

## VELscope Photo System App User Guide

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### Intended Use

The VELscope Photo System App is designed to be used with:

- An Apple iPod Touch 5<sup>th</sup> generation device
- A VELscope Vx Imaging Adapter
- A VELscope Vx Handpiece

It is intended to be used to capture fluorescence intraoral photographs of areas of interest while attached to the VELscope Vx Handpiece with the VELscope Vx Imaging Adapter. It is also intended to be used to capture white-light intraoral photographs of areas of interest for comparison with the corresponding fluorescence photographs.

The app organizes the photographs within “Cases” that can be reviewed at the time of acquisition or later as desired. Individual photographs can be e-mailed and it is also possible to download the entire case library from the iPod to a computer using iTunes.

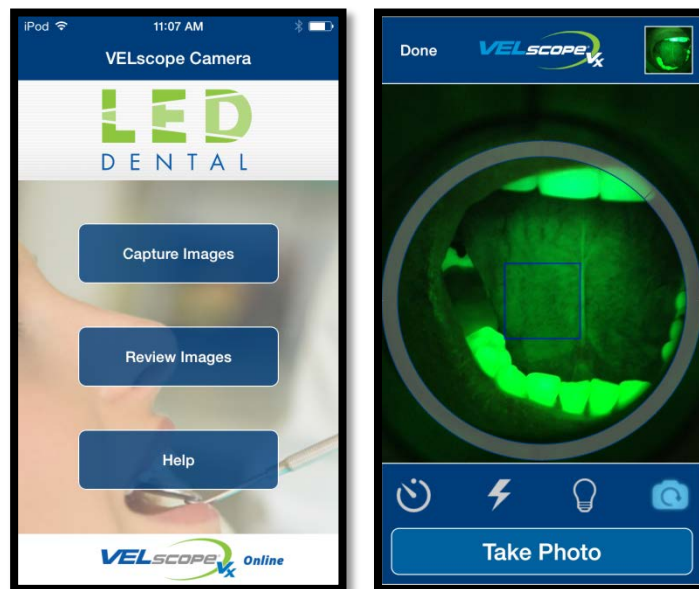
*\*Note that the App is not intended to contain Protected Health Information (PHI); that is, no provision is made for the storage of any information that discloses the identity of the patient. Refrain from disclosing information on the patient identity when using the e-mail feature to transmit photographs as this may breach patient confidentiality guidelines.*

## Installation

To install an Apple iPod Touch 5<sup>th</sup> generation device into the VELscope Vx Imaging Adapter and attach to the VELscope Vx handpiece, please see the VELscope Vx Imaging Adapter Quick Start Guide included in the product packaging.

**Note:** Because of tight tolerances and desirability of having a tight fit on the VELscope Vx Handpiece, on a brand new unit, the Adapter Ring may be stiff and hard to get on initially. It will loosen up after a few attachments but will require some force to rotate into the locked position on the first try.

The app is designed to work in both 'portrait' and 'landscape' orientations. For consistency, this help guide uses the landscape format to show the app interface although there are corresponding versions in the other orientation: two examples of this are shown below:



## Main Menu



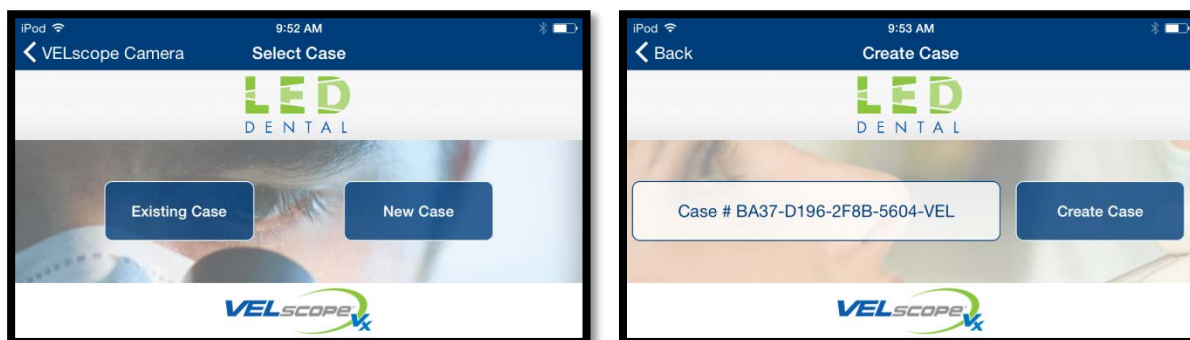
This is the main menu of the VELscope Photo System App.

- If you want to capture a VELscope or white light photograph, press the “Capture Images” button.
- If you want to review previously acquired photographs, press “Review Images” button.
- Press “Help” button to go to the VELscope website to access a detailed guide on how to use the app.
- You can also press on the “VELscope Vx Online” banner at the bottom to take you to the main VELscope Vx website.

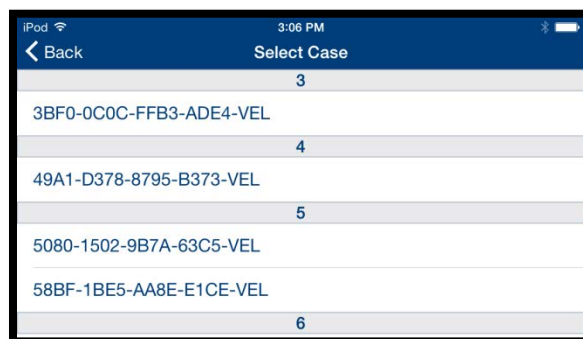
### Capturing Images

Sets of images in the App are organized under “Cases” with randomly generated Case numbers as opposed to patient names to help protect confidentiality of patient information.

When you press on the “Capture Images” button, you can either create a “New Case” to store the photographs under or store them under an “Existing Case” that you have previously created. Pressing “New Case” will create a Case number and ask you to confirm by pressing “Create Case” as shown below.

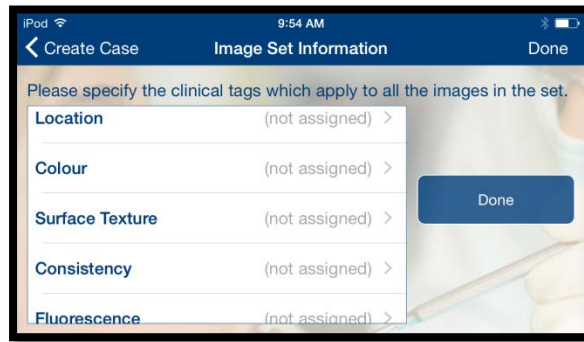


Pressing “Existing Case” will provide a list of Cases for you to choose from:



Press on the desired Case to proceed.

### Tagging Images with clinical descriptors

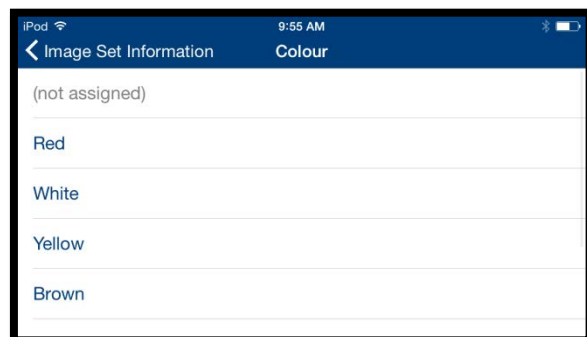
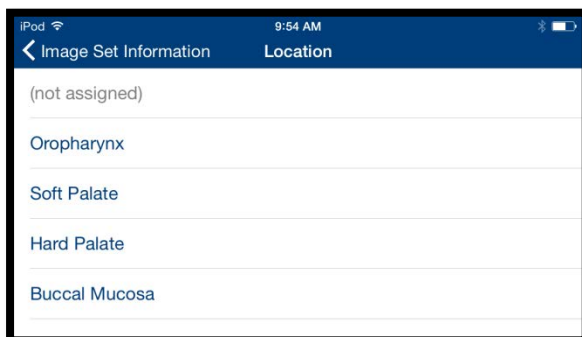


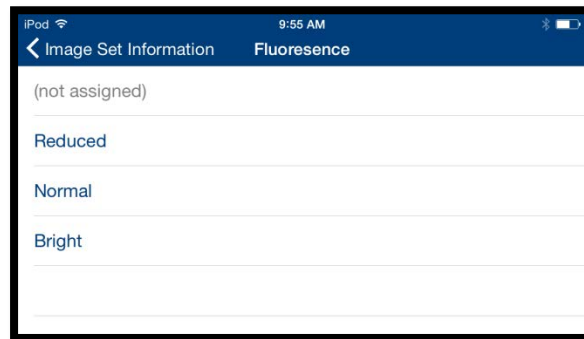
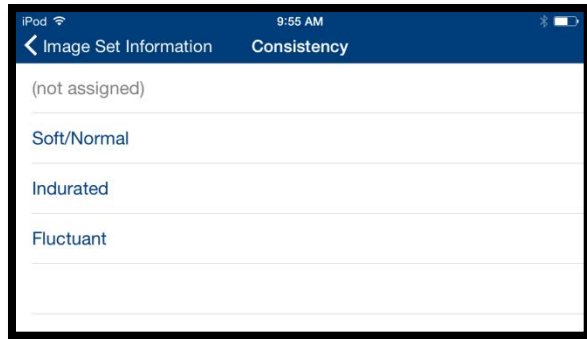
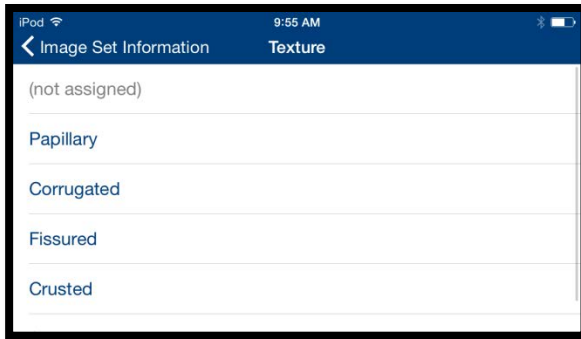
The App gives you the option of pre-assigning clinical descriptors to a set of photographs in the event that you have already identified and characterized an area of interest that you wish to photograph. This is optional and you may also do this at a later time after you have acquired the photographs.

You can assign 5 categories of descriptors:

- Location
- Color (intended as a descriptor for white light photographs)
- Surface Texture
- Consistency
- Fluorescence (intended as a descriptor for fluorescence photographs)

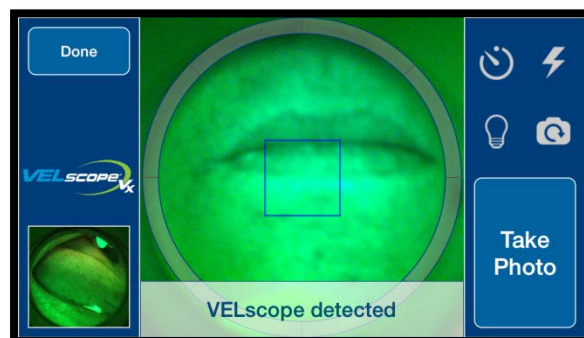
Examples of the choices available are shown below. As is customary on an Apple device, swipe the screen in the appropriate direction order to see all the choices available.





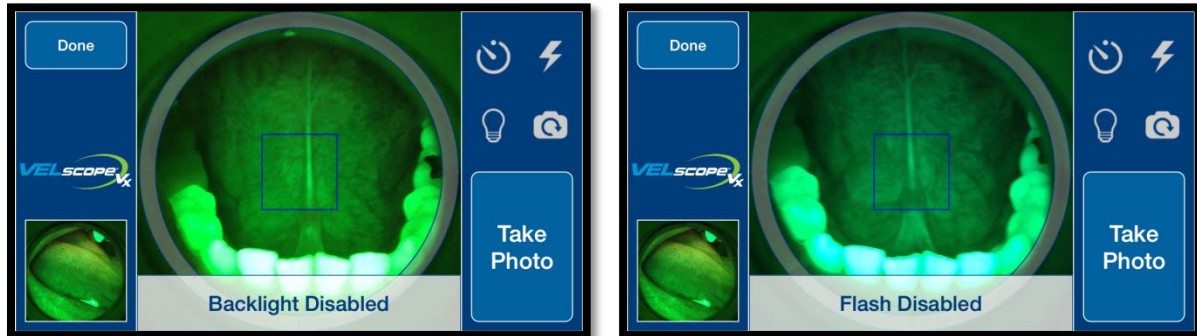



### Acquiring Fluorescence Images with VELscope

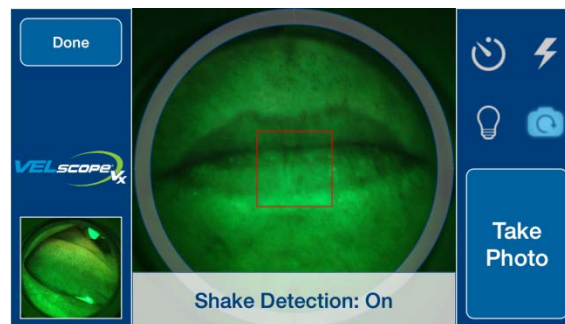
Once you have finished with the optional pre-assignment of clinical descriptors, you proceed to the photo acquisition screen. Note that the camera is zoomed appropriately for use with the VELscope Vx and is kept the same whether or not you are taking white light or VELscope photographs. The zoom is set so as to optimally fill the frame with the field of view through the VELscope Handpiece. The grey circle should approximately correspond to this field of view and can be used as a guide during white light photography to position the area of interest appropriately. If you have attached the iPod to a VELscope Vx Handpiece with the VELscope Vx Imaging Adapter, the App automatically detects this and configures the screen for fluorescence photography.




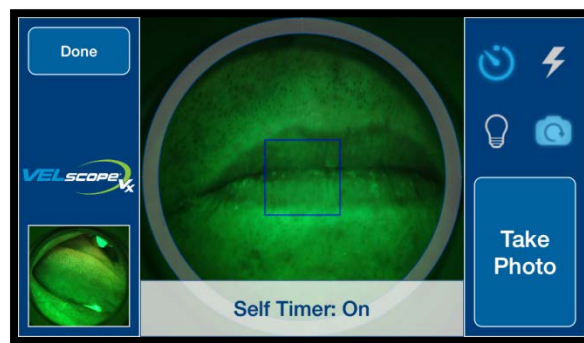
The “Backlight”  and “Flash”  buttons are disabled (because you only want the blue excitation light from the VELscope Vx for fluorescence photographs).



The “Shake Detection”  function is useful for all types of photography. When activated (icon becomes blue instead of white), the App will wait until the iPod is held steady before capturing an image.



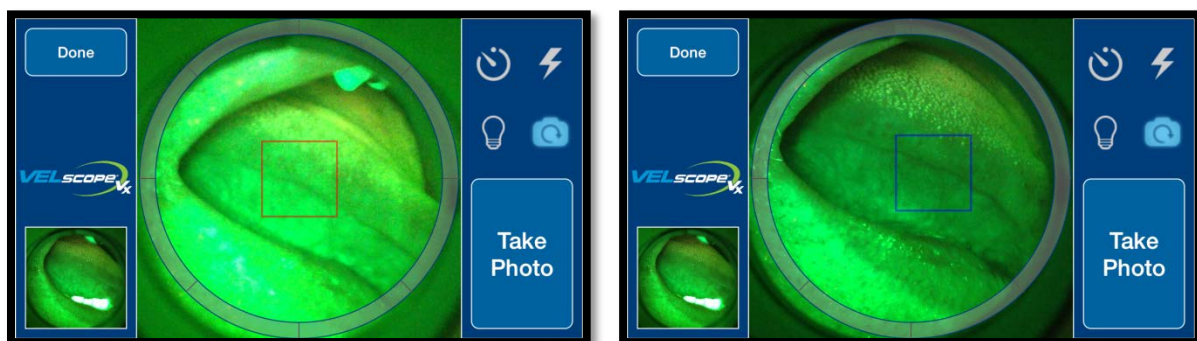
The “Self Timer”  button can be useful if you desire a few seconds delay after pressing the “Take Photo” button before capturing the image. Note that the “Shake Detection” will still be in effect if the “Self Timer” function is used.



Touch the area of the screen for which you want proper focus and exposure. The color of the focusing/exposure box is blue in fluorescence photography mode; it becomes red when the camera is unable to achieve a proper focus. To prevent over-exposure when taking fluorescence photographs, it may be necessary to touch the iPod screen on the area of interest (somewhere in the centre of the grey circular window) to get the iPod camera to adjust exposure properly.

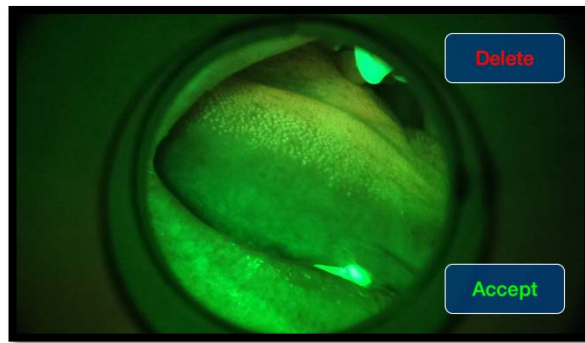


This is further illustrated in the example below: the exposure setting on the left will lead to an overexposed image, whereas touching the screen to help the camera find the correct area for exposure adjustment leads to the correct exposure on the right.

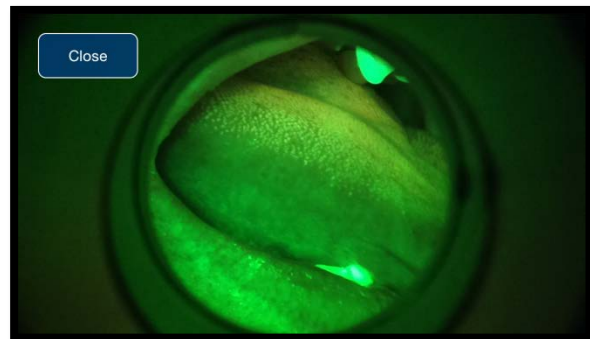
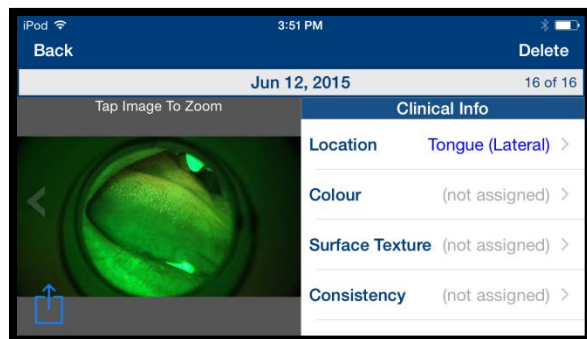


After you acquire a photograph in either VELscope or normal white light photography mode, the App provides you with a full screen preview of the image and you can either “Accept” to save the image or press “Delete” to discard the image (see image on next page).








When you are using the Camera, at any time you can press the preview photograph in the lower left hand corner of the display to bring up the image review screen where you can review or assign clinical descriptive tags for the previous image. By swiping the image you can review other photographs you have acquired in the current session. Also, by pressing on the image, you can bring up a full screen preview.



## Acquiring White Light Images

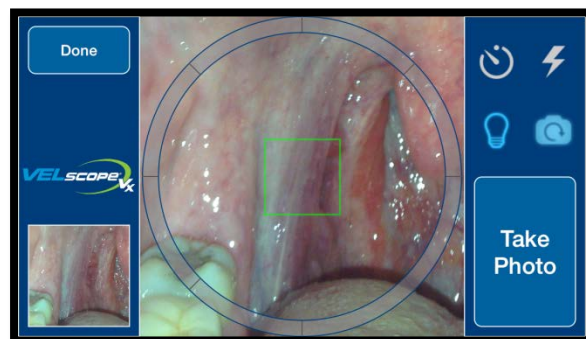
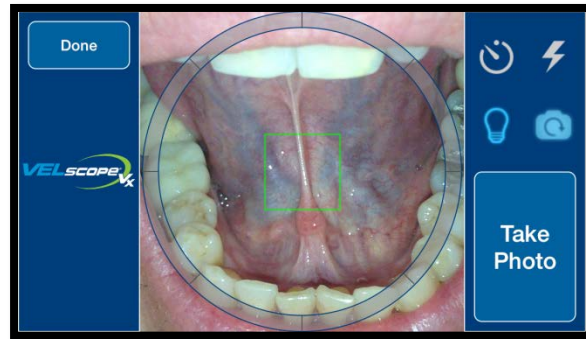
### Automatic Recognition of White-light mode

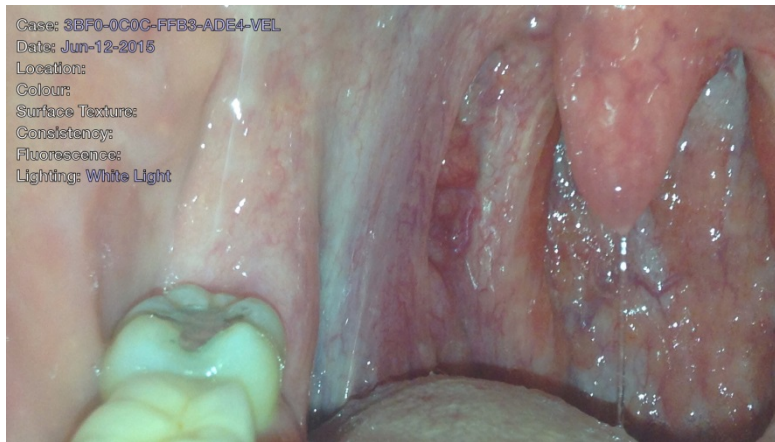
To acquire white light photographs, simply detach the iPod in its bracket from the VELscope Vx handpiece. The App detects that the iPod is no longer attached to the VELscope and you will notice that it is now possible to activate the “Backlight”  and “Flash”  functions.

You will probably find that the most straightforward method to acquire intraoral white light photographs is to use the “Backlight”  function because not only does it allow you see well inside the oral cavity as you set up the photograph but it also provides lots of light for the iPod to use to acquire

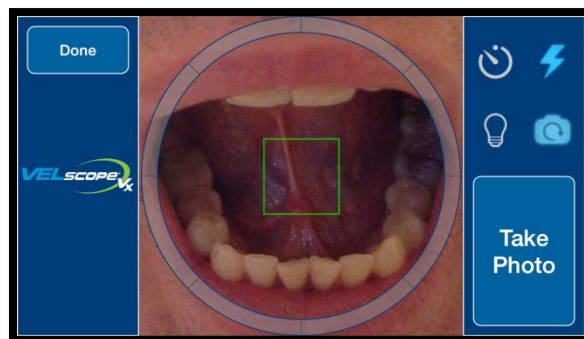


the focus for the camera. When this occurs, you will notice that the focusing box turns green as shown in the examples below.

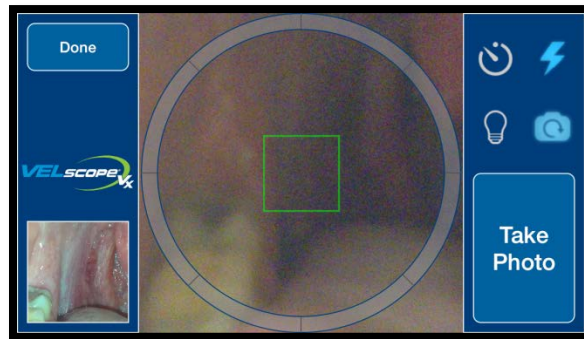




Flash photography is also possible but focusing might be a problem without an additional light source. In this example below there was enough light for the camera to focus and the flash photograph produced an acceptable result.



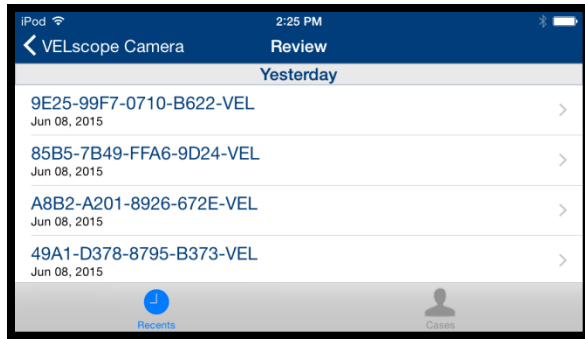
However in the next example the camera had trouble focusing with the low light level and a blurred picture resulted.



Note that the App does not allow you to select “Backlight” and “Flash” simultaneously: selecting “Backlight” will automatically disable flash and vice versa.

### Reviewing Images

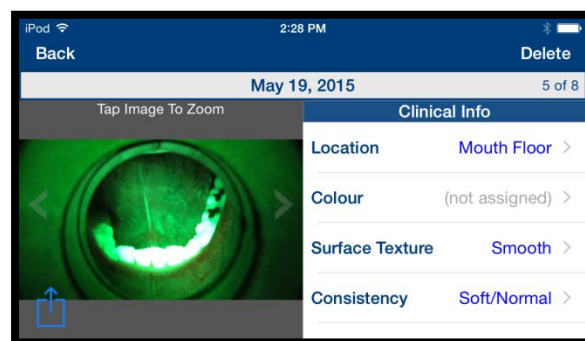
At the main menu, you can press on “Review Images” to review photographs from any of the cases you have created on the iPod. The cases are organized by date or alphabetically/numerically which is controlled by the icon buttons at the bottom of the screen.



Once you choose a case, all the photographs that you have taken under that case number will be shown. If you have taken photographs under that case number on multiple dates, they will appear organized by date as shown below.

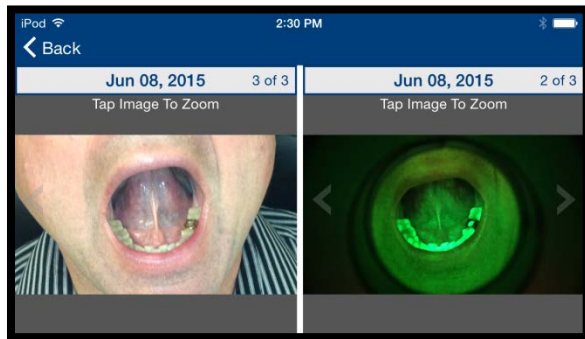
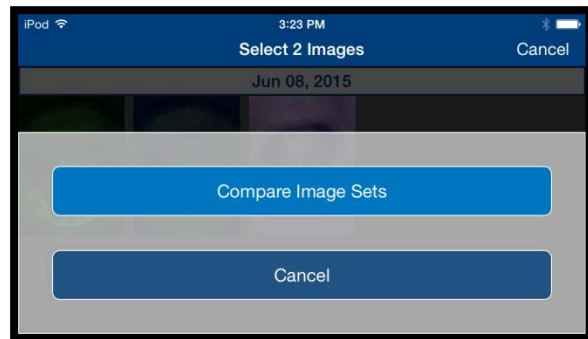
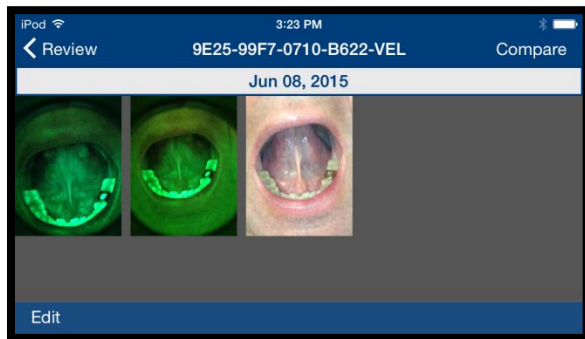


Press on a particular image to bring up the image review screen. You can assign clinical tags, or press on the image for a full screen preview. You can swipe the image to the left or the right to see the previous or next image respectively.



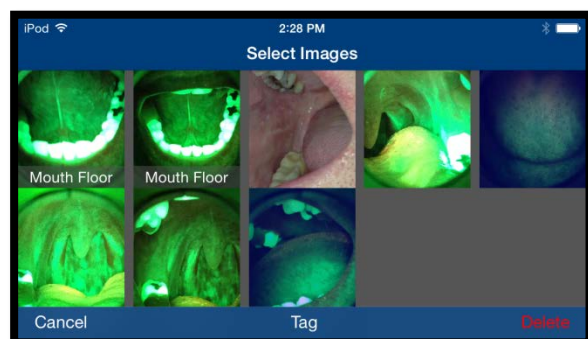
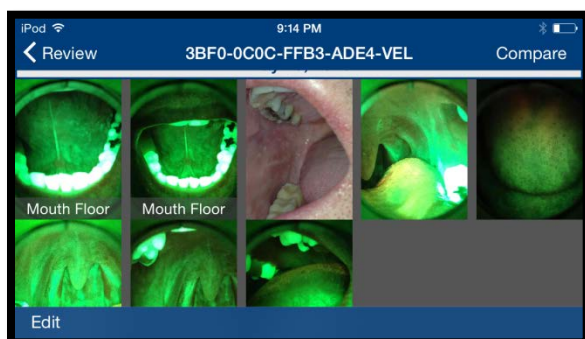
## Comparing Two Images

You can compare two images (for example, a white light image and the corresponding VELscope image) by pressing “Compare”, selecting, when prompted, the two images by pressing on them and then confirming by pressing “Compare Image Sets.”

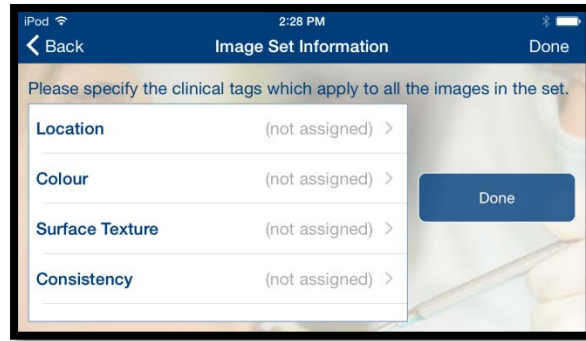


## Tagging Multiple Images at once

You can tag multiple images with the same set of clinical descriptor tags from the Case Review screen by pressing Edit, selecting all the images you wish to tag, pressing the Tag button and then selecting the applicable descriptors from the drop-down menus as you would a single image.

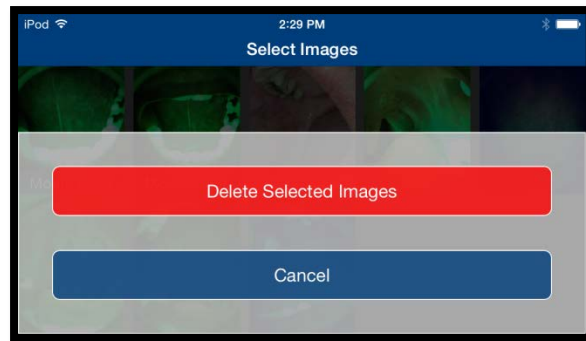




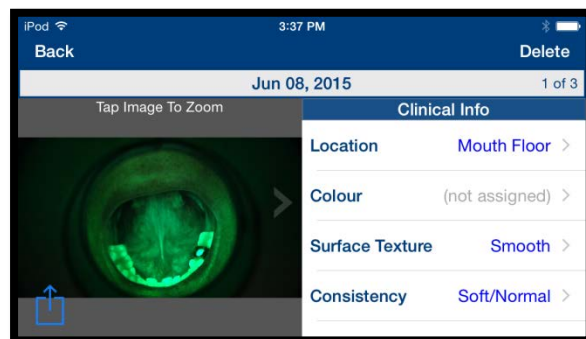



## Deleting Images

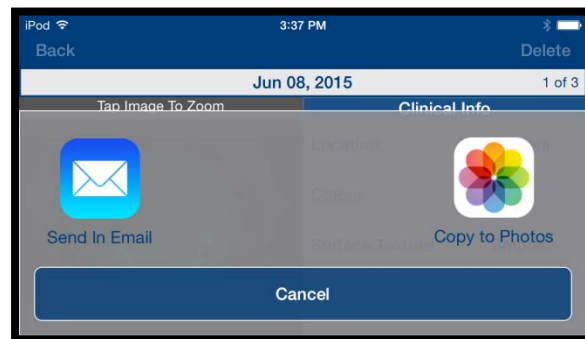
Similarly, instead of pressing the “Tag” button, you can press the “Delete” button to delete these images.



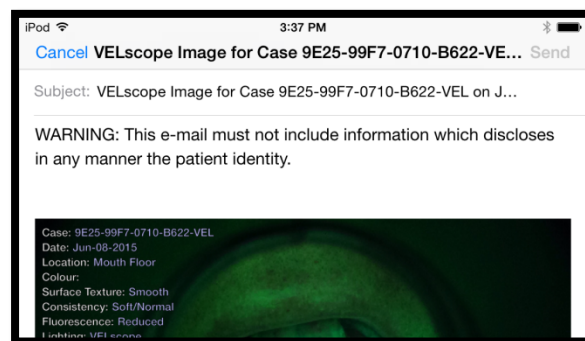
## Transferring Images



On the image review screen, you can press the upload button  to either send the image in an e-mail or copy the image from the private application library to iPod's more accessible photo library (the "Camera Roll").



If you hit e-mail, it will automatically create an e-mail from your Apple ID e-mail to recipients of your choice.



\*Note the warning in the main body of the e-mail:

"This e-mail must not include information which discloses in any manner the patient identity." This is for patient confidentiality reasons: please do not include the patient name or other unique identifiers within the e-mail while using this app.

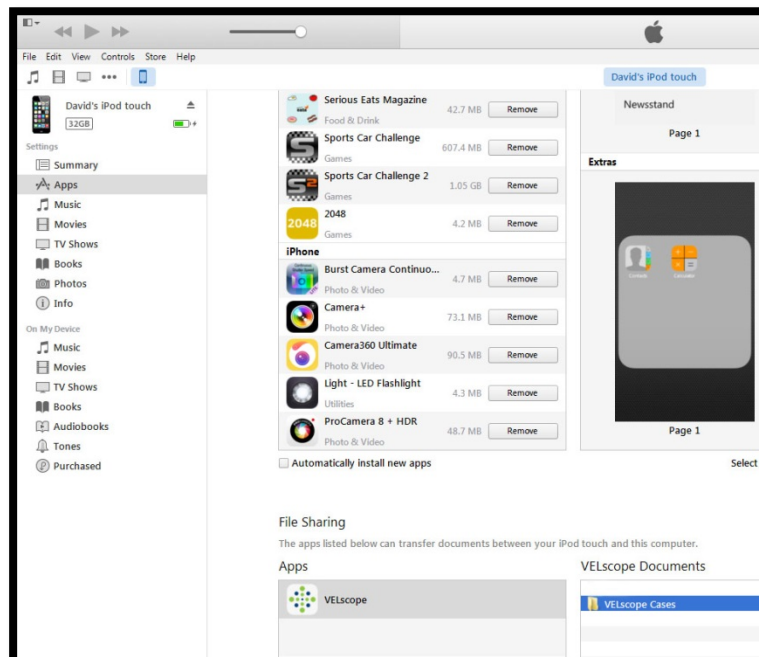
The image will have the Case number, date and clinical tag information embedded within the image in the upper left hand corner.





By pressing the “Copy to Photos” button, the image will be copied to the iPod’s Photo Roll which allows you to take advantage of many of the file sharing options available with Apple mobile devices, e.g. the iCloud.

You can transfer the entire case library of photographs from your iPod to a computer via iTunes as shown in the iTunes screenshots below. Highlight the iPod, select “Apps”, scroll down to “File Sharing”, select “VELscope” under the “Apps” and then choose “VELscope Cases” under “VELscope Documents”. Then save to a location on your computer of your choice.



The files will be saved in a directory with folders names given by the Case numbers. In Case folder, the photos will be organized by date as shown in the screenshots below.

