

NON-INVASIVE THERMAL IMAGING - A NOVEL AND ACCURATE METHOD FOR THE DEFINITION OF DISEASE ACTIVITY IN CROHN'S DISEASE

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Poster

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A prospective study of 147 Crohn's disease patients and 14 healthy volunteers found that infrared thermography can detect differences in abdominal surface temperature and texture features that correlate with bowel inflammation as measured by intestinal ultrasound.

KEY POINTS

- The study included 147 Crohn's disease patients (68% with active disease by intestinal ultrasound) and 14 healthy volunteers, using a smartphone-connected FLIR ONE thermal camera to capture abdominal thermal images
- Average abdominal temperature was significantly higher in Crohn's patients compared to healthy volunteers ($30.4 \pm 2.9^\circ\text{C}$ vs. $28^\circ \pm 2.9^\circ\text{C}$, $p=0.0032$), and also higher in active disease versus healthy controls ($30.4 \pm 2.99^\circ\text{C}$ vs. $28^\circ \pm 2.9^\circ\text{C}$, $p=0.0035$)
- A novel parameter, fractal dimension of gradient magnitude (FDGM), was significantly higher in patients with active disease than those with normal ultrasound (1.66 vs 1.63, $p=0.045$)
- The authors propose infrared thermography as a potential noninvasive, easy-to-use tool for monitoring Crohn's disease activity that could be used at home or in office settings

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