

Carotid Studies - in Pulse Wave Analysis or Pulse Wave Velocity Modes

During *SphygmoCor* Pulse Wave Analysis (PWA) and Pulse Wave Velocity (PWV) modes there are occasions when you may want to take a reading from the carotid artery. Some important notes on this topic are described below.

ITEM 1. ENTERING THE BLOOD PRESSURE VALUES IN THE “STUDY SCREEN” FIELDS

Set Up:

During PWA measurements, the carotid box on the Study Screen needs to be selected.

During PWV when performing a carotid-femoral reading, it is recommended that “carotid” be selected as the Site A.

BP Data Entry:

In each case, the **blood pressure values entered for a carotid study must be the mean pressure and diastolic pressure** you obtain from your prior cuff BP measurement --- **this is different from the procedure for entering the blood pressure values when taking radial tonometry measurements**, when systolic and diastolic cuff BP values are entered.

Obtaining Mean Pressure:

The mean pressure (MP) value can be obtained in a number of ways:

- From an automated blood pressure device that provides a brachial MP value; or
- By using the calculation of $MP = DP + 1/3 PP$, with DP and PP (pulse pressure) values obtained from the sphygmomanometer or automated blood pressure reading; or
- By using the mean pressure calculated by SphygmoCor in an earlier radial artery PWA study.

Correcting Old SphygmoCor Carotid Studies:

If you have previously performed a carotid study incorrectly using the SP and DP values (rather than MP and DP) you can retrospectively correct the study report by:

- calling up the old study on the screen
- clicking on “Recalculate” button top right corner
- entering the DP and MP values in the BP data entry fields
- clicking “Recalculate” button

The carotid report will now be recalculated with correct BP calibration.

ITEM 2. “ NO PROCESSING” OF THE CAROTID WAVEFORM IN PWA STUDIES

In certain instances, you may wish to simply analyse the carotid waveform itself, using it as an approximation for the aortic root waveform.

Procedure:

- In the Study Screen, the “aortic” transfer function box between the “radial” and “carotid” selection boxes on the left-hand side of the torso needs to be activated. This is done by double-clicking your mouse on the purple circle located over the heart on the torso, then answering “yes” to the “No Processing” question, and so activating the “aortic” box for selection. Click on the “aortic” box.
- After capturing the carotid waveform, the two averaged waveforms on each side of the report screen will be identical; i.e. the input waveform from the carotid will be analysed as if it were the derived aortic waveform, as no processing has been performed to derive an aortic root waveform.

Reprocessing a “No Processing” carotid study as a “Carotid” processed study:

In studies where you have selected “no processing”, you may change the study fields by clicking the “recalculate” button, then selecting “carotid” in the artery drop down box. However, once you have turned back on the normal carotid processing, you are unable to revert to “no processing” on this study.

If you have previously performed carotid studies with the “carotid” box highlighted (software uses transfer function processing) you are not able to retrospectively change the study fields to turn off the processing.