Development of NIR camera for early detection of diabetic wounds

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Chronic inflammation of the forefoot following a sports injury

Rheumatoid arthritis of one knee (left of the image).

Figure 3 from Infrared thermal imaging in medicine
NIR imaging can be used to find vessels under the skin
NIR imaging can be used to monitor wound healing and to find blood vessels under the skin

\((\lambda = 685, 780, \text{ and } 830)\).

Application of Near-Infrared Imaging
Currently used NIR cameras are expensive
The purpose of this study is to manufacture a cheap near-IR camera and application for use with smart phones to test whether the device can detect areas of skin at risk for ulceration.
NIR imaging can be used to find vessels under the skin.

Customized NIR 840nm LED illumination.

Near-Infrared Detection device
Application of Near-Infrared Imaging
Some images from Teresa
**Results:**
Camera assembled and tested
IRB protocol obtained

**Future work**
Continue clinical data collection
Monitoring of the patients before and after receiving hyperbaric treatment
Use multiple wavelengths