

Suture Evaluation Simulator

⚠ Caution Ink from the model can stain the model
 –Do not let it touch the simulator and its components.
 Ink marks on the simulator will be irremovable.

Instruction Manual

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Introduction

- **This model is designed to assess simple interrupted skin suturing quantitatively, and teaching yourself.**

- **Manufacturer's note**

Read this manual carefully before use and follow all instructions. This model is designed for assessing the simple interrupted skin suturing quantitatively. Any other use, or any use not in accordance with the enclosed instructions, is strongly discouraged.

Kyoto Kagaku Co., Ltd. cannot be held responsible for any accident or damage resulting from such use. Please use this simulator carefully and refrain from subjecting it to any unnecessary stress or wear. Should you have any questions or concerns regarding use of this simulator, please contact the distributor you purchased from or Kyoto Kagaku Co., Ltd.

- **Features**

- Simple interrupted skin suturing can be evaluated quantitatively.
(See "Suture Evaluation Simulator Help" for details)

For self learning with evaluation

- The all movies and assessment data of registered user can be stored for review.
The assessment scores can be shown as a chart with the user's learning curve.
(Each user can review his/ her own data only).
(1GB memory can store the data of approx 200 sessions.)

- Administrator can register assessment data as "good example" 's so that all users can see.

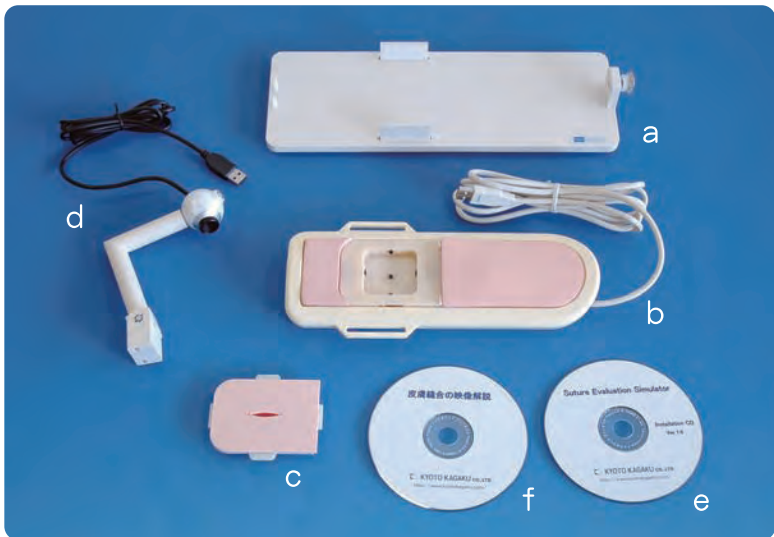
For clinical skills assessment

- "Examination mode" can be used for evaluating students' assessment.

This simulator was developed by Kyoto Kagaku Co., Ltd. with Takanishi laboratory, Faculty of science and Engineering, WASEDA University as joint research.
The project was supported by "Gifu and Ogaki Robotics Advanced Medical Cluster," which forms a part of MEXT-Japan (Ministry of Education, Culture, Sports, Science and Technology.)

Set includes and part names

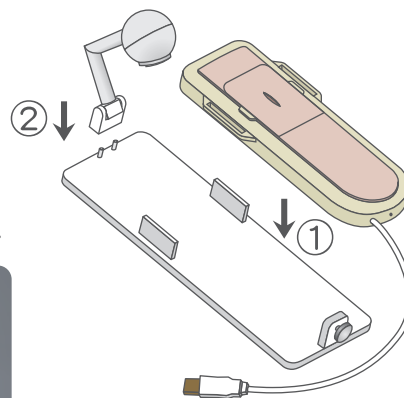
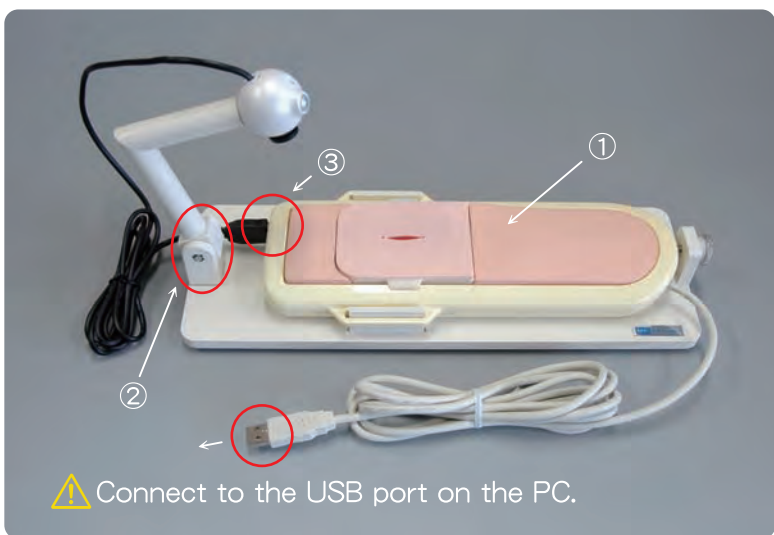
Before your first use, ensure that you have all components listed below.



- a. Unit base 1
- b. Skin suturing unit 1
- c. Simulated Skin 40 pcs
- d. USB unit 1
- e. Software (CD) for setup 1
- f. CD 1
- Instruction Manual 1

※At the time of delivery a, and b, are already assembled

Put together or connect the components as shown below.



- ① Put the Skin Suturing unit on the Unit base.
- ② Put USB camera unit on the Unit base.
- ③ Put the USB cable of the camera into USB port on the frame of the Skin Suturing unit.
- ④ Attach the Simulated Skin into the Skin Suturing unit. (See the page16.)



• Ensure to install the USB camera driver before connect the simulator with PC.

Platform Information

It is prerequisites for using suture evaluation simulator.

● **OS**

Microsoft Windows Vista XP (Over SP2)
Microsoft Windows Vista (Over SP1)

● **Hardware**

CPU: Intel PentiumIII Over 1G Hz
Memory: Over 512 MB
Hard disk: Over 1GB
Display: High Color (Over 16 bit)
Desktop: Over 800×600 (Recommended : over 1024×768)
Drive: CD-ROM Driver (For Installation)
Interface: USB 2.0 Port (For Connection of the Suture Simulator)

● **Software**

Windows Media Player over 9
Internet Explorer over 6

⚠ DOs and DON'Ts

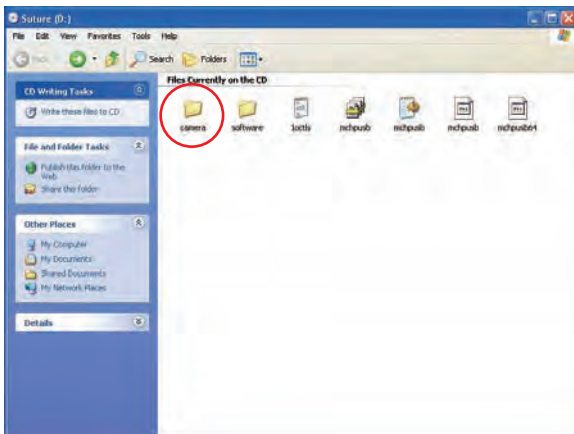
<p>● Handle with care</p> <p>The materials of the model are special compositions of soft-resin which could be damaged in case of fall.</p>	<p>● The Suture Evaluation Simulator Skin can remain usable even though the color of the unit parts may fade over time.</p>
<p>● Cleaning</p> <p>Clean the surface of the skin or the simulator with wet, soft and mildly soapy water. Never use organic solvent such as paint thinner.</p>	<p>● Don't mark on the model and other components with pen or leave painted materials contacted on their surface.</p> <p>Ink marks on the Simulator will be irremovable.</p>
<p>● In case that the body of machine gets heat up, any burnt or smoke is perceived, promptly pull out the USB cable.</p> <p>contact the distributors or KYOTO KAGAKU Co., Ltd for repair.</p>	<p>● Store the Simulator at room temperature, away from heat, moisture and direct sunlight.</p>
<p>● Please use the Simulator carefully and refrain from subjecting it to any unnecessary stress or wear.</p>	<p>● Never store the Simulated skin in piles or stress.</p> <p>Store the Simulator in its storage case when not in use.</p>



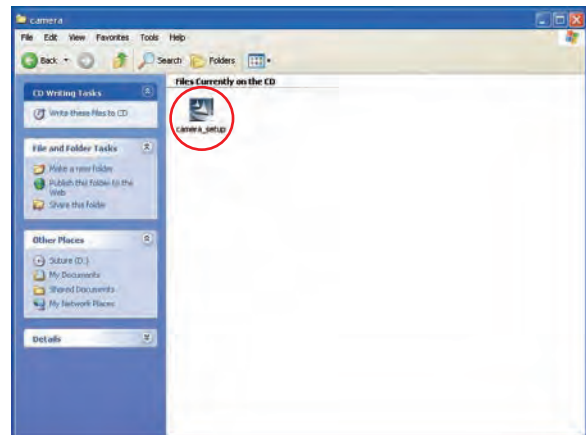
Caution

Never fail to install the driver-soft of the camera, before connect this simulator with PC.

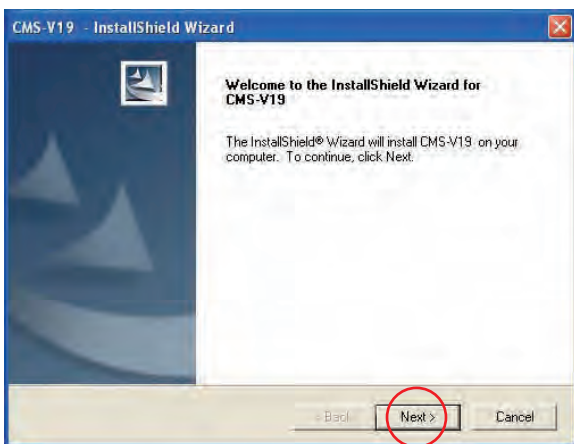
1 Install the USB camera driver



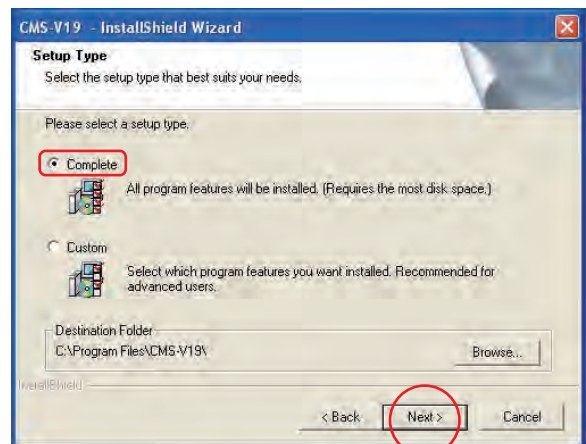
① First, install the driver-soft (CD) of the camera. Put the setup CD into drive, and open the folder "camera".



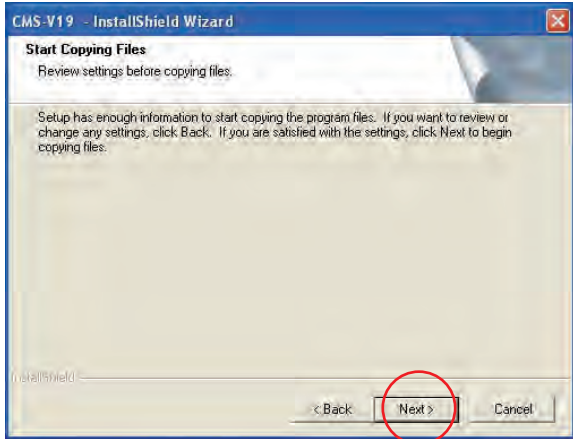
② Double-click on "camera_setup.exe", in camera folder.



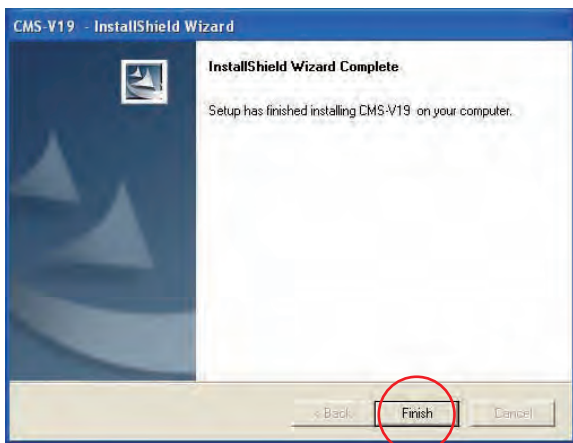
③ Then starting installation, follow the screen's instructions. Click "Next."



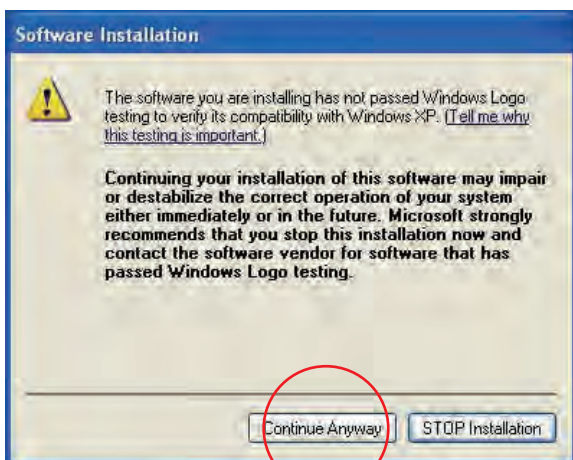
④ Select "Complete", and then click "Next."



⑤ Click “Next.”

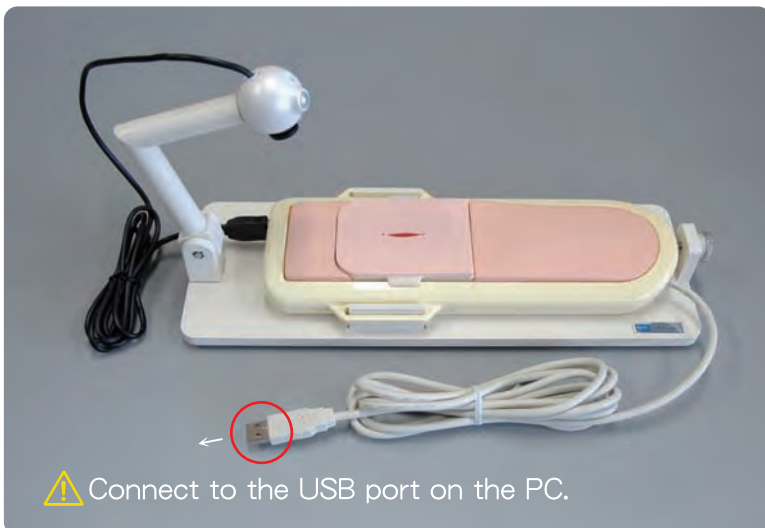


⑥ Click “Continue.”

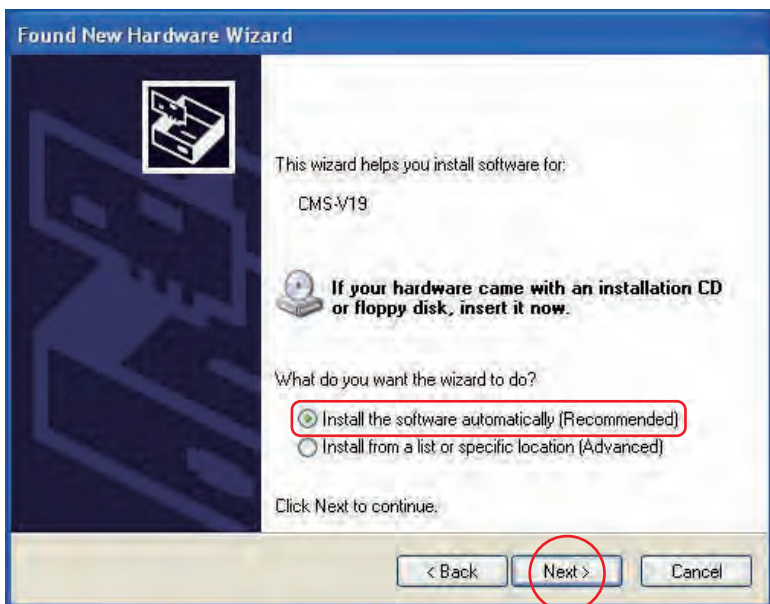


⑦ Click “Finish,” then finish installing of the driver-soft.

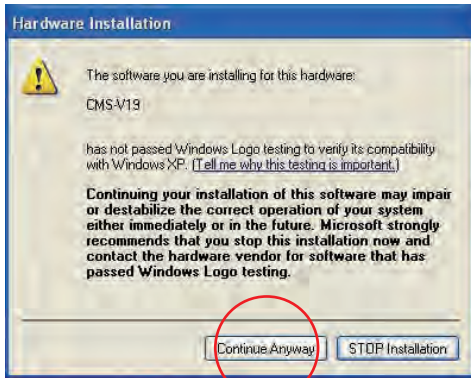
After installing the USB camera driver, connect the Suture Evaluation unit's USB cable to PC.



※The sample screen shots in this manual are of Windows XP. Window appearance or procedures may vary depending on OS or other system settings.



⑧When the simulator connected to the PC, window opens as shown above.
Click "Install the software automatically", then choose the "Next."



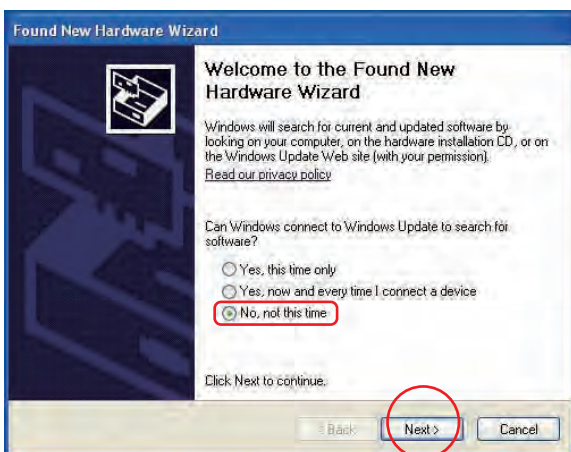
⑨ Click “Continue Anyway”



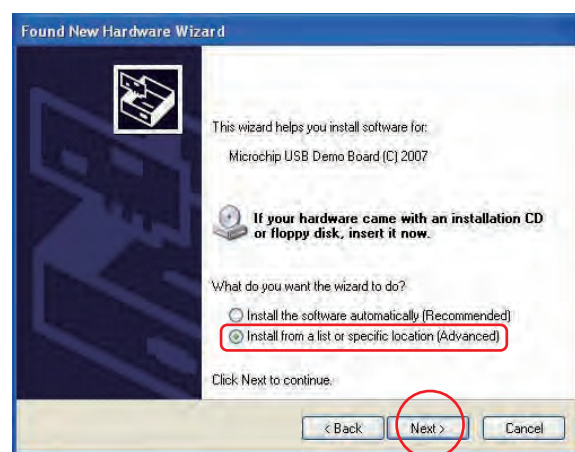
⑩ Click “Finish” , complete the installation.

Set up is to begin installing Suture Evaluation Simulator automatically, then click “Next”

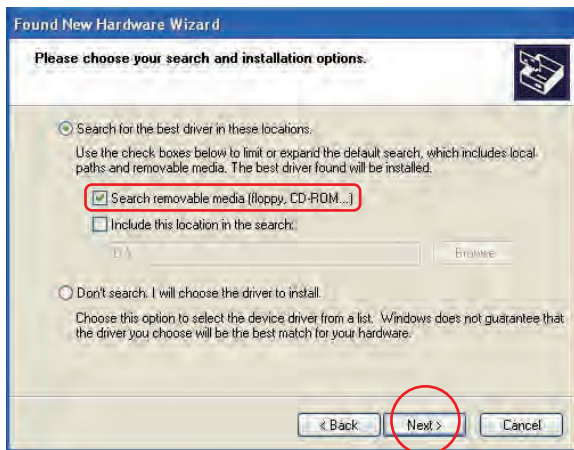
2 Installation of the Suture Evaluation Simulator



① Ensure the set up CD in the drive.
Click “No, not this time.”
Click “Next.”



② Select “Install from a list or specific location,”
select “Next”



③ Select “Search the Removable Media” , select “Next.”



④ Installation starts automatically, please wait a minute.



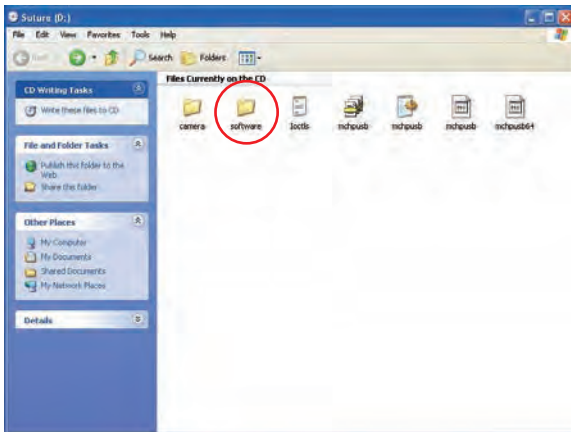
⑤ After finished the installation, click “Finish” .



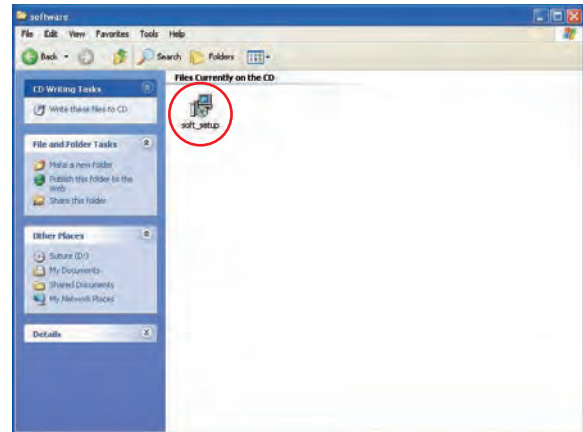
⑥ In a short time, screen like the upper picture is appeared at the lower right on the monitor.

※ If connecting the USB of the suture simulator into other USB port, installation procedure is required again (See on page 6 ~ page 8).

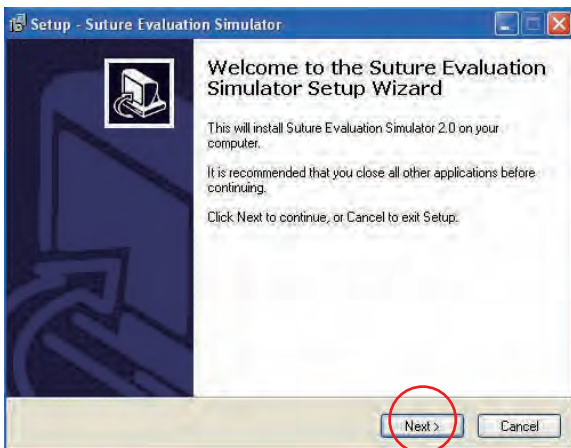
3 Installation of the Simulator software



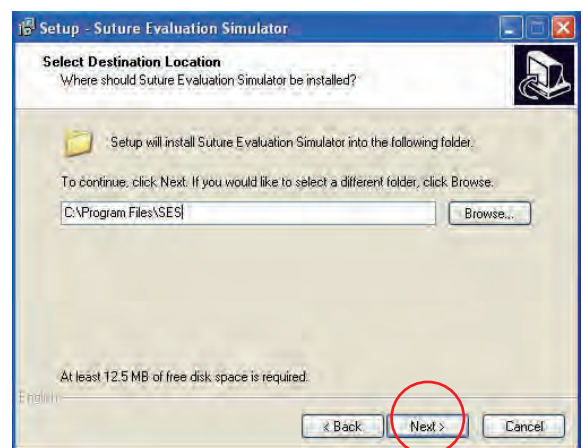
- ① After finished the installation of the driver, install the Simulator soft. Put the set up CD into the drive, then open the folder "software" .



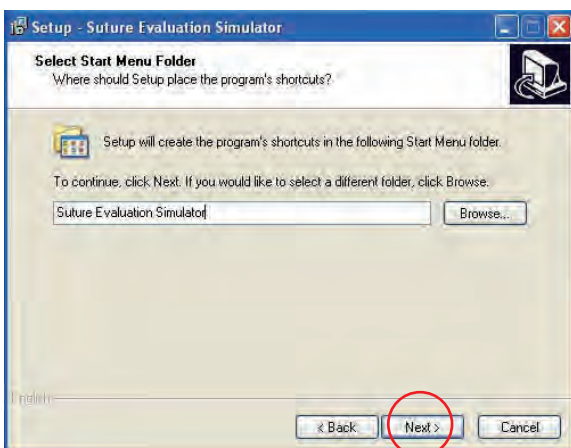
- ② Double-click "soft setup.exe" . Select "English" with click "OK" .



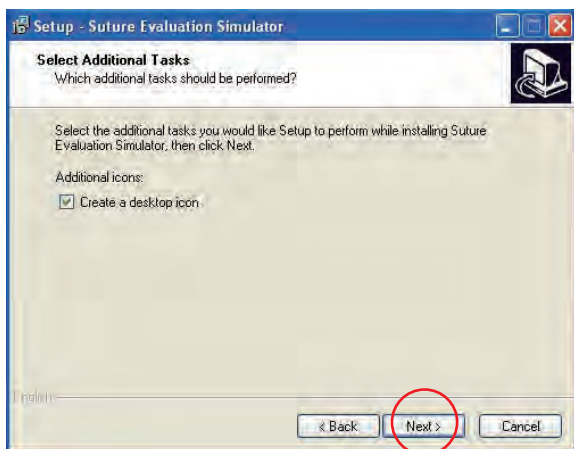
- ③ Click "Next."



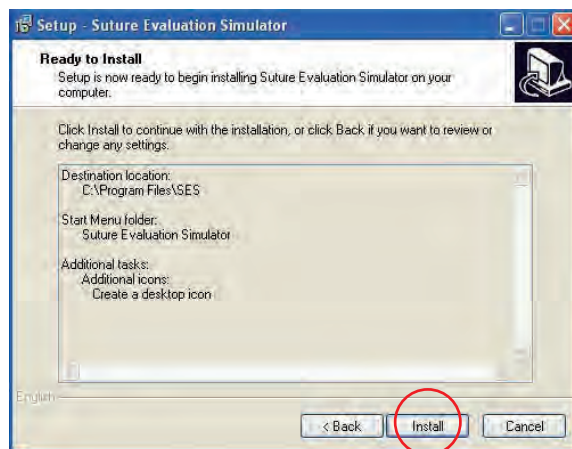
- ④ Click "Next"



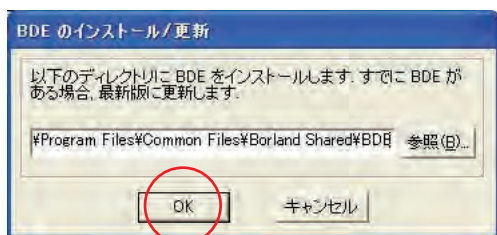
- ⑤ Click "Next"



⑦ Click “Next”



⑧ Click “Install” with ensuring the place of the installation.
Installation is automatically, please wait a minutes.

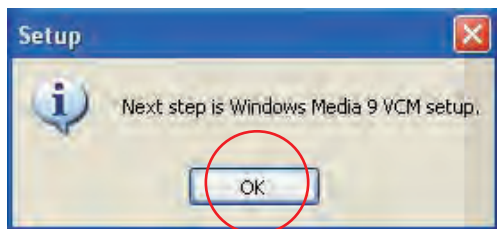


※This screen might appear differently on your PC, find the “OK” button and click it.

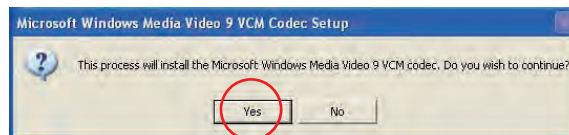
⑨ Click “OK.”



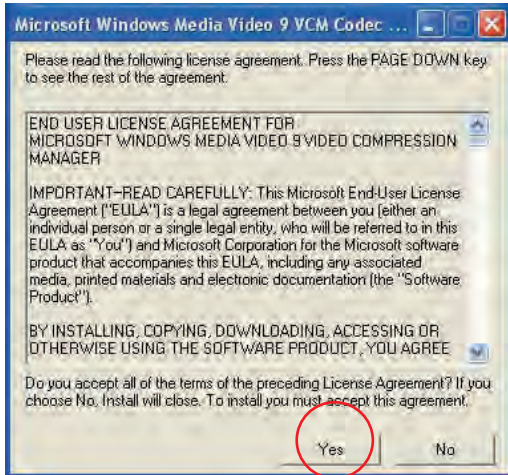
⑩ Click “Finish” to exit set up.



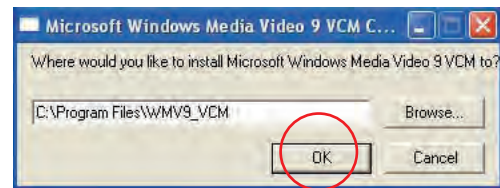
⑪Next step is “Windows Media 9 VCM” set up. Click “OK.” (Windows media Video 9 is the free soft which is necessary to motion of the program.)
Windows Media Video 9 is free soft which is the act of putting the program onto a computer system so that it can be executed.



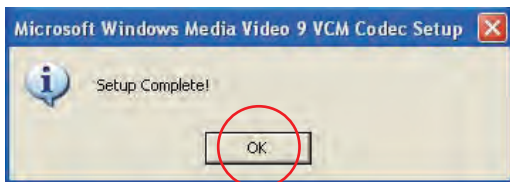
⑫ Click “Yes.”



⑬ Click "Yes."

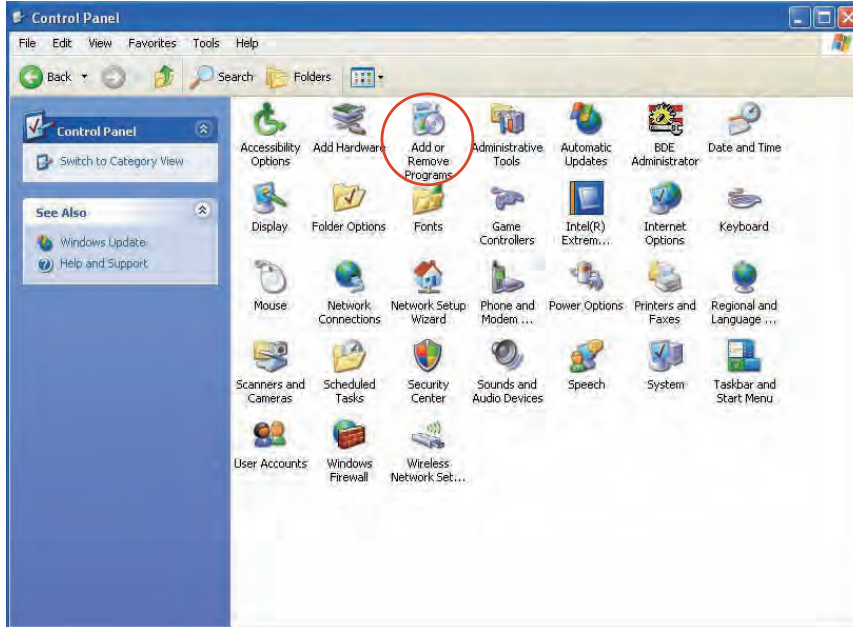


⑭ Click "OK."

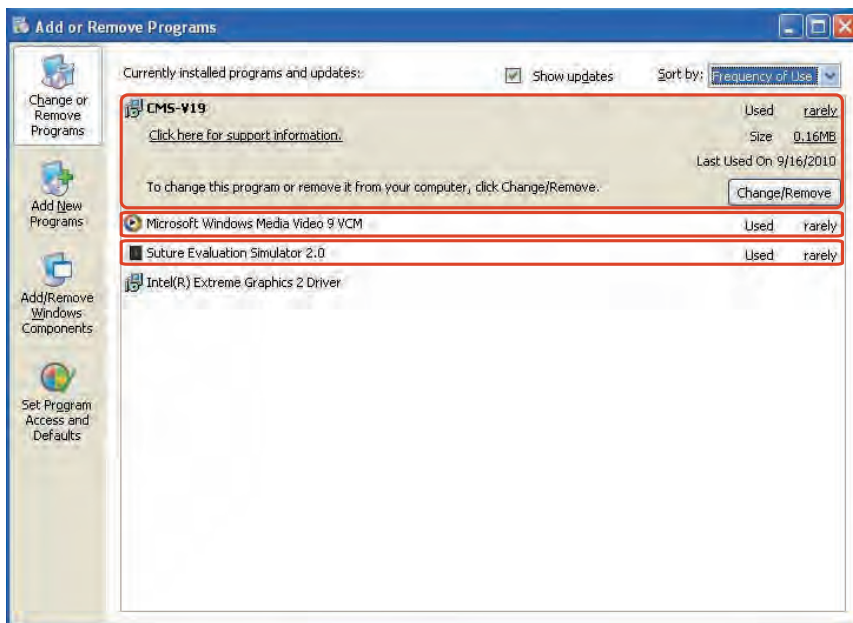


⑮ Click "OK," and finish the installation.

4 Un-installation of the driver and the soft



- ① Open the “Control panel.”
Double-click the icon “Add or Remove Programs.”



- ② Open the window “Add or Remove Programs” , delete the three applications as following.

[Program]

- Windows Media Video 9 VCM
- CMS-V19 driver
- The Suture Evaluation Simulator 2.0

Training

● Skills intended to be assessed

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● Screen and Functions

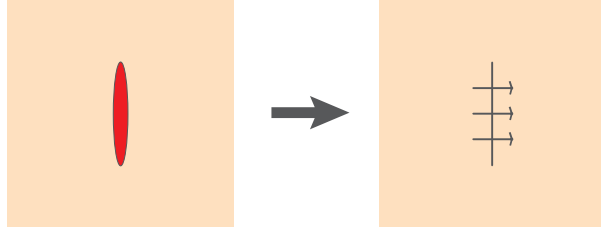
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1 Skills intended to be assessed

This Simulator is designed to assess the skin suturing skills.

Suture intended to be assessed

- Suture : Simple interrupted suture
- Ligature : Instrument tying



Make three-stitch sutures as shown above.



- Proper evaluation cannot be obtained when suture is made with unintended methods, such as mattress suture or continuous suture.

2 Evaluation function / Evaluation items

● Evaluation function

This simulator evaluates the skin suturing skills by a unique evaluation function shown below.

$$E_{Suture} = \omega_T I_T + \omega_{FoT} I_{FoT} + \omega_{JuT} I_{JuT} + \omega_{DbS} I_{DbS} + \omega_{EqD} I_{EqD} + \omega_{WoD} I_{WoD}$$

(総合点)

● Evaluation items

- | | | |
|------------------------------------|----------------------|----------------------------------|
| ① Time | I_T : Index of | Completion Time |
| ② Force on Tissue | I_{FoT} : Index of | Force on the Tissue |
| ③ Suture Tension | I_{JuT} : Index of | Judging Tension |
| ④ Distance between Stitches | I_{DbS} : Index of | Distance between Sutures |
| ⑤ Equidistance from the wound edge | I_{EqD} : Index of | Equidistance from the wound edge |
| ⑥ Would Dehiscence | I_{WoD} : Index of | Wound Dehiscence |

重み係数 $\omega_{T,FoT,JuT,DbS,EqD,WoD}$: Weighting Coefficients

(Reference)

Oshima,N. ; Solis,J. ; Ishii,H. ; Matsuoka,N. ; Hatake,K. ; Takanashi,A.

“Acquisition of quantitative data for the detailed analysis of the suture/ligature tasks with the WKS-2R”

Proceedings of 6th International Special Topic Conference on Information Technology Applications in Biomedicine, 2007.

8-11 Nov. 2007 Page(s) : 107-110

Oshima,N. ; Solis,J. ; Ogura, Yu. ; Hatake,K. ; Takanashi,A.

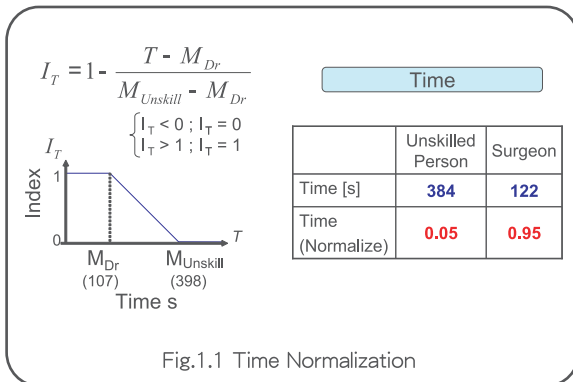
Development of the suture / ligature training system WKS-2 designed to provide more detailed information of the task performance

Proceedings of IEEE / RSJ International Conference on the Intelligent Robots and Systems 2007.

ct.9 2007-Nov.2.2007 Pages(s) : 58-63

3 Normalization of the evaluation items

Each evaluation item in the evaluation function was normalized by using the collected data of surgeons, performance and those of unskilled persons. The average of the surgeon group's data is set to "1", while the average of the unskilled group's data was set to "0", and then they were linearly-connected. Each evaluation parameter was normalized as follows.



1.1 Normalization of the completion time
 For the surgeons group, the average time required to complete the designated skin suturing procedure was 107 [s], while that of the unskilled group was 398 [s]. Thus, when the completion time is 107 [s] or less, IT is "1", and when it takes 398 [s] or more, IT is "0". When the time is between 107 [s] and 398 [s], IT is found by the calculating formula shown below.

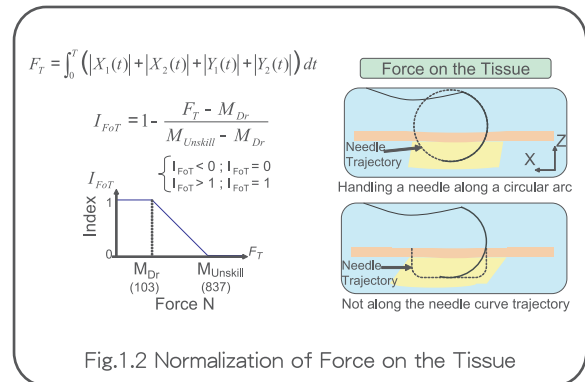


Fig. 1.2 Normalization of force on the tissue
 The data of the force applied on the tissue during the suturing operation was normalized according to "the smaller, the better" principle.

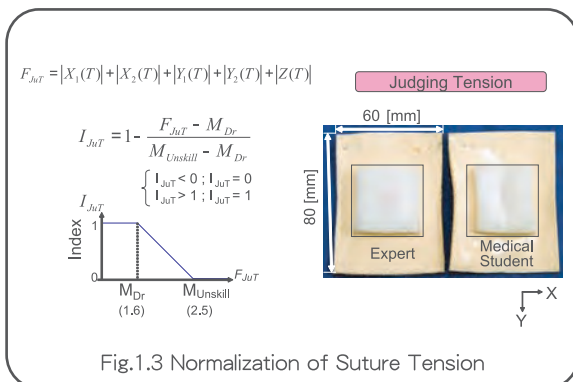


Fig. 1.3 Normalization of Suture Tension
 The tension caused by the ligature was also normalized, according to the principle that the smaller the deformation of the simulated tissue, the better the result.

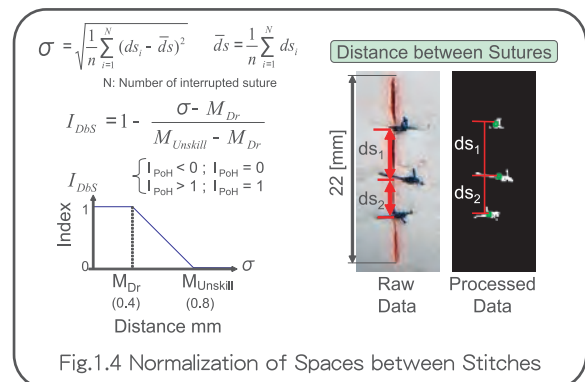


Fig. 1.4 Normalization of Spaces between Stitches
 Distances are measured between the centroid of each stitch.
 The Distances are measured between the centroids of the stitches were used for normalization, because the smaller the values is, spaces between the stitches are closer to equal.

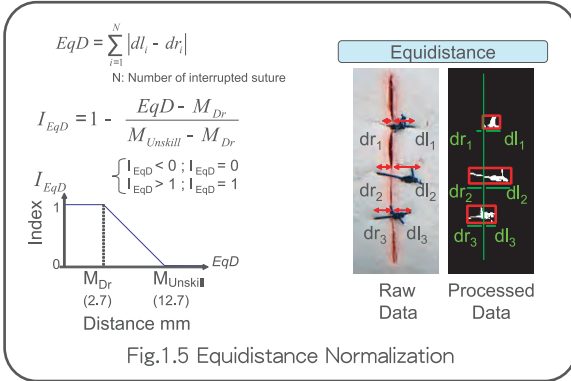


Fig.1.5 Equidistance Normalization

Fig. 1.5: Normalization of the equidistance from the wound edge

On each stitch, difference in distances from the needle insertion point to the wound edge and the distance from there to the needle emerging points is obtained from image processing. The normalization was made to the total equidistance value of all stitches.

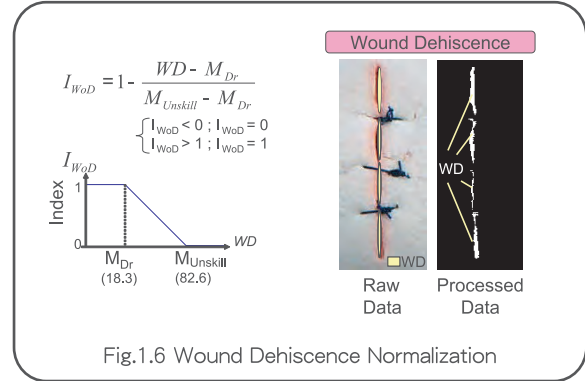
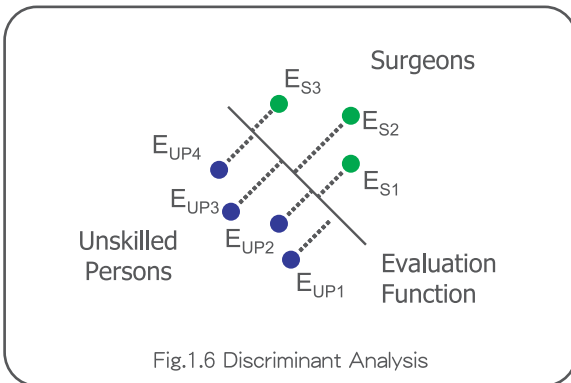


Fig.1.6 Wound Dehiscence Normalization

Fig. 1.6 Normalization of the wound dehiscence
 Since lips of a wound should be as closely contacted to each other as possible, the area of opening wound was normalized accordingly.
 Wound Dehiscence

4 About weighting coefficients



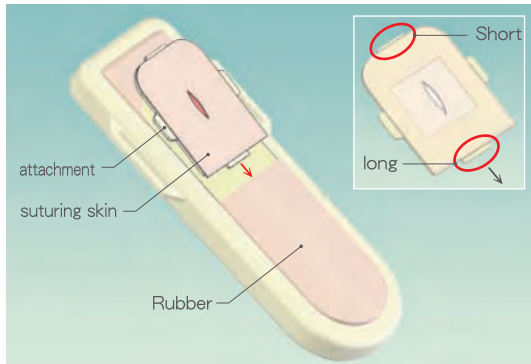
Weightings “ ω ” of each evaluation item in the evaluation function was found by using method , a straight line separating the two groups at the greatest distance is drawn, and the coefficients are derived therefrom.

- | | |
|------------------------------------|-------------------|
| ① Time | $I_T = 0.843$ |
| ② Force on Tissue | $I_{FoT} = 0.257$ |
| ③ Suture Tension | $I_{JuT} = 1.367$ |
| ④ Distance between Stitches | $I_{DbS} = 0.330$ |
| ⑤ Equidistance from the wound edge | $I_{EqD} = 1.072$ |
| ⑥ Would Dehiscence | $I_{WoD} = 0.746$ |

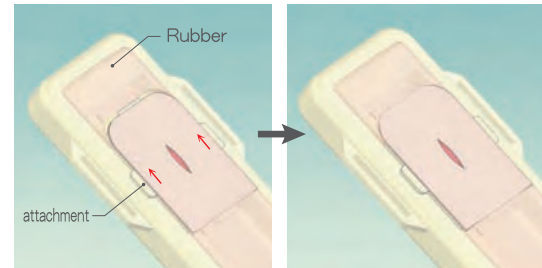


- The weighting coefficient values are set as the default. The values can be changed by the administrator only.

1 Attachment and removal of a simulated skin



① To attach the skin unit, holding the side lugs of the plate, insert its longer tenon into the pit in the section of the larger rubber until it is all the way seated.



取付完了

② Holding the lugs, slide the skin unit to the opposite direction so that its shorter tenon is inserted in the section of the smaller rubber.

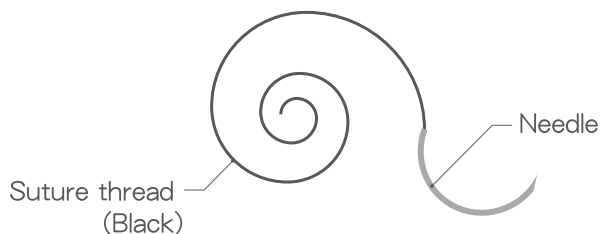


③ When detach the skin unit, holding the lugs, slide the skin toward the larger rubber, and detach the tendons following the reverse procedure of its.

⚠ Caution

- Pay attention to direction, the upper and the lower of the Suture skin.
- The rubber can be damaged if the plate is forcibly inserted or removed without being slid.

2 Use a black suture thread



When the simulator evaluates the sutured wound by image processing, PC will not recognize lighter colored thread properly. Therefore, be sure to use a black suture thread for evaluation and training with this simulator.

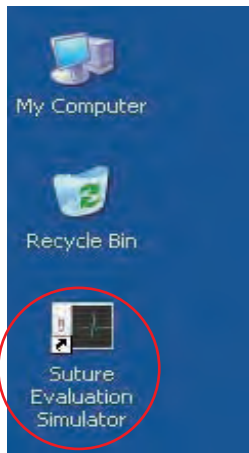


⚠ Caution

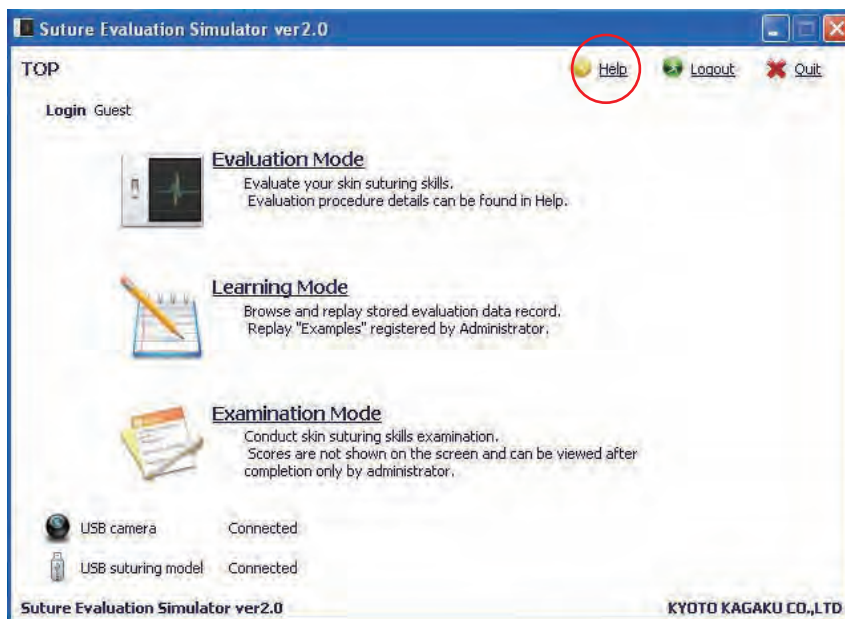
- Recommend a standardized needles and threads as the above picture.

3 Start up the Simulator-soft

Before starting up the suture simulator soft, connect the Suture Simulator USB cable into the PC.



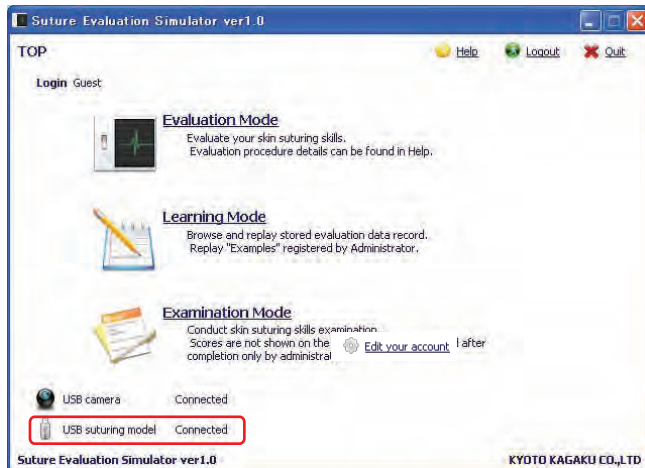
For starting up the suture simulator soft, double-click the short cut “Suture Simulator” or click the button “Windows” , select Suture Simulator in “All programs” from the menu.



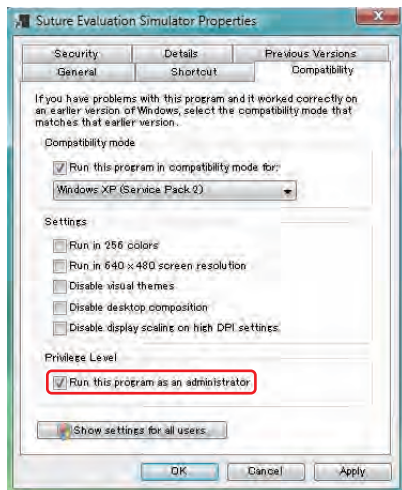
4 For “Windows Vista” users

About “UAC(User Accounts Control)”

The suture model can't be perceived because of “UAC (User Accounts Control)” of Windows Vista.



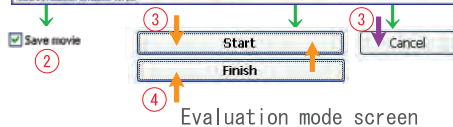
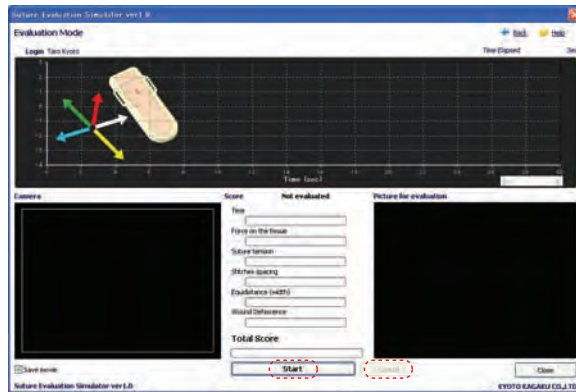
In this case, Once finishing the soft ware, open the property “The Suture Evaluation Simulator.”
Check on “this program as administrator.”



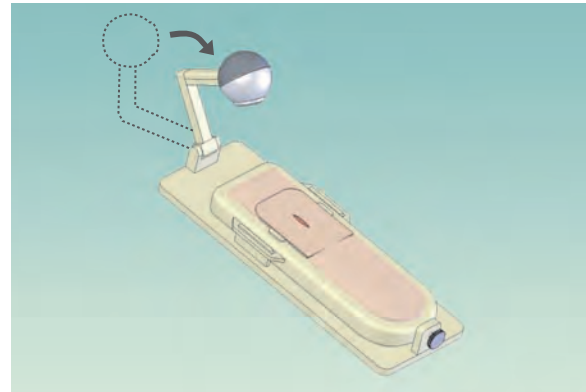
(Property of the suture simulator can be opened by right-click on the short cut.)



5 The process of the Suture Evaluation



Evaluation mode screen



Standard position (picture-recording position)

① After start up the suture simulator soft, select Evaluation mode or Examination mode with registered account number. (About login: See on the page 22 “How to use the software.”)

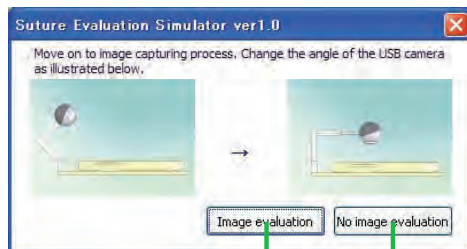
② Confirm the check-box “keep movies” checked when recording the suture operations, and set the USB camera like the above figure
 ※Even if no recording, it is no influence on evaluating the skin suturing skills.

③ Set a needle with needle-folder, click the start button in Examination mode. Start suturing after “Go” sign is shown in the screen.

④ After making three-stitch, click the “finish” button. (Cut an excessive thread after click the finish button.) Image evaluation dialog box is shown, evaluated the image according to the image evaluation system. When USB camera has no connection, image evaluation dialog box isn't shown.



• Be sure to make three-stitch suturing with Simple interrupted suture and Instrument tying. Image Evaluation Dialog Box①



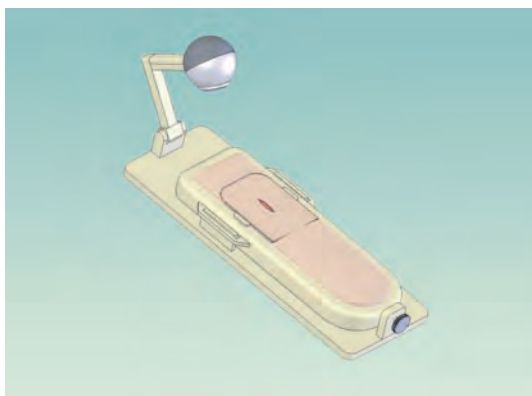
⑤ ⑥

Image Evaluation Dialog Box①

⑤ Image evaluation: The image is evaluated. See on the page 20 “How to assessment.”

⑥ No image evaluation: Score is shown in evaluation mode screen which is judged from “Time,” “Force on tissue” and “Suture tension.”

6 Image Evaluation Procedure



Standard position (picture-recording position)

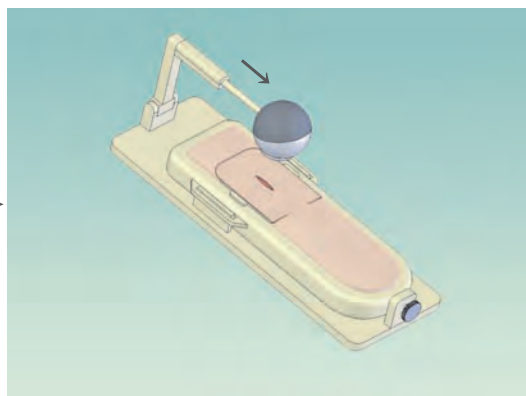
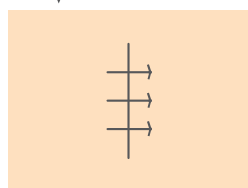
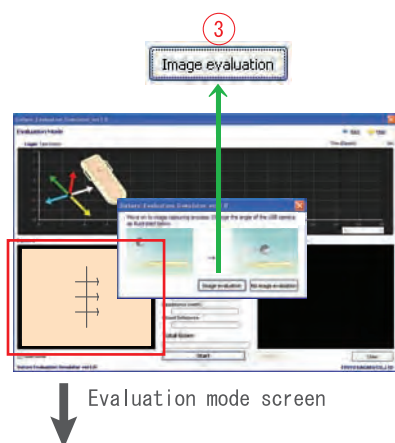
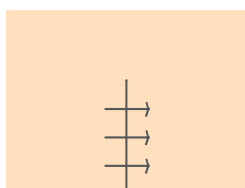


Image Evaluation Position

① First, move the USB camera to the image evaluation position as illustrated below.



○ Good



× Whole of the wound is not covered



× Out of focus

② Ensure that the whole of the wound is covered by the image captured with the USB camera.

③ When the captured image is confirmed to be good, click the “Image Evaluation” button in the Image Evaluation Dialog Box. Click the “Image Evaluation” button in the Image Evaluation dialog box.



• It is impossible to be assessed, in case of whole of the wound is not covered or out of focus.

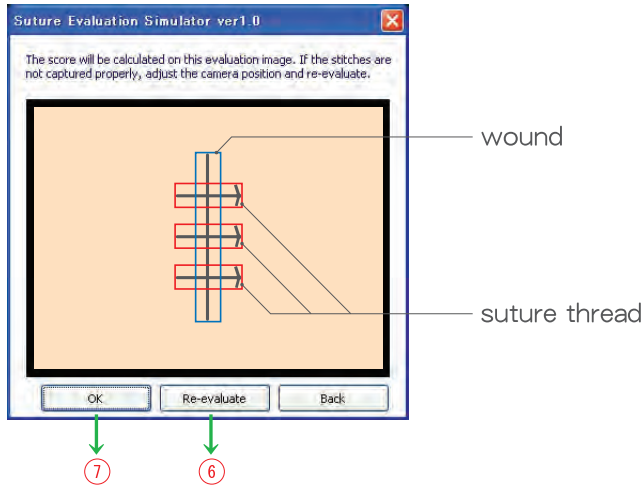
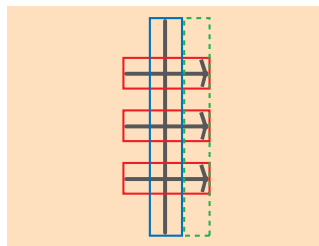
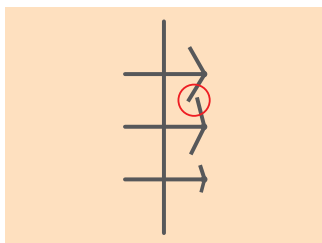


Image Evaluation Dialog Box②.

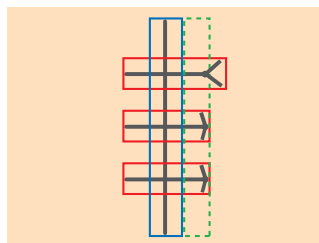
- ④ A dialog box asking for confirmation of picture to be evaluated will be displayed. The recognized wound area is indicated by a blue box, and the recognized stitches are enclosed in red boxes.



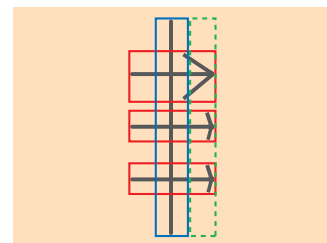
○ Good



× Overlapping tails
(Boxes will not be displayed.)



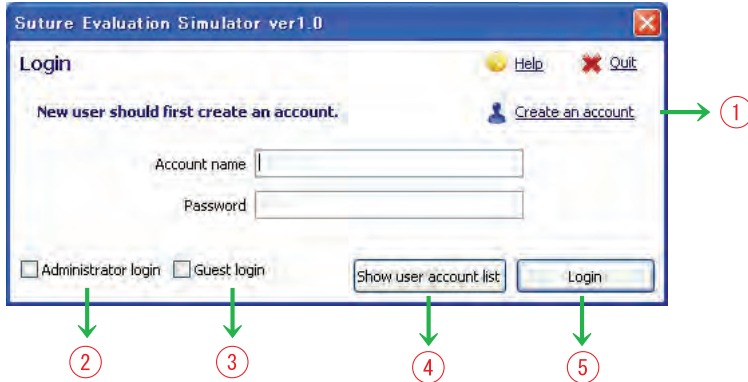
× Tails out of the
designated area.



× Tails out of the
designated area.

- ⑤ Before moving on to the next step, cut the tails of knots shorter than usual to avoid overlapping with other stitches, or position them towards the wound and keep them within the area shown with a dotted-line box below.
- ⑥ When stitched are not recognized properly, adjust the tail of the suture threads, and then click the “Re-evaluate” button.
- ⑦ When the stitches are properly recognized, confirm it by clicking the “OK” button. Scores will be shown on the Evaluation Mode Screen.

1 Login

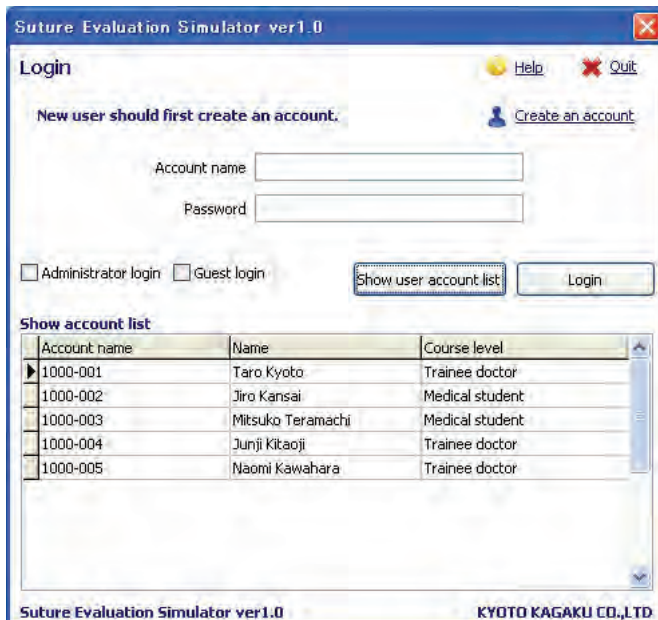


① Login as administrator

By checking this box, the Account name becomes un-editable. Default password is set to "crossnet".

※ The administrator should to change the password after the software is installed.

② Login as guest By checking this box, both Account name and Password are set to "guest", which are automatically entered.



③ List of accounts

Show all registered accounts.

④ Login

Login the system by checking the entered Account name and Password against the database. When the login is complete, the TOP Screen will be displayed.

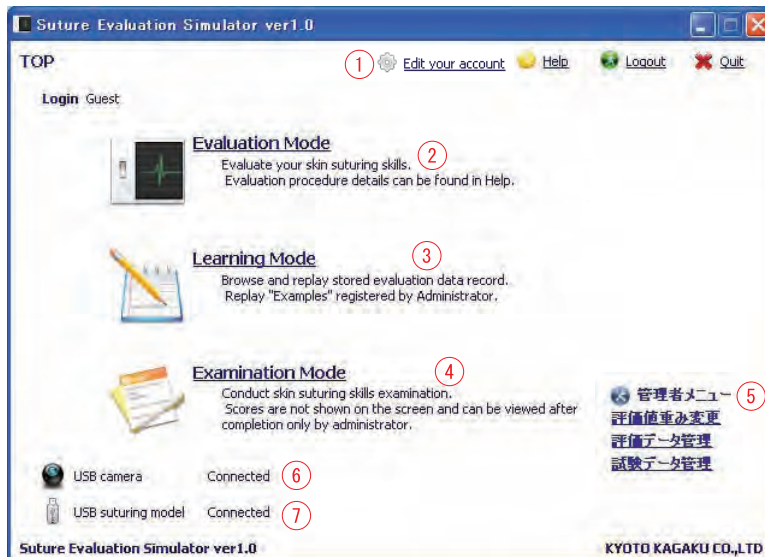
⑤ Account registration

Open a new Account Registration dialog box

② User Account registration

- ① Account name (one-byte alphanumeric characters, 35 characters at maximum)
Enter an account name to be used for login.
(If the same name has already registered, the new one cannot be accepted.)
- ② Password (one-byte alphanumeric characters, 4 characters at minimum, 35 characters at maximum)
Enter a password.
- ③ Password confirmation (one-byte alphanumeric characters, 4 characters at minimum, 35 characters at maximum)
Enter the same password again.
- ④ Name (double-byte or one-byte kana/alphanumeric characters, 35 characters at maximum)
Enter your name.
- ⑤ Course level (double-byte or one-byte kana/alphanumeric characters, 35 characters at maximum)
Enter your current course level.
- ⑥ Account registration
Register the account in the database. An automatic login follows.
- ⑦ Cancel
Cancel the Account registration.

3 Top screen



① Edit your account settings

This link is not shown when login is done as guest.
Current account details can be edited.

② Evaluation Mode

This mode is unselectable when login is done as administrator.
Evaluation result cannot be saved when login is done as guest.

③ Learning Mode

This mode is unselectable when login is done as administrator.
When login is done as guest, only the “Model Techniques” video can be watched.

④ Examination Mode

This mode is selectable only with login as guest.

⑤ Administrator menu

This menu is shown only when login is done as administrator. The following modes are options.
Edit evaluation value weighting: Change weighting of each evaluation item in the evaluation function.
Evaluation data management: Browse/delete user account and evaluation data.
Examination data management: Browse/delete examination data.

⑥ USB camera

Connection status of the USB camera.
When it says “disconnected”, suture performance cannot be recorded on video for image evaluation.

⑦ USB suture model

Connection status of the USB suture model.
When it says “disconnected”, neither “Evaluation Mode” nor “Examination Mode” is selectable.

4 Edit your account settings

Edit registered account information.

① Account name

Account name is un-editable.

② Password (one-byte alphanumeric characters, 4 characters at minimum, 35 characters at maximum)

Enter a new password.

③ Password confirmation

(one-byte alphanumeric characters, 4 characters at minimum, 35 characters at maximum)

Enter the same new password again.

④ Name (double-byte or one-byte kana/alphanumeric characters, 35 characters at maximum)

Enter a new name.

⑤ Course level (double-byte or one-byte kana/alphanumeric characters, 35 characters at maximum)

Enter your current course level.

⑥ Update

Save the data and update the account information in the database.

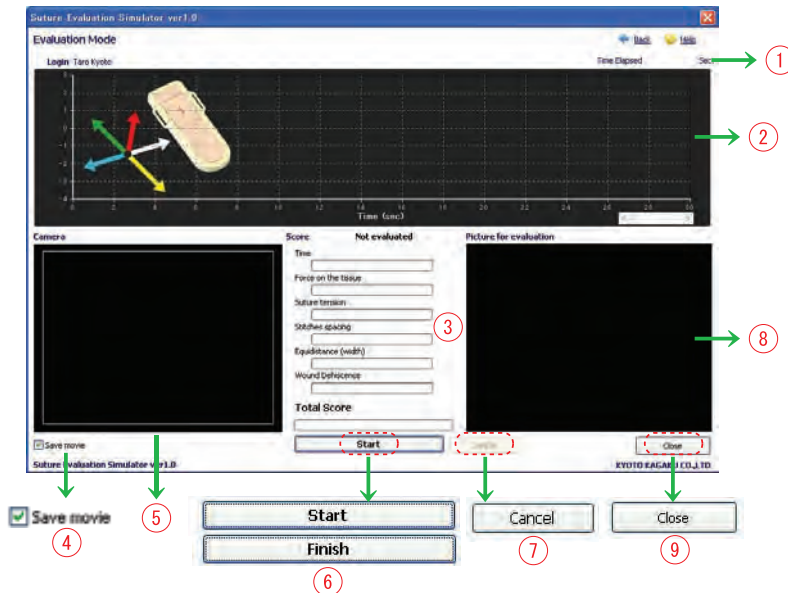
⑦ Cancel

Cancel the Account editing.

5 Evaluation Mode

Suturing operation with registered account (or guest-login).

※Refer to "Skin suturing evaluation procedure" for actual procedures of suture performance evaluation.



① Time elapsed

Indicates the time elapsed.

② Chart data

Chart data is shown (horizontal axis: time, vertical axis: skin displacement).

Skin displacement along five axes is dynamically graphed by color corded chart ; X+ (white), X- (blue), Y+ (green), Y- (yellow), and Z (red) .

③ Scores

Itemized scores

④ Save video

When this check box is checked, moving pictures captured by the camera will be saved.

When log in is done as guest, "Save video" function is unusable.

⑤ Camera

Images captured by the USB camera are shown. The same moving pictures are saved by the "Save video" function" .

⑥ Start (Finish)

Evaluation starts after three-second countdown.

When the suture performance is complete, click the same button "Finish" to close the session.

⑦ Cancel

Cancel evaluation. Scores will not be displayed for an aborted operation.

⑧ Evaluation image

The picture evaluated for giving scores on distance between sutures, equidistance from the wound edge, and wound dehiscence, is shown.

⑨ Close

Close the window.

6 Learning Mode (login as a registered user)

Registered user's data and the "Examples" can be read.

The screenshot shows the 'Learning Mode' interface. At the top is a 'Learning Curve' graph with a red line showing performance over time. Below it are three tables: 'Evaluation information', 'Evaluation data list', and 'Examples list'. The 'Evaluation data list' table contains the following data:

Registration date	Time	Force on the tissue	Suture tension	Sutures spacing	Equivalence
2009/07/03 14:50:29	71	86	100	86	
2009/07/03 15:04:54	78	92	100	90	
2009/07/03 16:14:46	67	70	100	90	
2009/07/03 16:28:27	39	62	70	38	
2009/07/03 18:19:53	46	69	100	55	
2009/07/03 19:36:00	74	74	99	80	
2009/09/25 10:53:11	0	0	0	0	
2009/09/25 10:53:24	0	0	0	0	

The 'Examples list' table contains the following data:

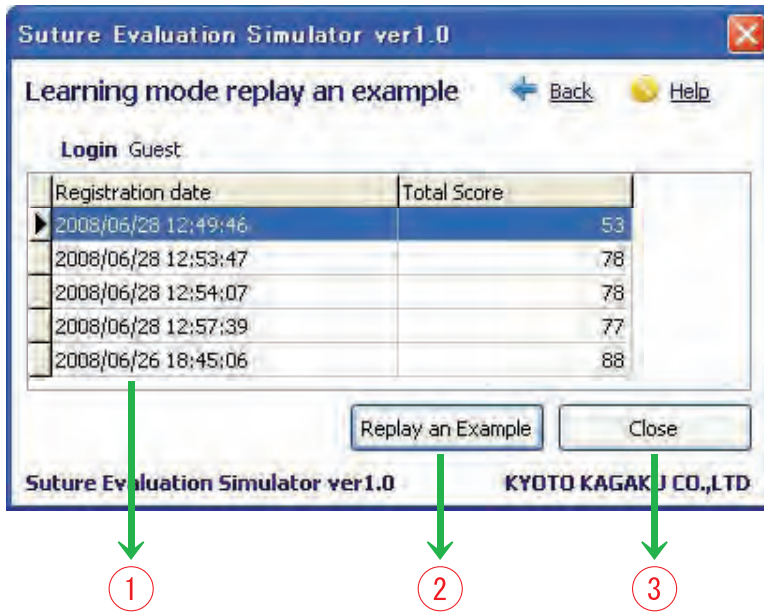
Registration date	Total Score
2009/07/03 14:50:29	0

Below the main window are three buttons: 'Replay a data', 'Replay an Example', and 'Close'. Red circles with numbers 1 through 7 are placed around the interface to indicate specific features and actions.

- ① Your evaluation information
Statistics of evaluation data of the login user are displayed.
- ② Evaluation data list
Evaluation data of the login user are displayed.
Data can be sorted by clicking the title of a key evaluation item.
- ③ Learning curve
Learning curve of the login user is shown.
- ④ Replay evaluation data
Replay a selected evaluation data of the login user (Data replay).
- ⑤ List of Examples
Evaluation data registered in Examples is shown in a list form.
- ⑥ Play Examples' data
Replay a selected Example' s data (Data replay).
- ⑦ Close
Close the window.

7 Learning Mode (login as guest)

When login as guest, can be checked only “example data.”



① List of Examples

Evaluation data registered in Examples is shown in a list form.

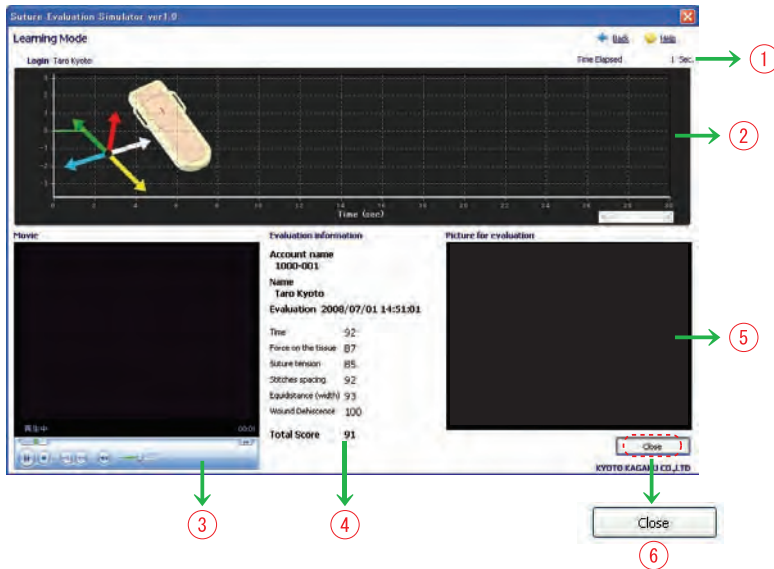
② Replay Examples' data

Replay a selected Example's data (Data replay).

③ Close

Close the window.

8 Data replay window



① Time elapsed

Indicates the time elapsed.

② Chart data

Chart data is shown (horizontal axis: time, vertical axis: skin displacement).

Skin displacement along five axes is dynamically graphed by color corded chart ;
X+ (white), X- (blue), Y+ (green), Y- (yellow), and Z (red) .

③ Movie

The recorded video is replayed.

④ Evaluation information

User information of the session' s operator and the itemized evaluation scores are shown.

⑤ Evaluation image

The picture evaluated for giving scores on distance between sutures, equidistance from the wound edge, and wound dehiscence, is shown.

⑥ Close

Close the form.

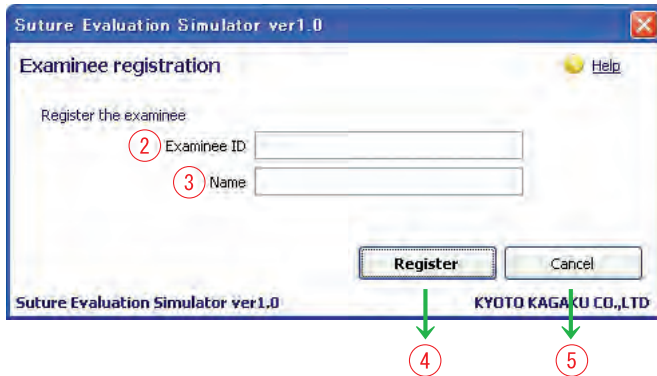
9 Examination Mode

Evaluation Mode is for students' achievement examination.

Set up the examinee data and evaluate suture operation as a guest.

After operation, its score doesn't appear.

Only an administrator can check scores.



① Examinee registration

When the Examination Mode is selected, the “Examinee registration” dialog box will open.

② ID number (one-byte alphanumeric characters, 35 characters at maximum)

Enter the examinee's ID number.

③ Name (double-byte or one-byte kana/alphanumeric characters, 35 characters at maximum)

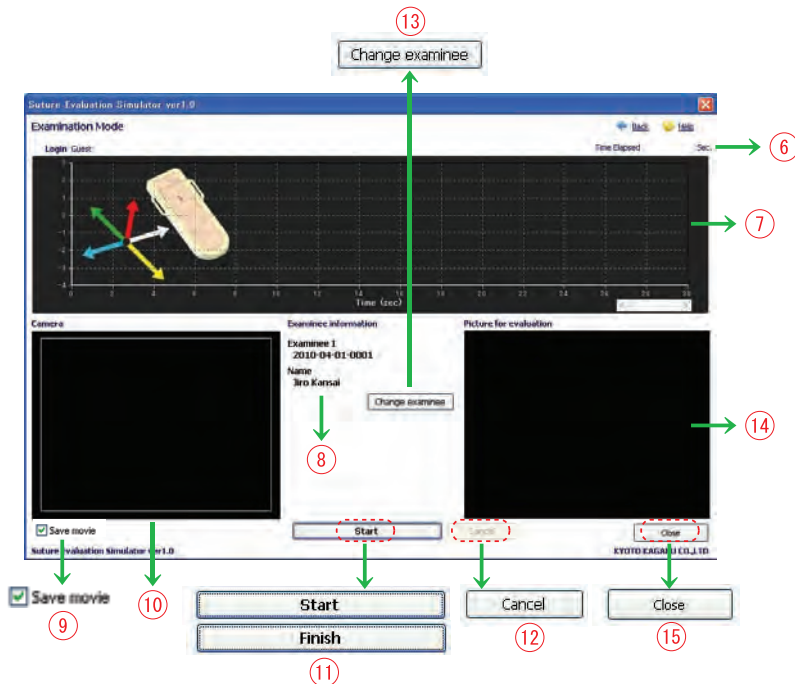
Enter the examinee's name.

④ Register

Register the examinee and move on to the Examination Mode Screen.

⑤ Cancel

Close the form.

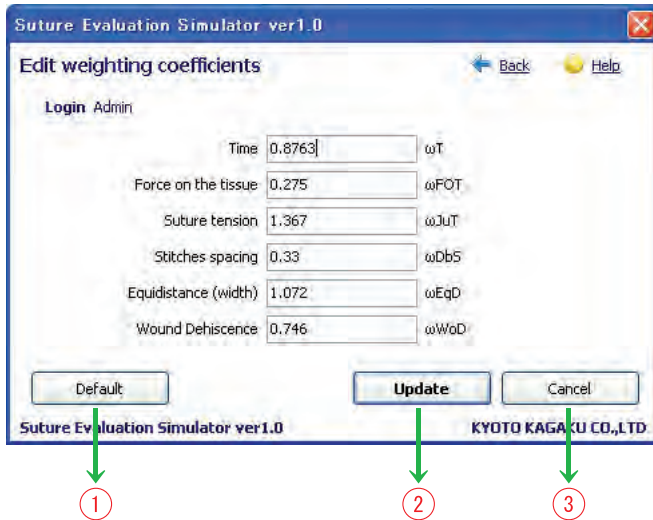


※Refer to "Skin suturing evaluation procedure" for actual procedures of suture performance evaluate

- ⑥ Time elapsed
Indicates the time elapsed.
- ⑦ Chart data
Chart data is shown (horizontal axis: time, vertical axis: skin displacement).
Skin displacement along five axes is dynamically graphed by color corded chart ;
X+ (white), X- (blue), Y+ (green), Y- (yellow), and Z (red) .
- ⑧ Examinee information
Registered examinee information is shown.
- ⑨ Save video
When this check box is checked, moving pictures captured by the camera will be saved.
When log in is done as guest, "Save video" function is unusable.
- ⑩ Camera
Images captured by the USB camera are shown. The same moving pictures are saved by the "Save video" function" .\
- ⑪ Start (Finish)
Evaluation starts after three-second countdown.
When the suture performance is complete, click the same button "Finish" to close the session.
- ⑫ Cancel
Cancel evaluation.
- ⑬ Change examinee
Open the examinee registration window and to reset the examinee.
- ⑭ Evaluation image
The picture evaluated for giving scores on distance between sutures, equidistance from the wound edge and wound dehiscence, is shown.
- ⑮ Close
Close the window.

10 Change evaluation value weighting

Change evaluation value weighting in Examination mode at will as an administrator.



① Default values

Reset the all weighting coefficients to the default values.

② Update

Save the entered weighting coefficients and make them reflected in the calculation.

③ Cancel

Cancel the change of weighting coefficients, and closes the window.

11 Evaluation data management

Management use account and assessment data as an administrator. Register “Example data” in this screen.

The screenshot shows the 'Evaluation data management' interface. The 'User list' table contains the following data:

User ID	Account name	Course Level	Name	Number of evaluation record	Best Score	Average score	Date
1	1000-001	Trainee doctor	Tam Kiyoko	3	91	85	2008/06
3	1000-002	Medical student	Tero Kazuo	2	53	53	2008/06
4	1000-003	Medical student	Mitsuko Teramachi	0			2008/06
5	1000-004	Trainee doctor	Juri Kikao	0			2008/06
9	1000-005	Trainee doctor	Ajino Kawahara	0			2008/06

The 'Evaluation data list' table shows detailed evaluation records for user 1000-001, including registration dates, times, and scores across various metrics.

① User list

All data of administrators are shown.

With double-click on a line of individual data, all the evaluation data of the selected user will be shown in the Evaluation data list box. Data can be sorted by clicking the title of a key evaluation item.

② Delete user

Delete a selected user account (with Ctrl key, multiple users can be selected together).

③ Evaluation data list

A list of evaluation data of the user selected in the User list is shown. Data can be sorted by clicking the title of a key evaluation item.

④ CSV export

Export the selected evaluation data in CSV format.

⑤ Example data registration

Register the selected evaluation data as an Example.

※ “Examples” accept up to 5 set of evaluation data.

⑥ Replay evaluation data

Replay the selected evaluation data (Data replay).

⑦ Delete evaluation data

Delete the selected evaluation data (with Ctrl key, multiple lines can be selected together).

⑧ Close

Close the window.

12 Examination data management

Data management the operation in Examination mode as an administrator.

The screenshot shows the 'Examination data management' window in 'Suture Evaluation Simulator ver1.0'. The window title is 'Suture Evaluation Simulator ver1.0' and the subtitle is 'Examination data management'. It includes a 'Login Admin' section and a table of examination data. The table has four columns: 'Examinee ID', 'Name', 'Total Score', and 'Date'. The data rows are as follows:

Examinee ID	Name	Total Score	Date
2010-04-01-1000-001	Taro Kyoto	98	2008/07/02 11:23:26
2010-04-01-1000-002	Jiro Kansai	98	2008/07/02 11:24:05
2010-04-01-1000-003	Mitsuko Teramachi	98	2008/07/02 11:24:45
2010-04-01-1000-004	Junji Kitaoji	98	2008/07/02 11:25:54
2010-04-01-1000-005	Naomi Kawahara	98	2008/07/02 11:26:27
2010-04-01-1000-006	Takuya Kitayama	98	2008/07/02 11:27:09
2010-04-01-1000-007	Yumiko Shirakawa	98	2008/07/02 11:27:48
2010-04-01-1000-008	Akane Toba	98	2008/07/02 11:28:33
2010-04-01-1000-009	Shinsuke Kyogoku	98	2008/07/02 11:29:33
2010-04-01-1000-010	Hajime Takakura	98	2008/07/02 11:32:14
2010-04-01-1000-011	Kenzaburo Ebisugawa	98	2008/07/02 11:33:58
2010-04-01-1000-012	Meo Ayanokouji	98	2008/07/02 11:34:39

Below the table, there are four buttons: 'CSV export', 'Replay a data', 'Delete a data', and 'Close'. Red dashed boxes highlight these buttons, and arrows point to numbered callouts (1-5) explaining their functions:

- ① User list
- ② CSV export
- ③ Replay a data
- ④ Delete a data
- ⑤ Close

① User list

All registered examination data are shown.
Data can be sorted by clicking a key item name.

② CSV export

Export the selected examination data in CSV format.

③ Replay examination data

Replay a selected examination data (Data replay).

④ Delete examination data

Delete a selected examination data (with Ctrl key, multiple lines can be selected together)

⑤ Close

Close the window.



Caution

Do not leave this manual in contact with manikin skin.
Ink marks will be indelible, due to pigment infiltration.

Consumables and Replacement parts

Part number	Description
11230-010	Simulated skin 40pcs



Simulated skin

▪ For inquiries and service, please contact your distributor or KYOTO KAGAKU CO.,LTD.

KYOTO KAGAKU CONTACT & ORDERING INFORMATION

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