Transdermal Delivery of Carbon Dioxide Boosts Microcirculation

Pilot Study Results

"There are a lot of possibilities here and we are really excited about conducting future studies to determine what D`OXYVA may be able to provide to people with microvascular disease."

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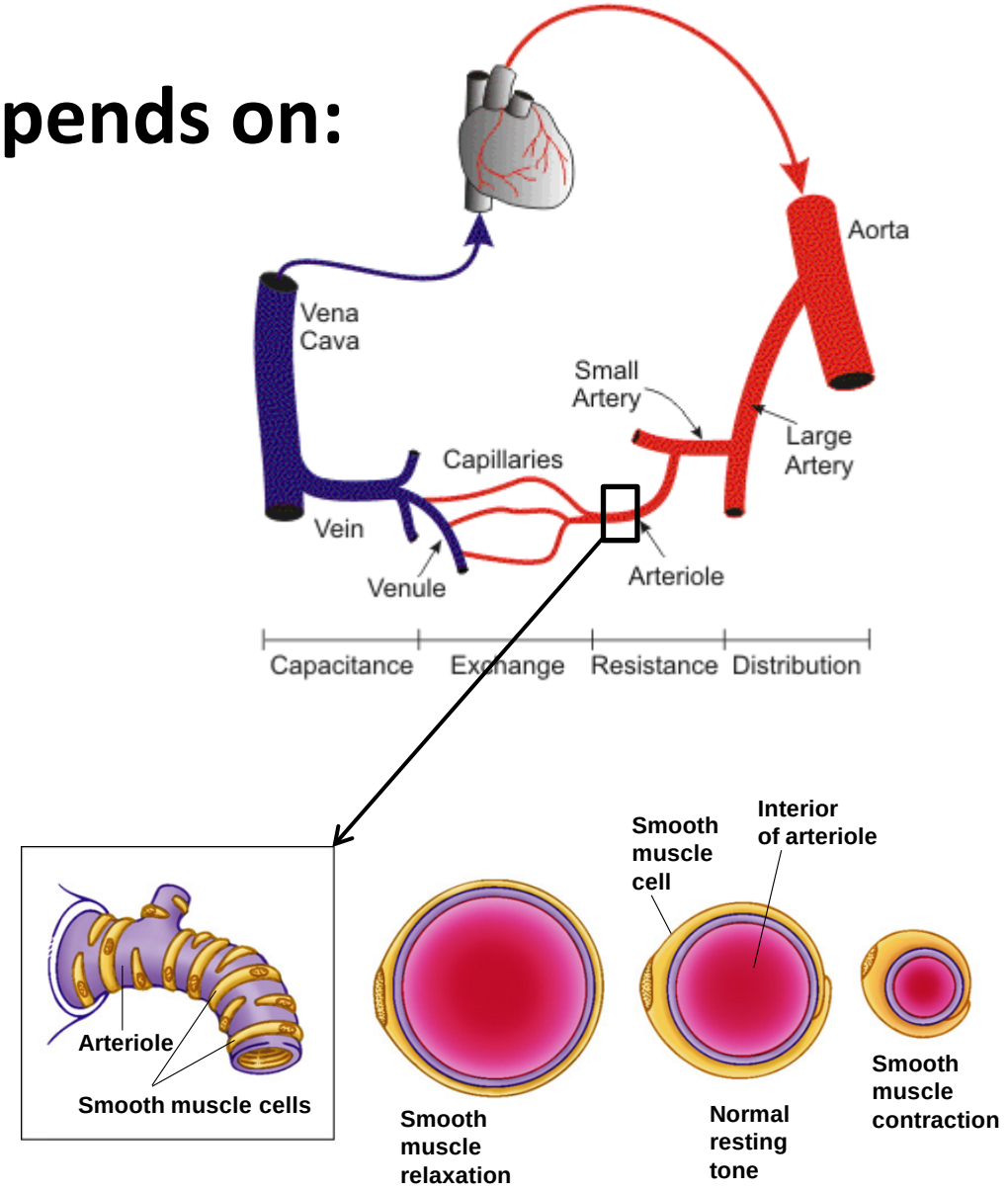
InvisiDerm D`OXYVA Scientific Advisory Board Member

July 2013

Oxygen Delivery Depends on:

1. Heart
2. Arteries
3. Arterioles
4. Capillaries



Study Design:

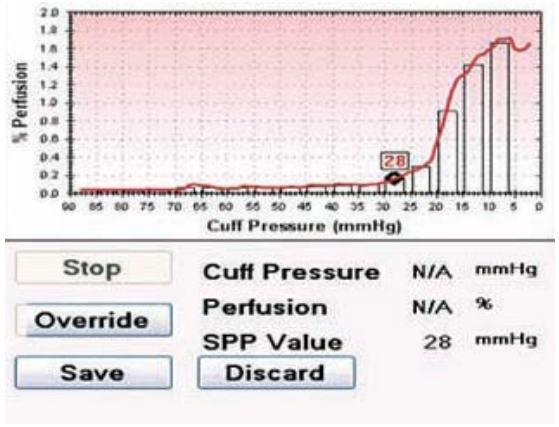
Subjects:
6 subjects with diabetes
8 subjects without diabetes

Treatment:
The subject's thumb was inserted into the D`Oxyva® device and "bathed" in CO_2 gas for 5 minutes.

Measurements:
Brachial blood pressure

Skin perfusion pressure in the toe
- •5 minutes pre-treatment
- •5 min post-treatment
- •30 minutes post-treatment
- •60 minutes post-treatment
- •120 minutes post-treatment
- •240 minutes post-treatment

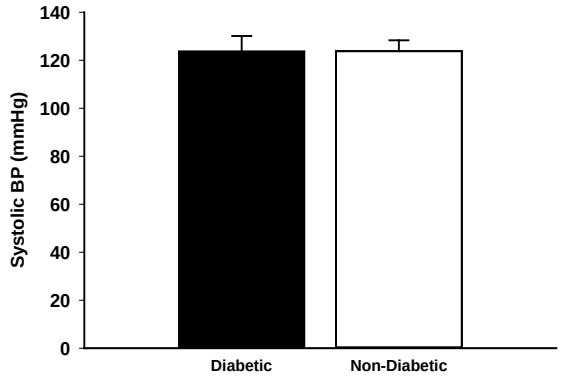
SensiLase® System

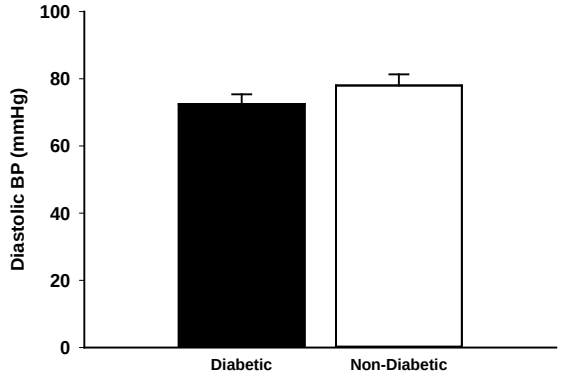


A graph displays pressure and perfusion during cuff deflation and indicates the pressure at which skin perfusion is found to return.

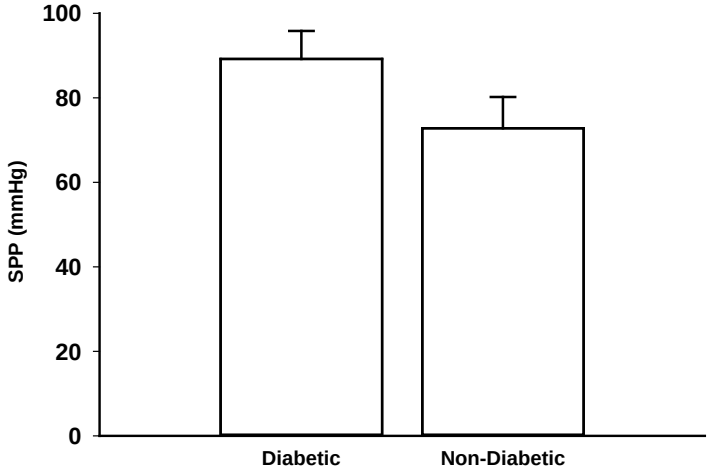
BASELINE MEASUREMENTS

Blood Pressure

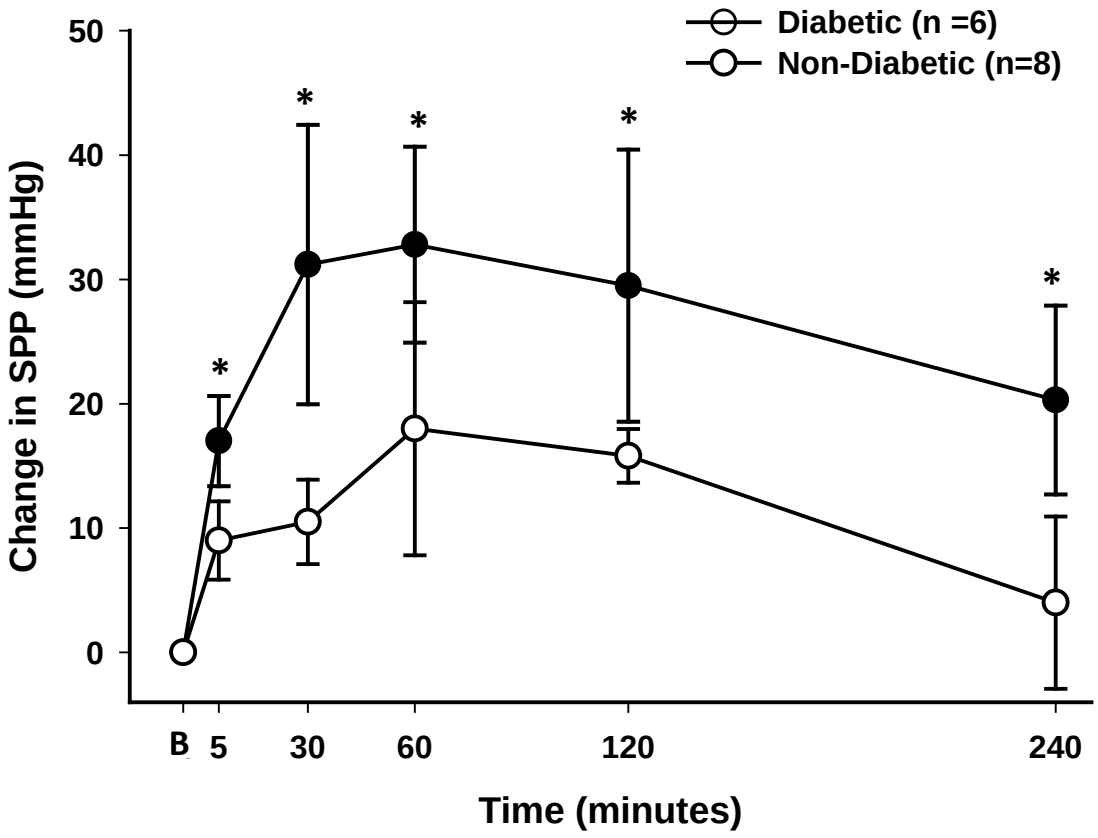




Skin Blood Flow

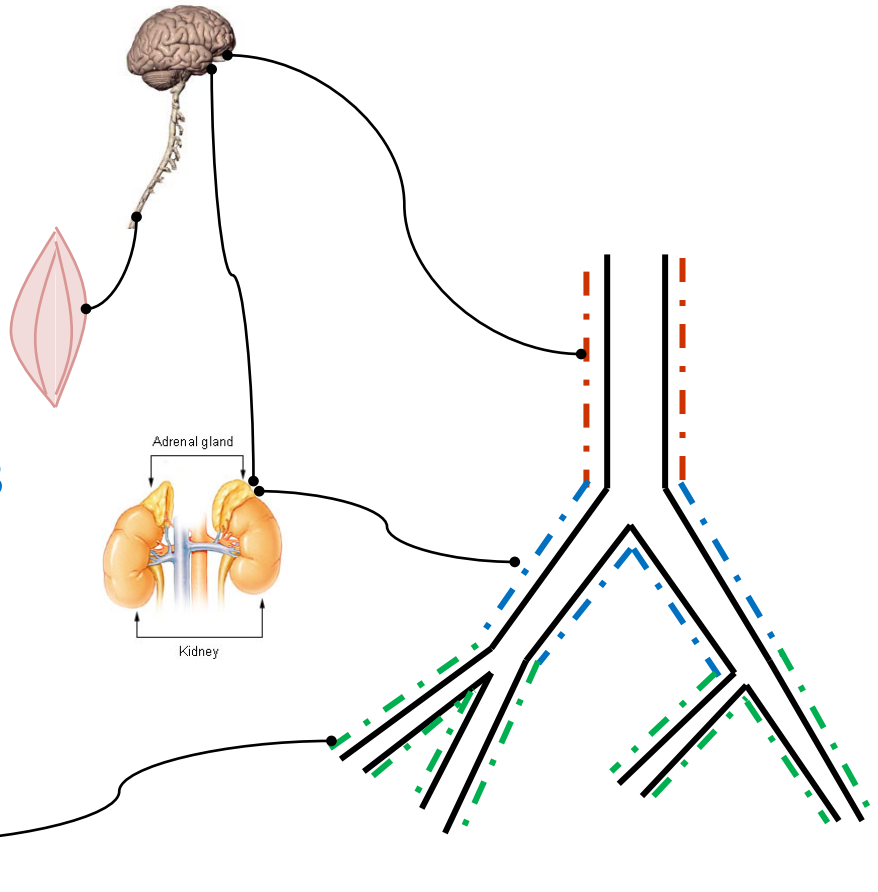


Transdermal delivery of CO_2 to the thumb promotes sustained blood flow at the foot.



How does transdermal CO_2 delivered at the thumb cause blood flow to the foot to increase?

1. **Neural Signals**
   - Metaboreflex
2. **Hormonal Signals**
   - Epinephrine
   - Angiotensin
3. **Tissue Signals**
   - Adenosine
   - Potassium



A FEW BENEFITS OF IMPROVED MICROVASCULAR FUNCTION

- Better Healing
- Pain Reduction
- Increased Metabolism
- Reduction of Fatigue