Picture perfect

Anna Baker on the 3D LifeViz II™ Camera

As a practitioner involved in cosmetic and dermatological consultations and treatments, it is vital to my practice to capture accurate imagery of sufficient clarity; to not only establish a precise baseline, but to analyse patient response to an intervention, over a period of time or throughout a course of treatment. The vast majority of available sophisticated digital technology allows the practitioner to obtain detailed images in the two dimensional plane. As cosmetic practitioners we are mindful of analysing not only the static and dynamic, but also the three dimensional facial characteristics, which are fundamental in assessing suitability for a procedure, and the degree of appropriate correction. It can be challenging to fully appreciate the facial contours of an individual based upon two dimensional imagery and equally in capturing accurate photographs to reflect the achieved results.

I was introduced to the 3D LifeViz II™ camera and specialist QuantifiCare software two years previously and have found it to be an invaluable tool to both enhance consultations and manage patient expectation, throughout treatment. The device is a portable, lightweight hand held camera which was designed to produce realistic three dimensional images with a lens accuracy of between 15-17 megapixels and inbuilt flash lighting to allow for consistent lighting with each captured image. It uses dual beam pointer technology to provide accuracy and allow for reproducibility of imagery. The QuantifiCare Software Suite enables the photographs to be stored chronologically, which is a key component for practitioners in maintaining contemporaneous patient notes.

In practice, I have noted that subjects may be photographed in any given space, this does not impact upon the clarity of the image generated. When using the photographs for comparative analysis and to ensure consistency, it is important to use the same background with each set captured to maintain accuracy. Once the facial images have been obtained these are then transferred

wirelessly to a designated computer whereby the software reconstructs four stereoscopic images in order to generate the three dimensional image. Once formulated, the image may then be viewed at a multitude of angles, 180-200 degrees, from ear to ear, depending upon the desired area(s) of interest during the consultation.

The Simulation Software provides exceptional accuracy and clarity with regard to the expected outcome from treatment by generating realistic three dimensional images. In my clinical practice, I have found this to be particularly useful when undertaking cosmetic consultations for patients, as they are able to visualise the level of enhancement, which they may expect from a cosmetic non-surgical treatment. The Software also enables the practitioner to simulate the softening or removal of visible imperfections, such as moles, dynamic and established ryhtides and open or closed comedones. These changes may be saved in the Software Suite alongside the baseline three dimensional images to allow for comparison and discussion between the practitioner and patient as treatment progresses.

Quantificare have also developed and introduced the 3D Lifeviz Micro™ system which uses the same stereovision technology as the standard Lifeviz and can be used for assessing subjects where meticulous assessment of detail may be required, with a focal length of 20cm. Lifeviz 11 is the standard camera with a focal length of 80cm, which allows for imaging of the head as well as chest, torso and hips if required. The extent of my experience to date has been in utilising the device purely for facial analysis and comparison before and after treatment.

The Lifeviz camera also features measurement analysis software, which allows for specific facial regions to be highlighted and volume and surface area, to be measured precisely. This is particularly useful in considering which treatment modality may be the most suitable, or perhaps which dermal filler may be the most appropriate. This unique software characteristic sets the camera aside from many other devices. The baseline measurements are then recorded and transferred onto subsequent images, which allows for direct comparison and response to treatment to be quantified. The analysis is particularly useful in measuring and determining volumetric changes following dermal filler placement, over a given timescale.

Additionally, the imaging may be used to measure changes in lesion depth and width which has been in explored in a clinical study undertaken by Skvara et al (2013) who undertook baseline and follow-up images from a small sample size of 27 basal cell carcinomas treated with topical therapy. The authors concluded that the three dimensional camera imaging was sensitive in detecting

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precise changes in the area and volume, before and after intervention, indicating the potential for dermatological application and versatility.

The Skin Analysis software is the latest addition to the suite, complementing the existing tools by measuring a variety of facial skin irregularities. Melanin and vascular distribution, pore size, skin clarity and also depth of dynamic and established ryhtides. The module allows the practitioner to generate a personalised skin analysis report as an opportunity to formulate a detailed plan of treatment. This also allows scope for a comparison to be made against a matching population, based upon corresponding age, gender and skin type, which is particularly useful for potential research purposes. The skin analysis module allows for any ryhtides to be visualized in 3D dimension as well as colour coded for severity. The latest software application has been designed to facilitate an intuitive approach.

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