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## A study on superficial and deep blood flow alterations elicited with physical therapeutic modalities in healthy human subjects

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An uncompromised blood flow (BF) is vital to the normal homeostatic functioning of all humans. When tissue damage occurs from trauma, increased BF occurs as part of the healing and repair process. Physical therapy claims to increase BF to these damaged tissues and thereby improve healing rates. The injured person's healing process can become impaired or dysfunctional by various parameters e.g., disease and lack of nutrition. An ability to increase BF once it has been compromised, is important in maintaining homeostasis and healing. An ability to achieve increased BF and measure any changes caused by a therapeutic intervention are central to this research. The majority of studies have considered skin blood flow (SBF), this study will investigate common therapies that claim to increase BF in both superficial and deeper lying tissue. This will be achieved by considering 3 forms of physical therapy that purport to have an effect on BF: 1. Electrical Stimulation (ES) modalities, 2. Thermal modalities, 3. Non-Thermal modalities. Historically, the measurement of SBF is related to the penetration depth of the available equipment. Some studies have postulated that there is a correlation between SBF and BF in the deeper structures (muscle (MBF)); however a relationship has not been shown. The design of the experimental protocol will attempt to answer whether this relationship exists or not. Varying claims have been made by authors using various modalities in order to obtain alterations in BF. A review of literature (LR) found that electrotherapy could increase the rate of wound healing. Others found that there was "insufficient scientific evidence for efficacy of widely used electrotherapy treatment in physiotherapy". Numerous devices exist that claim to increase BF. Much of the literature is still inconclusive with regards to its validation of these BF changes. Thus, a need to have high quality and empirically supported research which supports these modalities claims is needed in order to fully evaluate the said devices.

### Biography

Alex Anzelmo is currently pursuing his PhD at the University of Hertfordshire (UK). He was previously an international professional Athlete and was the Head Physiotherapist for Great Britain Basketball for over 10 years. He has worked at several Olympic games, World championships, European championships and Commonwealth games as a Physiotherapist.

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