

BFR – Usability Test Results

Siddhesh Mahadeshwar

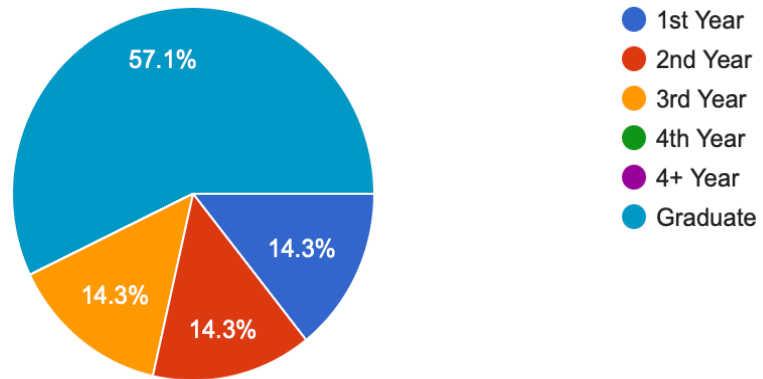
Testing Process and Data Collection

- Conducted a pre-testing questionnaire
- Ran through 4 scenarios with descriptions to prompt users to explore different areas of the application
- Measured time taken to complete each scenario
- Took notes on any facial reactions
- Took notes on overall testing observations
- Asked questions regarding each scenario
- Conducted a post-testing questionnaire

Pre-Testing Results

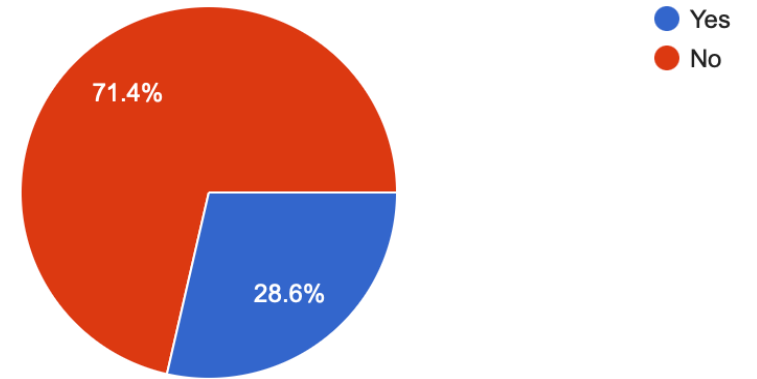
What is your level of education?

7 responses



Do you know what is Blood Flow Restriction (BFR)?

7 responses



Scenario 1 & Resulting Pages

- Scenario criteria:


- Male
- Diabetes
- No budget limitations

Risk Level Evaluation Form

High Risk

Seek medical advice before performing BFR


If clearance has been given



Continue using Automated Pneumatic Cuff

Manufacturers page


Auto-regulated Cuff



Auto-regulated Cuffs will automatically find the AOP for you and give constant pressure at your preferred percentage of AOP. This is the most recommended way of training, however the price for Auto-regulated Cuff can range from (\$1,000 - \$10,000). Most Automated Auto-regulated Cuffs are not wireless

Delfi Personalized Training System (FDA Approved)
MADLUP Pro (FDA Approved)

Automatic Cuff



Automatic Cuff Products, much like the Auto-regulated Cuffs, will find the AOP for you and wireless systems are available. Manual Cuff Products will not apply constant pressure and can cost (\$300 - \$600).

Scenario 2 & Resulting Pages

- Scenario criteria:


- Female
- BMI 25-30
- Manual BFR preferred

Risk Level Evaluation Form


Low & Moderate Risks

BFR is safe to perform

Please select the device you will use



Automated Pneumatic Cuff System



Manual Pneumatic Cuff System



Manual Pneumatic Cuff Input

pressure and can be cost effective at (\$20 - \$500) while remaining wireless. However, it cannot calculate the AOP, or for how long you have been using it. Overuse can cause major health problems.




- EDGE Restriction System
- B. Strong Training System
- BODYPRO BFR Cuff Set
- Hokanson Rapid Cuff Inflator System

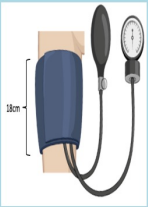
Scenario 3 & Resulting Pages


- Scenario criteria:
 - Male
 - 40-50 years age
 - Knee band/wrap preferred

Risk Level Evaluation Form

Risk Level 1
Very low Risk
BFR is safe to perform
Please select your preferred option


 Automated Pneumatic Cuff System

 Manual Pneumatic Cuff System

 Knee wrap/band

Guidance for Knee Wrap/Band

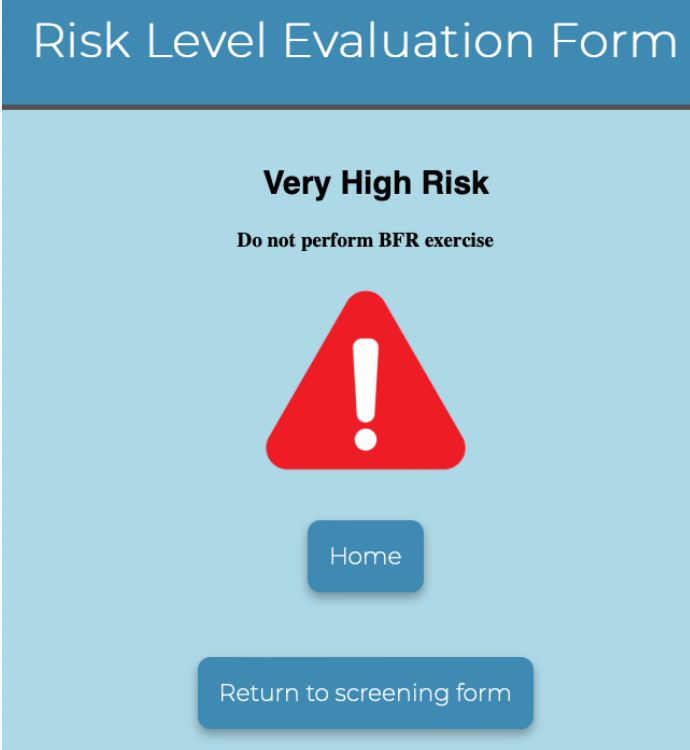
Devices we recommend


Harbinger Red-Line, Fairfield, CA, USA;
7.6 cm width

The image shows a flow from the Risk Level Evaluation Form to the Guidance for Knee Wrap/Band section. A green arrow points from the 'Knee wrap/band' option in the evaluation form to the 'Devices we recommend' section, which features a Harbinger Red-Line knee wrap/band with a 7.6 cm width.

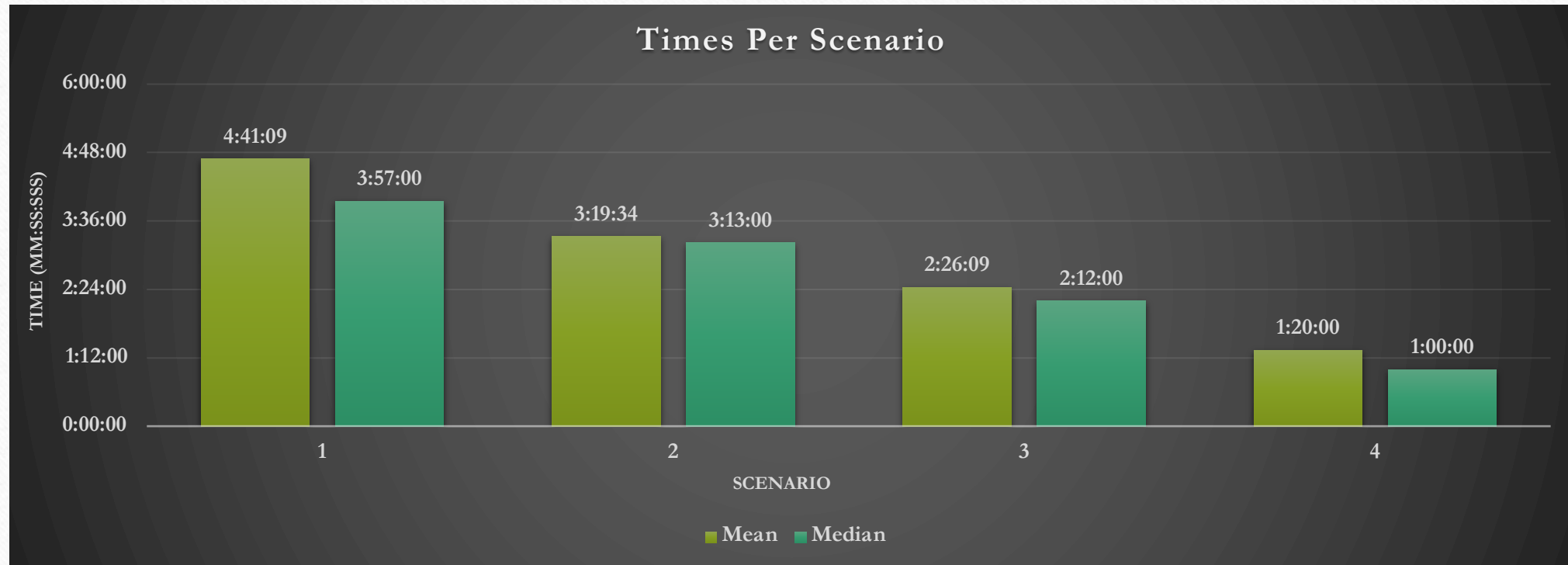
Scenario 4 & Resulting Pages

- Scenario criteria:
 - Female
 - Family history of blood clotting disorders



The screenshot displays a digital form titled "Risk Level Evaluation Form" with a blue header. The main content area is light blue and features the text "Very High Risk" in bold black font, followed by the instruction "Do not perform BFR exercise" in a smaller black font. A prominent red warning triangle with a white exclamation mark is centered on the screen. Below the warning, there are two blue buttons: "Home" and "Return to screening form".

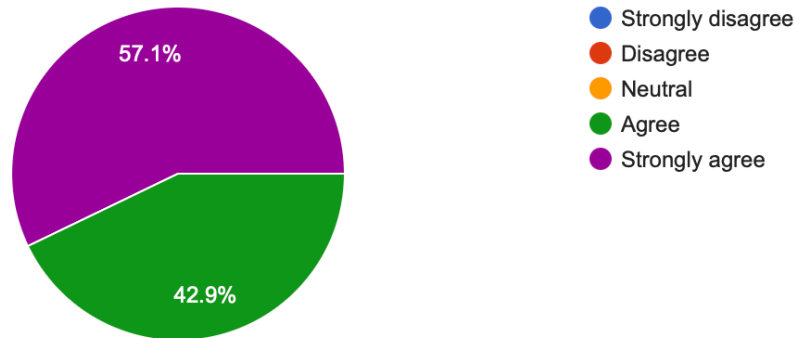
Test Results – Time to Complete Scenarios



Post-Testing Results

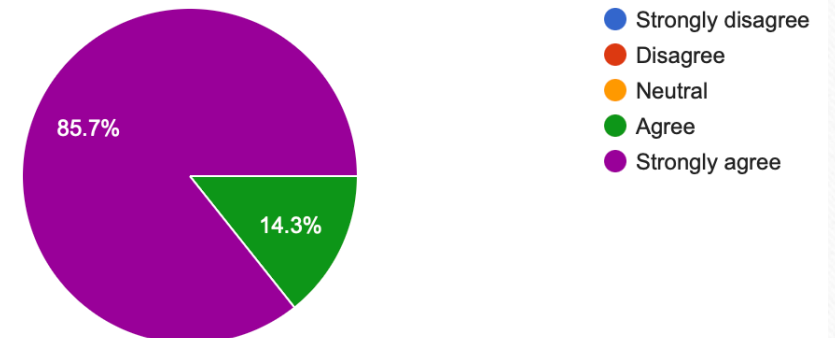
Overall, this application was easy to use for the intended task.

7 responses



Overall, I enjoyed using this application.

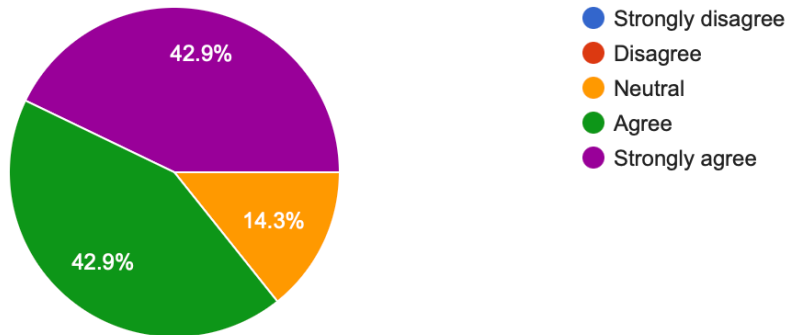
7 responses



Post-Testing Results

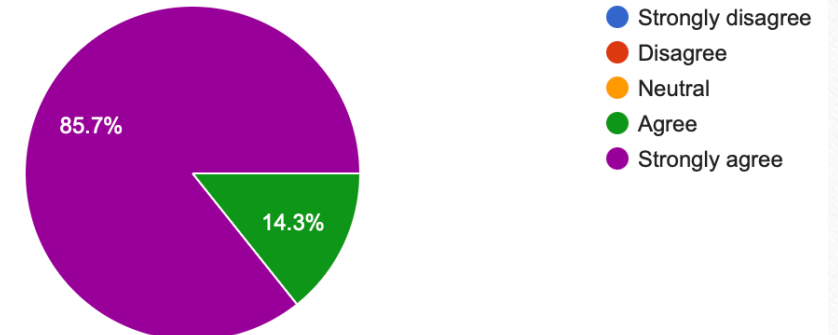
I would use this application again.

7 responses



I understood the purpose of this application.

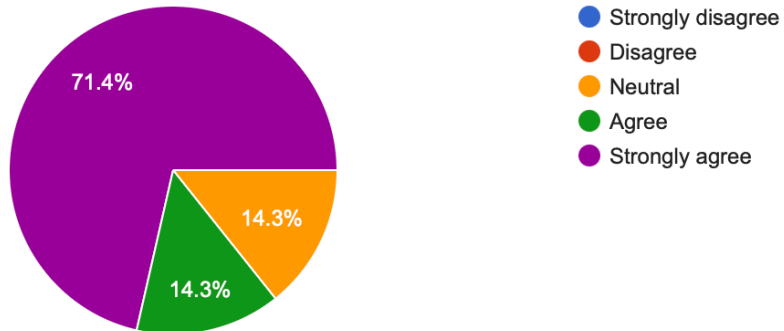
7 responses



Post-Testing Results

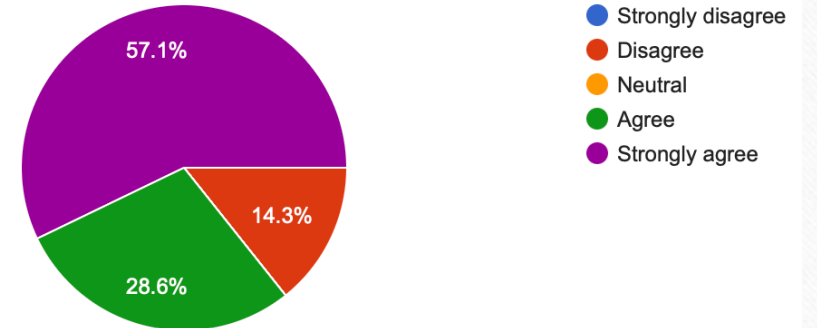
Imagining that I am the intended user, this application would be useful for me.

7 responses



The application appears to solve a problem or facilitate an inconvenience.

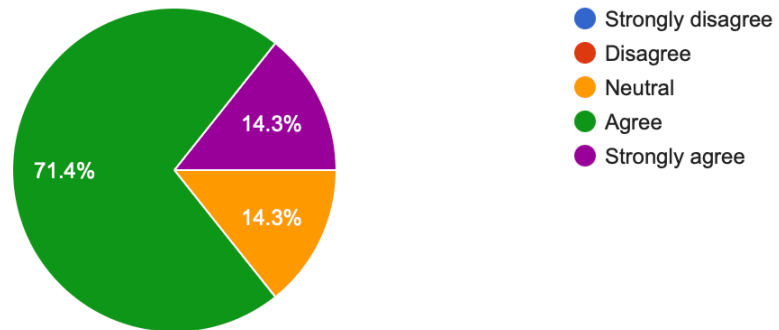
7 responses



Post-Testing Results

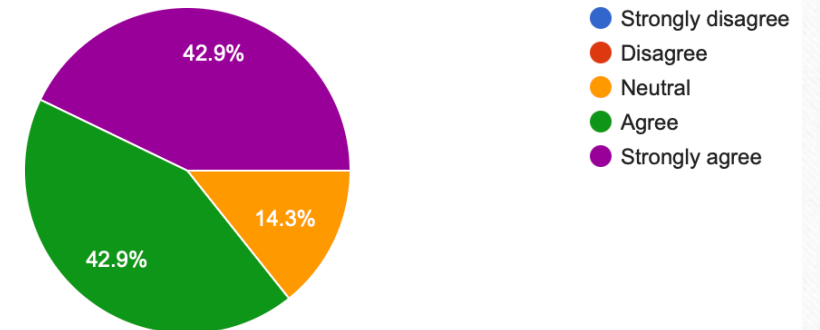
The application appeared to be professional.

7 responses



Without additional guidance, the application itself was clear to use.

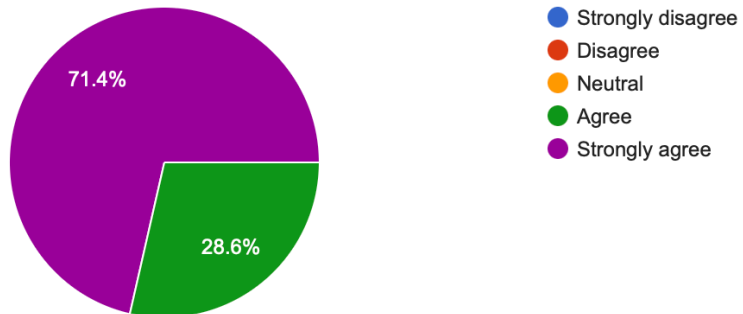
7 responses



Post-Testing Results

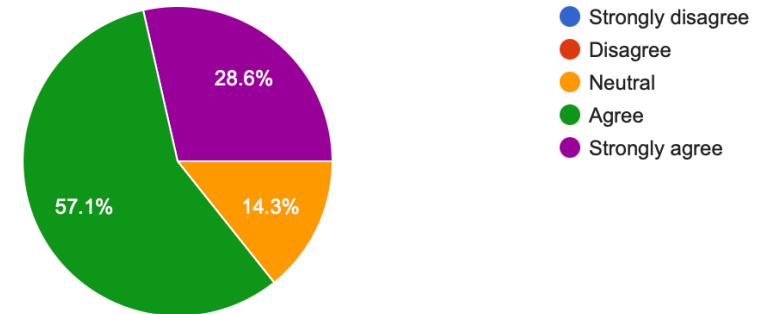
I would recommend this application to a medical practitioner who may need such a technology.

7 responses



The user interface and experience were well thought out even for people who may not have a technical background.

7 responses



Common Usability Questions

- Did you feel lost/confused at any point during the test?
- Did the front page of the website clearly communicate how to go through the general workflow of the application?
- Did you think the initial information page was helpful to learn about the devices?
- Was the “High Risk” page communicative that BFR is not recommended?

Bugs

Bug Number	Summary	Severity (1 – 5)
1	Input values for manual cuff page should be “required”	4
2	Input validation on manual cuff page	3
3	Submit button on manual cuff page requires excessive scrolling to reach	4
4	404 ERROR: clicking on “Return to Screening Form” from High-Risk page	5
5	Some pages open on new tabs but not all (lack of consistency)	2

Select Upper/Lower Body Application

Upper Body

Lower Body

Choose Your Cuff Width

5cm

11cm

13cm

18cm

Please enter the following information

Systolic Blood Pressure (mmHg)

120

Diastolic Blood Pressure (mmHg)

abc

Limb Circumference (cm)

45

Upper body instructions

Lower body instructions



Back

Reset

Submit Query

Recommended Changes

- Assuming that all bugs will be fixed, here are some other recommendations:
 - Consistency of button sizes for all pages
 - Provide some hints on every page to help the user with their options
 - The Help Page should open on a new tab by default from every page
 - The Help Page should have more comprehensive information for every reachable page
 - Back buttons and Homepage buttons should be available on all pages
 - *Temporarily save screening form responses if the user uses the application's Back button