

**DRAFT**

**3D-SSP  
(3D-Stereotactic Surface Projections)  
Interface Software**

***"iSSP for CBF SPECT"***

***iSSP3.5\_Viewer***

**Windows Version**

**Operation Manual**

**Nihon Medi-Physics Co., Ltd.**

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## I. iSSP3.5\_Viewer Installation and Uninstallation

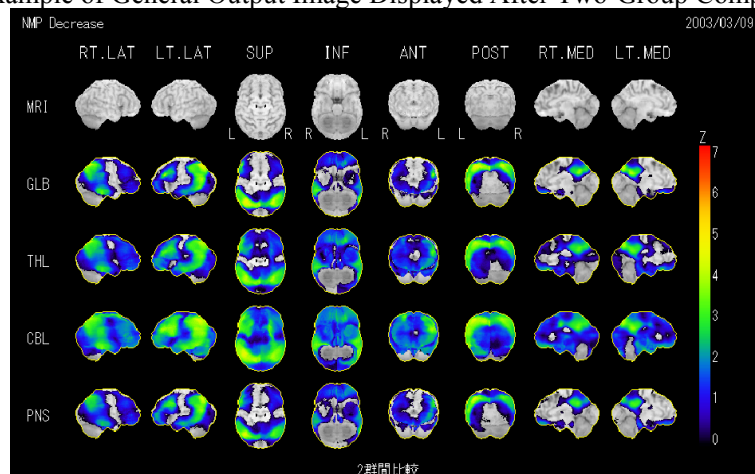
For information about iSSP3.5\_Viewer installation and uninstallation and the required operating environment, refer to the Installation Manual 3.5 and iSSP Version 3.5 Operation Manual.

## II. iSSP3.5\_Viewer Overview

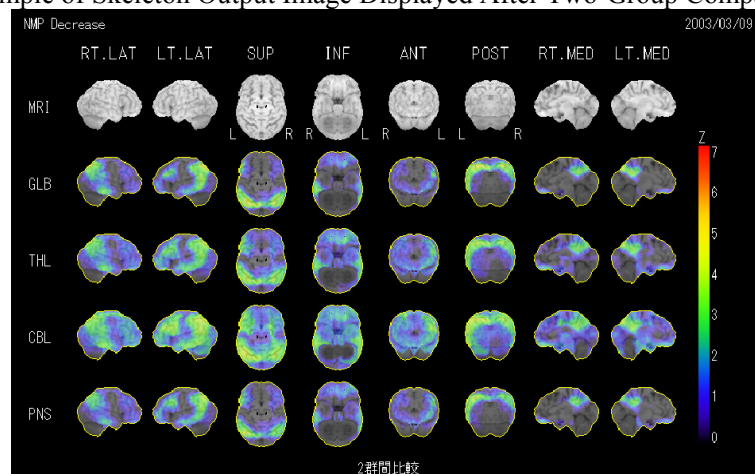
iSSP3.5\_Viewer is an iSSP viewer for displaying images from analysis result files (\*.dat) that are output from 3D-SSP analysis and two-group comparison and from databases created by facilities. The display scale can be modified and a skeleton view can be used to display the images.

For information about the result files which are output (\*.dat), refer to the operation manuals for iSSP Version3.5, iSSP3.5\_2tZ, and iSSP3.5\_DBuilder.

Example of General Output Image Displayed After Two-Group Comparison



Example of Skeleton Output Image Displayed After Two-Group Comparison

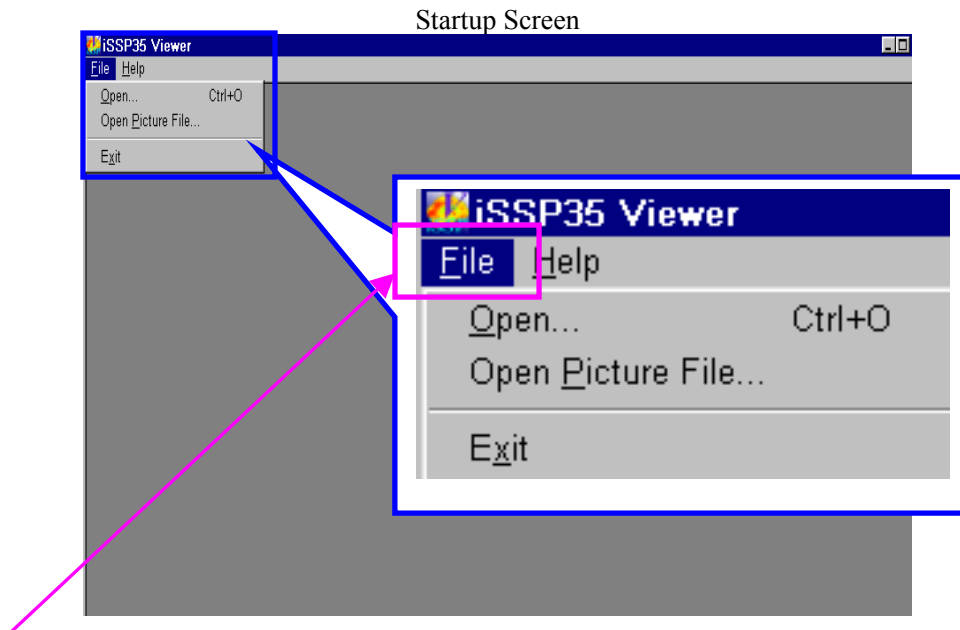


### III. iSSP3.5\_Vviewer Operating Procedures

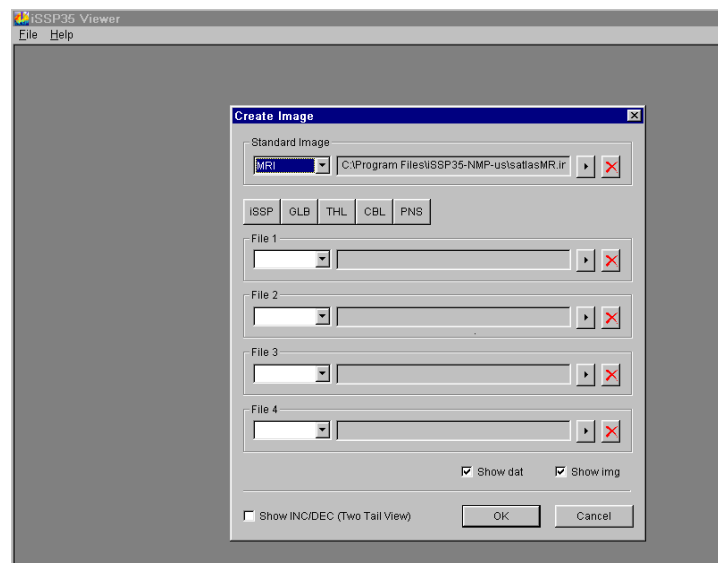
#### (1) iSSP3.5\_Vviewer Startup



Double-clicking the iSSP3.5\_Vviewer icon or shortcut icon displays the startup screen.



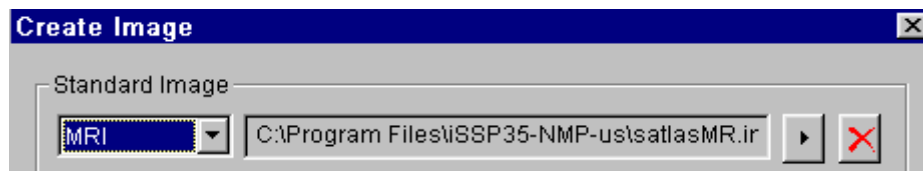
Clicking **File (F)**, and then selecting **Open (O)** from the pull-down menu displays the screen shown below.



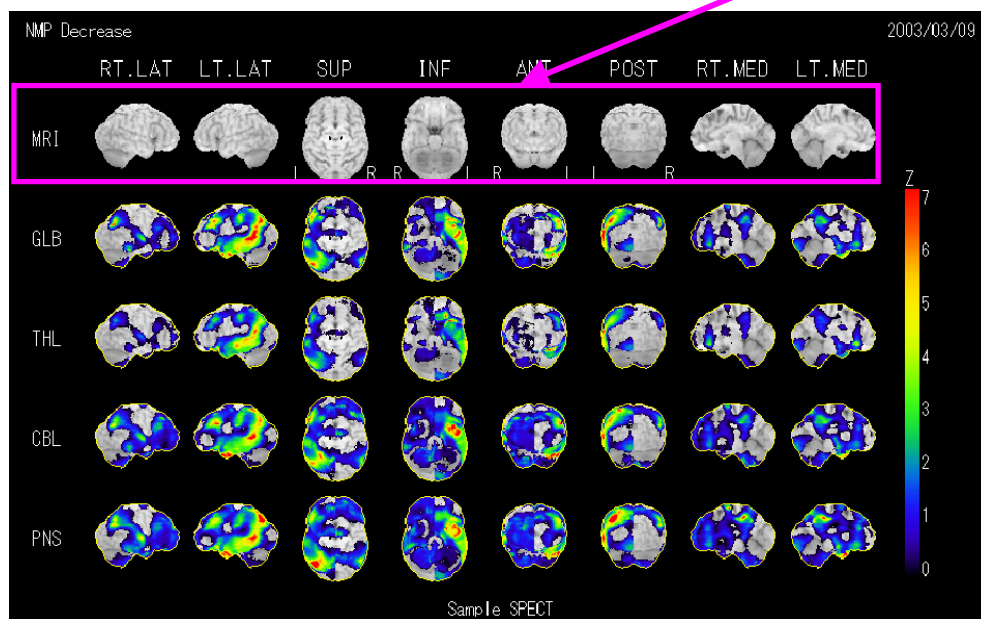
\*Tiff file (\*\*\*.tif) and bitmap file (\*\*\*.bmp) picture images can be displayed by selecting the **Open Picture File (P)** command from the pull-down menu.

## (2) Standard Images

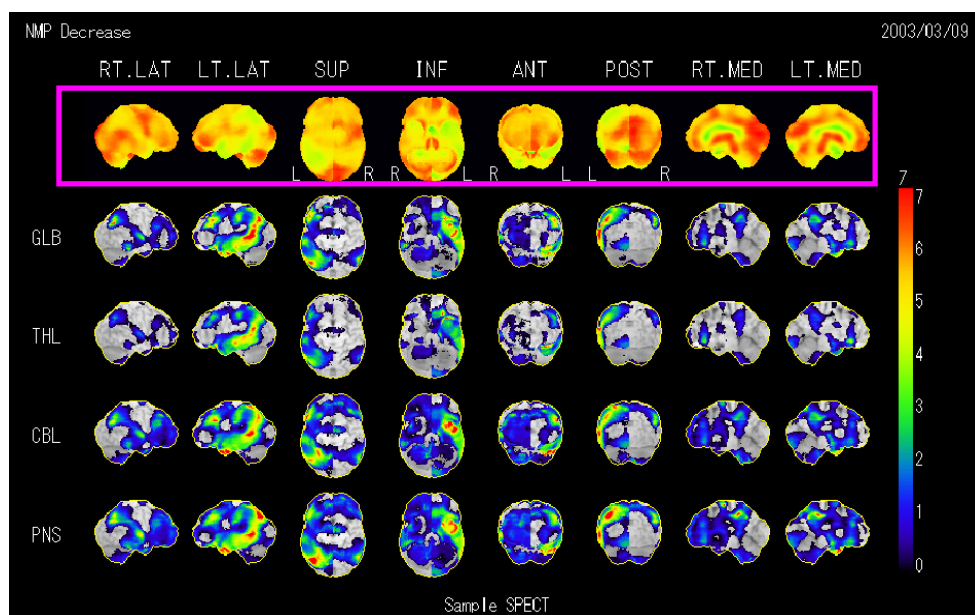
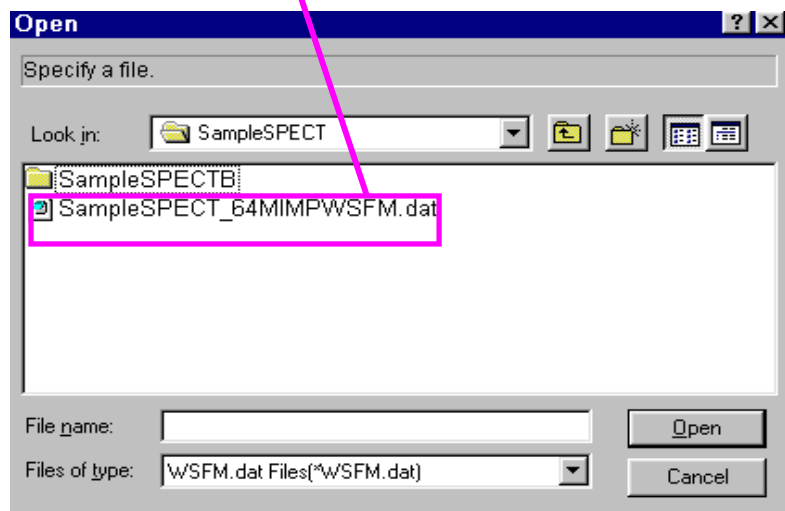
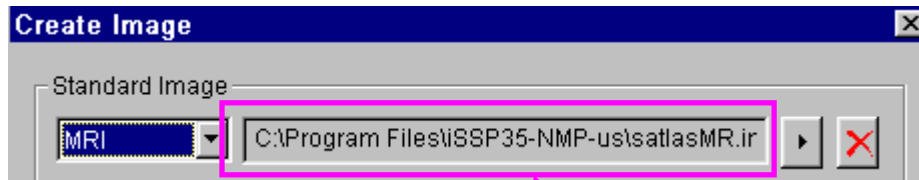
Under the default settings at installation, MR images (satlasMR.img files) extracted on a three-dimensional stereotaxic brain surface are set as the standard images.



If images are created without changing this setting, as shown in the figure below, MR images will be displayed on the top row of the displayed images.

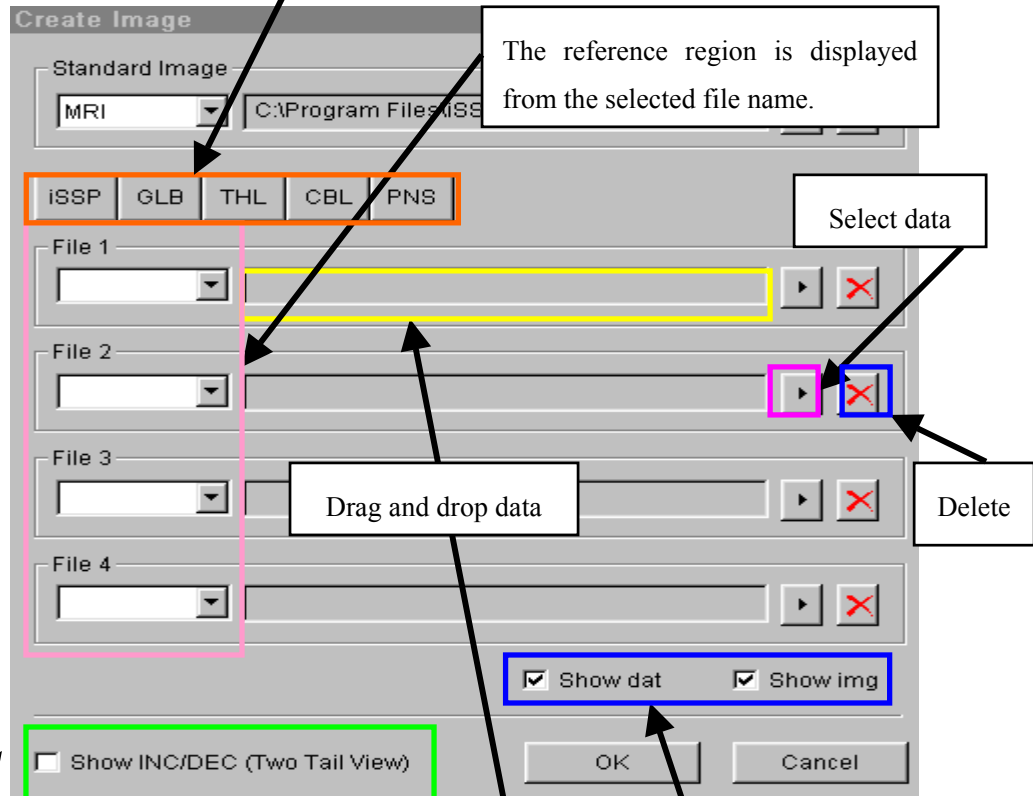


To display the brain surface bloodflow image of the patient in the top row instead of the MR image extracted to the three-dimensional stereotaxic brain surface, select the **Brain Surface Bloodflow Image** (Filename\_AgeSexPharmaceuticalNameWSFM.dat) that is output after completing analysis using iSSP3.5.



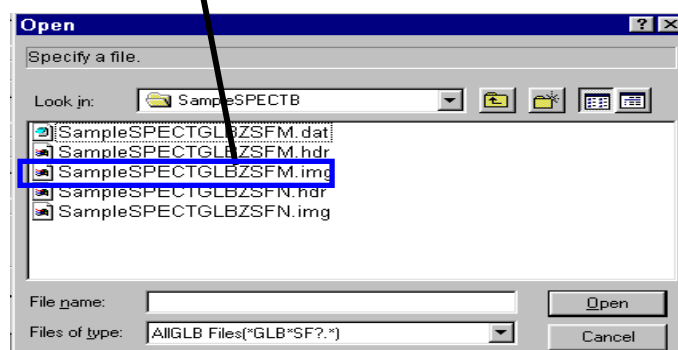
### (3) Selecting Files

Select the reference region. Using these buttons makes it easier to find a filename.



If a check mark is inserted here, the Z-score of the region with decreased bloodflow and the Z-score of the region with increased bloodflow are displayed together on the same image. However, if an \*\*\*.img file is selected, either the Increase or Decrease image is displayed. (Proposed by Dr. Takashi Nakajima, Dept. of Neurology, National Sanatorium Saigata Hospital)

If check marks are left in both boxes, binary image data and text format image data can be displayed.

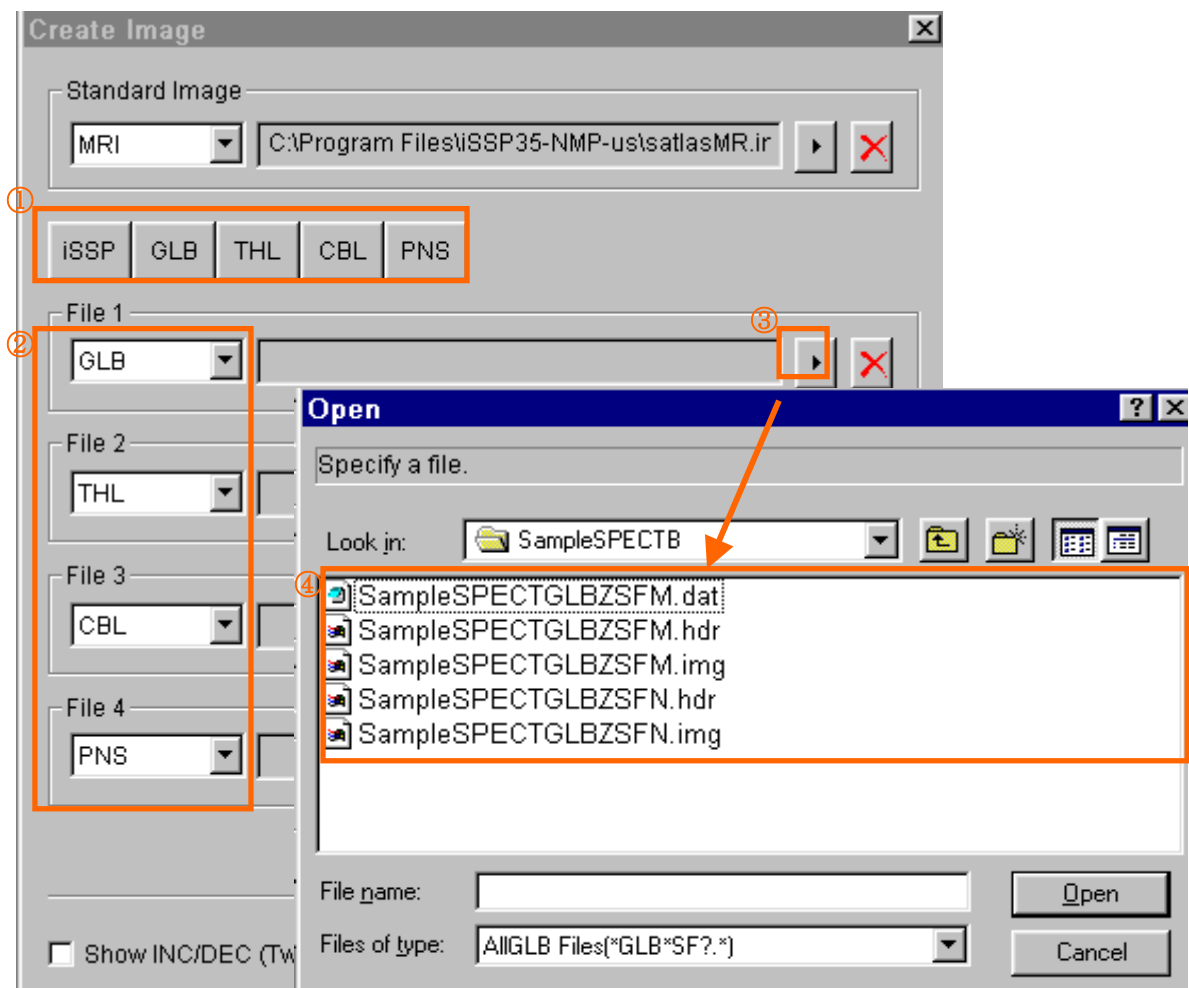


Either drag data to the **Drag & Drop** field or select files using **Select Data**.

\*Only Z-score images can be displayed as binary image data (\*.img).

When a reference region selector button (1) is selected, the reference regions of files 1 to 4 are automatically determined as shown below (2). If the reference region is already selected, pressing the **Select Data** button (3) displays only the files normalized by the reference region (4), and this makes it easier to select the desired files.

- **iSSP**: The reference region for each file is automatically assigned as File 1: GLB, File 2: THL, File 3: CBL, and File 4: PNS.
- **GLB**: The reference region of files 1 to 4 are all automatically assigned to GLB.
- **THL**: The reference region of files 1 to 4 are all automatically assigned to THL.
- **CBL**: The reference region of files 1 to 4 are all automatically assigned to CBL.
- **PNS**: The reference region of files 1 to 4 are all automatically assigned to PNS.





#### (4) Examples of Selected Files

##### 1) Output data after execution of two-group comparison (iSSP3.5\_2tZ)

If a check mark is inserted in **Save Binary Image Data (I)**, the **binary image data (\*\*\*.img)** and **text format image data (\*\*\*.dat)** are saved.

- **Z-score image data (\*\*\*.dat: Text format image data)**

Select the four files **\*\*\*GLBTZSFM.dat**, **\*\*\*THLTZSFM.dat**, **\*\*\*CBLTZSFM.dat**, and **\*\*\*PNSTZSFM.dat**. Click **OK**, and then the two images **Increase** and **Decrease** are displayed.

- **Z-score image data (\*\*\*.img: Binary image data)**

Select the four files **\*\*\*GLBTZSFM.img**, **\*\*\*THLTZSFM.img**, **\*\*\*CBLTZSFM.img**, and **\*\*\*PNSTZSFM.img**. Click **OK**, and then the **Decrease** image is displayed.

Select the four files **\*\*\*GLBTZSFN.img**, **\*\*\*THLTZSFN.img**, **\*\*\*CBLTZSFN.img**, and **\*\*\*PNSTZSFN.img**. Click **OK**, and then the **Increase** image is displayed.

- **Percent change image data (Control group – Disease group)/Control group**

Select the four files **\*\*\*GLBPCSFM.dat**, **\*\*\*THLPCSFM.dat**, **\*\*\*CBLPCSFM.dat**, and **\*\*\*PNSPCSFM.dat**. Click **OK**, and then the two images **Increase** and **Decrease** are displayed.

- **Subtraction image data Control group – Disease group**

Select the four files **\*\*\*GLBSBSFM.dat**, **\*\*\*THLSBSFM.dat**, **\*\*\*CBLSBSFM.dat**, and **\*\*\*PNSBSFM.dat**. Click **OK**, and then the two images **Increase** and **Decrease** are displayed.

- **Disease group average image data**

Select the four files **\*\*GLB1MNSFM.dat**, **\*\*THL1MNSFM.dat**, **\*\*CBL1MNSFM.dat**, and **\*\*PNS1MNSFM.dat**. Click **OK**, and then the average image of the disease group is displayed.

- **Control group average image data**

Select the four files **\*\*GLB2MNSFM.dat**, **\*\*THL2MNSFM.dat**, **\*\*CBL2MNSFM.dat**, and **\*\*PNS2MNSFM.dat**. Click **OK**, and then the average image of the control group is displayed.

- **Disease group standard deviation image data**

Select the four files **\*\*GLB1SDSFM.dat**, **\*\*THL1SDSFM.dat**, **\*\*CBL1SDSFM.dat**, and **\*\*PNS1SDSFM.dat**. Click **OK**, and then the standard deviation image of the disease group is displayed.

- **Control group standard deviation image data**

Select the four files **\*\*GLB2SDSFM.dat**, **\*\*THL2SDSFM.dat**, **\*\*CBL2SDSFM.dat**, and **\*\*PNS2SDSFM.dat**. Click **OK**, and then the standard deviation image of the control group is displayed.

## 2) Database created by own facility

This enables the display of the average image and standard deviation image of created databases.

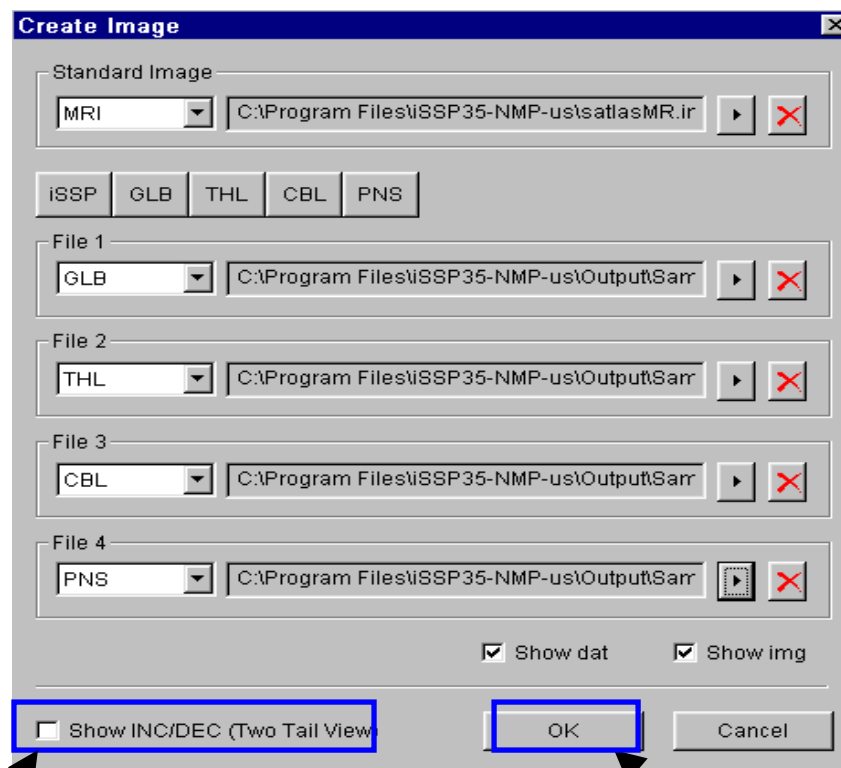
### • Average image data

Select the four files **\*\*GLBMNSFM.dat**, **\*\*THLMNSFM.dat**, **\*\*CBLMNSFM.dat**, and **\*\*PNSMNSFM.dat**. Click **OK**, and then the database average image is displayed.

### • Standard deviation image data

Select the four files **\*\*GLBSDSFM.dat**, **\*\*THLSDSFM.dat**, **\*\*CBLSDSFM.dat**, and **\*\*PNSSDSFM.dat**. Click **OK**, and then the database standard deviation image is displayed.

## (5) Execution of Image Display



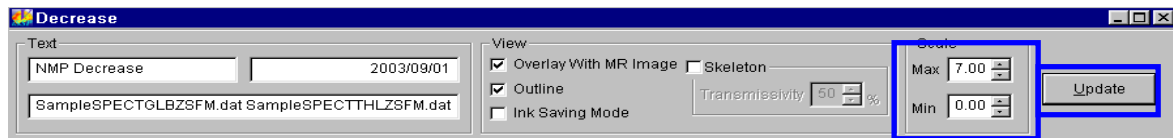
If a check mark is inserted here, the Z-score of the region with decreased bloodflow and the Z-score of the region with increased bloodflow are displayed together on the same image. However, if an **\*\*\*.img** file is selected, either the **Increase or Decrease image is displayed.**

Select the data, and then click **OK** to display the image.

Note:

If a check mark is inserted in **INC/DEC View (Two Tail View)**, the two conventional **Increase** and **Decrease** images are not displayed.

## (6) Adjusting the Image Display Scale



After the image is displayed, specify the **Max** and **Min** in **Scale** in the menu bar at the top of the screen to change the scale of the displayed image.

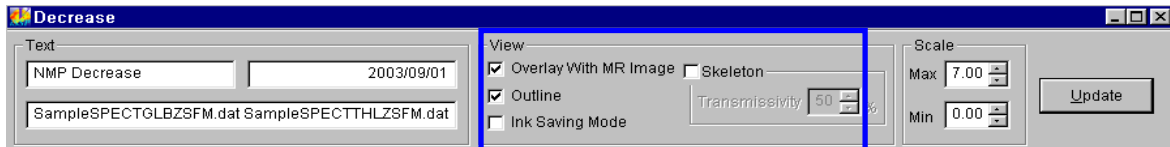
After setting **Scale**, click **Update (U)**, and then the scale which was set is applied to the displayed image.

Note that the images below will not be displayed properly unless the display scale is adjusted. (Default: The entire image is displayed in blue without changing the maximum value of 7.)

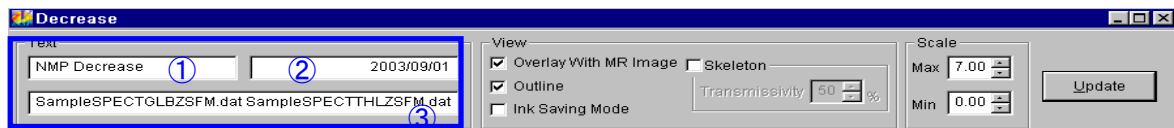
***MNSFM.dat file:	The recommended Max setting is approx. 1.5.
***SDSFM.dat file:	The recommended Max setting is approx. 0.2.
***PCSFM.dat file:	The recommended Max setting is approx. 0.5.
	The Max value of 1.00 is equivalent to 100%.
***SBSFM.dat file:	The recommended Max setting is approx. 0.5.

## (7) Changing the Display Method

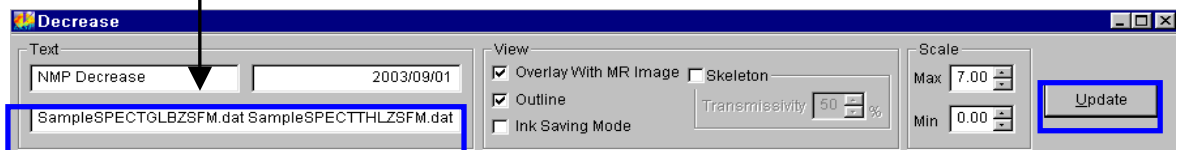
After displaying the image, use the **View** command in the menu bar at the top of the image to change the image viewing options.



- Check mark in Coregistration on the MR Image (M): This displays the Z-score image over the MR image.
- Check mark in Display Outline: This displays the outlines of the brain in the Z-score image.
- Check mark in Ink Saving Mode: The black color in the background is reduced when printing for saving ink when printing the image.
- Check mark in Skeleton: A skeleton Z-score image is coregistered on the standard brain MR image photographed on the brain surface. The transmittance can be changed.



The displayed information in (1), (2), and (3) can be changed by moving the cursor to the respective box and entering any desired text.



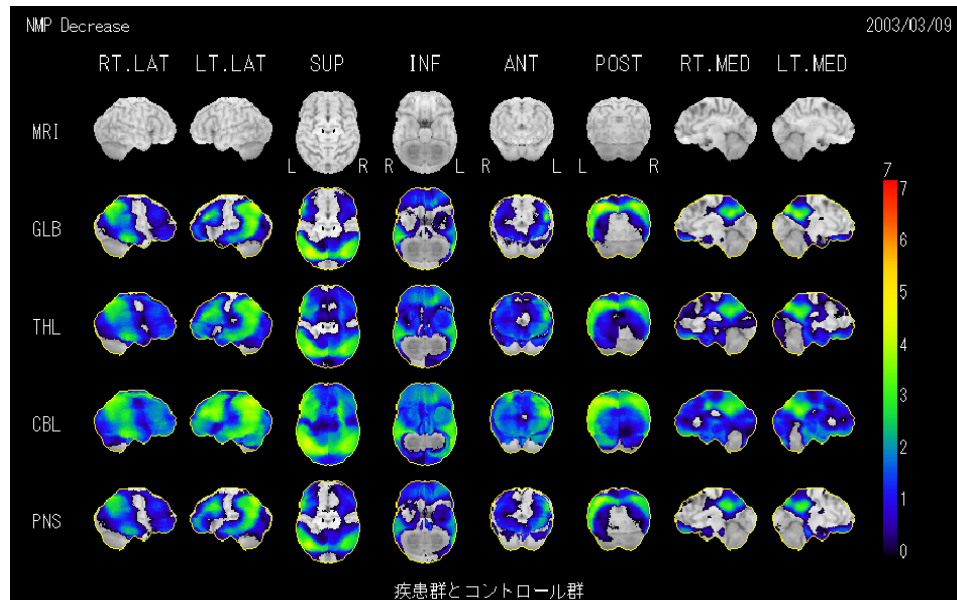
Clicking the **Update (U)** button updates the displayed information.

## (8) Examples of Displayed Images

### Example of Z-score images (1)

Coregistration on the MR Image : On   Display Outline: On

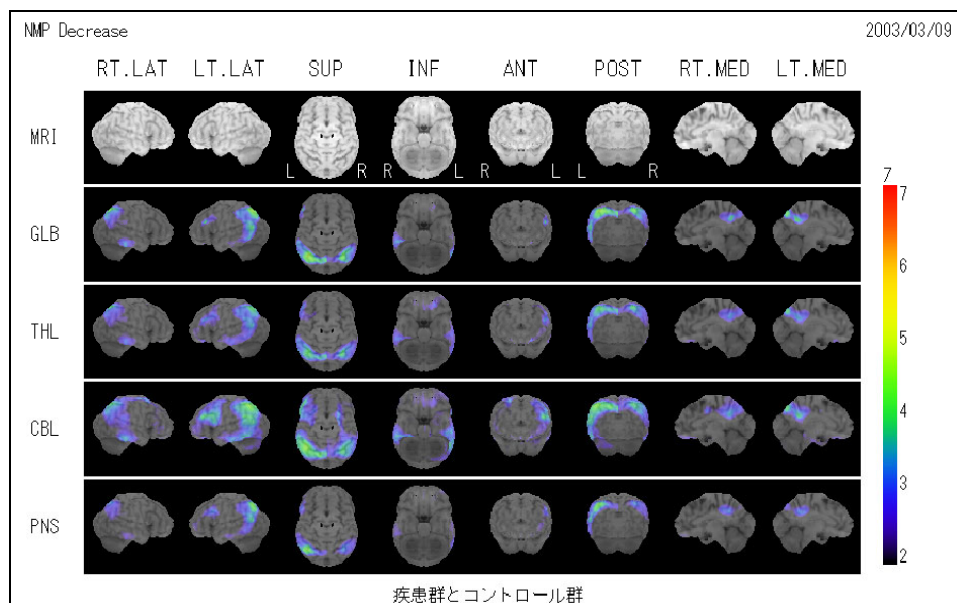
Ink Saving Mode: Off   Skeleton: Off   Scale Setting: 0 to 7



### Example of Z-score images (2)

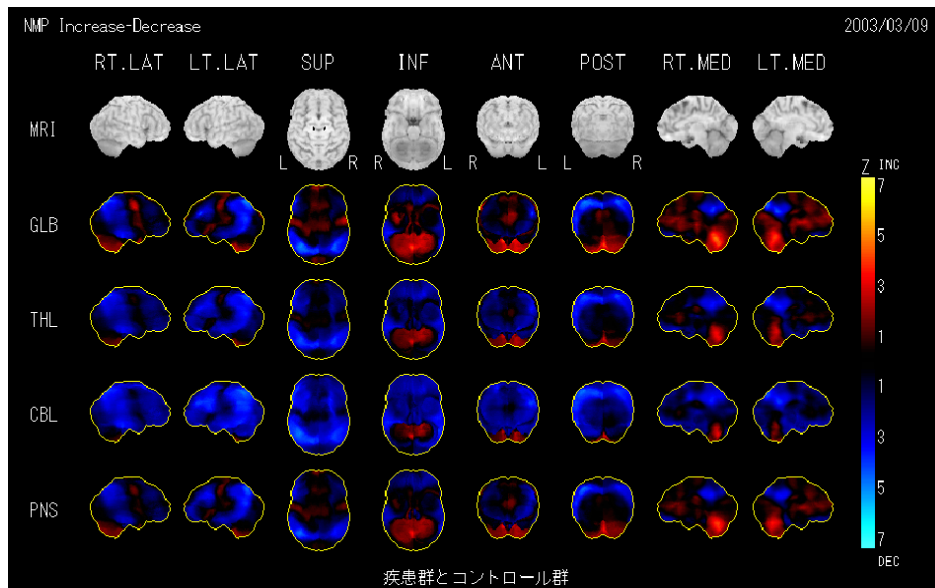
Coregistration on the MR Image: On   Display Outline: Off

Ink Saving Mode: On   Skeleton: On (Transmittance: 50%)   Scale Setting: 2 to 7



### Example of INC/DEC images (Two Tail View)

Coregistration on the MR Image: On    Display Outline: On  
Ink Saving Mode: Off    Skeleton: Off    Scale Setting: 0 to 7

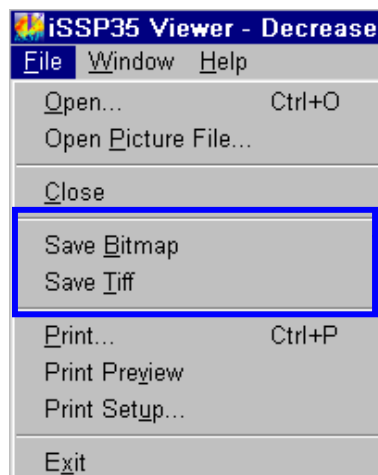


Note:

If **INC/DEC View (Two Tail View)** is selected, coregistration on the MR image cannot be performed even if a check mark is inserted for **Coregistration on the MR Image**.

### (9) Saving Displayed Images

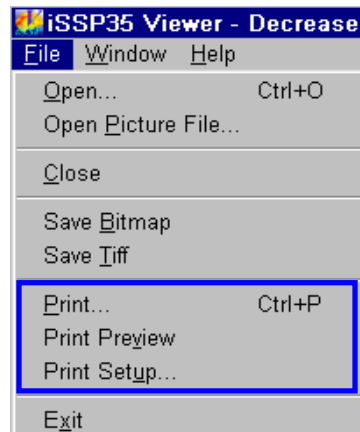
The displayed image can be saved as a picture file in bitmap format (\*\*\*.bmp) or TIFF format (\*\*\*.tif).



The displayed image which was selected can be saved in bitmap format (\*\*\*.bmp) or TIFF format (\*\*\*.tif).

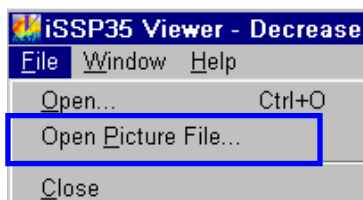
## (10) Printing Images

Displayed images can be printed. The print screen can also be previewed and the settings can be changed.

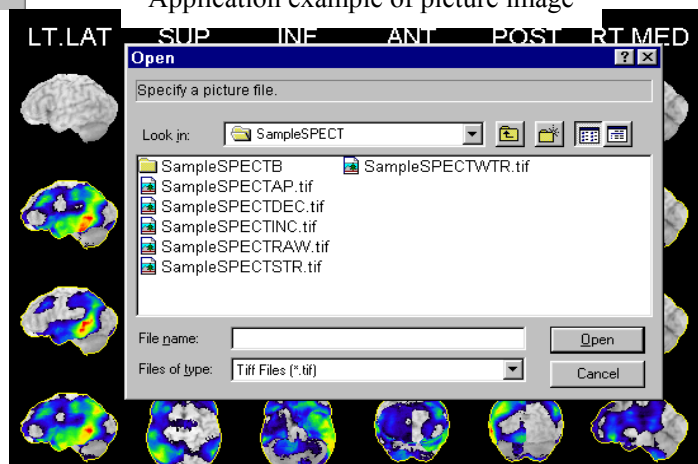


## (11) Viewing of Picture Files

The picture file (\*.tif or \*.bmp) can be viewed using the accessory software provided with Windows PCs, and it can also be viewed using iSSP3.5\_Viewer.



Application example of picture image



## IV. Contact Information

Please use the contact information below to send any inquiries, questions, or comments about this software.

This software requires registration since the validation period is set by the keycode. To use this software, please send your name, facility name, position, and e-mail address to the medical representatives (MR) at Nihon Medi-Physics. The software will then be sent to you.

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