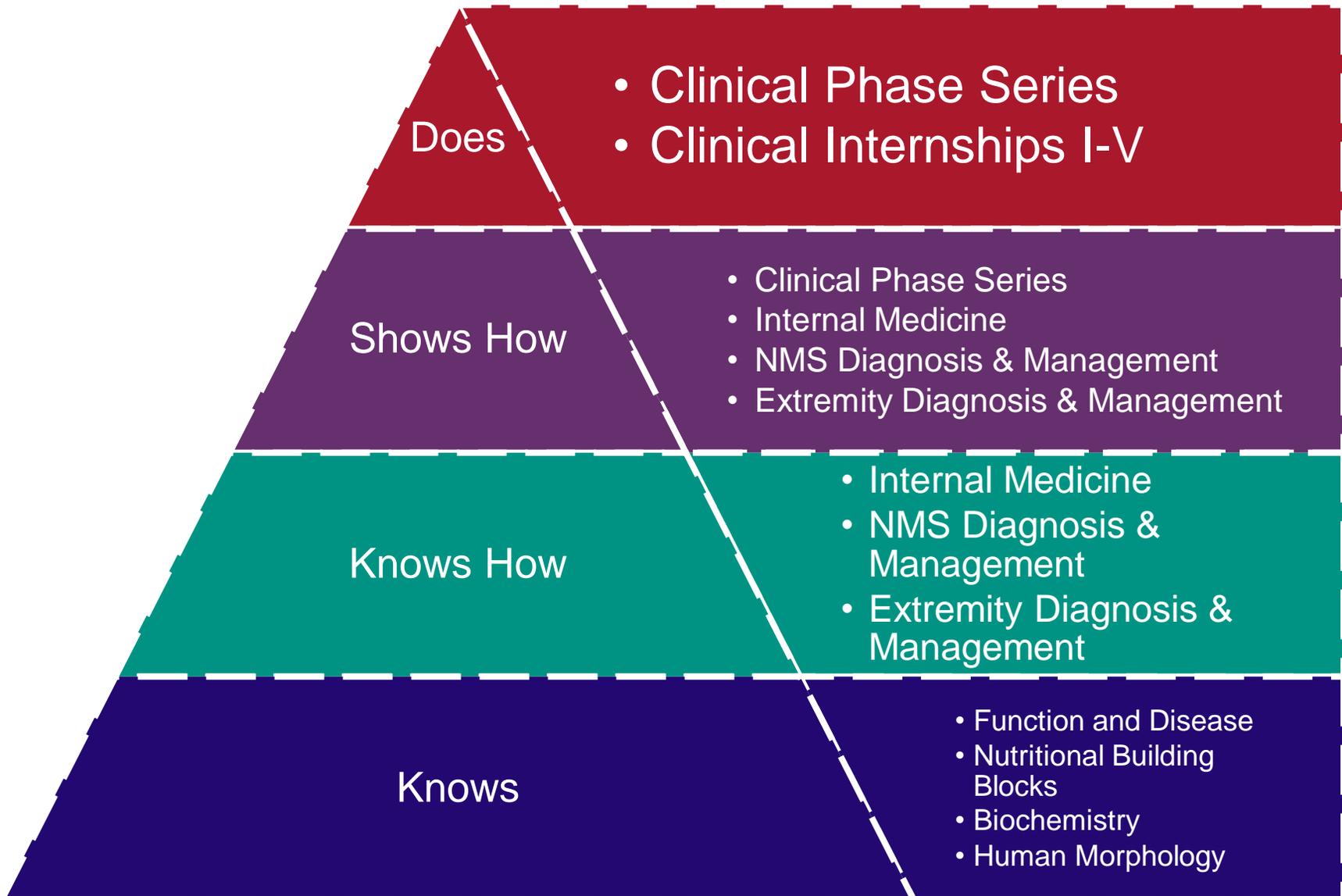
Adjusting*



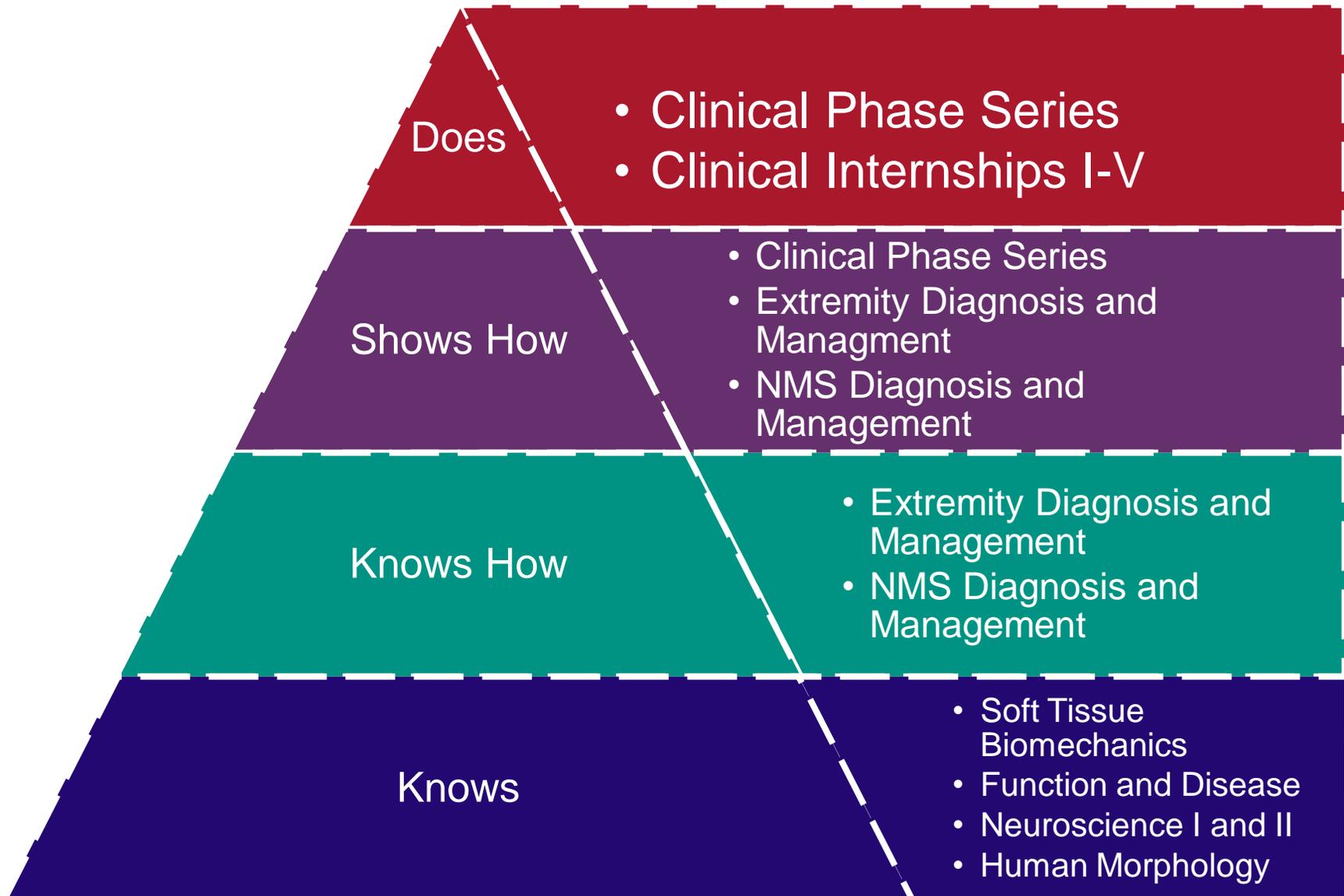
Radiology*



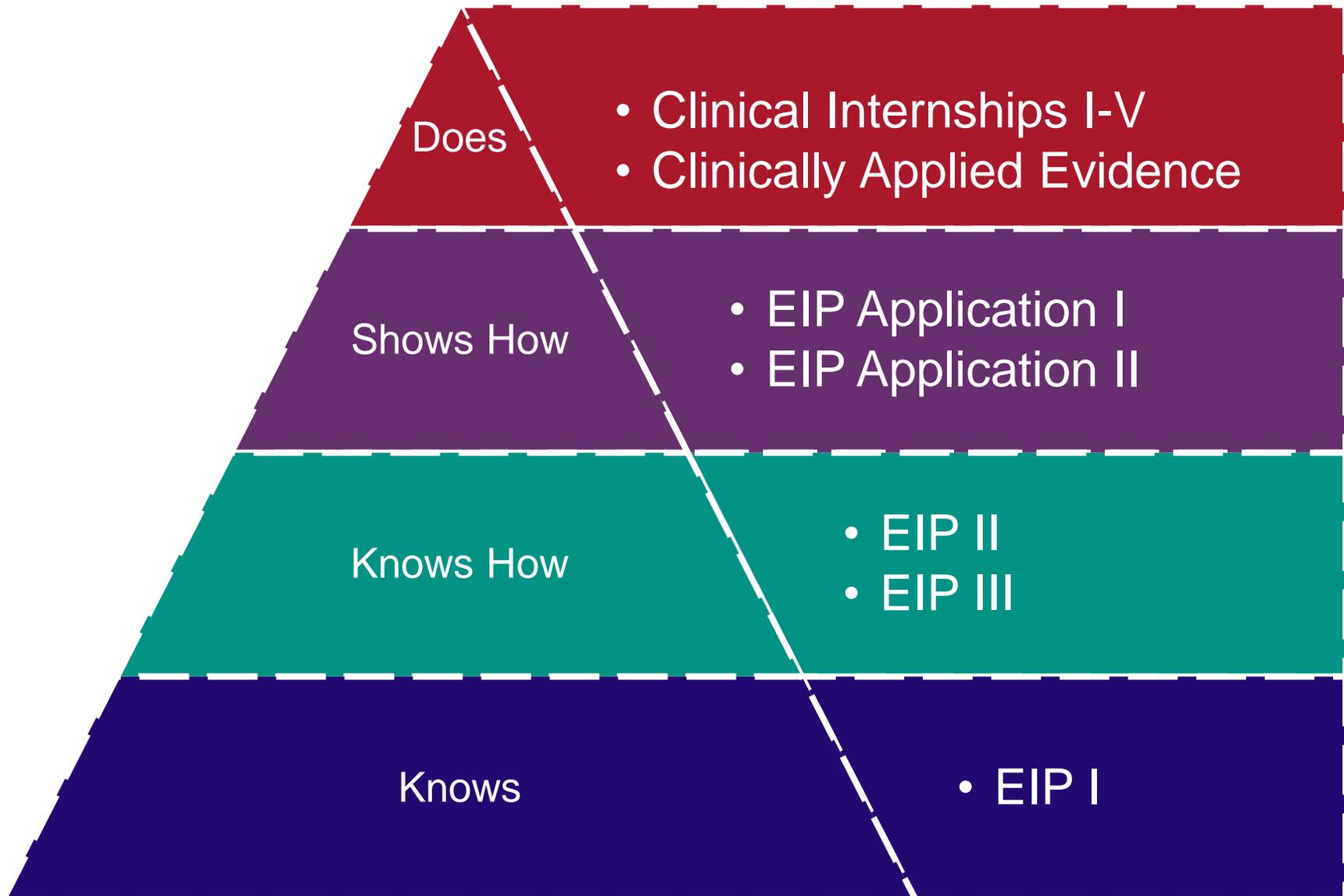
Diagnosis and Management*



NMS Diagnosis and Management*



Evidence Informed Practice*



*These pyramids are meant to be examples of how clinical competence is developed as a student moves throughout the curriculum, moving through the various stages of increasingly clinically oriented outcomes.

Please note:

- Not all UWS courses are included in these examples due to space constraints. These are meant to serve as a guide for you as you think about the assessments you are developing for your courses.
- Moving from one stage to another (knows to know how, for example) is more fluid than is represented by the pyramid. This is illustrated by the dashed lines between levels.
- Courses could have a combination of different stages of clinically oriented outcomes. For example, in extremity diagnosis and management, students learn how to diagnose certain conditions (knows how) and are also expected to apply this knowledge through case-based learning (shows).
- The pyramid on page 1 provides examples of how to assess student learning. This list is not exhaustive.