

"THERMAL BIOFEEDBACK IN THE TREATMENT OF FROSTBITE
AND COLD INJURIES: A PRELIMINARY REPORT"

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Thermal biofeedback training has been found potentially useful and promising in obtaining self-regulatory skills over many cardiovascular disorders, including Raynaud's Disease, which often results in pain and discomfort in one's extremities after exposure to cold temperatures or sometimes mild anxieties. Typical cold injuries are often accompanied by varying degrees of vasospastic and vasoconstrictive problems, depending upon the severity of the injury.

This study is the beginning of a series of studies conducted to ascertain the feasibility of using thermal biofeedback training for prevention and treatment of frostbite and other cold injuries. The clinical application for prevention has certainly raised the possibility of minimizing injuries; however, equally promising is thermal biofeedback in the treating of frostbite patients whose vascular control is irregular or nonexistent. In some cases, a 1° to 2°C temperature change in one direction or the other may mean the difference between surgery or the viable use of one's digits.

The current clinical case studies examine biofeedback results from two mountain climbers, who, while climbing Mt. McKinley, sustained frostbite injuries to their feet, and subsequently trained in thermal biofeedback as part of their total frostbite treatment regime.

About the Presenter

Dr. Bruno Kappes, a native of Nancy, France, is currently an Assistant Professor in the Psychology Department at the University of Alaska. He received his doctorate in Counseling in 1978 from Kansas State University. He is the Founder and Past President of the Biofeedback Society of Alaska.

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"ARTIFACTS IN THERMAL BIOFEEDBACK"

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Skin temperature biofeedback is frequently used as a stress reduction technique and has become a commonly used measure of a general relaxation response. Clinicians and researchers, however, have found accurate assessment of temperature variations difficult if not impossible to attain at the present time.

Skin temperature not only fluctuates regionally on different surfaces of the skin but also varies for certain times of the day within the same individual. Artifacts, like ambient room temperature, seasonal and geographic temperatures, effects of suggestion, placebo, or expectation effects, sex differences, experimenter or clinician attitudes, genetics, exercise, drugs and diet, are just some of the known parameters that may influence temperature measurement.

The discussion includes a summary of five years (1975-1980) of thermal biofeedback research conducted in three different states, Missouri, Kansas, and Alaska. Over 500 male and female subjects have been measured for various experimental and clinical factors in five separate studies. The issues presented are intended to question and address thermal biofeedback principles in hopes of developing further refinement of our knowledge in thermal self-regulation.

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