# SkinDOC



# User Manual

*Version 1.0*

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# SkinDOC

## USER MANUAL

## Section I - INTRODUCTION

# 1. Safety

Read this page carefully before installing and using the instrument. The safety statements in this manual comply with the requirements of the HEALTH AND SAFETY WORK ACT 1974.

The instruments described in this manual are designed to be used by properly trained personnel only. Qualified personnel who are aware of the hazards involved must carry out adjustments, maintenance and repair of equipment.

## 1.1. Safety Precautions

1. For the correct and safe use of this instrument it is essential that both operating and servicing personnel follow generally accepted safety procedures.
2. The instrument covers should only be removed by personnel who have been trained to avoid the risk of electric shocks. The main electric supply to the instrument must be disconnected at the mains supply connector and at least three minutes must be allowed for capacitors to discharge.
3. Specific warnings and cautionary statements are noted in the manual and on the unit where necessary.

## 1.2. Impaired Safety Protection

Whenever it is likely that safety protection has been impaired, the instrument must be made inoperative and secure against any unintended operation. The problem should then be referred to the appropriate service authority. Safety protection is likely to be impaired if for example the instrument fails to perform the intended examinations or shows visible damage.

## 1.3. CE Mark

According to European safety requirements, the SkinDOC system is approved by an Austrian authorized organization to comply with EN 55022/1994, EN 50081-1, EN 50082-1, IEC 601-1 and ÖVE-MG / EN 60601-1-1.

In compliance with the Medical Device Directive 93/42/EEC, SkinDOC is classified as a medical instrument in the medical device class 1.

**IMPORTANT**
The SkinDOC is an integrated medical device and as such certified with the CE mark. In case of loss of functionality of the system as a result of the user installing software not certified by the experts of Derma Medical Systems, the warranty guaranteed by Derma Medical Systems is void.

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**DERMA**
**MEDICAL**

## Konformitätserklärung
### *Declaration of Conformity*

**Produktspezifikation / *product details*:**

| | |
|---|---|
| Produktbezeichnung / *product name* | **SkinDOC / SkinDOC** |
| Type / *type* | **Digitales Auflichtmikroskopiesystem für die Dermatologie / *Digital Epiluminescence Microscopy System for Dermatology*** |
| Klassifizierung nach RL 93/42/EWG, Anhang IX / in der Fassung von 2007/47/EC *Classification according 93/42/EEC, annex IX as amended by 2007/47/EC* | **I nach Regel 12 / *I per rule 12*** |

**Konformitätsbewertung / *assessment details*:**

| | |
|---|---|
| Verfahren nach RL 93/42/EWG / in der Fassung von 2007/47/EC *Route of directive 93/42/EEC as amended by 2007/47/EC* | **Anhang VII (EG-Konformitätserklärung) und Anhang X (Klinische Bewertung) / *Annex VII (EC-declaration of Conformity) and Annex X (Clinical Evaluation)*** |

**Angewandte Normen / *used standards*:**

| | |
|---|---|
| Harmonisierte Normen / *harmonized standards* | **EN 60601-1:2006+Cor:2010+A1:2013, EN 60601-1-1:2001, EN 60601-1-2:2016 EN 62366:2016** |
| Sonstige Normen / *other standards*: | **EN ISO 14971:2012, EN 980:2008** |

Wir erklären in alleiniger Verantwortung, daß die oben beschriebenen Produkte den Anforderungen der Richtlinien 2014/30/EG und 93/42/EWG in der Fassung von 2007/47/EC und den österreichischen Medizinproduktegesetzes BGBl. 657/1996 i.d.g.F. entsprechen. Die Produkte werden mit dem CE-Kennzeichen versehen. *We declare under sole responsibility that the products described above are in compliance with directive 2014/30/EU and directive 93/42/EEC as amended by 2007/47/EC and the austrian medical- device-law BGBl. 657/1996. The products are CE marked.*
Gültig bis / *Valid until 05.11.2018*

$C\epsilon$

Wien, 05.11.2017

Generaldirektor / *general director*

V1.0

## 2. General Information

Thank you for buying SkinDOC, device from worldwide leader in digital epiluminescence microscopy (DELM) and digital skin imaging.

DELM provides a method to view not only the skin surface but the sub-surface layers as well, making it possible to distinguish between benign and malignant moles at early stages.

The method of epiluminescence microscopy, also called dermatoscopy, opens up a new view of morphological features, colors and patterns not seen in an examination with traditional skin surface microscopy.

SkinDOC is using MoleMax technology, developed in co-operation with the University of Vienna Medical School, Department for Dermatology (Prof. Klaus Wolff, MD).

International patents are pending.

But SkinDOC can also be effectively used as a documentation system for **ALL Skin problems** (e.g. "before and after" laser treatments as well as the progress of psoriasis and acne treatments etc.).

### 2.1. How to Use this Manual

This manual consists of four sections. The first section describes the safety requirements and provides general information about DELM and the system. The second section explains the hardware components and lists the technical specifications of the system. Next, the installation and the different functions of the SkinDOC software are described. In the last section a troubleshooting guide will help to answer the most frequently asked questions and to solve possible problems.

If you need further assistance please contact your local dealer.

The users of SkinDOC have access to the **DMS Service-Hotline**:

<div align="center">

**+43 1 318 69 90**

</div>

Monday-Friday from 09:00 to 16:00 (CET), communication in German and English. Or just send an email to *derma@dermamedicalsystems.com*.

### 2.2. Principle of Operation

SkinDOC is an integrated system for digital epiluminescence microscopy and digital skin imaging. Thanks to the worldwide-patented technique of light polarization dermatoscopic examinations can be done without the use of immersion fluids.

The system's hard disk can store thousands of images and they are immediately available for comparison. Therefore, simultaneous dermatologist/patient on-screen observation of potential mole alteration is possible.

## 2.3. SkinDOC System

**SkinDOC** systems consist of:

- The SkinDOC system camera in high definition (HD signal) with fix-focus and SMD LED illumination
- SkinDOC case with all necessary electronics
- PC (desktop or portable)
- Widescreen True Color flat screen with Full HD 1920x1080 resolution (if PC)
- The SkinDOC software package respectively
- (Optional) Canon EOS camera for macro imaging over LiveImage feature

Other Options: Total Body Mapping Stand, Color Printer or other hardware and software Add-Ons

The camera-electronics is pre-configured for optimal image quality. Adjustments can be made by qualified Service-engineers only. Please contact your local dealer.

## 2.4. SkinDOC Software

The SkinDOC software version 1.0 is supported by Windows 7 and Windows 10 operating systems (registered trade mark of Microsoft) in 64 bit versions.

The software was designed by doctors for doctors and not by computer specialists. Therefore, the software is user-friendly and can be used without computer/software skills.

## 2.5. How to Turn On the System

Always turn the system on and off via the front  power switch on the case. PC and monitor have to be turned on separately, after SkinDOC unit has been turned on.

The pre-installed operating system checks the hardware components on each boot up, which takes a few minutes and automatically starts the operating system and the SkinDOC software, unless specific User log in is required.

The system is ready to work when the main menu of the SkinDOC software is visible on the screen.

Before switching off the system always exit the SkinDOC program first. Then click on the *Start* button in the lower left corner and *Shut down* to log off the system. Choose the option *Shut down the computer?* and confirm with YES.

Wait for the permission before switching off the system by using the central power switch.

**IMPORTANT**
- Please follow this procedure strictly and do not switch off the system before the corresponding message is displayed on the monitor.
- SkinDOC should be switched ON before PC starts, and should be switched OFF when PC is also turned Off
- All power standby options on the PC should be turned OFF when used with SkinDOC

## 3. Care Instructions

All parts of the SkinDOC can be cleaned with standard, mild cleaning supplies. Only the plastic covers should be cleaned with special Acryl glass cleaning agents. The front glass plates of the camera may  be removed from the camera in order to be cleaned with Alcohol or to get sterilized. Please take care that no alcohol gets inside the camera. To clean the monitor of the system please use standard display cleaner

# *SkinDOC*

## USER MANUAL

## Section II - HARDWARE MANUAL

# 4. Installation

## 4.1. Connection to the Mains, Grounding

The standard configuration of the SkinDOC system is for 220/230 V and 50 Hz.
115 V version is available on request.
Make sure to use protective grounding via three core mains cables only.
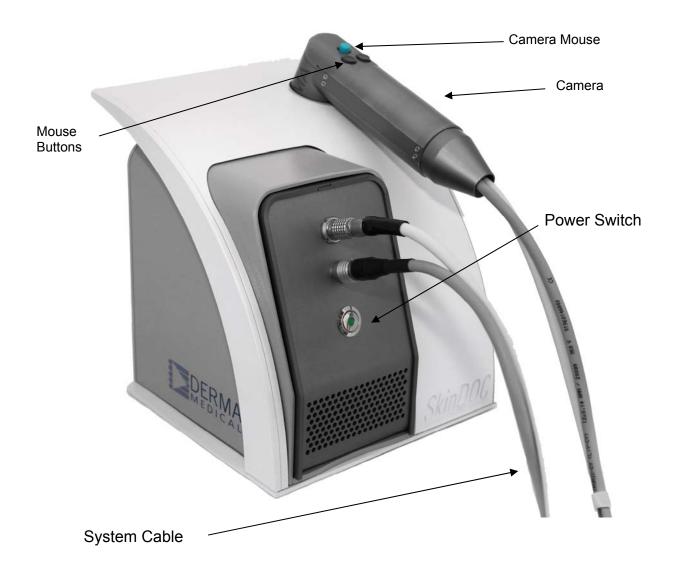
> **Warning!**
> Any interruption of the protective conductor inside or outside the instrument is likely to make the instrument dangerous. Intentional interruption is prohibited.

## 4.2. Front View Description

### SkinDOC System



Camera Mouse

Camera

Mouse Buttons

Power Switch

System Cable

## 4.3. Connections

Connector positions may vary due to further developments of the SkinDOC models.



USB 3 Connector

Unused

USB 2 Connector

System Power Connector

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## 5. Specifications

### 5.1. SkinDOC System Camera

Effective picture elements:
Approx. 2,000,000 pixels

Video signal:
HD: 1080p

Lens:
30x zoom

Resolution:
1920x1080 Pixel

Sensor Type:
CMOS Color

Sensor Size
1/2.8"

Scanning System:
Progressive Scan

Digital Video Output:
True HD over USB3

### 5.2. Basic Unit

System case includes:

Power supply and camera connections with grip and integrated camera holder

Camera control electronics

USB 2 connection

USB 3 connection

SkinDOC Software CD (requires Windows 7 or Windows 10 (64 bit) + latest service pack)

To improve system performance, specifications are subject to change without notice.

## 5.3. PC Requirements

Computer Minimum Requirements:

- Latest Generation PC, Intel CPU recommended
- 3GB RAM
- 10 GB free disk space (HDD of 500 GB or more recommended)
- One free USB 3.0 port AND one additional free USB port
- Backup over DVD-RW/CD-RW or external USB device (HDD or USB Stick)
- Card Reader recommended
- Microsoft Windows 7 or Windows 10 with latest Service Pack (64 bit)
- True Color graphic/video card

## 5.4. General Technical Data

The SkinDOC system may be connected to any properly grounded outlet, which is secured with a 2,5 A fuse (except of explosive dangerous areas).

| | |
|---|---|
| Nominal Voltage: | 110/ 230V AC, 60/ 50 Hz, 1,9/ 1,1A |
| Power Consumption: | max. 80 W |
| Dimensions: | 25 x 20 x 20 cm (W/L/H); |
| Weight: | 3 kg |

# SkinDOC

## USER MANUAL

## Part III – SOFTWARE MANUAL

**Content (continued)**                                                        **Page**

# Part III – SOFTWARE MANUAL

## 6. Software Installation

> **IMPORTANT**
> - Please note that the software is already pre-installed on the delivered system (if delivered with computer). Only in case of a complete breakdown of the system software needs to be re-installed according to the guidelines below.
> - To install the SkinDOC software you need to have administrative privilege. Please contact your local dealer for obtaining a temporary administrator password.
> - The SkinDOC software requires Microsoft Windows 7 or Windows 10 operating system (64 bit). Ask you local dealer about the current drivers for the hardware components that need to be installed before installing the SkinDOC software.
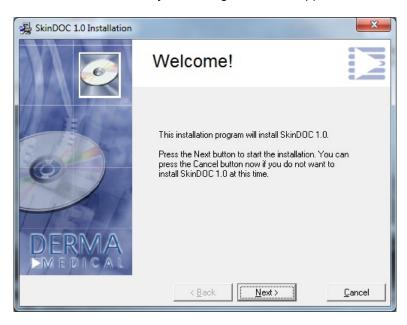
*Step 1:*
Put the CD-ROM labeled SkinDOC into the disk drive.

*Step 2:*
Installation procedure will start automatically. Following screen will appear:



Click on the "Next" to start with SkinDOC Installation

*Step 2a:*
If installation screen does not come automatically start Windows Explorer and execute installations program manually. Follow the instructions.

*Step 3:*
After exchanging some system files the installation routine might need to reboot the system automatically and start the actual software installation after the start up. Select the appropriate language version and follow the instructions on the screen.

*Step 4:*
After the installation has been completed restart the system and log in to activate the changes.

When starting the software for the first time after the installation the software prompts for SkinDOC Activation Code. This is to be obtained thru your dealer or directly over DMS service hotline. Please note Your Site Code as well as Serial Number of the system if doing this directly.

If you experience problems with the installation of the software please contact your local dealer or the software hotline.

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> ⚠️ **IMPORTANT**
> • Always use native resolution of the screen. If delivered with the PC, SkinDOC is delivered with Full HD widescreen monitor.
> • Minimal screen resolution for SkinDOC software is 1920x1080 pixels. This is also the recommended resolution!
> • Prior to SkinDOC installation SkinDOC drivers need to beinstalled
> • All SkinDOC drivers are located on the SkinDOC installation CD/DVD in drivers folder

## 7. SkinDOC Software

### 7.1. Main Menu

It is recommended to read the heading "General Information" of this handbook prior to using the instrument. This heading explains the basic steps on how to operate the system. SkinDOC can be used without any computer knowledge. The integrated mouse in the camera can control all functions within SkinDOC.

In addition a standard PC mouse and keyboard can be used. The program automatically recognizes, which mouse is active. Both mouse devices may be used simultaneously.

Before getting started please make sure that SkinDOC is switched on, then power PC ON. During routine use, always leave both SkinDOC and PC ON. Turn the system OFF after computer has been switched OFF. The camera is ready for use when the Start Menu is shown, as on the image below.

*Log On / Log Off*

If different user profiles are defined each user needs to log on with his user name and his password at the log on screen. Select the down arrow to open the list box and select a user name from the list. Enter the appropriate password and select **LOGON** to enter the Main Menu.

After having finished working with the SkinDOC system the user needs to log off. To do so, select the symbol **LOG OFF** in the Main Menu.

(Contact your dealer if You wish to activate "*User Profiles*")

> **IMPORTANT**
> - Your SkinDOC System is equipped with single widescreen monitor Live Video is shown after entering appropriate Video function!
> - **All screenshots in this Manual are taken from SkinDOC System with widescreen monitor**

The easy-to-use **icons** have the following functions:

| | |
|---|---|
| **Express View** | Substitution for the handheld dermatoscope by using SkinDOC video camera, Fast check without patient input, but still with option to save the images! |
| **New Patient** | To be used during patient's first visit. All necessary data patient data must be input here. |
| **Select Existing (Patient)** | To be used if the patient is already in the database. All follow up examinations of patient and all other patient related functions are located in this menu |
| **Services** | Includes all services such as **Backup**, Export/import or Statistics |
| **Administration** | Complete SkinDOC administration tools |
| **Exit** | Close SkinDOC software and exit to Windows |

## 7.2. SkinDOC Camera
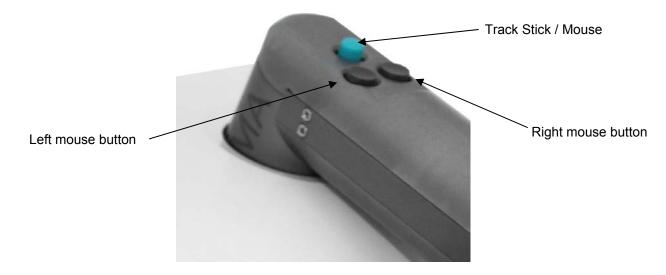
The SkinDOC digital video camera is connected to the front of the basic unit through a special designed twin cable.

Always handle the camera with care and if not in use store it in the designated holder.

The front lens of the DELM camera can be easily removed for cleaning or replacing by simply twisting it by 90 degrees. It is possible to autoclave the glass lens. (Important: autoclave only up to 120° C).

Please take a look at the following illustration for the explanation of the control buttons on the backside of the camera.

The software is designed in that way that all functions are executed when clicking on the corresponding buttons.



Track Stick / Mouse

Right mouse button

Left mouse button

In principle, it is essential to direct the cursor (mouse pointer) to the appropriate position and then click on the left mouse button.
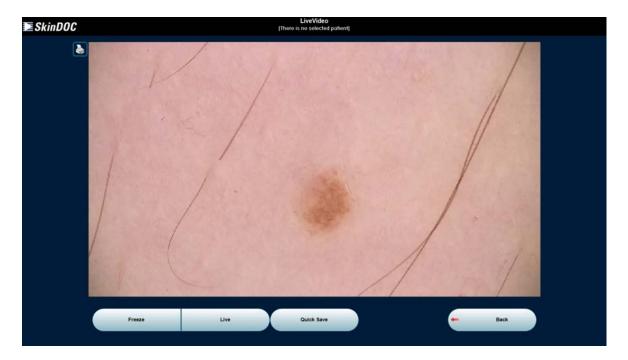
> **IMPORTANT**
> - The combination of these two procedures (positioning of the cursor and pressing the left button) will be expressed as <u>Select</u> for easy understanding.
> - To simplify some operations the right button can be used. This operation is useful at various program steps and will be expressed as <u>Press RB</u> in this manual.
> - Never press onto the Track-stick because this could damage the sensors inside. Just smoothly push it to the desired direction.

## 7.3. Express View

The Express View Live Video replaces the traditional hand held dermatoscope. SkinDOC allows the user to perform an extremely fast screening of patients without the need of immersion oil.

Live Video can be done by simply using Express View without using saving option.



Live Video Option offers a possibility to FREEZE and PRINT the image.

<u>Press RB</u> when mouse pointer is inside Live Video screen to freeze the image.

Click the PRINT button [icon] to print the frozen image to default printer.

> **REMEMBER**
> - To capture an image always hold the camera steady for a second after having pressed the button to get a clear image. The processing of the image may take a short moment.
> - Always place the lesion at the center of the screen, as the illumination is best in the center.
> - To zoom with the macro-camera either use the zoom button on the back of the camera or the up / down (↑↓) keys.
> - To return to the live video function either select **LIVE VIDEO**, press <u>RB</u>, or press the Space bar.

**SHORTCUTS:**
Shortcuts can be used instead of pressing some buttons for faster handling.
- Press <u>RB</u>: to freeze/unfreeze the image (the cursor has to be inside the live video frame)
- Press <u>Space</u>: to freeze/unfreeze the image
- Press <u>Esc</u>: to return to the Main Menu
- Press <u>F10</u>: to return to the Main Menu
- Press <u>(↑↓)</u>: to zoom in/out with the macro camera

To **SAVE** the images during the Express View Live Video Session to the hard drive click the **QUICK SAVE** button located on the bottom of the screen. Explorer View pops up and destination for saving the image may be selected. After saving the images, Express View Session can either be continued or finalized.

To return to the main menu select **BACK** or press **F10**.

## 7.4. New Patient

This function is used for the first examination of a new patient. If the patient is already in the database always use Select Existing (Patient) function.

*Step 1:*
Select the icon **NEW PATIENT** in the main menu. The software moves on to the New Patient window.

*Step 2:*
New Patient screen is shown below:



The following four lines are mandatory (red colored):

- Last name
- First name
- Date of birth (the format depends on the country settings, the year has to be typed in with 4 digits e.g. 1950, this is very important for patients born before 1929)
- Insurance number

All other information is optional and can be typed in later too.

> **IMPORTANT**
> - Two first or last names of a patient have to be typed with space between the names.
> - To move from one line to the next, move the cursor into the specific line and press the left mouse button or press the TAB key.
> - The Insurance number looks different in different country settings.

Additionally face image can be acquired by clicking on the appropriate icon on the top right side. Live Image or File Import can be chosen to acquire face image. This image is shown in the search screen for easier patient recognition.

Detailed patient data such as address, email, phone number etc can be set up in second card **CONTACT.**

> **IMPORTANT**
> The appointment for a follow-up visit needs to be entered in this function.

Select **ADDITIONAL** and enter the date of the follow-up visit. Only a defined follow-up visit date allows the software to check whether the patient has been seen for his scheduled appointment by using patient menu in ADMINISTRATION screen.

Apart from follow-up date family relation index and patient related custom comment can be set up in this screen.

> **REMEMBER**
> - Two first or last names of a patient have to be typed with space between the names.
> - It depends on the country settings how to enter the date of birth. Always use 4 digits for the year e.g. 1950. This is very important for patients born before 1929.
> - To calculate the Risk Group the patient falls into, select the option **MELANOMA RISK** and answer the four questions together with the patient. The result is immediately displayed at the bottom of the screen. There are four possible risk groups (low, average, increased and high risk).

> **SHORTCUTS:**
> - Press Tab: to move from one line to the next
> - Press Esc: to return to the main menu
> - Press F10: to return to the Main Menu

To edit or delete a patient record SERVICES function must be used. This function is accessible from the SkinDOC start screen.

> **IMPORTANT**
> - There is no Undo feature.
> - There is Edit feature in the SERVICES menu accessible from the start screen

*Step 3:*
Select **LIVE VIDEO** to store the patient in to database and to start taking images for this patient. Alternatively **IMAGE FILE IMPORT (or optional LIVE IMAGE)** can be selected by using the arrow on the right side of LIVE VIDEO button.
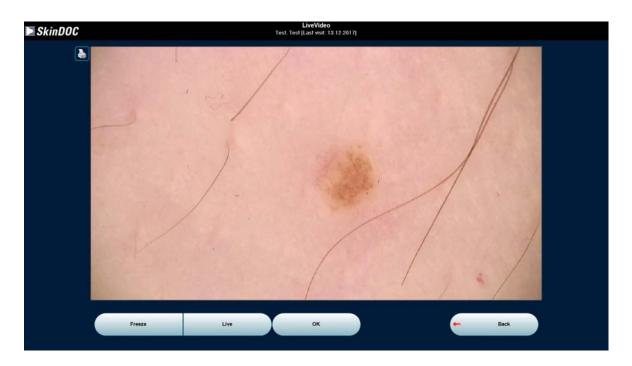
*System enters Live Video (or File Import or Live Image) function where images can be taken and stored to the patient record.*

**After patient record is set up patient details are shown on the top right side of the screen!**

*Step 3.1 (Taking images by using **LIVE VIDEO**):*
On single screen systems software enters Live Video screen. On dual screen system video is shown in the top screen.

Live Video always comes from the SkinDOC System camera and images taken are fix-focus DELM micro images with 30x magnification. SkinDOC software automatically recognizes the recording mode, no further user action is required to determine the image mode.



**SHORTCUTS:**
Shortcuts can be used instead of pressing some buttons for faster handling.
- Press <u>RB</u>: to freeze/unfreeze the image (the cursor has to be inside the live video frame)
- Press <u>Space</u>: to freeze/unfreeze the image
- Press <u>Esc</u>: to return to the Main Menu
- Press <u>F10</u>: to return to the Main Menu
- Press <u>(↑↓)</u>: to zoom in/out with the macro camera

Proceed to Step 4.

*Step 3.2 (Taking images by using **IMAGE FILE IMPORT**):*
Alternatively to Live Video functions all SkinDOC systems offer an additional option of image acquire over FILE IMPORT. This function is identical in all SkinDOC systems.

After selecting **IMAGE FILE IMPORT** function following screen is displayed:

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Simply select the file location of the image to be imported and confirm if image is micro image or macro image by clicking on IMPORT AS MICRO or IMPORT AS MACRO buttons. Proceed to *Step 4.*

Current path location is shown in the path bar on the top of the screen and selected image preview is displayed in the big frame. Preview of additional images is displayed in thumbnails on the right side. Arrow buttons on the top are used for the standard Windows Explorer navigation. The button with arrow refreshes the Explorer tree.

The functionality of last 5 icons (from left to right) is following: "Show images from the same folder as thumbnails", "Display only detailed list of the images from the same folder", "Image file properties (properties of selected image)", "Display image in external associated viewer" and "Open containing folder in Windows Explorer (in external window)".
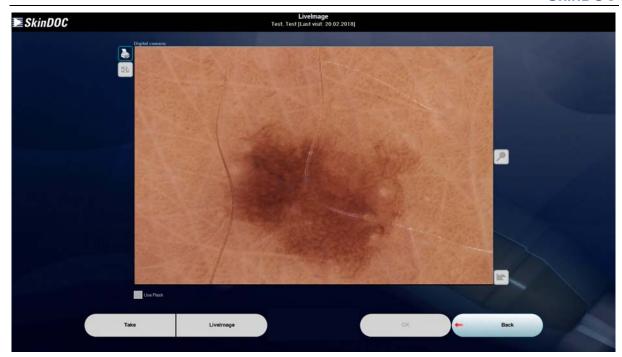
Proceed to Step 4.


*Step 3.3 (Taking images by using **OPTIONAL LIVE IMAGE** feature):*
This function utilizes Canon EOS digital still camera to acquire the High Resolution Macro Images within SkinDOC System. SkinDOC performs live and online fast screening of patients by using this feature.

Switch Canon digital still camera ON and set to "play" position. Take care that there is enough battery power in the camera and connect the camera with the USB system cable to the SkinDOC system. Start **Live Image** function.

Low quality preview is shown on the screen. This preview should mainly be used for positioning, such as locating the mole in the centre of the image. In order to obtain high resolution image press button **TAKE o**r **press release button on the camera**. If image is blurry or not satisfying simply return back to live imaging by pressing **LIVE IMAGE** button.

If image does not appear to be correct refresh camera by using refresh button ……………….

To zoom camera in and out use zoom buttons……………………..………………………….....

To save the frozen image into to the database, select **OK** button. Proceed to Step 4.

To print the frozen image (if printer available) select **PRINT** button

Proceed to Step 4.

To return to the main menu select **CANCEL** or press **F10**.

*Step 4 (Saving image):*
After image is acquired (either using LIVE VIDEO or FILE IMPORT) it must be localized on the body before it is saved into the patient database. Optional comments and diagnose can be assigned to the image. This is done in **DETAILS** screen as shown on the image below.

SkinDOC systems differ between three basic types of the images: **MACRO, CLOSE-UP** and **MICRO** images.

### (1) Macro Image

*Defining the location*

Specify the location by framing the corresponding body region on the Body Figure. Note that the Body Figure can be viewed from various directions. There are also separate displays of the head, the hands and the feet. To see the different displays use the scroll icons under the Body Figure. As soon as the position is selected, the corresponding location text will automatically appear in the *Location* bar.

**REMEMBER**

- If a wrong position was chosen simply redo. If the Body Figure is scrolled after a location is specified, the location needs to be defined again.

- To alter the pre-defined frame move the cursor into the frame until it changes to a black 4-arrow symbol. Keep the left mouse button pressed to move the whole frame. To change the size of the frame move over the sidelines until a two-arrow symbol appears. Keep the left mouse button pressed and move the mouse to change the width or the height of the frame.

- Additional information can be written in the comments box under the *Location* bar. Move the mouse into the box and press the left mouse button to be able to type in your comments.

- As a standard procedure all images are saved in a lossless compressed mode. This saves time and storage capacity.

**Please note that only image localization is mandatory and required! All other definitions such as diagnose, comment etc can but do not have to be determined!**

Diagnose assignment is same for all three types of image. See *Giving a Diagnosis* below for more details

Select button **SAVE** to save the image. The image is stored into the database and SkinDOC software returns to the live video and the next image of this patient can be taken.

*Giving a diagnosis*

Usually the diagnosis is assigned immediately upon image acquire, but there is also the possibility to enter it later, whenever DETAILS screen is used.

To assign the diagnosis, simply select one of the diagnosis buttons and select one of pre-defined diagnosis by double-clicking on it, and then confirm it with SELECT DIAGNOSIS button! Or simply start to type your diagnosis into the diagnose text field: "MY DIAGNOSIS". Multiple diagnosis can be entered into this box.

There are five Diagnosis buttons: Diagnosis (contains all given diagnosis), Favorites (list of your favorite diagnosis), Recent (list of all recent given diagnosis), All (list of all diagnosis) and All Skin module (external module with the list of all diagnosis including image examples) For more information about All Skin module see Chapter *ALL SKIN.*

To pre-define and customize the list of diagnosis use "Diagnosis Configuration" option located in ADMINISTRATION.

**SHORTCUTS:**
- Press <u>RB</u>: to get to the next display of the Body Figure (the cursor must be inside the Body Figure)
- <u>Keep RB or LB Pressed on the scrollbar</u>: all displays will be scrolled through automatically until the button is released
- Press <u>F1-F8:</u> to enter the Customized diagnoses (see "Administration → *Diagnoses Configuration*")

If there is intention to send image over email check the e-m@il checkbox. This allows user to search later easily for images to be sent.

Additionally any type of document can be attached to the image record. Simply click the button ATTACH DOCUMENTS" and file import screen will open. Document is stored as an addition to the image in the database. If original of the document should be deleted on the previous location after import simply select "Delete original documents after import"

For easy determination of a lesion size a millimeter grid can be displayed by selecting the grid sign next to the image. The size information can eventually be entered in the comments box. The grid will not be saved with the image.

Full screen view of the image can be recalled by clicking on to image thumbnail on the top left corner of the DETAILS screen.

In the Full Screen view image can be seen in the full screen size, can be zoomed in and out, scrolled in all directions as well as seen in a real size view (pixel per pixel view), by simply selecting appropriate icon on the right side of the image.

### (2) Close-Up Image

A close-up image is an additional macro image, which covers only a part of a pre-taken macro overview image.
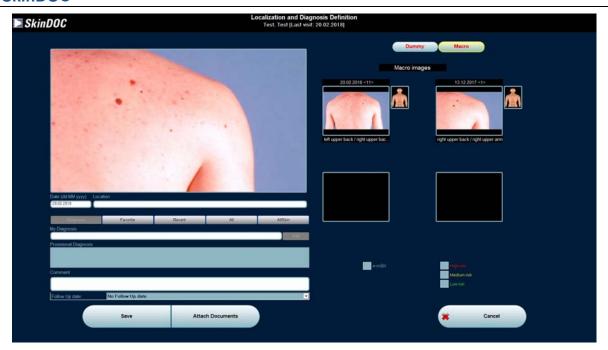
To take a close-up image, repeat the same procedure (*Step 3*) as for the macro image. To turn on the close-up light press the black button in the left upper corner on the backside of the macro-camera.

*Defining the location*

**IMPORTANT**
- A close-up image needs to be defined on the corresponding macro image and not on the Dummy view, the software recognizes automatically that this image is an close-up image and mathematically evaluates the localization on the Dummy.
- Select **MACRO** and choose the appropriate macro overview image. If there are more than four macro images available, use the scrollbar (+/-) to see the following / previous ones. Open the corresponding macro image by selecting it. Mark the appropriate region on the macro image and select **OK** to return to the New Diagnosis window.

## SkinDOC



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**REMEMBER**

- If a wrong position was chosen simply redo. If the Body Figure is scrolled after a location is specified, the location needs to be defined again.
- To alter the pre-defined frame move the cursor into the frame until it changes to a black 4-arrow symbol. Keep the left mouse button pressed to move the whole frame. To change the size of the frame move over the sidelines until a two-arrow symbol appears. Keep the left mouse button pressed and move the mouse to change the width or the height of the frame.
- Additional information can be written in the comments box under the *Location* bar. Move the mouse into the box and press the left mouse button to be able to type in your comments.
- As a standard procedure all images are saved in a lossless compressed mode. This saves time and storage capacity.

---

**Please note that only image localization is mandatory and required! All other definitions such as diagnose, comment etc can but do not have to be determined!**

Diagnose assignment is same for all three types of image. See *Giving a Diagnosis* above for more details. All other functions such as Full Screen view and Attach Documents are identical to those assigned to the macro image.

Select button **SAVE** to save the image. The image is stored into the database and SkinDOC software returns to the live video and the next image of this patient can be taken.

---

**SHORTCUTS:**
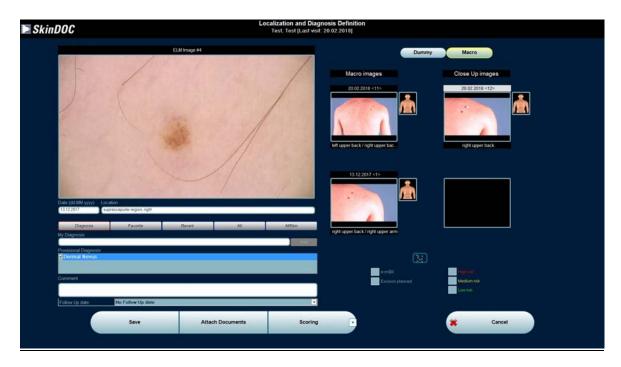
- Press RB: to get to the next display of the Body Figure (the cursor must be inside the Body Figure)
- Keep RB or LB Pressed on the scrollbar: all displays will be scrolled through automatically until the button is released
- Press F1-F8: to enter the Customized diagnoses (see "Administration → *Diagnoses Configuration*")

---

### (3) ELM Image

To take an ELM image follow the image taking guidelines in *Step 3* using SkinDOC camera.

*Defining the location on the Body Figure*



Locations of the micro images are stored differently from locations of macro and close-up images. While macro and close-up images are marked and localized as an area on the body, micro images are determined and localized as a single spot on the body.

In order to localize micro image specify the location by marking the corresponding position of the body where the lesion is situated. Note that the Body Figure can be viewed from various directions. There are also separate displays of the head, the hands and the feet. To see the different displays use the scrollbar under the Body Figure

As soon as the position is selected, the corresponding location text will automatically appear in the *Location* bar.

**REMEMBER**

- If a wrong position was chosen simply redo. If the Body Figure is scrolled after a location is specified, the location needs to be defined again.
- Smaller gray crosses mark other lesions that were localized on the same Body Figure display. This allows localizing the lesion in relation to other lesions on the body.

*Defining the location on a Macro or Close-Up Image*

If a corresponding macro or close-up image was taken earlier, the location of the lesion can, in addition to the localization on the Body Figure, also be defined on that image. Select **MACRO** button in the top left corner of the DETAILS screen to define the lesion on a macro or close up image.

The macro images are displayed in the left column, the close-up images in the right column, as showed on the image above.

If there are more than two images available, use the scrollbar underneath the appropriate column to see the next / previous images. Choose the appropriate macro or close-up image and select it. Mark the corresponding lesion on the macro or close-up image and select **OK** to return to the New Diagnosis window.

In order to make sure that the position is set on the correct macro or close-up image, the other images linked to the selected image are displayed to the right. If a macro image is selected the related close-up images defined on the macro overview image are listed. In the large view of the macro image the frames showing the positions of the close-ups as well as their image numbers are displayed. To localize the ELM on a better-suited close-up image select the appropriate close-up on the right and mark the ELM position on it.

If a close-up image is selected the related macro overview image and other close-ups also located on that macro image are listed. In the large view of the macro image the frames showing the positions of the close-ups as well as their image numbers are displayed. To localize the ELM on a better-suited close-up image or directly on the macro overview select the appropriate image on the right and mark the ELM position on it.

**REMEMBER**
- If a wrong position was chosen simply redo.
- Gray circles mark other lesions that were localized on the same macro or close-up image.

*Defining the location on a Body Mapping Image*

If a correlating body mapping session was taken earlier, the location of the lesion can, in addition to the localization on the Body Figure, also be defined on that body mapping image. Select **BODYMAP** to define the lesion on a macro image taken in the Body Mapping function (this button is only visible if there is a Bodymapping series existing from the selected patient).

Use the scrollbar to see the next / previous body mapping images. Choose the appropriate body-mapping image and select it. Mark the corresponding lesion on the body mapping image and select **OK** to return to the New Diagnosis window.

**REMEMBER**
- If a wrong position was chosen simply redo.
- If you want to do scoring use scoring button in the middle of the bottom bar

**Please note that only image localization is mandatory and required! All other definitions such as diagnose, comment etc can but do not have to be determined!**

Diagnose assignment is same for all three types of image. See *Giving a Diagnosis* above for more details. All other functions such as full Screen view and Attach Documents are identical to those assigned to the macro image.

Additionally two more functions can be applied to micro images.

Field "EXCISION PLANNED" marks that this image should be cut out in the near future. It allows user to search later easily for images to be cut out.

Select button **SAVE** to save the image. The image is stored into the database and SkinDOC software returns to the live video and the next image of this patient can be taken.

**REMEMBER**
- If the ELM image has not been defined on the Body Figure and/or on a macro/close-up/body mapping image the corresponding button is highlighted in red. After the definition the button turns white.
- The examination date is preset.
- Additional information can be written in the comments box under the *Location* bar. Move the mouse into the box and press the left mouse button to be able to type in your comments.
- As a standard procedure all images are saved in a lossless compressed mode. This saves time and storage capacity.
- To evaluate the lesion interactively according to the ABCD method or the 7-Point rule select **SCORING**.

*Step 5 (Finalizing the patient)*
After all images are recorded exit to the Patient Menu Screen either by using F10 or Escape button. In the patient menu screen further actions (described later in this manual) can be performed.

If no other actions with this patient are planned, simply exit to the main menu by using **F10**.

## 7.5. Select Existing (Patient)

From second patient visit on option Select Existing (Patient) my be used. No matter if patient record has images or not, if the patient is already in the database all patient-related functions can be performed from Patient Menu screen.

Existing Patient can be selected either directly from the Main Menu or over advanced search functions by clicking the button **SELECT EXISTING**

### (1) Fast patient search directly from the Main Menu

Any patient selection can be done directly from the Main Menu by using the search fields.



Input the patient data in one of the search fields and all matching patients will show up in the list automatically. If the patient is highlighted pop-up balloon with additional data will be shown. If there is face image acquired, this image will be shown right next to search fields.

Select the Patient and choose one of following options:

- Select Patient to enter Patient Menu screen
  (Further actions will be selected within this screen)
- Follow Up / Monitoring
  (Follow Up screen is shown directly skipping Patient Menu screen)

The bar at the top of the screen indicates the selected and active patient. All functions entered will be saved to this patient's record. The date of the last visit of this patient is also displayed.

**REMEMBER**
- Search results are automatically updated and shown during input
- If the patient has face image it will be shown on the screen
- Patient details of selected patient are shown within info balloon

### (2) Advanced Search for a patient

Select button **EXISTING PATIENT** from the Main Menu. **SIMPLE** patient selection screen with following options is displayed:

- Either select the button of the first letter of the patient's Last Name or
- Type in parts of the last name and/or first name and/or insurance number in the corresponding line and select **SEARCH** or

•Clear all input fields and select **SEARCH** to search the complete patient list.



Select the Patient and choose one of following options:

•Select Patient to enter Patient Menu screen.
(Further actions will be selected within this screen)
•Follow Up / Monitoring
(Follow Up screen is shown directly skipping Patient Menu screen)

**SHORTCUTS:**
•Simply move the mouse over the patient name and patient is highlighted!
•Double-click on the patient's name: to select the patient and to enter the Patient Menu screen
•Face image of highlighted patient is shown in the box right next to the patient list (if available)
•Press Esc: to return to the Main Menu
•Press F10: to return to the Main Menu

The bar at the top of the screen indicates the selected and active patient. All functions entered will be saved to this patient's record. The date of the last visit of this patient is also displayed.

## 7.6. Patient Menu Screen

After patient is selected following Patient Menu screen appears.



This is main and central patient switching point that contains all the necessary functions for a full and comprehensive patient management. All important functions can be accessed from this menu.

The bar at the top of the screen indicates the selected and active patient. All functions entered will be saved to this patient's record. The date of the last visit of this patient is also displayed.
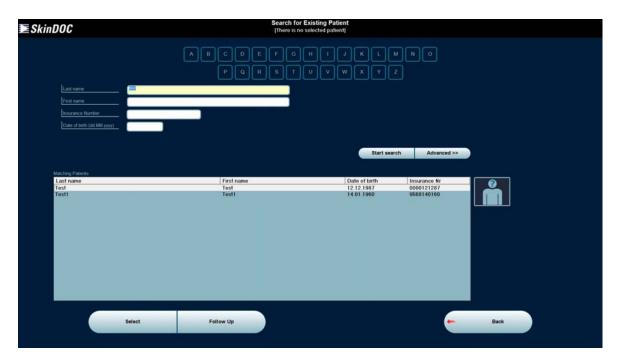
The easy-to-use **icons** have the following functions:

| | |
|---|---|
| **LiveVideo/LiveImage/ Image file Import** | Function for adding images of new moles or macros to the existing patient |
| **Total Body Mapping** | Total body mapping function for complete body photography, using Canon EOS digital still camera |
| **Follow Up** | All follow up examinations of a patient (follow up of lesions, follow-up macro and close-up images as well as new images of new lesions and new macros and close-ups). |
| **Scoring** | Interactive evaluation of the lesion according to the ABCD method or the 7-Point Rule |
| **e-m@il** | Transmission of images and data files via Email or HTTP |
| **Reports** | Printouts for patient or for documentation |

## 7.6.1. Follow Up / Monitoring

**This is essential function of any SkinDOC system and is used for all follow-up visits of a patient.**

## 7.6.1.1. Standard Follow Up / Monitoring

That includes follow-up images of already examined ELM, close-up or macro images as well as new ELM, close-up and macro images that were not taken at the first visit. Furthermore Trending and Clinical Audit functions for complete and detailed evaluation of the development of one lesion over time are accessible thru Follow-Up option.

In the Follow-Up mode it is not only possible to compare two stored images but also to compare any stored image with an actual live video image.

> **IMPORTANT**
> • Always take new images of already examined lesions or body regions within the *Follow-Up* function. Only that gives the possibility to view all images of a lesion or a body region, taken over a period of time, in the picture gallery (see *"History"*).
> • Follow-Up body mapping sessions (consisting of 33 or 10 images) have to be made within the *"Total Bodymap"* function.

### *Step 1 (Image selection for Follow-Up):*

Select the button **FOLLOW UP** in the Patient Menu. Depending on the individual setting the software moves on to the **3x3**, the **Macro and Close-Up** images, or the **Dummy** display of the patient's sheet.

| **3×3** Display | **Macro** and **Close-Up** Display | **Dummy** Display |



> **IMPORTANT**
> • All image of the patient are visible only in 3x3 mode
> • Only micro or macro and close-up images are visible in dummy and macro/close-up modes respectively
> • Previous recordings (old pre follow-up images) are visible only in fourth column

Within the Follow Up screen it is very easy to switch fast between these three views. This is simply done by clicking on appropriate button located in the top right corner.

**3×3 Display** ........................................................................................................................... `3x3`

In the 3×3 Display, the macro images are displayed in the left column, the close-up images in the center column and the ELM images in the right column. Each row shows a specific link between a macro image and/or a close-up image and/or an ELM image. The images are sorted descending by the examination date of the ELM images. Use the arrows at the right bottom and the left top to see the next / previous images.

In the fourth column history of selected image is displayed. If there are more than three recordings in the history scrolling arrows are visible.

> **REMEMBER**
> • The green line shows where the ELM image is located on the corresponding macro or close-up image, respectively where the close-up image is located on the corresponding macro image.
> • If the ELM image was not defined on a macro image the corresponding Body Figure (Dummy) position is displayed.
> • Above the columns the total numbers of the different Macro, Close-Up and ELM images in the patient's file are displayed.
> • If more information about an image is needed or a correction has to be made, select the image and select **DETAILS**.
> • The first number in brackets on top of each image indicates the picture number; the second how many follow-ups of this image have already been taken.
> • The images of each image type (macro, close-up or ELM) are numbered ascending within the patient file. The numbers are however not fixed, but vary depending on the chosen sorting criterion.

**Additional features**

- (I) Finding and Selecting specific close-ups and ELM images
- (II) Sorting
- (III) Filtering specific images


**(I) Finding and Selecting specific close-up and ELM images**

To select a specific close-up or ELM image move the cursor over the corresponding macro or close-up image and press <u>RB</u>.

> ⚠️ **IMPORTANT**
> **Selecting specific close-up and ELM images**
> To select a specific close-up or ELM image move the cursor over the corresponding macro or close-up image and press <u>RB</u>

*Selecting a specific ELM image*
If more than one ELM image was defined on the same macro or close-up image it might be useful to enlarge the specific image and directly select the lesion that should be followed-up.

In case close-up images as well as ELM images were defined on the same macro overview, select the DELM location symbol to see all positions of ELM images on the enlarged macro image. Select the specific lesion. The selected image appears green. Select **OK** to return. The selected image is highlighted.

*Selecting a specific close-up image*
If more than one close-up image was defined on the same macro image it might be useful to enlarge the specific image and directly select the close-up image that should be followed-up.

In case close-up images as well as ELM images were defined on the same macro overview, select the close-up location symbol to see all positions of close-up images. Select the specific close-up. The selected image appears in color on the black and white macro. Select **OK** to return. The selected image is highlighted.


**(II) Sorting**

It is possible to sort the images descending by the macro image examination date, the close-up image examination date or the ELM image examination date (default setting).

Select **Macro**, **Close-Up**, or **ELM** buttons located on the top to see all images sorted from the last image taken to the first image taken according to the examination dates in that column. The respective button above the columns is highlighted.


**(III) Filtering specific images**

In the case of patient files with many images it can be helpful to have only images of a specific category displayed to find a specific image more easily. The following categories can be selected:

ALL    ← **All** images (default setting)

LV    ← Images taken at **L**ast **V**isit

PD    ← Images with **P**ending **D**iagnoses

R    ← Lesions at **R**isk (not available in the "Macro and Close-Up images" display)

PE    ← **P**lanned **E**xcisions (not available in the "Macro and Close-Up images" display)

T    ← Images selected for **T**eleconsulting per e-m@il

TBM    ← Total BodyMap images

**Macro and Close-Up images Display** ...............................................................................  `M+C`

In the Macro and Close-Up images display, only the macro and close-up images of this patient are shown. The macro images are framed in white color, the close-up images in green. The latest macro is displayed on the left top corner. The other macros follow to the right in descending order according to their image number. If close-ups are defined on a macro overview image they are shown right after the corresponding macro. Use the arrows at the right bottom and the left top to see the next / previous images.

**REMEMBER**

• The green frames show where the close-up images are located on the corresponding macro image.

• On top of the sheet the total numbers of the different Macro and Close-Up images in the patient's file are displayed.

• If more information about an image is needed or a correction has to be made, select the image and select **DETAILS**.

• The first number in brackets on top of each image indicates the picture number; the second how many follow-ups of this image have already been taken.

• The images of each image type (macro or close-up) are numbered ascending within the patient file. The numbers of macro images are displayed in white, the numbers of the close-ups in green.

**Additional features**

• (I) Selecting a specific close-up image
• (II) Filtering specific images

**(I) Selecting a specific close-up image**

If more than one close-up image was defined on the same macro image it might be useful to enlarge the specific image and directly select the close-up image that should be followed-up.

To select a specific close-up move the cursor over the corresponding macro overview image and press <u>RB</u> to enlarge it. Select the specific close-up. The selected image appears in color on the black and white macro. Select **OK** to return. The selected image is highlighted.

**(II) Filtering specific images**

In the case of patient files with many images it can be helpful to have only images of a specific category displayed to find a specific image more easily. See above for the functions of the various filters.

**Dummy (Body Figure) Display** ....................................................................................  `D`

In the Dummy Display, only the locations of the ELM images of this patient are displayed either by crosses or by circles if they correspond with a macro image. The selected lesion is indicated by the dark blue cross or circle and is displayed in the right upper corner. To change to another Body Figure display select the appropriate small view on the side and it is enlarged in the center.

**REMEMBER**

• Lesions can only be selected in the enlarged view in the center.

• The colors of the crosses and circles depend on the diagnosis given. White ones indicate benign lesions; red ones lesions at risk, yellow ones indicate a Diagnosis Pending and black ones mark excised lesions.

• Above the body figure displays the total number of ELM images in the patient's file is shown. Within each Dummy Display a number shows how many lesions are localized on this display.

• If more information about an image is needed or a correction has to be made, Select the image and Select **DETAILS**.

• The first number in brackets on top of the selected image indicates the picture number; the second how many follow-ups of this image have already been taken.

**Additional features**

- (I) Filtering specific ELM images

**(I) Filtering specific ELM images**

In the case of patient files with many images it can be helpful to have only images of a specific category displayed to find a specific image more easily. See above for the functions of the various filters.

*Step 2 (Follow Up With Live Video):*
Find and select the image to follow-up by using instructions from above. Select **FOLLOW UP** button to proceed.

> **IMPORTANT**
> - Every image of the patient is controlled (within follow-up) with the same camera as originally used
> - Still, every image can still be controlled by using any camera (previous selection needed)

If follow-up is to be done with different camera than originally first select appropriate follow-up mode by clicking arrow on the right side of Follow-Up button (located on the left bottom corner of Follow-Up screen) and then select Live Video or Image File Import.

Optionally LIVE IMAGE is available as well.
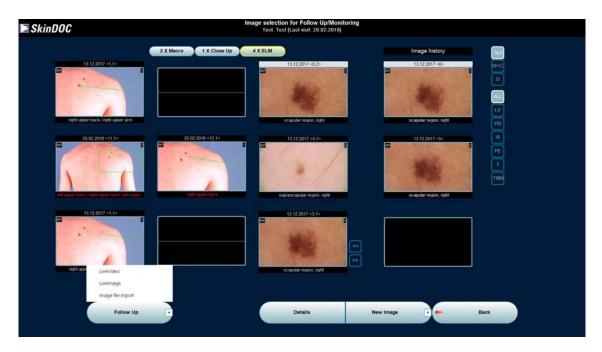


> **REMEMBER**
> - Lesions are always automatically followed-up using same image source as originally recorded
> - Optionally "Direct Import from digital camera" can be selected if available and enabled within Administration screen.
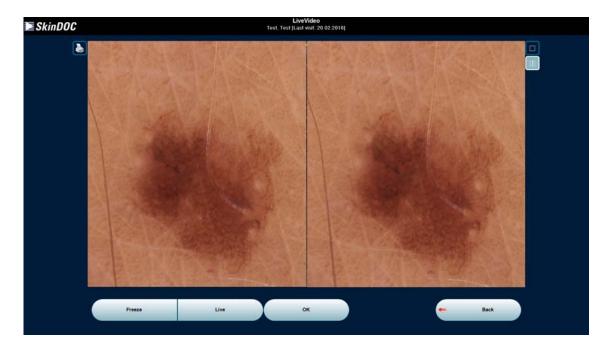
Automatically the latest image is compared to live video image. To compare live video image to one of previous recordings of the same image (one of pre follow-up images) simply select this recording in the fourth column. Three latest recordings are visible in the Follow-Up screen, more images (if available) can be accessed by clicking on the arrow icons.

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Follow-Up selection screen (with selection options) is shown on the following image:



After clicking Follow-Up button Follow-Up Live Video screen appears.



> **IMPORTANT**
> - Follow up of macro images can not be done with ELM micro camera
> - Follow up of micro images can not be done with Canon EOS camera

When Live Video is used, there are two different ways to take a follow-up:

- Full Screen mode
- Compare mode for side-by-side comparison of a stored image with the actual live video (default setting)

> **IMPORTANT**
> - When doing Follow UP character of each image (the way how image is obtained) is described within the image thumbnail in the top left corner of the image. **SRe** (SkinDOC ELM micro camera – micro image) **IMP** (imported over file import) and **SDm** (SkinDOC camera - macro image)
> - **Magnification** of the SkinDOC camera micro image is 30x

> **REMEMBER**
> - The software can be configured in that way that it does not automatically proceed to the Compare mode (as per default) but directly either to the Full Screen or Overlay mode

> **IMPORTANT**
> - If Image Import is used old image is scaled to fit the screen and displayed next to image selected for import.
> - If SkinDOC camera is used for stored image, follow up can ONLY be done by using the same magnification!

**Full Screen mode**......................................................................................................................

To get into the Full Screen Mode select the corresponding symbol to the right of the live video frame. To freeze the live video select **FREEZE**. Select **OK** to proceed.

**Compare mode (default)** .............................................................................................................

To get into the Compare Mode select the corresponding symbol to the right of the live video frame. On the left picture-half the stored image is shown. To freeze the live video select **FREEZE**. Select **OK** to proceed.

> **REMEMBER**
> - To move the image on the left take the cursor into the image until it changes to a big arrow symbol and press the mouse button. The image will be moved into the direction displayed by the arrow.

*Step 3 (Saving the image):*
After clicking **OK** button DETAILS screen is shown.

To save time in the follow up examinations the mouse pointer is positioned automatically on the next logical step.

Select either **OK** to save the image.

The program returns to the Image Listing window and the next image is automatically selected. Redo *Steps 2* to *4* to follow up this image.

> **REMEMBER**
> - The localization is already pre-set. Give a new diagnosis if necessary. For a more detailed description see *Giving a diagnose* in New Patient.
> - If the box *Excision planned* was activated at the last examination it will be automatically activated in the follow up examination. This ensures a continuous history of a lesion.
> - Images that have been followed-up are labeled by a dark red localization text underneath the image.

## 7.6.1.2. Guided Follow Up / Monitoring

The faster option to do follow-up (for experienced users) is called **Guided Follow-Up**.

For following up all images of a specific type (ELM, macro or close-up) this guided follow-up procedure is available. Select an ELM, macro or close-up image in the patient's sheet and select **DETAILS**. Starting by selecting latest image is recommended because of numeration of images within guided follow-up.



Select **FOLLOW UP** to start the examination procedure. Take the follow up image as described in previous section (Standard Follow-Up). By clicking the right mouse button the live video image gets frozen and clicking on the left mouse button afterwards brings you to the next step in the examination routine (Mouse has to be within live video to enable these **LB** and **RB** shortcuts).

To save time in the examination the mouse pointer is positioned automatically on the next logical step, which eliminates the time-consuming mouse movements. The steps in the examination just have to beconfirmed by clicking the left mouse button.

After entering back the DETAILS screen new image is ready to be saved.

Select **SAVE** and the next image to follow up is shown and mouse moves automatically to FollowUp button. Repeat the procedure until the last image is followed up and the software returns to the patient's sheet.

**REMEMBER**
- To skip an image for follow-up select **SKIP** button located right from the image thumbnail in the top left corner of the screen.
- It is possible to manually scroll between the images by using arrow buttons located right from the image thumbnail in the top left corner of the screen
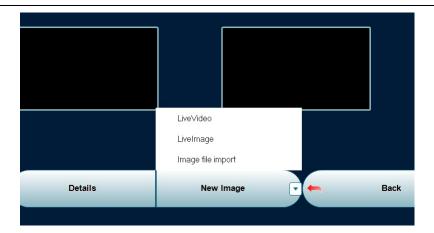
## 7.6.1.3 New image within Follow Up

**New Image**
In order not having to switch between functions it is possible to record new images during a follow up visit of a patient directly within the Follow Up function. In such a case, select **NEW IMAGE** button in the patient's sheet to get to the live video mode.

Click on the **arrow** located on the right side of **NEW IMAGE** button to select between LIVE VIDEO and IMAGE FILE IMPORT, as well as optional "LIVE IMAGE" if available

Take the new macro, close-up and/or ELM image as described in New Patient section in the beginning of this manual.
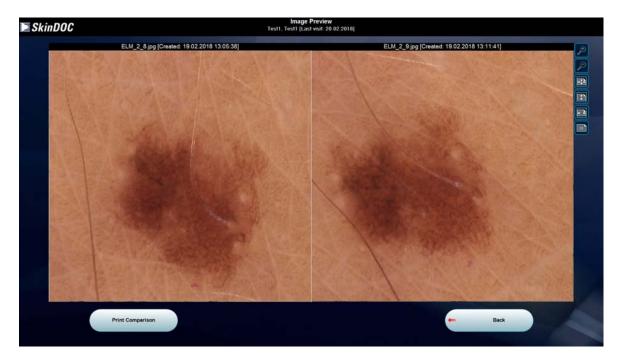
> ⚠️ **IMPORTANT**
> • Always take "new" images of already existing images of lesions or body regions in the Follow up live video mode as described above in (1) Follow Up.

Use the **CANCEL** button to return to the Patient Main Menu or simply press **F10**.

## 7.6.1.4 Compare Saved Images

In order to compare two already saved images select two recordings in the fourth (history) column in Follow-Uo selection screen. As soon as two images are selected button **COMPARE** appears instead of button DETAILS in the middle of the bottom bar. By clicking this button following screen appears:



> ⚠️ **IMPORTANT**
> • In order to activate COMPARE button within Follow-Up selection screen <u>TWO</u> recordings of the same image must be selected in the fourth (history) column.

> **REMEMBER**
> - Older image is always shown on the lest side of the screen
> - It is possible to zoom, scroll and move images by using appropriate buttons on the top right side of the screen
> - Use zoom buttons on the top right corner to zoom images in and out
> - Use Button 1:1 to display the images in their NATIVE resolution pixel per pixel
> - Use Full Size and Scaled Size buttons on the top right side to display images side by side respectively

Use Print Comparison Button to print the image comparison. Different as within Report function in this function images are printed two per page.
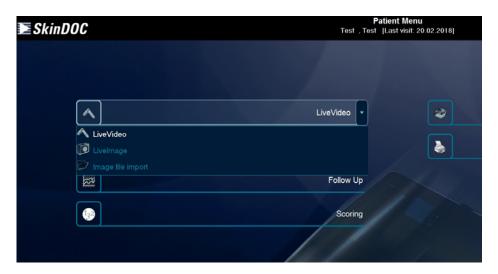
Select Back Button to go back to Follow-Up screen or F10 to return to Main Menu.

## 7.7. New image

**New Image** can also be obtained directly from the Patient Main menu. When entering Patient Main menu (right after patient selection) **Live Video** is active and shown inside top left icon on the screen.

To obtain the new image by using Live Video function (using SkinDOC video camera) click on **LIVE VIDEO** button.

To obtain new image by using alternative method click on the **arrow** located on the right side of the icon and select between **LIVE VIDEO** and **IMAGE FILE IMPORT**, or optional **LIVE IMAGE** option



Take the new macro, close-up and/or ELM image as described in the New Patient section in the beginning of this manual.

## 7.8. Total Body Mapping (Macro)

This feature is especially useful for clinical examinations of high-risk patients such as those with dysplastic nevi syndrome. It consists of a series of images of pre-defined body positions following a standardized capture protocol. Either 33 (standard) or 10 clinical images can be compared over time and can be stored on a disk for patients' self-examinations.

If the SkinDOC is used for the documentation of cosmetic procedures, the default 33 images of the Body Map is usually replaced by a 10 images series that was developed merely for this purpose.
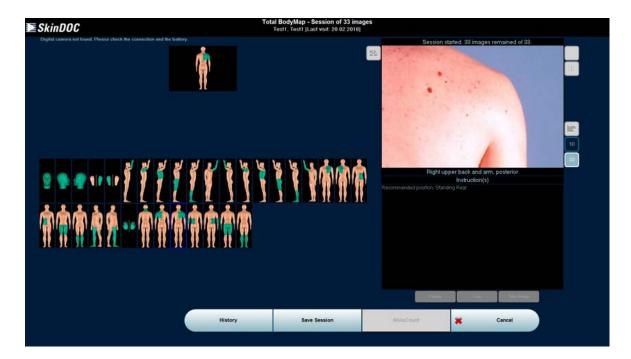
Select **Total Body Mapping** button within Patient Menu screen (second left from the top). Simply click this icon to enter Total Body Mapping feature .

> **IMPORTANT**
> - This Feature is available ONLY if OPTIONAL **LIVE IMAGE** function with Canon EOS camera is activated.

Following screen appears:
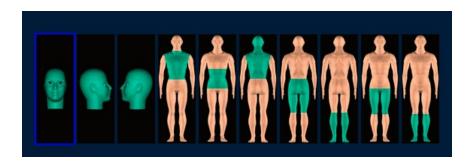


BodyMap session can now start.

First select maximum number of images for the session. Sessions of 10 and 33 are

available. Simply do this by clicking one of following icons ........................................................

Alternatively, customized Body Mapping session may be defined in Administration Menu.

If session of 33 is selected 33 dummy locations are shown within BodyMap screen as on the image above. If session of 10 images is selected BodyMap locations appear as displayed on the screen below. In both cases first image (head–front view) is automatically selected and becomes a blue frame.
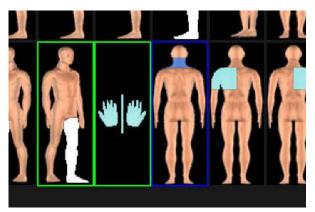


Start taking images by using Canon EOS digital camera as described in the section *New Image* at the beginning of this manual. Freeze with right mouse button (when mouse pointer is inside live video screen) and confirm with left mouse button or by clicking on **TAKE IMAGE** button. After image is taken (and stored in the database) its' dummy location becomes a green frame and next location is ready for screening (becomes a blue frame). Keep taking images until session is over and all 33 images are stored. Confirm the session with **SAVE SESSION** button. Otherwise BodyMap session will not be saved. BodyMap session can be saved at any moment and all images taken up to this moment will be stored in the database.

If full BodyMap session is not required, also **Part-Session** can be taken. Simply click with the mouse on any BodyMap location dummy and this location will become active (get a blue frame). After taking the image simply select next location as desired. After all desired locations are covered simply confirm the session by clicking **SAVE SESSION** button.

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> **IMPORTANT**
> - Current location (also shown in the top left corner of the BodyMap screen) has blue frame
> - Saved location has green frame
> - Location with no image has no colored frame



Frames:

Images taken (green frame)
Active Image (blue frame)
Image not taken (no colored frame)

If the BodyMap stand is used, recommended patient actions (sitting, standing etc) are displayed in the black frame underneath the image.

The Colors on the Dummy correspond to the color coding on the Total Body Mapping Stand (to be purchased separately)

When taking a follow-up BodyMap session there are two options:

-    Live Video modus (default setting)

-    Compare modus for a side-by-side comparison of a previous BodyMap image with the actual live video

**History**

With this function the images of all body mapping sessions of a specific patient can be viewed in the standard 3x3 screen.

To enter BodyMap History select **HISTORY** button located on the left side of the bottom bar.

Full BodyMap session is displayed in the common 3x3 screen. Fourth column is used to display history of the image. Select any image and click **DETAILS** to see details of this image.

> **REMEMBER**
> - The Body Mapping images can also be viewed and compared in the standard 3x3 screens by clicking TBM button

## 7.9. e-m@il

The term **DermaNET** was originally used for the teleconsulting offer from the University Clinic of Dermatology, Vienna. In the meantime, DermaNET has become a worldwide registered trademark and stands for the teleconsulting, telediscussion and telediagnostic options.

SkinDOC uses simplified e-m@il functionality as known from MoleMax DermaNET feature.

The integrated e-m@il option is in principle the sending activity of the SkinDOC System.

Images marked to be sent to another user (SkindDOC, DermDOC or MoleMax user or any email recipient) per e-mail can be found in the search menu within Patient administration screen (See chapter *Administration* in this manual to learn how to use this function).

Prior to using e-m@il option correct e-m@il settings must be done in the "e-m@il". Section of Administration. (See chapter *Administration* in this manual to learn how to set up e-m@il server setting and address book).

The SkinDOC e-m@il offers you the possibility to send your images to any email address in the world.

> **IMPORTANT**
> To be able to use this option you need to have
> • Access to the Internet,
> • The email address of the recipient(s) in your Address Book
> • The e-m@il set up properly on your system
> • To send the images that were specified in the DETAILS screen (prior to saving) for obtaining a second opinion use the option "Administration / Patient Menu / Images to send".

*Step 1:*
Select **e-m@il** button in the Patient Main menu (top right icon in the menu). Standard 3x3 screen is displayed.

*Step 2:*
Select the images that should be transmitted and select **SEND E-MAIL**. Multiple images can be selected.
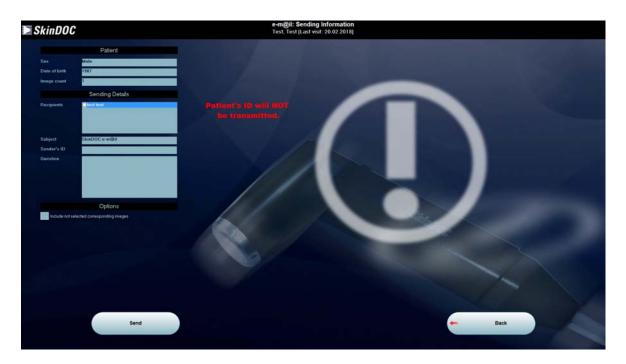
> **REMEMBER**
> • Only the sex and the date of birth of the patient are transmitted. To easily find the images again for discussion the Image IDs (but not Patient ID data) are also transferred.
> • To send the corresponding macro, close-up and/or ELM images check the box *Include not selected corresponding images*.

*Step 3:*
Select one or more recipients from the list of available recipients in the screen shown below.



Insert your question to the recipient or any type of the comment into the question text box. If necessary change the subject of the message. Your e-mail address (as preset in e-m@il settings) will be shown in Sender ID field.

*Step 4:*
Select **SEND** and the Communication screen will open.



Simply click **SEND IMAGE(S)** button and image transfer procedure will start. Wait until the transfer has been finished and the message inside the screen confirms image has been sent.

*Step 5:*
Click **CLOSE** button to return back to previous screen. Press F10 to return back to Main menu.

## 7.10. Reports

This function is used to print a detailed report with images enclosed. The information that is given can be chosen individually for each report.

> **IMPORTANT**
> • PRINT function is also available on diverse locations within SkinDOC software, whenever PRINT button is present.

There are several types of reports available. Using Reports Function either Patient Record or two type of Dummy Sheets may be printed or saved as PDF.

To select reporting option click on the **arrow** located on the right side of the REPORTING icon and select the reporting method, as shown on the image below:



PRINT EMPTY DUMMY SHEETS – prints empty dummy sheet on the default printer. This sheet may be used to mark and localize remote images taken (for an example by using digital still camera) away from the site with the SkinDOC device. This way all the necessary data needed to import these images into SkinDOC database may be found on one sheet.

PRINT PATIENT DUMMY SHEET REPORT – prints complete patient record with localizations of all images to one paper sheet. This may be used as a summary of a patient record, as well as template for follow up at a remote site.
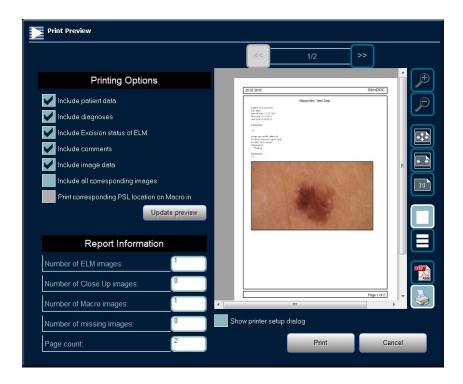
REPORTS – is a function used to print a detailed report with images enclosed or to create a PDF with appropriate information. Prior to printing the selection of images to print is required, as well as additional choice of printed data.

*Step 1:*
Select the icon **REPORTS** from the Patient main menu (fourth icon from the top on the right side)

*Step 2:*
Select the images that should be printed and select **PRINT**. The following screen with PRINT PREVIEW is displayed:



Use icons on the right side of the Print Preview screen to zoom in and out, to center or move print preview within the preview window, or to see it pixel by pixel (in real size).

*Step 4:*
Select Printing Options that include displaying or removing Patient Data, Diagnoses, Excision Status, Comments given, Image data, as well as adding corresponding Macro and Close-Up images.

*Step 4:*
Printer icon on the right side is selected. Document can now be printed on the default printer. If other printer than default should be used click on the check box *"Show printer setup dialog"* and standard windows print dialog will open. Chose any installed printer and confirm with **PRINT** to print the page.

If there is no printer available or installed, Adobe PDF document can be created

> **IMPORTANT**
> - PRINTING of the patient record may be performed with three images per page, or by printing one single image per page.
> - Select corresponding button on the right side of the printing dialog to determine the number of images printed on one page.
> - Printouts with two Follow-Up images per page are available from Follow-Up screen.

*Step 5:*

Press **F10** to exit to main menu.

## 7.11. Scoring

To enter the Scoring screen use **SCORING** button in the Patient Main menu (fourth icon from the top on the left side). Click the button to enter Scoring screen where familiar 3x3 screen is displayed.

There are two different SCORING methods available within SkinDOC software:

- Manual using ABCD method and expertise of the user.
- Manual using 7-Point Rule method and expertise of the user.

**Remember**
- Scoring methods are also available in DETAILS screen prior to saving the image
- Scoring methods are implemented in the SkinDOC software to assist the doctor only. No scoring method can better the doctors' experience!

### 7.11.1 Manual Scoring (Expertizer ABCD and 7-Point Rules)

The Expertizer software was developed in co-operation with the Department of Dermatology at the Medical School Vienna. It is designed to be an interactive learning add-on module to the standard SkinDOC Software.

It draws presently on a pool of more than 700 selected reference images that were recorded with the MoleMax systems at the Vienna Medical School, Department of Dermatology. Those images chosen among 25.000 ELM images should help those users who are not so familiar with the technique of ELM to train them in that method. The reference images are grouped according to their diagnoses and to the ELM criteria they exhibit.

The software package contains state-of-the-art image analyses functions and aids in the classification of lesions according to the clinically approved ABCD-rule and the extended ABCD-E (where E stands for the evolutionary change of the nevus) method. A newer scoring method, the Seven-Point Checklist (also known as Argenziano Score), is also implemented in the Expertizer to give a diagnostic support. But, it cannot be emphasized enough that the SkinDOC-Expertizer is not a provider of simple black-box diagnosis. It is a sophisticated aid to the doctor to improve his diagnostic accuracy - this is the primary purpose and philosophy behind the creation of the SkinDOC-Expertizer.

To strengthen this idea, the Expertizer offers a self-assessment module, where the doctor can test his diagnostic accuracy. By receiving the proper feedback, he can further improve his ability to diagnose pigmented skin lesions. Also full detailed list of different criteria and diagnose examples are available.

Expertizer software is divided into two parts. While Expertizer scoring methods (**ABCD** and **7-Point rule**) are integrated into SkinDOC SCORING menu, **Self Assessment**, **Diagnose examples** and **ELM Criteria examples** are available in SERVICES Menu and are described in "*Services*" Chapter of this manual.
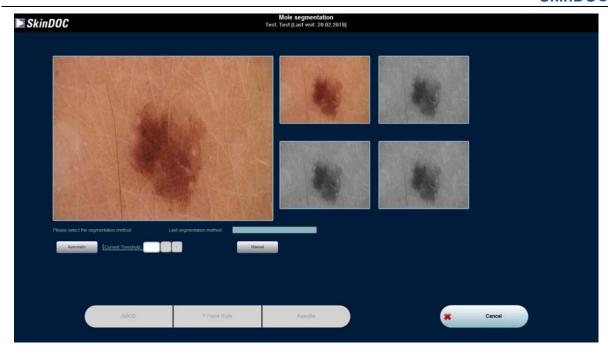
To score the image by using Expertizer **ABCD rule** or
**7 Point Check List** first select the image in the 3x3 screen and click appropriate button in the scoring menu (**ABCD and 7 Point Check List**).

Prior to scoring image must run through segmentation process to obtain mathematical and statistical interpretation of the image.

Segmentation screen will appear as shown on the image below:

There are two methods of segmenting a lesion from the surrounding skin: Automatic or Manual.

*Automatic*
1. To start the automatic segmentation Select **AUTOMATIC**. The automatic segmentation will be executed in four steps: Initializing, Image Enhancement, Feature Extraction and Data Output. It takes approximately 20 seconds for the software to segment the lesion.

2. In case the size of the lesion has not been correctly recognized, the current threshold can be adjusted. Select **+** to increase the threshold if the lesion is larger than the segmentation proposal. Select **–** to decrease the threshold in case the software segmented a larger area than the actual size of the lesion. Keep the button pressed and the threshold value will increase/decrease until the button is released. The threshold has to be adjusted depending on how much the proposed area differs from the actual area of the lesion. The threshold can also be typed in manually.

3. Select **AUTOMATIC** again to get the new segmentation area by the software.

4. Repeat *Steps 2* and *3* until the correct area is segmented.

*Manual*
However, the automatic identification will not always provide the best results, like in some cases with hair strings in the lesion image.

In those cases the segmentation needs to be done manually.

1. Select **MANUAL** and the image will be zoomed to the original size.

2. Circle the lesion as good as possible. To do so click with the left mouse button around the lesion. At least eight connection points have to be specified.

3. Press the right mouse button to close the circle. If not pointed correctly, Select **RESET** to redo.

4. Select **OK** to start the segmentation process. The program returns to the lesion identification window.

For your information the last segmentation method and the value of the current threshold are displayed on the screen.

After having segmented the lesion from the surrounding skin select **RESULTS** to get some mathematical parameters calculated by the software.

Select **SAVE** to save the segmentation results in the file. This fine is called segres.txt and is located in the folder where SkinDOC  software is installed.

Select **PRINT** to print-out the results and/or **CANCEL** to return to the Segmentation screen.

*__Following Results are calculated within this module:__*

*Form Factors*
- Area (area of the lesion, given in mm$^2$)
- Perimeter (the length of the border line of the identified lesion)
- Min. Diameter (minimum diameter of the lesion)
- Max. Diameter (maximum diameter of the lesion)
- Elongation (ratio of the maximum and minimum lesion diameter – perfectly smooth lesions will have an elongation of 1)
- Roughness (measurement of the irregularity of the border of the lesion – perfectly smooth lesions will have a roughness of 1)
- Center of Gravity (x/y) (mathematical lesion center given in pixels counted from 0/0 pixel point in the top left corner)
- DCircle (the diameter of a circle with an equal area)

Form Factor (measurement for the circularity of an object – it is calculated by the following equation: FormFactor = 4 $\mu$ (Area / Perimeter$^2$)

*Gray Value Factors*
- Min./Max. (minimum describes the value of the darkest pixel in the lesion and maximum describes the value of the brightest pixel in the lesion measured on the gray value scale 0 to 255)
- Variance shows the variability of visual information within the lesion.
- Standard Deviation shows the standard deviation of the colors within the lesion.

*Histogram*
The Histogram shows how many pixels in the lesion have certain gray values (y-axis: number of pixels 0-307200max, x-axis: gray value scale 0-255).

After segmentation is performed ABCD rule o 7 Pont Check List can be applied.

## 7.11.1.1. ABCD-Score

The ABCD rule of dermatoscopy is a worldwide accepted classification method based on a semi-quantitative analysis of four criteria: A stands for the Asymmetry of the lesion, B for the Border of the lesion, C for the Color(s) in the lesion and D for Differential Structural Component(s) found in the lesion.

*Step 1:*
Select the symbol **ABCD** in the Segmentation screen. First step / screen of ABCD method is displayed.

During each step of the evaluation process reference images are displayed on the right side of the screen. Those images are already evaluated on the base of the ABCD criteria and are sorted according to their single ABCD values. In the image description box the specific ABCD criteria seen in the lesion are described. The histological proven diagnosis can be found above the image. Select the + or - buttons under the image description to see the next or the previous image.

In each step of the evaluation the software tries to find similar reference images based on the criteria that you selected.

At any time during the ABCD-Method it is possible to select **BACK** to go back one step in the evaluation process.

*Step 2:*
First, evaluate the asymmetrical characteristics of the lesion:
Choose one out of three options:

- Lack of asymmetry in both axes if the lesion is fully symmetrical,
- Asymmetry in one axis if the lesion exhibits an asymmetry in one axis,
- Asymmetry in both axes if the lesion is fully asymmetrical.

Select **OK**.

*Step 3:*
Second, evaluate the number of segments with an abrupt cutoff of pigment pattern: Choose the number of segments (1 to 8) in which the lesion has a clearly defined and sharp border to the surrounding skin. Select **OK**.
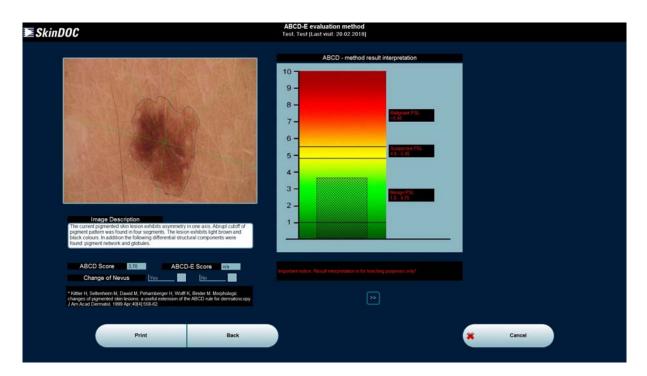
*Step 4:*
Third, evaluate the different colors in the lesion: Select the specific colors of the lesion. There are six options offered. Note that more than one selection can be made. Select **OK**.

*Step 5:*
Last, evaluate the differential structural components in the lesion: Select differential structural components in the lesion. There are five options offered. Note that more than one selection can be made. Select **OK**.

*Step 6:*
The **ABCD SCORE** is displayed by the bar chart at the right side of the screen. The corresponding ABCD total score and the description of the identified ABCD criteria are shown below the lesion.



Next to the ABCD total score, the extended ABCD-E score is displayed. The extension to the traditional ABCD method, E, stands for the evolutionary change of the evaluated lesion. To calculate the extended ABCD –E score answer the question whether the particular lesion has changed or not.

*Step 7:*
Select **CANCEL** to return to the Segmentation screen.

When returning to the SkinDOC main menu the program asks whether or not to save the calculated ABCD-score. Select **YES** to store the ABCD-score in the database. It will be displayed in the comments box when opening the corresponding image and it also can be viewed in scoring field within TRENDING function.

### 7.11.1.2. 7-Point Checklist

The Seven-Point Checklist is the newest approach to the analysis of criteria in pigmented skin lesions. It is based on a blind study of 342 malignant lesions (117 melanomas and 342 malignant lesions). The doctor has to identify major and minor criteria. In criteria with several variables, the variables that had a significant influence in the diagnosis of melanoma were determined. Significant major criteria

receive two points each and significant minor criteria receive one point. A score of three or greater has a 95 percent sensitivity of being a melanoma.

*Step 1:*
Select the symbol **7-Point Check List** in the Segmentation screen. First step / screen of 7 Point Check List is displayed.

During each step of the evaluation process reference images are displayed on the right side of the screen. Those images are already evaluated on the base of the 7 Point criteria and are mainly used to as example for the answer checked on the left side in one of Check Boxes. The histological proven diagnosis can be found above the image. Select the + or - buttons under the image description to see the next or the previous image.

In each step of the evaluation the software tries to find similar reference images based on the criteria that you selected. At any time during the 7 Point Check List it is possible to select **BACK** to go back one step in the evaluation process.

*Step 2:*
Identify the major criterion atypical pigment network.

Only a prominent & irregular network in a lesion receives two points; a network that is absent, regular, irregular or prominent, is, according to the study of Argenziano, not significant in the diagnosis of melanoma. Select **OK**.

*Step 3:*
Identify the major criterion Gray-blue areas (Blue-whitish veil).

Gray-blue areas are defined as irregular, confluent, gray-blue to whitish-blue zones and are not associated with red-blue lacunes or maple leaf pigmentation. Select **OK**.

*Step 4:*
Identify the major criterion atypical vascular pattern.

Atypical vascular patterns are defined as linear, dotted or globular red structures and are irregularly distributed outside of areas of regression. These patterns are associated with other malignant structures. Select **OK**.

*Step 5:*
Identify the minor criterion Streaks (pseudopods/radial streaming).

Radial streaming or streaks are defined as radially and asymmetrically arranged linear bulbous extensions at the edge of the lesion. Only irregular Streaks in a lesion receive one point; streaks that are regular, are, according to the study of Argenziano, not significant in the diagnosis of melanoma. Select **OK**.

*Step 6:*
Identify the minor criterion Irregular pigmentation/blotches.

Blotches appear as brown, gray or black areas of diffuse pigmentation with irregular shape or distribution and abrupt ending. Select **OK**.

*Step 7:*
Identify the minor criterion Dots and globules.

Irregular dots and globules appear as black, brown, or blue round structures irregularly distributed within the lesion. Only irregular Dots and globules in a lesion receive one point; Dots and globules that are regular, are, according to the study of Argenziano, not significant in the diagnosis of melanoma. Select **OK**.
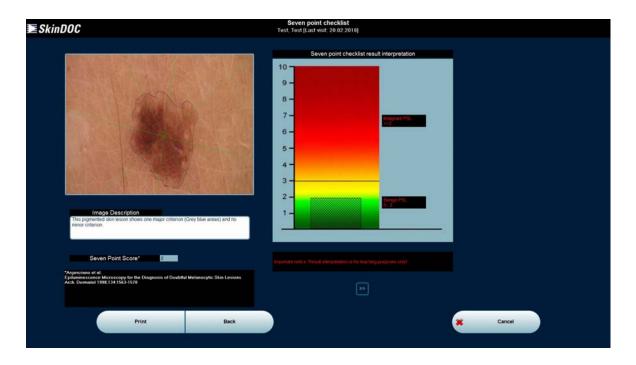
*Step 8:*
Identify the minor criterion Regression pattern.

A regression pattern appears as scar like depigmentation or sometimes as speckled blue-gray dots within a hypopigmented area (i.e. peppering). Select **OK**.

*Step 9:*
The Seven-Point Checklist result is displayed by the bar chart at the right side of the screen. The corresponding Seven-Point total score and the description of the identified criteria are shown below the lesion.



*Step 10:*
Select **CANCEL** to return to the Segmentation screen.

When returning to the SkinDOC main menu the program asks whether or not to save the calculated ABCD-score. Select **YES** to store the ABCD-score in the database. It will be displayed in the comments box in DETAILS when opening the corresponding image.

## 8. Services

SkinDOC Services Menu is activated by clicking the SERVICES button in SkinDOC Main menu

**Important functions such as SkinDOC Backup**, as well as Data Import, Data Export, Statistics, **Patient Management, Education Module and MoleAtlas Expertizer services are located within this menu.**

After entering SkinDOC Services Menu following screen is displayed:



### 8.1. MoleAtlas (Expertizer) Services

The MoleAtlas (Expertizer) software was developed in co-operation with the Department of Dermatology at the Medical School Vienna. It is designed to be an interactive learning add-on module to the standard SkinDOC Software.

MoleAtlas (Expertizer) software is divided into two parts. While Expertizer scoring methods (ABCD and 7-Point rule) are integrated into SkinDOC SCORING menu (described in "Scoring" Chapter of this manual), Self Assessment, Diagnose examples and ELM Criteria examples are available within SERVICES Menu.



SkinDOC MoleAtlas (Expertizer) Services Menu is activated by clicking the arrow on the right side of Expertizer icon in Services Menu.

### 8.1.1. MoleAtlas (Expertizer) – ELM (Review Reference Images)

Select the symbol **MOLE ATLAS – ELM** in the Expertizer icon within Services Menu to view the reference images according to the list of ELM criteria as known from pattern analysis study.
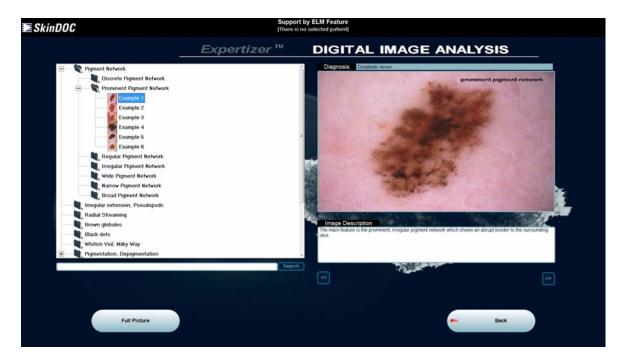
> **IMPORTANT**
> Reference images are installed on your hard drive during SkinDOC installation

To clarify the ELM-criteria in each image, these elements have been highlighted in each example to improve the utility of the Expertizer, and to further aid the understanding of the user.

Select an ELM criterion from the list to view the corresponding reference images. The chosen category opens. Use arrows to navigate and select the criteria as known from Windows Explorer.

Below the reference images the description of the corresponding ELM criteria in the lesion can be found. Use the scrollbar on the right side to scroll down in the text. Above the reference images the diagnosis is displayed.



To change to the original size of the reference image Select **FULL PICTURE** or move the cursor over the image and press a mouse button. In the full size picture mode the following functions can be executed:

- zooming in / out
- moving the image left and right
- viewing the image in full size pixel by pixel

To use these functions select the corresponding icon on the right side of the image.

Select the **+** or **-** buttons under the image description to get to the next or the previous image.

Select the **BACK** buttons to exit the Expertizer or simply press the **F10** key to return to the SkinDOC Main menu.

### 8.1.2. MoleAtlas (Expertizer)  – Diagnosis (Review Reference Images)

Select the symbol **MOLE ATLAS – DIAGNOSIS** in the Expertizer icon in Services Menu to view reference images grouped according to the Diagnosis criteria they exhibit.

Please note this diagnosis list is build from melanoma point of view as known from pattern analysis study.

Select one of the following main categories of diagnoses on the left side of the screen: Melanoma, Nevi and Non-Melanocytic Lesions to view the corresponding reference images. The chosen category opens. Use arrows to navigate and select the criteria as known from Windows Explorer.

Below the reference images the description of the main features in the lesion can be found. Use the
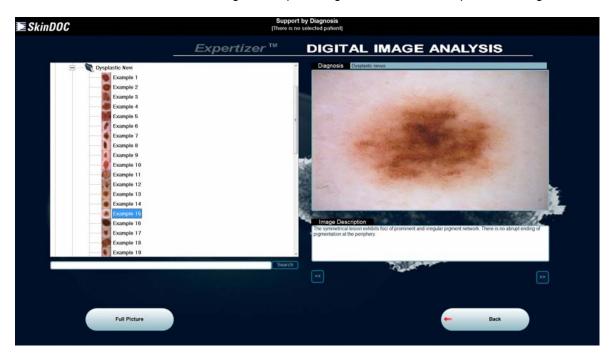
scrollbar on the right side to scroll down in the text. Above the reference images the diagnosis is displayed.

To change to the original size of the reference image Select **FULL PICTURE** or move the cursor over the image and press a mouse button. In the full size picture mode the following functions can be executed:

- zooming in / out
- moving the image left and right
- viewing the image in full size pixel by pixel

To use these functions select the corresponding icon on the right side of the image.
Select the **+** or **-** buttons under the image description to get to the next or the previous image.



Select the **BACK** buttons to exit the Expertizer or simply press the **F10** key to return to the SkinDOC Main menu.

### 8.1.3. MoleAtlas (Expertizer) – Self Assessment (Review Reference Images)

Select the symbol **EXPERTIZER – ASSESSMENT** in the Expertizer icon in Services Menu to enter SELF ASSESSMENT module.

In the self-assessment function the doctor can test her/his diagnostic accuracy. The physician can choose from three different levels.

In Level A tests, the physician is asked to classify the test lesions in definitely benign, more benign than malignant, more malignant than benign and definitely malignant.

In Level B tests, the test person has to be more distinctive than in Level A and has to decide whether or not to excise the lesion.
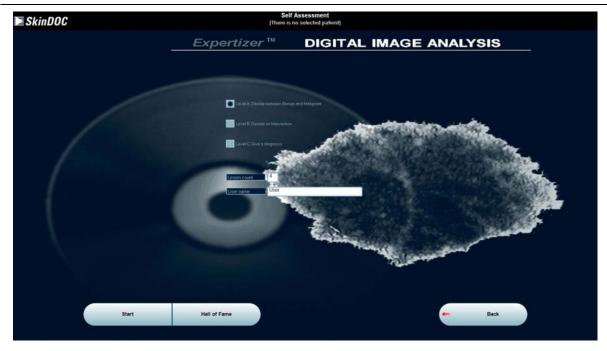
In Level C tests, the doctor has to diagnose the test lesions.

After each test the doctor can review her/his wrong answers. Using this feedback possibility, the physician can improve her/his diagnostic accuracy.

*Step 1:*
Select the test level.
Choose Level A for classification between benign and malignant, Level B for deciding on interventions or Level C for giving the diagnosis.

*Step 2:*
Enter the number of images that should be included in the test. If not a different number is specified each test includes 30 images.

In Level A and B between 4 and 129 images can be evaluated, in Level C between 1 and 291.

Enter the name of the test person in the appropriate line (optional).


*Step 3:*
Select **START** to start the test.
In Level A choose one of the following possible answers for each image:

- This lesion is definitely benign
- This lesion is more benign than malignant
- I don't know
- This lesion is more malignant than benign
- This lesion is definitely malignant


In Level B choose one of the following possible answers for each image:

- No intervention
- Intervention

In Level C choose one of the following possible answers for each image:

- Common Nevus
- Spitz's Nevus
- Atypical / Dysplastic Nevus
- Melanoma

**REMEMBER**
Diagnoses that indicate benign lesions are displayed in green, diagnoses that indicate atypical lesions are displayed in white and diagnoses that indicate malignant lesions are displayed in red.

Select **NEXT** to receive the next test lesion.

> **REMEMBER**
> The number of lesions left in the test is displayed above the current image.

## Test Results

After the test has been fiished the following results are displayed on-screen.

*Level A*

*ROC (Receiver Operating Characteristics) Curve* shows the Sensitivity (% of correctly identified melanoma) in relation to the Specificity (% of correctly identified benign lesions). It is a graphical representation of the test person's performance.

*Correctly identified lesions* are those images where a correct classification in definitely benign or definitely malignant was made.

*Performance* is the percentage of how many lesions were classified into the correct category (benign lesions classified as definitely benign or more benign than malignant and vice versa).

*Gain* shows by how many percent the test person's result is better than answers just guessed. If all answers are wrong (benign lesions classified as definitely malignant or more malignant than benign and vice versa) the gain is 0. Correct answers for improving the gain are those where the lesion was classified into the correct category (benign lesions classified as definitely benign or more benign than malignant and vice versa).

*Max. Sensitivity / Specificity* indicates the highest percentage value where the sensitivity and the specificity equal each other. This point is displayed in yellow on the ROC curve.

*SkinDOC Test Score* is a weighted average score given in % for the performance in this test. For Level A tests it is calculated by adding up the following values for each answer and by dividing it by the number of test lesions:

| Correct Answer | Doctor's answer | Points received (in %) |
| --- | --- | --- |
| Definitely benign | Definitely benign | 100 |
| Definitely benign | More benign than malignant | 60 |
| Definitely benign | I don't know | 30 |
| Definitely benign | More malignant than benign | 10 |
| Definitely benign | Definitely malignant | 0 |
| Definitely malignant | Definitely benign | 0 |
| Definitely malignant | More benign than malignant | 10 |
| Definitely malignant | I don't know | 30 |
| Definitely malignant | More malignant than benign | 60 |
| Definitely malignant | Definitely malignant | 100 |

*Level B*

*Correctly identified lesions* are those images where the correct intervention was defined - no interventions for benign lesions and excisions for melanoma.

*Sensitivity* is the percentage of correctly identified or diagnosed melanoma. It is calculated by the following formula:

Correctly identified melanoma / (Correctly identified melanoma & Missed Melanoma)

*Specificity* is the percentage of correctly identified or diagnosed benign lesions. It is calculated by the following formula:

Correctly identified benign lesions / (Correctly identified benign lesions & Unnecessarily excised benign lesions)

*Accuracy* is the ratio of correctly identified lesions and the number of test lesions.

*SkinDOC Test Score* is a weighted average score given in % for the performance in this test. For Level B tests it is calculated by adding up the following values for each answer and by dividing it by the number of test lesions:

| Correct Answer | Doctor's answer | Result | Points received (in %) |
|---|---|---|---|
| No intervention | No intervention | Correct Decision | 100 |
| Intervention | Intervention | Correct Decision | 100 |
| No intervention | Intervention | Unnecessary Excision | 40 |
| Intervention | No intervention | Missed Melanoma | 0 |

*Level C*

*Number of correct diagnoses* shows how many test lesions were correctly diagnosed.

*Correct category – wrong diagnosis* are those cases where a common nevus was diagnosed as Spitz's nevus and vice versa.

*Incorrect diagnoses – missed by one category* shows those cases where the test person missed the correct diagnosis by one category (benign lesions diagnosed as atypical, malignant lesions diagnosed as atypical or atypical lesions diagnosed as benign or malignant).

*Incorrect diagnoses – missed by two categories* shows those cases where the test person missed the correct diagnosis by two categories (benign lesions diagnosed as malignant or malignant lesions diagnosed as benign).

*SkinDOC Test Score* is a weighted average score given in % for the performance in this test. For Level C tests it is calculated by adding up the following values for each answer and by dividing it by the number of test lesions:

| Correct Answer | Doctor's answer | Points received (in %) |
|---|---|---|
| Common Nevus | Common Nevus | 100 |
| Common Nevus | Spitz's Nevus | 80 |
| Common Nevus | Atypical/Dyspl. Nevus | 40 |
| Common Nevus | Melanoma | 0 |
| Spitz's Nevus | Spitz's Nevus | 100 |
| Spitz's Nevus | Common Nevus | 80 |
| Spitz's Nevus | Atypical/Dyspl. Nevus | 40 |
| Spitz's Nevus | Melanoma | 0 |
| Atypical/Dyspl. Nevus | Atypical/Dyspl. Nevus | 100 |
| Atypical/Dyspl. Nevus | Common or Spitz's Nevus | 40 |
| Atypical/Dyspl. Nevus | Melanoma | 40 |
| Melanoma | Melanoma | 100 |
| Melanoma | Atypical/Dyspl. Nevus | 40 |
| Melanoma | Common or Spitz's Nevus | 0 |

# Test Review

To improve the diagnostic accuracy, the test person should review the incorrect answers after the test. Depending on the test results the following images for review can be chosen to be included in the feedback.

*Level A*

- Include wrong identified melanoma
- Include wrong identified benign lesions
- Include correctly and almost correctly identified lesions

Select one or more review options and Select **REVIEW**.

Above each image the correct diagnosis and the test person's answer is displayed.

Correct answers are marked by a green check mark on the right side of the image.

**REMEMBER**

- Diagnoses that indicate benign lesions are displayed in green; diagnoses that indicate malignant lesions are displayed in red.
- Answers that suggest definitely benign lesions are displayed in green; answers that suggest definitely malignant lesions are displayed in red. Answers where the test person was not definitely sure (more benign, I don't know or more malignant) are displayed in white.

*Level B*

- Include wrong identified melanomas
- Include wrong identified benign lesions
- Include correctly identified lesions

Select one or more review options and Select **REVIEW**.

Above each image the correct diagnosis and the test person's answer is displayed.

Correct answers are marked by a green check mark on the right side of the image.

**REMEMBER**

- Diagnoses that indicate benign lesions are displayed in green; diagnoses that indicate malignant lesions are displayed in red.
- Answers that suggest no intervention are displayed in green; answers that suggest an excision are displayed in red.

*Level C*

- Include lesions with wrong diagnoses, missed by two categories
- Include lesions with wrong diagnoses, missed by one category
- Include lesions from correct category with wrong diagnoses
- Include lesions with correct diagnoses

Select one or more review options and Select **REVIEW**.

Above each image the correct diagnosis and the test person's answer is displayed.

Correct answers are marked by a green check mark on the right side of the image.

**REMEMBER**

Diagnoses that indicate benign lesions are displayed in green, diagnoses that indicate atypical lesions are displayed in white and diagnoses that indicate malignant lesions are displayed in red.
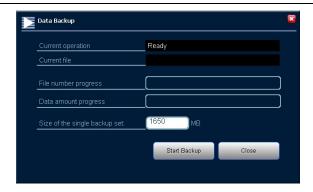
## 8.2. Database Backup

**Apart from functions described in chapters "New Image" and "Follow Up" the most important function of the SkinDOC system is BACKUP.**

This functions backs up all skinDOC data necessary to rebuild the SkinDOC system with ALL PATIENT DATA in case of physical or mechanical failure of SkinDOC system.

<p style="text-align:center"><strong style="color:red">TAKE CARE TO DO BACKUP AT LEAST ONCE A WEEK</strong></p>

As a standard procedure during the work with SkinDOC system all data is stored on the internal hard disk of the PC. In case of an emergency it is helpful to have the patient data and the images saved on an external media. Please contact your local dealer if such a break down should occur.

Select **BACKUP** icon in the Services Menu to start BACKUP procedure. Following backup screen appears:

First define if backup should be done onto CD-R or DVD-R media by typing the size of a backup set. If size is less than 650 MB use CD-R media, and if size is bigger use DVD-R (or DVD-R DL) media.

Insert a CD-R or DVD-R into the DVD-writer and click the button **START BACKUP.** Backup is starting and backup progress bar is shown. After backup is completed the message "Backup Completed" will be displayed in the message field. Select **CLOSE** to return to the SkinDOC main menu.

<div style="text-align:center; color:red;">**Take out the media and store it at a secure location!**</div>



**REMEMBER**
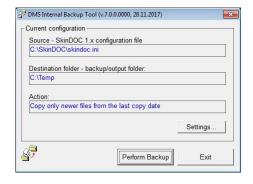If Amount of Data (Data Volume Size) is too big for CD or DVD writer also Blu-Ray writer may be used

### *Other Backup Options*

If data is stored on other devices such as *Streamer Tape, any type of Backup Drive or similar* please contact your dealer.

### *SkinDOC Internal Backup Tool*

If database is to be backed up to *Memory Stick* or *External USB Hard Drive* (RECOMMENDED) SkinDOC Internal Backup Tool is the perfect option to use. It is integrated part of every SkinDOC software and can be enabled if necessary. Refer to User Manual, Chapter "Administration" to learn how to set up this tool.

If SkinDOC Internal Backup Tool is used following dialog appears when button BACKUP in Services Menu is used:



If performing the backup by using SkinDOC Internal Backup Tool for the first time, click the button Settings to determine backup options. Following screen appears:

SkinDOC Configuration file is automatically selected. This file contains all the necessary information needed to backup all the vital data of the SkinDOC system. Only by having full backup it is possible to restore the system to its full functionality and integrity in case of hard drive failure or any other breakdown.

Select Destination folder on the external drive used for backup and select amongst three backup options:

- Copy files recorded since last backup (by date)
- Copy always all files (takes the most time but performs full backup every time)
- Copy files recorded since last backup (by file attribute)

Click Save Settings and click PERFORM BACKUP. Backup of all relevant data is started. **Please note backup may take a long time to complete!**

### *Server Backup*

If the System is running in a network it is **highly recommended** to store the pictures on a server, mainly because of automatized backup methods used on servers. Please contact your dealer or computer administrator for more details.

**REMEMBER**
Please note that also external backup writing procedure is available. See the Administration section of this manual to learn how to activate external backup

## 8.3. Statistics

To enter Statistics menu click the icon **STATISTICS** in the Services Menu.

Statistics menu is divided into 4 sections: **Diagnoses**, **Patient Statistics**, **Images Statistics** and **Database Info and Statistics**.

**IMPORTANT**
Please note that STATISTICS menu is the only menu in the SkinDOC software where images of different patients can be compared.

### *Diagnoses*

When STATISTICS menu starts Diagnose Statistics screen is displayed.

To get diverse statistics about examined images over a certain period of time click on **SEARCH** button. The results will be promptly displayed on the screen. The results include the full list of all given diagnoses in the database, the type of images recorded (macro or close-up) and the number of images taken.

If no time frame is displayed SkinDOC software will display statistics of whole database, from the very first image. If SEARCH within certain time frame is desired simply input the start and end date in the appropriate fields.

If only recent (last) images without their pre follow ups should be displayed, click the check box "Count current images only".

All ELM, macro and/or close-up images with similar diagnoses (e.g. melanomas or acne) can be viewed and compared in a non-patient related picture gallery.

Select these by clicking appropriate check boxes on the bottom of the screen.

To do so select the diagnoses that should be displayed in the picture gallery and select **GALLERY**.

**REMEMBER**
To include/exclude Macro, Close-Up or ELM images in the evaluation select the specific option on the bottom of the screen (all images selected is the default setting).

*Show image in full size picture mode*
To view an image in the full size picture mode select the specific image and select **FULL PICTURE**.

*Comparing two images*
To compare two images select two images and select **COMPARE**. Press **CANCEL** to return.

**REMEMBER**
• If one image is selected FULL PICTURE button is displayed
• If more than one image is selected COMPARE button is displayed

*Details about an image*
To get more detailed information about an image or to make corrections select the specific image and Select **DETAILS**. Press **OK** to save and return.

### *Patient Statistics*

To get some statistics on a specific patient click the icon Patient Statistics located on the top of the screen.

Select the patient and choose whether the statistics should be calculated for all images of the patient or for the images taken at the last visit by selecting the appropriate Selection Criteria.

If only recent (last) images without their pre follow ups should be displayed, click the check box "Count current images only".

Select **SEARCH** and the results for the chosen selection criteria are displayed in the lower window. The statistics include the diagnoses given, the type of images recorded (macro or close-up) and the number of images taken.

To view the images of a specific diagnosis select the diagnosis and select **GALLERY**.

*Show image in full size picture mode*
To view an image in the full size picture mode select the specific image and select **FULL PICTURE**.

*Comparing two images*
To compare two images select two images and select **COMPARE**. Press **CANCEL** to return.

**REMEMBER**
• If one image is selected FULL PICTURE button is displayed
• If more than one image is selected COMPARE button is displayed

*Details about an image*
To get more detailed information about an image or to make corrections select the specific image and

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Select **DETAILS**. Press **OK** to save and return.

### *Find Images*

To search for specific images select the button Find Images on the top of the screen corner.
The following search criteria are available

- Search for ELM ID numbers,
- Search for File names (including wildcard characters such as * etc.)

Enter the search values in the appropriate line and select **SEARCH**. The corresponding patient names are displayed.

Select the patients and select **GALLERY**.

*Show image in full size picture mode*
To view an image in the full size picture mode select the specific image and select **FULL PICTURE**.

*Comparing two images*
To compare two images select two images and select **COMPARE**. Press **CANCEL** to return.

**REMEMBER**
- If one image is selected FULL PICTURE button is displayed
- If more than one image is selected COMPARE button is displayed
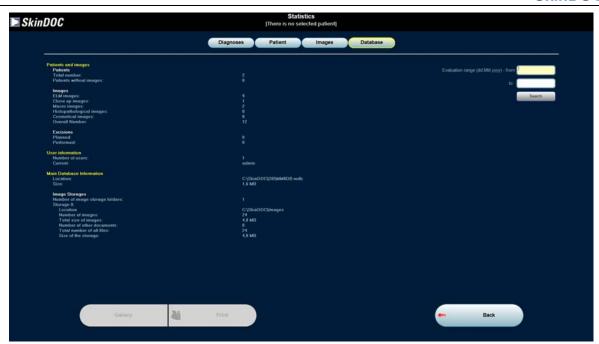
*Details about an image*
To get more detailed information about an image or to make corrections select the specific image and Select **DETAILS**. Press **OK** to save and return.

### *Database Statistics*

To get more detailed information about Database click Database Statistics icon on the top of the screen.

Comprehensive DATABASE STATISTICS are shown. This includes:

- Database location and name
- Database size
- Number of folder sued
- Folder location on the hard drive
- Number of images
- Size images occupy on the hard drive
- Number of other (attached) documents
- Total number of files
- Total space occupied
- User name
- Number of active users

After Statistics are done click either **BACK** to return to Services menu or **F10** to return to SkinDOC Main menu.

## 8.4. Data Export

If there is a need to transfer images of one patient to another computer as in the case when Patient moves from one city to another, or if there is need to export one or more particular images Data Export function is used.

Click on **DATA EXPORT** icon in the Services menu to enter Exporting menu shown below.



There are two basic options when using Data Export:

- Patient export
- Image Export

Select Either Patient Export or Image Export by clicking appropriate check box on the top of the screen.

### *Patient Export*

There are two Patient Export formats to choose from:

- SkinDOC Export format
- HTML Export format

Select export format from the selection menu on the bottom of the Exporting screen. Use SkinDOC format when transferring patient record to another SkinDOC, DermDOC or MoleMax unit, and use HTML format if you simply want to give the patient his patient record that can be viewed by using any common HTML browser software such as Internet Explorer, google Chrome or Mozilla Firefox.

Select Patient to export from the top window and a destination where to export it in the bottom window (Tree as known from standard Windows Explorer).

Click **EXPORT PATIENT** button to export the patient and wait until files are transferred.

**REMEMBER**
- If Patient export is done in SkinDOC format all images are exported in their original format
- Patient file is exported in SkinDOC proprietary format

After Export is completed click either **BACK** to return to Services menu or **F10** to return to SkinDOC Main menu.

### *Image Export*

If you want to export particular images click check box Export Images and Image Export screen is displayed.

Select export format from the selection menu on the bottom of the Exporting screen. Diverse export formats such as JPEG, PDF, BMP or PCX formats are offered within SkinDOC software.

Select Patient whose images you want to export from the top window and a destination where to export it in the bottom window (Tree as known from standard Windows Explorer).

Click the button **SELECT IMAGES** to choose the images to export and familiar 3x3 screen appears. Select the images to export, click the button **EXPORT** and wait until files are transferred.

After Export is completed click either **BACK** to return to Services menu or **F10** to return to SkinDOC Main menu.
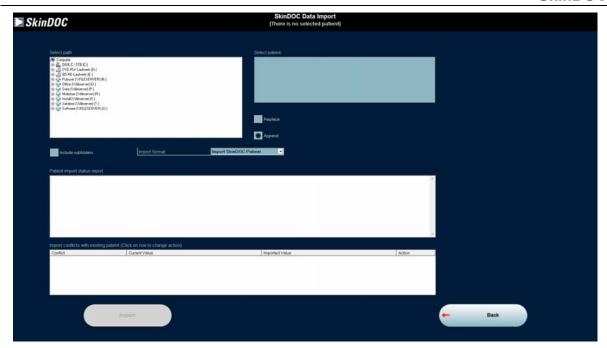
## 8.5. Data Import

If there is a need to import a patient record as in the case when Patient moves from one city to another, Data Import function is used.

**IMPORTANT**
- Data import should be used only for transferring patient data from one SkinDOC to another
- For all other import functions Image File import should be used

Click on **DATA IMPORT** icon in the Services menu to enter Importing menu shown below.

Select from Dropdown Menu if import file is current, or from older database type.

Point to the SkinDOC import file by using tree menu as known from Windows Explorer. After correct file is selected it is shown in the window on the right side and associated files to import are listed in the bottom window.
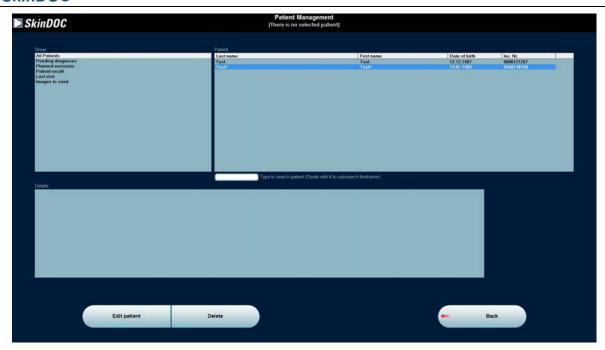
Select if the eventually existing patient files should be replaced or if new images should only be appended by clicking the appropriate check box in the top right corner.

Import the patient data by clicking the **IMPORT** button. Wait until patient is transferred into the database.

After Patient import is completed click either **BACK** to return to Services menu or **F10** to return to SkinDOC Main menu.

## 8.6. Patient Management

Within feature Patient Management several patient related administrative functions can be performed. User can perform search after images with no diagnose or images selected for excision, edit patient data or check dates for patient recall. Furthermore images or whole patients can be deleted in this menu. After clicking on **PATIENT MANAGEMENT** in Administration menu following screen appears:

In this window the following options can be chosen:

- Edit or delete a patient or delete single images of a patient
- Find images without diagnose and add a diagnose
- Find images selected for excision
- Patient recall
- Find images selected for e-m@il and send these images
- View last visit date of patients

### *Edit Patient data*

To edit patient data select the patient and select **EDIT PATIENT**. It is possible to correct any spelling mistakes or other incorrect information. Also the date of the follow-up visit can be entered. This function is equal to creating the patient as described in Chapter *"New Patient"*.

> **IMPORTANT**
> The appointment for a follow-up visit needs to be entered in this function.

Select **ADDITIONAL** and enter the date of the follow-up visit. Only a defined follow-up visit date allows the software to check whether the patient has been seen for his scheduled appointment. For more detailed information see Patient Recall below.

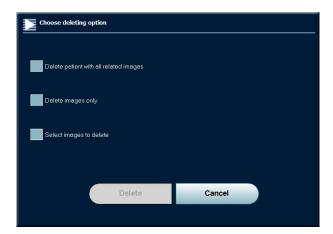Select **SAVE** to store the corrected patient data.

> **REMEMBER**
> - Two first or last names of a patient have to be typed with space between the names.
> - It depends on the country settings how to enter the date of birth. Always use 4 digits for the year e.g. 1950. This is very important for patients born before year 1929.
> - To calculate the Risk Group the patient falls into, select the option **MELANOMA RISK** and answer the four questions together with the patient. The result is immediately displayed at the bottom of the screen. There are four possible risk groups (low, average, increased and high risk).

### *Delete Patient or Patient Images*

To delete the patient data select the patient first and then select **DELETE** button. Following screen appears:



Choose to delete the patient with all images from the database, to delete all images of the patient or to select images to delete. Please note any deletion is permanent and can't be rolled back.

When patient (**"Delete Patient with all related images"**) or all images of a patient (**"Delete images only"**) are selected for deletion, screen with exact information about the files to be deleted is displayed. Confirm with **DELETE** to delete the patient or images permanently.

If you want to select images to delete choose last option **"Select Images to Delete".** Familiar 3x3 patient screen is displayed. Select images to delete (including pre follow ups in the fourth column) and confirm with **SELECT**. Screen with exact information about the files to be deleted is displayed. Confirm with **DELETE** to delete selected images permanently.

> **IMPORTANT**
> **There is no Undo feature after performing DELETE function!**

### *Pending Diagnoses*

To see the list of all images without diagnose data select the **PENDING DIAGNOSES**. The list of all images without diagnosis is displayed in the bottom window. Click on the particular image in the list and select **SHEET** button on the right side to enter **DETAILS** screen where diagnosis can be assigned.

Confirm with **SAVE** to return to the list of pending diagnosis. Next image can be selected now.

Choose to display between ELM, Macro and Close Up images by clicking appropriate check boxes on the bottom of the screen.

### *Planned Excisions*

To see the list of all images checked for excision select the **PLANNED EXCISIONS**. The list of all images noted for excision is displayed in the bottom window. Click on the particular image in the list and select **SHEET** button on the right side to enter **DETAILS** screen. Only micro images apply for this function.

### *Patient Recall*

To see the list of Patient noted for recall select the function **PATIENT RECALL**. The list of all patients noted for recall is displayed on the right side and required follow up date is displayed in the bottom window. The patients that are overdue on their scheduled follow-up visit are displayed **RED** in the list. The other, for follow up marked patients, are displayed in standard **BLACK** letters.

If the patient is not due for recall any more use button REMOVE on the right side to remove the patient from the list. If patient should be noticed for recall use button EMAIL to send a reminder email to the patient (this patient's email should be preset in the patient record to enable this function). Furthermore list of patients to be recalled, selected patients only or whole and complete recall list may be

printed if there is printer on the system. Use the function SET FOLLOW UP DATE to edit or set recall date for any patient.

### *Last Visit*

To display last visit of all patients as well as number of visits and number of images of every single patient use function **LAST VISIT.**

List of patients with the dates of their last visit is displayed in the right window. Selecting the patient in the list to see details of the last visit, total number of visits and number of images.

The full list of patients with dates of their last visits can be exported by using **EXPORT PATIENT LIST** function on the right side of the screen.

### *Images to Send*

To see the list of all images checked for e-m@il sending select the **IMAGES TO SEND**. The list of all images noted for e-m@il is displayed in the bottom window. Click on the particular image in the list and select **SHEET** button on the right side to enter **DETAILS** screen.

Choose to display between ELM, Macro and Close Up images by clicking appropriate check boxes on the bottom of the screen.

## 9. Administration

SkinDOC Administration Menu is activated by clicking the **ADMINISTRATION** button in SkinDOC Main menu

**All important settings such as BACKUP settings, Diagnose configurations, SkinDOC e-m@il settings and User profiles, as well as additional functions such as Patient search mechanism and module to Delete Images are located within this menu.**

After entering SkinDOC Services Menu following screen is displayed:



List of settings and functions are located in the top left corner of this screen. Simple select an option by clicking on it.

## 9.1. Display and Presentation

First Option within Administration Menu is called "Display and Presentation". It is used to determine user preferred settings for image and video presentation as well as to enable/disable image sources.

In "Live Video" option user can determine if Live Video in Follow Up function should start in Full Screen or Compare mode.

In "Image Selection Preview" option user can determine if Follow UP / Monitoring should start in 3x3 view, M+C view or in Dummy view.
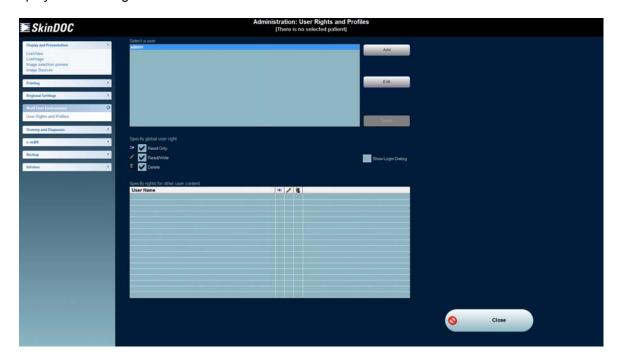
In "Image Sources" option user may select / deselect any of four available image sources:

- Live Video
- Image File Import
- Live Image
- Direct Image Import from Digital Camera

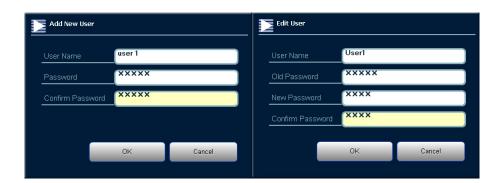Please note that Live Video and Image File Import are selected by default.

## 9.2. Multi User Environment

By clicking on **Multi User Environment** button administration screen for setting a multi user option is displayed. Following screen is shown:



Simply add new users by clicking the button **ADD** or edit an existing user by clicking the button **EDIT**.

When adding a new user first step is to determine name and password as on the image left below. After the user name and password are determined second step is to adjust user rights for this particular by using checkboxes **"Read Only"**, **"Read/Write"** and **"Delete"**.



If editing the patient first step would be to edit user name and password as sown on the image right above and second step is to edit the rights of this user.

Please note ONLY administrator user "**admin"** is allowed to do this.

After user names and rights are defined, activate Multi User Environment by clicking the check box **"Show Login Dialog"**.

After Multi User Environment is activated the **LogOut** button is shown in the bottom left corner of SkinDOC Main menu

Also Login is required when entering SkinDOC software

> **!** **IMPORTANT**
> - Please note that STATISTICS menu is the only menu in the SkinDOC software where images of different patients can be compared.
> - Current user is always displayed in the top right corner (yellow letters)

After Multi User Environment is set up as desired, exit the screen by clicking the CLOSE button and save the changes by clicking OK. Software will prompt you to Log In as desired user.

> **REMEMBER**
> - A user can see only his patients, patients of defined users or patients of all users. To be able to view the patients of other users adjust user rights within Administration menu
> - To log on as a different user select **LOGOFF** on the main menu, and select the appropriate user name in the Log-on window.
> - Only Administrator ("admin") can change user rights and set up user profiles.

## 9.3. Dummy and Diagnoses

If you want to define your own diagnose list and / or to change titles of body locations function Dummy and Diagnoses located within Administration menu is used.

### 9.3.1. Diagnosis Configuration

With this feature diagnoses can be changed, added and deleted and individual shortcuts can be set.

*Step 1:*
Select **DIAGNOSIS CONFIGURATION** in the Administration menu.

By using this function it is possible to edit and configure all diagnosis available in the list. This way personal diagnosis tree can be configured for each user.

*Step 2:*
To add a new diagnosis select **ADD DIAGNOSE**. Type in the diagnosis and define whether it is pending or risky by selecting the particular option. To assign a diagnosis to a function key select a button from F1 to F8. Confirm by selecting **OK**. Also define if this diagnose should be displayed in the list of favorite diagnosis

To edit a diagnosis select the diagnosis from the list and select **EDIT**. Change the diagnosis text and define whether it is pending or risky by selecting the particular option. To assign a diagnosis to a function key select a button from F1 to F8. Confirm by selecting **OK**. Also define if this diagnose should be displayed in the list of favorite diagnosis

To reset all diagnoses to defaults click the button **R** located in the top right corner.

To create a new category in the diagnosis tree select **ADD CATEGORY** button.

To delete a diagnosis from the list select it and select **DELETE**.

*Step 3:*
Select **CLOSE** and confirm with **OK** to save changes.

### 9.3.2. Location Nomenclature

With this feature the location texts of the various body regions can be edited. This is useful in particular if SkinDOC software is not yet available in your language.

*Step 1:*
Select the **LOCATION NOMENCLATURE** in the Administration menu.

*Step 2:*

Select the specific Dummy position and select the body region. Change the location text below the dummy. Repeat this procedure for all regions that should be renamed.

**REMEMBER**
- To rename the Micro location texts select the particular check box on the top right corner.
- To rename the Macro location texts select the particular check box on the top right corner.
- To reset all locations to default click the button **R**

*Step 3:*

Save the changes by selecting **CLOSE** and confirming the changes with **OK**.

## 9.4. e-m@il Settings in SkinDOC

Use this function to set up e-m@il Address Book and server settings in the SkinDOC software.

### 9.4.1. e-m@il Address Book

This function is used to set up Email recipients for e-m@il function within SkinDOC Click on **ADDRESS BOOK** and then on **ADD** button to open following screen:

| First Name: | test |
|---|---|
| Last Name: | test |
| Display Name: | test |
| e-mail: | test@test.at |

OK    Cancel

Input the name of the recipient, and the Nick that should be shown for selection within e.m@il function. Input correct Email address of the recipient. Confirm with **OK**.

It is also possible to edit existing recipient by using the button **EDIT**, or to delete it by clicking the **DELETE** button.

## 9.4.2. e-m@il SMTP Server Setup

This function is necessary in order to set up e-m@il properly. In order to send an email (necessary for both Email and AIS functions) SMTP server must be defined. If you are not sure how to do this please contact your system administrator or nearest e-m@il dealer.

After clicking on **SMTP SERVER SETUP** following screen is displayed:



There are 3 possibilities to get connected to the Internet:

- The oldest one is that you have a modem directly connected to your system and that you dial into a server of your Internet Service Provider (Dial-Up Networking). This one is obsolete technology and is not used any more but is kept for compatibility reasons
- There are Providers that offer a "24 hours online" service which means that whenever you turn on your system you are automatically connected with one of their Internet servers and you are online as long as you have your system running. Usually the connection is through a network-card in your system where a Tools type of modem is connected (Direct Connection).
- In a network neighborhood you often find a proxy server solution. That means that the workstations in the network are connected to a so-called Proxy Server that establishes the connection to the Internet (Proxy Server).

Depending on your individual setup you need to configure the e-m@il Settings as described below.


***Dial Up Networking***

Select **DIAL-UP NETWORKING** if you have a modem connected to your system and you are calling your Internet Provider.

If the Dial-Up networking is set up correctly in the operating system you can open the Phone Book Entry list and select the Dial-Up networking name of your Internet Service provider. If your personal User name and Password for the Internet connection is not filled in automatically, you need to fill them in manually in the appropriate lines.

Enter the SMTP server name or address (the name of the mail server for outgoing mails) in the appropriate line. Your Internet Service Provider provides this information to you. If you do not have this information please contact your Internet Service Provider.

Enter your email address in the appropriate line.

Select **CLOSE** and confirm with **OK** to save your settings.

*Direct or Proxy Connection*

Select **DIRECT CONNECTION** when you are always online when your system is turned on or if you are currently online.

Enter the SMTP server name or address (the name of the mail server for outgoing mails) in the appropriate line. Your Internet Service Provider provides this information to you. If you do not have this information please contact your Internet Service Provider.

Enter your email address in the appropriate line.
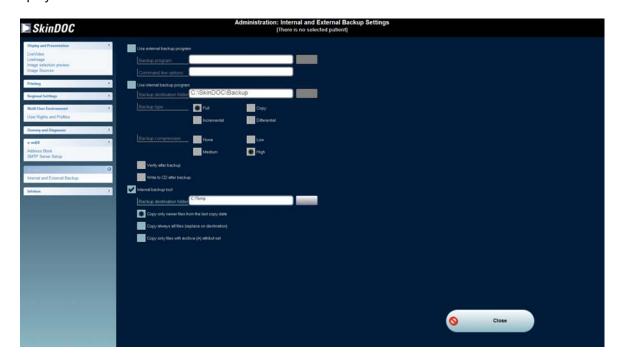
Select **OK** to save your settings.

## 9.5. Backup Settings

**Performing backup in regular intervals is one of the most important SkinDOC functions. Only by performing successful backup all Patient Data are safe in case of machine failure!**

The backup settings are pre-defined when the system is delivered. But in case o system upgrad or reinstallation following changes need to be made before using the backup function for the first time.

*Step 1:*

Select **INTERNAL AND EXTERNAL BACKUP SETTINGS** from the menu. Following screen is displayed:



Internal and external backup are possible on SkinDOC machine. Internal backup program is using proprietary SkinDOC burning and external program is using a control to start external procedure such as Windows burning routine or Nero burning software.

Internal Backup may be performed as Internal Burning to CD/DVD/Blu-Ray or as copy tool to external USB memory (USB Memory Stick or USB Hard Drive)

*Internal Burning (standard):*

- Select the option **Use internal backup program**.
- Enter a temporary backup folder on the local hard drive in the line **Backup destination folder** (c:\SkinDOC\backup).
- Choose one of the following options in the section **Backup type**:

Full (default setting)   Backup every file, regardless of the archive attribute
Removes the archive attribute after the file is backed up

| Copy | Backup every file, regardless of the archive attribute |
| | Does not remove the archive attribute after the file is backed up |
| Incremental | Backup only the files that have the archive attribute |
| | Removes the archive attribute after the file is backed up |
| Differential | Backup only the files that have the archive attribute |
| | Does not remove the archive attribute after the file is backed up |

Choose one of the following options:

- Select the option Verify after backup.
- Select the option Write to CD after backup.

***Internal Backup Tool***

- Select the option SkinDOC Internal Backup Tool.
- Enter Backup Destination (path to external USB drive)
- Choose one of three copying options

***External Backup:***

- Select the option Use external backup program.
- Enter a command line to start external backup program
- Enter a flag describing the files to be recorder during backup.

> **IMPORTANT**
> - <span style="color:red">**Backup is VERY IMPORTANT function. Perform it in regular intervals.**</span>
> - <span style="color:red">**Contact your administrator immediately if your backup drive is broken.**</span>
> - <span style="color:red">**Always store Backups of your system at external site!**</span>

See Section *"Backup"* in order to learn how to perform backup correctly!

## 9.6. Regional Settings

SkinDOC software can be run in different languages

Use this Section of Administration Menu to determine the language used within User Interface as well as additional language options in SkinDOC software.

- Select one of the languages listed in "Available Languages" for User Interface (Buttons and SkinDOC Messages)
- Select the Checkbox "Change Resources" to change Diagnoses and Dummy Locations to selected language
- Choose amongst three options of Insurance number presentation

Please note that Standard Language of a SkinDOC System is English and that language of System Messages may depend of the language of installed Windows operational System.

## 9.7. Printing

Use the Section Printing within the Administration Menu to select default printer for SkinDOC printouts.

Please note that SkinDOC default printer does not have to be identical to default Windows printer.

SkinDOC can either use physical printer or save the reports and printouts as in PDF format.

For more information about printing see Chapter REPORTS

## 9.8. Authorization Code

Use this Section of Administration Menu if an additional option is purchased as extension to existing SkinDOC System.

Please note that Site Code and System Serial Number are necessary in order to activate any additional Option. In order to activate additional Option please contact Derma Medical Systems or the nearest Dealer.

To determine the language used within User Interface as well as additional language

## 9.9. Infobox

Click on **INFOBOX** to get web links for **Derma Medical Systems** homepage and for our parental company **MacQuarie Health Corporation**, as well as for **Derma Medical Systems Online Store.**
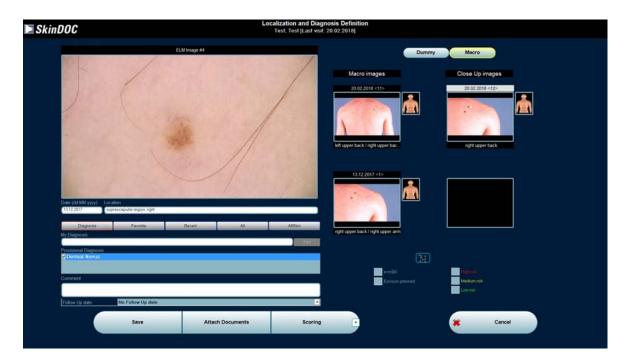
## 10. AllSkin Module

### 10.1. Introduction

AllSkin is a diagnosis library, which is illustrated with images, descriptions and has ability to browse and search through. The images are categorized by diagnosis in one hierarchical list.

To start to use AllSkin, select the menu item "Images". This menu will exist on all dialogs where the possibility of giving diagnosis exists.
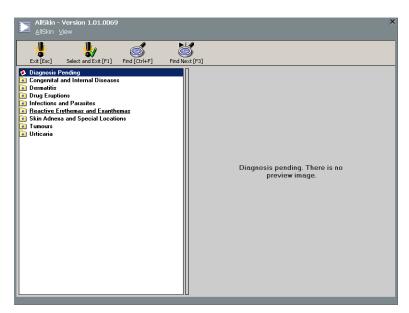


> **!**
> **IMPORTANT**
> The AllSkin is not a standard standalone application and it can be started only with SkinDOC.
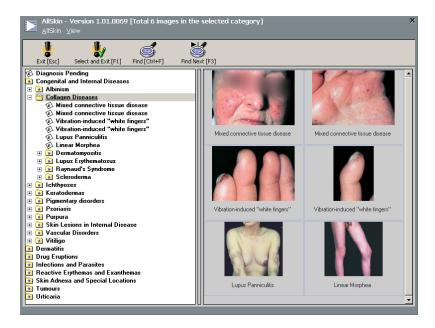
The startup screen of AllSkin:



On the left side the hierarchy list of diagnoses is shown, and the right side is the preview panel.
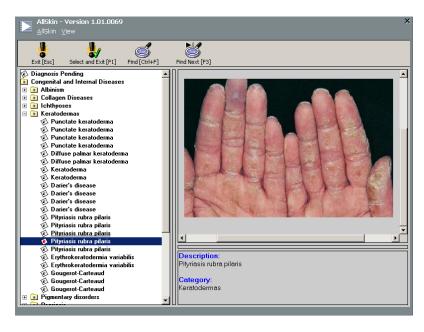
## 10.2. Selecting the Diagnosis

To select the category, just click on it in the left panel. The content of this category is shown in the preview panel as thumbnail images.



To select the diagnosis, just mark the desired thumbnail and click **Select and Exit** button from the toolbar, or press **F1** button.
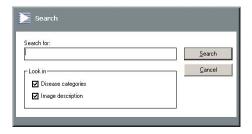
If the selected item on the hierarchy list is an image, then the preview of this image with details is shown in the preview panel:



To select the diagnosis, just click **Select and Exit** button from the toolbar, or press **F1**, or just double click on description.

## 10.3. Searching For Desired Diagnosis

To search through database, click **Find** button on the toolbar or press **Ctrl/Strg + F** keyboard combination. The following dialog will appear:
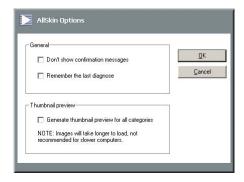
Type the desired keyword (or part of it) in the search box, select option where to look in (in categories or/and in descriptions) and press **Search**.

The searched item, if exist, will be located in diagnosis hierarchy list and the details will be in the preview panel. To search another occurrence of given keywords, just press **Find Next** on the toolbar or press **F3**.

## 10.4. Settings

Click on the menu item *"View → Options...".* The following dialog will appear:



The options are:

- Don't show confirmation messages - Select these options to avoid the messages at selecting diagnosis and leaving from AllSkin.
- Remember the last diagnosis - Select this option, and AllSkin at the next start will locate and select the last selected diagnosis.
- When generating thumbnail preview, enumerate all images in subcategories too - Select this option if you want to have a preview of all thumbnails in the selected category and it's subcategories.

**IMPORTANT**
This last option is not recommended for slower computers, because generating of preview can take a lot of time.

## 11. Powering Down the System

SkinDOC System is designed for continuous run during its screening times. After the use SkinDOC System should be switched OFF.

Select button EXIT in the bottom right corner within the Main Menu and following screen is displayed:



Select EXIT FROM SkinDOC ONLY to return to the Windows desktop.

Select SHUT DOWN COMPUTER to exit SkinDOC software AND Windows software as well. After system has completed its shutdown procedure, switch OFF the SkinDOC MAIN SWITCH.

Select LOG OFF WINDOWS to exit SkinDOC software and log off from your Windows profile. Computer will stay in its own login screen.

> **IMPORTANT**
> After computer has shut down switch the SkinDOC System completely  OFF by using the green MAIN SWITCH located on the front of the SkinDOC case!

# *SkinDOC*

## USER MANUAL

## Section IV – FAQ (Frequently Asked Questions)

# 12. Troubleshooting

## 12.1. Problem Solving

*Problem    Check/Action*

a) System not ready

    ☑      Main power plug in socket
    ☑      Green light on main power switch on
    ☑      First Turn SkinDOC on, then PC
    ☑      On/Off power button on the unit turned on
    ☑      Both USB cables on the back of the system connected correctly
    ☑      USB 3 and USB 2 cables on proper conenctors

b) No display on monitor

    ☑      Monitor power switch turned on
    ☑      PC turned on
    ☑      Interconnection between monitor and PC
    ☑      Turn off PC, wait for 1 minute and turn it on again

c) Black live video screen

    ☑      Green light on the unit on
    ☑      Camera cable connection
    ☑      USB Cable
    ☑      Power
    ☑      Fuse

d) Automatic recognition of camera mode does not work

    ☑      USB Cable connection on the backside of the system (see chapter Connections)
    ☑      Check the appropriate settings in the config file

e) No freeze function with RB

    ☑      Move cursor into the live video frame

*Problem    Check/Action*

g) Error when initializing the video

☑ System camera not properly connected at the boot up
☑ Attach the camera and restart the system
☑ Check the appropriate settings in the config file

h) Colors on the screen change during use

☑ Cable connection between monitor and PC
☑ Do the interferences occur when moving the camera cable? Exchange Camera Cable.

i) Backup is not performed

☑ No or wrong backup disk (CD-R/DVD-R) inserted
☑ No USB Stick inserted
☑ Backup settings in Administration Menu

i) Printing not possible / Printout is of bad quality

☑ Printer power switch
☑ Cable connection between basic unit and printer
☑Printer settings
☑Clean printer cartridges or exchange them if necessary

**IMPORTANT**
For hygienic reasons clean the front glass of the SkinDOC camera after each examination with a soft, fluff-free cloth.

## 12.2. Service Support

The information contained in this manual has been carefully written and is accurate for the existing system. We are, however, continually striving to improve and refine our product. Some minor changes in the hard- and software configuration resulting from such improvements will not affect the basic operation procedure but will provide the newest technology available at the time.

If you encounter any problems not covered in this manual, please contact your local dealer or use the

**DMS** SERVICE-HOTLINE

**+43 1 318 69 90**

Monday-Friday from 9:00 to 16.00 (CET).

German or English language.

Or send an email to *derma@dermamedicalsystems.com*

Thank you for your co-operation and please recommend

**SkinDOC**