

## ENDOSCOPIC ULTRASOUND CENTER OLYMPUS EU-ME3

# Shear Wave Quantification (SWQ)

GI ONLY

### CAUTION

Do not use SWQ while using the contrast agent. If SWQ is required, confirm that microbubbles have sufficiently disappeared first. There is a risk that cavitation may be produced by the interaction between the acoustic pressure of ultrasound and the contrast agent, which may injure the patient's tissue or result in bleeding.

### WARNING

Do not perform SWQ during puncturing or the interposition of any other type of metal. The unknown effects of shear waves and unintended ultrasound image freezing for ultrasound transducer cooling may cause problems for the procedure.

## SWQ Operations

SWQ provides an absolute value of tissue stiffness within a region of interest. It performs this quantitative tissue assessment by calculating the propagation velocity of shear waves, generated from a push-pulse.

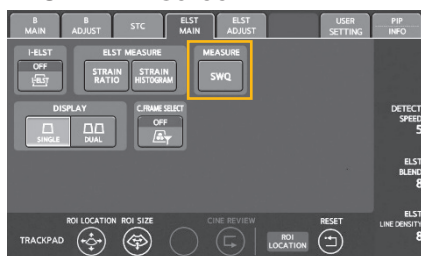
### B MAIN screen



1. While the ultrasound image is live, press the B MAIN tab or the ELST MAIN tab to switch the touch panel to the B MAIN or ELST MAIN screen.
2. Press the MEASURE SWQ button to switch the monitor display to the SWQ monitor display.
3. The touch panel screen switches to the SWQ measurement screen.

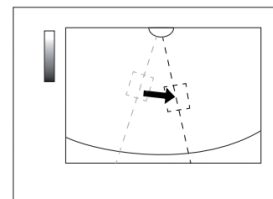
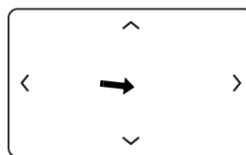
\* SWQ is available with GF-UCT180/260 and GF-UE190/290.

### ELST MAIN screen

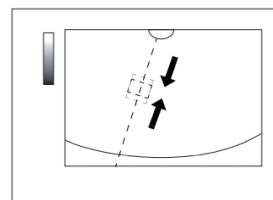
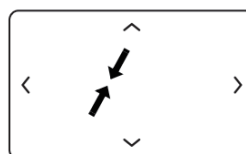


## Adjusting the location and size of the measured region

1. Swipe the trackpad to move the SWQ ROI in the swiped direction.



2. Pinch in or out on the trackpad to make the SWQ ROI smaller or larger in the vertical direction.



## SWQ measurement screen



PERFORM SWQ button



Measurement result SWQ ROI SWQ line

### Performing SWQ

1. Press the PERFORM SWQ button on the touch panel to perform SWQ measurement.
2. Once the SWQ ultrasound transmission is completed, the ultrasound image will freeze (SWQ cooling). A countdown message for how much longer until the completion of the SWQ cooling will appear in the lower right corner of the monitor display.
3. The results of measurement appear in the measurement results display area.
4. Press the FREEZE key to display the live ultrasound image and reset the measurement results.

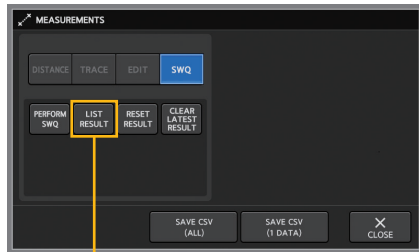
Countdown message

Performing SWQ cooling  
Expected time needed: 3 sec

### Description of display items

Measurement results display item	Description
No	Displays a serial number for performances of SWQ.
TIME	Displays the time when the SWQ measurement was confirmed in 24 hour format (hh:mm:ss).
Vs	Displays the median value of the shear wave propagation velocity [m/s] measured in the SWQ ROI.
E	Displays the median value of the modulus of elasticity [kPa] measured in the SWQ ROI.
IQR	Displays the interquartile range of the group of measurement values in the SWQ ROI.
SD	Displays the standard deviation of the group of measurement values in the SWQ ROI.
CI	Displays the availability of measurement points acquiring the Vs group in the SWQ ROI.
DEPTH	Displays the distance [mm] from the surface of the ultrasound transducer to the center of the SWQ ROI.

## SWQ measurement screen

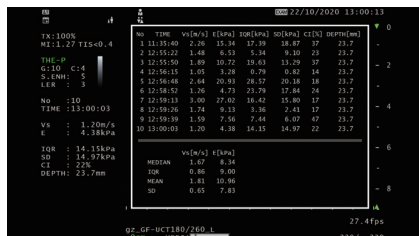


LIST RESULT button

### Displaying the measurement result list

1. Repeat the steps “Performing SWQ” and perform SWQ several times.
2. Freeze the ultrasound image and press the LIST RESULT button on the touch panel.
3. The LIST RESULT window appears on the monitor, displaying the last 10 measurement results.

### The LIST RESULT window



#### Disclaimer

This sheet is for quick reference only. Please refer to the relevant User's Manual(s) for instructions, warnings and cautions. Nothing in this presentation is meant to supersede or replace the instructions for use applicable to each specific device, or the processes and procedures in place at your facility. Quick Reference Guide is only for trained health care professionals.

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