

BFR Clinical Application Lab Worksheet

Screen, individualize, apply, monitor, and reassess.

Participant / patient: _____

Date: _____

Clinician / learner: _____

Lab partner: _____

01

Baseline Safety Check *Complete before cuff inflation*

Blood pressure: _____ / _____ mmHg

Heart rate: _____ bpm

Pain at baseline: _____ / 10

Baseline RPE: _____ / 10

Proposed cuff site / limb: _____

Cuff size: _____

SKIN INTEGRITY

- ☐ Bruising or discoloration
- ☐ Varicose veins near cuff site
- ☐ Shiny skin or hair loss
- ☐ Redness or edema
- ☐ Capillary refill / temperature concern
- ☐ Skin intact and appropriate for cuff

Baseline findings / location:

SENSATION + NEURAL SCREEN

- ☐ Dermatomes
- ☐ Myotomes
- ☐ Reflexes
- ☐ Peripheral nerve sensation
- ☐ Recognizes and reports symptoms
- ☐ Baseline screen acceptable

Baseline findings / comparison:

CURRENT PRESENTATION AND DECISION

- ☐ No unexplained swelling, warmth, discoloration, or calf pain
- ☐ No current illness, infection, or dehydration
- ☐ Resting vital signs and symptoms are acceptable for today's lab
- ☐ Participant can describe symptoms that require stopping

Decision: ☐ PROCEED ☐ PAUSE AND CLARIFY ☐ DO NOT APPLY TODAY **Rationale:**

02 BFR Pre-Screening Questionnaire *Adapted from the Australian Institute of Sport*

Participant / patient: _____ Date: _____

Has the participant received BFR risk-benefit education? First BFR use or >6-month break? ☐ Yes ☐ No
☐ Yes ☐ No

If education has not been completed, pause before proceeding. This educational worksheet does not replace medical review, facility policy, or professional judgment.

DO NOT PROCEED WITHOUT APPROPRIATE REVIEW

SCREENING ITEM	YES	NO
Peripheral vascular disease involving the arteries of the arms or legs?	☐	☐
Previous vascular surgery to the proposed arm or leg?	☐	☐
Previous skin graft to the proposed arm or leg?	☐	☐
Arteriovenous fistula in the proposed arm or leg?	☐	☐

A YES response in this section requires stopping the screen and following the original AIS guidance, facility policy, and the appropriate referral pathway.

PRECAUTIONS REQUIRING CLARIFICATION OR MEDICAL REVIEW

SCREENING ITEM	YES	NO
Cognitive or physical impairment that may affect safe participation or symptom reporting?	☐	☐
History of hypertension or elevated blood pressure?	☐	☐
Bleeding disorder, such as hemophilia?	☐	☐

Credit: Adapted for instructional use from the Australian Institute of Sport Blood Flow Restriction Pre-Screening Questionnaire (Australian Sports Commission, 2021; ASC36119).

02 BFR Pre-Screening Questionnaire *Continued*

SCREENING ITEM	YES	NO
Clotting disorder, such as factor V Leiden thrombophilia or lupus?	☐	☐
History of deep vein thrombosis or pulmonary embolism?	☐	☐
Surgery within the last 12 weeks?	☐	☐
Arm or leg immobilization within the last 4 weeks?	☐	☐
History of stroke or transient ischemic attack (TIA)?	☐	☐
History of cancer?	☐	☐
Diagnosed heart disease?	☐	☐
History of rhabdomyolysis?	☐	☐
Continue the questionnaire on the next page. Any YES response requires clarification and may require medical review before BFR.		

Credit: Adapted for instructional use from the Australian Institute of Sport Blood Flow Restriction Pre-Screening Questionnaire (Australian Sports Commission, 2021; ASC36119).

02 BFR Pre-Screening Questionnaire *Continued*

SCREENING ITEM	YES	NO
Diagnosed diabetes?	☐	☐
Sickle cell disease?	☐	☐
History of compartment syndrome?	☐	☐
History of nerve damage or injury?	☐	☐
Previous complication or adverse event with BFR?	☐	☐
Pregnant or possibly pregnant?	☐	☐
Taking an oral contraceptive pill?	☐	☐
Any other medical condition that should be discussed before BFR?	☐	☐

Any YES response requires clinical clarification and may require medical review before BFR. When uncertain, do not proceed.

SCREEN OUTCOME
☐ PROCEED - no significant risk identified

☐ PAUSE AND CLARIFY - additional review needed

☐ DO NOT APPLY TODAY - acute safety concern

Reviewer initials: _____ Date: _____

Notes / referral / clearance:

Credit: Adapted for instructional use from the Australian Institute of Sport Blood Flow Restriction Pre-Screening Questionnaire (Australian Sports Commission, 2021; ASC36119). Consult the original questionnaire and current AIS guidance.

03 Cellular Swelling Lab Activities *Record the actual pressure and patient response*

The 100% AOP/LOP value is the individualized reference point. Record the treatment percentage and working pressure separately. Reassess skin, sensation, pain, and symptoms after deflation.

PASSIVE BFR

100% AOP/LOP

_____ mmHg

Selected % AOP/LOP

_____ %

Working pressure

_____ mmHg

Cuff / limb

Size ____ ☐ UE ☐ LE

LAB NOTES

- ☐ Abbreviated interval completed
- ☐ Soft tissue or ROM performed during deflation
- ☐ Skin and symptoms reassessed
- ☐ Reperfusion / rest: _____ minutes

ISOMETRIC BFR

100% AOP/LOP

_____ mmHg

Selected % AOP/LOP

_____ %

Working pressure

_____ mmHg

Cuff / limb

Size ____ ☐ UE ☐ LE

LAB NOTES

- ☐ 10 seconds contraction / 2-3 seconds rest
- ☐ Abbreviated activity interval completed
- ☐ Pain remained below threshold
- ☐ Movement quality maintained

ISOMETRIC WITH NMES

100% AOP/LOP

_____ mmHg

Selected % AOP/LOP

_____ %

Working pressure

_____ mmHg

Cuff / limb

Size ____ ☐ UE ☐ LE

LAB NOTES

- ☐ NMES / Russian stimulation settings documented
- ☐ 10 seconds contraction / 2-3 seconds rest
- ☐ Abbreviated activity interval completed
- ☐ Skin and sensation reassessed

NMES mode / settings:

Electrode placement: _____

RPE: _____ / 10 Pain: _____ / 10

Cuff discomfort: _____ / 10

04 Aerobic and Isometric Resistance Labs *Abbreviated classroom application*

AEROBIC CONDITIONING

100% AOP/LOP	Selected % AOP/LOP	Working pressure	Cuff / limb
_____ mmHg	_____ %	_____ mmHg	Size ____ ☐ UE ☐ LE

LAB NOTES

- ☐ Mode: ☐ walk ☐ cycle ☐ other _____
☐ Exercise bout: _____ minutes
☐ Rest / deflation: _____ minutes
☐ Rounds completed: _____
☐ Target RPE 4-6 or prescribed intensity

Pre RPE: _____ Peak RPE: _____ Post RPE: _____

Pain: pre ____ / during ____ / post ____

Pre HR: _____ bpm Peak HR: _____ bpm

Symptoms / skin response: _____

RESISTANCE TRAINING: ISOMETRIC

100% AOP/LOP	Selected % AOP/LOP	Working pressure	Cuff / limb
_____ mmHg	_____ %	_____ mmHg	Size ____ ☐ UE ☐ LE

LAB NOTES

- ☐ Exercise / position: _____
☐ Hold 1: _____ sec ☐ complete
☐ Rest: _____ sec
☐ Hold 2: _____ sec ☐ complete
☐ Pain remained < planned threshold

RPE: _____ / 10 Pain: _____ / 10

Cuff discomfort: _____ / 10

Deflation / reperfusion: _____ minutes

Response: ☐ favorable ☐ modified ☐ stopped

Stop or modify for numbness, progressive tingling, marked color or temperature change, unexpected pain, dizziness, nausea, chest symptoms, feeling unwell, poor movement quality, or a request to stop.

05 Resistance Protocol Trackers *Check each completed set*

ISOLATED OPEN CHAIN

100% AOP/LOP		Selected % AOP/LOP				Working pressure	Cuff / limb	
_____ mmHg		_____ %				_____ mmHg	Size ____ ☐ UE ☐ LE	
Exercise	Load	30	15	15	15	RPE	Pain	Notes
1.		☐	☐	☐	☐	_____	_____	
2.		☐	☐	☐	☐	_____	_____	
3.		☐	☐	☐	☐	_____	_____	

Protocol: 30 repetitions, then 15 / 15 / 15. Rest 30 seconds between sets. Deflate between exercises and document reperfusion time.

CLOSED CHAIN ISOTONIC

100% AOP/LOP		Selected % AOP/LOP				Working pressure	Cuff / limb	
_____ mmHg		_____ %				_____ mmHg	Size ____ ☐ UE ☐ LE	
Exercise	Load	30	15	15	15	RPE	Pain	Notes
1.		☐	☐	☐	☐	_____	_____	
2.		☐	☐	☐	☐	_____	_____	
3.		☐	☐	☐	☐	_____	_____	

Protocol: 30 repetitions, then 15 / 15 / 15. Rest 30 seconds between sets. Deflate between exercises and document reperfusion time.

Deflation between exercises: _____ min

Post-deflation skin / sensation acceptable: ☐ Yes ☐ No

Overall RPE: _____ / 10

Overall pain: _____ / 10

05 Resistance Protocol Trackers *Continued*

COMBINED MOVEMENTS

100% AOP/LOP		Selected % AOP/LOP				Working pressure	Cuff / limb	
_____ mmHg		_____ %				_____ mmHg	Size ____ ☐ UE ☐ LE	
Exercise	Load	30	15	15	15	RPE	Pain	Notes
1.		☐	☐	☐	☐	_____	_____	
2.		☐	☐	☐	☐	_____	_____	
3.		☐	☐	☐	☐	_____	_____	

Protocol: 30 repetitions, then 15 / 15 / 15. Rest 30 seconds between sets. Deflate between exercises and document reperfusion time.

COMPOUND EXERCISES

100% AOP/LOP		Selected % AOP/LOP				Working pressure	Cuff / limb	
_____ mmHg		_____ %				_____ mmHg	Size ____ ☐ UE ☐ LE	
Exercise	Load	30	15	15	15	RPE	Pain	Notes
1.		☐	☐	☐	☐	_____	_____	
2.		☐	☐	☐	☐	_____	_____	
3.		☐	☐	☐	☐	_____	_____	

Protocol: 30 repetitions, then 15 / 15 / 15. Rest 30 seconds between sets. Deflate between exercises and document reperfusion time.

Deflation between exercises: _____ min

Post-deflation skin / sensation acceptable: ☐ Yes ☐ No

Overall RPE: _____ / 10

Overall pain: _____ / 10

06 Documentation Template *Document what was actually performed*

OBJECTIVE

Blood-flow restriction training was performed using SmartCuff 4.0, cuff size _____, applied to the _____ extremity. The measured 100% arterial/limb occlusion pressure (AOP/LOP) was _____ mmHg. The patient performed the planned protocol at _____% AOP/LOP (_____ mmHg). The patient completed _____ using _____ load / resistance. For resistance exercise, the patient completed ☐ 30-15-15-15 repetitions with _____ seconds between sets, or ☐ the following alternate protocol: _____. The cuff was ☐ maintained during interset rest ☐ deflated as indicated, and was deflated for _____ minute(s) between exercises. Post-deflation skin appearance, sensation, symptoms, and recovery were reassessed. Response was ☐ favorable ☐ modified ☐ not tolerated.

ASSESSMENT

Tolerance	☐ Good ☐ Fair ☐ Poor Details: _____
RPE	Baseline _____ / 10 Peak _____ / 10 Recovery _____ / 10
Pain / cuff discomfort	Pain _____ / 10 Cuff discomfort _____ / 10
Skin / sensation	☐ Returned to baseline ☐ Changed Details: _____
Symptoms / movement quality	_____
Clinical interpretation / next dose	_____

CLINICAL NOTE

Use the measured 100% AOP/LOP as a reference value, not automatically as a treatment dose. Current AIS guidance recommends individualized pressure and advises avoiding full arterial occlusion during passive training. Documentation should describe the actual intervention and observed response rather than assume a lactate-mediated outcome.

REFERENCES

- Australian Institute of Sport. (2021). Blood flow restriction pre-screening questionnaire (ASC36119). Australian Sports Commission. https://www.ausport.gov.au/ais/position_statements/blood-flow-restriction-training-guidelines
- Patterson, S. D., Hughes, L., Warmington, S., et al. (2019). Blood flow restriction exercise: Considerations of methodology, application, and safety. *Frontiers in Physiology*, 10, 533. <https://doi.org/10.3389/fphys.2019.00533>