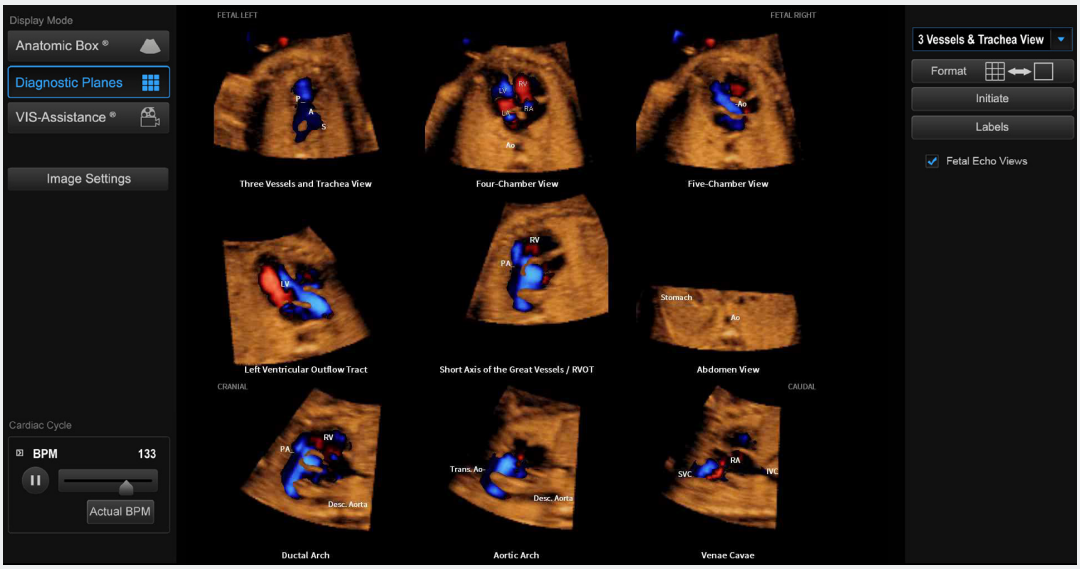
Article # CL201510-5DHeartColor / Issue Date 03 Nov, 2015

WS80A with Elite

5D Heart Color : Automatic examination of the fetal heart based on Intelligent Navigation Technology



Key Advantages

Diagnostic Value	Automatically displays nine standard fetal echocardiography views simultaneously in a single template
Ease of Use	Intuitive workflow that can simplify examination of the fetal heart and reduce operator dependency
Innovative	Intelligent navigation technology

5D Heart Color

Congenital heart disease is the leading organ-specific birth defect,[1] and is also the leading cause of neonatal mortality attributable to birth defects.[2] Yet, the screening and diagnosis of congenital heart disease remains an important challenge for sonographers and physicians. An adequate sonographic exam of the fetal heart is time cosuming and requires expertise and skill.

5D Heart Color allows interrogation of a STIC (spatiotemporal image correlation) volume dataset using "intelligent navigation" technology, which automatically generates nine standard fetal echocardiography views.[3]

The successful display of cardiac diagnostic planes occurs in the presence of anatomical variability, and also despite different gestational ages. This innovative method has the potential to improve efficiency and workflow of performing fetal cardiac examination by reducing the time necessary to obtain standard cardiac views.

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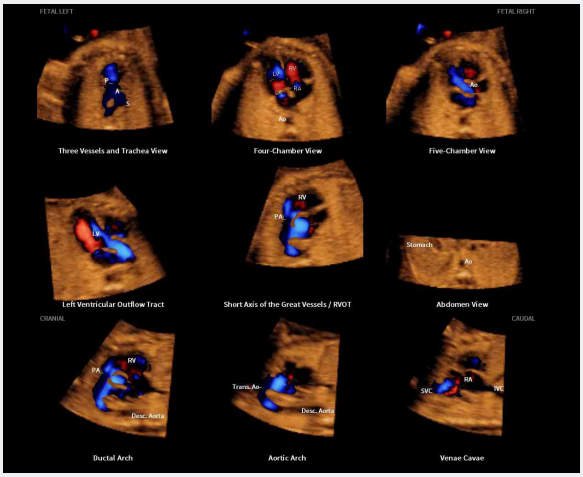
Proprietary Technologies



After marking seven anatomical structures of the fetal heart, 5D Heart Color will automatically generate nine standard fetal echocardiography views:

1) Four chamber
2) Five chamber
3) Left ventricular outflow tract
4) Short-axis view of great vessels/ right ventricular outflow tract
5) Three vessels and trachea
6) Abdomen/stomach
7) Ductal Arch
8) Aortic arch
9) Superior and inferior vena cava

STICLoop™ : A two-dimensional cine loop that aids the user in determining the appropriateness of STIC volume datasets before implementation of the 5D Heart Color

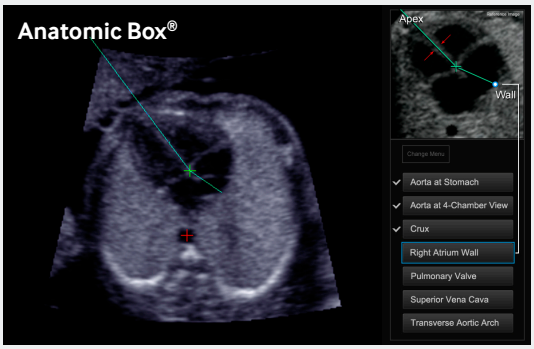
Anatomic Box® : A tool used to mark anatomical structures within the STIC volume to allow the automatic display of standard fetal echocardiography views.

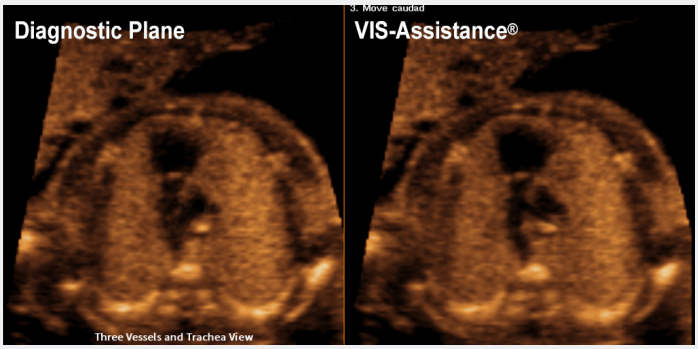
Intelligent Alerts : Captions notifying the operator about potential issues with the STIC volume dataset (e.g. location of the fetal spine at three o'clock)

Marking Alerts : Captions notifying the operator that fetal anatomical structures used for marking may be in different locations from what is expected

Automatic labeling : Fetal echocardiography views, anatomical structures, left and right side of fetus, and cranial and caudal ends

VIS-Assistance® (Virtual Intelligent Sonographer Assistance) : An operator-independent tool that allows sonographic navigation and exploration of surrounding structures in each of the fetal cardiac diagnostic planes.





References

1. Centers for Disease Control and Prevention (CDC). MMWR Morb Mortal Wkly Rep 2006 Jan; 54(51):1301-1305.
2. Yang Q et al. Birth Defects Res A Clin Mol Teratol 2006 Oct; 76(10):706-713
3. Yeo L, Romero R. Fetal intelligent navigation echocardiography (FINE) : a novel method for rapid, simple, and automatic examination of the fetal heart, Ultrasound Obstet Gynecol. 2013 Sep;42(3):268-84.

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