



LUCID<sup>®</sup>

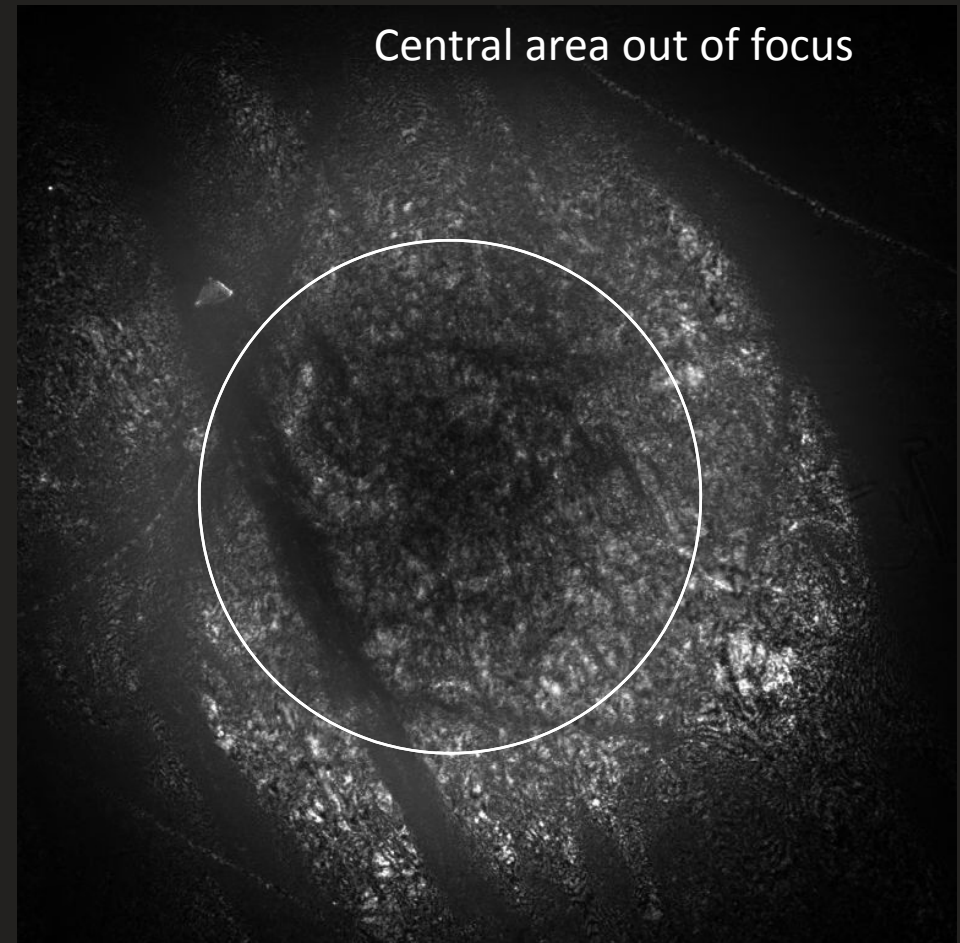
REDEFINE  
YOUR STANDARD OF CARE

# Measuring Epidermal Thickness



# VivaStack Profile

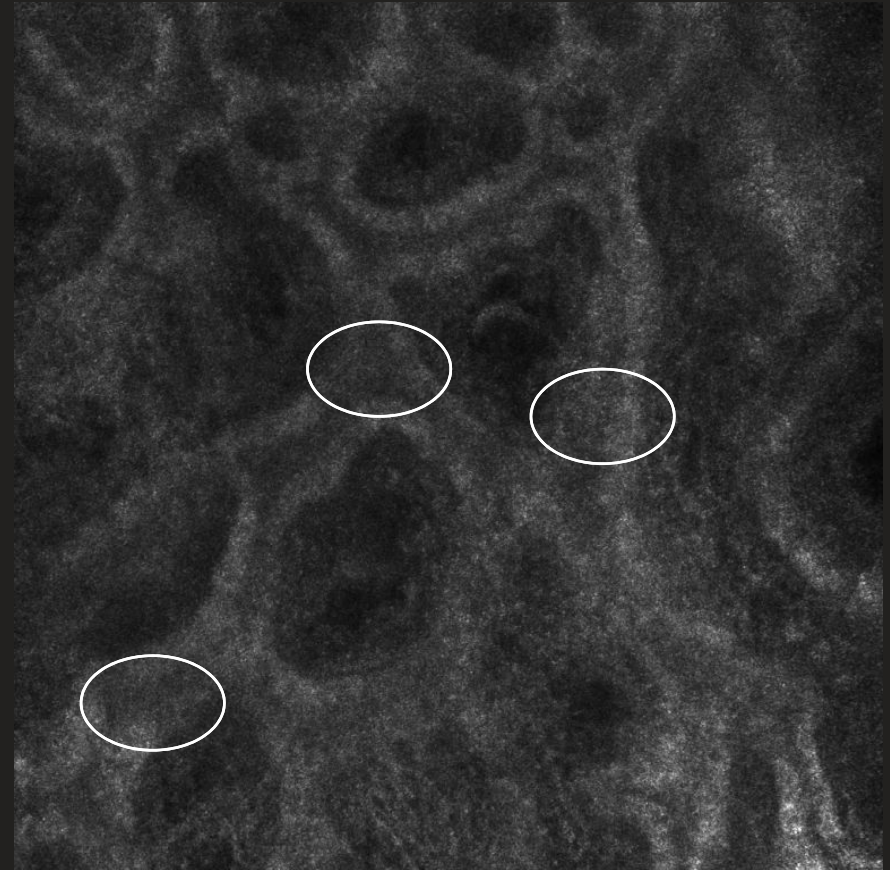
- Create a VivaStack Profile with 3  $\mu\text{m}$  step sizes that images to 100  $\mu\text{m}$  deep.
- Locate a flat area of skin with no skin lesions, large wrinkles, hair follicles or sweat ducts.
- Step the objective above the surface of the skin (see example on right)
- Locate an image similar to the example, and take two more steps ABOVE this so the image is VERY out of focus.
- Capture the stack
- Repeat in 2-4 other similar locations





# How to Measure

- Open the stack of images.
- Locate the surface of the stratum corneum as described on slides 4-5.
- Record the image number.
- Step through the VivaStack until you locate the BOTTOM of the rete (between the dermal papillae) as shown in slide 6. You should not be able to see any basal cells between the papillae.
- Record the image number.
- Subtract the final image number from the first image number.
- Multiply the value by 3, which is your step size in microns. This is your final thickness.
- Repeat this procedure for remaining stacks to obtain an average.



Circled areas show an absence of basal keratinocytes between the papillae.

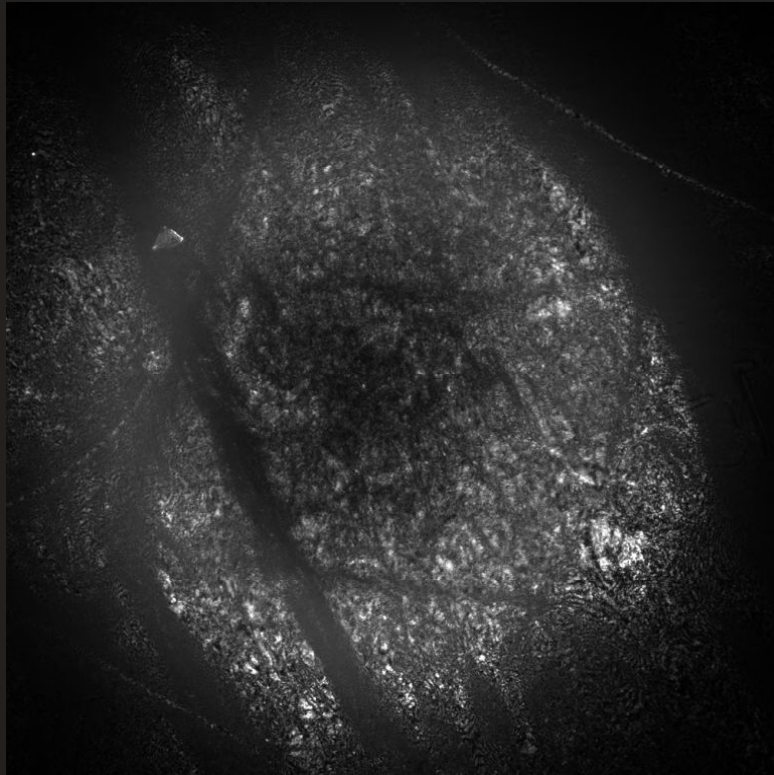


Image 26 from VivaStack

Surface of skin NOT in focus

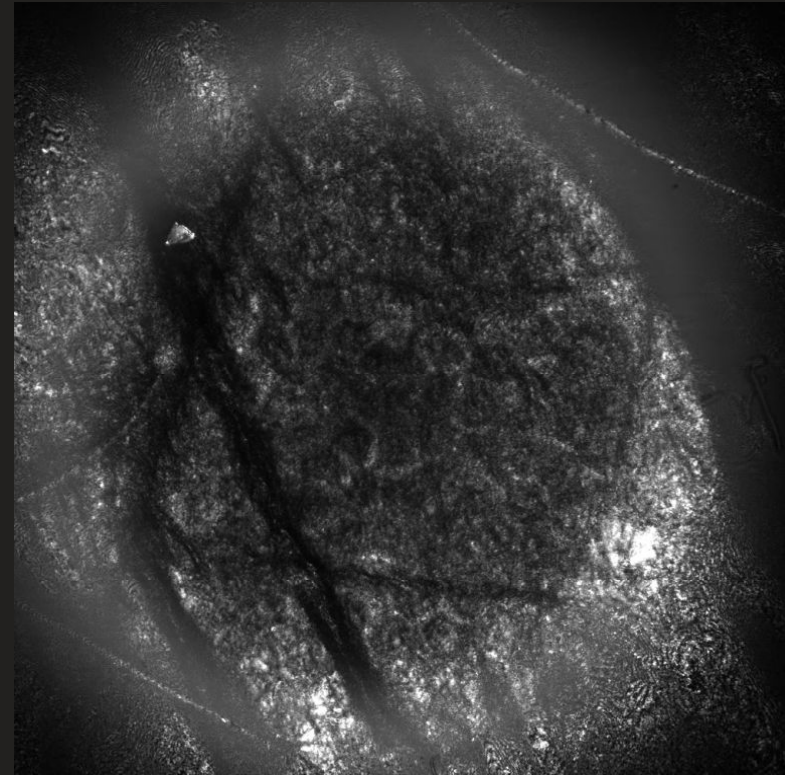


Image 27 from VivaStack

Surface of skin ALMOST in focus

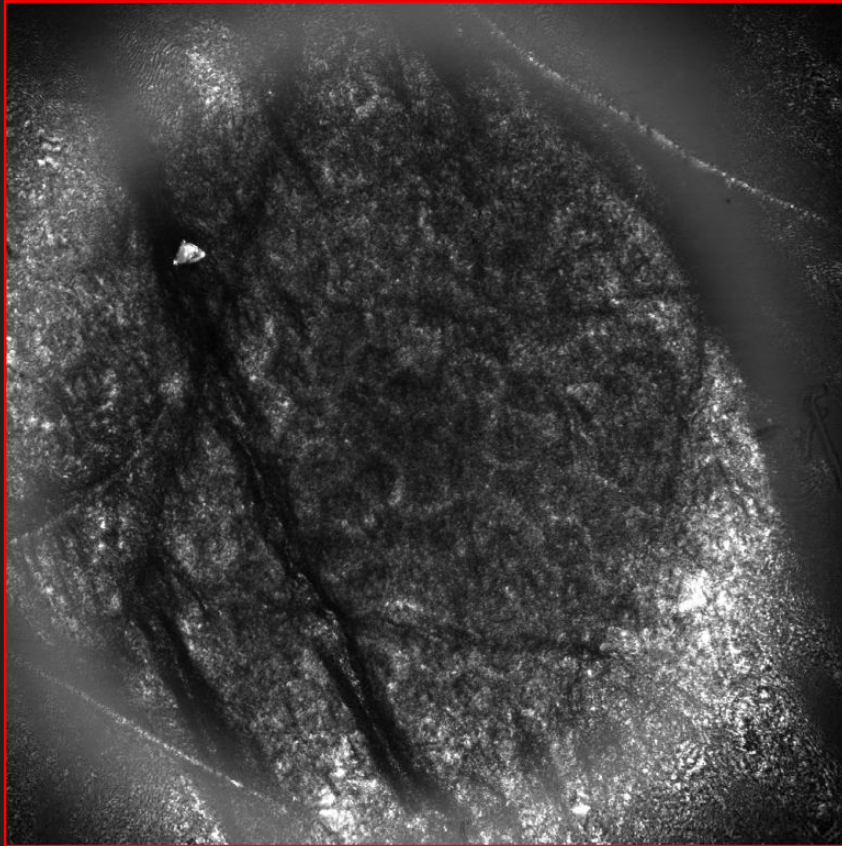


Image 28 from VivaStack

Surface IN FOCUS

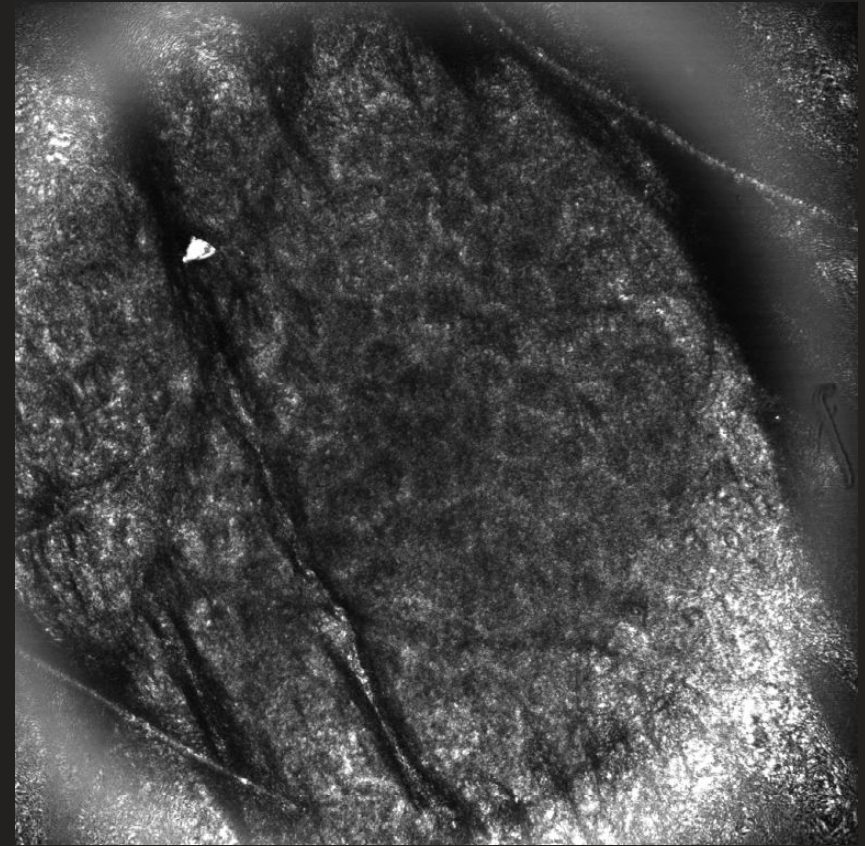


Image 29 from VivaStack

This image is too deep, so  
Image 28 is the surface of  
the skin.



# Locate the Bottom of the DEJ



Image 43 from VivaStack  
Image too shallow,  
keratinocytes still visible

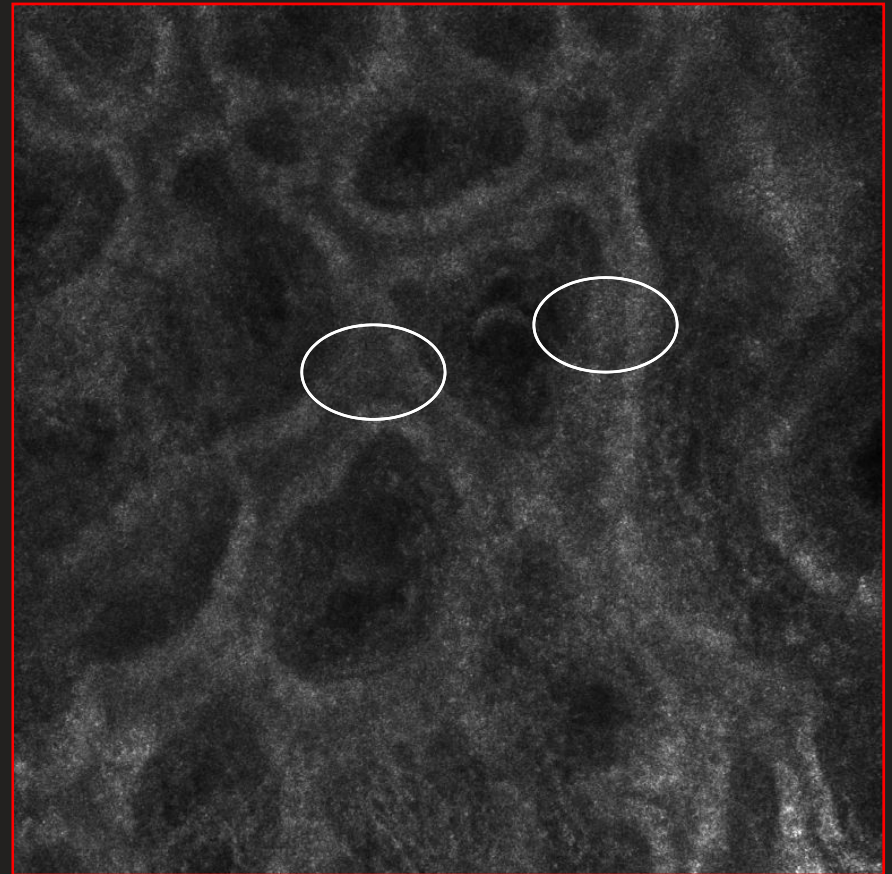


Image 53 from VivaStack  
Keratinocytes no longer  
visible. This is the bottom  
of the DEJ.



# Calculations

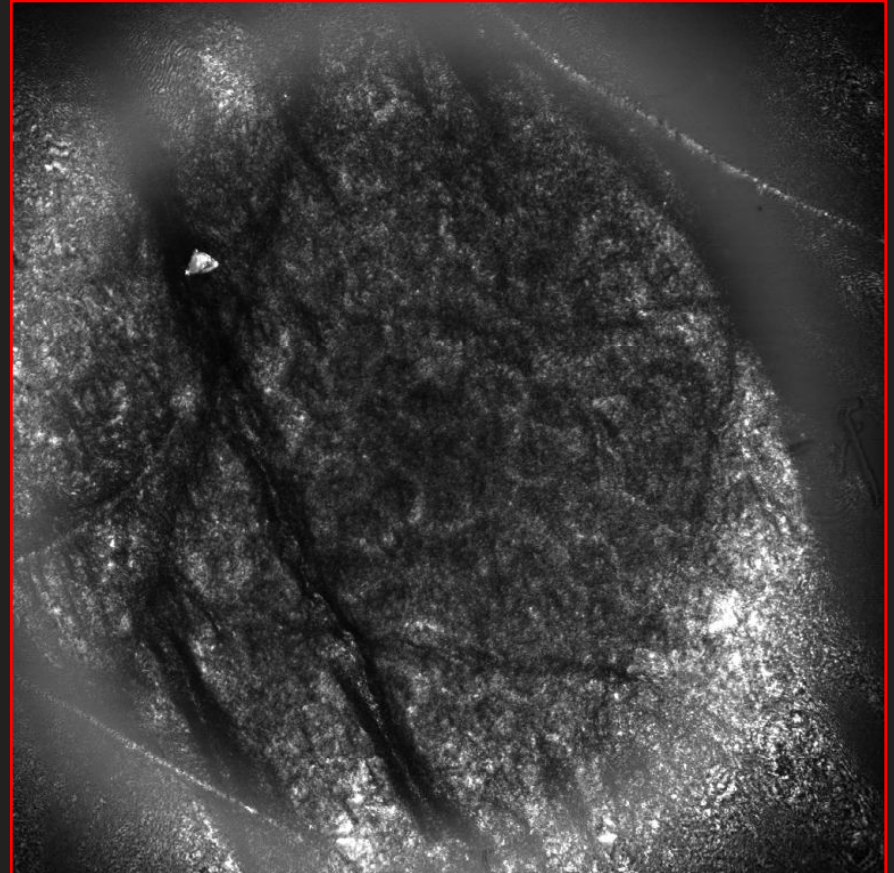
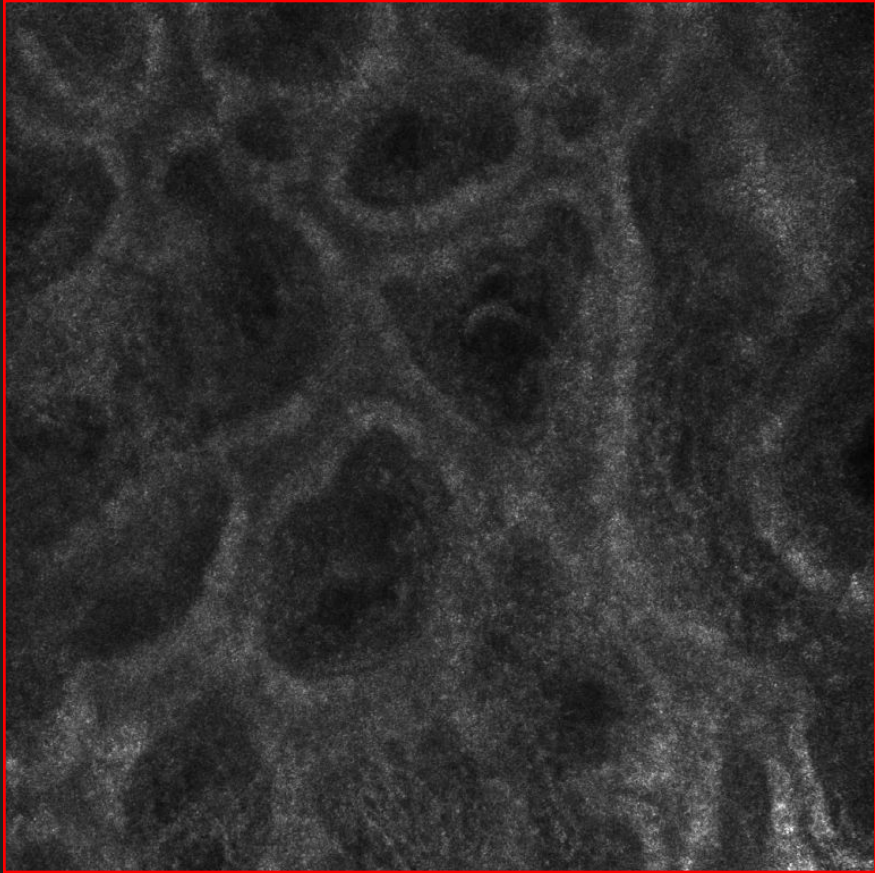


Image 53-Image 28= 25 steps  
25 steps x 3um= 75 um epidermal thickness