POCUS in Pediatrics Educational Repository

June 2025

US Basics

Resource Name	Website	Author	Link	Peds/Adult	Format	Length
5 Minute Sono: Knobology, Basic US Physics, Ultrasound Artifacts Parts 1 and 2, Color and Power Doppler	5 Minute Sono	Jacob Avila, MD	https://coreultrasound.com/5minsono-basics/	Peds and Adult	Video	5 min each
High yield and highly effective information on how ultrasound images and artifacts are produced. Excellent diagrams and clear explanations of complicated concepts including ultrasound artifacts. Best for beginning learners.						
Pediatric Resident POCUS Curriculum: Module 1-Introduction to POCUS, Module 2-Instrumentation, Module 3- Basic Physics and Orientation	Dan Park Videos	Dan Park, MD	https://vimeo.com/user30459684	Peds and Adult	Video	10-20 min each

Excellent, clear, and concise lecture that covers the basics of POCUS, physics, and artifacts. Great introductory resource with convincing evidence from cases and the literature as to why POCUS can be helpful in practice in pediatrics.						
LITFL: POCUS Physics 101, 2, 3, 4	Life in the Fast Lane	Jo Deverill, MD	https://litfl.com/pocus-physics-101/ https://litfl.com/pocus-physics-202/ https://litfl.com/pocus-physics-3/ https://litfl.com/pocus-physics-4/	Peds and Adult	Video	10 min each
Comprehensive and concise, extremely well-done explanation of complex physics topics. The language was clear, and the topic explained in such a way that it was easy to understand.						
NICU POCUS: POCUS Physics	NICU POCUS	Zoltan Molnar, MD	https://www.nicupocus.com/pocus-physics.html	Peds NICU	Article	20 min
Thorough resource summarizes the physics of ultrasound well, especially for novice learners. Very good review and discussion of general ultrasound physics with deeper dive into pulse wave echo and Doppler physics.						
POCUS 101: US Knobology, Probes, & Modes Made Easy	POCUS 101	Vi Dinh, MD	https://www.pocus101.com/ultrasound-machine-basics-knobology-probes-and-modes/	Peds and Adult	Blog	>30 min
Robust, practical tutorial on how to use the ultrasound machine and probes, including knobology, probe types, US modes, and terminology for movements, orientation, and planes for probe positioning. Covers a broad depth of material from basic fundamentals to advanced ultrasound modes, like Doppler, with clear explanations of the physics of ultrasound.						

Cardiac

Resource Name	Website	Author	Link	Peds/Adult	Format	Length
5 Minute Sono: How to Obtain Cardiac Windows, Basic Cardiac Function, Pericardial Effusion, Pericardial Tamponade	5 Minute Sono	Jacob Avila, MD	https://coreultrasound.com/5minsono-cardiac/	Peds and Adult	Video	5 min each
Great information on how to obtain good cardiac images in each view, including tips and tricks. Efficient resource where he shows the patient, probe hand movement, and the ultrasound images all at the same time to help the learner obtain optimal cardiac views.						
Focused Cardiac Ultrasound (FOCUS)	Toronto General Hospital, Perioperative Interactive Education (PIE)	NA	http://pie.med.utoronto.ca/POCUS/POCUS_content/focus.html	Peds and Adult	Module	>30 min
An interactive website with animated 3D models designed to show probe positioning and views obtained during FOCUS, which is helpful for learners to understand the anatomy of the heart in different planes. Great for introductory learning of normal cardiac echo-anatomy. Also available as an app for iPhone users.						
NeoCardioLab: Normal Neonatal Echocardiography	NeoCardio Lab	Gabriel Altit, MD	https://www.neocardiolab.com/tnecho-and-neonatal-hemodynamics/normal-neonatal-echocardiography	Peds- NICU	Module	>30 min

The site provides extensive detail about the anatomy and measurements that can be obtained in each echocardiography view and has both text and video components describing each view. This is a resource that would be best utilized by advanced users in neonatology. Relevant neonatal physiology and how that is reflected in the images is discussed.						
The POCUS Atlas: Echocardiography	The POCUS Atlas	NA	https://www.thepocusatlas.com/echocardiography-2	Peds and Adult	Video	10-20 min
Repository of images that highlights normal anatomy, labeled important structures, and various pathologies. The resource appears more suitable for clinicians with a foundational understanding of ultrasound, as it does not provide guidance on image acquisition.						
ACEP SonoGuide: Cardiac	ACEP SonoGuide	Michael I. Prats, MD and David P. Bahner, MD	https://www.acep.org/sonoguide/basic/cardiac	Peds and Adult	Article	20-30 min
Thorough article that details the basics of the cardiac ultrasound exam and some more advanced techniques. Includes images and short video clips of normal anatomy and pathology. Also discusses pearls for image acquisition as well as pitfalls of cardiac POCUS.						
ALiEM PEM POCUS Series: Pediatric Cardiac	ALiEM	Jacob Hemberger, MD, MSEd and Thomas J. Lee, MD	https://www.aliem.com/pem-pocus-series-pediatric-cardiac/	Peds	Module	20-30 min
Very high yield, in depth module focused on the basics of cardiac US with examples of normal and abnormal findings with clinically relevant case and examples. The module is easy to navigate, with text, images and videos, and is a great pediatric-focused resource for both beginners and more advanced practitioners.						

Lung

Resource Name	Website	Author	Link	Peds/Adult	Format	Length
5 Minute Sono: How to Perform a Pulmonary Exam, Pneumothorax, B-lines, Pleural Effusions, Pneumonia	5 Minute Sono	Jacob Avila, MD	https://coreultrasound.com/5ms-lung/	Peds and Adult	Video	5 min each
Great, high yield resource hits the points quickly but with appropriate depth. Easy to follow and apply to clinical practice. Suitable for beginners and advanced learners.						
AliEM PEM POCUS Series: Pediatric Lung Ultrasound	AliEM	Joni Rabiner, MD	https://www.aliem.com/pem-pocus-pediatric-lung-ultrasound/	Peds	Module	20-30 min
Very high yield, in depth module focused on the basics of lung US as well as pathology and demonstrates how lung US can be applied in practice. The module is easy to navigate, with both text and clips and is a great pediatric-focused resource for both new and advanced learners.						
ACEP SonoGuide: Lung	ACEP SonoGuide	Stephen Alerhand, MD and Betul Gulap, MD	https://www.acep.org/sonoguide/basic/lung	Adults	Module	20-30 min
Great introduction to the basics and importance of lung POCUS. In depth discussion of lung ultrasound for the adult patient, with a significant amount of primary literature incorporated and cited and high yield videos of normal anatomy, pathology, and protocols.						

NICU POCUS: POCUS Lung	NICU POCUS	Benjamin Ficial, MD and Iuri Corsini, MD	https://www.nicupocus.com/pocus-lung.html	Peds-NICU	Module	20-30 min
A wonderful, information-rich but easy to read introductory resource for point-of-care lung ultrasound in the neonatal population.						
P2 Network Videos (3)						
P2Network: Meet the Experts Lung Ultrasound in Pediatric Hospital Medicine	P2Network	Aaron Silver, MD	https://www.youtube.com/watch?v=FAIXHaXTzjg	Peds	Video	15 min
High yield, engaging video about lung US that is engaging with quality slides, US video images, and diagrams. It has high-quality educational content that starts with the basics and covers all the fundamentals and some nuances of Lung US.						
P2Network: Meet the Experts Pneumonia	P2Network	Antonio Riera, MD	https://www.youtube.com/watch?v=3wV6WSe5AVc	Peds	Video	48 min
Engaging, well-paced, and contained an appropriate amount of information regarding lung ultrasound. It reviewed ultrasound findings, provided clinical correlation, and cited relevant literature, as well as commenting on future directions for lung ultrasound.						
P2Network: Core Content Lung Ultrasound	P2Network	Marla Levine, MD	https://www.youtube.com/watch?v=zSyWtuO68CU	Peds	Video	19 min
Excellent summary of scanning techniques and the ultrasound findings for the most common lung pathologies in pediatrics, with wonderful animations that grab attention. Good resource for novice earners and refresher for intermediate learners.						

IV Access

Resource Name	Website	Author	Link	Peds/Adult	Format	Length
Ultrasound Guided Peripheral Venous Access	Holy City Sono.com	Matthew Moake, MD	https://vimeo.com/1003215292	Peds and Adult	Video	45 min
Comprehensive video discussing ultrasound guided IV placement with citation of sources, starting with background and vessel selection and finishing with supplies, technique and complications/pitfalls. The material is presented in an engaging and easy to understand manner.						
Core Content-Ultrasound Guided PIV	P2Network	Vipin Philip, MD	www.youtube.com/watch?v=m7gD0wgYcac	Peds and Adult	Video	12 min
Through video on peripheral IV placement using POCUS, focusing on pediatrics, that covers technique, anatomy, and pitfalls. This is an excellent resource for novice learners on how to place peripheral IVs.						
Pediatric Peripheral IV Access	AliEM PEM POCUS	Scott Michael Sutton, MD and Margaret Lin-Martore, MD	https://www.aliem.com/pem-pocus-series-pediatric-peripheral-iv-access/	Peds	Article	10-20 minutes

Provides a practical, step-by-step guide to ultrasound-guided peripheral IV access in pediatric patients, complete with annotated images, videos, and expert tips to improve success in difficult access scenarios. This is a user-friendly and clinically relevant guide for pediatric providers.						
3 Quick Tips to Improve Peripheral Venus Access with POCUS	P2SK	Sarah Jones, MD	https://www.youtube.com/watch?v=LpoYaIAR8H8	Peds	Video	1 min
Super short but highly effective video of some tips/tricks on successful IV cannulation using US.						
5 Min Sono US-Guided Peripheral IV Access: Equipment and Vein Selection, IV Placement, Securing the IV	5-Minute Sono	Jacob Avila, MD	https://coreultrasound.com/ultrasound-guided-peripheral-iv-access/	Peds and Adults	Video	10-20 min
Overall, this is a great resource that had a lot of information that was easily digestible and the visuals were very good, with both real patients and phantoms.						