Digital dermatoscopy is a handy alternative in melanoma referrals

Digital dermatoscopy is a fast-moving area of technology. Dermatologist Amanda Oakley reviews its uses and some of the range of smartphone and camera compatible devices and adaptors, as well as stand-alone cameras.

The first dermatoscopic camera in use at Waikato Hospital’s department of dermatology was a purpose-built, unpolarised Minolta SLR Dermaphot. It was necessary for us to scan photographic transparency slides to use them digitally. The Dermaphot was stolen in 2003; since then, we have used, and continue to use, a variety of photographic systems.

My iPhone 6+ is very convenient. You may have valid reasons to prefer your Android or Microsoft mobile device. Or, maybe, you would consider an iPhone Touch, a convenient clinical image repository that is cheaper than a phone and has built-in security and automated back-up using iOS8+.

This third article on taking clinical images using a smartphone looks at digital dermatoscopy. Reasons to take dermatoscopic images may include:

- Clinical record
- Second opinion
- Clinicopathological correlation
- Teledermatoscopy opinion
- Referral
- Teaching and research

High Suspicion of Cancer (melanoma) referral now requires digital images. Although dermatoscopic images are currently optional, checking the box “Dermatoscopy of skin lesion is suspicious for melanoma” is an alternative to finding three or more red flags from the ABCDE criteria, personal history of melanoma and strong family history. A convenient smartphone referral app makes it easy to attach images taken on the same device.

Dermatoscopic imaging requires:

- Patient consent
- Identification of the patient, location, date
- A skin lesion of interest or concern
- A compatible camera, adapter and contact dermatoscope
- Immersion gel or fluid
- An image showing the anatomic location of the lesion
- A macroscopic or close-up image with a scale to show lesion size
- Polarised and unpolarised dermatoscopic images
- Storage and transfer software.

Buyer’s guide to digital dermatoscopy

Caveat: The following description of currently available dermatoscopic imaging solutions is likely to quickly become outdated.

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High Suspicion of Cancer (melanoma) referral now requires digital images. Dermatoscopic images are currently optional.

Canfield Scientific® offers VEOS HD2 – features include:
- adapters for the iPhone 4, 4S, 5, 5S, 6, 6s, iPad 2, 3, 4, Air
- polarised and non-polarised lighting
- non-contact and contact options
- ×10 magnification
- VEOS app with web-archiving options. With additional heads, an Opticlar® D-Scope can also be used as an otoscope and an ophthalmoscope – features include:
- adapters for the iPhone 4, 5, 6, 6s
- several accessories, which make it very flexible
- polarised and non-polarised lighting
- non-contact and contact options
- ×10 magnification
- no software.

Digital dermatoscopy does not always require a smartphone. You could purchase a standalone dermatoscopic camera and store your images (at least temporarily) on an SD card.

The Canfield Scientific® VEOSSLR is an integrated macroscopic and dermatoscopic, flash-based 18MP Canon EOS camera – features include:
- polarised and non-polarised lighting
- contact and non-contact options
- training offered at a price
- ability to add Mirror software.

The DermLited DL Cam is an integrated 5MP dermatoscopic camera designed by MoleMap NZ. Another camera is needed for anatomic shots. Features include:
- polarised and non-polarised lighting
- contact-only use, and not easy to use in small or curved body sites
- ×10 magnification
- ability to add MoleMap’s MoleTrac software.

Amanda Oakley is a specialist dermatologist practising in Hamilton at Waikato Hospital and Tristram Clinic. She is an honorary associate professor at Waikato Clinical School, and manager for the website DermNetNZ.org

Finding digital dermatoscopy systems online
- a. Canfield Scientific
  http://bit.ly/1PDCm2Y
- b. FotoFinder
  HandyScope http://bit.ly/1UvDGdW
- c. MetaOptima
  MoleScope http://bit.ly/1Jv9L5m
- d. DermLite http://dermlite.com/ and
  http://bit.ly/1UAnWY
- e. Opticlar from AWOnline www.awonline.com

DrMoleScope app and web storage. The hand-held dermatoscopes described below can be attached to a smartphone using an adapter.

DermLite® photodermoscopy professional models are Foto, DL4, DL2N, DL3, II Hybrid m, II PRO HR, II Multispectral, II PRO and DL1. Low-cost devices for patients are DL1 basic and DermLite Monitor. Features include:
- connection kits for the iPhone 4, 4S, 5, 5S, 5C, 6, 6s, iPad 2, 3, 4, Air, mini, Galaxy S3, S4, S5, S6
- polarised and non-polarised lighting
- non-contact and contact options
- ×10 magnification
- DermLite licenses the FotoFinder app.

Sony Cybershot 20MP DSC-W800
- Opticlar® D-Scope for Sony Cybershots and others
- Canfield Scientific® VEOS HD2 for Nikon 1.
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