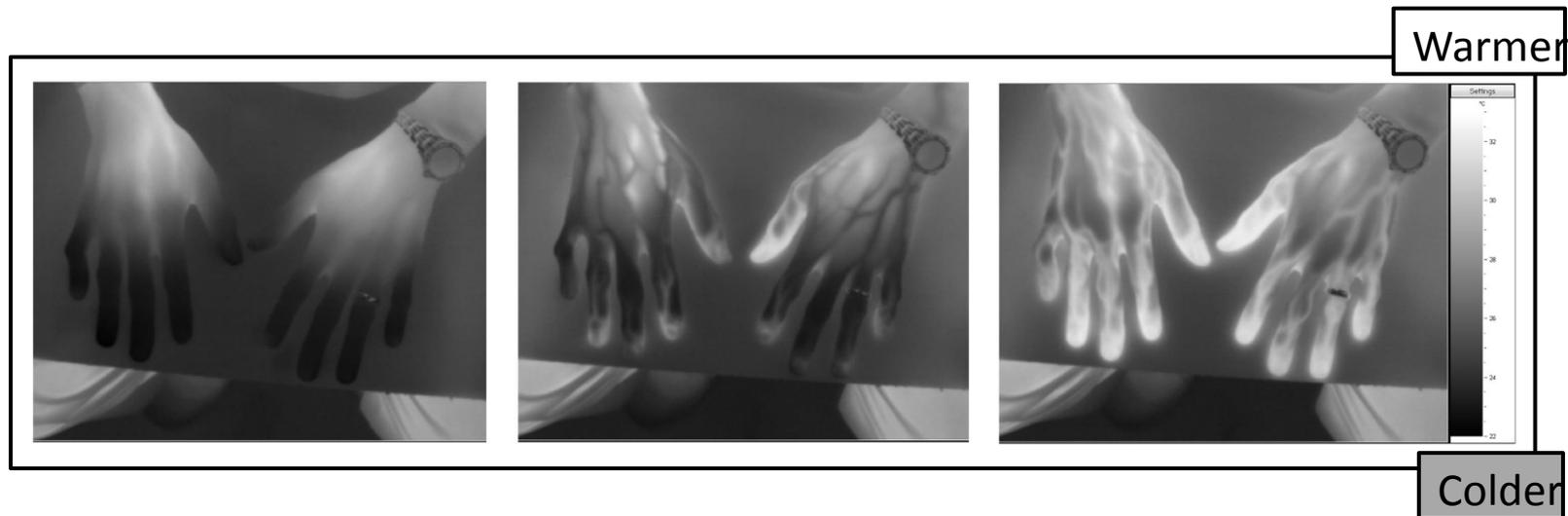


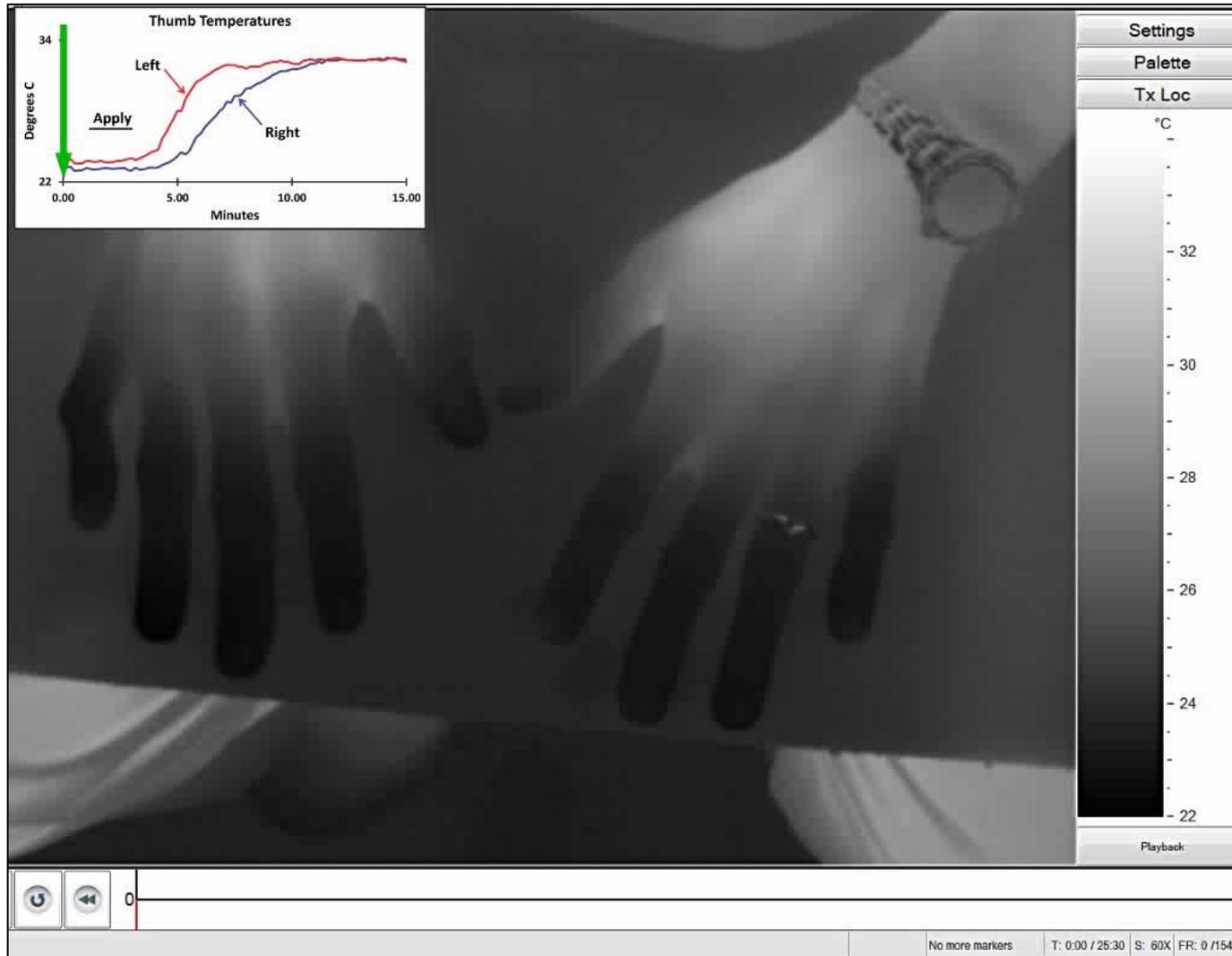
Sensor-based Evidence of Effects

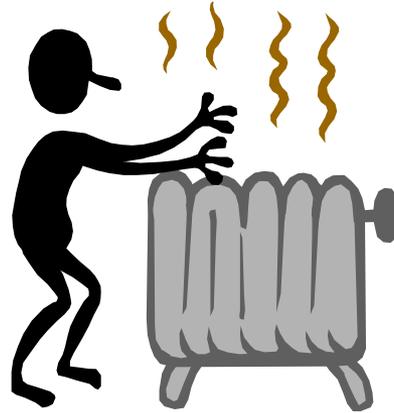
Linking Resolution with Photobiomodulation





Time-compressed “movie” (15min = 6 sec)





A whole body experience
in about a minute





Disclosure



- The following potential conflict of interest relationships are germane to my presentation.
- I am an engineer. I am the founder, funder, & CEO of PhotoMed Technologies, Inc. (2000)

Equipment from PhotoMed Technologies, Inc.

- The equipment is labeled for investigational use only. It is not FDA cleared.

Clinical illustrations

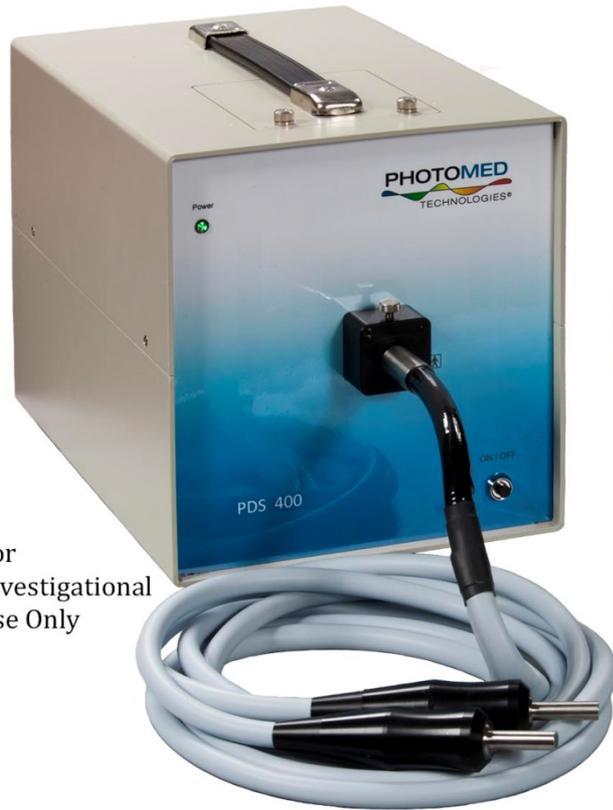
- PhotoMed Technologies built the proprietary data acquisition system that captured the information presented.



Study Management System™



PDS 400® VW Generator



For
Investigational
Use Only

Thermal
Imaging
Camera



DeviceLogger™



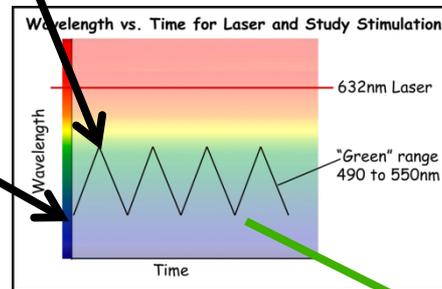
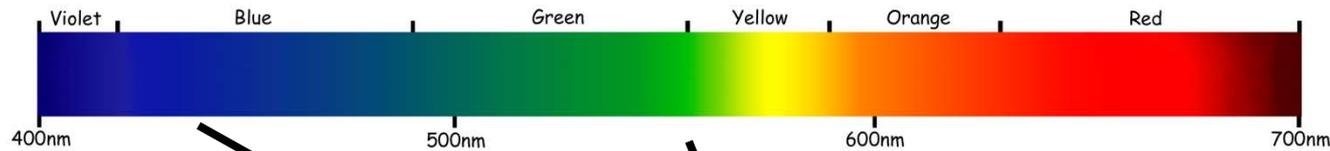
Copyright PhotoMed Technologies, Inc. 2014

PhotoMed's integrated system for exploring wavelength-dependent effects





Vary the wavelength during therapy



- Range – 400 to 700 nm
- Rate of variation – 1 to 12 nm/sec
- ~ 25nm bandwidth (similar to an LED)
- 5 to 100mW/cm²
- 80 seconds typical



Simulated 450 – 550nm



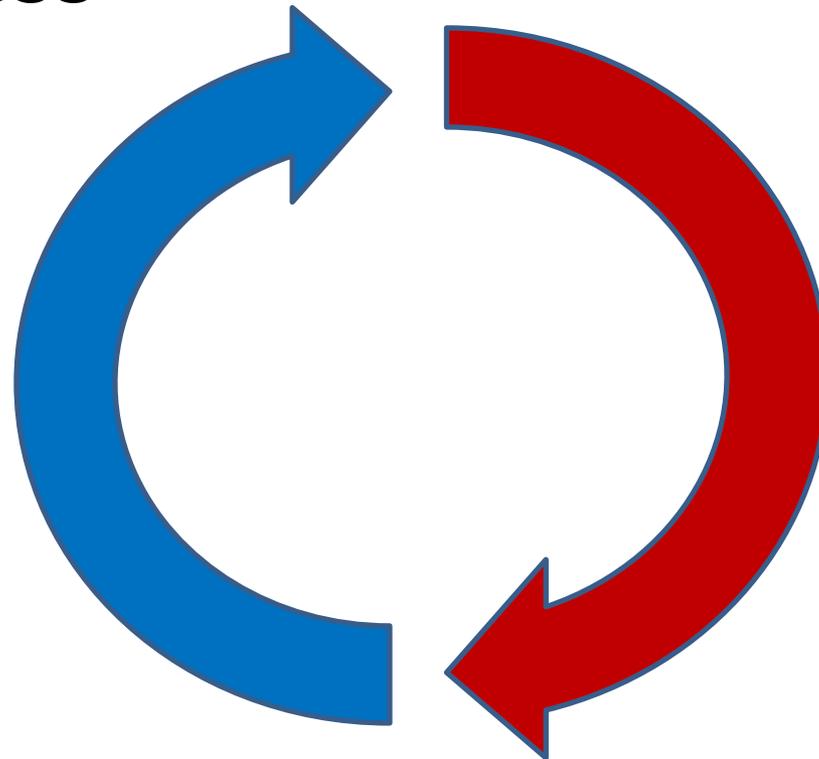


Linked coldness and pain



Coldness

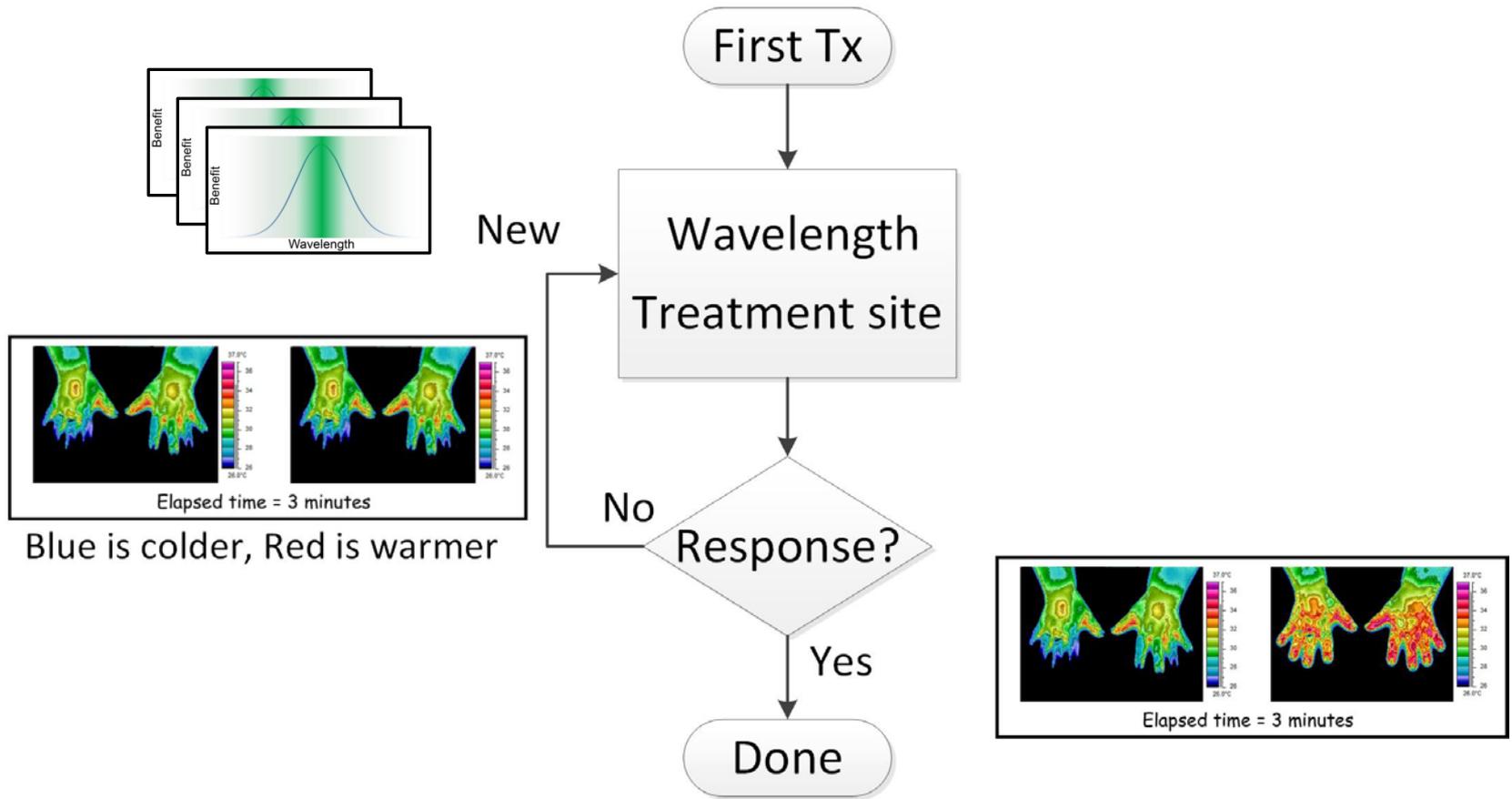
**Unrelenting
Pain**



Called sympathetically mediated pain, CRPS, or RSD



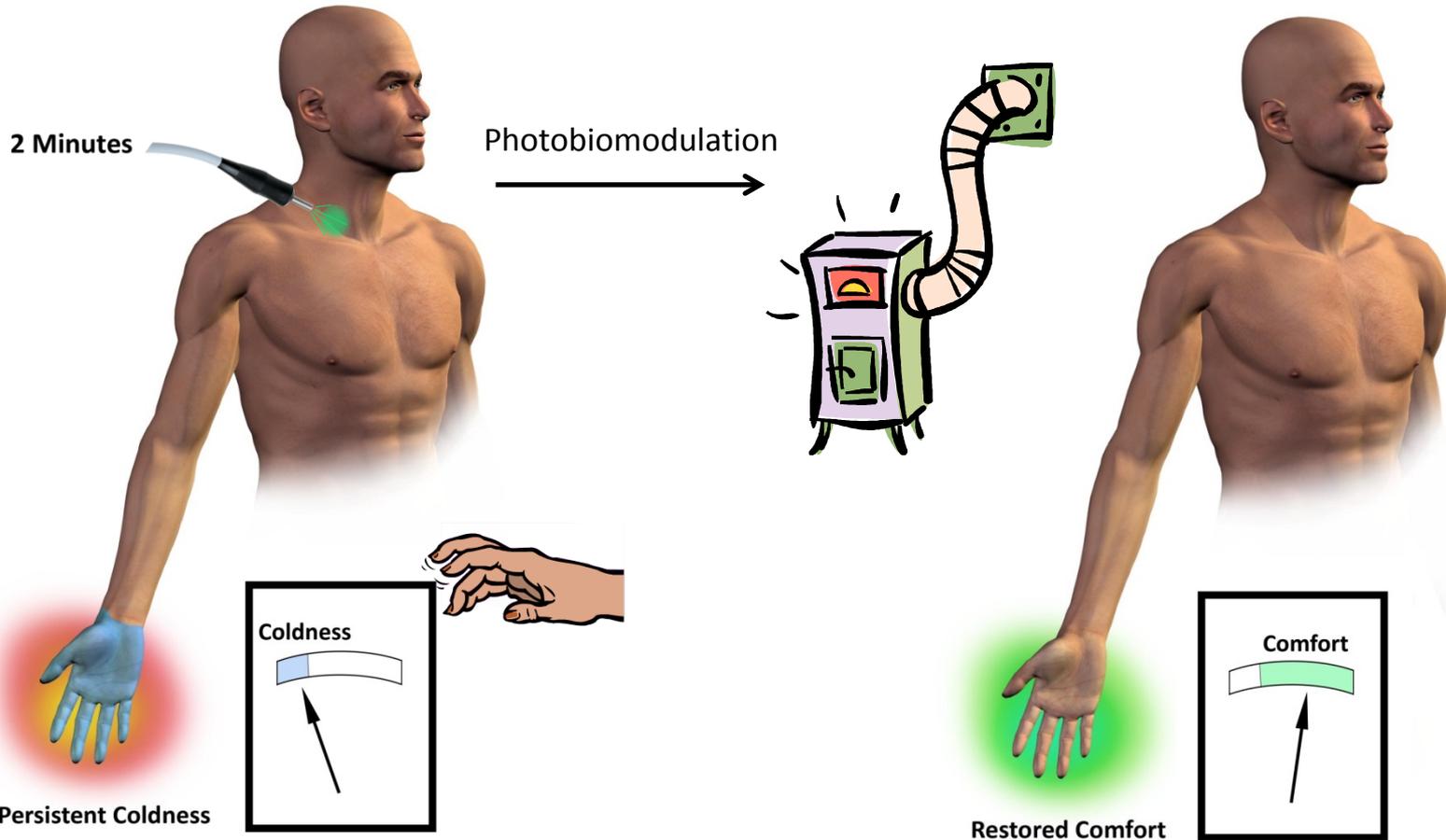
An iterative solution



Sessions that require iteration may suggest wavelength-dependent effects



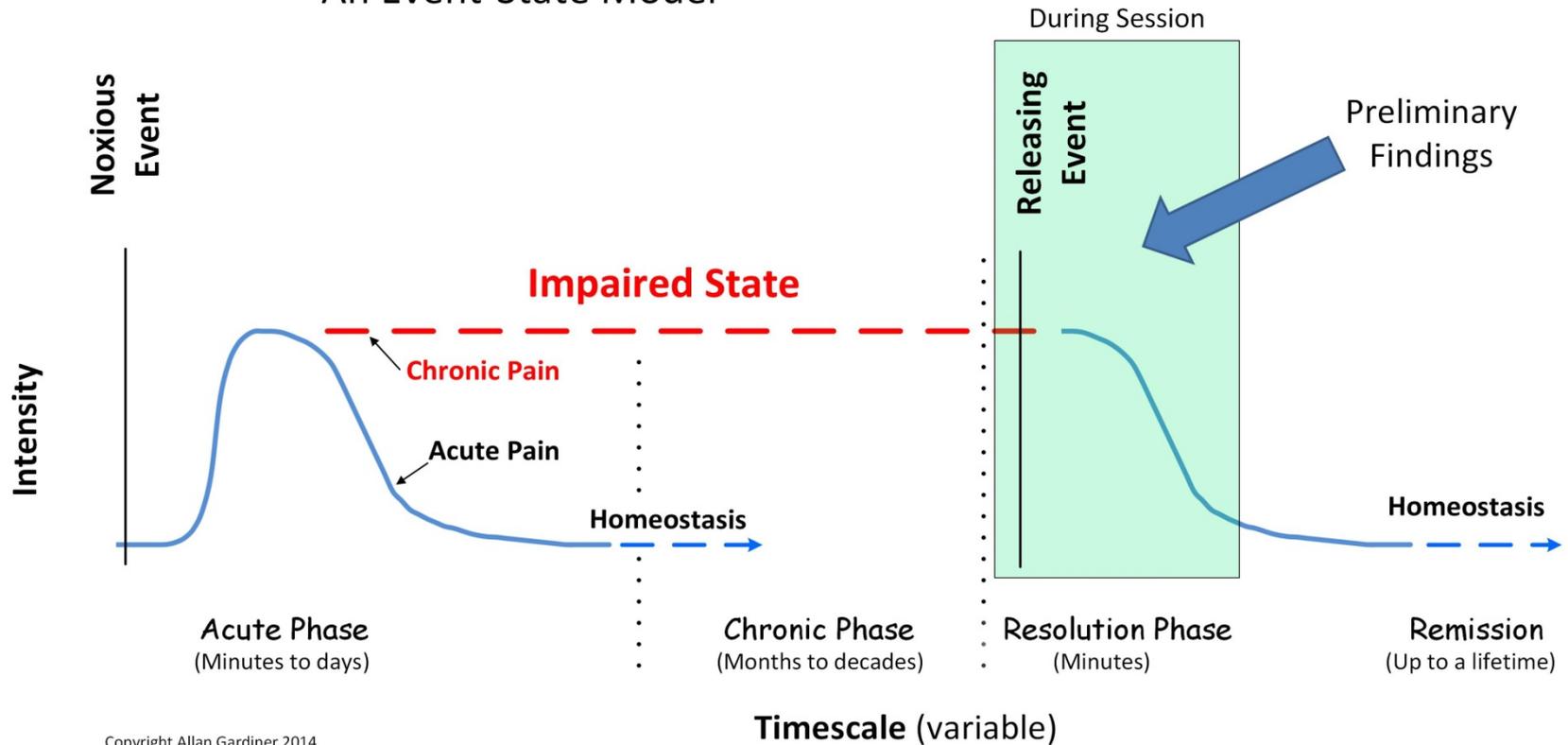
Thermostat Model



The warming phase is independent from the treatment parameters



Natural History of Sensory, Motor, and Emotional Experiences: An Event-State Model

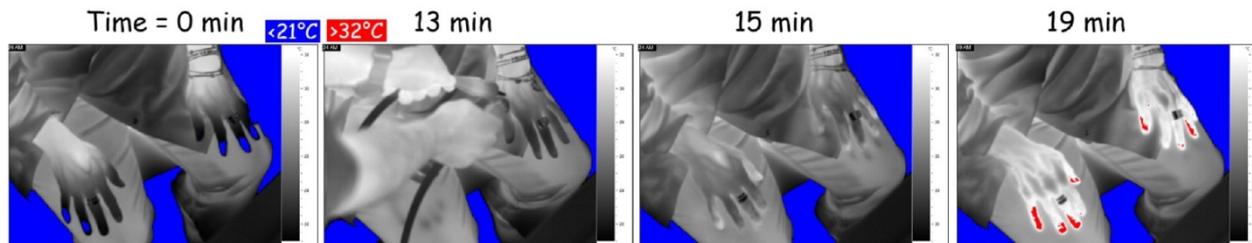
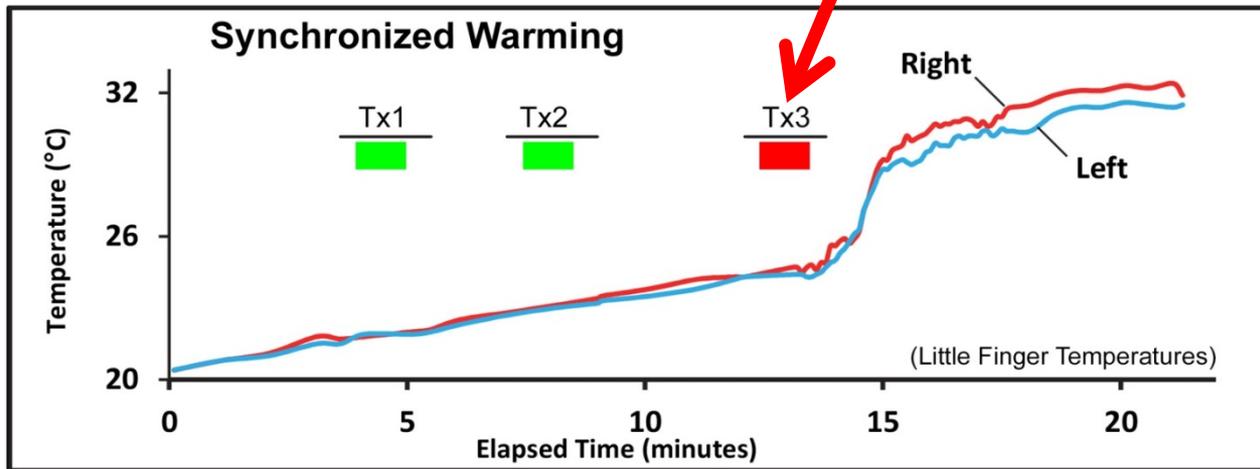
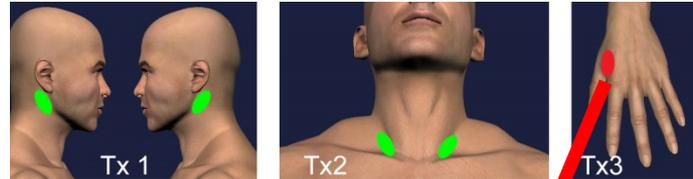


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- Each treatment is a separate experiment.
- The healing process does not convey information about the treating parameters.



Synchronized Responses

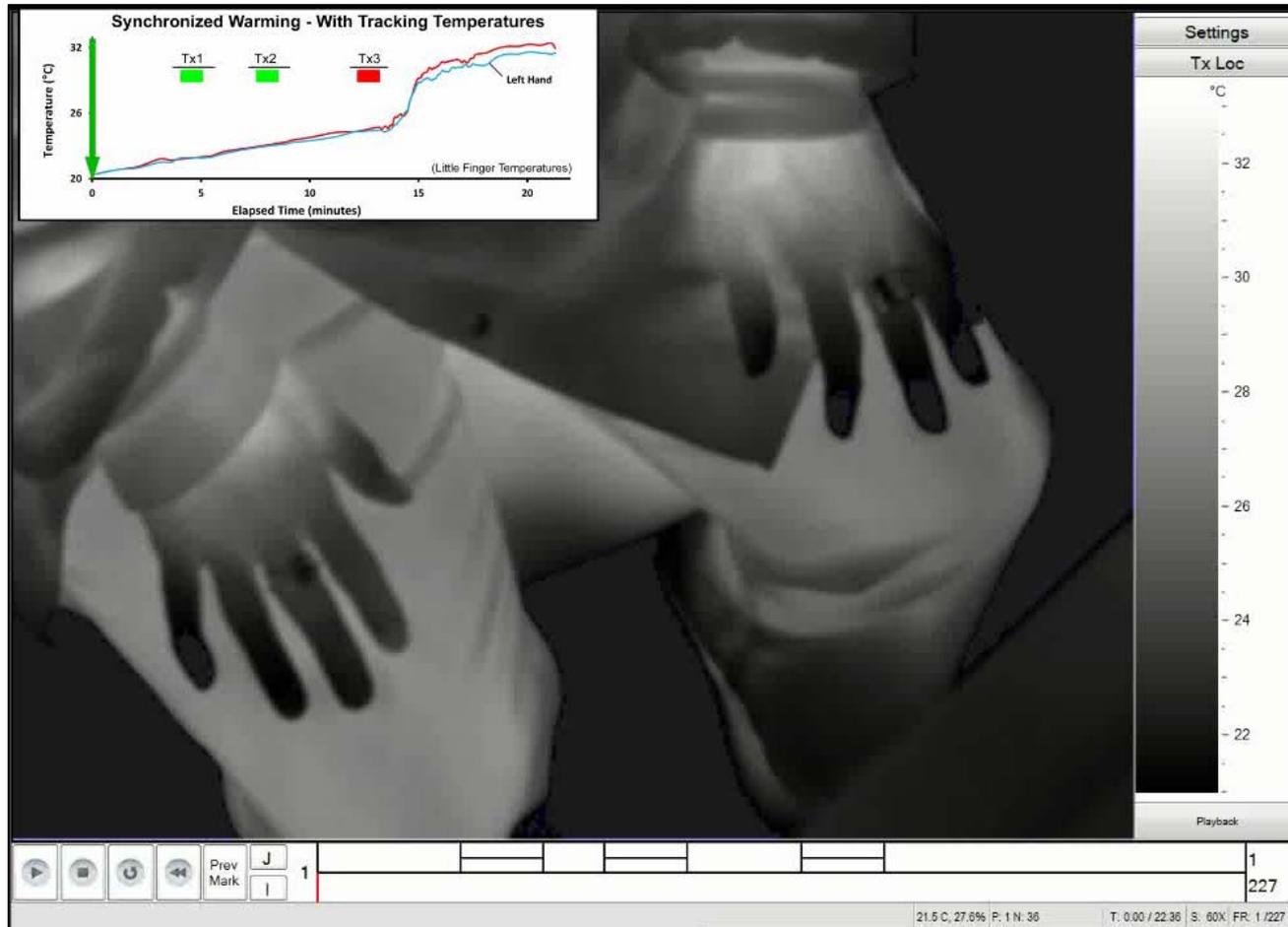


Rapid and large physiological responses mark effective treatments



Feedback Enabled Process

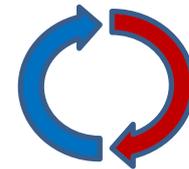
(21min = 11sec)



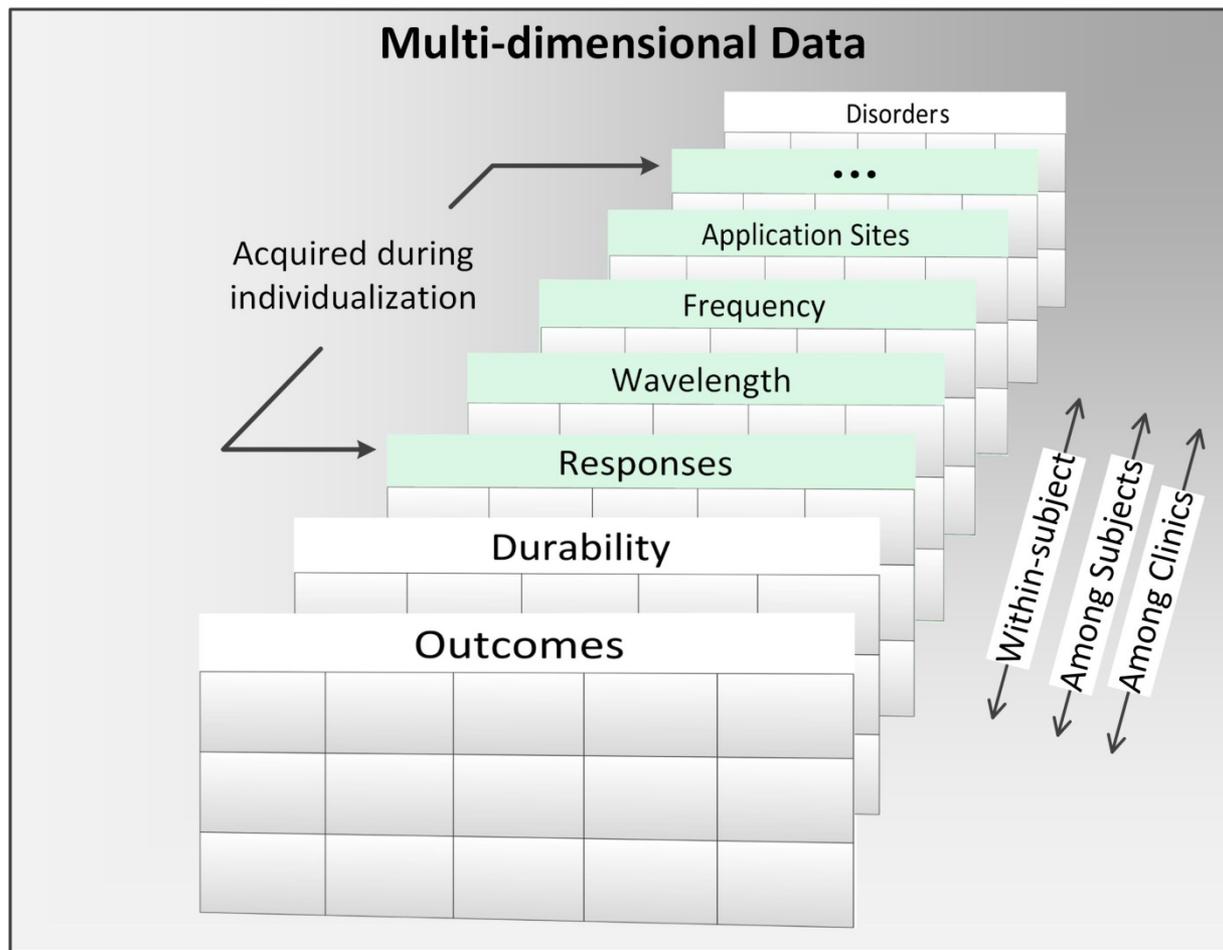
Subjects



- Subjects had multiple sources of pain
 - On pain medications, pumps, stimulators
 - Musculoskeletal pain
 - Neuropathies
- Sympathetically mediated pain (SMP) (CRPS, RSD)
 - Coldness linked with unrelenting pain
- Explore association and independence of disorders

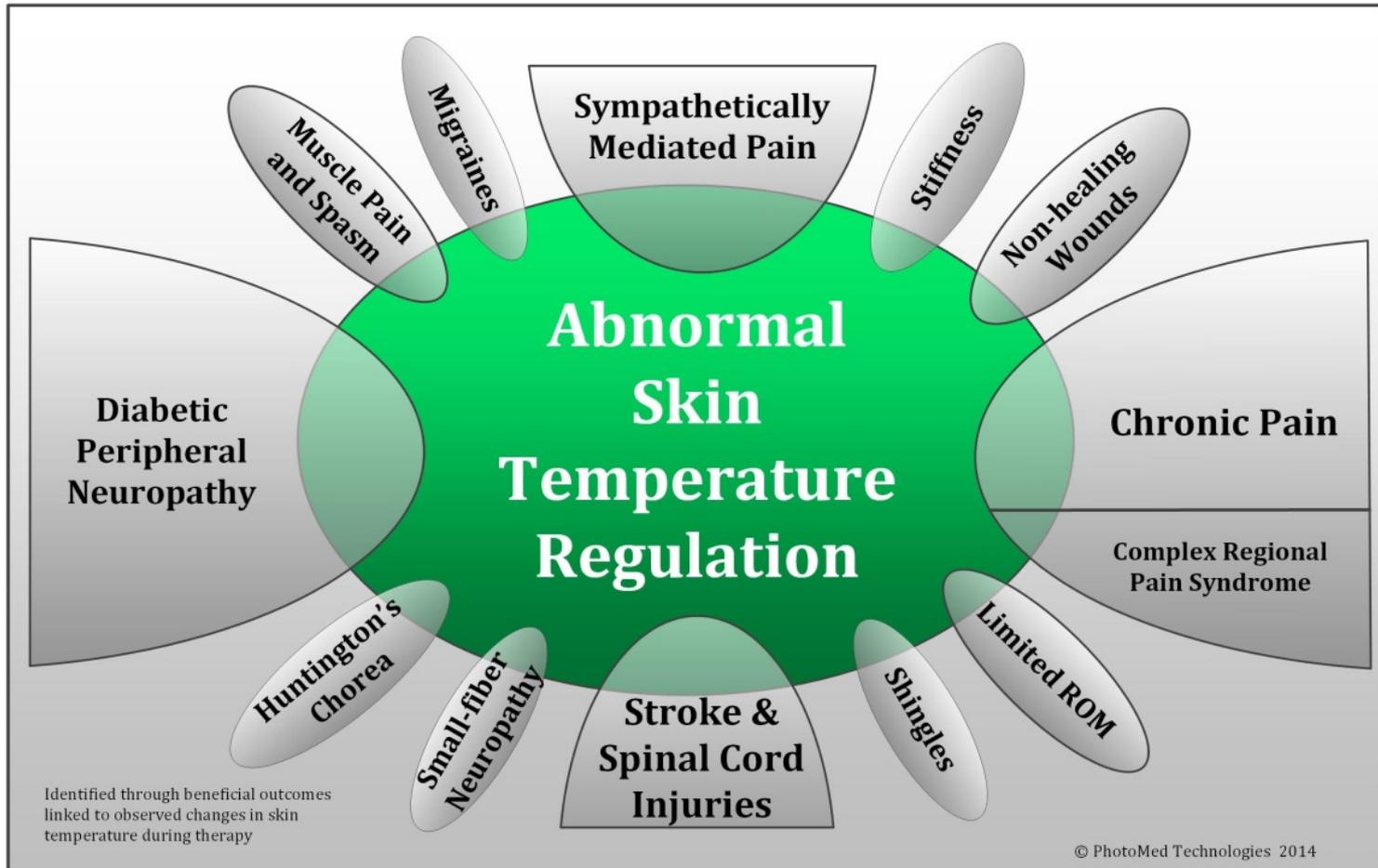


Multi-dimensional Data Set



Optimization is at the individual and systems levels

Associated Disorders



Sensor-based evidence – by impairment



Thank you

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Reserve Slides

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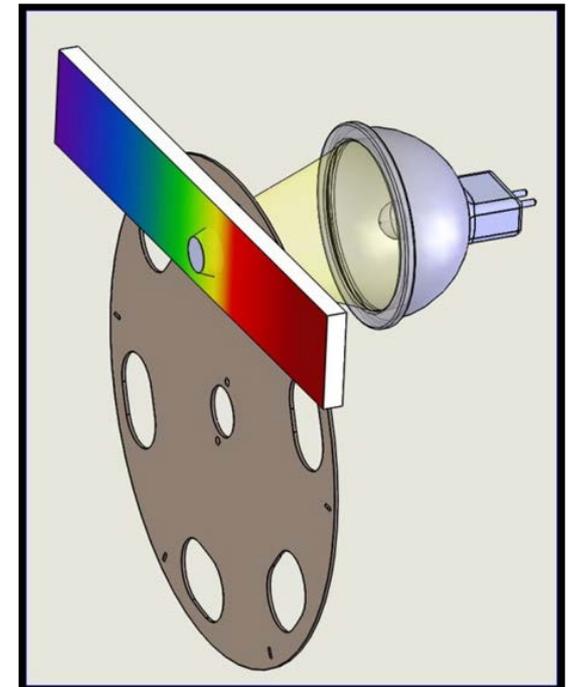
allan@photomedtech.com



Wavelength selection



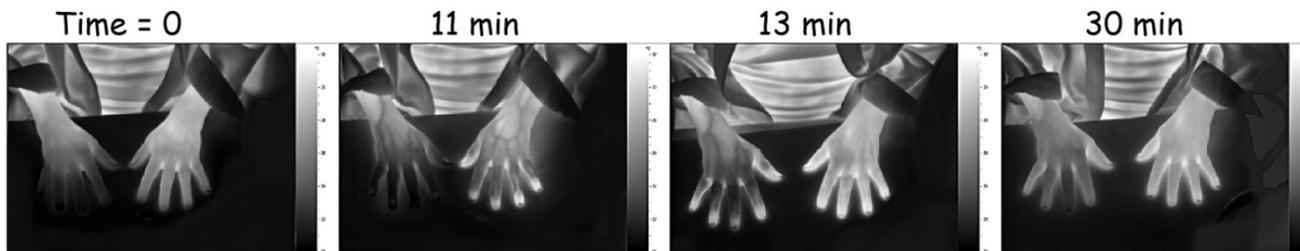
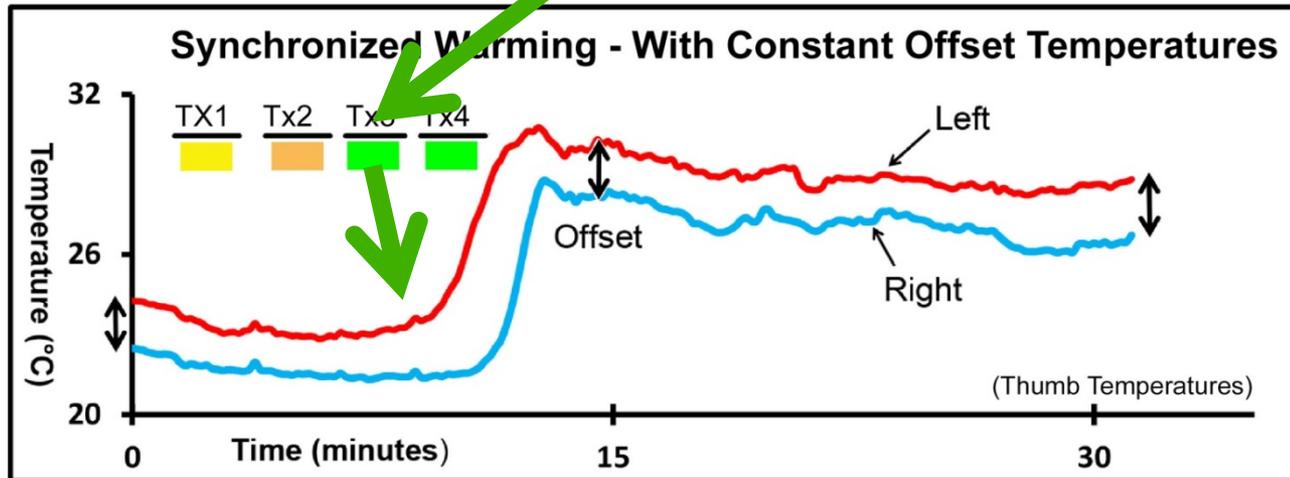
- Variable within 410 to 700nm
- 0 to 400Hz
- Dual fiber-optic cables



A motorized filter and chopper provided control of the wavelength and frequency to 1nm and 1Hz resolution.



Synchronized warming – Constant offset

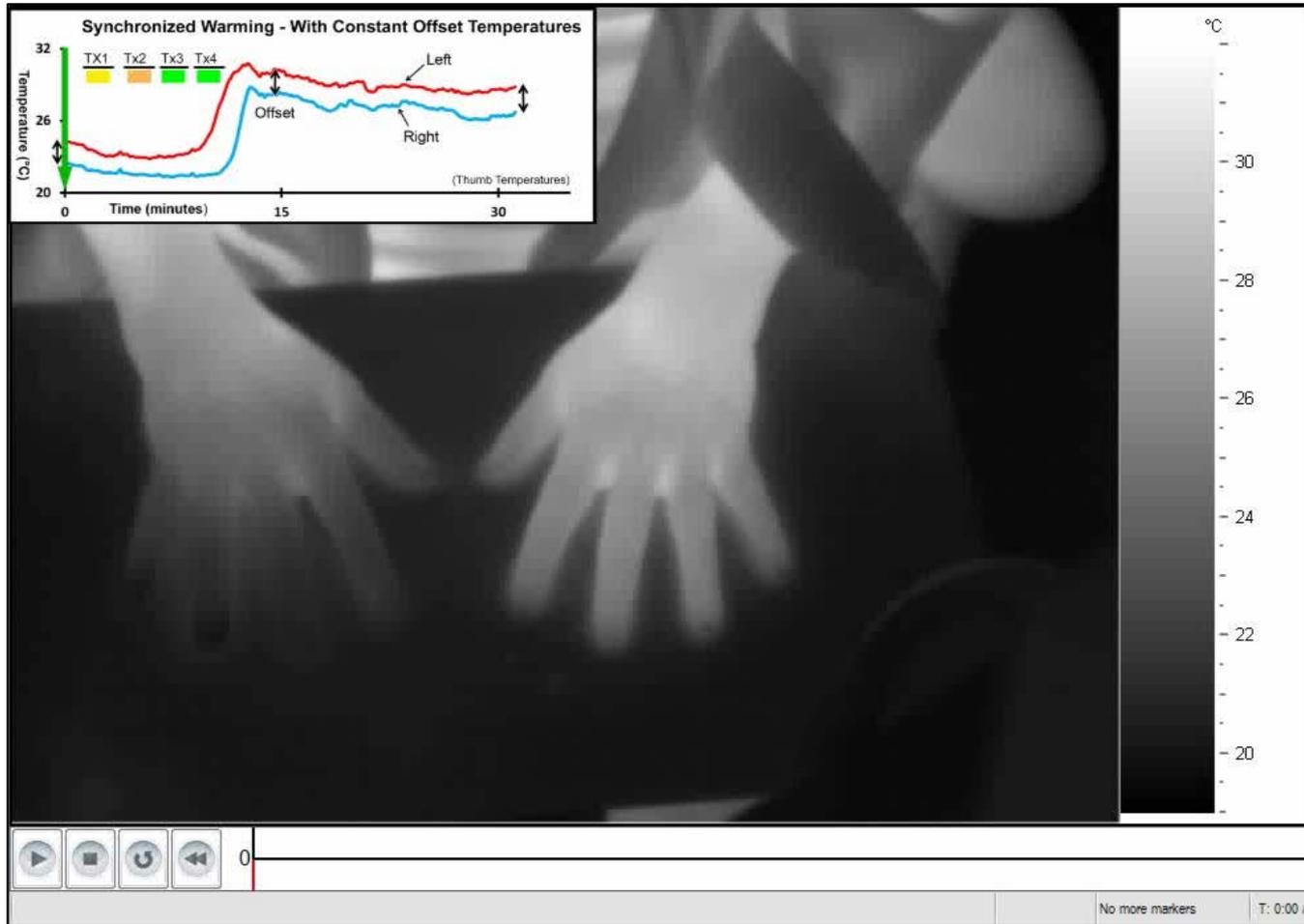


50 YOF - Offset hand temperatures demonstrate the precision management of skin temperatures during perceived shift from coldness to comfort.



Synchronized warming

(19min = 11sec)



Click to start the movie.