

## Assessment of inflammation in patients with rheumatoid arthritis using thermography and machine learning: a fast and automated technique.

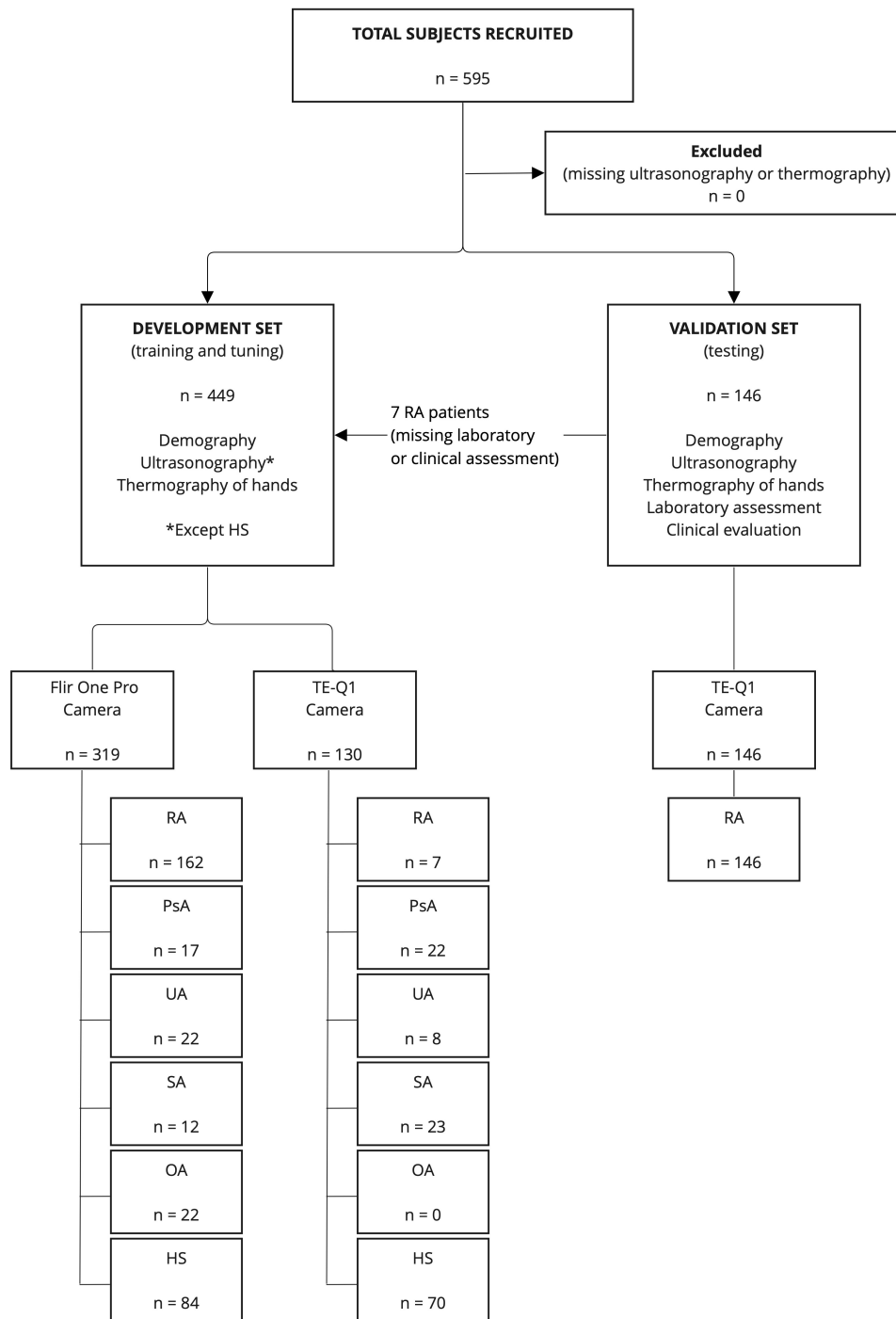
### Supplementary

**Supplementary table S1:** Main specifications of the thermal cameras used in this study.

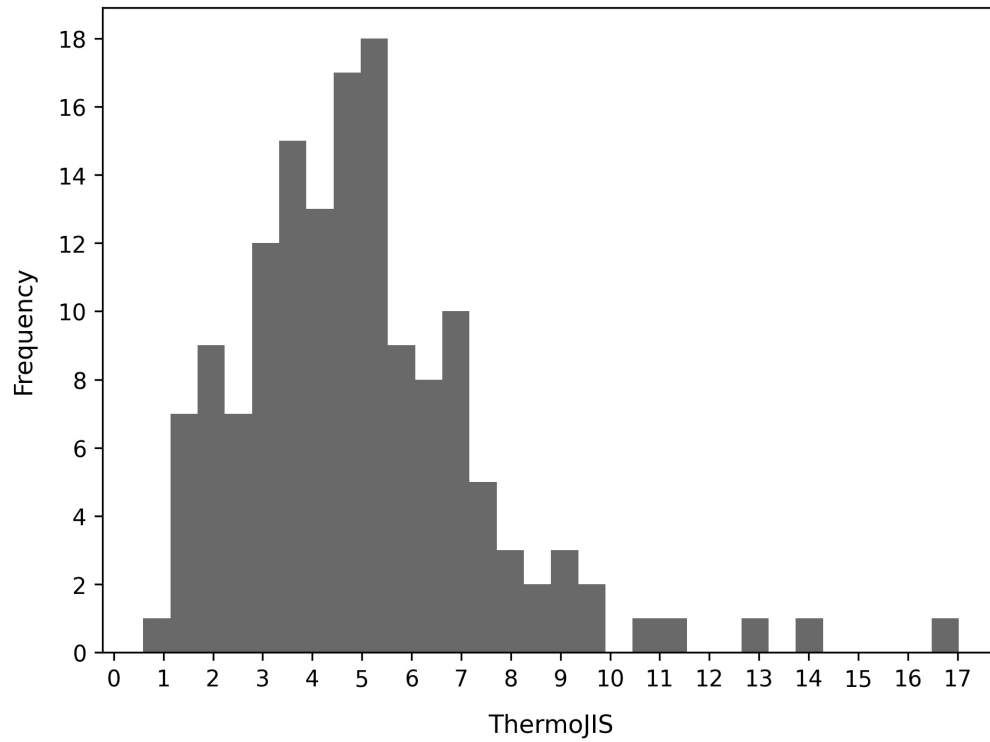
	FLIR ONE PRO	THERMAL EXPERT TE-Q1
<b>Wavelength band</b>	8 to 14 $\mu\text{m}$	8 to 14 $\mu\text{m}$
<b>Detector type</b>	Uncooled microbolometer	Uncooled microbolometer
<b>Thermal resolution</b>	160x120 pixels	384x288 pixels
<b>Thermal sensitivity</b>	70 mk	< 50 mk
<b>Scene temperature range</b>	-20°C to 400°C	-10°C to 150°C
<b>Non-uniformity correction (NUC)</b>	Integrated with shutter	Manual using lens cap
<b>Focus</b>	Fixed 15 cm — Infinity	Adjustable from 20 cm to infinite (6.8 mm lens)
<b>Manufacturer</b>	Teledyne FLIR LLC (Wilsonville, OR, USA)	i3system, Inc. (Daejeon, Republic of Korea)

**Supplementary table S2:** Analysis of the area under the receiver operating curve (AUROC) of the Thermographic Joint Inflammation Score (ThermoJIS) for the detection of active synovitis in different age and gender groups.

	<b>n</b>	<b>AUROC</b>
<b>Age (years) ≤ 45</b>	30	0.78 (95% CI, 0.61 to 0.96; p<0.01)
<b>Age (years) &gt; 45 and ≤ 55</b>	39	0.81 (95% CI, 0.67 to 0.95; p<0.01)
<b>Age (years) &gt; 55 and ≤ 65</b>	39	0.73 (95% CI, 0.56 to 0.90; p<0.05)
<b>Age (years) &gt; 65</b>	38	0.81 (95% CI, 0.63 to 1.00; p<0.01)
<b>Male</b>	29	0.83 (95% CI, 0.67 to 0.99; p<0.01)
<b>Female</b>	117	0.77 (95% CI, 0.68 to 0.85; p<0.01)

**Supplementary figure S1:** Diagram of the participants of the study.

RA, rheumatoid arthritis; PsA, psoriatic arthritis; UA, undifferentiated arthritis; SA, arthritis of hands secondary to other diseases; OA, osteoarthritis; HS, healthy subjects;

**Supplementary figure S2:** Distribution of ThermoJIS values from the validation set.

**Supplementary figure S3:** Analysis of the precision-recall curve (PRC) of the ThermoJIS score for the detection of active synovitis. a) Considering the entire validation set (Average Precision, 0.79; Baseline Precision, 0.53); b) Considering the ThermoJIS values lower than 3.46 and greater than 5.65 of the validation set (Average Precision, 0.86; Baseline Precision, 0.47). The baseline precision (dotted line) is the proportion of positives in the set, i.e., the random precision.

