

User Goals - Blood Flow Restriction (BFR) App

Application Idea:

Blood flow restriction aided exercise is a method of training that can strengthen the targeted muscle group without the need to use as heavy weights as otherwise necessary in a workout. The idea stems from the act of restricting blood flow to a given limb (arms or legs) so that the muscles in that area must now function with 50-80% lesser blood flow. Lesser blood flow means that those muscles will function with lesser oxygen. This is an incredibly useful tool when it comes to rehabilitation and physiotherapy as patients may not always be able to use heavy weights. With BFR, muscle building and strengthening occurs on the same level as regular training, but it can be accomplished with far lighter weights that the patient is better equipped to sustain.

There are a set number of equations that are used to calculate what the maximum Arterial Occlusion Pressure (AOP) can be for each user. As this pressure level varies, the app will serve a number of purposes along these lines. There will be three steps enabled through the BFR app. Step 1 will consist of a general questionnaire for the practitioner to answer medical questions about the patient to understand the risk involved in engaging with BFR. In Step 2, the practitioner will be recommended several different technologies to choose from based on the questionnaire data. Step 3 will focus on establishing safe and recommended numbers for the practitioner to use with the patient for their maximum AOP and exercise levels. A unique set of instructions will be provided based on the combination of risks and selected technologies for the practitioner's use. As of now, this app can be built with the possibility to save user data to track progress or keep it limited to a one-time use requiring medical history information on every instance.

Users:

As this application can be used across the domains of clinical, health & fitness, and sport performance, the users will be based in these areas as well. The purpose of this app will be to guide medical professionals such as physical therapists, personal trainers, and coaches to accomplish their goals with their respective patients or clients. Medical professionals across these domains will be using this app in a similar way. They will be looking for the same set of information with differences only in the customized areas based on their patients/clients. The only area of expertise needed from these professionals would be in the field of BFR exercises and understanding the information produced by the app. The design of the application will be carried out keeping in mind that it needs to be easy to interface with and quick to learn even for people who may not be too comfortable with technology.

User Goal Table:

User	Goal
Physical Therapists (Clinical)	Use with patients who may not be able to lift heavy weights due to injury limitations.
Personal Trainers (Health & Fitness)	Use with clients who may not be able to lift heavy weights due to physical limitations like obesity, past injuries, disabilities, etc.
Coaches (Sport Performance)	Use with clients who many want to grow muscle strength without the typical means of gym and weight lifting.