

The Use of the Butterfly iQ to Measure Blood Flow After Cupping Therapy

Advancing Recovery Tools for
Sports Performance

Original Research by

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Introduction

Athletic programs, and the medical staff supporting them, often look to uncover new and innovative techniques for athlete recovery. One such method that has received recent attention is cupping therapy. Numerous studies have been conducted to provide safety protocols, establish indications for use, and investigate the effects of cupping therapy.¹ Cupping therapy has been indicated to decrease pain and muscular spasm, accelerate microcirculation, and reduce systemic inflammation.^{2,3,4}

The purpose of this case study is to illustrate initial findings during the investigation into the physiological effects of cupping therapy on microvascular blood using the Butterfly iQ. Using the color Doppler setting and ellipse measurement features on the Butterfly iQ, we found that cupping therapy increased microvascular blood flow in the rectus femoris immediately after treatment, and hypothesize this is due to an increased mechanical interface that facilitates an influx of nutrient rich blood flow by increasing vessel diameter.⁵

Sample Population

The subject is a female student athlete who is a center back on a Division III soccer team. Cupping was chosen as a recovery treatment on the Rectus Femoris muscle. Recovery of working musculature is optimized by introducing increased blood flow to filter out muscle waste byproducts and bring oxygenated blood to the area. Using Doppler on the Butterfly iQ, blood flow to the right Rectus Femoris was measured prior to cupping therapy. After measurement, cupping therapy began on the middle point of the Rectus Femoris. After ten minutes, vessel diameter measurement was performed again and demonstrated an increase in vessel diameter. By increasing the diameter of blood vessels, the flow of nutrient-rich blood to and from the targeted muscular tissue was increased.

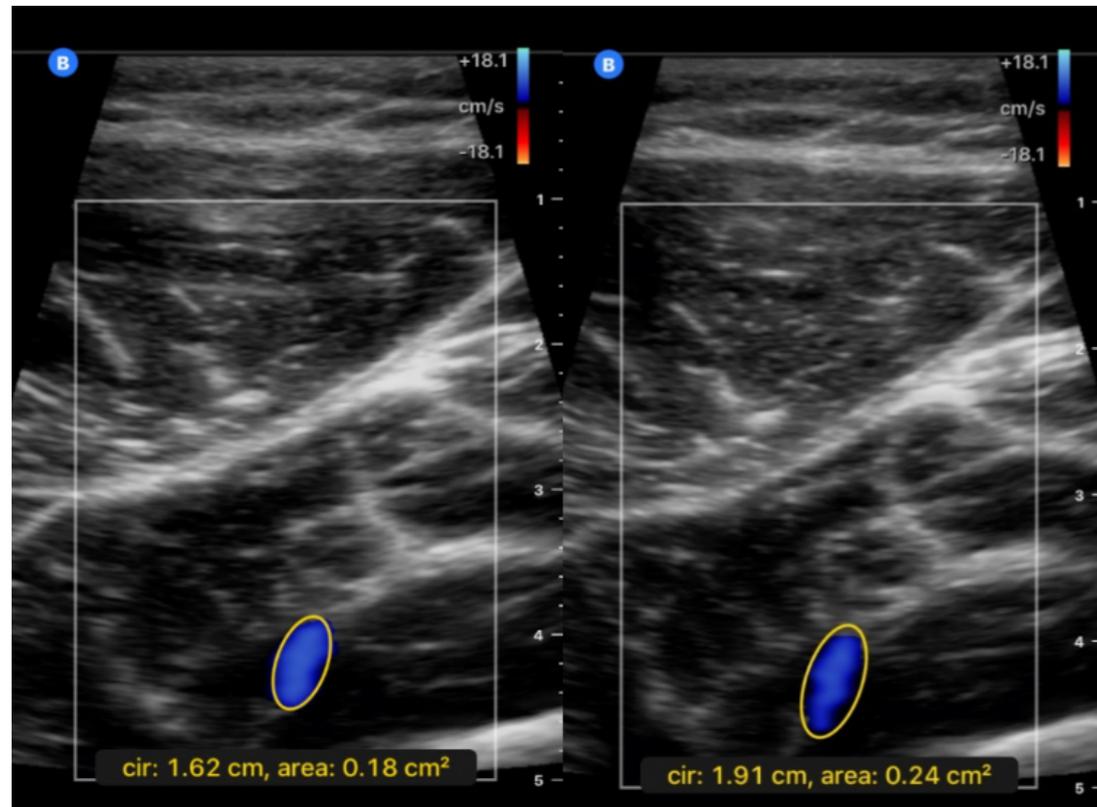
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The ability for Butterfly iQ to *physically demonstrate* the increased microvascularization thought to be associated with cupping therapy is exciting for the world of athletics, where returning athletes to play sooner and more safely, is paramount

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Sample Imaging Exam

The left image demonstrates pre-cupping therapy with a circumference of 1.62 cm. After 10 minutes of cupping therapy the right image shows an increase in circumference to 1.91 cm at a depth of 4.75 cm.



What Does This Teach Us?

The Butterfly IQ demonstrated a precise picture of vasculature and measurements pre-intervention and post-intervention. Ten minutes of cupping therapy increased vasculature diameter to increase blood flow to and from the targeted muscle. With this knowledge, clinicians can more confidently utilize cupping therapy as a recovery tool in the sports performance setting. An increase of blood flow can carry blood lactate away from the target muscle to the liver and heart, allowing gluconeogenesis production and creating usable energy by the athlete.

References

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