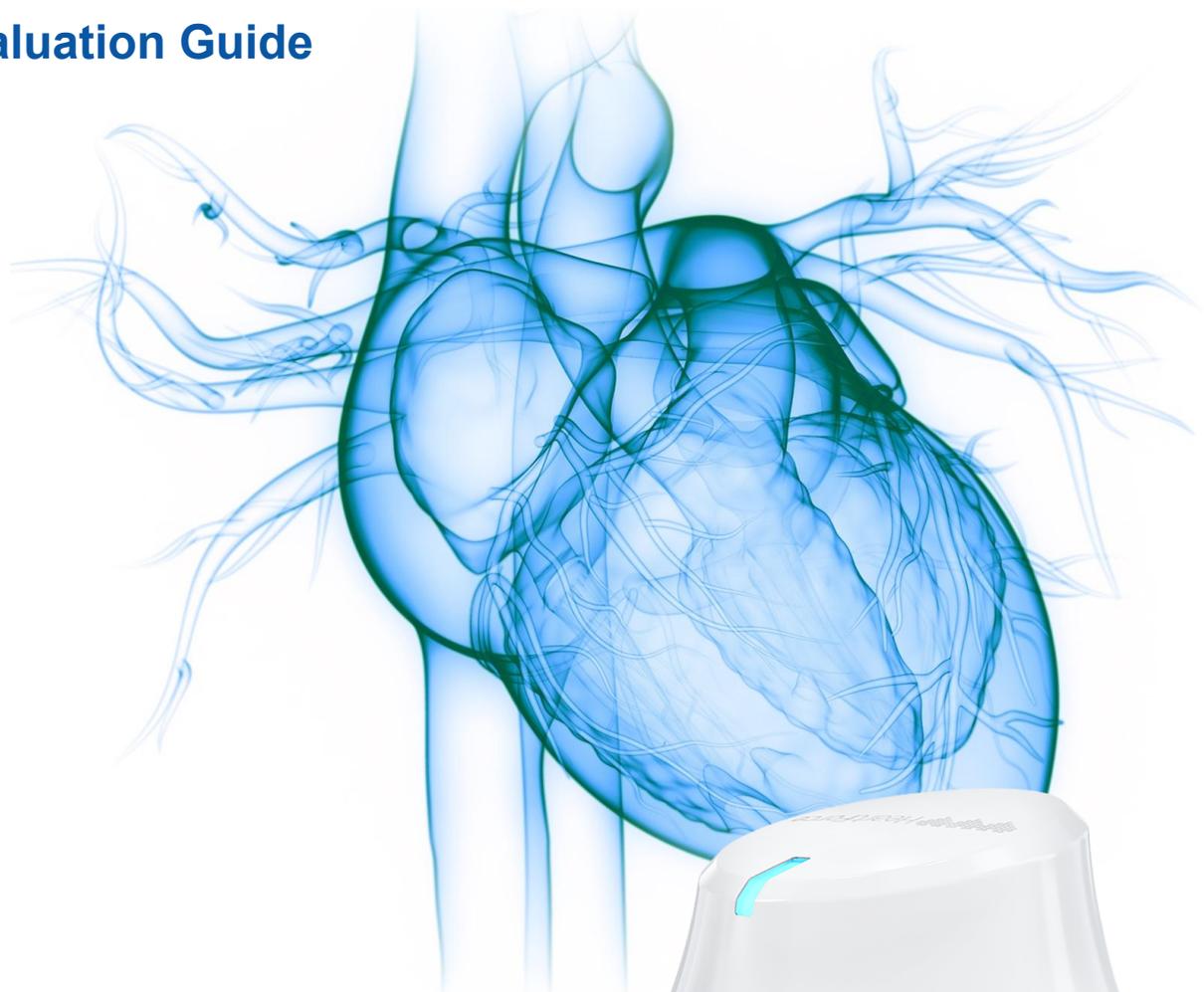




CardioPro™

Evaluation Guide



Heart Force Medical Inc.
Suite 700 - 1190 Melville Street
Vancouver, British Columbia,
Canada V6E 3W1

Version 1.

Table of Contents

Introduction	3
Disclaimer	3
Contacting Heart Force Medical Inc.	3
Symbols	3
Abbreviations	4
User Responsibility	4
Copyright	4
Getting Started	5
Items in the CardioPro™ Evaluation Package	5
The CardioPro™ Sensor	6
Turning On the CardioPro™ Sensor	7
Charging the CardioPro™ Sensor	7
Turning Off the CardioPro™ sensor	7
Cardiac Health Monitor App	8
Registering a User Account	9
Starting Cardiac Health Assessment	9
Performing Day-to-day Cardiac Health Assessment	11
Performing Monthly Cardiac Health Assessment	12
Maintenance	14
Technical Support	14

Introduction

CardioPro™ is a system that captures the vibrational and electrical characteristics of the heart in order to reveal your heart's health. The CardioPro system consists of a sensor and a companion mobile app.

The sensor captures your data and sends it wirelessly to the app to detect early signs of cardiac diseases such as atrial fibrillation (Afib) and coronary artery disease (CAD).

The "Cardiac Health Monitor" app provides an intuitive interface for the user to monitor their real-time cardiac signals and to obtain their full results and analysis from Heart Force's AI cloud server.

Disclaimer

The CardioPro™ system is intended to provide a non-invasive assessment of the electro-mechanical function of the heart. The system described in this document is a functional prototype of CardioPro™, which is for evaluation purposes only.

Contacting Heart Force Medical Inc.

To contact Heart Force Medical Inc. for any device or subject related problems and support questions, please use one of the following options:

Email: info@heartforce.com

Phone: (604) 566-8200

Mail: Suite 700 - 1190 Melville Street, Vancouver, British Columbia, Canada V6E 3W1

URL: www.heartforce.com

Symbols

The following symbols may appear in this User Guide, in associated labels, documentation, or on components of the CardioPro™.

Symbol	Description
	Warning or Caution. Consult the accompanying documentation including this User Guide or device labels before operating device.

Abbreviations

Afib:	Atrial Fibrillation
AI:	Artificial Intelligence
CAD:	Coronary Artery Disease
CHM:	Cardiac Health Monitor
ECG:	Electrocardiogram
LED:	Light Emitting Diode
SCG:	Seismocardiogram
USB:	Universal Serial Bus

User Responsibility

The user of the CardioPro™ is responsible for the operation of this system in accordance with this guide. The user of this system shall have the sole responsibility for any malfunction which results from improper use, damage, or alteration by anyone other than Heart Force Medical Inc.

Copyright

This guide contains proprietary information from Heart Force Medical Inc. The reproduction of this material in whole or in part, without the express written consent of Heart Force Medical Inc., is strictly prohibited.

© All rights reserved, 2021

Getting Started



Prior to using the CardioPro™ system, please ensure that you have read through and understand the contents of this User Guide.

Items included in the CardioPro™ Evaluation Package

- 1 x CardioPro™ sensor
- 1 x charging cable
- 10 x single use snap button adhesive
- 1 x carrying case



Figure 1: CardioPro™ evaluation package

CardioPro™ Sensor

The CardioPro™ sensor, as shown below in Figure 2, is used for acquiring cardiac signals from a user's heart and body, while transmitting the signals to the accompanying "Cardiac Health Monitor" app. The sensor features a LED that indicates the sensor's current condition and status. Two stainless steel electrodes are located at the base of the sensor. They are used to capture the electrical signals that originate from the heart. Between the two electrodes, there is a snap button connector, used for attaching an adhesive electrode and for securing the sensor to a user's sternum. The side features a magnetic charging port to charge the device when the battery is low. The sensor can be plugged in for charging with the provided USB cable.

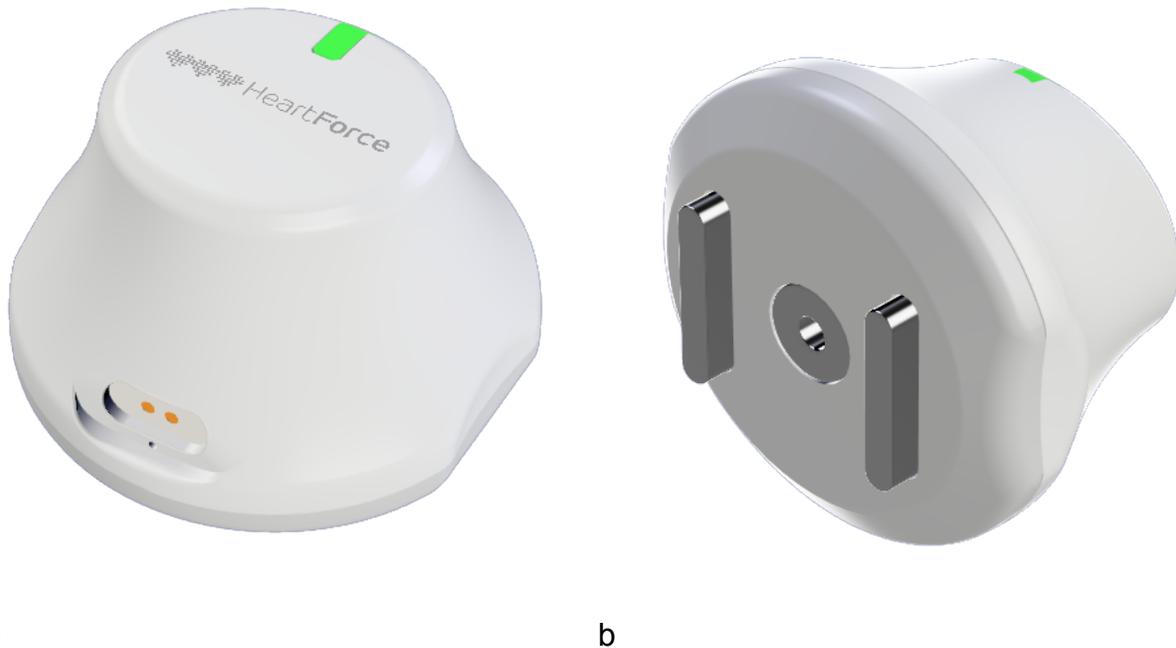


Figure 2: CardioPro™ sensor

Turning On CardioPro™ Sensor

To turn on the sensor, shake the sensor twice. Once the sensor is on, the LED light at the top of the sensor turns “Green”. If the LED turns “Red” or the LED is not lit, the sensor may be low on battery and requires recharging. To recharge the sensor, please refer to the next session (“**Charging CardioPro™ Sensor**”) If the LED turns “Blue”, the sensor has established a connection with the accompanying app and is ready to capture the signals.

Charging the CardioPro™ Sensor

To charge the sensor, simply connect the USB cable to the charging port as shown in Figure 3. Next, plug the cable connector into a standard USB port. Depending on the battery level, the LED will change from “red” to bright “purple-pink” during the charging process. Once the sensor is fully charged, i.e., LED becomes a bright purple-pink, unplug the charging cable to restart the sensor.



Figure 3: connecting the charging cable



The sensor must not be used while charging.

Turning Off the CardioPro™ sensor

The sensor does not need to be turned off as it will automatically enter “sleep mode” after 3 minutes of inactivity. A fully charged sensor can stay in “sleep mode” for approximately 100 hours.

The Cardiac Health Monitor App

The Cardiac Health Monitor (CHM) app is an Android application that acquires cardiac signals from the sensor and obtains cardiac health assessment results from Heart Force's server. It provides two types of cardiac health assessments:

- Day-to-day Cardiac Health Assessment
- Monthly Cardiac Health Assessment

The CHM app can be downloaded from Heart Force's website at:

<https://www.heartforce.ca/download>

To ensure that the CardioPro sensor and Cardiac Health Monitor (CHM) app work properly and effectively, please check that your device meets the minimum specification requirements outlined below.

Minimum requirement for using the CHM app:

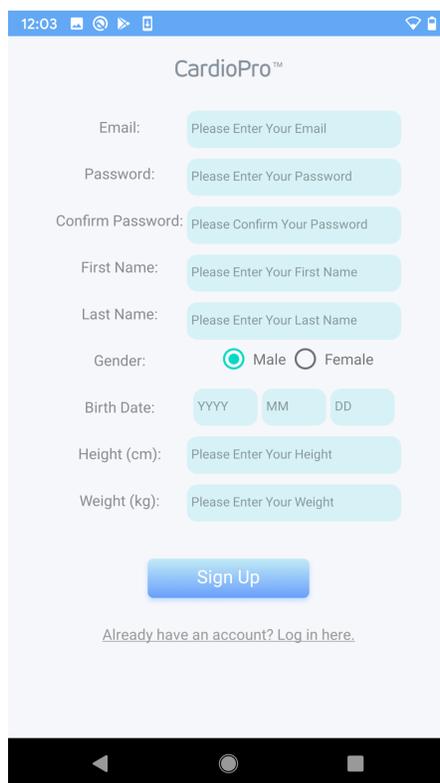
- Android 6.0
- Bluetooth connection is "On"
- Internet connection is "Allowed"



To conduct the cardiac health assessment test, please ensure that the mobile device being used to conduct the test is connected to the internet and that the bluetooth connection module is on.

Registering a User Account

Before conducting the cardiac health check for the first time, a user needs to create an user account through the CHM app by clicking the “Don’t have an Account? Sign up here.” link at the bottom of the screen. The user is required to enter their relevant information as shown in Figure 4.



The screenshot shows the sign-up page for the CardioPro™ app. The page has a light blue background and a white header with the app name. The form includes the following fields and options:

- Email: Please Enter Your Email
- Password: Please Enter Your Password
- Confirm Password: Please Confirm Your Password
- First Name: Please Enter Your First Name
- Last Name: Please Enter Your Last Name
- Gender: Male Female
- Birth Date: YYYY MM DD
- Height (cm): Please Enter Your Height
- Weight (kg): Please Enter Your Weight

At the bottom of the form is a blue "Sign Up" button. Below the button is a link: [Already have an account? Log in here.](#)

Figure 4: Sign up page for the Cardiac Health Monitor (CHM) app

Starting Cardiac Health Assessment

The CHM app provides two types of cardiac health assessment tests; one focuses on detecting the irregular heart rhythms and the other one focuses on detecting early signs of coronary artery disease (CAD).

For detecting irregular heart rhythms, such as the early symptoms of Afib, we recommend using your CardioPro device to check on a daily basis, as Afib symptoms can appear intermittently throughout the day.

For detecting early signs of CAD, it is recommended to perform checks on a monthly or bi-weekly basis to best take early precautions on your cardiac health.

To connect the sensor, pick up and shake the sensor twice to wake it up. When the sensor indicator turns green, click the “Connect Device” button on the app to connect with the sensor. You can select one of the two tests after connecting to the sensor in order to begin the test (see Figure 5). Once a test has been selected, please continue to follow the app’s instructions. If the indicator turns red or displays no color, please charge the sensor as described in the previous section.

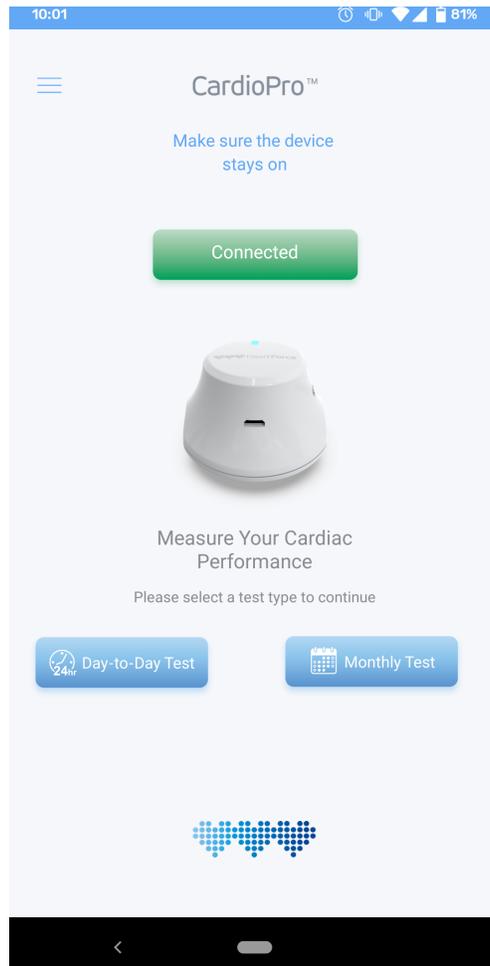


Figure 5: Cardiac health assessment selection page

Performing Day-to-day Cardiac Health Assessment

For conducting cardiac health assessment for detecting irregular heart rhythm, follow the video instructions on the app and press the sensor against the sternum while applying a bit of gentle force in a sitting position. The approximate location of the sternum is shown in Figure 6.

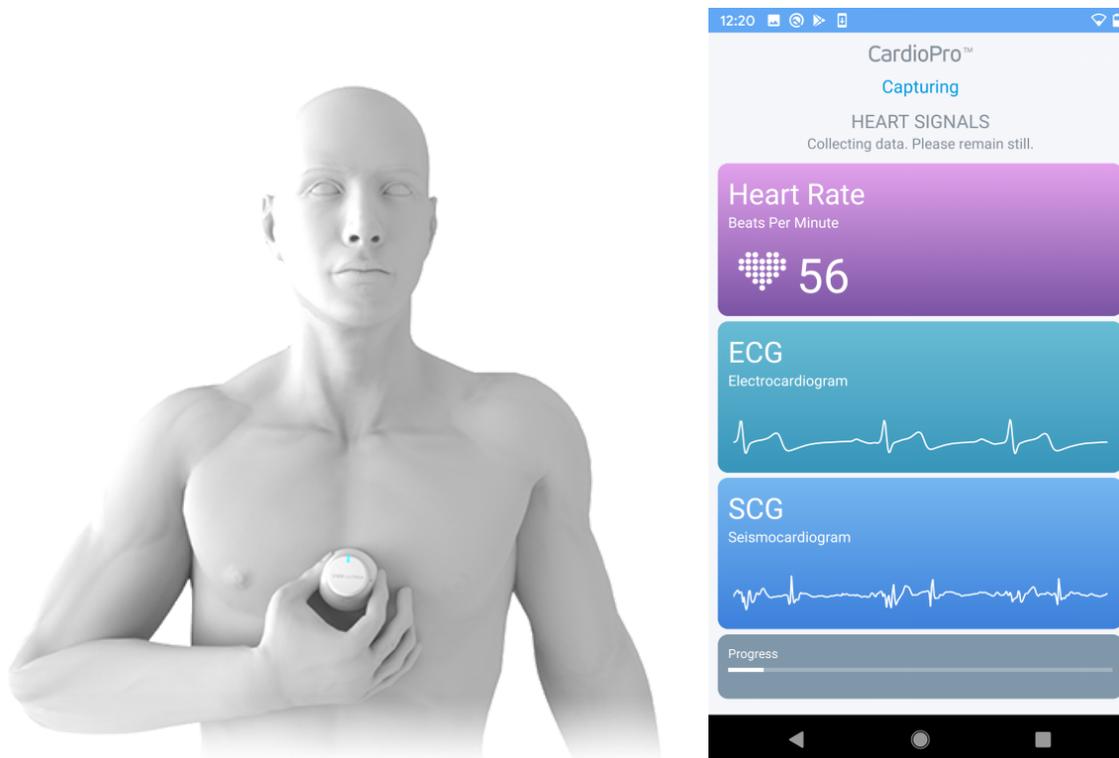


Figure 6: Sensor placement and an example of the Cardiac Health Monitoring app capturing heart data

To start the test, the user needs to hold the sensor steady on the sternum (as shown in Figure 6) and press the “Start Test” button on the app. The test will last 1 minute and the app will display the heart rate, the electrocardiogram (ECG) signal, the seismocardiogram (SCG) signal, along with the progress bar, all in real-time.

Once the test is completed, the app will send the collected data to Heart Force’s server for cardiac timing and rhythm analysis. Please ensure your mobile phone is connected to the internet before beginning the test in order to obtain your results.

Performing Your Monthly Cardiac Health Assessment

For conducting a cardiac health assessment, used to detect early signs of coronary artery disease (CAD), please follow the video instructions found in the app. For this test, Heart Force's proprietary CAD detection algorithm requires a more precise recording of the mechanical vibrations of the heart, therefore the user will be required to lie down on a flat surface in a supine position while the sensor sits directly on top of the sternum, as shown in Figure 7. To keep the sensor in place, an adhesive patch with a snap button connector is used (see the right image of Figure 7).

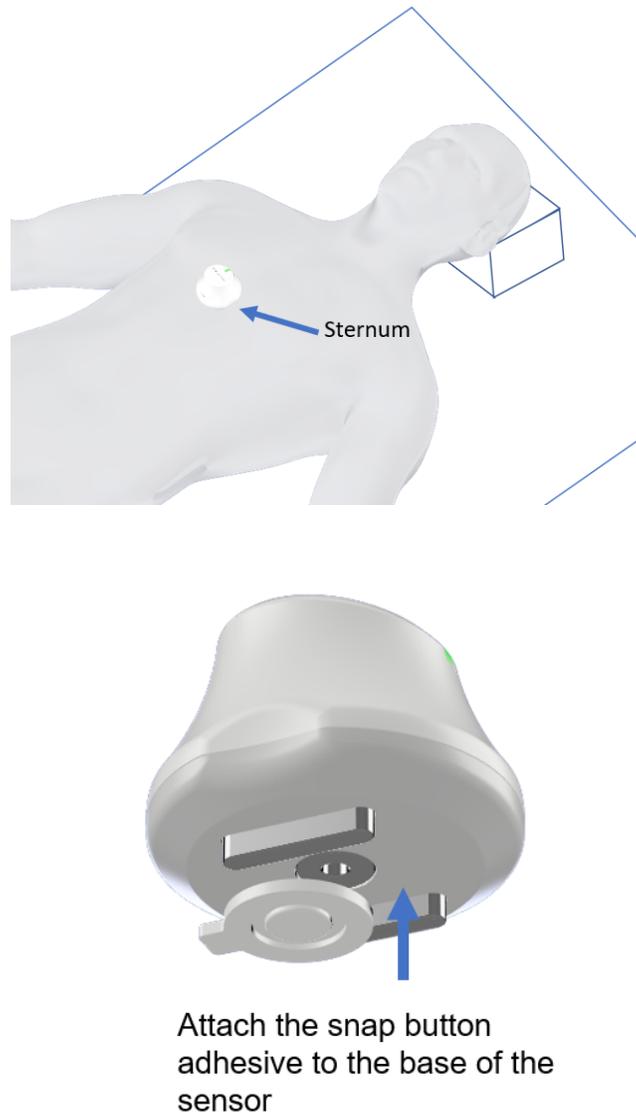


Figure 7: Sensor setup for conducting monthly CAD assessment

To conduct a CAD test, please follow the steps below:

- Step 1: Attach the button of the adhesive to the base of the sensor
- Step 2: Peel off the protective film that protects the adhesive
- Step 3: Press the sensor firmly onto the sternum as indicated in Figure 7
- Step 4: Release the sensor
- Step 5: Press the “Start Test” button on the app
- Step 6: Relax and keep your body steady until the test is completed (this test will last for 1 minute)
- Step 7: Detach the sensor and dispose of the adhesive

Once the test is completed, the app will transmit the collected data to Heart Force’s server for a CAD symptom analysis. Please ensure your mobile phone is connected to the internet before beginning the test in order to obtain your results. An example of results is shown in Figure 8.

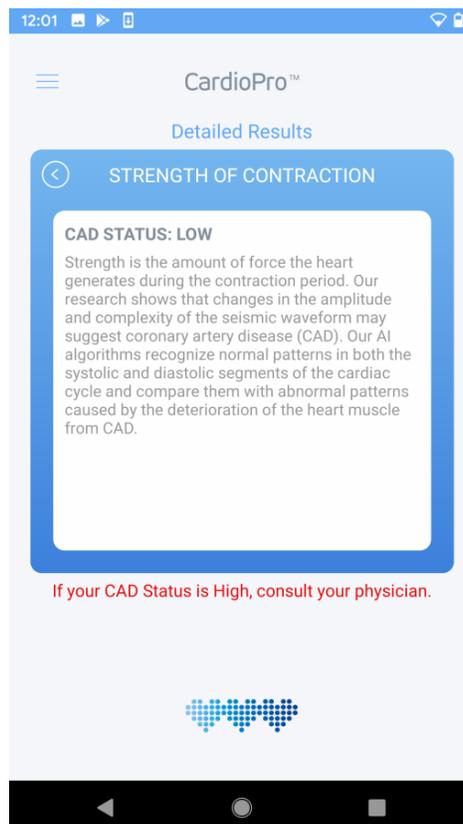


Figure 8: An example of the CAD assessment result

Maintenance

The CardioPro™ sensor should be disinfected with rubbing alcohol added sparingly to a clean cloth before and after each use.



Do not EVER submerge your sensor in any form of liquid!

The device should be periodically inspected to ensure that there is no damage to the housing, sensor or the associated cables. In the event your device is no longer useable, has failed, or is damaged, please notify Heart Force Medical Inc. by contacting info@heartforce.com

Your next steps to heart health

Congratulations! Now that you've completed this guide, you now can use your CardioPro to its fullest to help proactively monitor your heart health!

It's a big step and we're proud to be able to play a part in your journey to a healthier you.

Technical Support

For technical Support, contact Heart Force Medical Inc. as follows:

Email: info@heartforcemedical.com

Phone: (604) 566-8200

Mail: Suite 700 - 1190 Melville Street, Vancouver, British Columbia, Canada V6E 3W1

URL: www.heartforce.com