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# Letter to "Basics of Ultrasound for Musculoskeletal Evaluation in the Rehabilitation Settings: Review of the Literature"

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## *Dear Editor,*

We read with great interest the insightful article by Fernandez-Cuadros et al. (1) entitled "Basics of ultrasound for musculoskeletal evaluation in the rehabilitation settings: Review of the literature". The publication of this review article was both timely and appropriate given the recent increased interest in learning musculoskeletal ultrasound by undergraduates and trainees in Physical Medicine and Rehabilitation (PMR). We hope to use this opportunity to give some comments regarding the learning of ultrasound basics.

Firstly, having understood the physical properties of ultrasound, potential artifacts and choice of the transducer, teaching beginners how to handle an ultrasound transducer appropriately cannot be over-emphasized. A common mistake observed in beginners is the failure of holding the transducer using the thumb, index and middle finger leading to wobbling of the transducer back and forth. The image becomes restless, one's hand tires easily and poor angle of incidence leads to an artifact such as anisotropy. We hope instructors can spend time observing and correcting beginners on proper transducer handling and orientation as part of educating the basics of ultrasound.

The second observation is the growing efforts made to introduce the basics of ultrasound to pre-clinical education (2, 3). Unlike the preceding generations of clinicians who were not exposed to ultrasound during their medical training, basics of ultrasound training are now being introduced in early years of medical school. The intention is to enhance the understanding of anatomy and to improve clinical examination skills. The dynamic capability of ultrasound in appreciating tendons, muscles, nerves, vessels, masses and foreign bodies is an enriching experience for beginners. We foresee a positive direction of developing a structured ultrasound curriculum for medical students and trainees in PMR that is, at present, lacking in many institutions across the globe.

Finally, smaller portable ultrasound devices have made learning of ultrasound basics easier and beyond the clinic and classroom settings. The previous study by Kim et al. used pocket-sized ultrasound devices to facilitate self-study learning of anatomy and results were encouraging (4). While we are not advocating that every beginner or physician should own a portable ultrasound to enhance his or her learning due to various considerations, teaching faculties can provide their trainees small portable ultrasound devices with opportunities for self-learning as a part of the learning journey (5).

As clinicians and clinical educators, we see an exciting journey in educating ultrasound basics in years to come and congratulate Fernandez-Cuadros et al. and team for their excellent review article. We hope our comments can provide some practical ultrasound education perspectives.

### Footnotes

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