CardioScan

CSC 6612 Holter monitor
User Guide

Ensure that you have all the equipment ready before placing onto the patient. This includes:

- Holter recorder
- Holter leads
- SD memory card
- AAA battery (new)
- Holter pouch (with strap or belt)
- Electrodes.

Equipment overview

The silver **Event button** located on the front of the Holter monitor is used to start the Holter recording by pressing and holding it down initially.

It then becomes a standard Event button that should be used anytime the patient feels any symptoms.

Holding down the Event button after the recording has begun **will not stop the recording.** The recording will stop once the batteries are removed from the monitor.

ARROWS MUST BE ALIGNED.

Do not force the leads in the incorrect way

LED indicators:
Top = Red
Bottom = Green

Event button

Performing 24hr Holter study **(Patient)**

1. Ensure all patient details are correct and complete on the paperwork.

2. Attach electrodes to Holter leads first.

3. Prep the skin well as to ensure better trace quality.

4. Determine electrode placement in accordance with standard 5 lead (see image above).

5. Attached electrodes to the patient.

6. Instruct the patient how to use the Event button, located on front of monitor, by pressing the silver button when symptoms are felt. Also advise the patient how to fill out the Patient Diary.

7. Inform the patient not to shower for the entirety of the recording and not to get the Holter monitor wet.
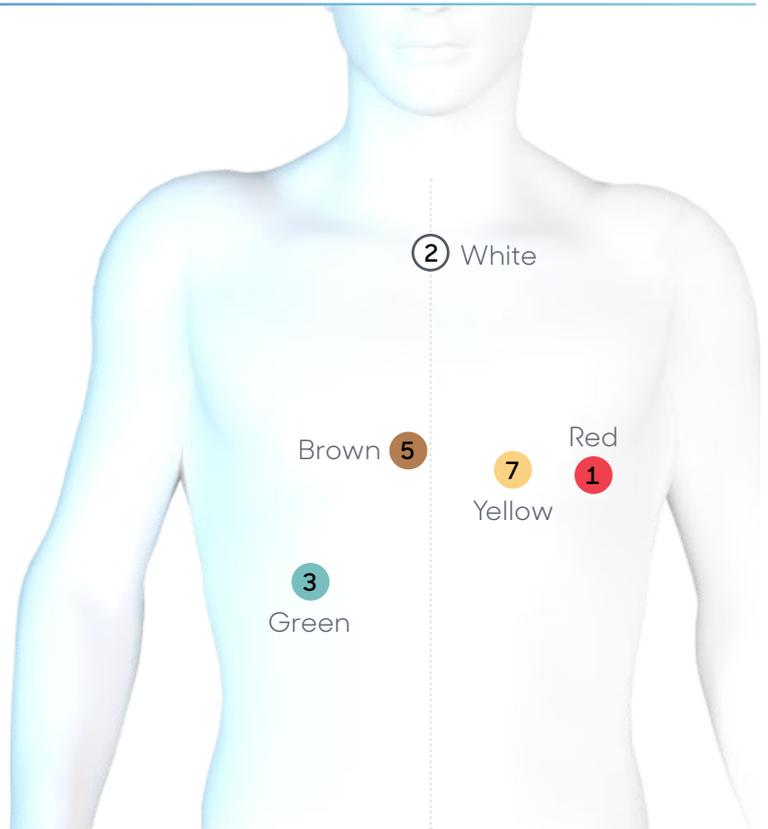
Performing 24hr Holter study **(Device)**

8. Remove cover on back of the Holter monitor.

9. Insert SD card into recorder as seen above. Ensure brass contact point is facing down and at top end of card. Ensure card is firmly pushed all the way in (you will feel the spring click in).

10. Insert single AAA battery into the monitor ensuring positive end to positive terminal. **You will hear a long beep if this is performed correctly**. This will only power the device, not start recording. Replace the cover on back of the Holter monitor.

11. Place monitor into carry pouch. The pouch straps are preferable and should be across the body, over the shoulder.

12. Connect Holter leads to the monitor correctly, ensuring that the arrows are aligned on the front. **The solid green light will turn on if this is performed correctly.**

13. Press and hold the silver event button on front of recorder until **The green light flashes rapidly. You should also hear three quick beeps (although this may be faint)**. Any previous recording will be wiped at this point.

> This step is cruicial for the 24hr Holter monitoring to occur.

14. The flashing green light will slow down, signifying that the SD card has been initialized and that the recording has begun. Do not proceed with the 24hr study unless the green light is flashing. If confirmed, advise the patient to return in approximately 24hrs to have Holter monitor removed.

Removing the Holter from the patient

15. Disconnect leads from electrodes on the patient.

16. Disconnect leads from monitor by squeezing the side clips in, and gently pulling the leads out.

17. Remove the monitor from carry pouch.

18. Remove battery from monitor; this will turn recording off.

19. Remove SD card from the monitor by pushing the card into the monitor; it will click and spring back.

20. Send the SD card with corresponding patient paperwork to location with DMS software and card reader.

21. Ensure that equipment is cleaned and stored in a safe location ready for next use.

Troubleshooting

Flashing green LED = Holter is recording.

Rapid flashing green LED = SD card is being initialized.

Solid green LED = Holter is powered by not recording.

Red LED = an irregularity has occurred, please read table below.

	Problems	Possible causes and correction actions	Solutions
1	**After powering on, the recorder has no response**	1. The battery voltage is too low. 2. The recorder is powered on continuously too fast. 3. No SD card is inserted. 4. No patient cable is connected. 5. No data is analysed.	1. Replace with a new battery. 2. Wait for over 5 seconds to power on again. 3. Insert the SD card 4. Insert the lead. 5. Analyse or delete the data on the SD.
2	**After powering on, the orange LED goes out after flashing for several times, and the green LED does not go on**	Access error of the SD card occurred.	Remove and re-install the SD card or replace the SD card.
3	**After powering on, orange LED is constantly flashed with buzz of "didi", and the green LED does not go on**	There is unanalysed data in the SD card.	Analyse or delete the data in the SD card.
4	**After powering on, the orange LED goes out after flashing several times, and the green LED remains on.**	The battery has been used.	Please replace with a new battery. Short- time recording be continued.
5	**During recording, a "beep" sound was heard.**	1. The patient had violent movement. 2. The contact of the electrode is poor. 3. Patient cable error.	1. Reduce movement suitably. 2. Re-check and install the electrode. 3. Replace the patient cable.

Troubleshooting (continued)

	Problems	Possible causes and correction actions	Solutions
6	**Recording for 24 hours (or the set time) cannot be performed.**	1. The battery is poor. 2. Misoperation incorrect termination in the midway or the battery is removed in the midway.	1. Check the EVT file to confirm the cause of termination, and replace the battery with a good one. 2. Tell the patient not to operate without authorization.
7	**The recording is normal, and when playing back for analysis, the recorder shows message that ECG data cannot be found, and the SD card disk cannot be seen in the operating system.**	1. The SD card is not inserted into the card reader or the card reader is wrong (if a card reader is used). 2. The USB cable of the recorder is not connected to the PC (if the USB cable is used). 3. SD card error.	1. Insert the SD card into the card reader slot or replace the card reader of the SD card. 2. Use the USB cable to connect the recorder and the PC. 3. Replace the SD card.
8	**The recorder shows message that data cannot be found, and the SD card can be seen, but no file in the SD card can be seen or file error occurs.**	1. Card reader error. 2. Poor contact of the SD card or other errors.	1. Replace the card reader. 2. Replace the SD card.
9	**The quality of the ECG waveform is low, and no QRS waveform can be seen.**	1. The electrode position is not good. 2. The electrode is poor. 3. The skin is not clean. 4. There is too much hair in the position for applying the electrode. 5. Patient cable error.	1. Apply the electrode again. 2. Replace the electrode. 3. Clean the skin. 4. Shave off the excess hair. 5. Replace the patient cable.
10	**The ECG waveform has interference from working frequency of stable amplitude and frequency.**	During monitoring, there is strong working frequency interference source around the patient.	Keep far away from such objects as transformer, electrical blanket and electrical blower. During analysis, the filter switch is enabled.
11	**The ECG waveform has interference from muscle discharge of stable amplitude and frequency.**	The electrode position is subject to muscle discharge interference.	Adjust the electrode position. During analysis, the filter switch is enabled.
12	**The baseline of the ECG waveform moves up and down and is not stable.**	1. Apply the electrode firmly. 2. The electrode cord is too tense, and the electrode is pulled during movement. 3. Electrode failure or quality problem.	1. Apply the electrode firmly and apply pressure suitably. 2. Arrange the electrode cord, and use a "tension relief loop" near every electrode. 3. Replace the electrode.

For more resources, guides, FAQs or to watch instructional videos, visit:
cardioscan.com.au

Contact us
E: info@cardioscan.com.au
T: +61 9832 2222

CardioScan