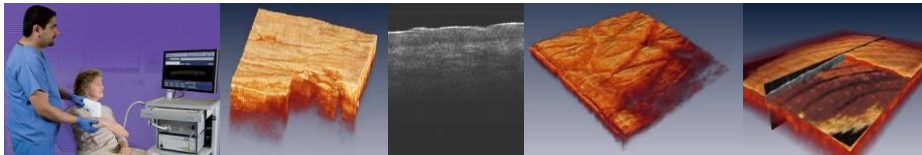
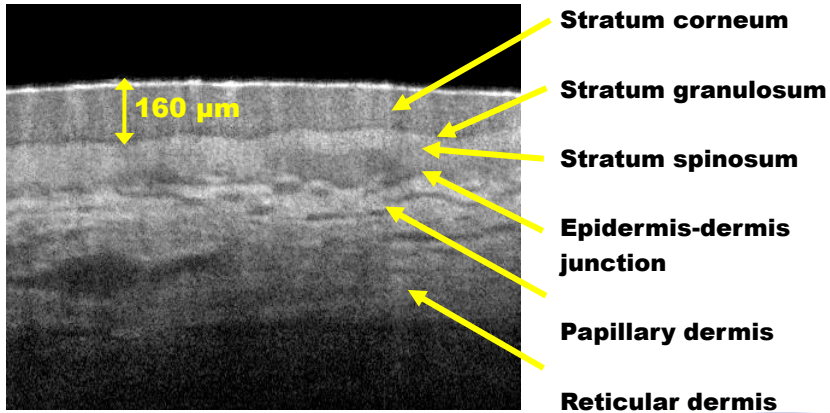


VivoSight Imaging for Dermatologists

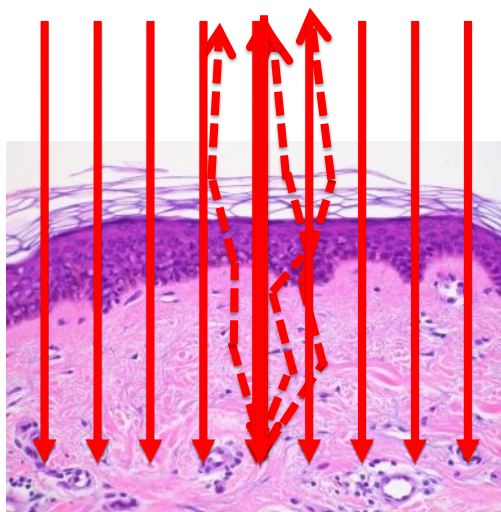


VivoSight: The new real time imaging tool

VivoSight Image of Skin

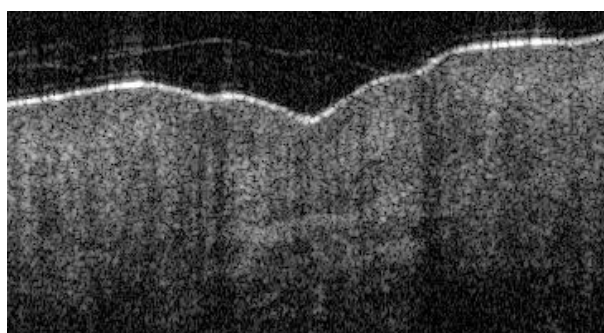


Optical Coherence Tomography



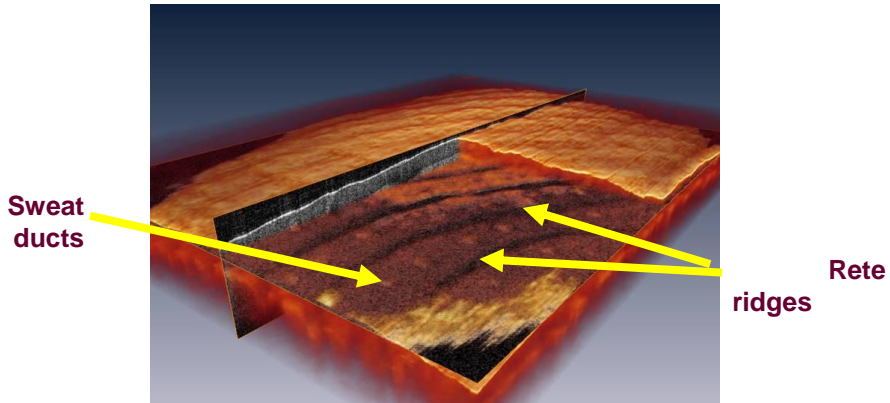
- Low intensity, 1310nm laser light
- Light is scattered within sample
- Backscattered light is detected
- Interferometric analysis yields A-scan image
- 2 & 3D images generated by scanning across sample

Real Time, Video Rate Images



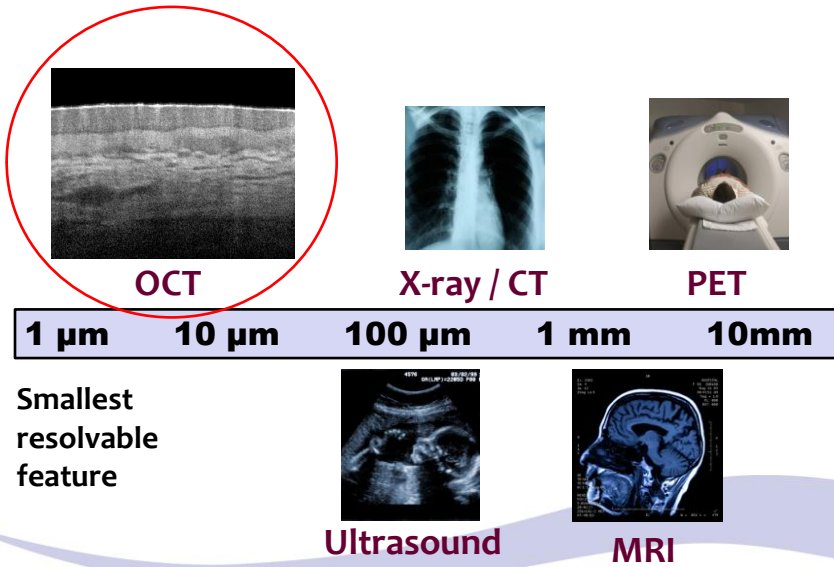
Up to 35 frames per second

3D Imaging Capability

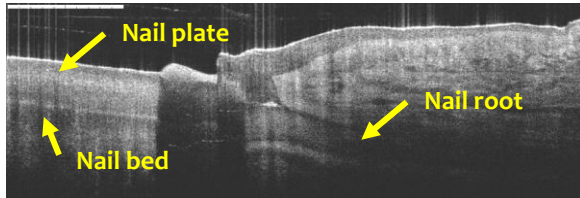


3D reconstruction of a finger tip after image was taken using "multi-slice" function

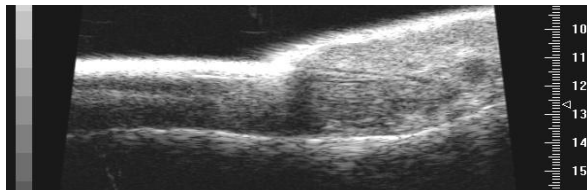
Technology Comparison



Fingernail – image comparison



Multi-Beam
OCT



Ultrasound

Images courtesy
Guys & St Thomas'
NHS Trust

VivoSight System



- Ergonomic hand-held probe
- Suitable for any external tissue

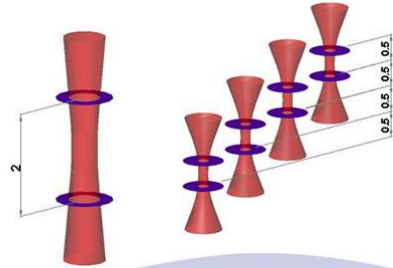


- No preparation required
- No gels, direct imaging
- TIFF or DICOM Output

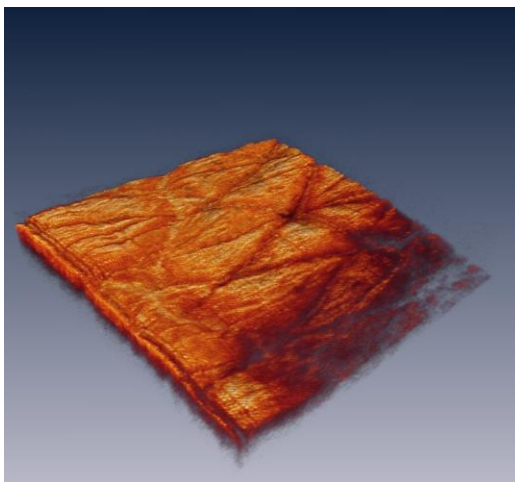
The VivoSight Advantage



- + Swept-source technology
 - enables high axial resolution
- + Multiple beam technology
 - enables high lateral resolution
- + Windows based, easy-to-use software



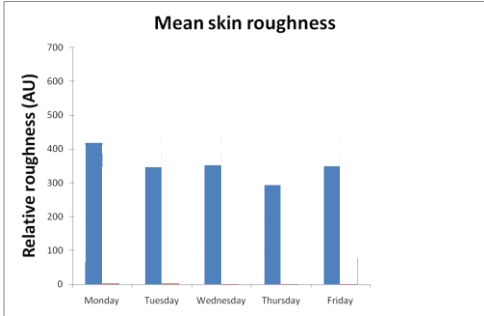
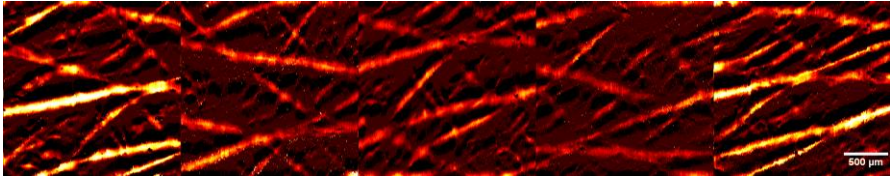
Surface Topology



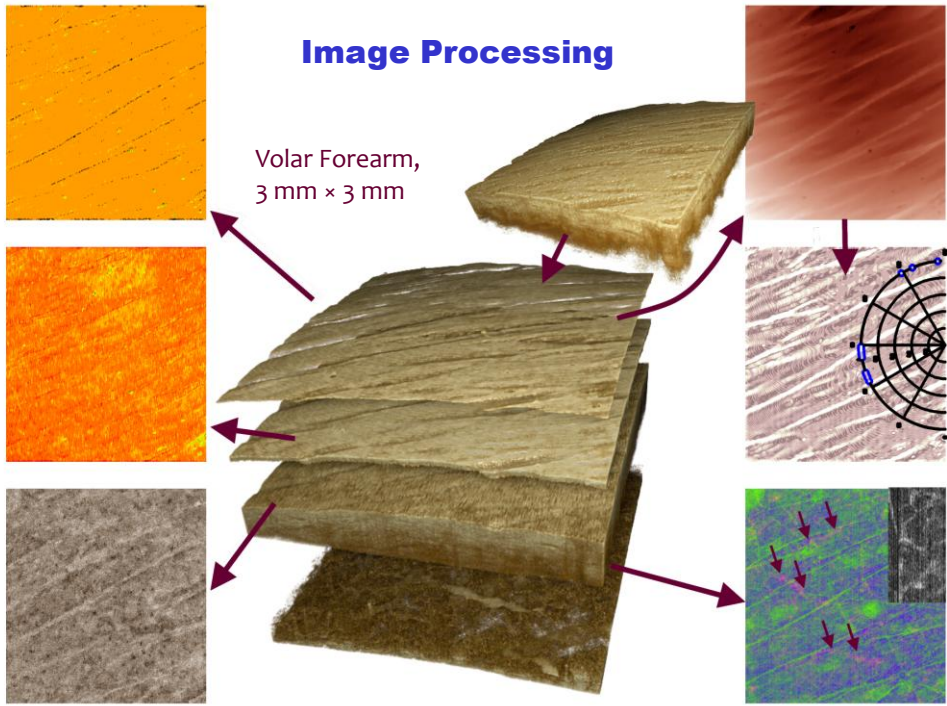
3D Wrinkle Imaging

- Wrinkle topography
- Preferred wrinkle direction
- Surface roughness (Ra)

Wrinkle Analysis



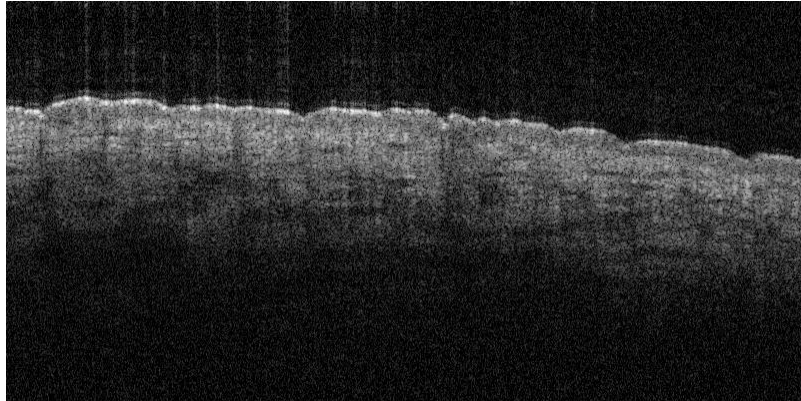
An anti-wrinkle cream was applied for 5 days. The skin was imaged each day before application.



Measure Layer Thickness

Surface

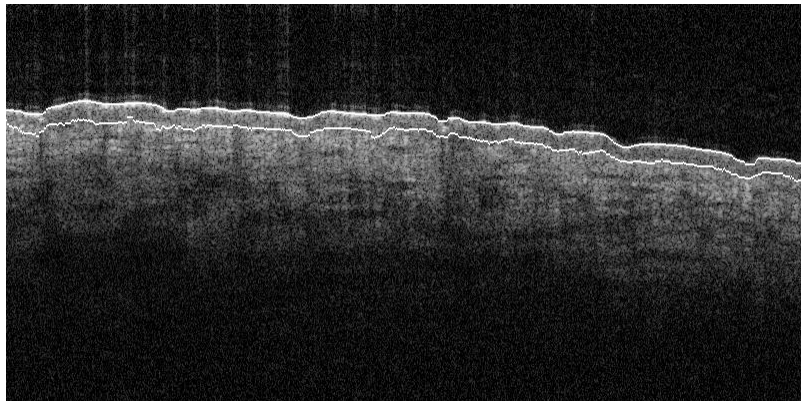
EDJ



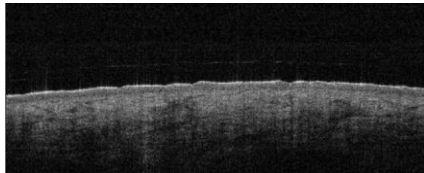
Measure Layer Thickness

Surface

EDJ

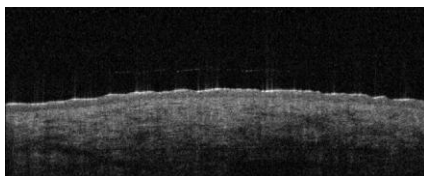


Skin Hydration – Product A

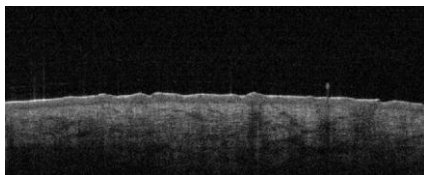


Effect of applying a moisturizing cream to skin – volar forearm

Before Application

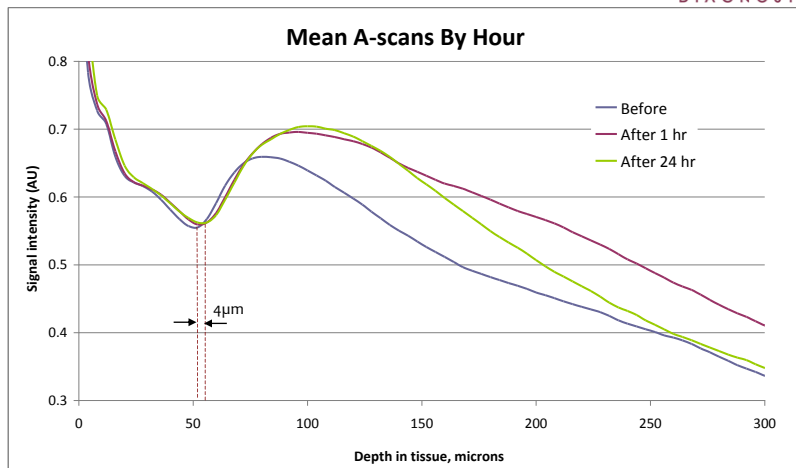


After 1 hour



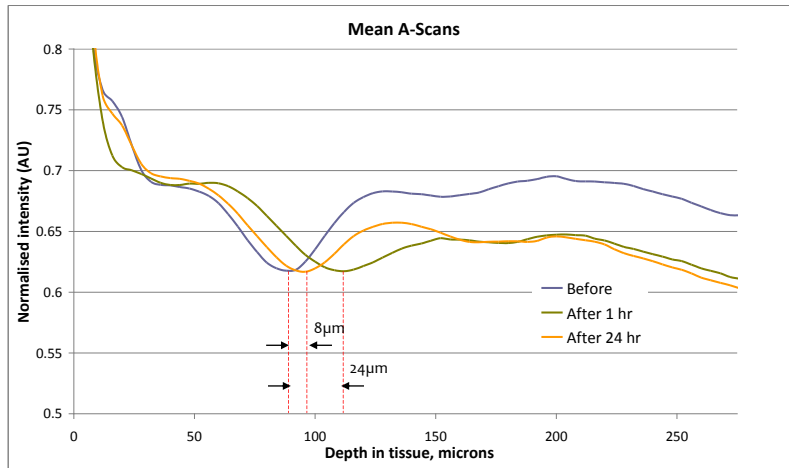
After 24 hours

Skin Hydration – Product A



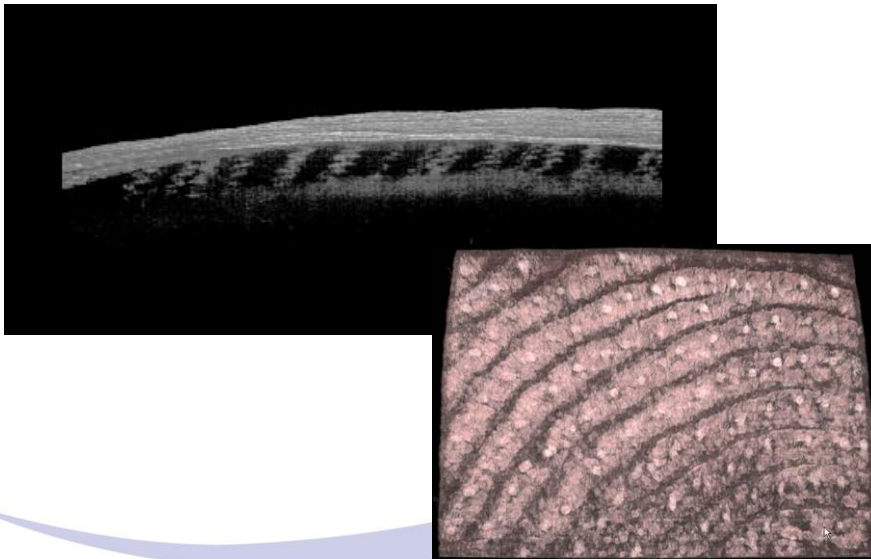
Analysis of Scattering Intensity – Epidermis Thickness

Skin Hydration – Product B



Analysis of Scattering Intensity – Epidermis Thickness

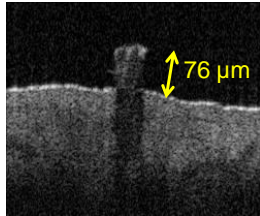
Sweat Ducts



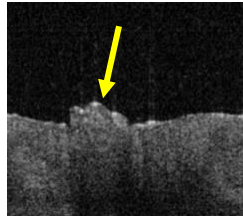
Shaving Assessment



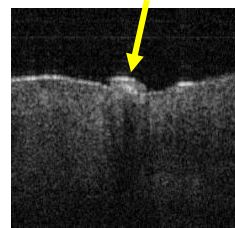
Whisker length can be measured accurately and visualized as a tomogram



Unshaven



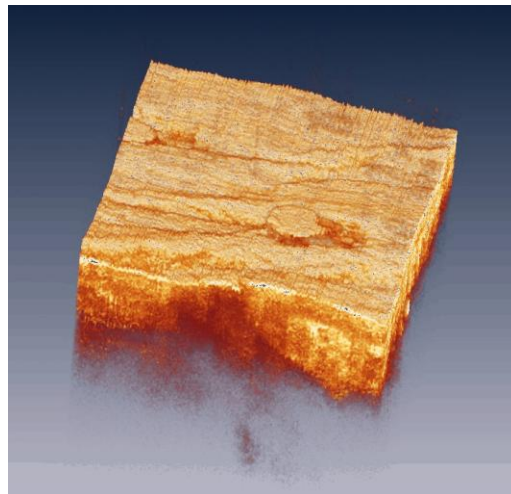
Blunt razor - uneven



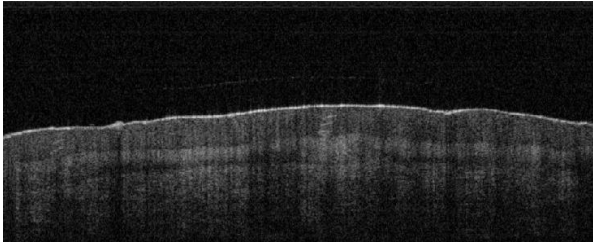
New razor - clean cut



Upper Lip with Shaved Whisker

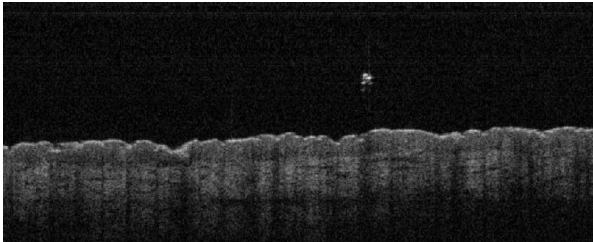


Skin Graft – full thickness on hand



Control site.

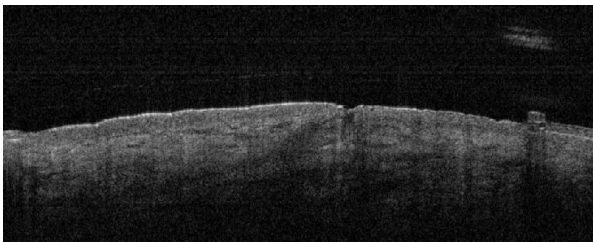
Thick stratum corneum with sweat gland.



Skin from stomach.

Irregular surface, thin stratum corneum, thinner epidermis, some hairs visible.

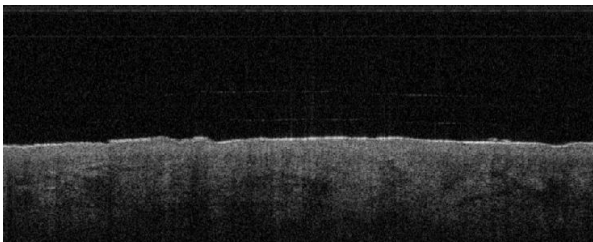
Skin Graft – full thickness on hand



Control site.

Clear layer structure of epidermis & dermis.

Blood vessels visible.

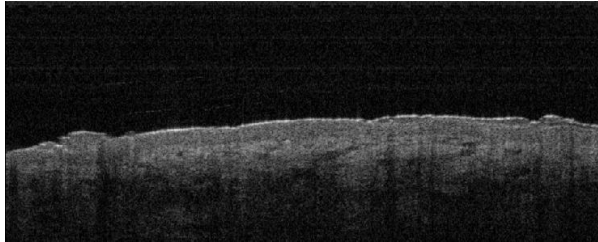


Artificial Dermal Substitute.

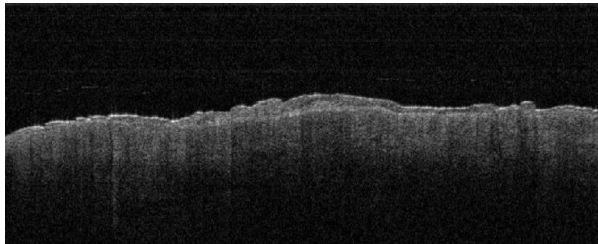
Blood vessels visible.

No defined layer structure. Epidermis & dermis appear structurally similar.

Psoriasis

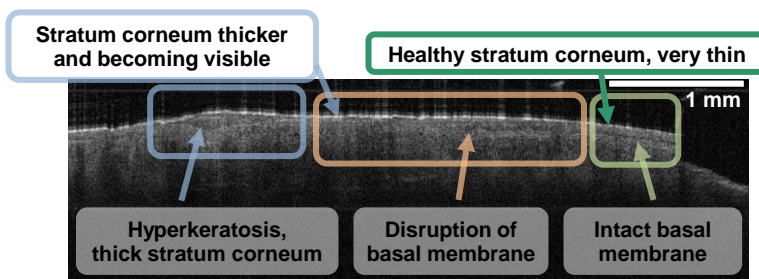


Control site on arm



Psoriasis on arm

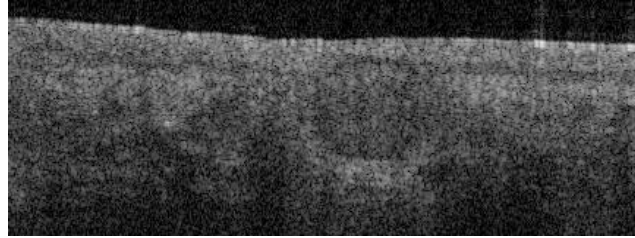
Early Stage Skin Cancer, forehead



Key features of early stage skin cancer are visible in the tomogram.

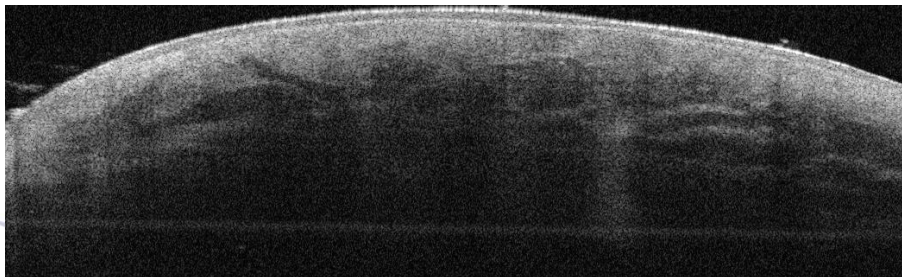
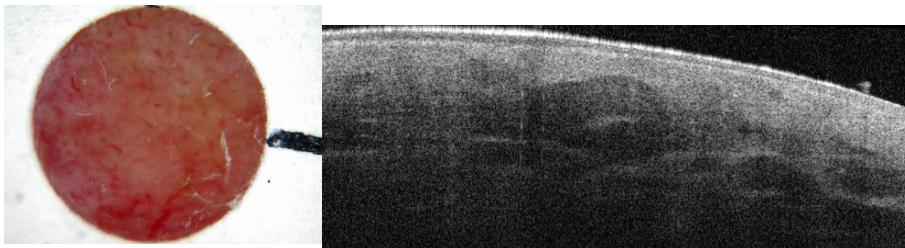
- Basal membrane disruption
- Stratum corneum is thicker than in normal skin

Basal Cell Carcinoma

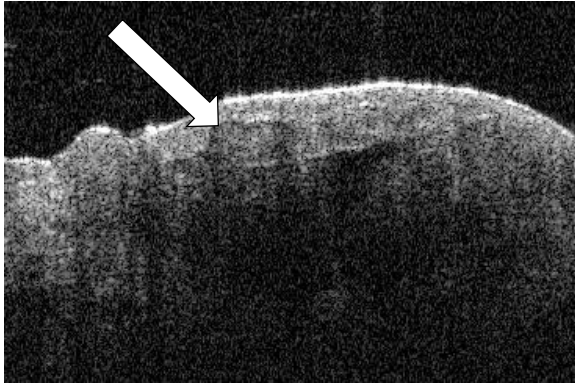


Early stage BCC is seen to grow out from the basal membrane.
This lesion was not apparent with a visual inspection by eye.

Basal Cell Carcinoma



Bloodflow (Hemangioma Image)



In a real time VivoSight image blood flow is seen as speckle.

This information can be extracted to provide a map of the blood vessels within the skin.

Blood Vessels

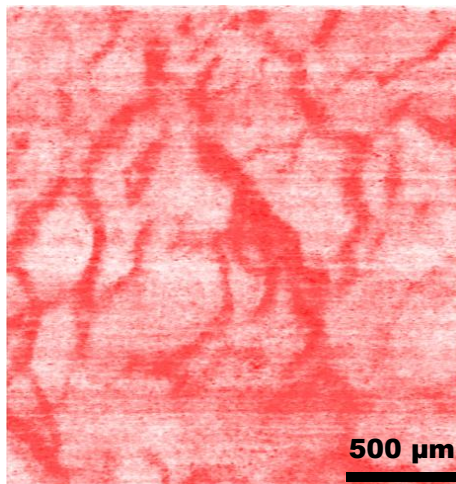
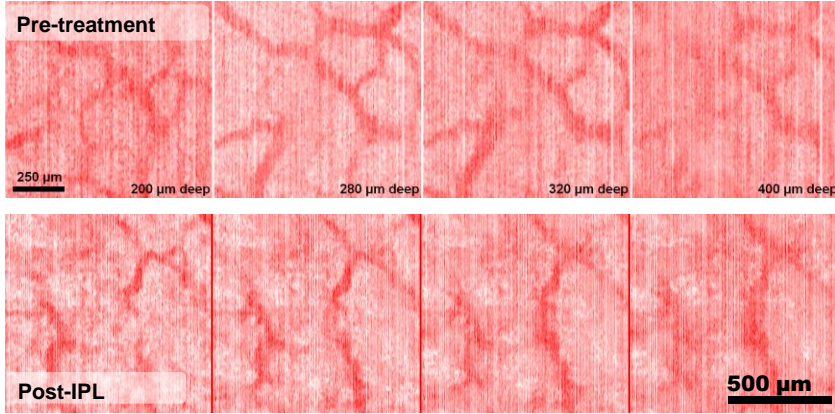
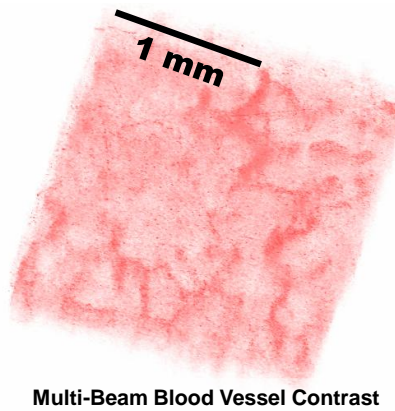
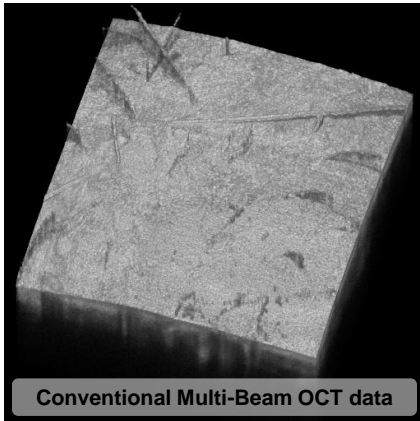


Image shows a 2D representation of the blood vessels at a depth of 0.2mm below the skin surface

Rosacea Treatment Study



Visualize Capillary Networks



2 mm × 2 mm surface area

Cosmetic Applications



- Analysis of wrinkles
- Follow up an aesthetic injection (e.g. botulinum toxin, hyaluronic acid)
- Evaluate the effect of moisturizing creams
- Study the action of antiperspirant on sweat ducts
- Evaluate shaving products



Clinical Applications



- Visualize Skin Structure
 - ♦ Study skin grafts, psoriasis & other conditions
 - ♦ Image non-melanoma skin cancer to aid diagnosis and treatment, including delineating margins prior to surgery
- Image blood vessels to aid treatment of rosacea & port wine stains
 - ♦ Evaluate drugs and creams which affect blood flow
 - ♦ Monitor blood flow in patients with burns



VivoSight – Now Available!



Thank you for Listening

For more information please contact:
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Michelson Diagnostics
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Email: enquiries@md-ltd.co.uk

