



# Smartdop XT6

Quick-Start Guide



Thank you for purchasing the Hadeco Smartdop XT6 Fully Automatic Vascular Testing System. This guide has been created as a quick reference guide in relation to operating your Smartdop XT6 and Smart-XT-Link software on your Windows based PC or Tablet.

If you encounter any issues not addressed within this document, refer to the pdf manual which can be found on the software USB Flash Drive supplied.

### Specifications:

Power:	Ni-MH rechargeable battery pack & AC adaptor
Full charge life:	Approx. 2 hours
Battery life:	Approx. 2 years
Speaker output:	250 mW or more
Measurement range:	30 to 260 mmHg
Dimensions:	300 (W) x 244 (H) x 167 (D) mm
Weight:	Approx. 3.6 kg
Electrical safety:	Conforms to IEC-60601-1
Options:	Additional Cuffs, Temperature probe

### Computer System Requirements:

OS:	Windows XP/ Vista/ 7/8/10
CPU clock:	Celeron 1 GHz or more
Display:	800 x 600 dots or more 256 colors or more

### Minimum memory requirements:

RAM:	1 Gbytes or more
HD:	40 Mbytes or more

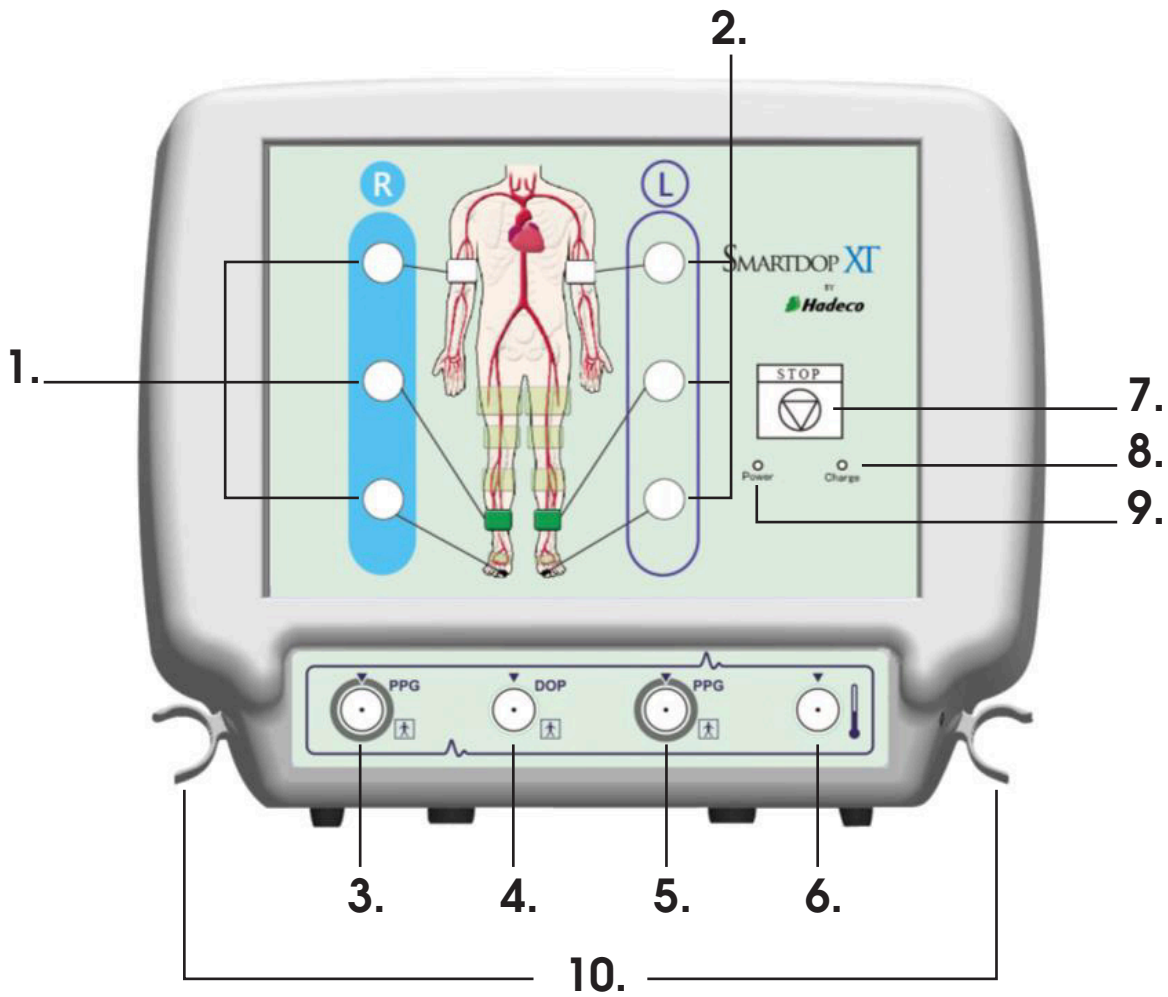
Software is NOT compatible with Apple Mac operating systems unless using Parallels or similar software.

## INDEX

---

- 4 MAIN FEATURES & CONTROLS
- 5 SMART-XT-LINK SOFTWARE INSTALLATION
- 6 OBTAINING STANDARD ABI/TBI
- 8 STANDARD DOPPLER VELOCITY WAVEFORMS
- 9 DOPPLER WAVEFORMS -INTERPRETATION
- 10 PRINTING & SAVING REPORTS
- 11 PPG VENOUS REFLUX STUDIES
- 11 FOOT TEMPERATURE PROBE

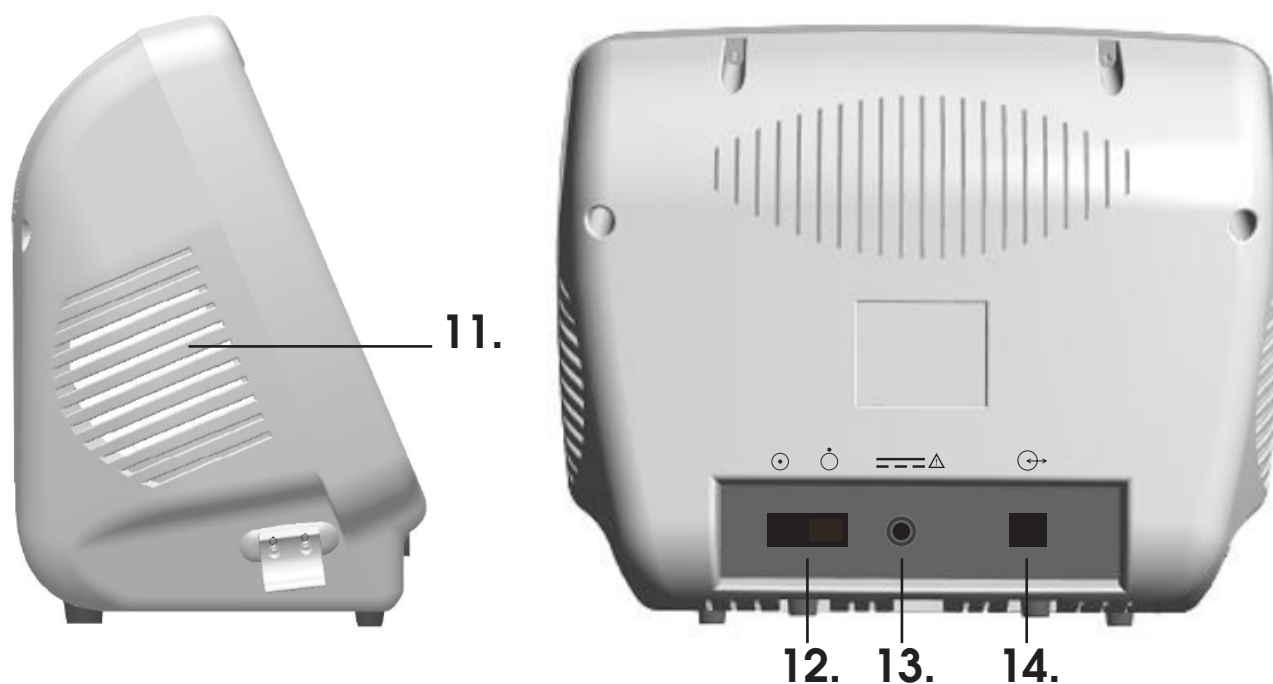
# MAIN FEATURES & CONTROLS



- |                                       |   |
|---------------------------------------|---|
| 1. Inflation ports for Right side     | To connect extender tubes for Right side cuffs                      |
| 2. Inflation ports for Left side      | To connect extender tubes for Left side cuffs                       |
| 3. PPG Probe connector for Right side | To connect PPG Probe for Right toe                                  |
| 4. 8 MHz Probe connector              | To connect 8 MHz Probe  |
| 5. PPG Probe connector for Left side  | To connect PPG Probe for Left toe                                   |
| 6. Foot Temperature Probe connector   | To connect Temperature Probe (optional extra)                       |
| 7. Stop Button                        | To stop testing and dump all cuffs immediately while in measurement |
| 8. Charge Indicator                   | Indicates battery charging status                                   |
| 9. Power Indicator                    | Indicates Power Status and Battery Level                            |
| 10. Probe Holders                     | To hold Probes when not in use                                      |

For a more detailed explanation on the Features and Controls for the Smartdop XT6, please refer to the Manufacturers Operating Manual supplied with the device.

## MAIN FEATURES & CONTROLS



11. Speaker

12. Power Switch ON/OFF

13. AC Adapter connection

14. Serial USB Port

For waveform audio output

To turn the device ON and OFF

To be connected to Mains Power supply

To connect to Windows based PC

For a more detailed explanation on the Features and Controls for the Smartdop XT6, please refer to the Manufacturers Operating Manual supplied with the device.

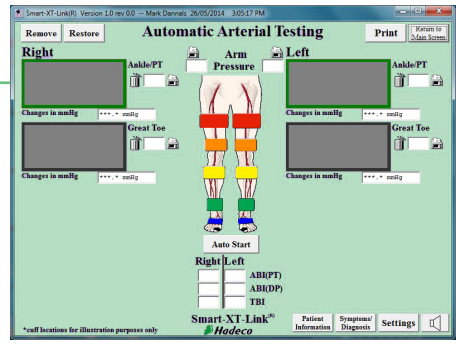
## SMART-XT-LINK SOFTWARE INSTALLATION

The Smartdop XT6 **CAN ONLY BE OPERATED VIA THE SMART-XT-LINK SOFTWARE.**

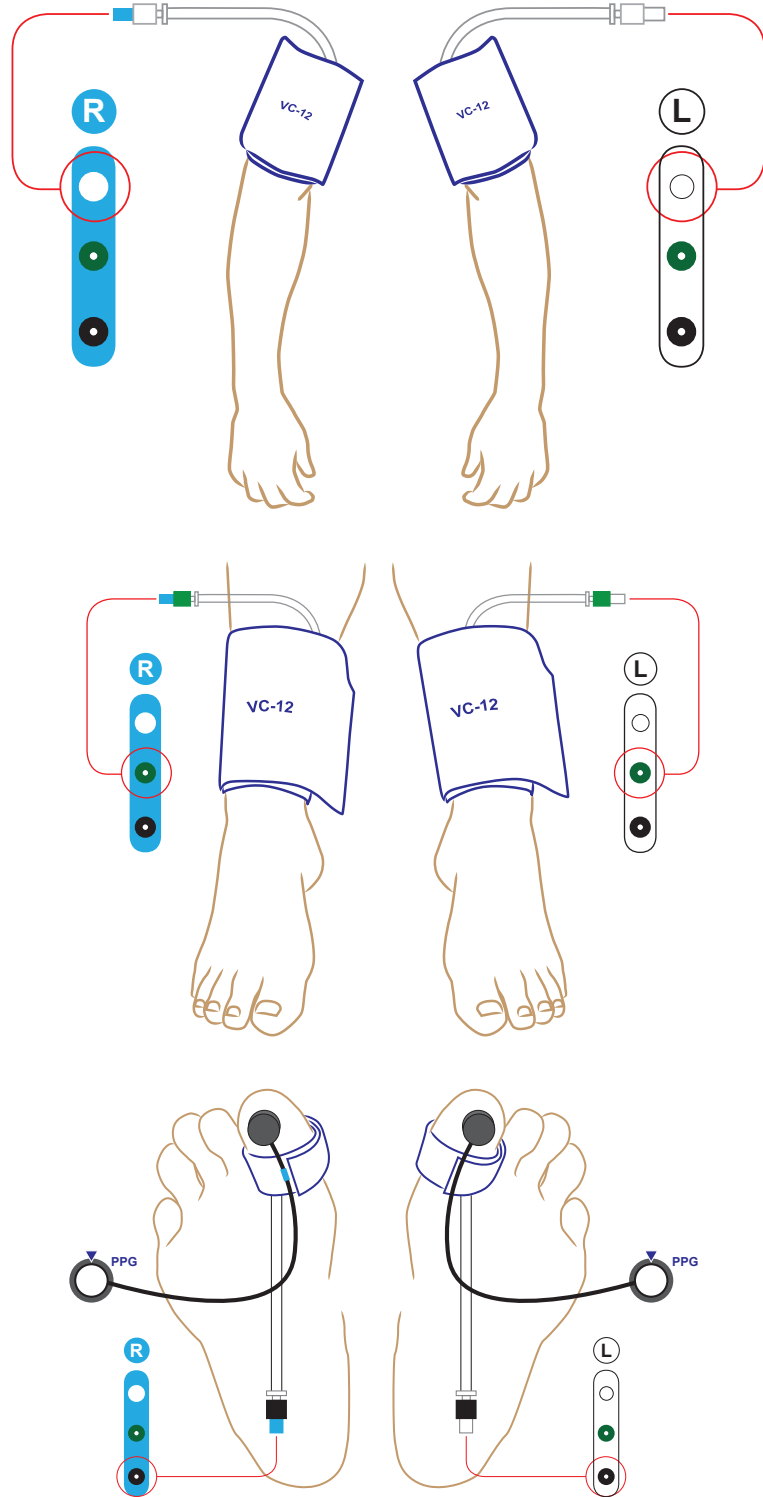
Please refer to the sections titled "3.Getting Started (pg 6)" and "4.Testing (Pg 8)" in the pdf manual supplied on the USB Flash Drive for instructions for software installation and initial set-up of the device.

# OBTAINING STANDARD ABI/TBI

(1) Open the Smart-XT-Link software and enter "Automatic Arterial Testing" from the Main Menu.



(2) Wrap cuffs snugly, positioning bilaterally for arm, ankle and hallux.

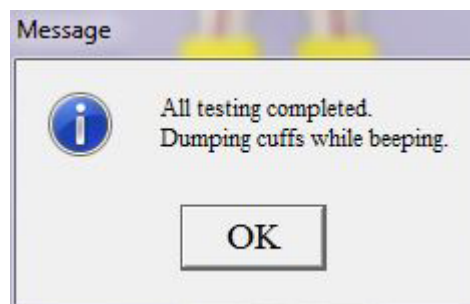


## OBTAINING STANDARD ABI/TBI (cont...)

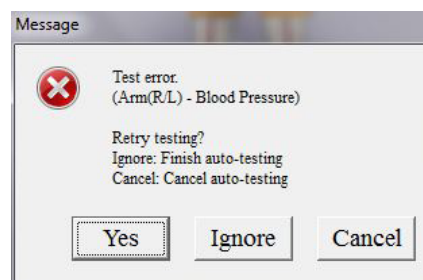
(3) Hook up colour coded tubing between cuff and inflation port on the XT6 for each site being used. Be sure to match colour coded tubing with the same colour inflation port for each site. Left & Right tubing and inflation ports are also colour coded with blue rubber secured on the end of each "Right" tube, while a blue strip on the device identifies all "Right" inflation ports (see pictured at end of manual).

(4) Connect 2 PPG probes to the Smartdop XT6 and secure each PPG transducer with the clear side against the pad of each great toe. You can use either the Toe Clips provided or Micropore tape to secure the probes.

(5) Once all cuffs and probes are secured in place, click "Auto Start". The Smartdop XT6 will start on both sides simultaneously, going through each selected site individually. Once complete, the message shown on right will appear. Click OK to close it and ABI and TBI will be calculated automatically during the tests.  
*Please Note:* If for some medical reason one arm site cannot be tested (i.e. dialysis), simply leave the cuff off the site and complete auto testing. An error message will appear, click ignore and the results will appear.



(6) If a site fails, the message shown on right will appear, explaining which site has failed. Simply adjust the cuff, ensure all tubing is tightly secured and click "Yes" to retry or "Ignore" to skip the site and carry on with procedure.



Once complete, click "Return to Main Screen".

# STANDARD DOPPLER VELOCITY WAVEFORMS

(1) Enter "Doppler Arterial Testing". This screen should already be set up with the necessary sites from your Initial Set Up process. (Refer to Initial Set-Up Manual)

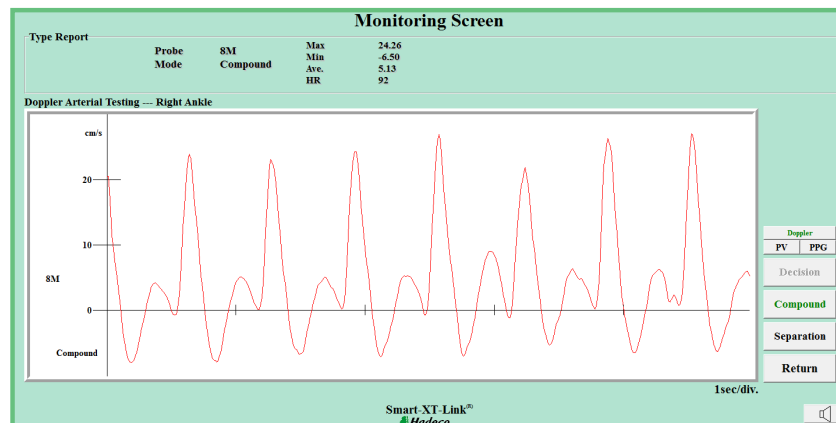
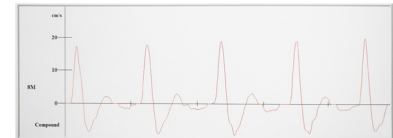
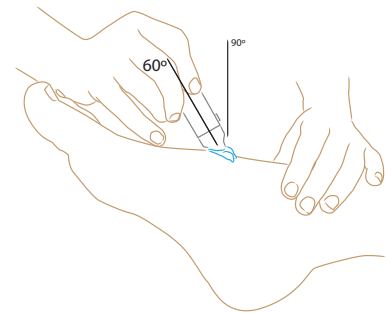
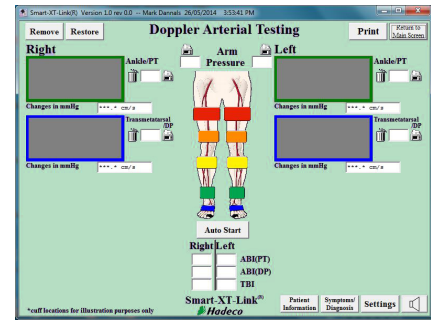
(2) Connect 8Mhz probe to Smartdop XT6 and have doppler gel ready.

(3) Click on any individual site and a Monitoring Screen will appear, ready to detect a waveform.

(4) Palpate relevant pulse and apply doppler gel.

(5) Position probe on pulse and angle at approximately 60 degrees to the vessel. Adjust the probe angle until clear, crisp sounds are heard and a defined waveform is visible on the Smart-XT-Link Software.

(6) Once you have found an ideal waveform, use "Freeze" button on the probe. If you are unsatisfied with current waveform, press "Freeze" button on the probe again to continue searching for an ideal waveform.



(7) Once you have an ideal waveform identified on the Monitoring Screen, click "Decision" to save waveform and click "Return".

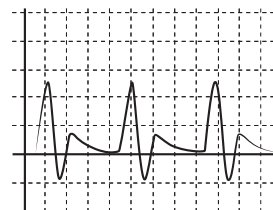
(8) Repeat previous step across all required sites.



# DOPPLER WAVEFORMS - INTERPRETATION

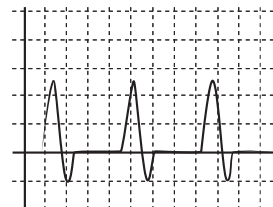
## TRIPHASIC (Normal)

- Triphasic sounds indicate bi-directionality and a compliant artery at the point of probe contact.
- The first long sound is the systolic forward component.
- The second short sound is the reversal component and is seen below the baseline of the waveform print out. It is thought to occur upon closure of the aortic valve.
- The third sound indicates wall motion characteristic of a compliant artery.



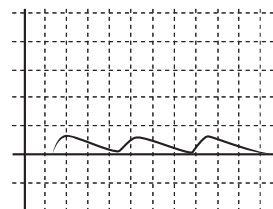
## BIPHASIC (Normal to Mild PAD)

- Biphasic sounds indicate bidirectional flow velocity having both forward systolic and reverse diastolic component but no third component.
- While they are considered normal, the lack of the third component may indicate minor to moderate blood flow impairment or simply improper probe angle this is why it is important to carefully adjust the probe to obtain the best sounds.



## MONOPHASIC (Severe PAD)

- Monophasic sounds are low frequency sounds having a single cycle. They are low in intensity and indicate severe disease.



## ABI

Ankle Brachial Indexes provide quantitative measurements of peripheral circulation. However, elevated readings >1.3 are common with patients with diabetes due to calcification of the vessels which results in an invalid reading.

$$\text{ABI} = \frac{\text{ankle systolic blood pressure}}{\text{brachial systolic blood pressure}}$$

Peripheral arterial disease (PAD)	<0.9
Mild PAD	0.7-0.9
Moderate PAD	0.4-0.69
Severe PAD	<0.4

## TBI

Toe Brachial Indexes are now commonly used as the chance of an invalid reading due to calcification of the vessels is less likely when compared with ankle pressures.

$$\text{TBI} = \frac{\text{toe systolic blood pressure}}{\text{brachial systolic blood pressure}}$$

Normal	0.65-1
Severe/Critical PAD	<0.2

## Absolute Toe Pressures

Absolute toe pressures are also used to indicate wound healing potential.

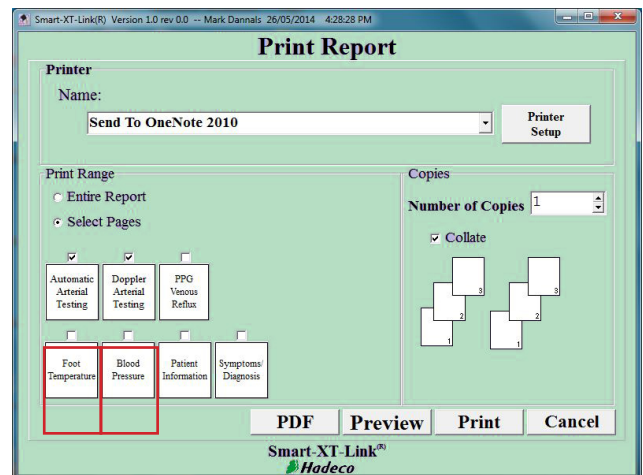
Absolute toe pressures >30mmHg indicate there is an increased chance of healing.

These quantitative measurements can assist in establishing a baseline to track a patient's progress over time, as well as being an excellent screening tool to identify potential foot health risk.

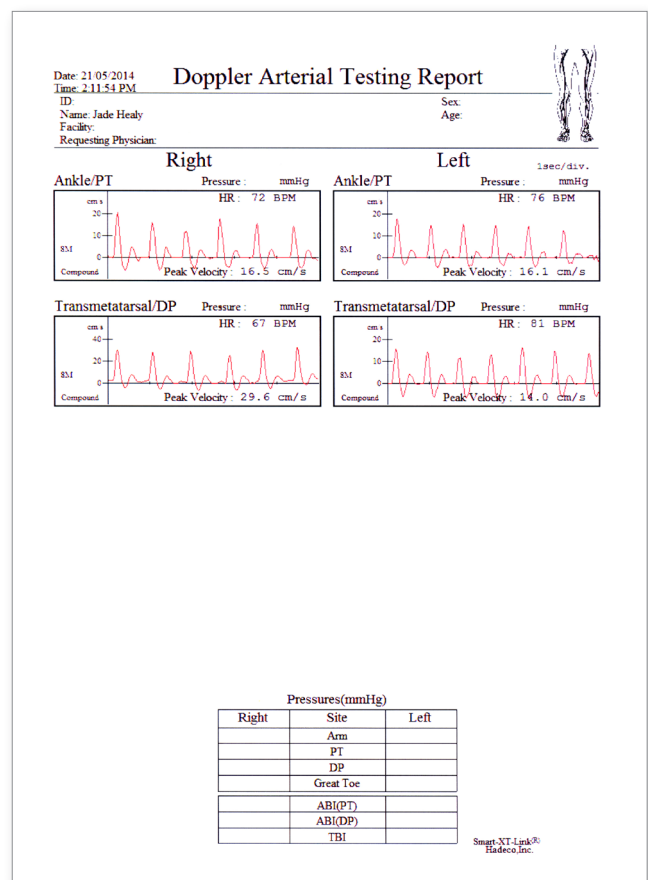
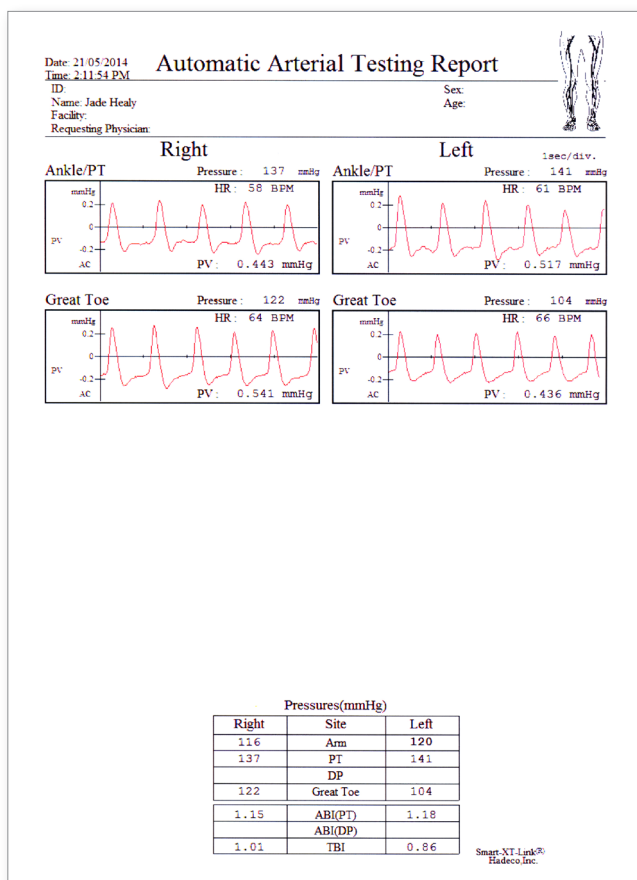
Reference: International Working Group on the diabetic foot, 2011

## PRINTING & SAVING REPORTS

- (1) Once all waveforms are taken, click "Print".
- (2) Select pages you wish to include in patient report (Automatic Arterial Testing & Doppler Arterial Testing).
- (3) Click "Preview" to ensure the report includes pages you require.
- (4) If you wish to print your patient report, select printer you wish to use and click "Print".
- (5) If you wish to save your patient report as PDF, click "PDF". Select folder you wish to save patient report PDF's and click "Save".
- (6) To start process again for new patient, Return to Main Screen and click "New File". You can also load existing files by clicking "Search Files".

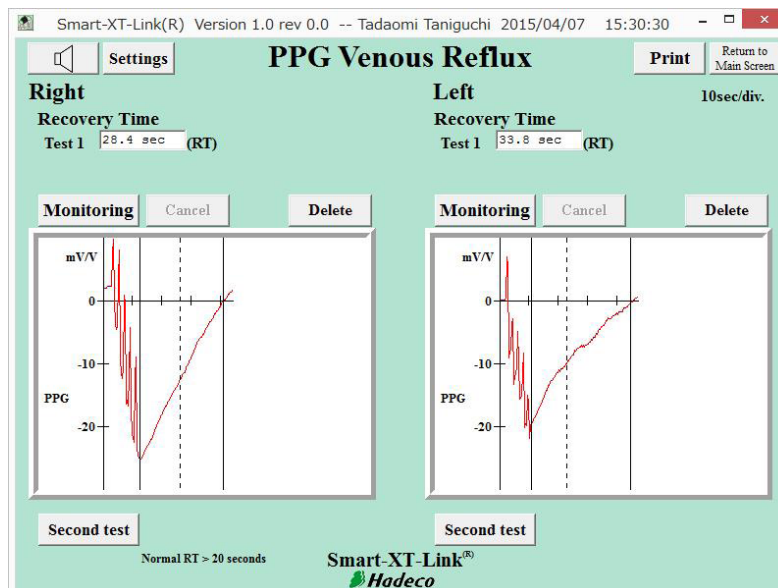


### Example of a Patient Report:



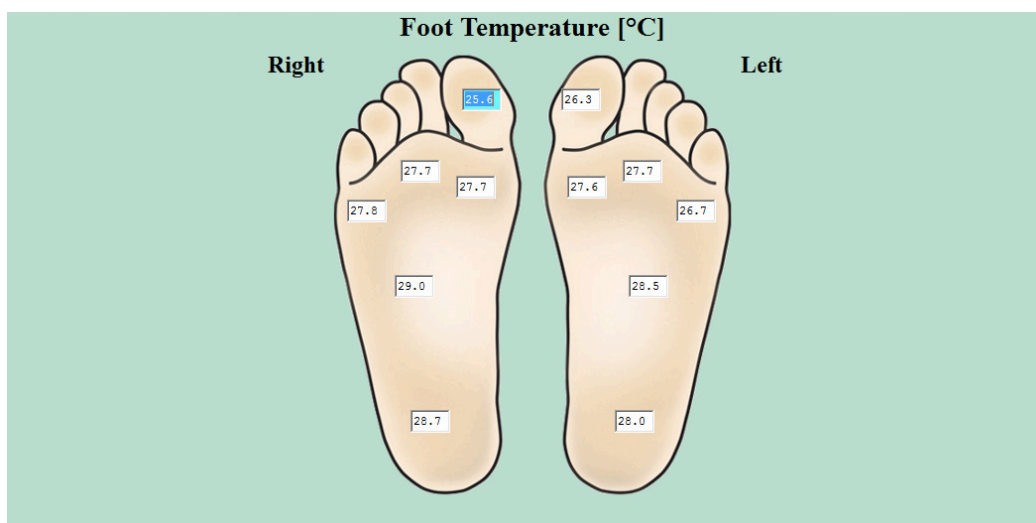
## PPG VENOUS REFLUX STUDIES

The Smartdop XT has the ability to conduct PPG Venous Reflux studies via the PPG Probes supplied with the device. For instructions on the procedure, please refer to page 19 of the pdf manual supplied on the software USB Flash Drive.



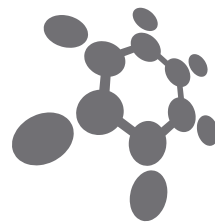
## FOOT TEMPERATURE PROBE

The Smartdop XT also has the ability to conduct Foot Temperature studies via the Thermometer Probe. For instructions on the procedure, please refer to page 21 of the pdf manual supplied on the software USB Flash Drive.





\* Tablet not included



**briggatemedicalcompany**

23-25 Lakewood Blvd  
Braeside Vic 3195  
Australia

Ph: (03) 8586 7800  
Fax: (03) 8586 7888

briggate@briggate.com.au  
www.briggatemedical.com