3D Printing in Radiology

What is 3D Printing

These printers can create bone and other anatomy from CT and MRI data. Three-dimensional printing refers to a number of manufacturing technologies that create physical models from digital information (Squelch 2018).

Pros and Cons of 3D Printing:

Pros:	Cons:
Great way to practice future surgery	3D printing can be costly
Learn the anatomy of specific patient	Printing can be slow and produce harmful emissions
Make workflow more fluent	3d printers are not user friendly

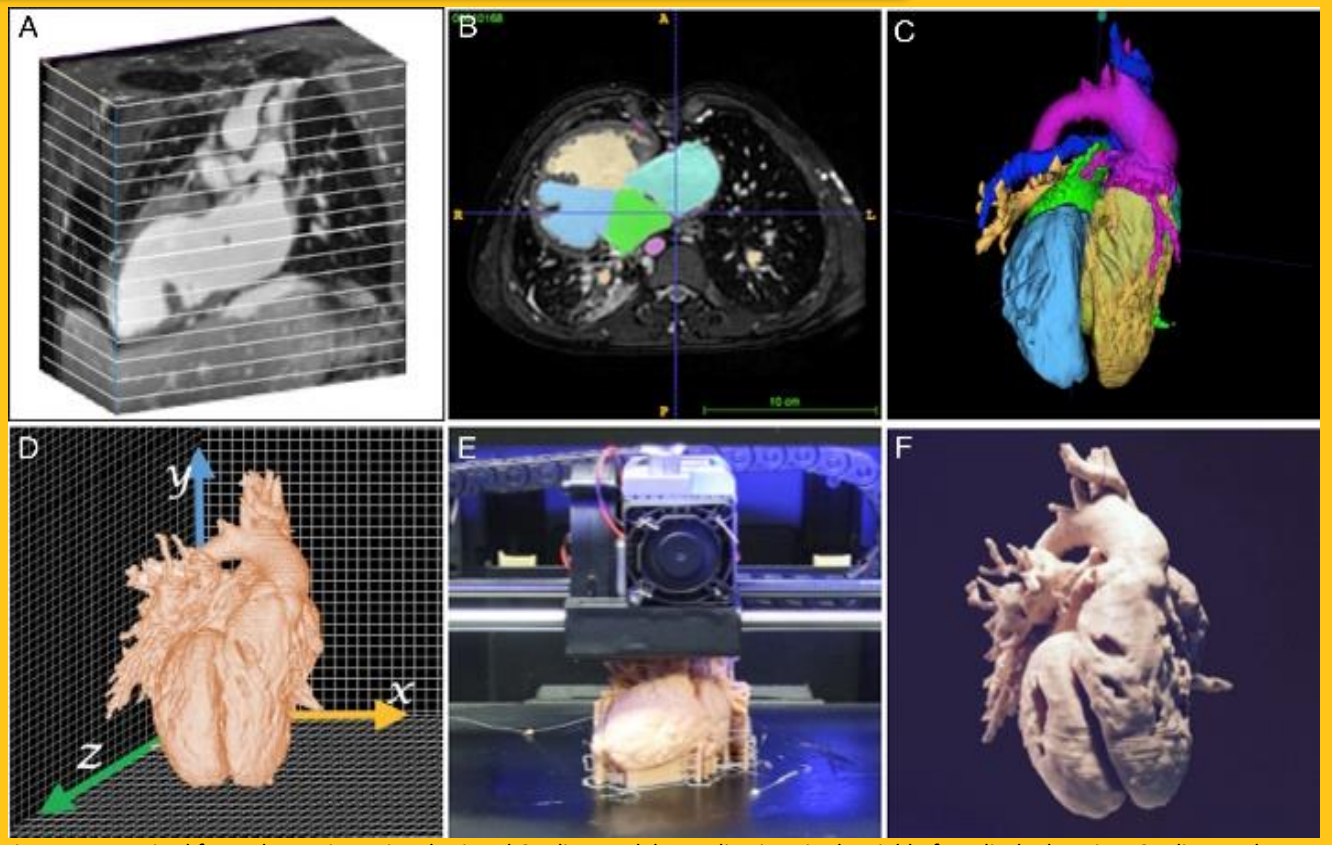

Figure 1. Accquired from Three-Dimensional Printed Cardiac Models: Applications in the Field of Medical Education, Cardiovascular Surgery, and Structural Heart Interventions

How is it used in Medical imaging?

Three-dimensional printing helps doctors to create realistic medical models to help plan and practice complicated exams (Ballard 2018). 3D printing is starting to gain traction in teaching facilities by helping show anatomy and how certain bones and organs fit together. Education uses them as phantoms for all modalities especially CT to help position and practice (Squelch 2018).

Ballard, DH: Clinical Applications of 3D Printing." *Radiology Research Alliance: Clinical Applications of 3D Printing*, Jan. 2018, pp. 30–31., doi:10.1016/j.acra.2017.08.00

Valverde, Israel. "Three-Dimensional Printed Cardiac Models: Applications in the Field of Medical Education, Cardiovascular Surgery, and Structural Heart Interventions." Revista Española De Cardiología, Elsevier, 1 Apr. 2017, www.revespcardiol.org/en/three-dimensional-printed-cardiac-models-applications/articulo/90460789/.

Squelch, Andrew. "3D Printing and Medical." *The Canadian Journal of Chemical Engineering*, Wiley-Blackwell, 2 Sept. 2018, onlinelibrary.wiley.com/doi/full/10.1002/jmrs.300.