See Deeper.
Care Better.

AI-Driven and Dermoscopy-Guided Skin Ultrasound. Made Simple.

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Research use only. CE (MDR) certification pending.

Skin Cancer is Widespread

- **1 in 3 cancers is skin cancer globally:**
  - Malignant melanoma (MM)
  - Non-melanoma skin cancer (NMSC):
    - Basal cell carcinoma (BCC)
    - Squamous cell carcinoma (SCC)
  - 2%+ increase per year
- **Most common cancer in the USA:**
  - 1 of 5 people will have it

Need for Effective Treatment Guidance

- **The full treatment process is a lengthy and costly** patient journey.
- **Treatment Guidance** helps in:
  1. Treatment Choice. Cancer (sub)type.
  2. Treatment Planning. Cancer extent.
  3. Follow-up. Treatment response.
- **Treatment Guidance** results in:
  1. Time, cost, and cancer recurrence ↓
  2. Survival probability ↑

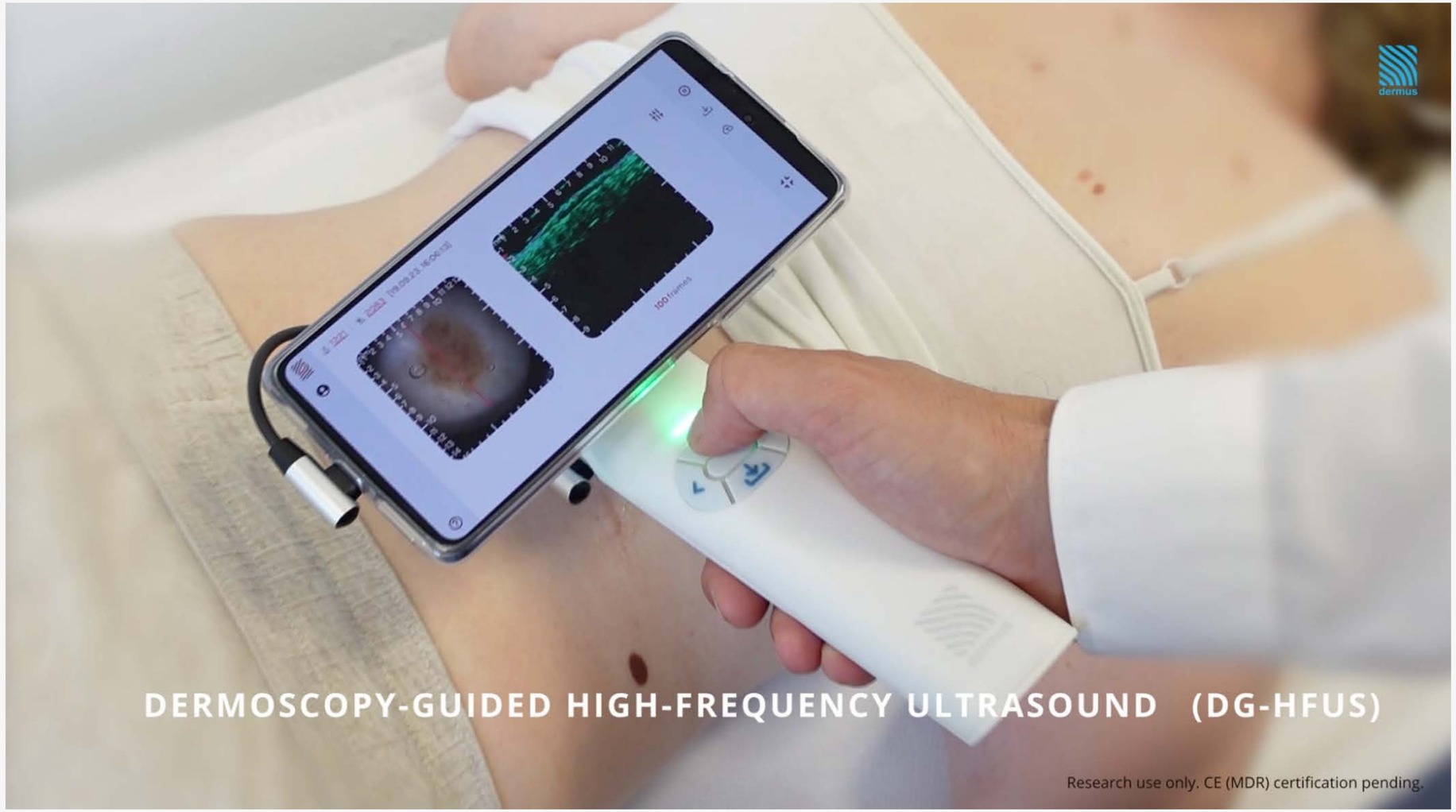
Example: dermatologist determines skin cancer is an easy-to-treat basal cell carcinoma (2019 European consensus) with known lateral extent.

Result: 15-min consultation + cryotherapy, instead of sending off to punch biopsy (2+ weeks wait) for subtype diagnosis and following appointment, 1-hour surgery.

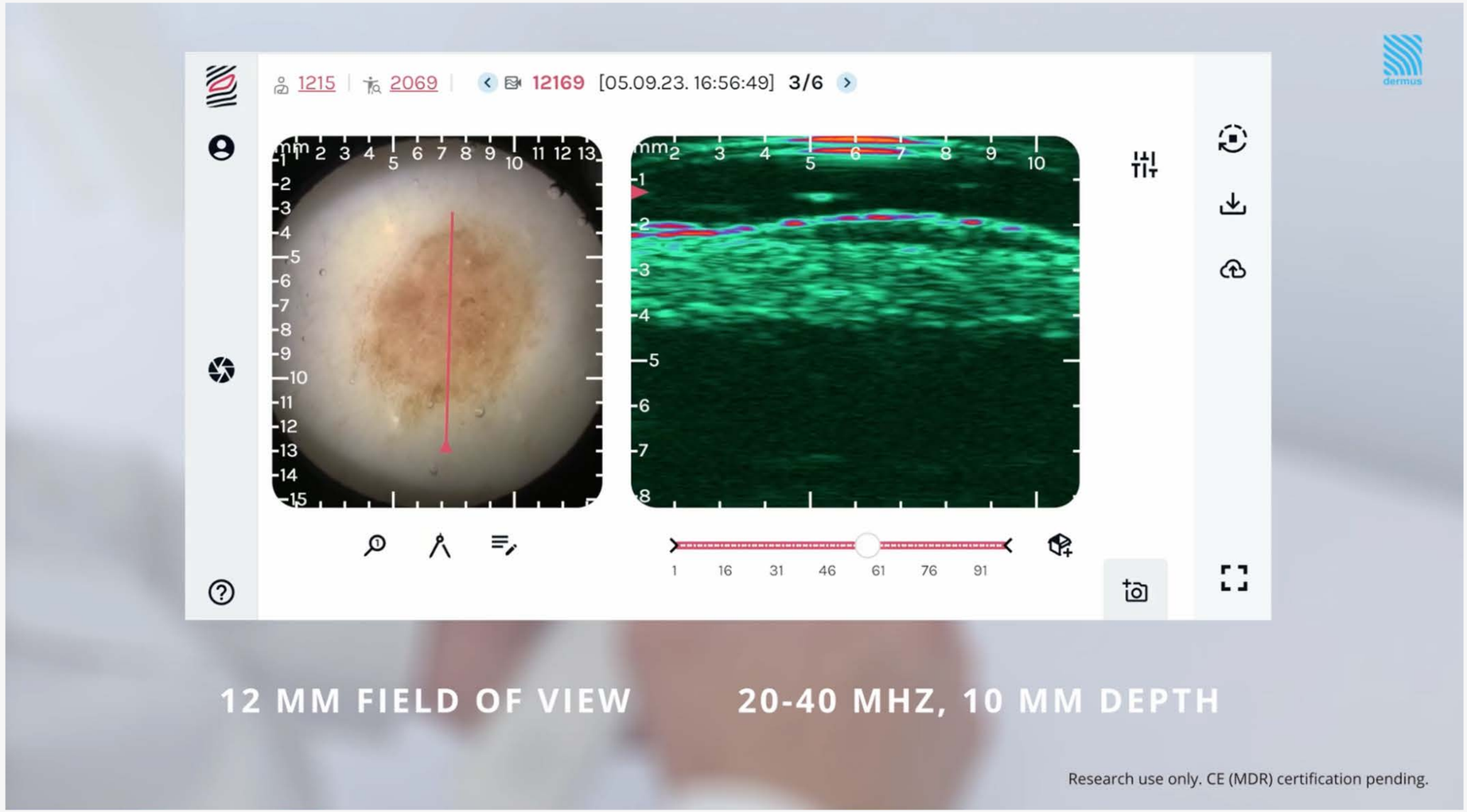
Answer for Effective Treatment Guidance

Compact & Affordable for Convenience

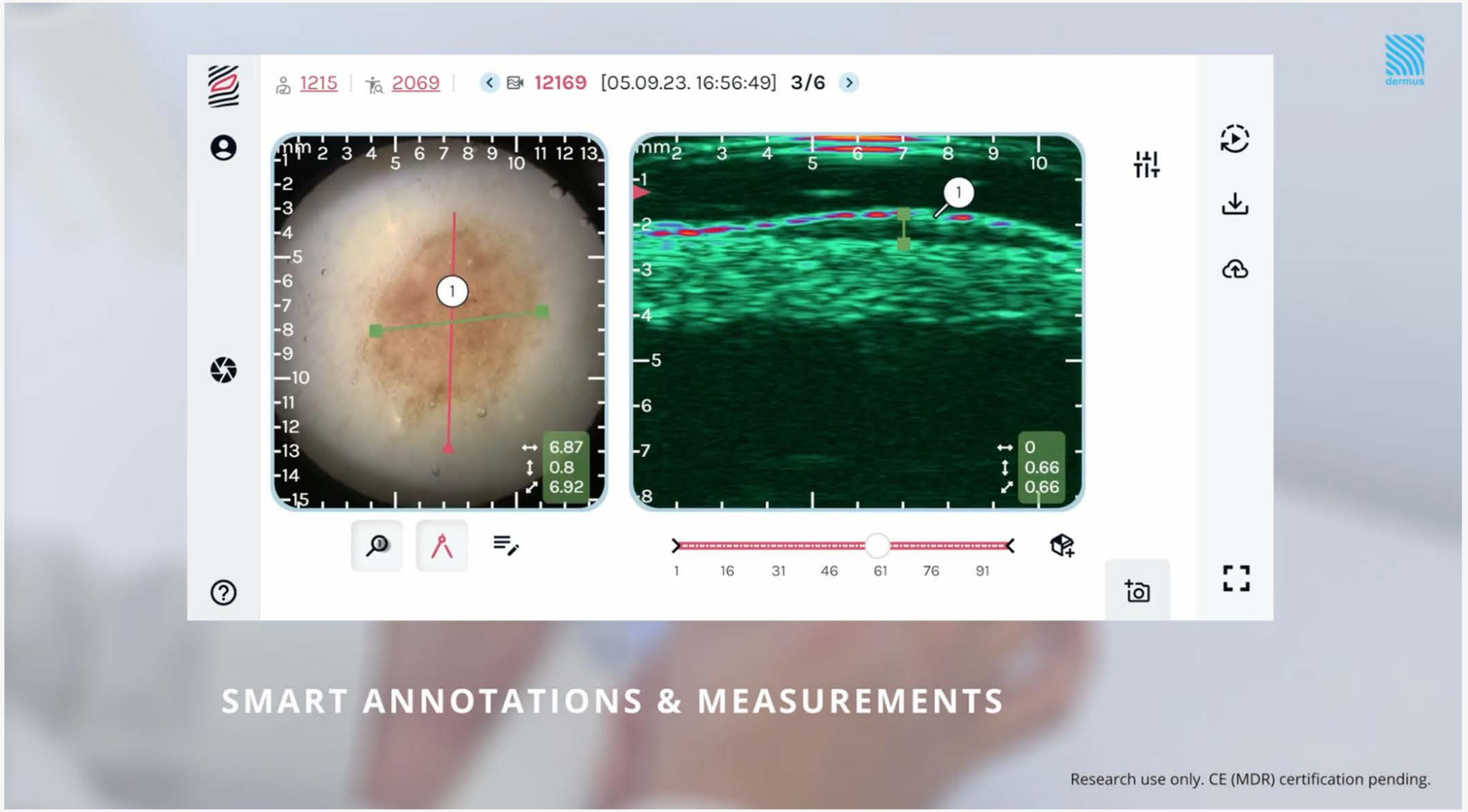
Simultaneous Imaging of Surface & Depth



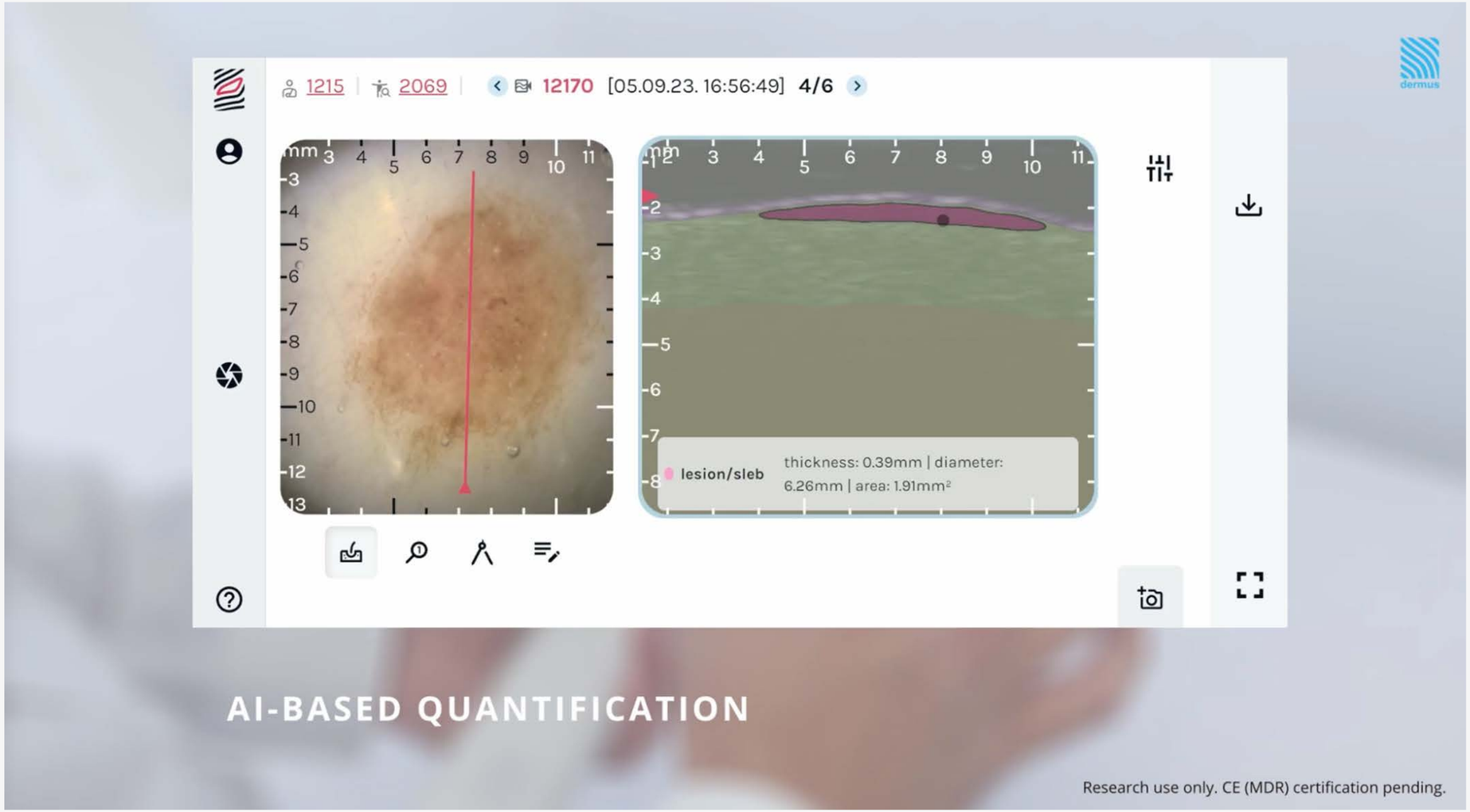
Precise Positioning & Reproducibility



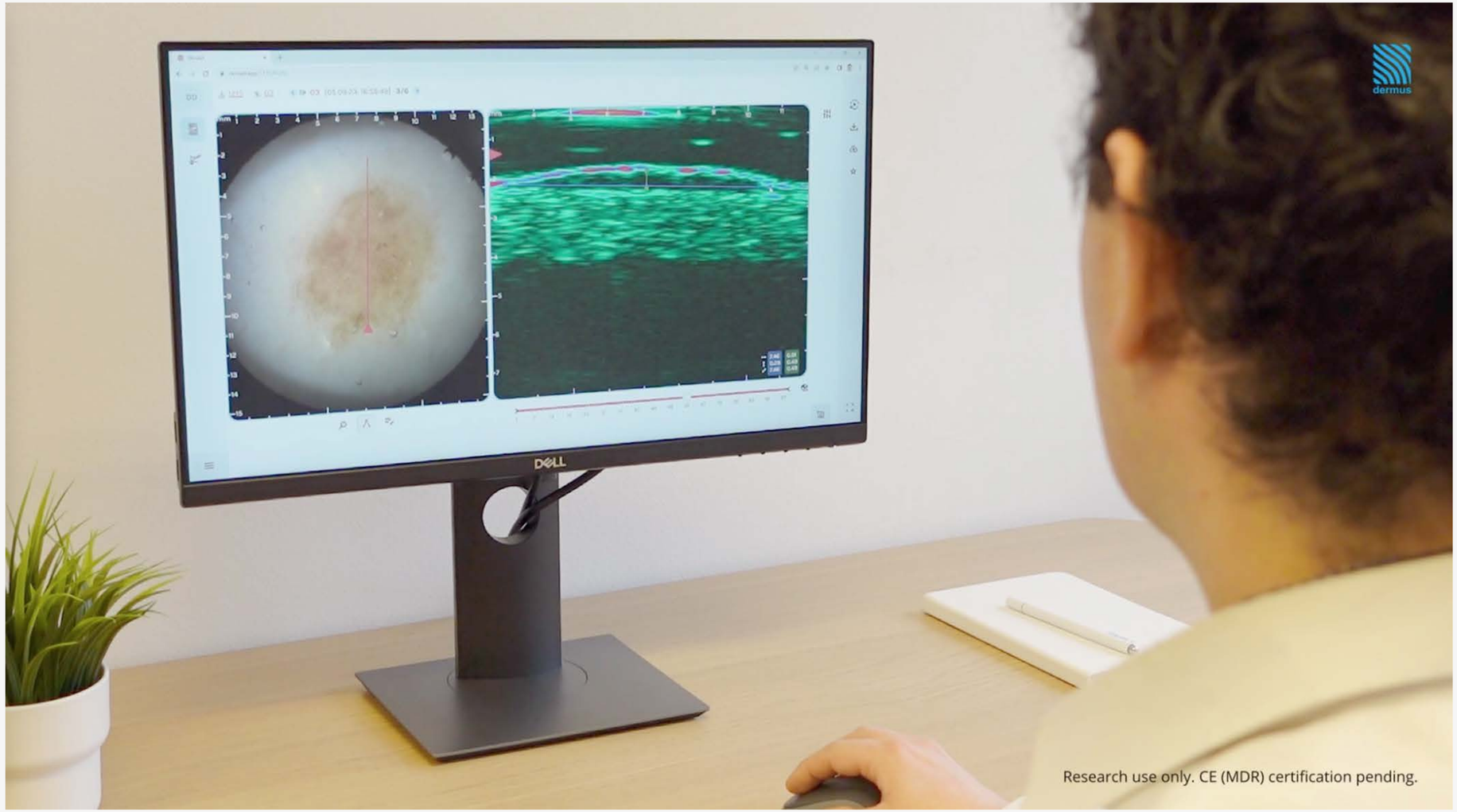
Objective Assessment of Location & Extent



Informed & Quantitative Decision-Making



Anonymous Data Accessible Anywhere

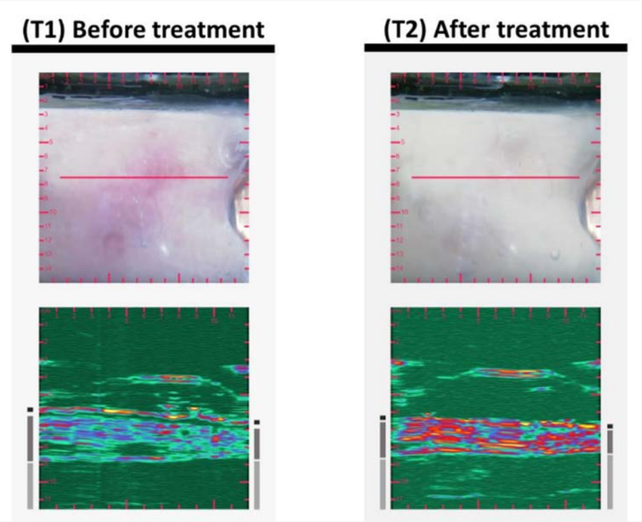


Scientifically Proved

- **Valid images.** Consistent with reference dermoscopy + HFUS. Csány et al. 2022.
- **Valid measurements.** Lesion thickness measurements with <25% inter-observer variability. Csány et al. 2021 (p. 35).
- **Valid conclusions.** Accurate melanoma thickness classification (Sen = 93%; Spe = 97% for 1- / 1–2 / 2+ mm). Differentiation between high-risk and low-risk BCC. (Sen = 85%; Spe = 92%). *Independent investigations.*
- **Automatic detection and quantification of skin changes.** Accuracy matches inter-expert agreement (72.8% vs 72.6% inter-expert Dice).
- **Automatic detection of skin cancer.** US algorithm with 90%+ accuracy. (Marosán-Vilimszky et al. 2021).

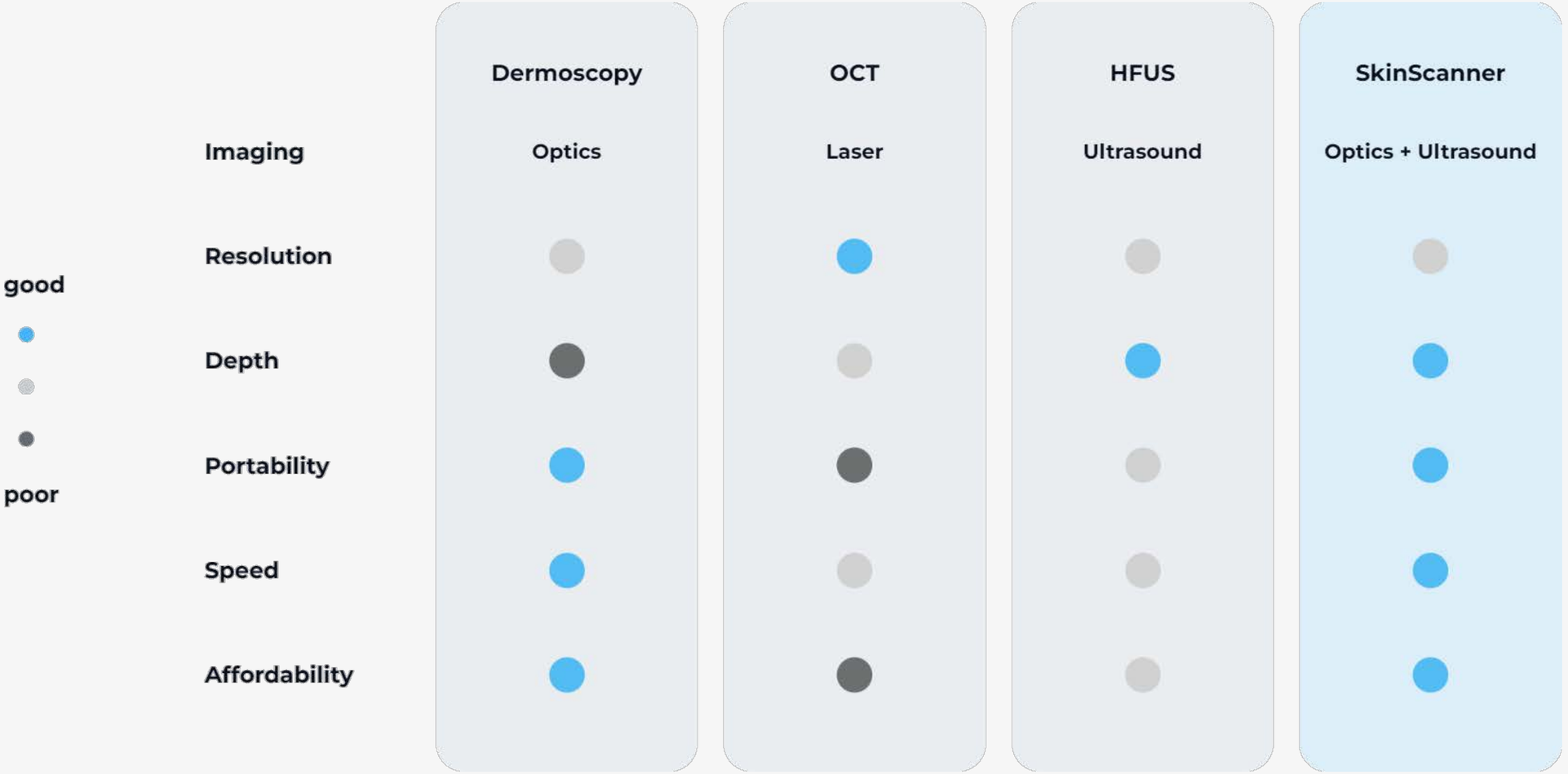
Ready to Analyze Other Skin Conditions

- **Monitoring skin inflammation treatment.** Psoriasis biological treatment effectiveness (90%+ correlation with reference PASI score). *Level of Evidence: conference publication.* *(Gergely et al., 2022; p 191)*.
- **Objective diagnosis and monitoring of drug reactions.** *Level of Evidence: article in preparation.*
- **Cosmetic treatment monitoring.** Monitoring anti-aging, hydration, acne, filling. *Level of Evidence: successful use cases, especially in rejuvenation.*
- **Treatment guidance and monitoring of warts, wounds**. *Level of Evidence: general high-frequency ultrasound literature.*



DG-HFUS images before and after treatment of atopic dermatitis (eczema) Csány et al. 2022

Novel & IP-Protected DG-HFUS Technology



Accumulating Scientific Results

Scientific results with Dermus technology and Dermus co-authorship

- Csány et al. “A low-cost portable ultrasound system for skin diagnosis.” Proc. Mtgs. Acoust. 32 (2017): 020002
- Csány et al. "A real-time data-based scan conversion method for single element ultrasound transducers." Ultrasonics 93 (2019): 26-36.
- Csány et al. “Comparison of Maximal Lesion Thickness Measurements between two Portable Skin Ultrasound Imaging Devices” ISBS 2021 (p. 35)
- Csány et al. "Preliminary Clinical Experience with a Novel Optical–Ultrasound Imaging Device on Various Skin Lesions" Diagnostics 12 (2022): 204
- Gyöngy et al. “Monitoring of skin using an optical-ultrasound imager for potential cosmetic applications” II Studium Conf Skin Model Cosm Sci 2022
- Gergely et al. “The practical significance of examining psoriasis with ultrasound” 2022 Grand Congress of Hungarian Dermatol Soc (p. 191)
- Marosán-Vilimszky et al. "Automated skin lesion classification on ultrasound images" Diagnostics 11, no. 7 (2021): 1207.
- Marosán et al. "Automated seeding for ultrasound skin lesion segmentation" Ultrasonics 110 (2021): 106268.
- Soós et al. “Expert-Level Reliability of Automated Skin Ultrasonography Segmentation”, 2023 IEEE Intl Ultrason Symp
- Soós et al. “Multimodal Optical-Ultrasound Classification of Skin Malignancy”, Article in Preparation
- Gyöngy et al. “Validation of a Marker-Based Optical-Ultrasound 3D Registration Method”, Article in Preparation

Independent scientific results using Dermus technology

- Soare et al. “Digitally Enhanced Methods for the Diagnosis and Monitoring of Treatment Responses in Actinic Keratoses: A New Avenue in Personalized Skin Care”, Cancers 16, no. 3 (2024): 484
- Varga et al., “Comparison of the effectiveness of optically guided high-frequency ultrasound and multispectral imaging for the in vivo measurement of melanoma tumor thickness”, ISID 2023 poster presentation, in J Invest Dermatol 143(5):S86
- Varga et al., “Optically Guided High-Frequency Ultrasound Shows Superior Efficacy for Preoperative Estimation of Breslow Thickness in Comparison with Multispectral Imaging: A Single-Center Prospective Validation Study”, Cancers 16 (2024): 157
- Bozsányi et al., “Optically Guided High-Frequency Ultrasound to Differentiate High-Risk Basal Cell Carcinoma Subtypes: A Single-Centre Prospective Study”, J. Clin. Med. 2023, 12(21), 6910
- Bán et al., “Monitoring of drug-induced skin reactions using an optically-guided HFUS device”, Article in Preparation

Active research collaborations

ROSWELL PARK COMPREHENSIVE CANCER CENTER

University of Glasgow

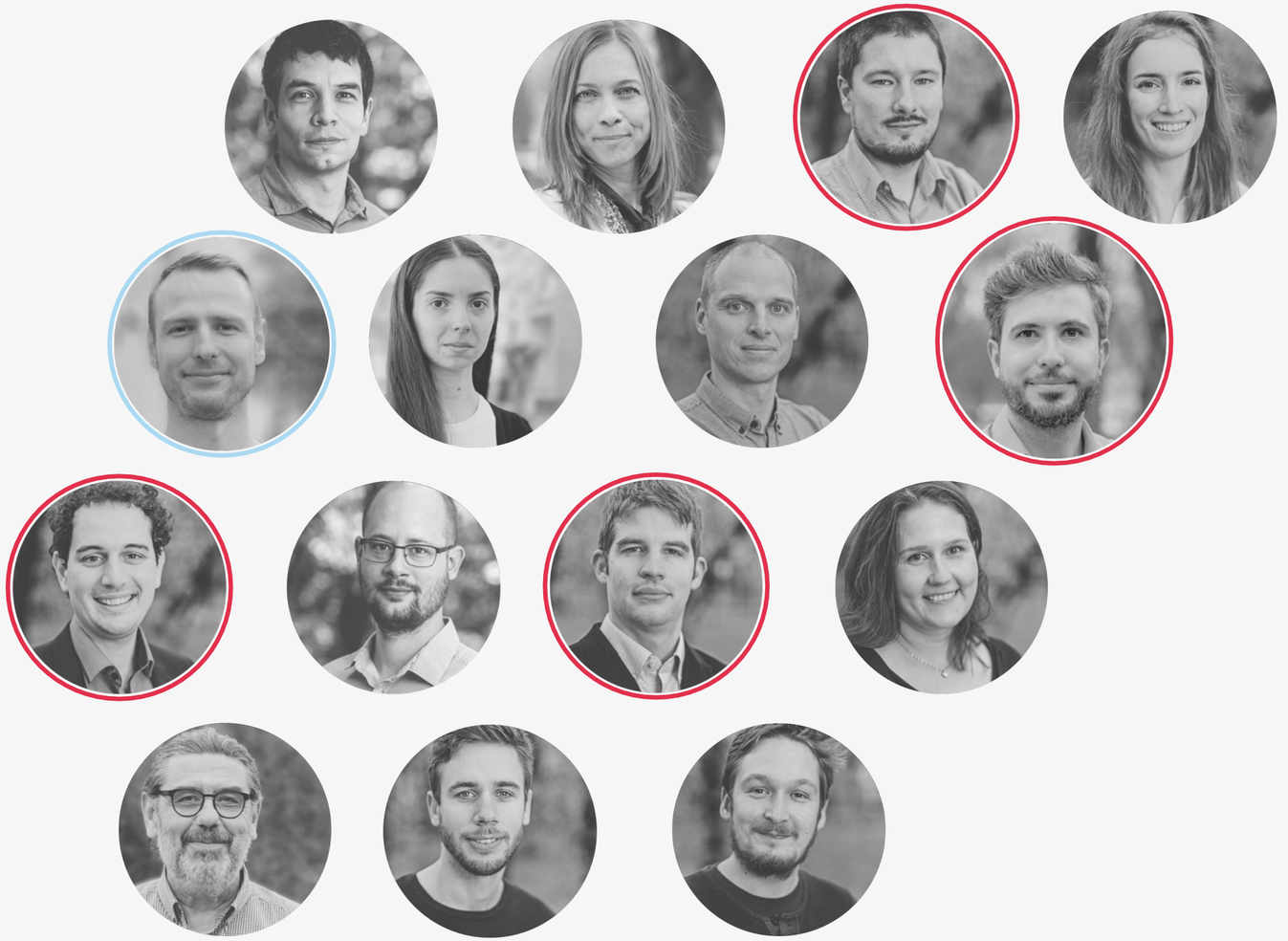
GEORGE EMIL PALADE UNIVERSITY OF MEDICINE, PHARMACY, SCIENCE, AND TECHNOLOGY OF TARGU MURES

PÁZMÁNY Pázmány Péter Catholic University 1635

SEMMELWEIS UNIVERSITY 1769

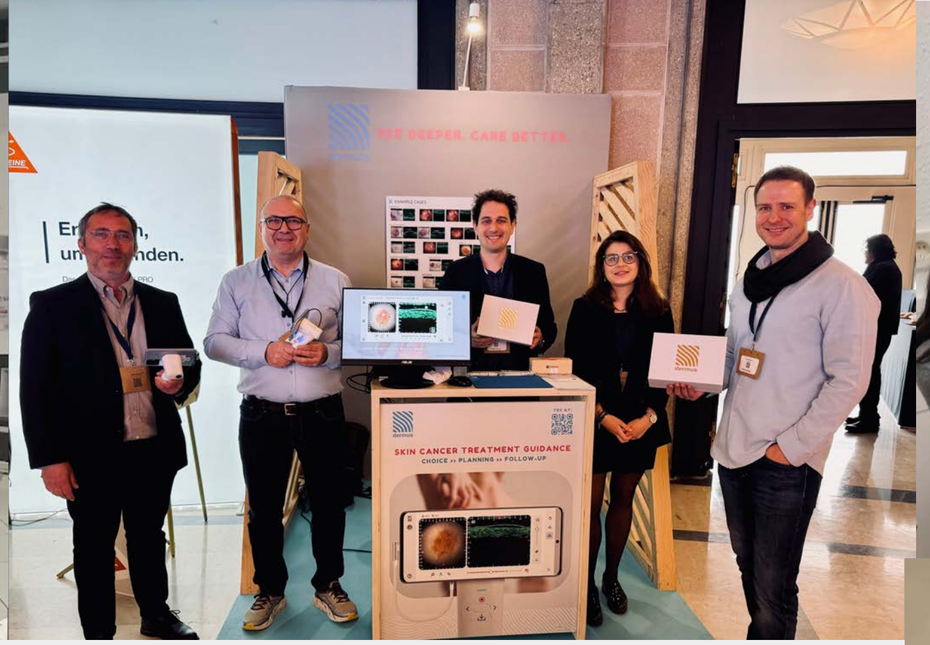
Capable and Dedicated Team

- Multidisciplinary
- **4 PhDs** (3 ultrasound, 1 dermatology)
- **1.500+ citations** (ultrasound and dermatology)
- Founded in 2018
- Backed by proven investors (9 exits)
- **First-line contact**

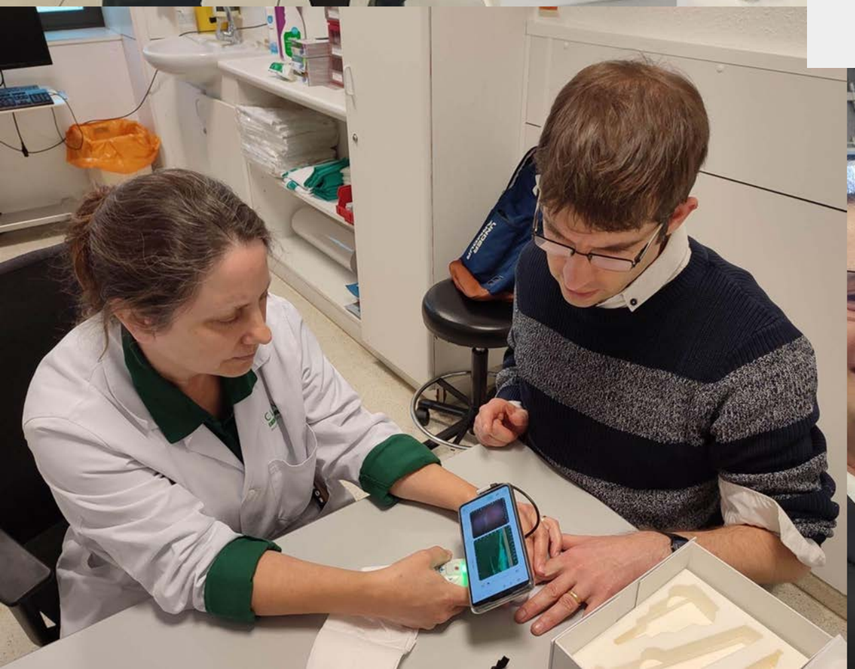


Summary of Highlights

- First all-in-one, handheld device with 20+ MHz
- Highest frequency handheld device on the market
- Only US guided by dermoscopy
- First US to segment skin (to the best of our knowledge)
- Skin AI for US
- CE (MDR) expected in 1H 2024, FDA certification in 2025



TRY AT DERMUS.APP/DEMO



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