Evolution of veterinary infrared thermography

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The diagnosis of each patient relies on structural and functional information. Structural information, such as radiographs, ultrasound studies, MRIs, CT scans, and even histology, tell us what already has happened to a patient. Functional information, such as infrared thermography, ECGs, EEGs, blood pressure measurements, gait analysis, and palmar arterial flow tests provide insight to the physiological status within a patient at a specific moment.

During the first few decades of development, from the 1950s to the 70s, infrared thermography had numerous technological and clinical limitations. The equipment lacked thermal sensitivity; the resolution needed for interpretation, analysis, and storage software; and portability. Equipment even required liquid nitrogen to operate. It is easy to understand why our profession preferred structural instead of functional information. Structural information was much easier to obtain and correlated easily to many clinical disorders.

During the 80s and 90s, the veterinary and the medical profession witnessed numerous technological advances that facilitated infrared thermography applications into clinical practice. Scientific improvements allowed the development of complimentary software, battery powered units, the first miniature cryogenic coolers that eliminated the need for liquid nitrogen, and the first uncooled, specific for medical applications. This model had a temperature range of 0.1°C. Measurements were taken and recorded on a standard analog needle.