

## Exporting Data from SphygmoCor

Information from SphygmoCor can be exported in either of two ways:

- 'As text' - which exports all the alphanumeric data in the reports in a Tab-delimited text-file format (.txt), which can then be read directly into analysis applications such as Excel.
- 'As graphic' - which exports the image of the report screen as a JPEG file (.jpg).

Data can be exported for one patient report (text or graphic), for all reports for one patient (text only) or for all patient reports in the current database (text only).

Extracting data from the different SphygmoCor programs (Pulse Wave Analysis [PWA], Pulse Wave Velocity [PWV], Pulse Wave Monitoring [PWM]) or from different databases must be done separately.

### EXPORT "ALL MEASUREMENTS IN THE DATABASE"

This will allow all readings from all patients in the active database to be exported.

To perform this:

- Ensure you are on the patient screen by clicking on the 'patient tab'
- From the tool bar select 'system>database>export'.
- The SphygmoCor export window will appear with a default file name and default file location to which the file will be written - if you wish to rename the file or change the location, this can be done now.

The default file name is prefixed with 'All' and is followed by the database name and the date of exporting and the mode the readings were taken in; eg,

For PWA:	C:\Program Files\SphygmoCor\Export\All_data_1Dec2002_pwa.txt
For PWV:	C:\Program Files\SphygmoCor\Export\All_data_1Dec2002_pvw.txt
For PWM:	C:\Program Files\SphygmoCor\Export\All_data_1Dec2002_pwm.txt

### EXPORT "ALL MEASUREMENTS FOR ONE PATIENT"

This will export all readings for a single patient in the active database.

To perform this:

- Ensure you are on the patient screen by clicking on the 'patient tab'.
- Right-click on the patient for whom you want to export the measurements, and select export.
- The SphygmoCor export window will appear with a default file name and default file location to which the file will be written - if you wish to rename the file or change the location, this can be done now.

The default name is prefixed 'Patient' followed by the patient name and the mode the readings were taken in; eg,

For PWA:	C:\Program Files\SphygmoCor\Export\Patient_Smith_pwa.txt
For PWV:	C:\Program Files\SphygmoCor\Export\Patient_Smith_pvw.txt
For PWM:	C:\Program Files\SphygmoCor\Export\Patient_Smith_pwm.txt

### EXPORT "A SINGLE STUDY RECORD FOR ONE PATIENT"

This option enables a single measurement from a patient to be exported, either 'as text' or 'as graphic'.

#### (a) To export measurement as text

This will export the alphanumeric fields for one study along with all waveform data points; which include:

- In PWA – the 4 graphs in the 'Detailed' screen - – 10 sec of peripheral and aortic waveforms and the average peripheral and aortic waveform
- In PWV – the 4 graphs from Site A and Site B – 10 sec of the waveforms from site A and site B and both ECG traces
- In PWM – each of the pressure trends in the pressure graph and the four parameter graphs – Heart Rate, SEVR (Buckberg) and Ejection Duration.

To perform this export:

- Open the selected report screen for the patient - in PWA mode either the "Detailed" or the "Clinical" screen;
- Click the arrow on the export button and select 'As Text' on the drop down menu.
- The SphygmoCor export window will appear with a default file name and default file location to which the file will be written - if you wish to rename the file or change the location, this can be done now.

The default name is prefixed with the name of the patient followed by the date of the measurement and the mode the readings were taken in; eg,

C:\Program Files\SphygmoCor\Export\Smith_24Jan2003_pwa.txt
C:\Program Files\SphygmoCor\Export\Smith_24Jan2003_pvw.txt
C:\Program Files\SphygmoCor\Export\Smith_24Jan2003_pwm_session.txt

**(b) To export a measurement as a graphic**

In PWA and PWV this feature allows the various report and analysis screens to be exported as a picture file.

To perform this for the 'Report Screen':

- Open the selected patient report screen - in PWA mode choose either the "Detailed" or "Clinical" screen;
- Click on the export button once; or click with the arrow on the Export button and select 'As Graphic' on the drop down menu.

To perform this for the 'Analysis Screen'

- Open the analysis screen – in PWA mode select either the 'Waveform' or 'Trend' screen and in PWV select either the 'Trend' or 'Velocity' screen
- Click on the 'export button'.
- The report screen in PWM mode cannot be exported as a graphic file.

The file will always be exported to the default location and the default file name is prefixed with 'PIC' followed by the exported screen (clinical, detailed, analysis or trend), patient name, date of reading and the type of measurement; eg,

C:\Program Files\SphygmoCor\Export\PIC\_clinic\_Smith\_24Jan2003\_pwa.jpg

**VIEWING EXPORTED FILES IN OTHER PROGRAMS**

**To view the exported 'text' data files**

To open the 'text' file in Excel:

- Open Microsoft Excel
- From the main menu select 'File', then 'Open'.
- From the 'Open' window open the file location. The default location of saved files is:  
C:\Program Files\SphygmoCor\Export
- From the drop down menu of the 'Files of Type' select 'All files' or 'Text files'.
- Select the file you wish to open based on the file name types above.
- When the "Text Import Wizard" Box appears, click on Finish and the data will be imported in the active worksheet.

**For a full list of exported fields refer to Appendix A for PWA and Appendix B for PWV**

- When 9999 appears, it indicates that this information was either not entered or the SphygmoCor software does not record a value for this field.
- When importing ' a single measurement from a single patient' in addition to the exported fields listed in Appendix A, values of points on the waveforms will be available. The values are taken every 128<sup>th</sup> of a second and are presented in columns in the following order:

**PWA**

- 10 sec radial waveforms
- 10 sec derived aortic waveforms
- average radial waveform
- average derived aortic waveform

**PWV**

- Site A waveform
- Site A ECG
- Site B waveform
- Site B ECG

**PWM**

- When an individual measurement from one patient, the exported fields appear in full in column A.
- When importing data as 'all measurements from one patient' or 'all measurements in the database' for PWM, it is the data from the PWA reports that are being imported and the full list of exported fields is the same as that for PWA, Appendix A.

APPENDIX A – Export Fields for PWA

Below is a list of the fields that are exported when a complete database export is performed:

System ID	System Serial Identification Number	C_AP	Central Augmented Pressure
Database ID	Database Identification	C_MPS	Central Mean Pressure of Systole
Patient Number	Patient Number	C_MPD	Central Mean Pressure of Diastole
Surname	Entered Patient's Surname	C_TTI	Central Tension Time Index
First Name	Entered Patient's First Name	C_DTI	Central Diastolic Time Index
Sex	Entered Patient's Sex	C_SVI	Central Buckberg Sub-Endocardial Viability Ratio (SEVR)
Date Of Birth	Entered Patient's Date of Birth	HR	Heart Rate
Patient ID	Entered Patient' Identification	C_PERIOD	Central Pulse Period
Patient Code	Entered Patient Code	C_DD	Central Diastolic Duration
SP	Entered Systolic Pressure	C_ED_PERIOD	Central ED/Period %
DP	Entered Diastolic Pressure	C_DD_PERIOD	Period-ED/Period %
MP	Entered Mean Pressure	C_PH	Central Pulse Height
DATA_REV	Math's Data Revision	C_AGPH	Central Aug/PH %
DATE TIME	Date & Time of Study	C_P1_HEIGHT	Central Pressure at T1 - Dp
MEDICATION	Entered Medication	C_SP	Central Systolic Pressure
NOTES	Entered Notes	C_DP	Central Diastolic Pressure
OPERATOR	Entered Operator	C_MEANP	Central Mean Pressure
HEIGHT	Entered Height	C_T1	Central T1
WEIGHT	Entered Weight	C_T2	Central T2
BODY_MASS_INDEX	Body Mass Index	C_AI	Central Augmentation Index
SAMPLE_RATE	Raw Data Sample Rate	C_ESP	Central End Systolic Pressure
SUB_TYPE	Entered Artery	C_P1	Central Pressure at T1
P_MAX_DPDT	Peripheral Pulse Maximum dP/dt	C_P2	Central Pressure at T2
P_QC_PH	Peripheral Pulse Quality Control Pulse Height	C_T1ED	Central T1/ED %
P_QC_PHV	Peripheral Pulse Quality Control Pulse Height Variation	C_T2ED	Central T2/ED %
P_QC_PLV	Peripheral Pulse Quality Control Pulse Length Variation	C_QUALITY_T1	Central Confidence Level of T1 (3-Very Weak/2-Weak/1-Strong/0-Very Strong)
P_QC_DV	Peripheral Pulse Quality Control Diastolic Variation	C_QUALITY_T2	Central Confidence Level of T2 (3-Very Weak/2-Weak/1-Strong/0-Very Strong)
P_SP	Peripheral Systolic Pressure	QUALITY_ED	Confidence Level of ED (3-Very Weak/2-Weak/1-Strong/0-Very Strong)
P_DP	Peripheral Diastolic Pressure	ED	Adjusted Ejection Duration (ES)
P_MEANP	Peripheral Mean Pressure	CalcED	Calculated Ejection Duration (ES)
P_T1	Peripheral T <sub>1</sub>		
P_T2	Peripheral T <sub>2</sub>		
P_AI	Peripheral Augmentation Index		
P_ESP	End Systolic Pressure		
P_P1	Peripheral P <sub>1</sub>		
P_P2	Peripheral P <sub>2</sub>		
P_T1ED	Peripheral T1/ED %		
P_T2ED	Peripheral T2/ED %		
P_QUALITY_T1	Peripheral Confidence Level of T1 (3-Very Weak/2-Weak/1-Strong/0-Very Strong)		
P_QUALITY_T2	Peripheral Confidence Level of T2 (3-Very Weak/2-Weak/1-Strong/0-Very Strong)		

APPENDIX B – Export Fields for PWV

Below is a list of the fields that are exported when a complete database export is performed:

System ID	System Serial Identification Number	PWV	Pulse Wave Velocity
Database ID	Database Identification	PWVERR	Pulse Wave Velocity Error
Patient Number	Patient Number	A_SUBTYPE	Site A Artery Location
Surname	Entered Patient's Surname	A_NOF_10_SETS	Site A No of 10sec data sets
First Name	Entered Patient's First Name	A_HR	Site A Heart Rate
Sex	Entered Patient's Sex	A_MDT	Site A Mean $\Delta t$
Date Of Birth	Entered Patient's Date of Birth	A_DEVIATION_DT	Site A Deviation
Patient ID	Entered Patient' Identification	A_TON_QC_PH	Site A Pressure Pulse Height
Patient Code	Entered Patient Code	A_TON_QC_PHV	Site A Pressure Pulse Height Variation
SP	Entered Systolic Pressure	A_TON_QC_PLV	Site A Pressure Pulse Length Variation
DP	Entered Diastolic Pressure	A_TON_QC_BLV	Site A Pressure Base Line Variation
MP	Entered Mean Pressure	A_ECG_QC_PH	Site A ECG Pulse Height
DATA_REV	Math's Data Revision	A_ECG_QC_PHV	Site A ECG Pulse Height Variation
DATETIME	Date & Time of Study	A_ECG_QC_PLV	Site A ECG Pulse Length Variation
MEDICATION	Entered Medication	A_ECG_QC_BLV	Site A ECG Base Line Variation
NOTES	Entered Notes	B_SUBTYPE	Site B Artery Location
OPERATOR	Entered Operator	B_NOF_10_SETS	Site B No Of 10 Sec Data Sets
HEIGHT	Entered Height	B_HR	Site B Heart Rate
WEIGHT	Entered Weight	B_MDT	Site B Mean $\Delta t$
BODY_MASS_INDEX	Body Mass Index	B_DEVIATION_DT	Site B Deviation
SAMPLE_RATE	Raw Data Sample Rate	B_TON_QC_PH	Site B Pressure Pulse Height
PX_DIST	Proximal Distance	B_TON_QC_PHV	Site B Pressure Pulse Height Variation
DT_DIST	Distal Distance	B_TON_QC_PLV	Site B Pressure Pulse Length Variation
PWV_DIST	PWV Distance	B_TON_QC_BLV	Site B Pressure Base Line Variation
PWV_DISTERR	PWV Distance Error	B_ECG_QC_PH	Site B ECG Pulse Height
ALGORITHM	Pressure Waveform Algorithm Selected	B_ECG_QC_PHV	Site B ECG Pulse Height Variation
PHEIGHT_PC	Pulse Height Algorithm - Percentage PH	B_ECG_QC_PLV	Site B ECG Pulse Length Variation
PP_MDT	Pulse to Pulse Mean $\Delta t$	B_ECG_QC_BLV	Site B ECG Base Line Variation
PP_DEVIATION	Pulse to Pulse Deviation		