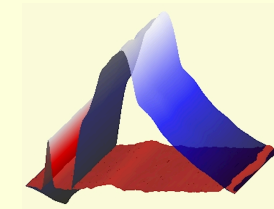




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PulsePen - Quick Reference Guide 1.1



This Quick Reference Guide contains information about the use of the PulsePen system in synthetic form, aiming at providing some tips to obtain good signals in a simple way.

This Guide, together with the User Manual, Tutorial, and the software online Help, provides comprehensive information regarding the use of PulsePen system.

We highly recommend the users read it.

Content:

- *General Notes*
- *Operator Tips 1*
- *Operator Tips 2*
- *Patient Tips*
- *Noisy Signals*
- *Good Signal*
- *Traffic Lights (software)*

Indications:



Recommended / Correct

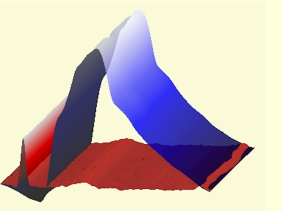


Wrong / Unsatisfactory

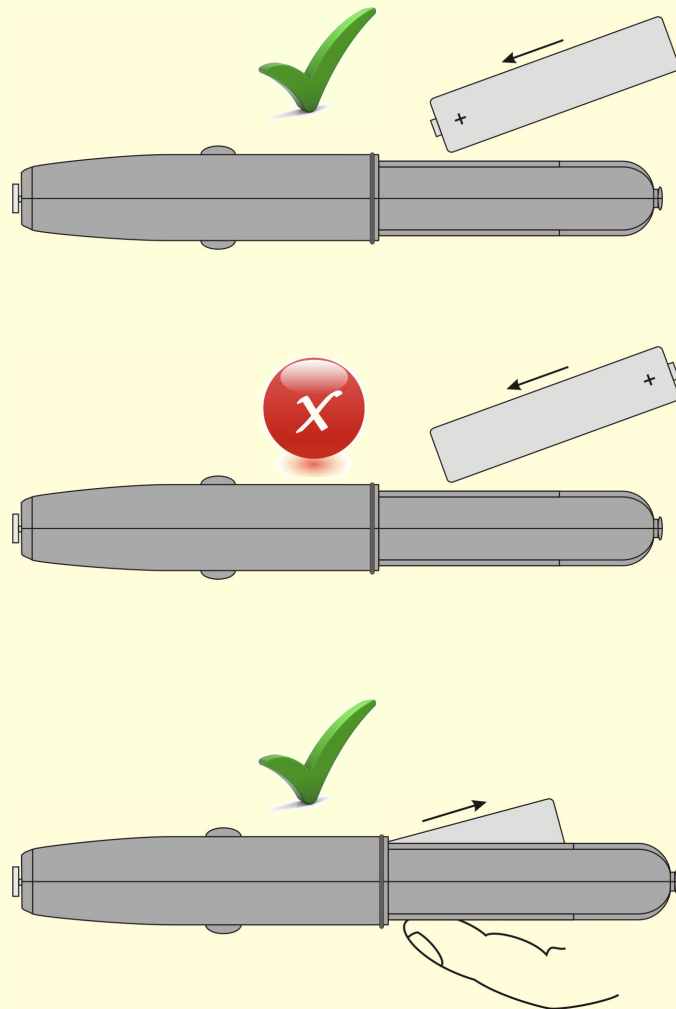


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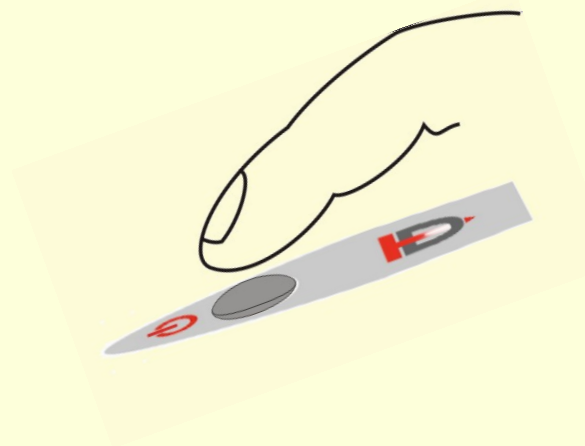
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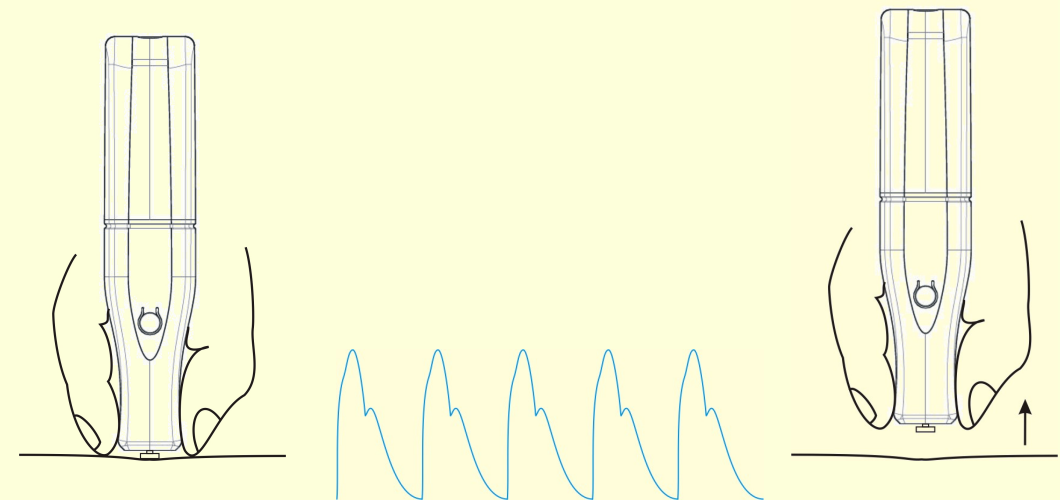
General Notes



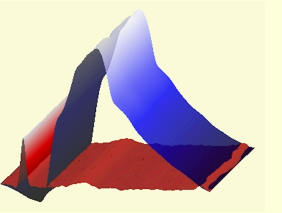
The above images show how to insert and remove the battery for the tonometric probe.



Press the on/off button  until the beep sound (about 1 sec).



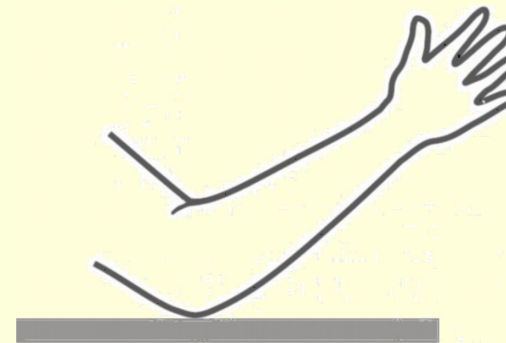
PulsePen includes an “auto-freeze” function that works in association with the tonometric probe - sensor 2 (blue curve) during the signal capture mode. When a pulsatile signal is detected (left), the computer screen is continuously updated with the incoming curves; the last captured curves are “frozen” when the probe is removed (right), waiting for storage.



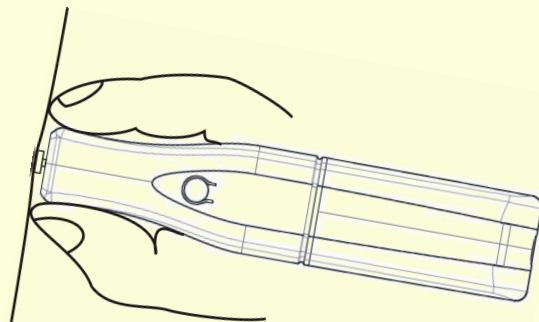
Operator Tips 1



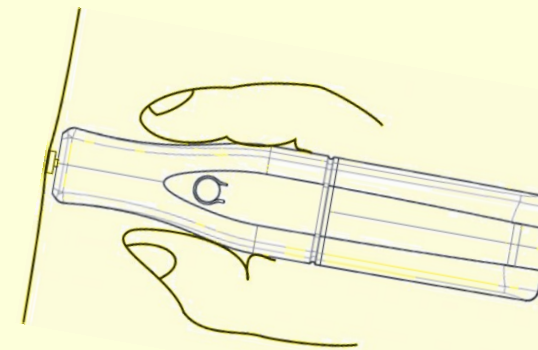
When searching for Femoral Artery, overlapping fingertips is very helpful to find pulsation.



Keep the operating elbow lying firmly on a stable surface (not “floating”).



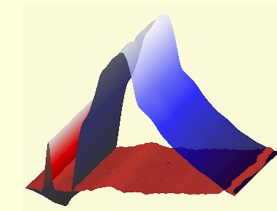
The tonometric probe must be kept perpendicular to the application surface with the operator's fingers touching the patient's skin.



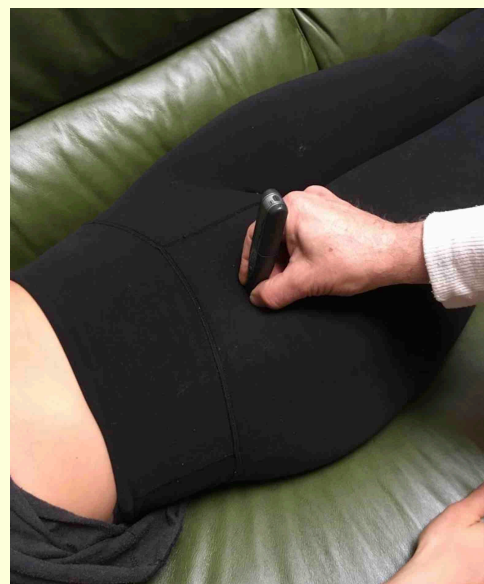
The **WRONG** way to hold the tonometric probe.

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Operator Tips 2



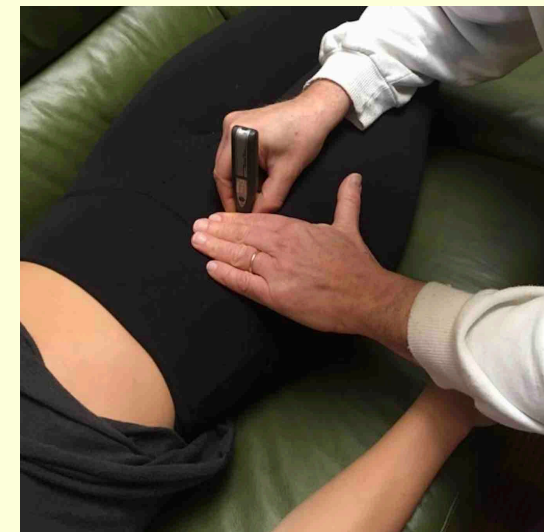
Femoral Artery capture.



How to reduce tremor.



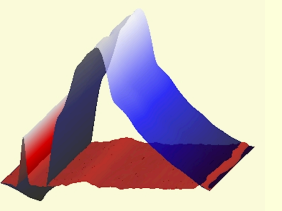
Femoral Artery capture.



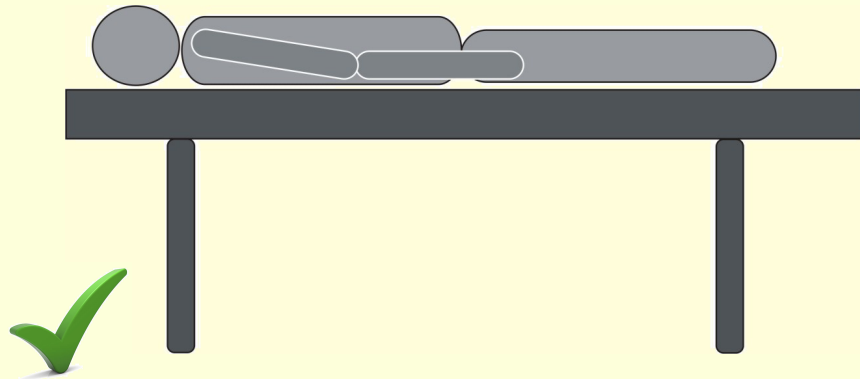
How to reduce tremor.

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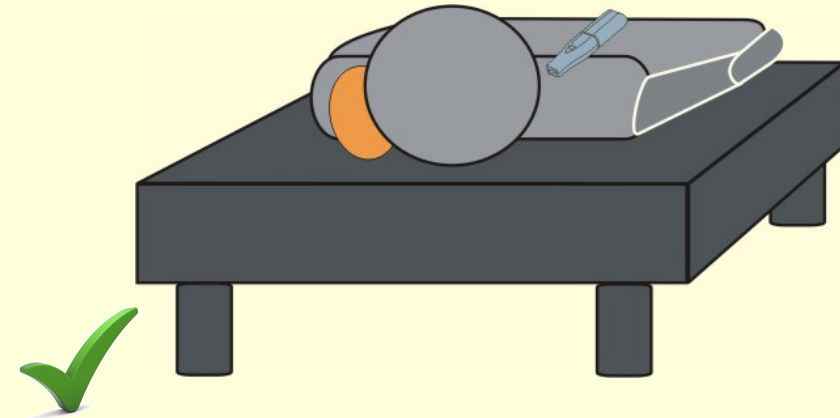
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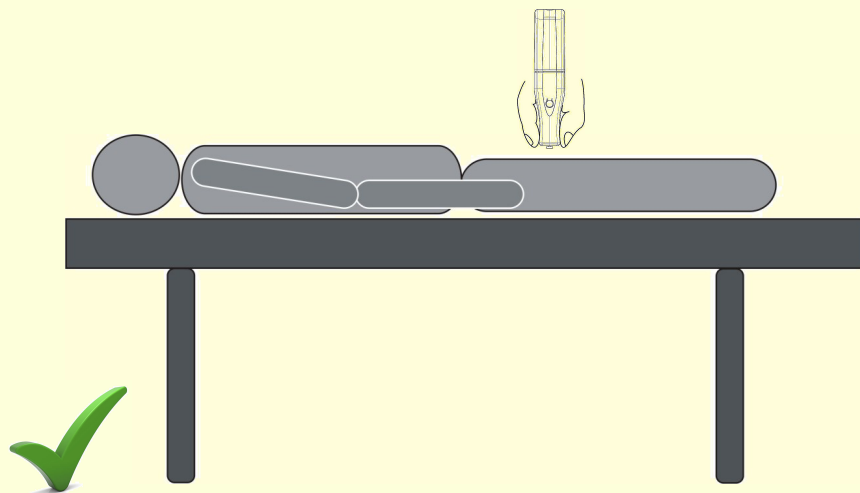
Patient Tips



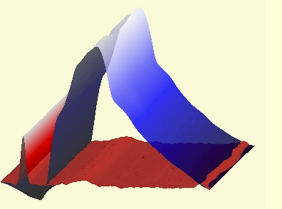
To obtain good quality signals, the patient must be relaxed, in a supine position on a horizontal surface.



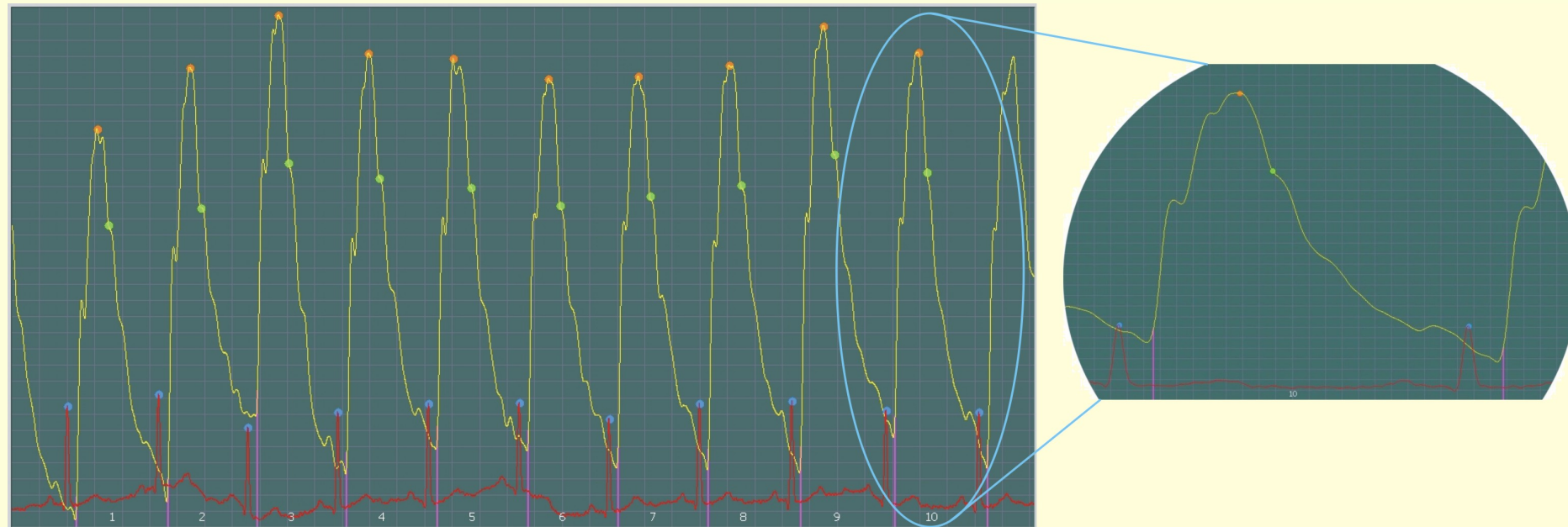
A small pillow (orange in the image) on the opposite side of the target carotid artery, is useful to keep the patient's head stable.



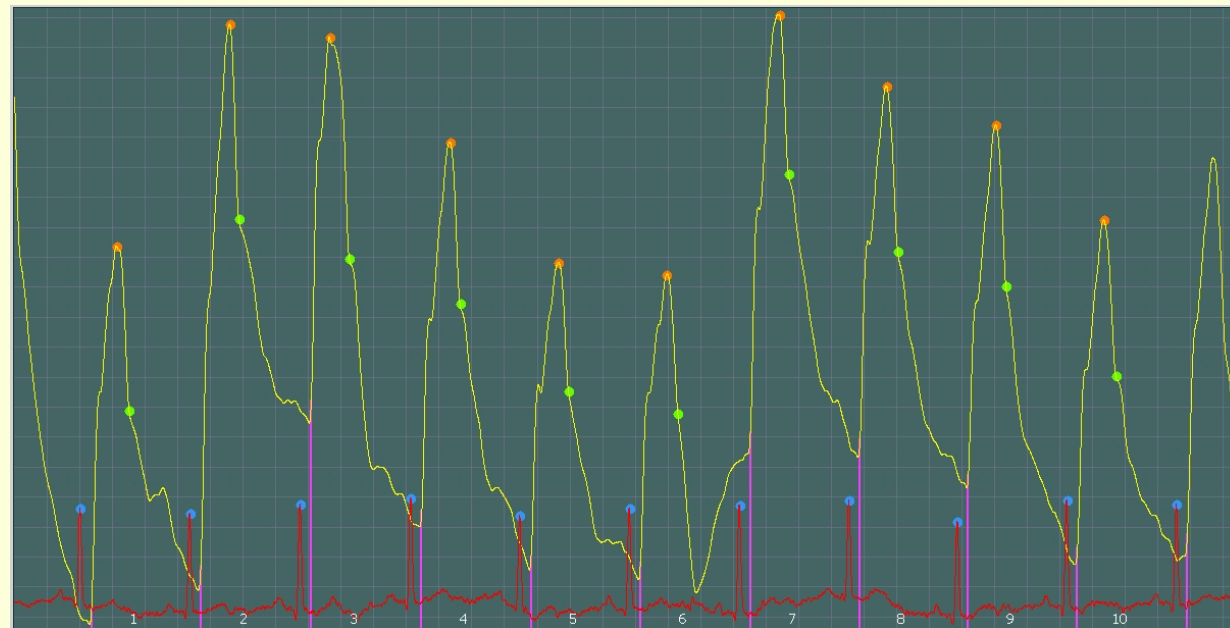
Signals on the femoral artery can be captured also through tights, pantyhose, leggings, or thin pants.



Noisy Signals



Example 1: Noisy signal superimposed by operator's tremor- cycle 10 expanded on the right.



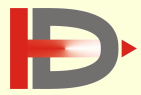
Example 2: Noisy signal superimposed by operator's tremor and movements

Important!

Bad signals could produce mistakes in the determination of the pressure wave markers and parameters.

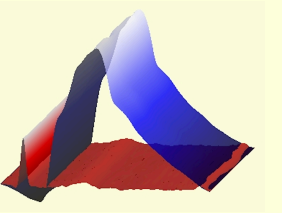
For remedies, please follow

Operator Tips and **Patient Tips**

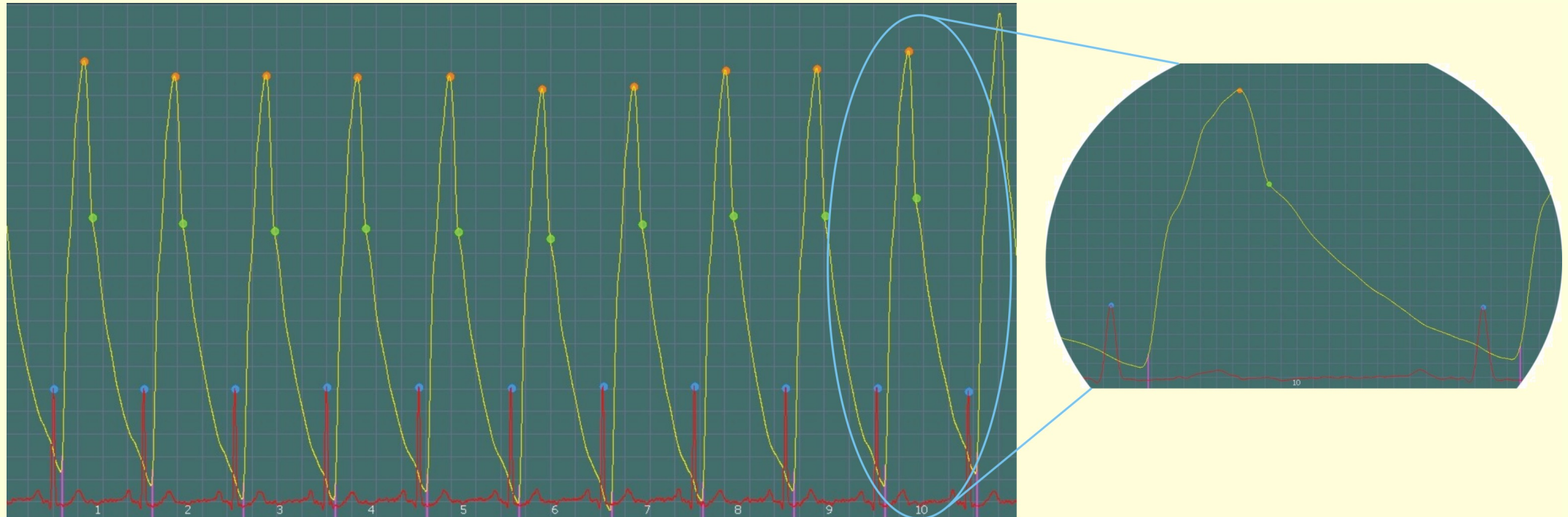


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Good Signal

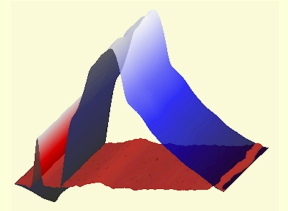


Example of clean signal - cycle 10 expanded on the right

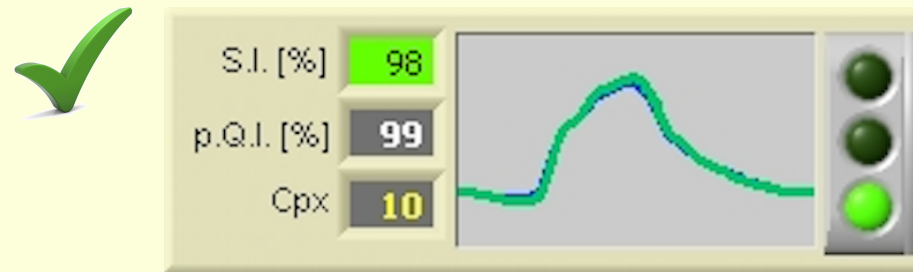
Slight breathing fluctuations are physiological and do not cause any problem.

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Traffic Lights (software)



The small traffic lights graph, at the top of the computer screen during the signal capture, is updated each cardiac cycle. If it doesn't occur, it means:

- The R wave of the ECG is not detected (in the case of ECG + Tonometry).
- The foot of the Tonometer - sensor1 curve is not detected (in the case of 2 x Tonometry, ETT model only).

Possible causes	Remedy
Ecg + Tonometry	
The ECG amplitude is too low	Re-position one or both the ECG electrodes to obtain signals with higher amplitude.
The R wave is reversed (downwards)	Press the ECG reverse key or exchange the ECG cables.
The R wave has a pathological shape	Proceed with the capture for at least 10 seconds, save the signals and manually add markers on the R waves.
2 x Tonometry	
Tonometer1 (red curve) is off and/or no signal is applied	Switch on the Tonometer1 and position it on the artery under investigation (Carotid).
Captured signal's amplitude on Tonometer1 is too low	Re-position the Tonometer1 to obtain signals with higher amplitude.