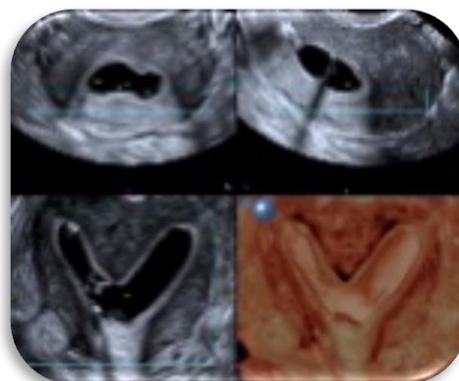
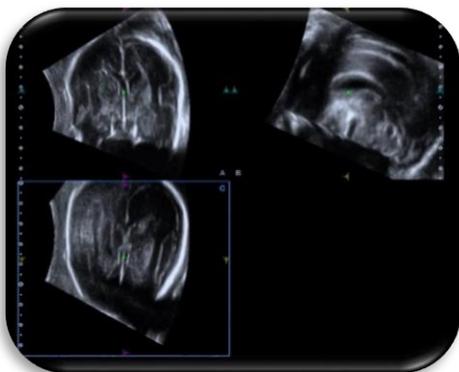


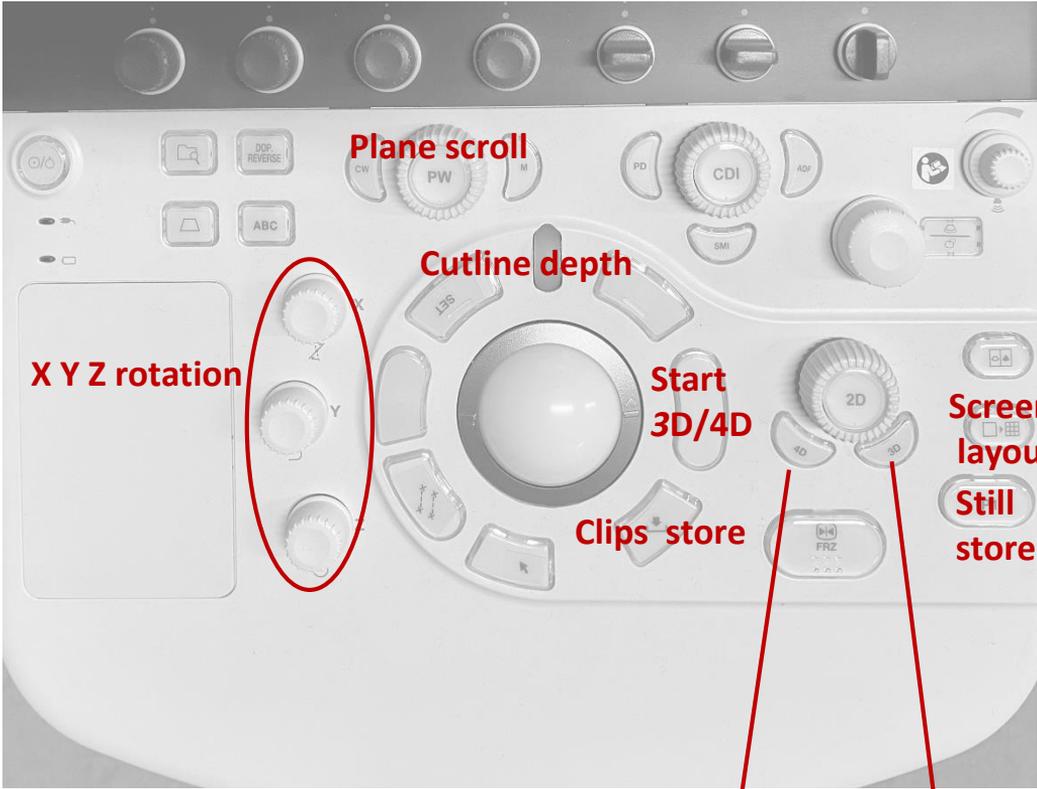
iGuide 3D/4D

Women's Health range





System layout



Activate pre4D Activate pre3D

Depending on the setup, the buttons to start 3D/4D could be in different positions, or only available on TCS.

Pre 3D/4D page

How to influence scan angle and quality



4D framerate: Quality index, low setting means good quality but low framerate. For face generally around 3 to 4.

3D framerate: Quality index, low setting means long scantime but good quality. For MPR image e.g. CNS and spine recommended 1, for face recommended 4.

4D fan angle: Sets the volume angle in Z direction.

3D fan angle: Sets the volume angle in Z direction.

4D Frequency: Sets the frequency of transducer during 4D. i-series recommended 4.5 (pen) a-series 6 (gen).

3D Frequency: Sets the frequency of transducer during 3D. i-series recommended 4.5 (pen) a-series 6 (gen).

3D Aplipure: Compounding on or off during 3D. Not recommended.

Volpure C: Acquires a thick slice in C-plane. Useful for eg Spine. Similar to OmniView which can be done after 3D acquisition.

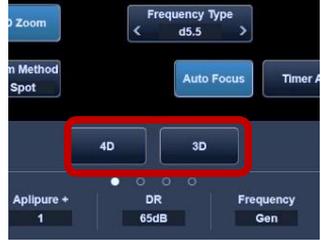
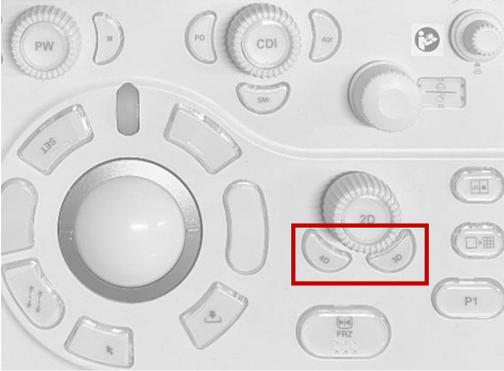
Vol pure A: Acquires thick slice in A-plane. Useful for extremities.

STIC: Acquires several cardiac cycles and reconstruct one complete one. For B-mode and CDI/ADF.

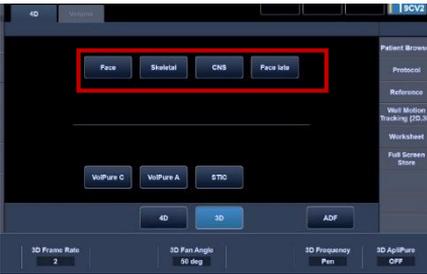


General workflow

Select 3D or 4D from panel or TCS



Default settings are similar to Preset Face, or select a different 3D/4D sub-preset. Adjust box size, framerate or scan angle if needed.

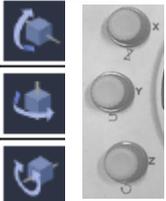
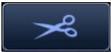


Start 3D/4D Acquisition from button next to TB or Freeze. Look at Head – up Display area, which indicates the button functionality around trackball.



3D is recommended for CNS, cleft lip, spine and in case you need best possible resolution. 4D for face and "baby television".

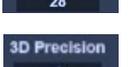
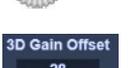
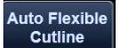
TCS after freeze



- Selects viewing direction for volume image, more possibilities on page 2.
- Activates real time automatic flex cutline (useful).
- Flexible cutline, manual curving of cutline.
- If active MPR and Volume are moving independently, depending which plane is active. Be careful!
- If active no functionality of cut plane on little wheel in full screen mode.
- Change screen layout.
- Same functionality as  from main panel.
- Indicates active plane.
- Rotates MPR/3D image by trackball.
- Activates cutting tools/Magic cut.
- Choose Render mode.
- Sets smoothness of 3D volume
- Rotates volume image and MPR by small rotary encoders around X,Y,Z axis



3D/4D Acquisition Face



1. Show Fetus profile (best bit from the side).
2. Start 3D or 4D from panel or TCS.
3. Select preset, if no preset selected it will be similar to Face.
4. Adjust the ROI, scan angle and framerate if needed.
5. Press 3D/4D start or Freeze to start scanning.
6. Adjust B-mode gain or '3D Gain offset' (threshold) if needed.
7. Push Z button if fetus is upside down.
8. Use cutline (little wheel) to come closer to face or,
9. Activate 'Auto flexible cutline' to cut away unwanted structures.
10. Adjust overall gain setting (volume and MPR).
11. Adjust '3D Gain offset' (threshold) (volume only).
12. Adjust smoothness of 3D volume image.
13. Rotate X,Y,Z for better display of face if needed.
14. Store clip/images on the fly or after freeze.
15. Scroll back to select best image (4D only).
16. To change light source position use TB. If not available, check heads up display.
17. Change screen layout if needed.
18. Zoom image with depth if needed. If cutline comes into face activate 'Fixed ROI' and zoom further.
19. Activate 'Scissor' if detailed cutting is needed.

[For details regarding cutting please click here](#)

Automatic flexible cutline is preferred over flexible cutline. In 4D real time trackball function is light position, after freeze it is cine mode. To change to light source again, check heads up display.



3D Acquisition Brain Corpus Callosum

Always use 3D

Display axial BPD/HC plane with good visibility of septum pellucidum and falx with almost no shadowing. For Vermis, angle probe towards cerebellum. You need two different acquisitions.



1. Start 3D on panel or TCS.
2. Select 3D/4D sub preset CNS.
3. Adjust ROI size, eventually angle and framerate.
4. Wait for baby to be quiet and ask the patient not to move.



5. Start acquisition by 3D start or freeze.
6. Image comes up in MPR.



7. A-plane is active. The midline should be completely parallel. If necessary rotate horizontally with Z-axis.
8. Place the cross in the middle of the CSP.
9. Activate B-plane.



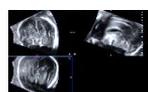
10. Rotate around Z-Axis by 90°, coronal view, baby looks to you, (B).



11. Activate C-plane.



12. Rotate around Z-axis by 90°, C is now axial, with baby looking down.



13. Result A is coronal looking towards you, B is midsagittal looking to A, C is axial view looking down.



14. If needed the plane can be slightly readjusted by using panning/slicing function (PW button), readjust position of cross and/or X,Y,Z rotation.



15. Use 'Thickness' (page 2) to improve contrast resolution if needed.

Rotation is around the cross mark(+)

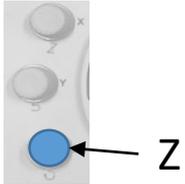
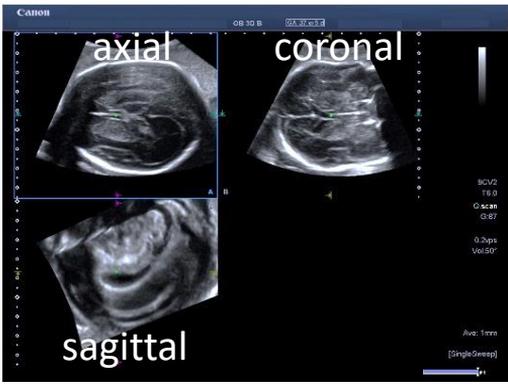
The best resolution for the Corpus Callosum would be mid sagittal acquisition, however since this is not always possible we used in this example axial acquisition.

See next pages for step-by-step guide.

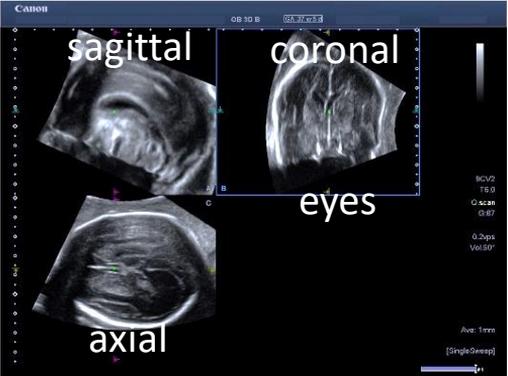


3D Acquisition Brain Corpus Callosum

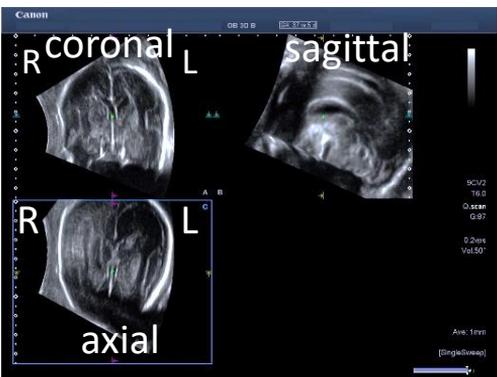
Quick guide



Initial Image: A active, put cross in CSP and make sure midline is horizontal.



Activate B-Plane, turn 90° around Z (looks towards you in B).



Activate C-plane, turn 90° around Z. Baby looks in A-plane towards you, in B-plane it looks to A-plane. In C plane it looks down.

Fine tune by slicing (PW), readjusting cross, rotating and adjusting thickness.

Thickness
4.0 mm



3D Acquisition Brain Corpus Callosum

Using MultiView for Corpus callosum

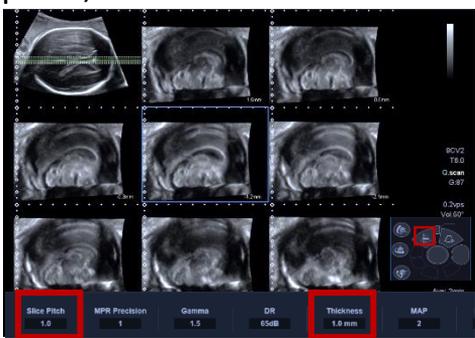
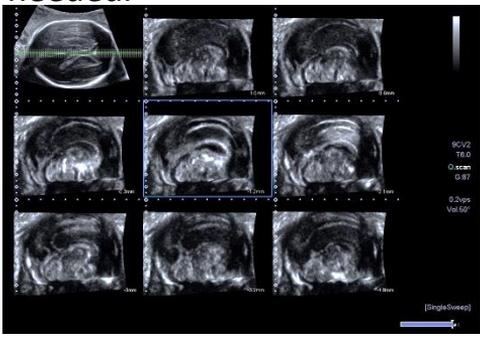
MPR: Activate A-plane.

Activate MultiView and C.



C-plane. Rotate with Z if needed.

Change position, 'slice pitch', 'thickness' if needed.



No 'thickness'

Increased 'thickness' to improve contrast



Toggles between position of lines and slice pitch (distance between lines). Slice pitch can also be done via TCS.



MultiView can be done from same acquisition as for normal 3D.

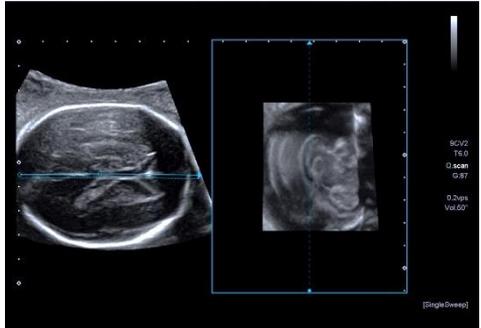


3D Acquisition Brain Corpus Callosum

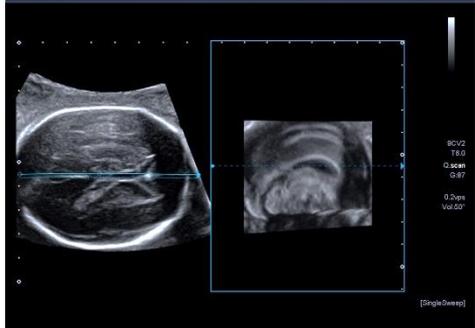
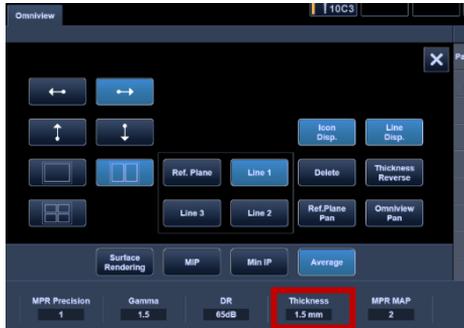
Using Omniview for Corpus callosum

MPR: Activate A-plane.

Activate Omniview **Omniview** and draw line over midline, end by fast double click.



Change view direction and 'Thickness' if needed. Wheel can be used to scroll.



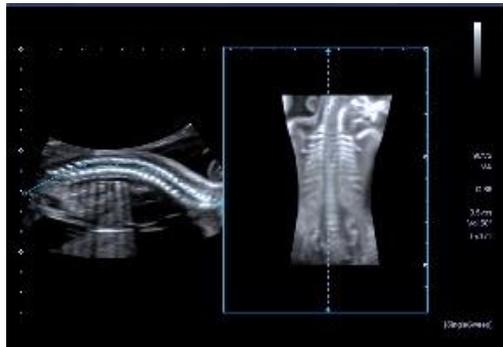
Omniview can be done from same acquisition as for normal 3D. This is preferred over Vol Pure C.



3D Acquisition Spine Skeleton Mode

For good resolution of fetal spine it is recommended to use 3D

1. Show fetal spine on B-mode in sagittal view with some fluid above.
2. Start 3D (on TCS or panel).
3. Select 3D/4D sub preset Skeletal on TCS.
4. Adjust ROI size, eventually angle and framerate.
5. Start acquisition by 3D start, or Freeze.
6. Skeleton Mode with Quad view is displayed.
7. Adjust overall gain setting (Volume and MPR) and or '3D Gain offset'(volume only).
8. Optimize image by,
 - Rotate X,Y,Z.
 - Use wheel for depth (z-direction).
 - Use PW button to scroll through different planes.
9. Adjust 'Thickness' (page 2) if needed.
10. Use 'OmniView' to display curved spine in straight image, always start from A-plane.
 - Adjust 'Thickness' for better contrast resolution and less noise.



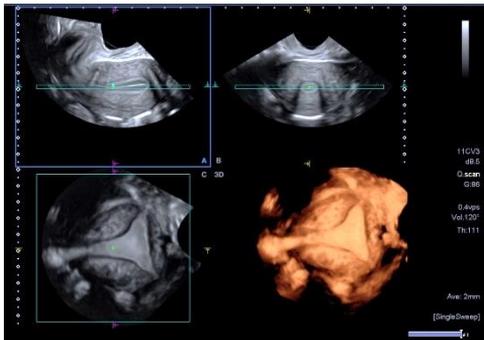
In case of standard sub preset select Skeleton Mode. Shadow Glass can also be nice for Spine.



3D Acquisition Uterus

For good visualization of Uterus please use 3D

1. Display uterus in midsagittal position with good display of endometrium.
2. Start 3D on panel or TCS.
3. Select 3D sub preset uterus.
4. Adjust 'ROI size', eventually angle and framerate.
5. Ask patient not to move or speak.
6. Start acquisition by 3D start or freeze.
7. Image comes up in MPR and Surface rendering.
8. Adjust 2D gain to optimize MPR.
9. Activate A-plane.
10. Place the cross in the endometrium.
11. Rotate (Z) to have full length of endometrium horizontal.
12. Adjust 'ROI size' to a very narrow thin line.
13. Adjust '3D Gain offset' to improve volume if needed.
14. Use little wheel to scroll through volume.
15. Use 'Thickness' (page 2) to improve contrast resolution of MPR if needed.



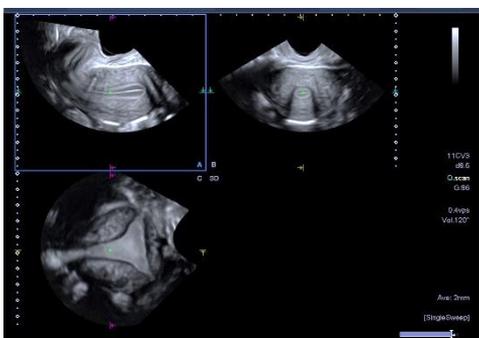
The steps can also be: Start in MPR and after rotation, activate **Surface** and adjust 'Edit ROI size' and 'gain offset'. Depending on setup, buttons can be in different location.



3D Acquisition Uterus

Using MultiView for Uterus

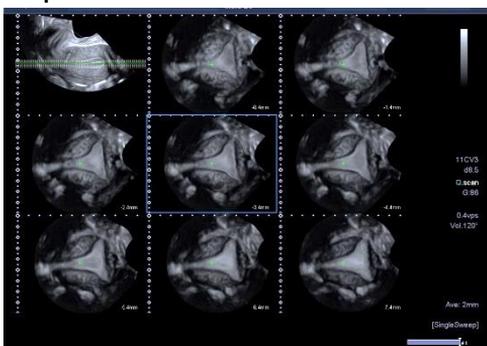
MPR: Activate A



Activate MultiView and C



C-plane



A-plane



Toggles between position of lines and slice pitch (distance between lines).

'Slice pitch' can also be done via TCS.

Increasing 'Thickness' might give better contrast.

MultiView for uterus is very useful, since it is easy and fast to see coronal view of endometrium. It can be done with same 3D acquisition.

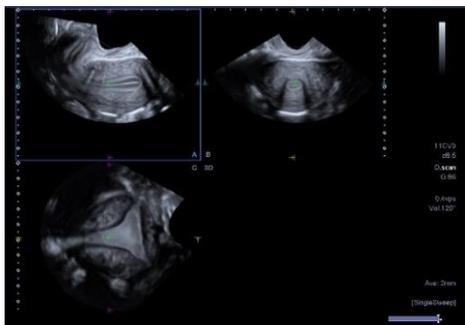


3D Acquisition Uterus

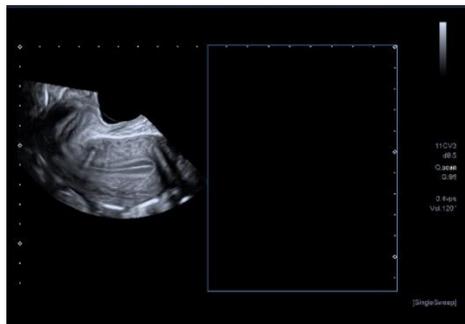
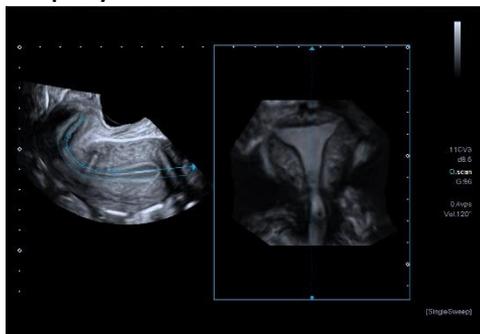
Using Omniview for Uterus

Activate OmniView **Omniview** and draw line over top of uterus through endometrium up to cervix.

MPR: Activate A.



End by fast double click and thick C plane will be displayed.



Thickness can be increased further. Viewing direction can be changed.



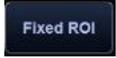
The wheel can be used to scroll through volume.

The plotted line can be readjusted. By hovering with the arrow over the point to change, the arrow turns into a X, press set, keep it pressed and move trackball to desired location.

Omniview with a thick slice is very useful, because endometrium is always rather curved. The high contrast (thickness) makes it easier to see polyps.



Volume optimisation Magic Cut



1. Before cutting activate Fixed ROI.
2. Select Magic Cut.
3. Rotate volume in such a way that structure you want to cut is not connected to other structures.
4. Select type of cutting.



5. Box outside is easy to just keep face.
6. Move trackball to get cursor.
7. Press SET to start.
8. Trace area or select box and end by set.
9. Rotate again and cut other areas away.
10. Select Undo if needed.
11. Select 'Cut depth defined' to cut away structures in front, up to a certain depth (no need for rotation first).



Selection for "cutting box/trace and inside/outside" keeps last setting.