



# VOLUSON 3D PRINTING

DISCOVER MORE THAN YOU IMAGINED

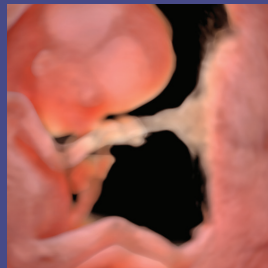
3D printing technology is creating new advancements in the healthcare industry and is proving to be an asset in developing new medical applications and in enhancing patient satisfaction. With Voluson™ ultrasound systems, you can explore the possibilities of 3D printing for research, clinical prototyping, and even parent bonding. As the first and only women's health ultrasound systems to offer full mesh exports directly from the system, you are ready to move your practice and patient care in new and innovative directions.



# CUTTING-EDGE PERFORMANCE. NEXT LEVEL PATIENT CARE.

Explore 3D printing for clinical prototyping, research, and parent bonding

3D printing technology has made great strides in recent years and is used for everything from additive manufacturing to custom art design. The healthcare industry is also harnessing the 3D printing potential to improve patient lives through prospects including prosthetics and surgical planning. Voluson, the leader in 3D/4D imaging, is keeping you at the forefront of this emerging technology by providing the ability export files directly from the system to instantly 3D print projected and full data sets. Downloading directly helps save time and reduces complexity versus using external post processing software.



Ultrasound image example



Projected mesh 3D print

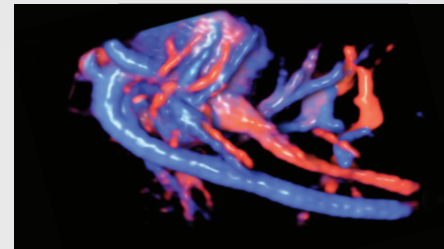


Full mesh 3D print

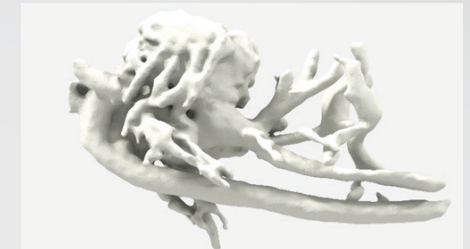
Projected mesh data sets produce surface renderings without overhanging elements. Therefore, only leading edge surfaces will be generated. This simplified 3D print type is useful in facial, limb, and general anatomical structures.

Full mesh data sets produce overhanging, free standing structures in addition to the surface views. Demonstrating spaces and cavities, this 3D print type is useful when analyzing fetal anomalies such as cleft lip and spina bifida.

In addition, full mesh export files can be generated from color, inversion, and glass body data sets – clearly demonstrating fetal blood flow as well as vessel and surrounding structure relationships.



Ultrasound image example

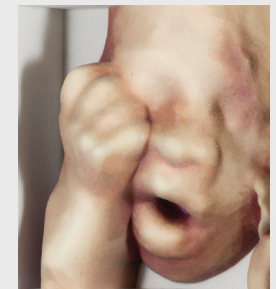


Full mesh 3D print

Mesh exported files can be used with 3D modeling software to further analyze and process for research purposes. Because these mesh files are exported directly from the Voluson ultrasound system to USB or 4D view without necessary manipulation, you can import the files right into a 3D printer for completion.

Voluson ultrasound systems support several file formats including:

- .stl – (STereo Lithographie)
- .obj – (Alias Wavefront OBJect file format)
- .ply – (Standard PoLYgon File Format)
- .3mf – (3D Manufacturing Format)
- .xyz – (Point Cloud File Format)



The most common are .stl and .obj. The advantage of .obj is that it contains the ultrasound skin rendering information for unique results (e.g. Sepia, HD*live*™ etc.). However, surface rendering data can only be realized in projected mesh.

Voluson systems also offer an export of the volumetric data in DICOM® format (Enhanced Ultrasound Storage; Supplement 43). Useful for research studies, this data can be imported by 3<sup>rd</sup> party post processing software for conversion to a surface model and refinement for a specific 3D printer.



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Note: With 3D printing rapidly evolving, we refrain from recommending printers.