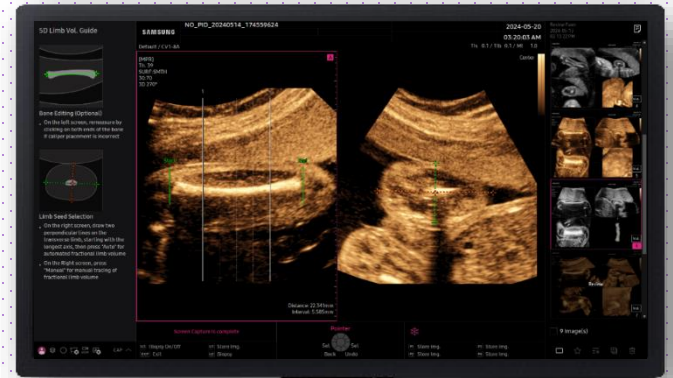


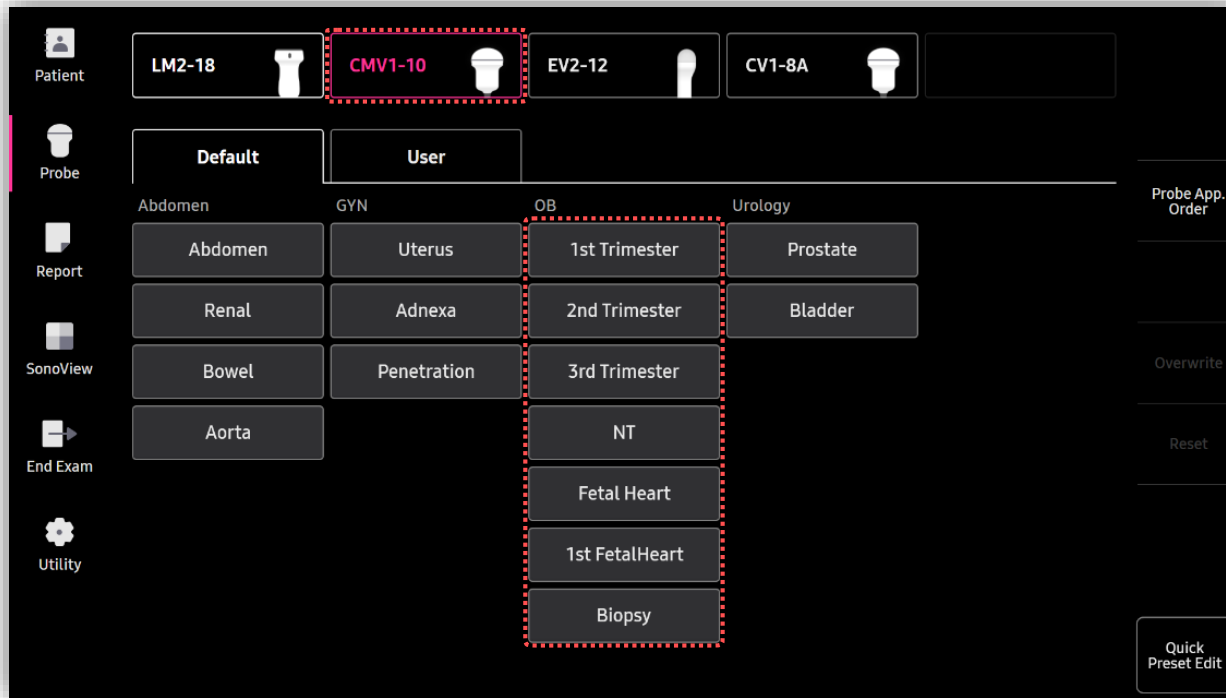
# 5D Limb Vol.™

## HERA Z20 Quick Guide



5D Limb Vol.™

# 1. Probe and Preset



※ 5D Limb Vol.™ can be operated under the following conditions :

Probe	Application
CV1-8A CMV1-10	All OB presets * Select proper preset regarding to fetal gestational age.

★ Tips

To display EFW based on AVol. or TVol., set the EFW Author of fetal weight equation to [Lee1] or [Lee2] in the setup.

*\*For instructions, refer to the appendix of this manual*

5D Limb Vol.™

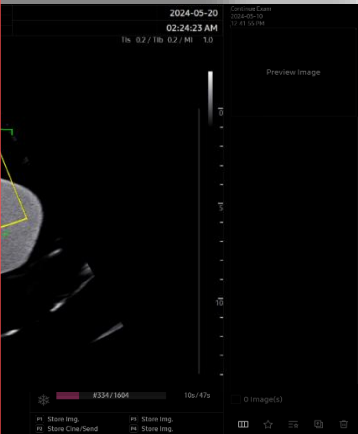
# 2. Activate 5D Limb Vol.™ (Before 3D Acquisition)

**Scan Acquisition Tips**

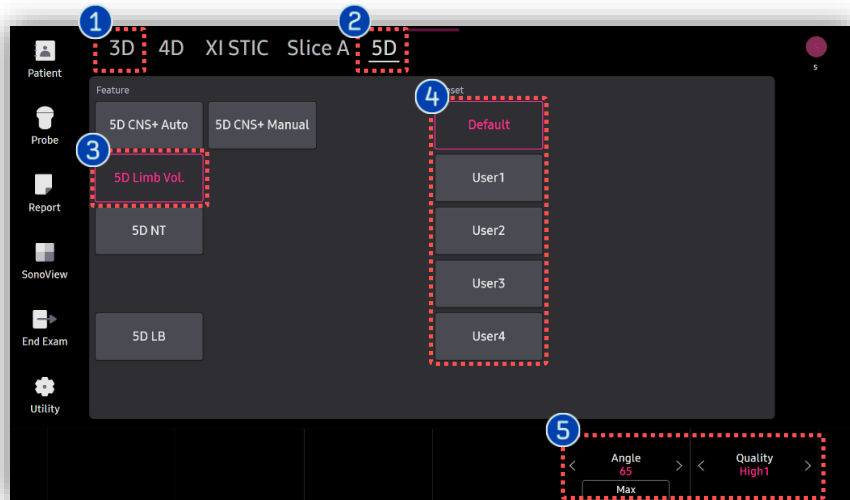
- Adjust image depth to fill at least two-thirds of the screen.
- Optimize gain to enhance limb soft tissue borders.
- Adjust size and Position of 3D ROI to include entire limb (bone+soft tissue).
- Breath-hold during 3D sweep to reduce motion artifact.
- Obtain volume acquisition when fetus is not moving.

**Recommended 3D Scan Angle**

2nd Trimester :40-45°  
 Early 3rd Trimester: 55-65°  
 Late 3rd Trimester:70-Max Angle



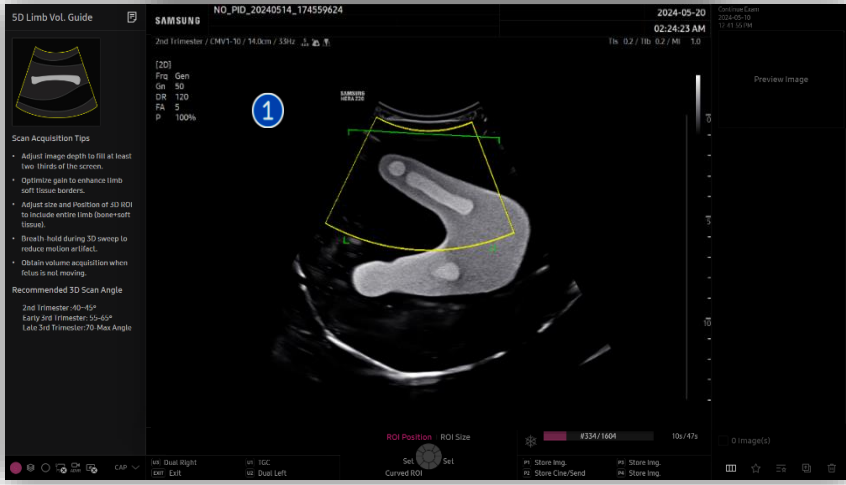
1	3D Button	Press [3D] button on the control panel.
2	5D Ready	Tap [5D] to activate 5d features.
3	5D Limb Vol.	Tap [5D Limb Vol.] to activate 5D Limb Vol.
4	Preset	Select preferred preset between default and users. Each 5D feature can have its own preset parameters.
5	Parameters	3D scan [Angle] and [Quality] are customizable. * Recommended 3D scan angle 2 <sup>nd</sup> Trimester : 40-45 Early 3 <sup>rd</sup> Trimester : 55-65 Late 3 <sup>rd</sup> trimester : 70-Max Angle
6	Image acquisition	Scan the upper arm or thigh of fetus.



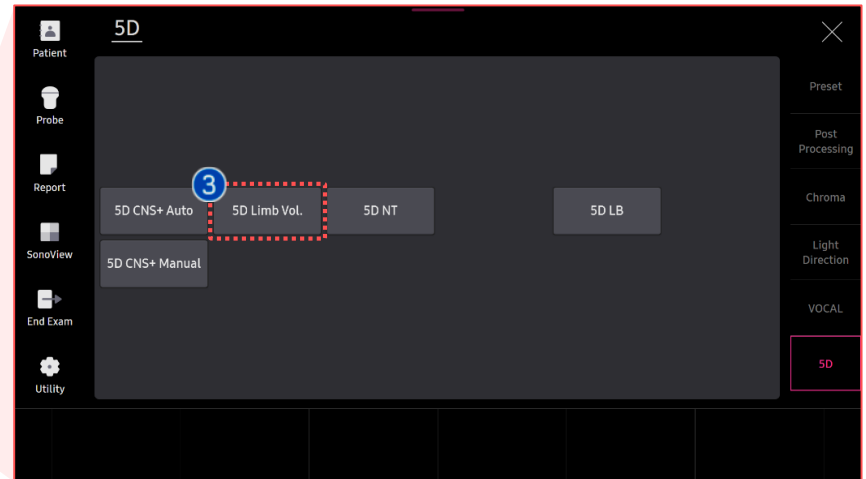
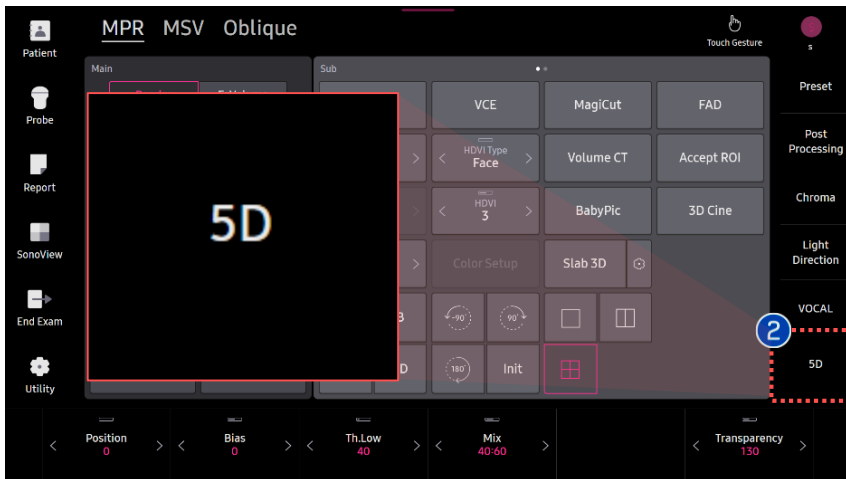
★ **Scan Acquisition Tips**

- Adjust image depth to fill at least two - thirds of the screen.
- Optimize gain to enhance limb soft tissue borders.
- Adjust size and position of 3D ROI to include the entire limb (bone + soft tissue).
- Breath - hold during 3D sweep to reduce motion artifact.
- Obtain volume acquisition when fetus is not moving.

# 3. Activate 5D Limb Vol.™ (After 3D Acquisition)

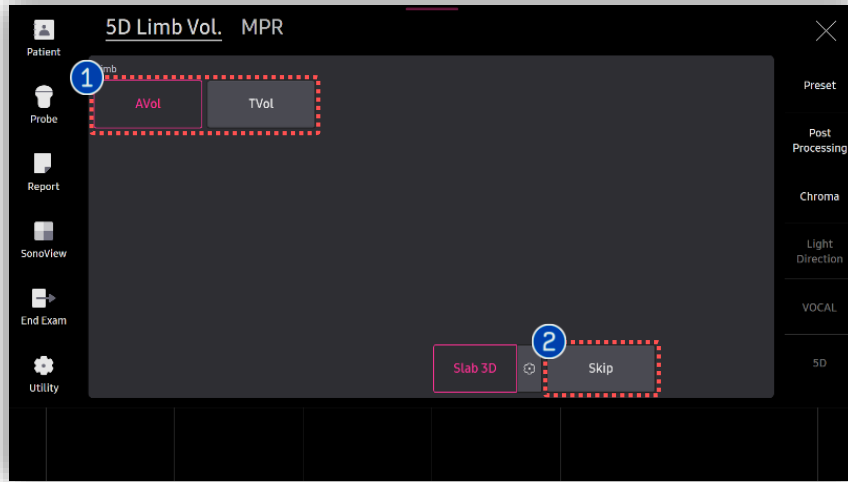


① Image acquisition	Scan the upper arm or thigh of the fetus.
② 5D Quantifications	Tap to activate 5D features.
③ 5D Limb Vol.	Tap to activate [5D Limb Vol.].



5D Limb Vol.™

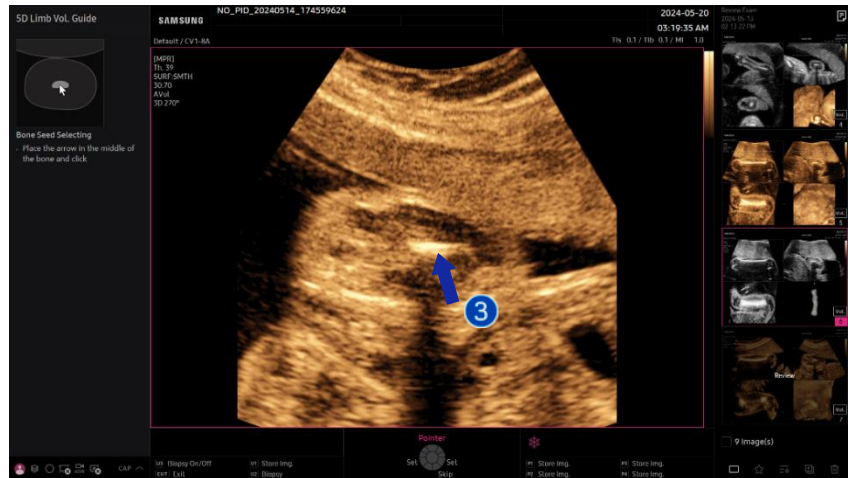
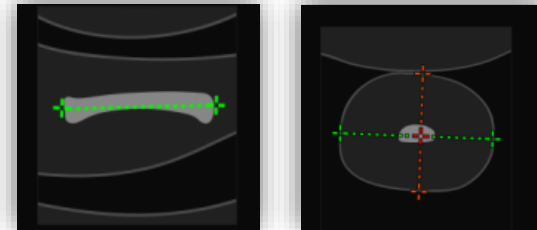
# 4. Bone Editing



1 Limb Type	Select limb type between arm (AVol) or leg (TVol).
2 Skip	To skip bone editing process, tap [Skip].

★ Tips

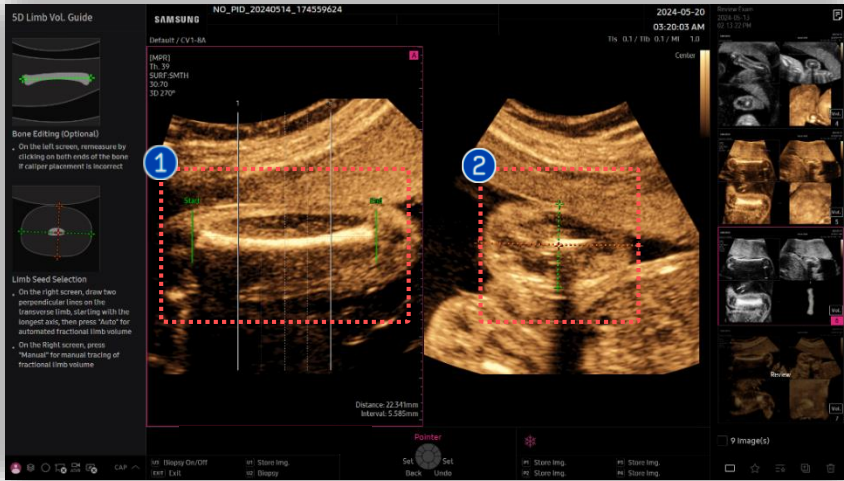
In case of using [Skip] on this progress, next two step which are [Bone Editing] and [Limb Seed Selecting], should be done for more accurate result.



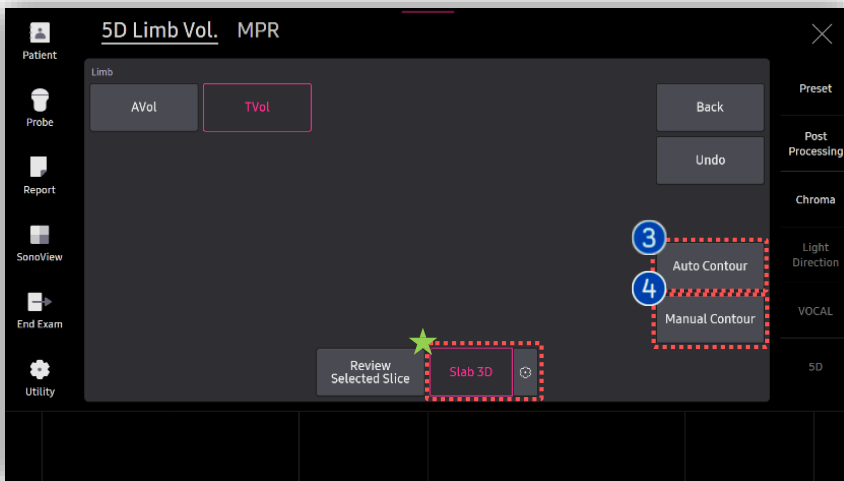
3 Bone Editing (Optional)	If you do not skip [Bone Editing], place the arrow on the middle of bone and [Set].
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5D Limb Vol.™

# 5. Bone Editing and Limb Seed



<p>1 Bone Editing</p>	<p>Re-measure by clicking on both ends of the bone if auto caliper placement is incorrect.</p>
<p>2 Limb Seed</p>	<p>Draw two perpendicular lines on the transverse limb, starting with the longest axis, then press [Auto Contour] or [Manual Contour].</p>

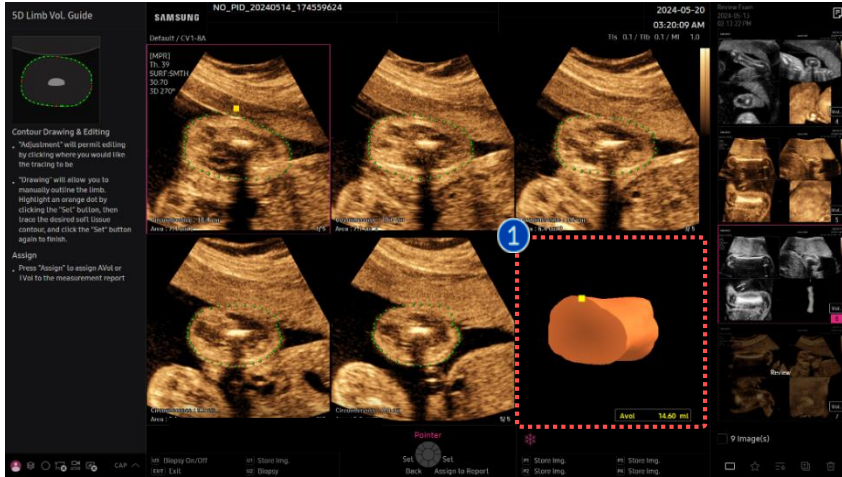


<p>3 Auto Contour</p>	<p>Locate and measure the volume of fetal limbs automatically.</p>
<p>4 Manual Contour</p>	<p>Locate and measure the volume of fetal limbs manually by using contour tool.</p>

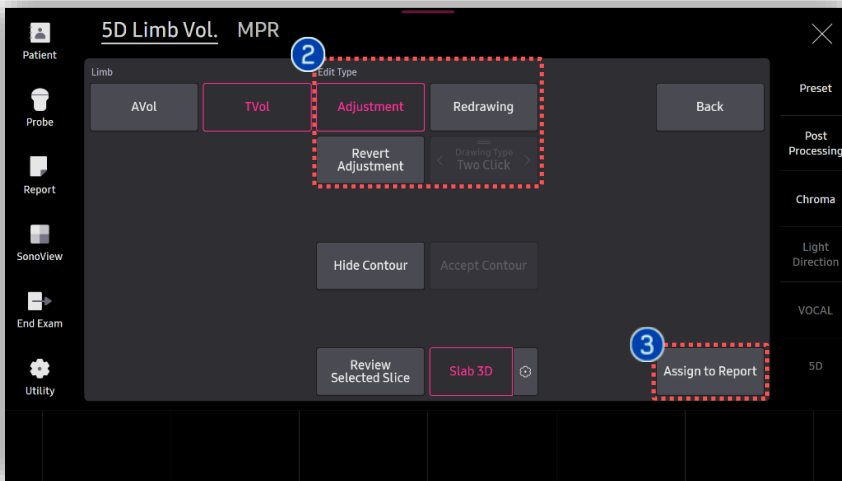
**★ Tips**

Slices of a 3D image will be displayed as images rendered in 3D. You may select ★ [Slab 3D] type among Surface, X-ray, Max and Min.

# 6. Result and Edit



1 Result  
3D rendered limb image and volume data will be provided at the bottom right.



2 Edit Type  
When edit is needed, select proper type of edit among [Adjustment], [Redrawing] and [Revert Adjustment].

3 Assign to Report  
Tap to apply the calculated result including Limb Vol. and EFW to the report.

5D Limb Vol.™

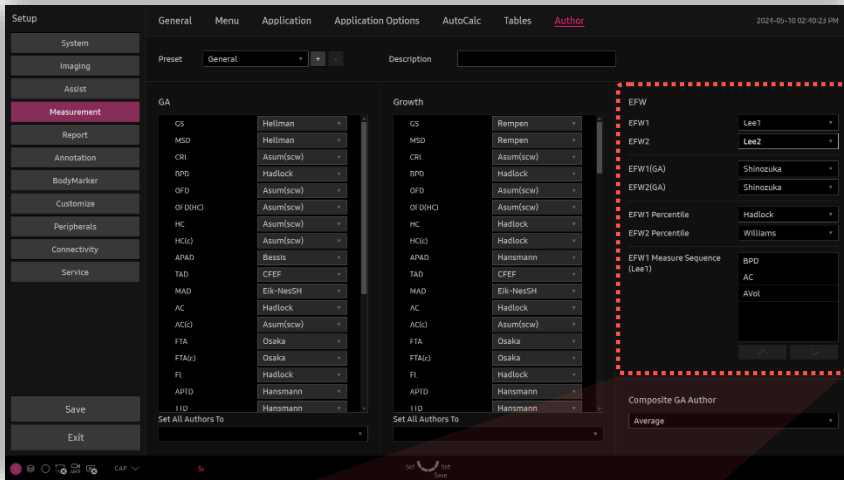
# 7. 5D Limb Vol.™ Result in Report

Patient ID	20240523-4			Name	5l																													
Exam Date	2024-05-23																																	
OB																																		
LMP(GA)	2023-12-21	GA(Clin)	22w0d	EDD(GA)	2024-09-26	PctL Criteria EDD(GA)																												
GA(AUA)	15w6d	EDD(AUA)	2024-11-07	Composite GA	Average																													
1	<table border="1"> <tr> <td>EFW1(BPD,AC,AVol)</td> <td>Lee1</td> <td>167 g</td> <td>6oz</td> <td>2024-11-03</td> <td>16w4d</td> </tr> <tr> <td>EFW2(BPD,AC,TVol)</td> <td>Lee2</td> <td>94 g</td> <td>3oz</td> <td>2024-11-21</td> <td>14w0d</td> </tr> </table>						EFW1(BPD,AC,AVol)	Lee1	167 g	6oz	2024-11-03	16w4d	EFW2(BPD,AC,TVol)	Lee2	94 g	3oz	2024-11-21	14w0d																
EFW1(BPD,AC,AVol)	Lee1	167 g	6oz	2024-11-03	16w4d																													
EFW2(BPD,AC,TVol)	Lee2	94 g	3oz	2024-11-21	14w0d																													
Fetal Biometry																																		
		1	2	3	GA																													
Lt. FL	1.75	cm	1.75		Last	Hadlock 15w1d±10d																												
BPD	3.07	cm	3.07		Last	Hadlock 15w5d±9d																												
AC	12.51	cm	12.51		Last	Hadlock 18w1d±15d																												
HC	10.06	cm	10.06		Last	Hadlock 14w5d±8d																												
AVol	9.40	ml	8.80	9.40	9.40	Last																												
TVol	9.40	ml	8.80	9.40		Last																												
2D Calculations																																		
HC/AC	0.80	(1.06 ~1.25)		Campbell																														
1	<table border="1"> <tr> <td colspan="7">Limb Vol.</td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>2</td> <td>3</td> <td colspan="2"></td> </tr> <tr> <td>EFW (AVol)</td> <td>167</td> <td>163</td> <td>167</td> <td>167</td> <td colspan="2">g</td> </tr> <tr> <td>EFW (TVol)</td> <td>94</td> <td>93</td> <td>94</td> <td></td> <td colspan="2">g</td> </tr> </table>						Limb Vol.									1	2	3			EFW (AVol)	167	163	167	167	g		EFW (TVol)	94	93	94		g	
Limb Vol.																																		
		1	2	3																														
EFW (AVol)	167	163	167	167	g																													
EFW (TVol)	94	93	94		g																													

1 Report

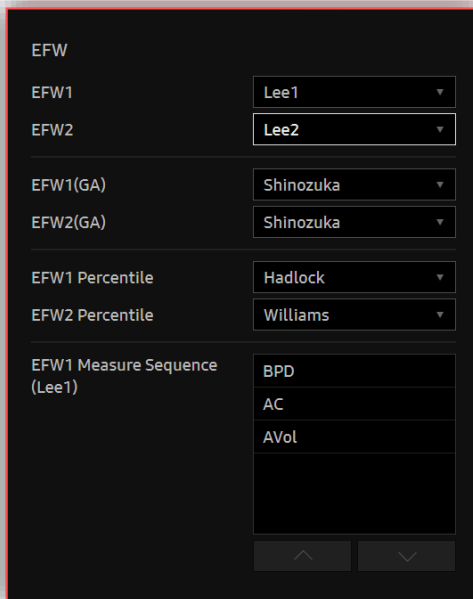
Limb volume and EFW(Estimated Fetal Weight) calculated by limb volume obtained will be displayed.

# \* Appendix – Assign EFW table



① Assign Author

Go to [Measurement] in the setup,  
Setup → Measurement → Author →  
EFW → EFW1, EFW2  
Assign [Lee1] or [Lee2] for the EFW table.



## ★ Tips

To display EFW based on AVol. or TVol., set the EFW Author of fetal weight equation to [Lee1] or [Lee2].

- [Lee1] is calculated by BPD, AC and AVol.
- [Lee2] is calculated by BPD, AC and TVol.

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- This product is a medical device, please read the user manual carefully before use.
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