WS80A with *Elite*
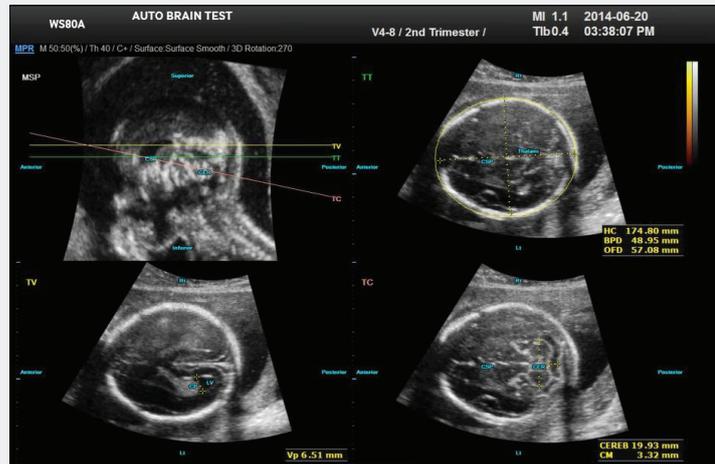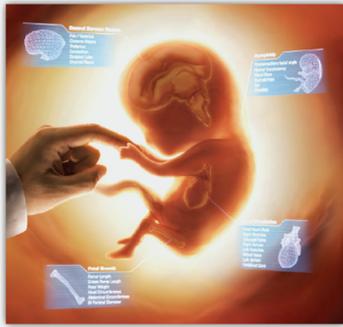
A novel semi-automatic method for biometric measurements of the fetal brain, 5D CNS

Key Advantages

Standardization	»	Automatically extracts axial views and biometric measurements
Easy of Use	»	Simplifies fetal brain scan steps and reduces scan time
Diagnostic Confidence	»	Minimizes the inherent variability and user dependency

5D CNS

Fetal brain biometry is an essential part of the sonographic examination to estimate the gestational age of the fetus and to detect congenital abnormalities. However, due to complex anatomy of fetal brain, fetal movement and operator dependency, it is difficult to measure the biometries and identify all relevant cerebral structures. Fetal central nervous system (CNS) anomalies have been diagnosed by the combination of recognizable markers including the lateral ventricles, the cerebellum and the cavum septi pellucidi (CSP).

A novel semi-automated technology, **5D CNS**, significantly improves accuracy and reproducibility as well as reduces intra-/inter-observer variability by combining fetal brain measurements and the automated process. **5D CNS** displays three standardized planes such as transthalamic view, transventricular view and transcerebellar view including mid-sagittal view of the fetal brain. And it automatically labels the measurements of biparietal diameter(BPD), head circumference(HC) and occipito-frontal diameter(OFD) as well as transverse cerebellar diameter(CEREB) for qualitative evaluation of the fetal growth and some cerebral anomalies. Also, the thickness of the atrium (atrial width) of the lateral ventricles (Vp) is measured for assessing the integrity of the ventricular system and the size of the cisterna magna(CM) is provided by **5D CNS**.

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"All things are innovative. **5D CNS** opens a new era of **intelligent ultrasound.**"
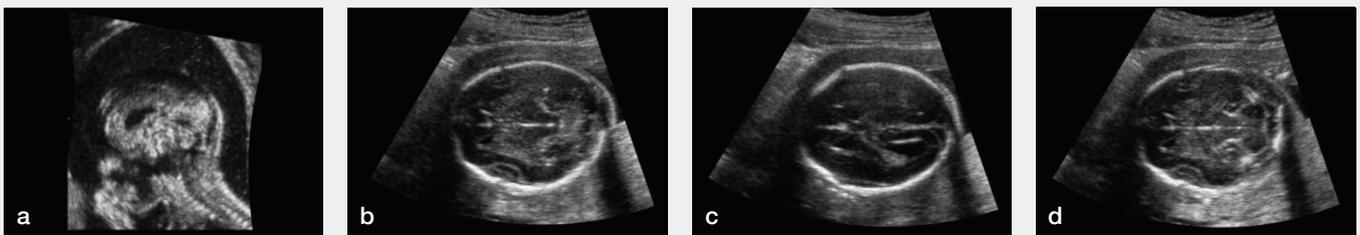
By Ja-young Kwon, Yonsei University College of Medicine, Seoul, Korea

Complexity made Simple

1. Use Set button to select first seed on thalamus and second seed on CSP
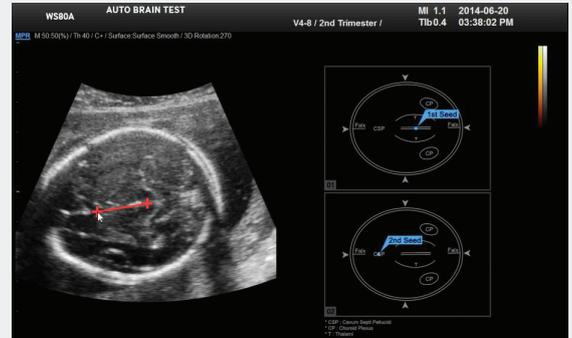
2. Obtains mid-sagittal, transthalamic (TT), transventricular (TV) and transcerebellar (TC) planes

a) mid-sagittal plane   b) transthalamic plane   c) transventricular plane   d) transcerebellar plane

3. Automatically labels anatomical landmarks of fetal brain and displays biometric measurements (HC/BPD/OFD, Vp, CEREB/CM) on each plane with locational information (anterior/posterior/superior/inferior/Rt/Lt)

a) TT plane: HC/BPD/OFD   b) TV plane: Vp   c) TC plane: CEREB, CM

Note BPD - biparietal diameter, HC - head circumference, OFD - occipito frontal diameter
CEREB - transverse cerebellar diameter, Vp - thickness of the atrium of the lateral ventricles,
CM - size of the cisterna magna

Reference

(1) Sonographic examination of the fetal central nervous system: guidelines for performing the 'basic examination; and the 'fetal neurosonogram'. Ultrasound Obstet Gynecol 2007; 29: 109-116

Supported System

(1) WS80A with Elite

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