Windows 8

X

CephaloMetrics AtoZ™

Manual Ver. 15.0

YASUNAGA Computer Systems Co. Inc.

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Installation of CephaloMetrics AtoZ for Windows XP

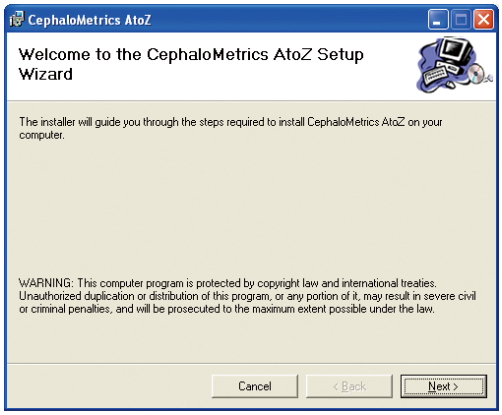
Do not connect the USB HASP key to the computer till installation is completed. After installation is finished, connect the key.

A. Installation of CephaloMetrics AtoZ

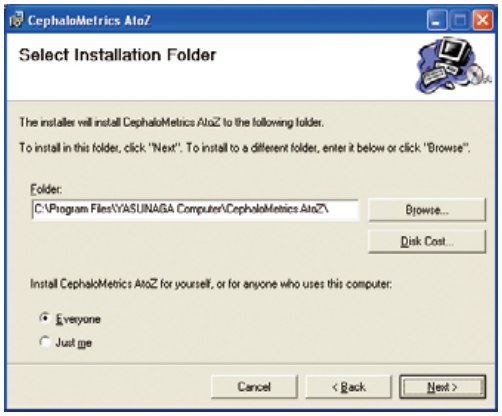
Insert CD-ROM into a computer. Installation begins automatically.

※ When installation menu is not displayed automatically, double-click "setup.exe" and install it.There is the file in "Disk1" in "(G:)CD-ROM". (G:) shows the drive that CD was inserted in. This process depends on your environment.

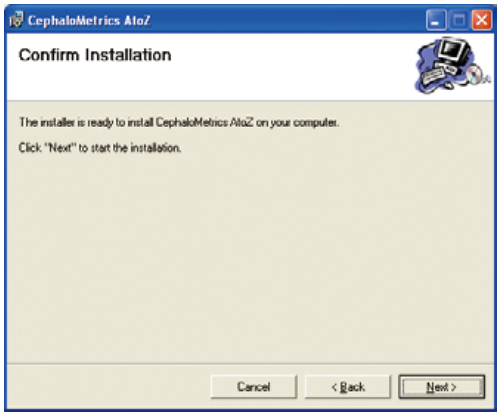
1. The following window appears.
Click the "Next" button.



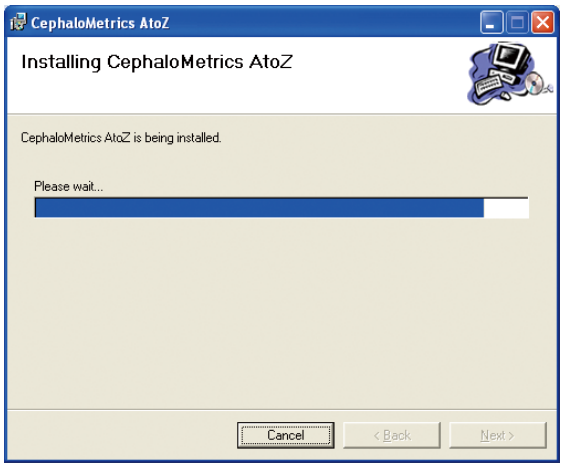
2. Click the "Next" button after the confirmation.



3. Click the "Next" button.



Installation starts.

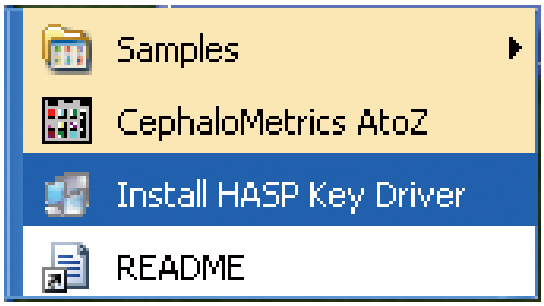


Click the “Close” button.

※ Installer of Windows was changed newly from AtoZ Ver.11. Therefore a method of the installation changes. When you install a driver for protection keys, you cannot install the key driver from installation of AtoZ successively. If installation of AtoZ is finished, you click “Start” menu → ” All programs “ → ” CephaloMetrics AtoZ “ → ” Install HASP key driver “. And start the installer of a driver for protection keys.

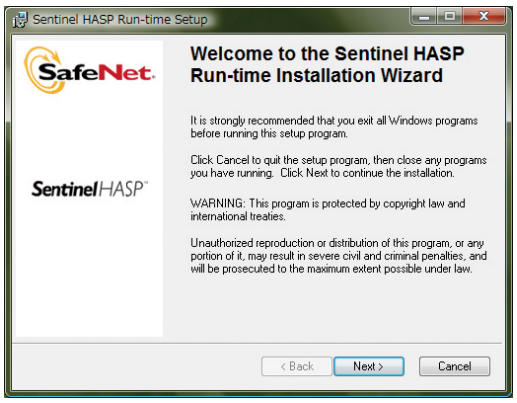
B. Installation of driver software for protection key

1. If installation of AtoZ is finished, you click “Start” menu → ” All programs “ → ” CephaloMetrics AtoZ “ → ” Install HASP key driver “. And start the installer of a driver for protection keys.

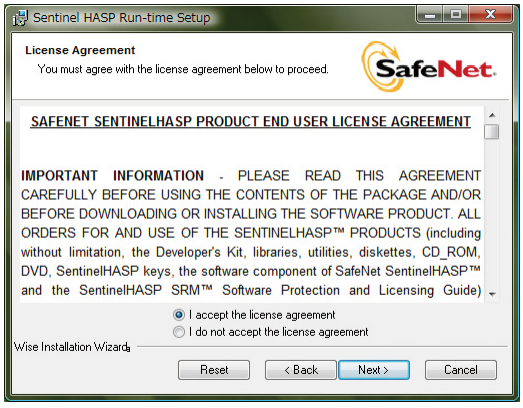


Even if you connect the protection key, a computer doesn't recognize it.

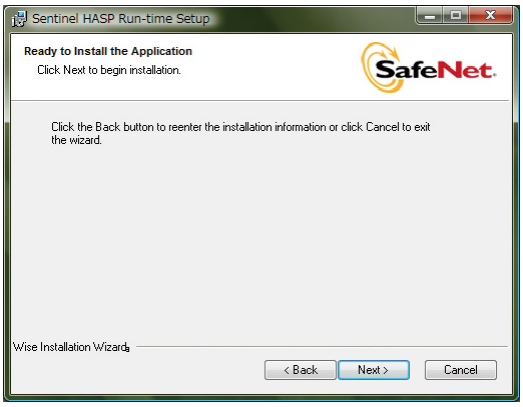
1. Click the “Next” button in the “Welcome” window.



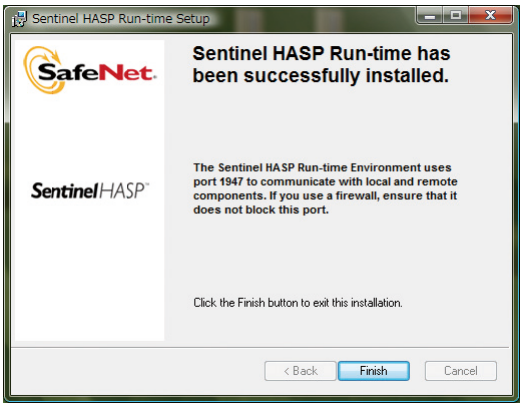
2.Check the “I accept the license agreement” button in the window, click the “Install” button.



3. Click the “Next” button.



4. Click the "Finish" button.



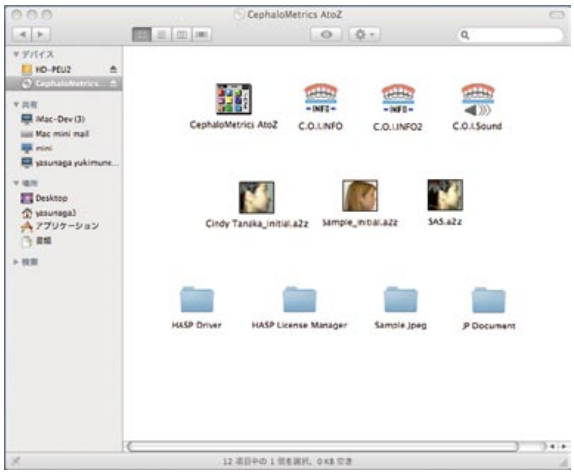
5. After connection the protection key, start CephaloMetrics AtoZ !

Installation of CephaloMetrics AtoZ for Macintosh OS X

Do not connect the USB HASP key to the computer till installation is completed. After all installation, connect the key.

A. Installation of CephaloMetrics AtoZ

Insert CD-ROM into the computer. CD-ROM icon appears on the desktop.
Double-click it, and open the CD-ROM. The follow window is indicated.

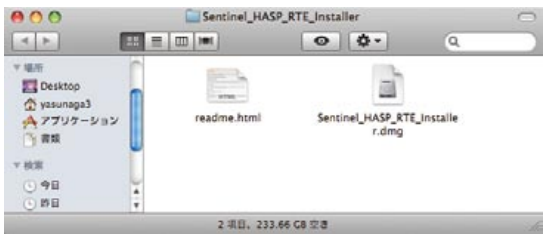


Make the "CephaloMetrics AtoZ" folder. And copy all file on this folder.

B. Installation of driver software for protection key

1. In the same way, copy "HASP4 Driver" folder →" Sentinel_HASP_RTE_Installer" folder in CD-ROM to the arbitrary place of the computer.

2. Double-click of copied "Sentinel_HASP_RTE_ Installer" folder, and open it.



3. Double-click of copied "Sentinel_HASP_RTE_ Installer.dmg" , and open it.
3. Installer of the driver starts when you double-click of "Install HASP SRM Runtime Environment" of the inside.

Install it according to indication of the screen.

4. After all installation, connect the protection key in USB port of the computer. You can start Cephalo-Metrics AtoZ.

CephaloMetrics AtoZ an easy manual

< Let's try to use AtoZ! Basic edition >

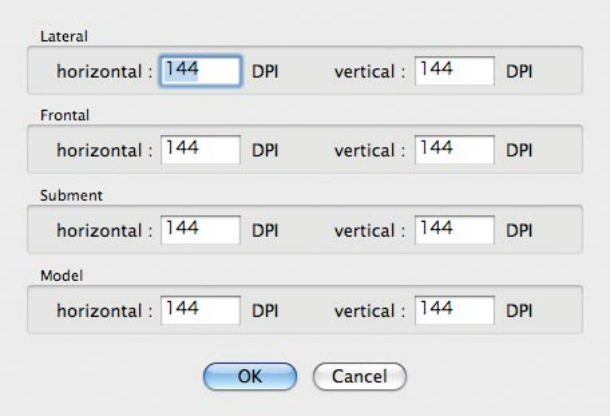
1. Input X-rays

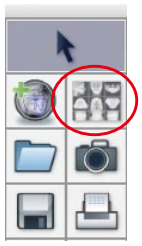
When X-rays device is digital, you input digital resolution as follows.
When film X-rays, you input digital resolution as follows.

※ Please refer to「◎ Import an X-ray with the New tool」, when you input directly from a scanner.

◎ X-Ray Resolution

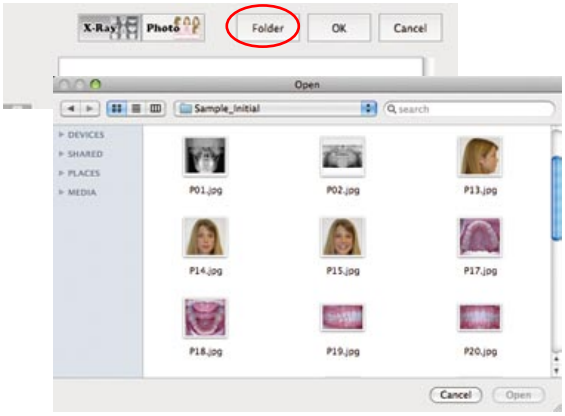
After installation, Set the resolution of the X-rays image(Thumbnail input).
Choose "IO setting" → " X-Ray resolution", and Set resolution. Input horizontal and vertical resolution (dpi) values, and click the “OK” button.
※ If you input resolution values once, the values are stored in a computer. You don’ t have to do it again.
※ The resolution values vary according to a X-ray machine maker and the model. For details, please contact contact with the X-ray machine maker.





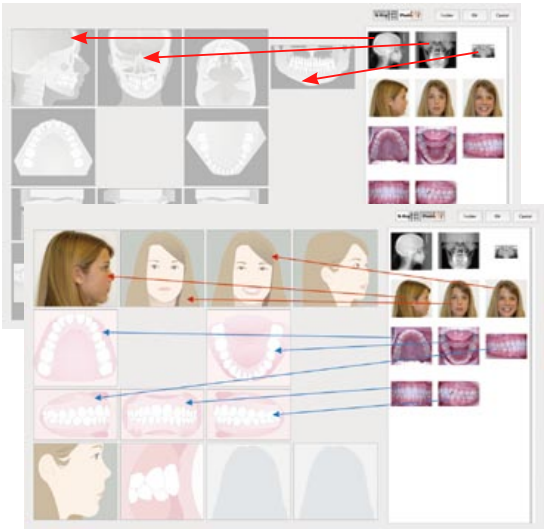
◎ Import an X-ray and image with the Thumbnail tool

You can import JPEG files with the thumbnail tool.
・Click the Thumbnail tool.



The thumbnail dialog box appears.
・Click the "Folder" button.

The “Folder” dialog box appears.
・Choose the folder to save images.
・Choose an image, and click the "open" button.



All of color photos in the folder appears from the thumbnail list.

When you change X-rays and a color photo, you click “X-Ray” button or “Photo” button.

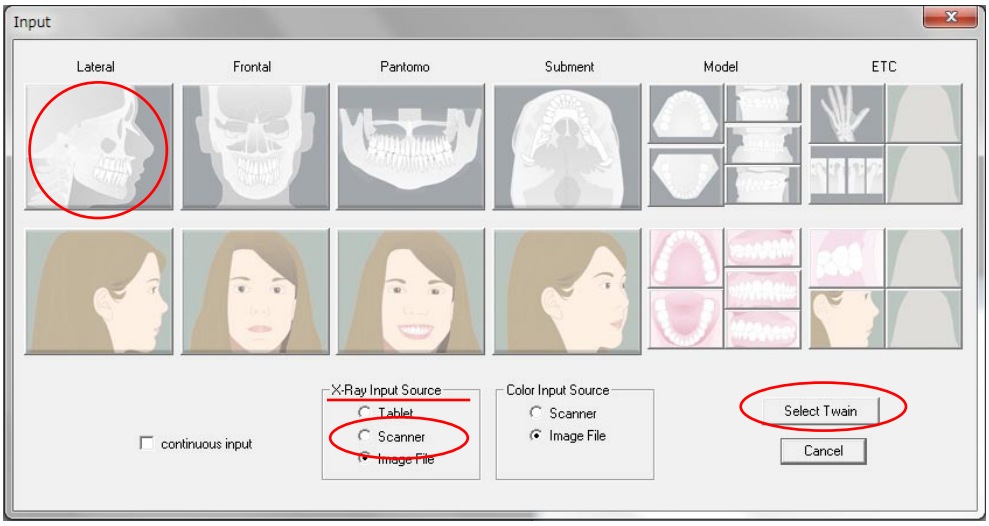
You can import the respective appropriate images from the displayed thumbnail images to the specified frame in the AtoZ by dragging and dropping.

It becomes the screen which regulates an image when you double-click.
・You regulate the size of the image in a blue rectangle frame.
・You regulate the degree of leaning of the image with a blue horizontal line.
・If adjustment is over, You click "OK".
・For X-rays picture, click "image resolution" button.
Input the value of resolution (DPI) and Click "OK" button.
※ It is unnecessary when having set up by "IO setting" → "X-Ray resolution".
※ If you input resolution values once, the values are stored in a computer. You don’ t have to do it again.
※ The resolution values vary according to a X-ray machine maker and the model. For details, please contact the X-ray machine maker.

◎ Import an X-ray with the New tool

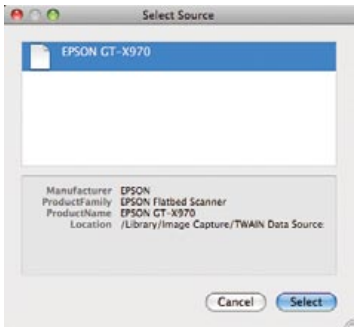
1. Click the New tool.

・Start up AtoZ.
・Click the New tool button, when you input a patient's data for the first time.
AtoZ displays the dialog to input as shown below.
Note : After inputting a X-ray image, or color image, use the Add tool to input additional images to a file.



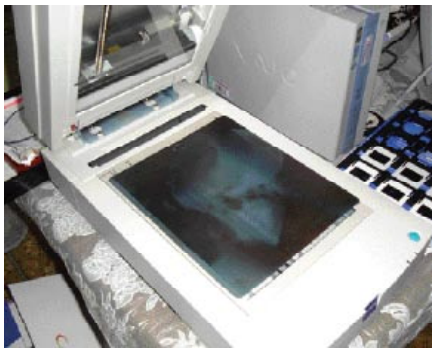
2. Import a CephaloMetrics lateral X-ray image on a scanner with a transparent unit.

・Turn on the [Scanner] radio button in the "X-Ray Input Source"dialog box .
・Click the "Select Twain", and choose the Twain of the scanner.
・Click the "Lateral" X-ray image button.



※ You must install the scanner driver in advance.

・Set a lateral X-ray image on a scanner with a transparent unit as below.
(EPSON ES-2200)



The Scanner Twain driver starts. (ex: EPSON ES-2200)

・Choose the "transparent unit"and "positive film", and then click the "preview" button.

If you have setup data, click a "setting preservation" button. Then it appears.

If not, we recommend that you should save a setup data referring to the following example.

Setup example for EPSON ES-2200

Manuscript type : transparent unit-positive film
Image type : 24bit color (standard)
Output machine : screen / WEB
Resolution : 144 dpi
Manuscript size : 1024 × 936 Pixel
Output size : 1024 × 936 Pixel
Zoom : 100 %

・Adjust the position, by dragging an inner area of a frame displayed on a preview screen to import with a mouse.
・And then click the "scan" button.

※ You must choose a zoom (magnification) "100%". If not, distance measurements will be incorrect.

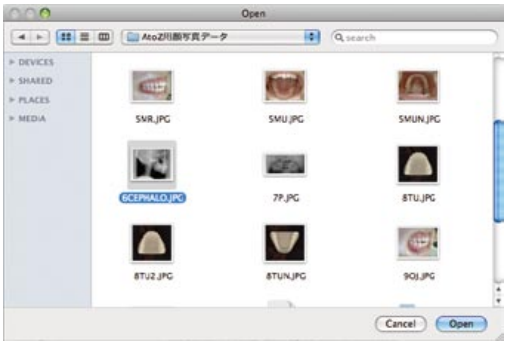
◎ When you import a JPEG file in a digital X-ray machine.

CephaloMetrics AtoZ can import a JPEG file in a digital X-ray machine. However, a JPEG file doesn't have size information originally.
Therefore, even if you import it into AtoZ, you can’ t evaluate the distance measurements correctly.

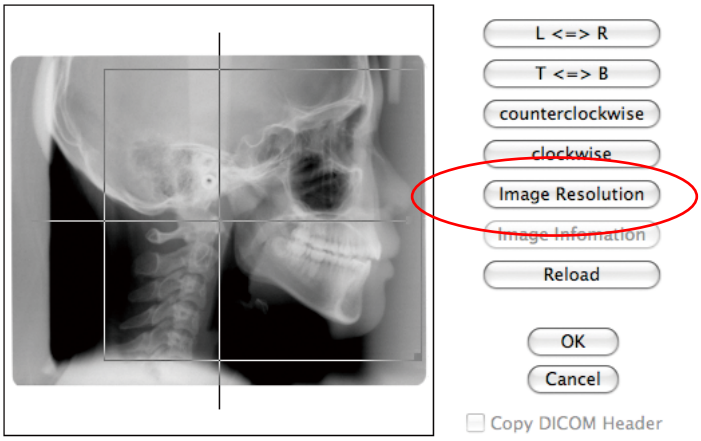
So, we equipped "JPEG Digiceph" button with AtoZ to solve the problem. With this button, you can import JPEG files easily and free-fiddly to analyze.

1 . Import a JPEG file with X-ray image into AtoZ

・Turn on the [Image File] radio button in the "X-Ray Input Source"dialog box .
・Click the "Lateral" X-ray image button.

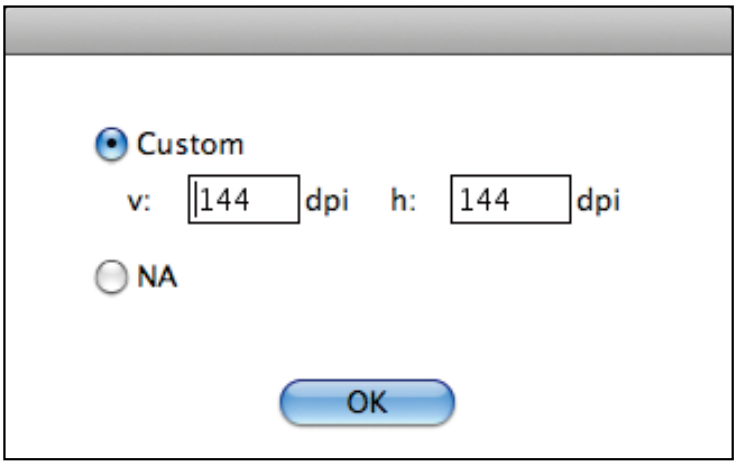


2. Specify image folder.
Click the JPEG file to import, and click the "Open" button.



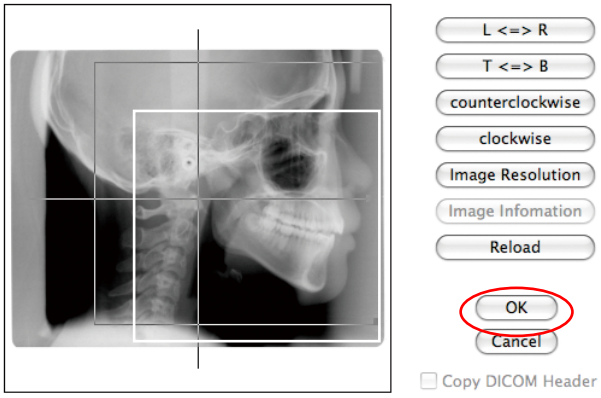
3. After the dialog box appears, click the "Image Resolution" button.

4. Click the "Custom" radio button, input horizontal and vertical resolution (dpi) values, and click the "OK" button.
※ If you input resolution values once, the values are stored in a computer. You don't have to do it again.
※ The resolution values vary according to a X-ray machine maker and the model. For details, please contact with the X-ray machine maker.



5. Adjust the frame to import, and click the "OK" button.

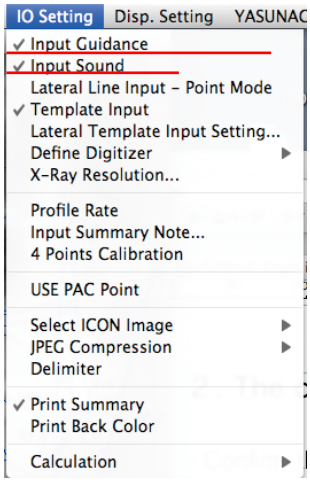
※ You should adjust the frame to the area to be able to input analysis points. (It is a standard to import a frame following the left figure.)



6. The JPEG file has been imported to AtoZ.

2. In the next step, digitize points and lines to the imported lateral X-ray image.

A guidance window appears when you check the "Input Guidance" in I/O Setting menu in advance. And, you can use a voice guide by a computer together when you check the "Input Sound" in the I/O Setting menu.



Guidance window

Bit of advice

When you click the magnifying tool, a whole X-ray image is expanded. Moreover, when you click the point you want to see in detail  , you can obtain the magnified part of image.

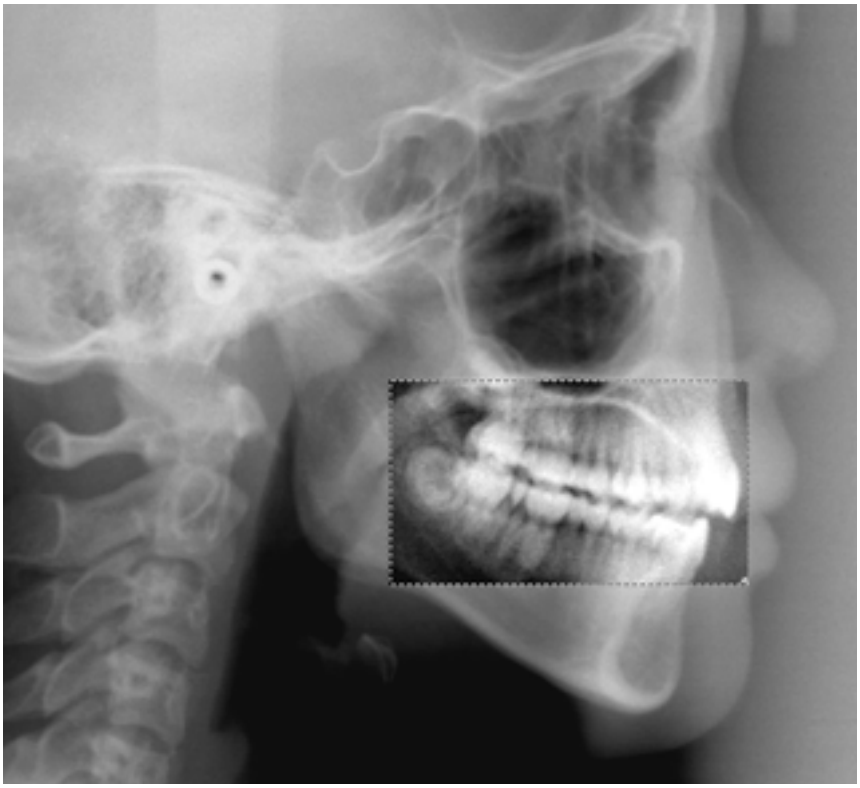
You can reduce it adversely. 

When you choose the Hand tool  and drag the image, you can move the image.

◎ How to use an image enhancement function

Image enhancement is the processing treatment to give better viewing with shade treatment using digital techniques of a computer in the X-ray image .

When you click the Enhance tool button  in the Tool window, the Enhanced window appears. You can adjust the image as you like. To close the window, click the button again.



the Enhance tool window

(1) Partial image Enhancement

· Click the Frame tool  , drag the desired area in a X-ray image with the mouse, and surround it.

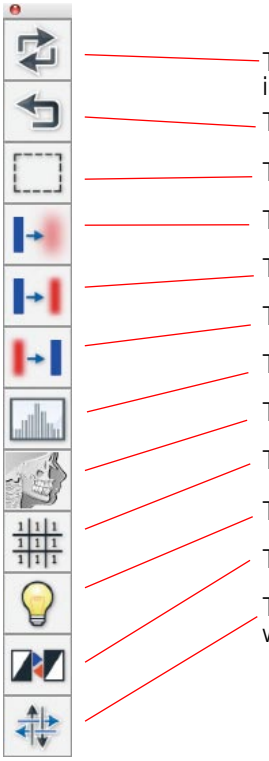
· Click each item in the Enhance tool window to adjust the image.

※ When you specify an area with the Frame tool, you should not surround a dark part and a light part at the same time. To work the enhancement function properly, it is important that there isn’ t so much shaddock difference in the specified area.

(2) Whole image Enhancement

· Click each item in the Enhance tool window without specifying an area with the Frame tool.

For the details of each item in the Enhance tool window, please see below.



To disable all history of the filter processing and return to the former image.

To cancel the last filter processing.

To surround the desired area to enhance.

To give the "Smooth" effect to an image.

To give the "Soft" effect to an image.

To give the "Sharp" effect to an image.

To give the "Embossed" effect to an image.

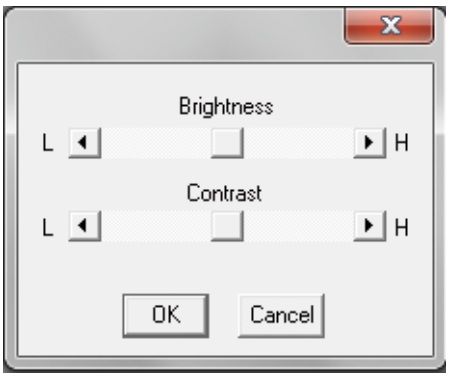
To enhance an image with shading process.

To display the "Custom Filter" menu.

To display the "brightness and contrast" menu.

To invert negative-positive image.

To reverse right and left image. To reverse top and bottom, click it while holding the control key.



"brightness and contrast" menu

Attention!

After enhancing a X-ray image, just save it. If you want to save an image before enhancement, click the "Restore tool"  and save it, and you should return it to the initial state before enhancement.

· Click the Tracing tool  on the upper-right corner of a screen, and input points and lines on a display.
There are two kinds of methods to input: a normal digitizing a trace and a Template Input.

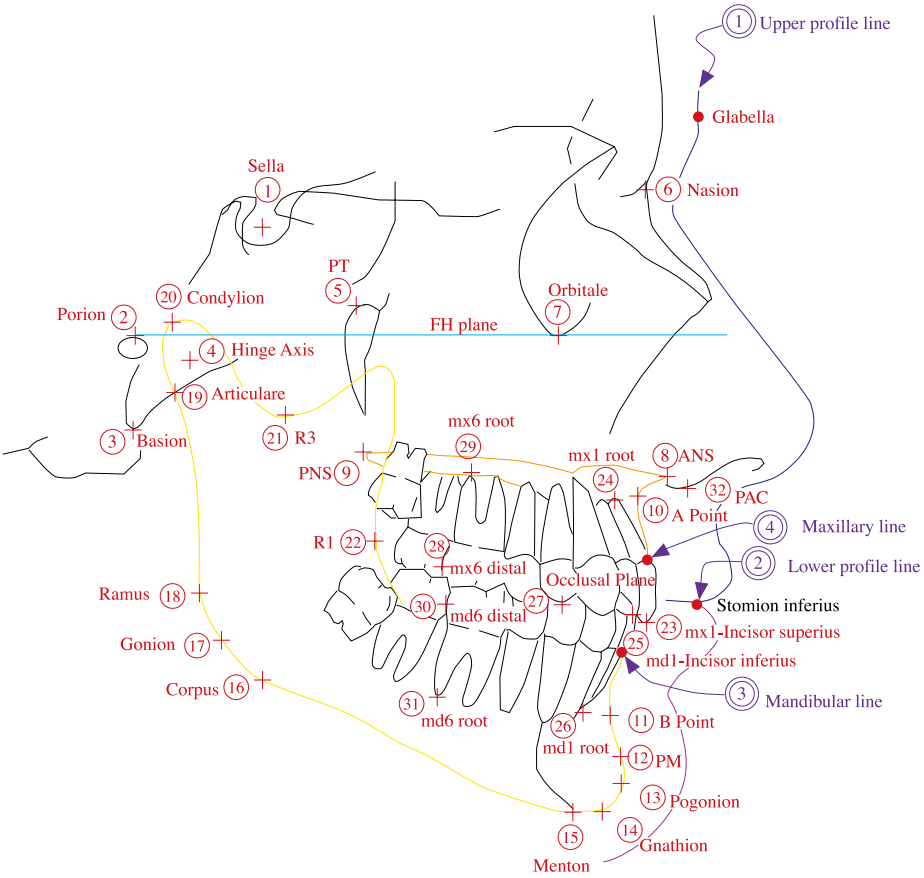
< Digitizing a Trace normally >
For lateral analysis, make sure to input all 32 points starting at [Sella], and 4 lines in order. You can' t skip it usually.

- **Click the left button to input a point with a mouse. (Click a mouse to input a point: Macintosh)**
- **Left-drag to input a line with a mouse. (Drag to input a line: Macintosh)**

※ To turn back a point, hold a Shift key and click it.

- **Shift key + click a Left button. (Windows)**
- **Shift key + click a mouse. (Macintosh)**

(You can turn back a point as much as you clicked.)



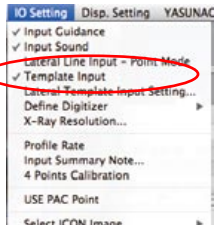
When the fourth line [Maxillary line] input is done, [Line] appeaars on the screen, and it is suggested that you should input a line more.
If necessary, you can input the shape of the "Sella" and others additionally.

· Click the Arrow tool  to terminate a digitizing session.
· Terminate the points and lines input, and go to the "Patient I.D." input.

◎ About "Template Input"

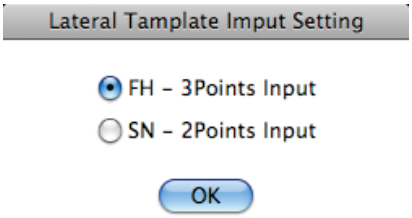
When you input three points of Porion, Orbitale and Gnathion in order, the rest of the analysis points are scattered automatically in approximate positions. And correct each point by dragging with a mouse.

※ When you want to input more quickly, uncheck the "Input Sound" in the I/O Setting menu, to set a voice guide function unworking.



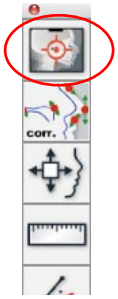
When the "Template Input" sets up.

Confirm that there is a check mark at the side of the "Template Input" in the I/O Setting menu.
If not, click the "Template Input".



Chooses the input method of the template.
・Advance "IO setting" → "Lateral Tamplate Input Setting".
・Choose it among "FH-3Points Input" or "SN-2Points Input".

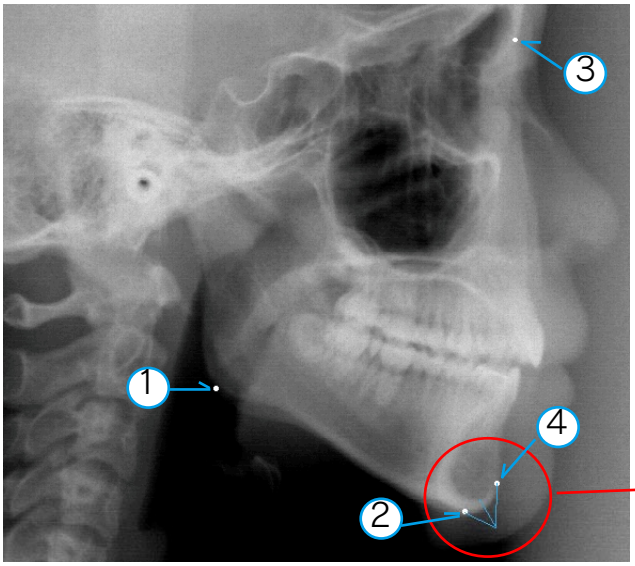
・When you click the “Tracing” tool in the Trace tool window, it enters an analysis point digitizing mode.

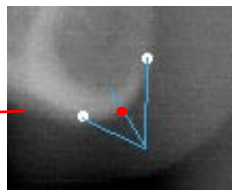


case of “FH-3Points Input”
・Input three points of Porion, Orbitale and Gnathion.

To decide a Gnathion point, use the "Bisector" tool.
・Click the Bisector tool in the Trace tool window, and obtain the side of the Gnathion position.

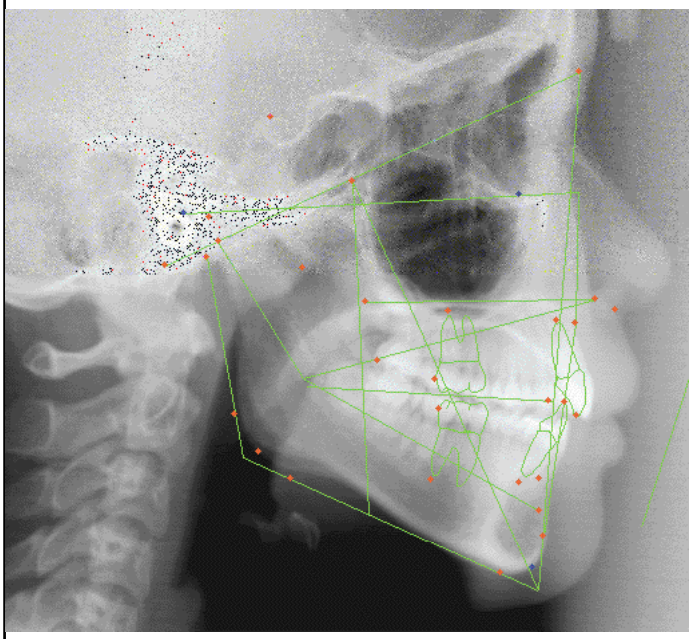
How to use the "Bisector" tool
When you click the Bisector tool, a computer asks you to input the "Point1" first.





・Input each 4 points.
Point1 : Corpus
Point2 : Menton
Point3 : Nasion
Point4 : Pogonion
Then bisectors appear . The point that the lines intersect is a Gnathion.

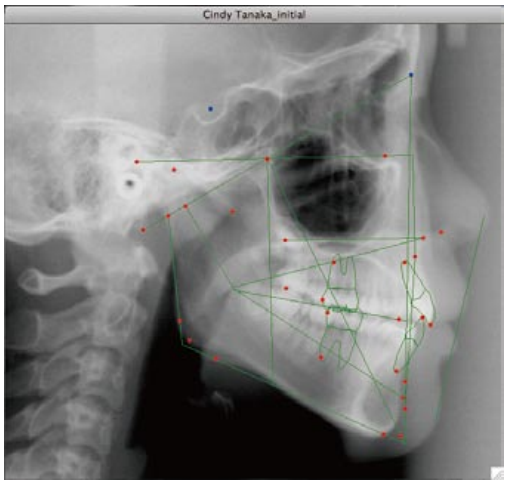
・Click the Tracing tool again.
・When you input a Gnathion, the rest of the analysis points appear automatically.



The entered points appears in blue , and the automatic displayed points appear in red.

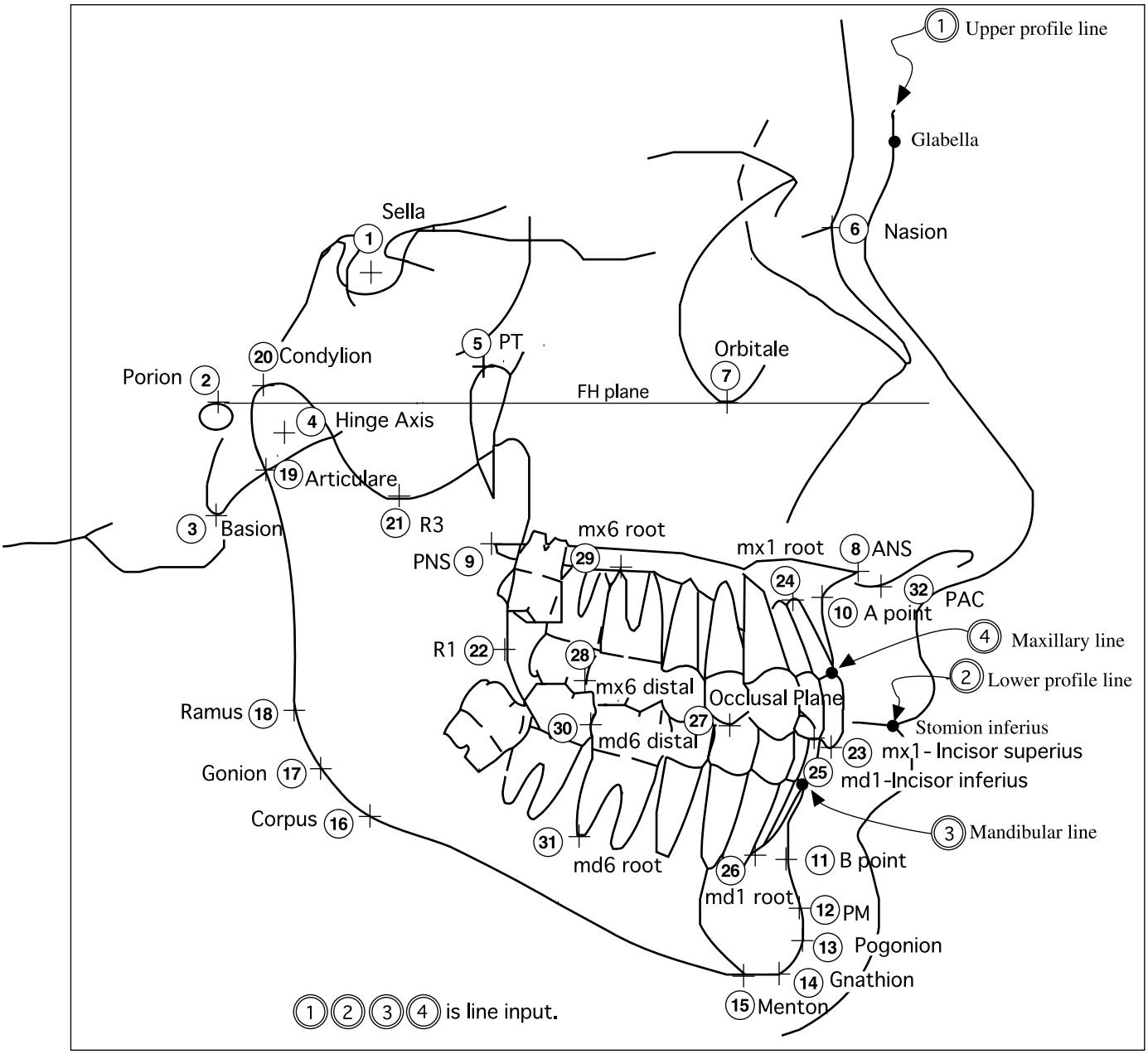
・Correct the red points appeared in a wrong position.

case of "SN-2Points Input"
・Input two points of Sella and Nasion.



When you point the cursor to the point to correct with a mouse, the name appears on the screen and announce with computer voice.
Just as it is , drag it to fine-tune the position. The tuned analysis points color change from red to blue. You can correct it starting with any points or in any order.
After that, digitize the lines. The way of input lines is the same as the normal input.

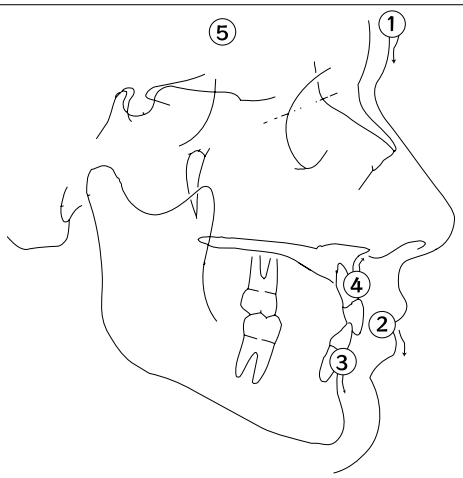
Location of 32 lateral landmarks



32 landmarks of the lateral analysis

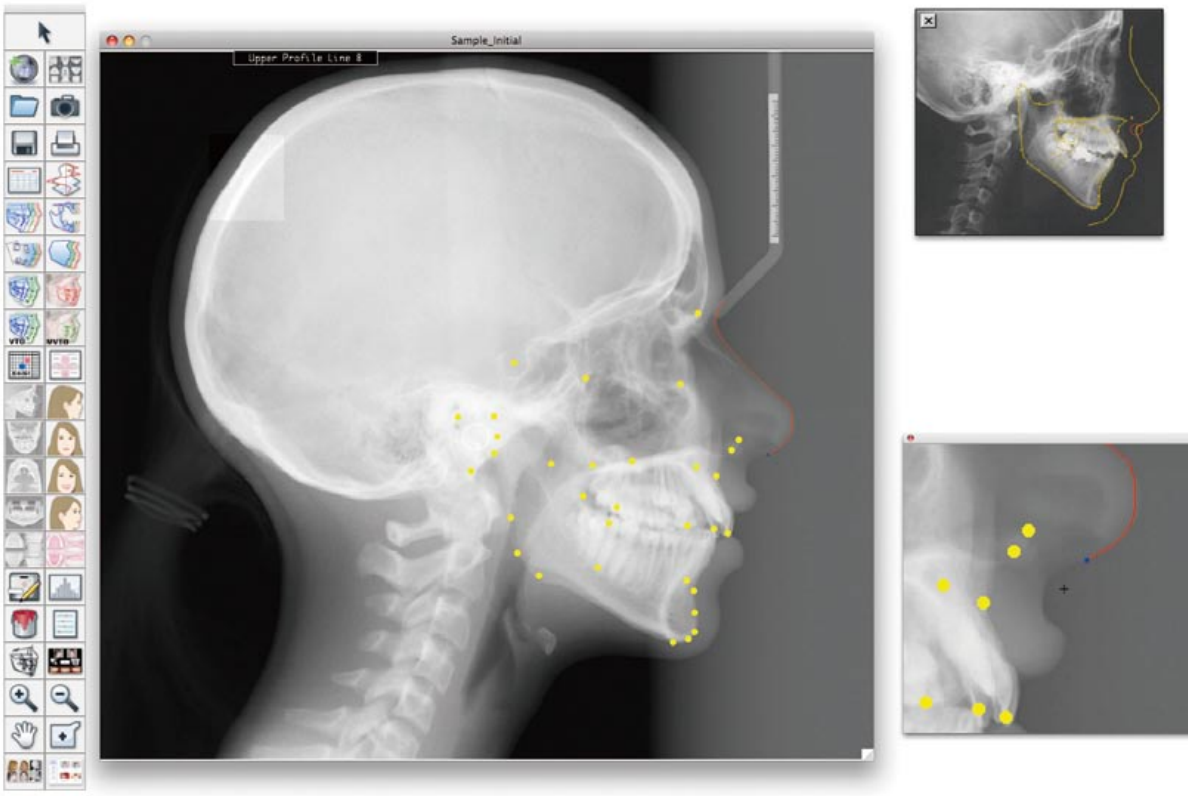
Following is a list of the 32 landmarks required for a lateral analysis, together with their exact definitions.

1. Sella	: Sella, A constructed point in the middle of the sella turcica.
2. Porion	: Anatomy Porion、Most superior point of external auditory meatus
3. Basion	: Most inferior point of external auditory meatus
4. Hinge Axis	: Center of Condyle
5. PT-point	: 11 o'clock position of the pterygoid fissure
6. Nasion	: 'V' notch of frontal and nasal bone
7. Orbitale	: Orbitale, Most inferior point of the orbital contour
8. ANS	:Tip of the Anterior Nasal Spine
9. PNS	:Tip of the Posterior Nasal Spine
10. A-point	:Deepest point between ANS and the upper incisal alveolus
11. B-point	:Deepest point between Pogonion and the lower incisal alveolus
12. PM	:Point where curvature changes between B-point and Pogonion
13. Pogonion	:Most anterior point of the symphysis
14. Gnathion	:on the born Gnathion, gnathion is the point of intersection of facial and mandibular planes.
15. Menton	:Most inferior point on the synphyseal outline
16. Corpus	:the point of a tangent of the inferior border of the corpus; mandibular plane left
17. Gonion	:the intersection of the lines tangent to the posterior margin of the ascending ramus and the mandibular base.
18. Ramus down	:Lower point of a tangent of the posterior border of the ramus
19. Articulare	:Intersection of inferior cranial bas ~ surface and posterior surface of condyle
20. Condylion (Co)	:It is the most superior point on the condylar head.*
21. R3	:Most inferior point of the sigmoid notch of the ramus
22. R1	:Deepest point on the curve of the anterior border of the ramus
23. Mx1 crown	:Tip of the crown of the upper incisor
24. Mx1 root	:Tip of the root of the upper incisor
25. Md1 crown	:Tip of the crown of the lower incisor
26. Md1 root	:Tip of the root of the lower incisor
27. Occlusal plane	:Midpoint between upper and lower first bicuspid, or upper and lower incisor
28. mx6 distal	:Distal contact point of maxillary first molar 2 mm above occlusal plane
29. mx6 root	:Distal buccal root of maxillary first molar
30. md6 distal	:Distal contact point of mandibular first molar 2 mm below occlusal plane
31. md6 root	:Distal root of mandibular first molar
32. PAC	:Dr.Kim's PAC (Posterior Alar Cartilage),use for ODI, APDI palatal plane instead of ANS-PNS palatal plane.



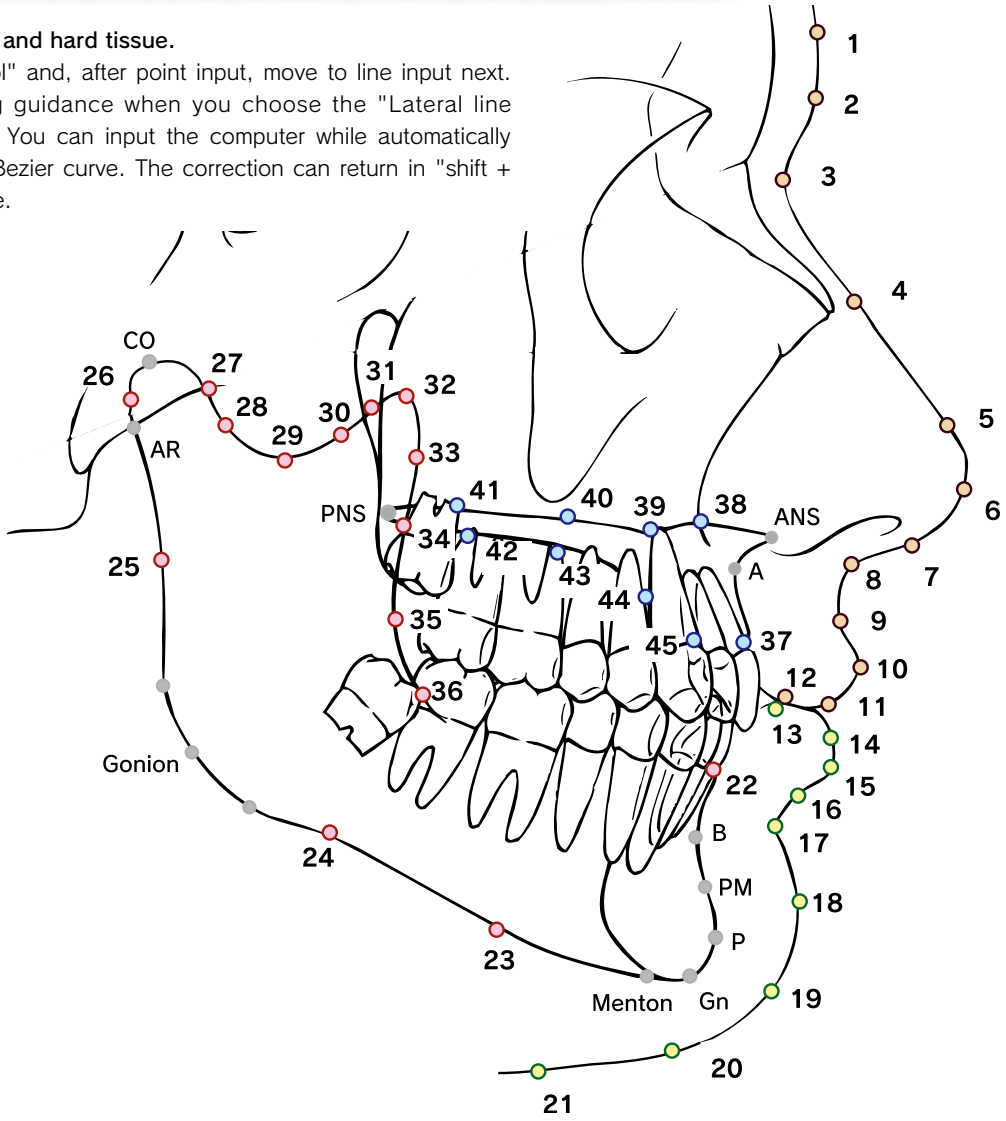
Lines for the lateral analysis

1. Upper profile Line
2. Lower profile line
3. Mandibular Line
4. Maxillary Line
5. Other structures



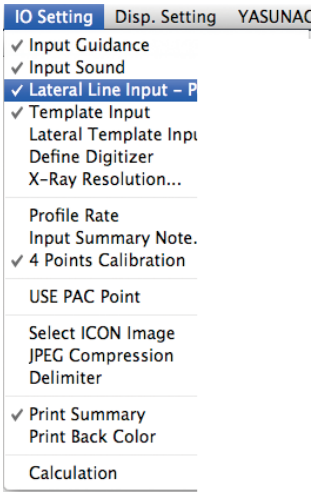
Line input of lateral and hard tissue.

You click "Arrow tool" and, after point input, move to line input next. Input a point along guidance when you choose the "Lateral line input -point mode". You can input the computer while automatically displaying a line in Bezier curve. The correction can return in "shift + mouse click" anytime.



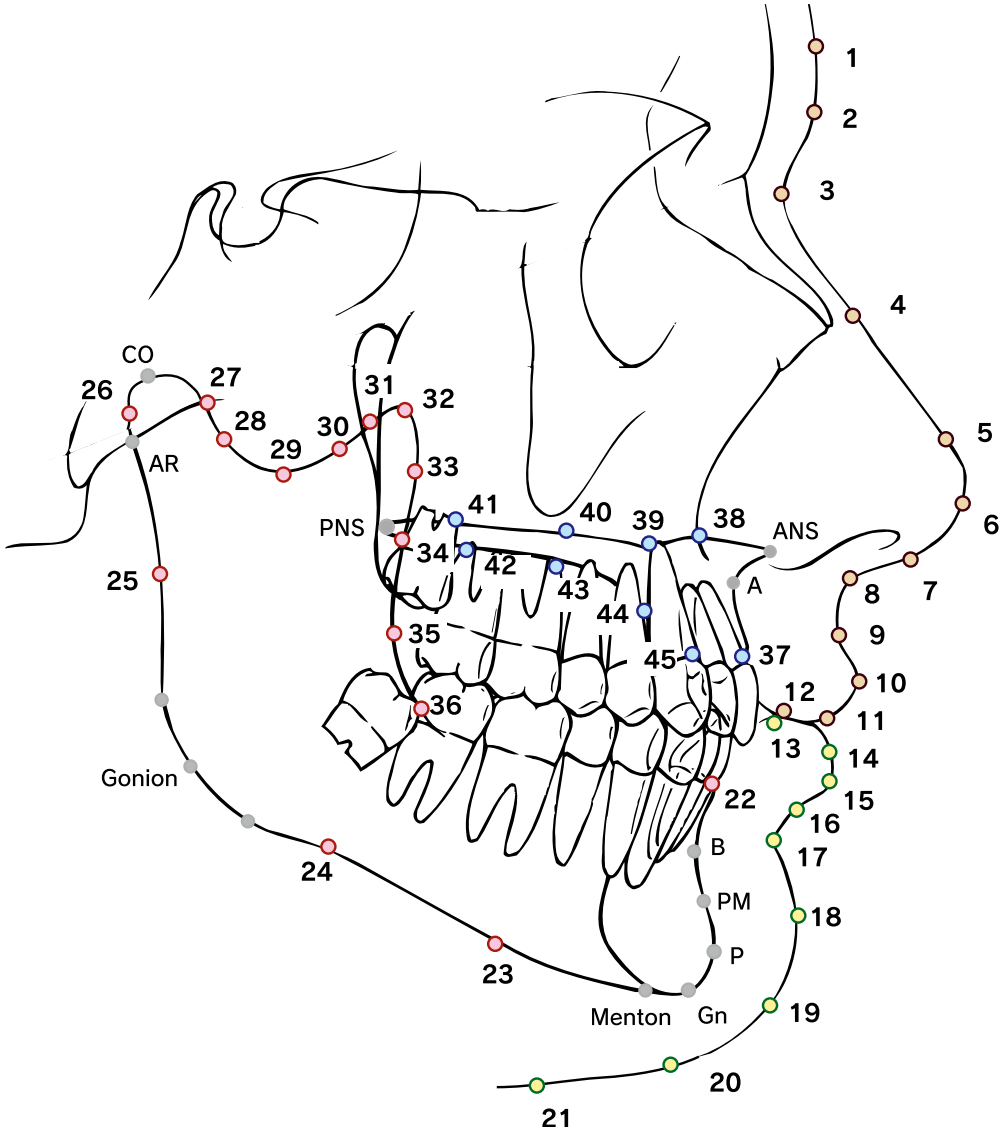
◎ Facial profile input change

Some people pointed out that it is difficult to trace lines as facial profile or hard tissue on a screen with mouse when inputting. Now you can click on the specified point with mouse to input in version 9.0.

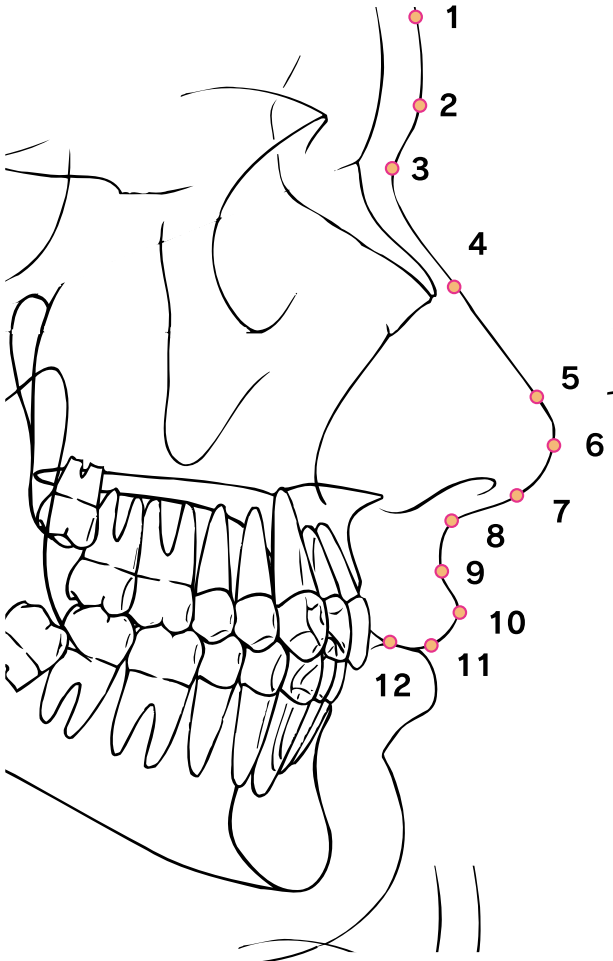


Operation:

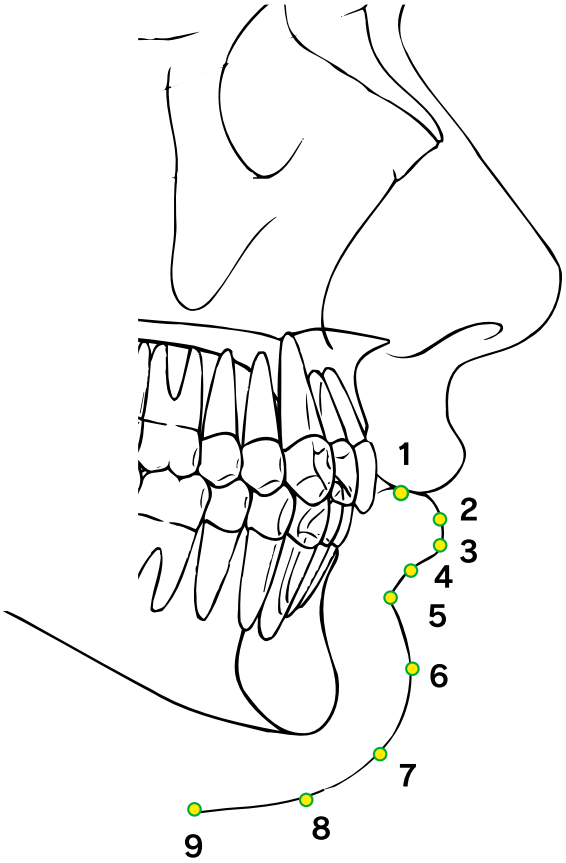
1. To change the line & point input, check "Facial profile import with point" on the "input /output setting" menu.
2. After inputting a hard tissue as Sella, point the upper profile line (12 range of points).
3. Point the lower profile line (9 range of points).
4. Point the lower jaw line (25 range of points).
5. Point the upper jaw line (11 range of points).
6. To input other lines or input with SAS analysis, trace the line with mouse in the customary way.
7. To close, use the arrow line tool. To correct, use Bezier curve on the correct tool.



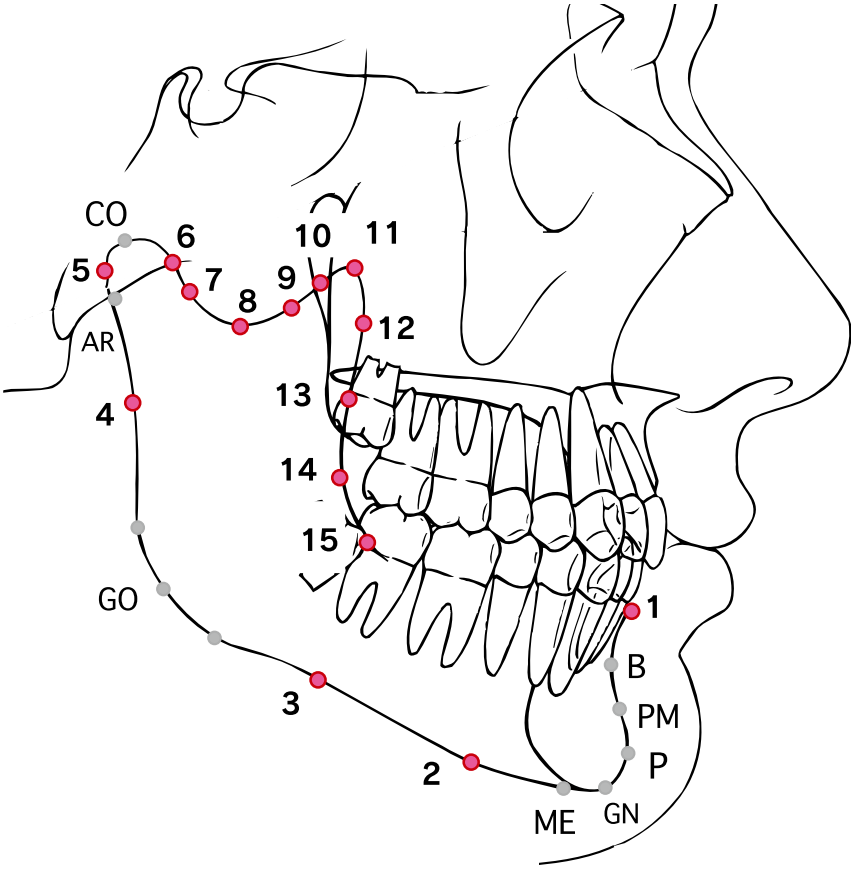
1. Upper Profile Line Input



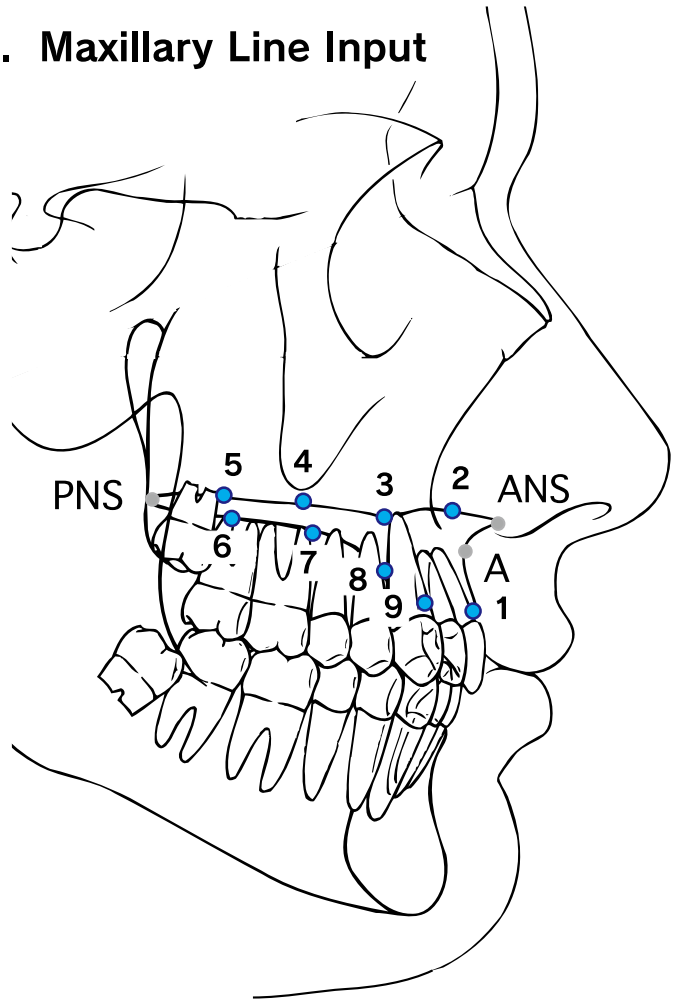
2. Lower Profile Line Input



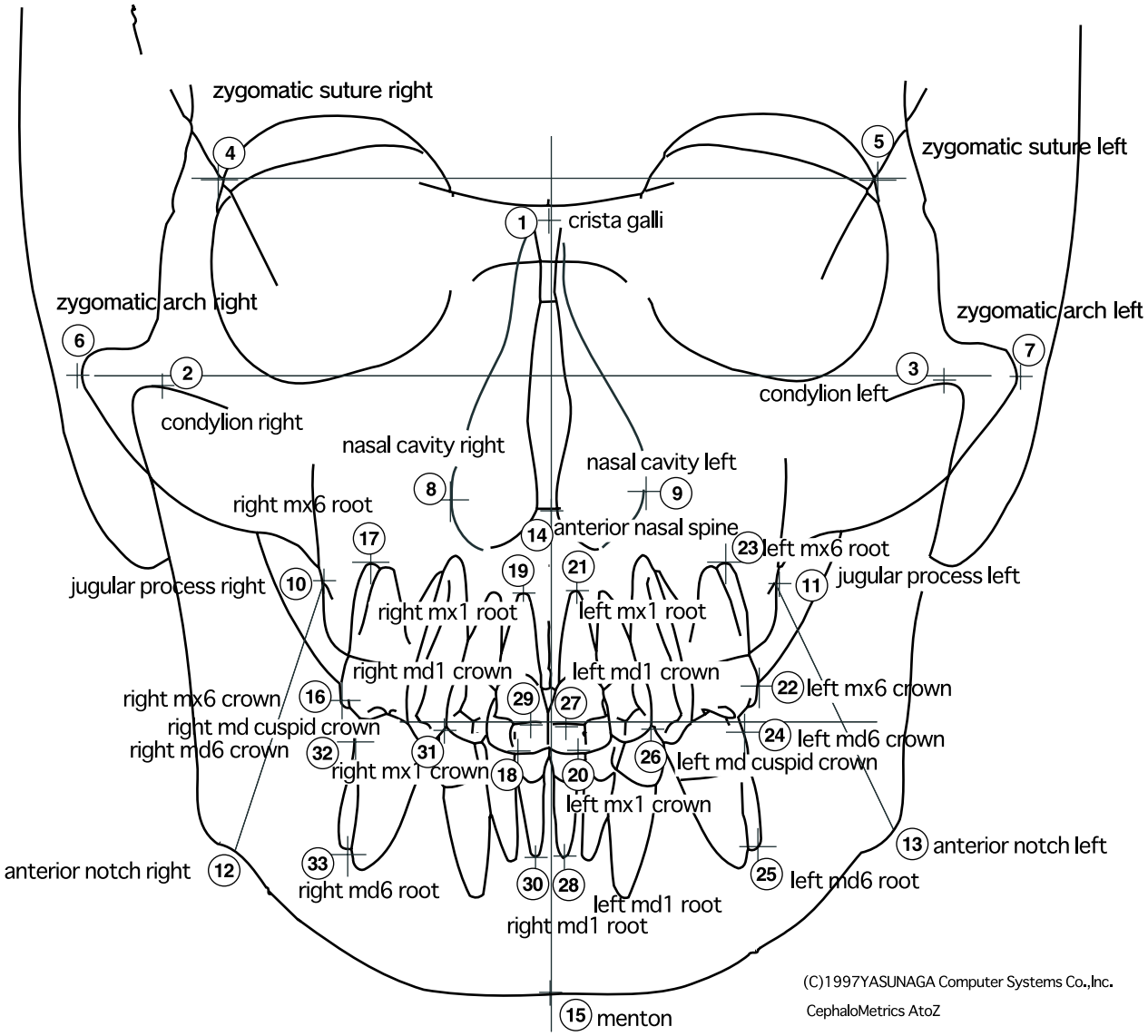
3. Mandibular Line Input



4. Maxillary Line Input



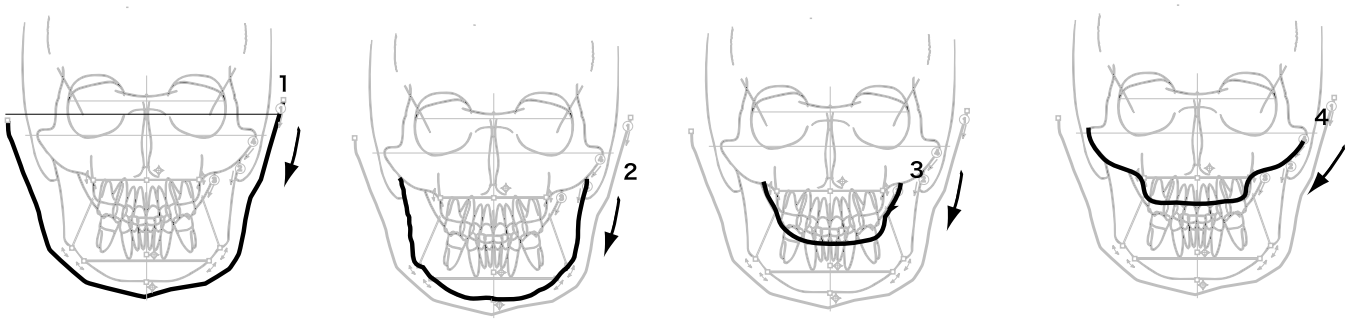
Location of 33 frontal landmarks

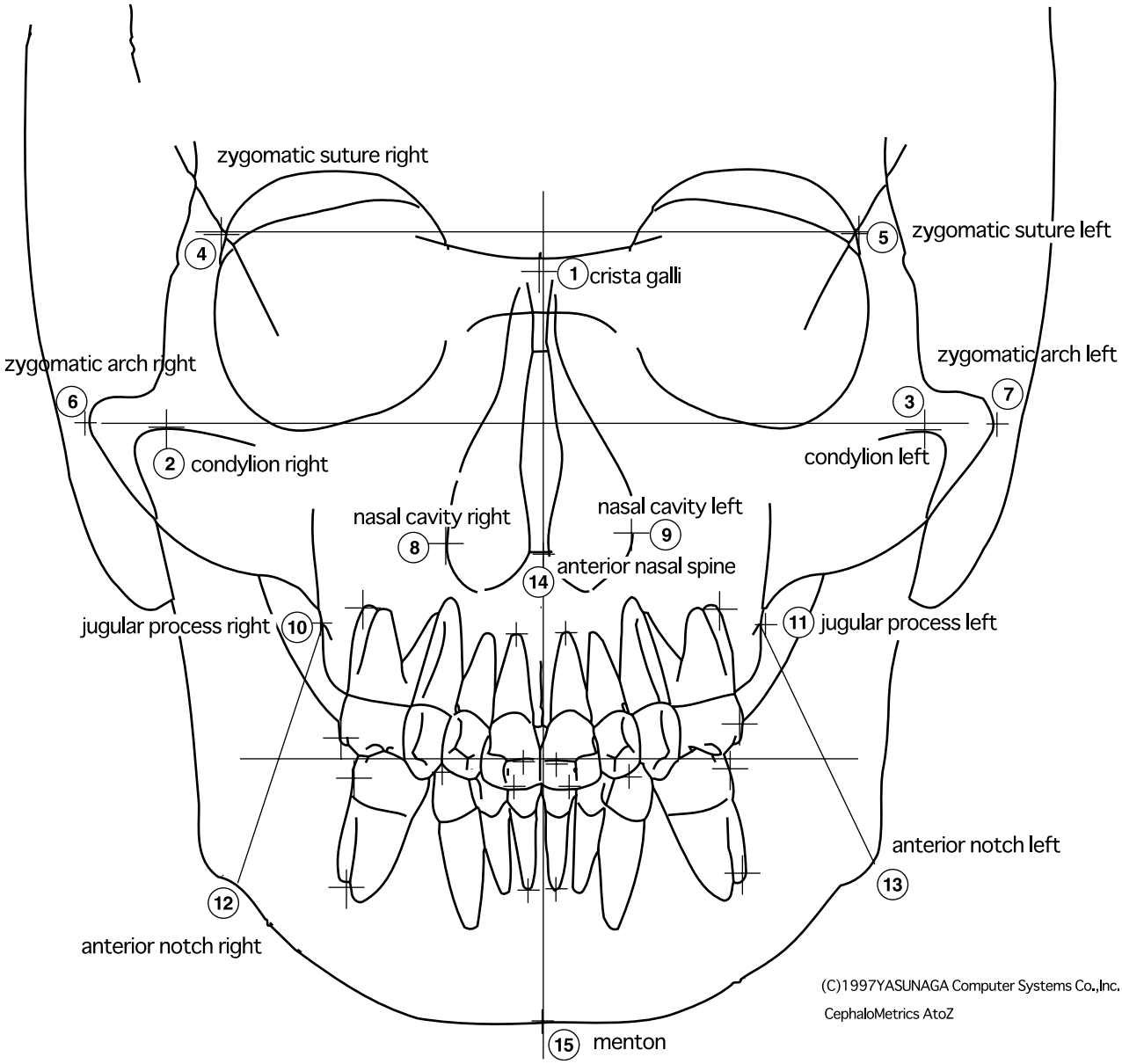


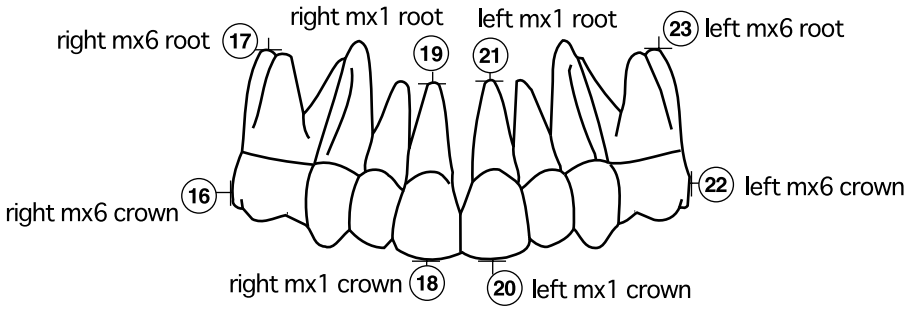
33 landmarks of the frontal analysis

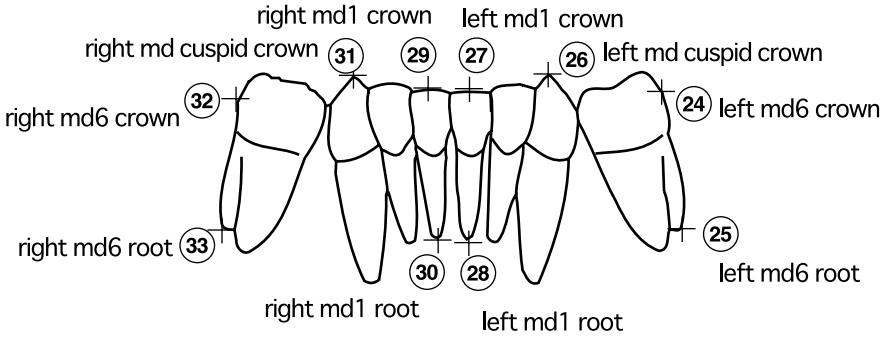
Following is a list of the 33 landmarks required for a frontal analysis.

1. crista galli	Cg crista Galli
2. condylion right	most superior aspect right
3. condylion left	most superior aspect left
4. zygomatic suture right	zygomatic Bilateral points on the medial margin of the zygomatico-frontal suture, at the intersection of the orbits.
5. zygomatic suture left	zygomatic frontal suture at intersection of orbits left
6. zygomatic arch right	zygomatic center of the root of zygomatic arch mid-points, right
7. zygomatic arch left	zygomatic center of the root of zygomatic arch mid-points, left
8. nasal cavity right	point on the outline of the nasal cavity at the widest area in frontal perspective right
9. nasal cavity left	nasal cavity at the widest area left
10. jugular process right	intersection of zygomatic buttress and outline of tuberosity right
11. jugular process left	intersection of zygomatic buttress and outline of tuberosity left
12. antegonial notch right	point at lateral inferior margin of the antegonial protuberances right
13. antegonial notch left	point at lateral inferior margin of the antegonial protuberances left
14. anterior nasal spine	tip of anterior nasal spine just below the nasal cavity and above the hard palate
15. menton	point on inferior border of symphysis directly inferior to mental protuberance and below center of trigonium mentali
16. right mx 6 crown	most buccal point at molar crown
17. right mx 6 root	tip of buccal root of molar
18. right mx 1 crown	midpoint of incisor edge
19. right mx 1 root	tip of incisor root
20. left mx 1 crown	midpoint of incisor edge
21. left mx 1 root	tip of incisor root
22. left mx 6 crown	most buccal point at molar crown
23. left mx 6 root	tip of buccal root of molar
24. left md 6 crown	most buccal point at molar crown
25. left md 6 root	tip of buccal root of molar
26. left md cuspid crown	tip of cuspid crown
27. left md 1 crown	midpoint of incisor edge
28. left md 1 root	tip of incisor root
29. right md 1 crown	midpoint of incisor edge
30. right md 1 root	tip of incisor root
31. right md cuspid crown	tip of cuspid crown
32. right md 6 crown	most buccal point at molar crown
33. right md 6 root	tip of buccal root of molar




zygomatic suture right
4
5
zygomatic suture left
1 crista galli
zygomatic arch right
6
zygomatic arch left
7
3
2 condylion right
condylion left
nasal cavity right
8
nasal cavity left
9
anterior nasal spine
14
jugular process right 10
11 jugular process left
anterior notch left
13
12
anterior notch right
(C)1997YASUNAGA Computer Systems Co.,Inc.
CephaloMetrics AtoZ
15 menton

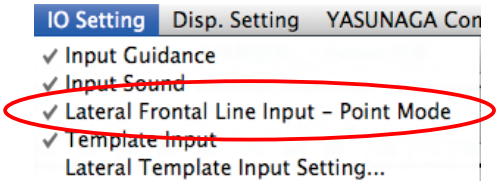

right mx1 root
left mx1 root
right mx6 root 17
19
21
23 left mx6 root
22 left mx6 crown
16
right mx6 crown
right mx1 crown 18
20 left mx1 crown

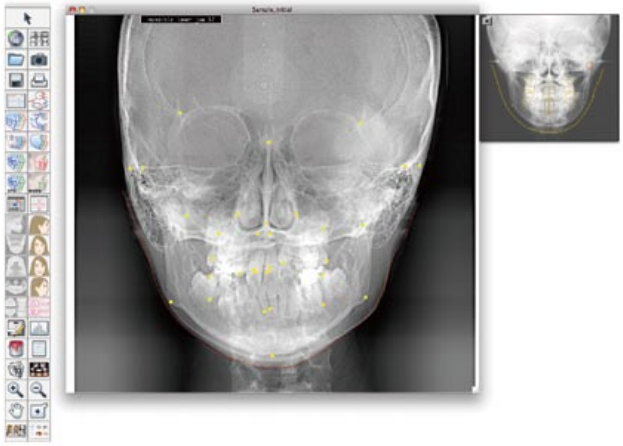

right md1 crown
left md1 crown
right md cuspid crown 31
29
27
26 left md cuspid crown
32
24 left md6 crown
right md6 crown
25
right md6 root 33
30
28
left md6 root
right md1 root
left md1 root

Frontal lines change into the Bezier curve.

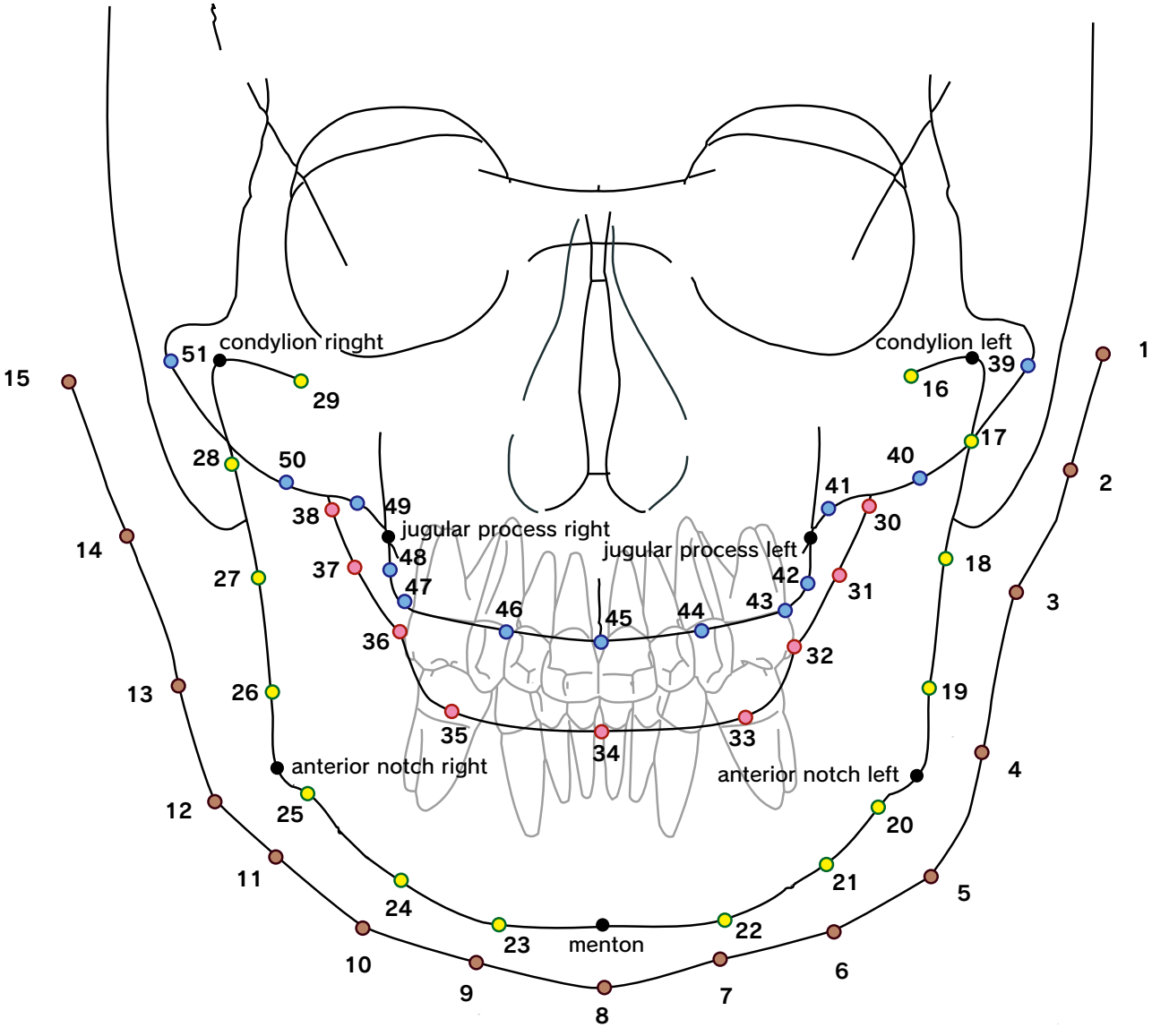
You can input frontal lines with the control points and Bezier curve.
As well as lateral point input, you can click specified points and input lines with sooth Bezier curve. It is possible to switch conventional line input and new point input.

Confirm whether there is a check mark at the "Lateral Froantal Line Input - Point mode" in "IO Setting" menu. If it is unchecked, click and check the "Lateral Frontal Line input - Point mode."



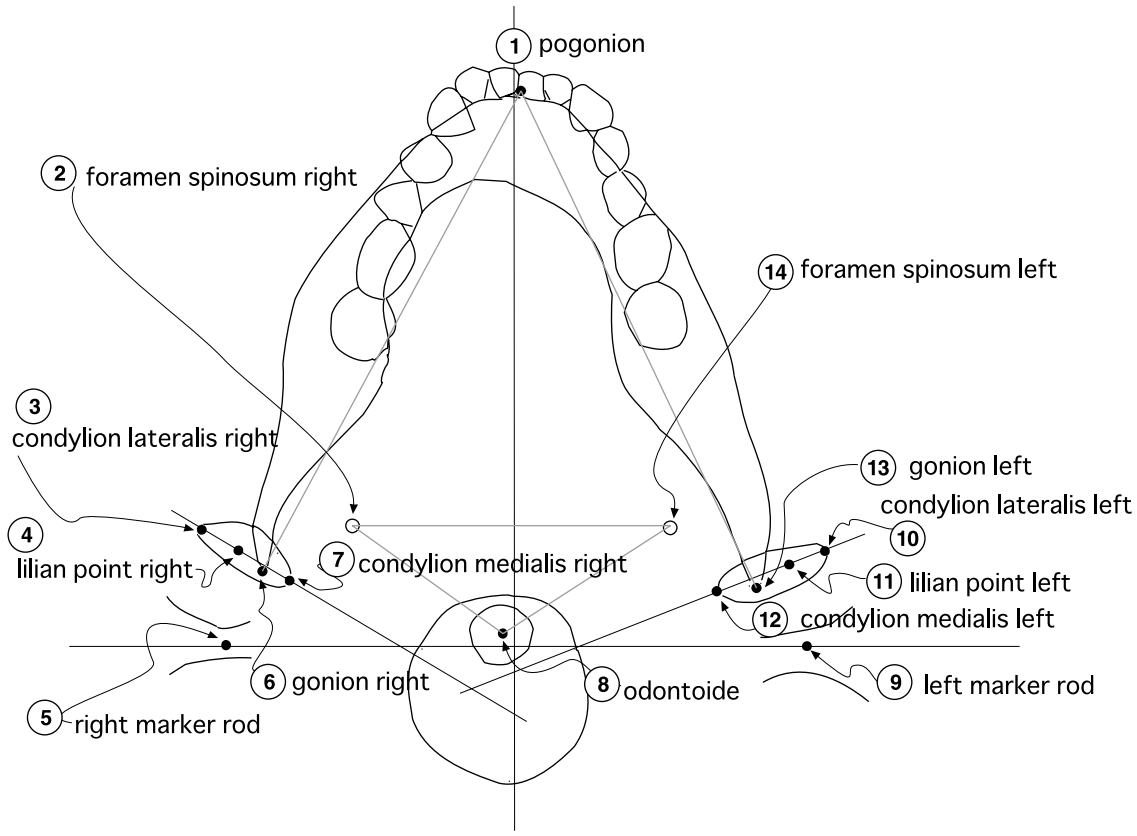


After finishing to input frontal analysis points by the "Tracing" tool, click the "Arrow" tool to input lines. You can input lines while automatically displaying lines in Beizer curve. The correction can be returned in "Shift + mouse click" anytime.
If you uncheck "Lateral Frontal Line Input - Point Mode," you can use conventional line input.



14 landmarks of the Submentovertex analysis

1. Pogonion
2. Foramen spinosum right
3. Condylion lateralis right
4. Lilian point right
5. Right marker rod
6. Gonion right
7. Condylion medialis right
8. Odontoide
9. Left marker rod
10. Condylion lateralis left
11. Lilian point left
12. Condylion medialis left
13. Gonion left
14. Foramen spinosum left

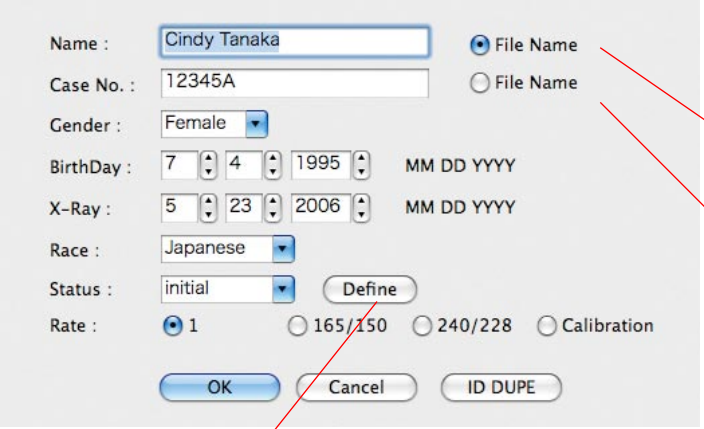


3. "Patient I.D." Input

You can display a screen by clicking the "Patient I.D." in the "View" menu all the time.

Name : Input a patient's name.
Case No. : Input a Patient's case number.
Gender : Click the arrow button and choose a patient's gender.
Birthday : Input a patient's birthday. (month, day, year)
(For example: You can input the year of birth 1991 as 91.)
X-Ray : Input the date when the X-ray was taken.
(For example: You can input the year of shoot 2001 as 01.)
Race : Click the arrow button, or input the first letter of the race, and choose.(For example: You can input the Caucasian as "C" or "c".)
Japanese:J or j / Oriental:O or o / Hispanic:H or h / Latin:L or l / Black:B or b
Status : Input a X-ray condition.
(For example: initial, growth, treatment(VTO), progress, final, T1, T2 or any other words)
Rate : Generally choose "1".

・Enter a patients information, using the tab key to go from box to box.
・Click the [OK] or press the return key, when you finish to input.



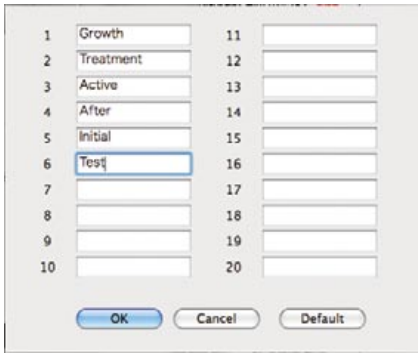
You can choose a file name by checking the box.

When you check a top box, the file name will be "sample_initial.a2z".

When you check a bottom box,the file name will be "12345A_initial.a2z".

User defines "Status" of "patient ID input".

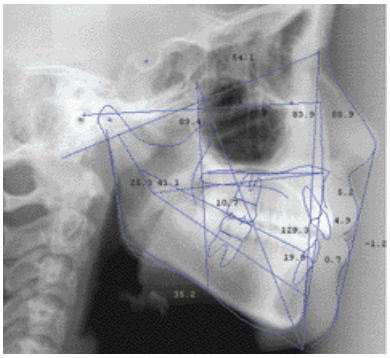
Click a "definition" button.
Input the item name into a box. It is registered when you click "OK".



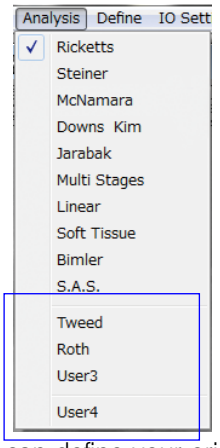
※ Be sure to input [Gender] and [Race]. If not, analytical values don't appear.

4. Change an Analysis

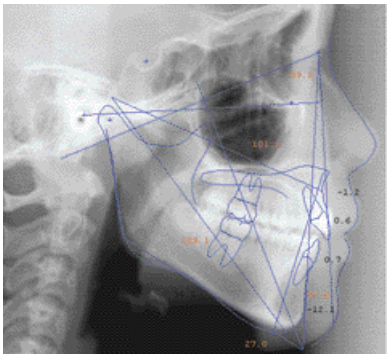
You can change any Analysis instantly, when you click the analysis name in the Analysis menu with a mouse. Multi stage and Linear support only for Asian people. (You can not use it for Caucasian.)



Ricketts analysis



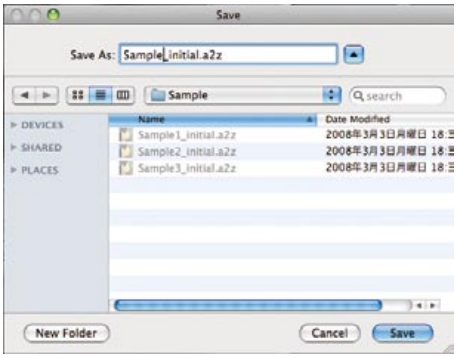
You can define your original analysis among these 4 items.



McNamara analysis

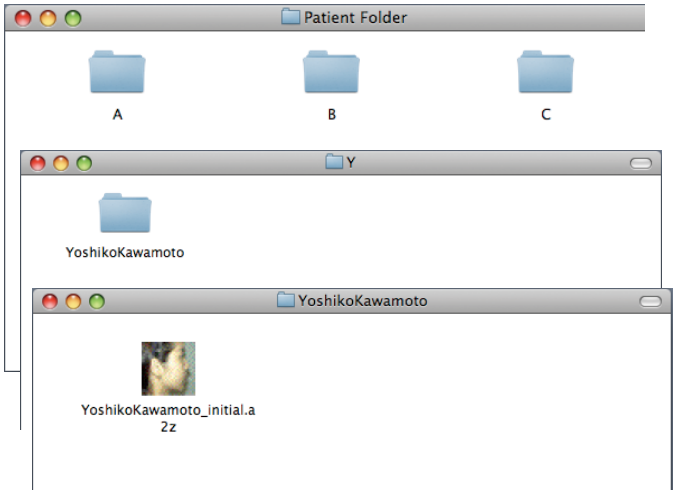
5. Save data

・Save data once. A dialog box appears when you click the Save tool.



A computer asks where to save a file.

・Choose a folder, and save a file.

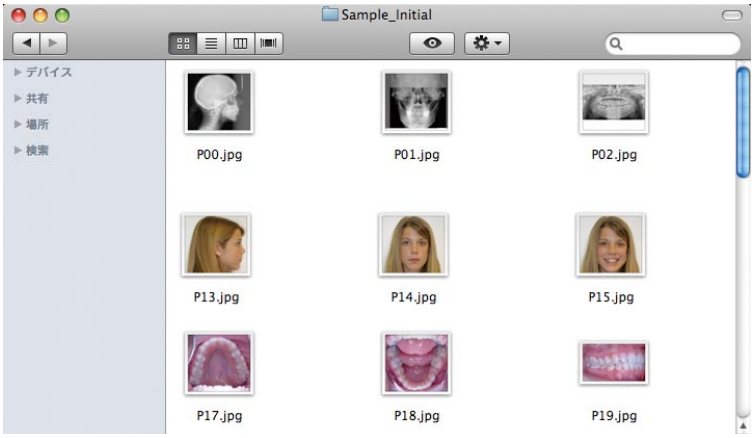


Bit of advice

We will explain how to manage patients' files here. Create a "patient folder" on the desktop first, and create "A" "B" "C" ….folders in it.
(When you manage them with numbers, create folders such as "100" "200" "300" ……)
For example, in case of a patient "Billy Clinton", create the "Billy Clinton" folder in the "B" folder, and save the initial file in it.
In this way, when you crate the other files as treatment or final for Billy Clinton, save all of them together in the "Billy Clinton" folder. It helps to manage with ease.
And, when you backup these files, save the whole "patient folder" regularly in another Hard disk, or CD-R /RW, and so on.

6. Add a color photo

You can add a patient's color photos with a digital camera or a slide.
For a digital camera, input a color photo to a hard disk drive with a card reader or others. For a slide, with a scanner with the transparent unit, a film scanner or others.
(Color photos are supposed to be taken with JPEG file here.)



Color photos are saved in the "color photo" folder in desktop as left.

Bit of advice

Following is the standard image size to import into the AtoZ. Note that if you import too big size image into the AtoZ, it may cause a computer run slowly or freeze.
To change an image size, Photo retouching software such as the Adobe Photoshop is needed.

< The standard image size >

- **Pixel size : 640 × 480 pixel**
- **The data size of 1 frame : 300 ～ 500 KB**
- **Record form : JPEG (Save at the highest quality.)**

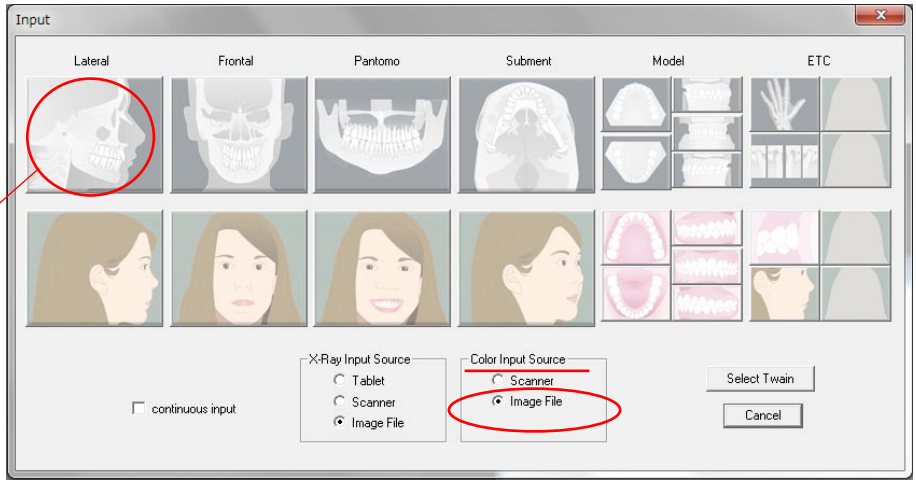
Add a color photo to the sample file.

・If you close it, click the Open tool , and open it.

・Next, click the Add tool .

Attention! **Note that if you input an image with the New tool , it becomes another file.**

· When you click the Add tool, the dialog box to input an image appears.



Inport within the frame.

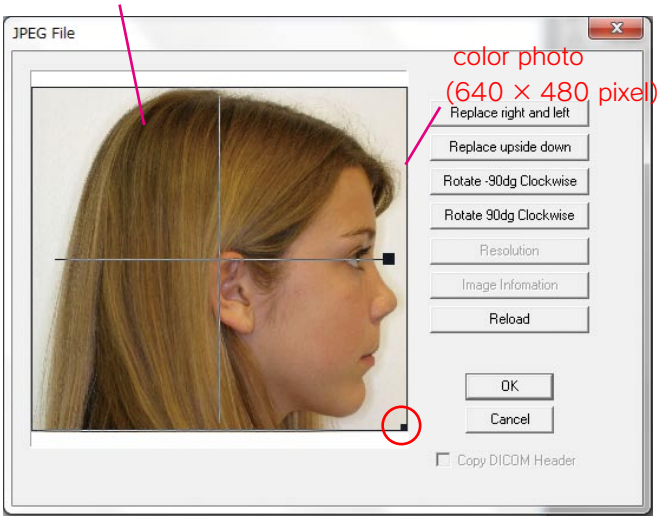
First, add a JPEG file [1Lateral.JPG] in the "color photo" folder in the desktop within the frame marked with a red circle.

· Choose the "Image File" in the "Color Input Source", and click the button of the lateral color photo marked with a red circle.

· When the dialog box appears, choose [1Lateral. JPG] in the folder, and click the "Open".

frame (512 × 468 pixel)

color photo (640 × 480 pixel)



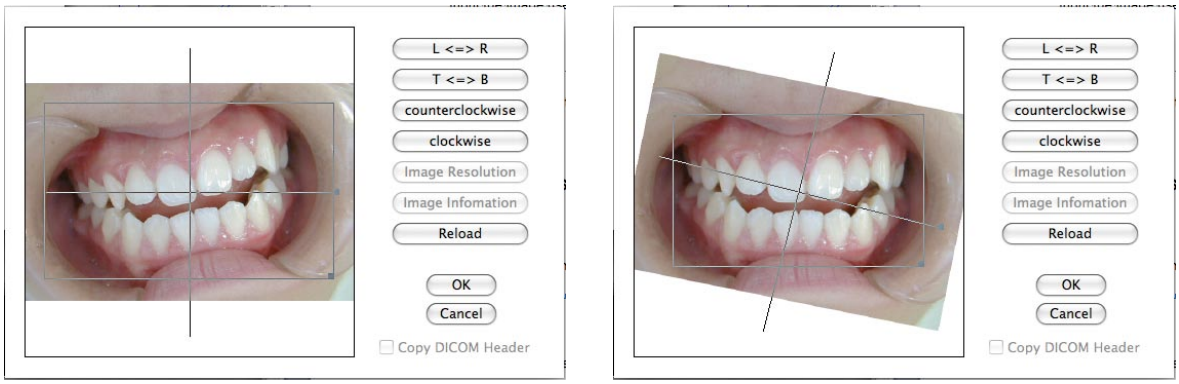
The dialog box as left appears.
You can adjust an image, such as "Replace right and left", "Replace upside down", "Rotate -90dg Clockwise", and others with this dialog box.
Also you can adjust the frame size by dragging the bottom right part of the frame. (marked with a red circle)
When you drag the center of a frame, you can move the frame itself.
· After you set a frame, click the [OK] button.

Bit of advice

If you set up the color photo size as 640 × 480 pixel by using Photoshop and others in advance, you can save your time to adjust the frame.
(The standard display resolution is 72 dpi, so the import frame size will be 512 × 468 pixel.)

◎ New angle adjustment

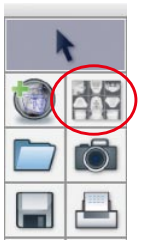
A cross line rotates, when you drag up or down a right edge in a cross line to take an oral image. You should put the inclined image and the cross line in a horizontal position.
And drag it and release the mouse button, the rotated image appears. You can do it as many times as you like.

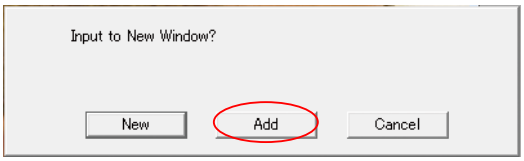


When the image is in a horizontal position, click the OK button and import.

◎ Import an additional image with the Thumbnail tool

You can import additional JPEG files with the thumbnail tool.
・Open the desired file to add images in advance.
・Click the Thumbnail tool.





A computer asks "Input to New Window?".
・Click the "Add" because the image is added to the file that is currently open.

Please refer to「◎ Import an image with the Thumbnail tool」for information about image input.

7. Trace positioning

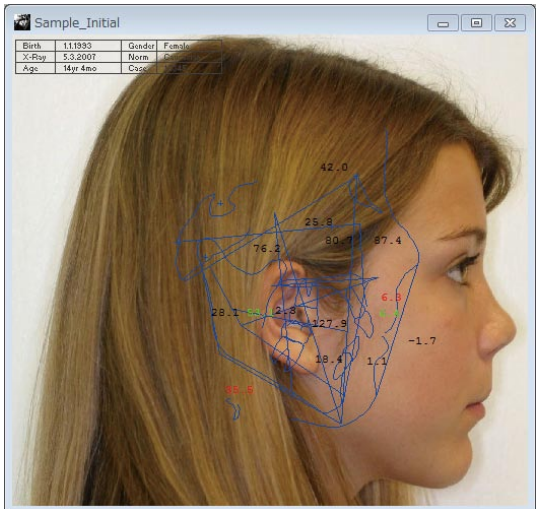


figure. 7-1

When you use as mentioned in this textbook, a color photo is supposed to be imported as the figure 7-1.
As you see, when a color photo is imported at first, there is a displacement between the color photo and the trace position.

To correct it, use the Position tool  .

· Click the Position tool on the upper right corner of the screen.

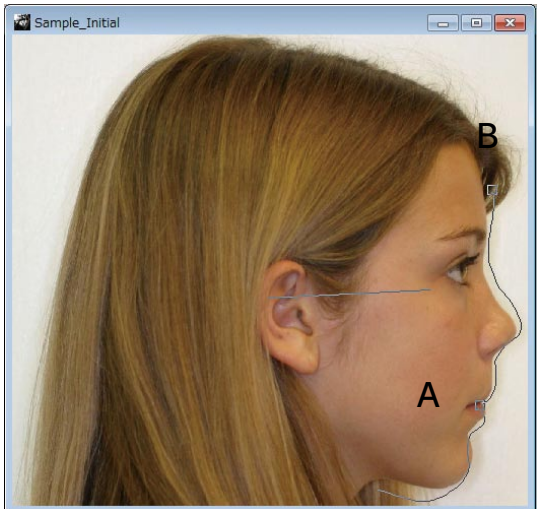


figure. 7-2

Then, the trace changes into the profile line where a box stuck to the Glabella and the Embrasure as the figure 7-2.

· Drag the box A to the Embrasure position of the color photo first.
· Then, drag the box B to the Glabella of the color image, and put them together.

You can adjust the profile line scale size and inclination by moving the box B.

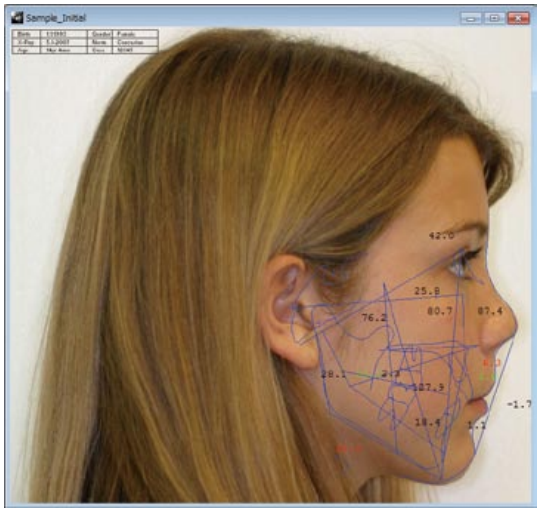


figure. 7-3

· After finis positioning the A and B box, click the Arrow tool  .

The color image come to correspond with the trace as the figure 7-3.

8. Correct a Trace

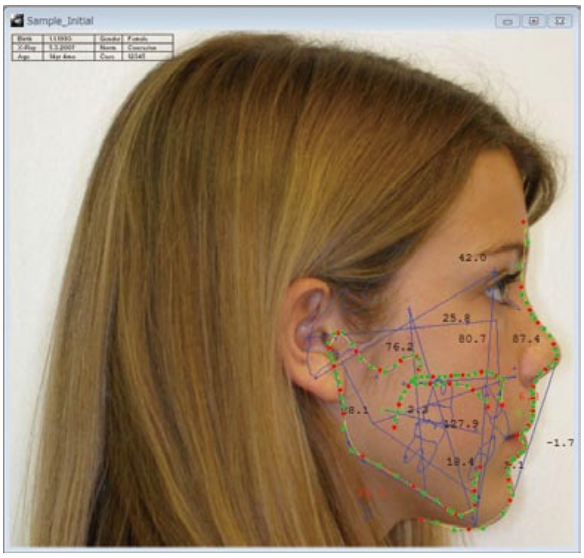
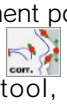


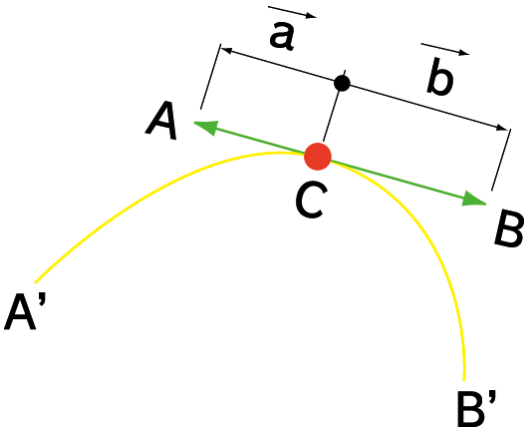
figure. 8-1

You can correct inputted measurement points and lines by clicking the Correction tool  .
When you click the Correction tool, all lines change into the Bezier curve as the figure 8-1. We will correct the line of the soft tissue here.

Before that, we will explain about the Bezier curve.

What is the Bezier curve?

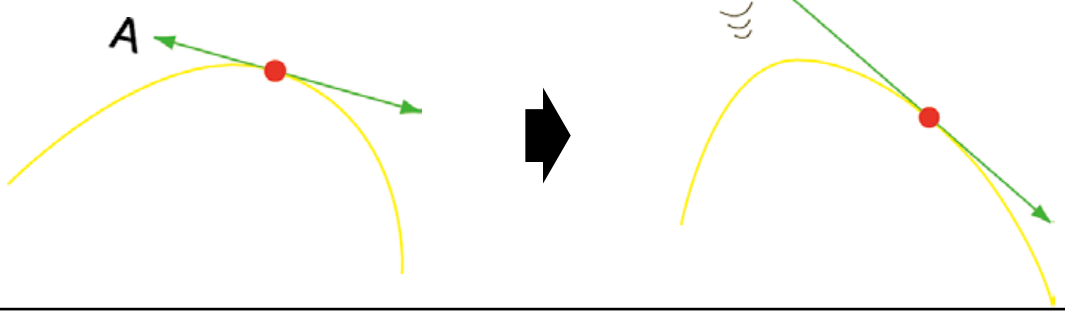
You can correct a soft tissue line, an upper and a lower jaw hard tissue line, (A hard tissue copes with it after Ver. 4.) with the Bezier curve in CephaloMetrics AtoZ.
This column provides descriptions about the Bezier curve.



The Bezier curve is a curve expressed with the anchor point and the handle as the left figure shown.

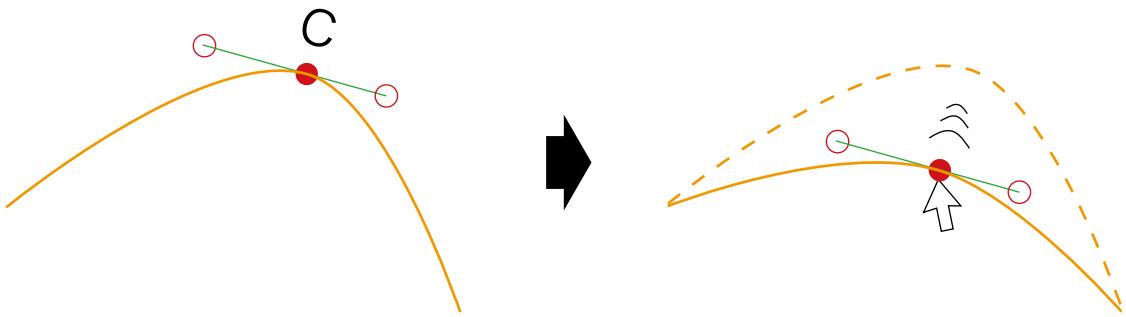
In a word, a curve A'C means a vector a which shows length and direction from a point C to A. A curve B'C means a vector b which shows length and direction from a point C to B as well.

Therefore, for example, when you drag a white circle A ○ to the upper left with a mouse, you can change a smoothly level of a curve (the size of R) as the figure below.



Now we will drag a red circle C ● to the lower.

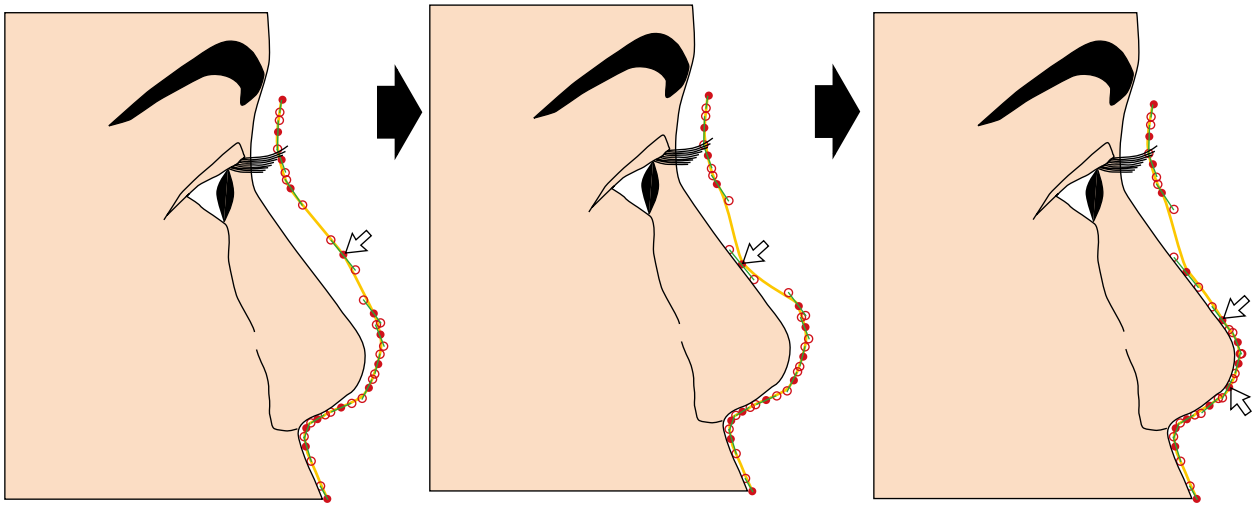
Then, You can see that the curve moves together with the circle.



How to correct a line with the Bezier curve

Could you understand what the Bezier curve is ? We will actually correct a line of a soft tissue and a hard tissue with CephaloMetrics A to Z here.

8-1. Correct a soft tissue



· Drag a red circle ● on a Bezier curve to a soft tissue line first.
You can point a red circle easily on a straight line, because there is relatively wide interval among adjacent circles. On the other hand, there is only narrow interval on a curve line, so take care to point.
When you move a red circle, be careful to leave appropriate interval.
· After finish correcting red circles, drag the green arrow to correct a line curve to correspond with a soft tissue.

8-2. Correct a hard tissue line

After finish correcting a soft tissue, correct a hard tissue line next.

・To change an image from a color photo to a X-ray image, click the lateral X-ray icon  in the Tool window.
・Click the Correction tool in the Trace tool window.
The X-ray image appears as the figure 8-2.

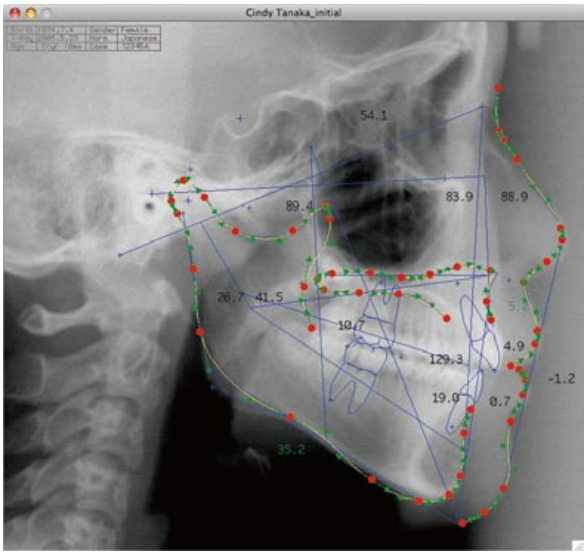
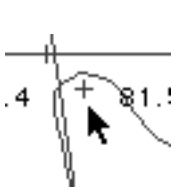
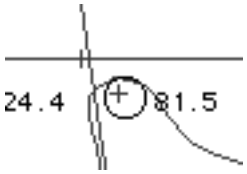


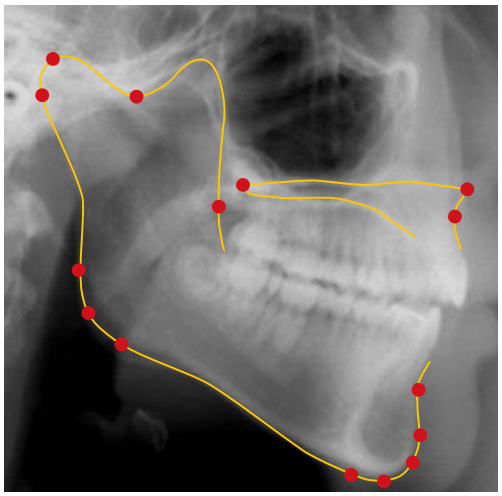
figure. 8-2

Bit of advice

When you correct points or lines, you should use the Loupe tool (expansion) to expand a image. It helps that you move an image with a Hand Tool, you can display a place to correct in the center.



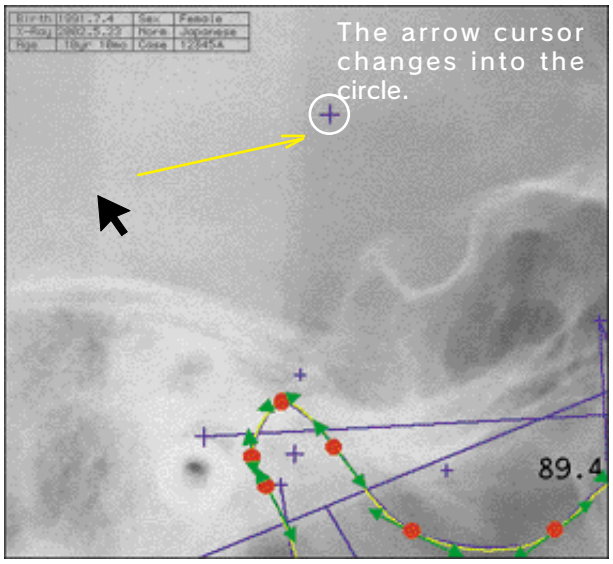




Different from a soft tissue correcting, when you correct a hard tissue, you should correct overlapping points. (Total 15 points, as ANS, PNS, Point A, Point B, Menton and others on the upper and lower.) When you move a cursor onto a point to correct, an arrow cursor changes into the circle ○. So you can't move a red circle. Therefore, you should move a cursor while holding a Shift key to move a red circles ●.

When a red circle ● overlapped with the green arrow, you can’ t point the green arrow as you like . To work it out, you should move a cursor while holding a Control key in Windows (Mac: holding an option key).

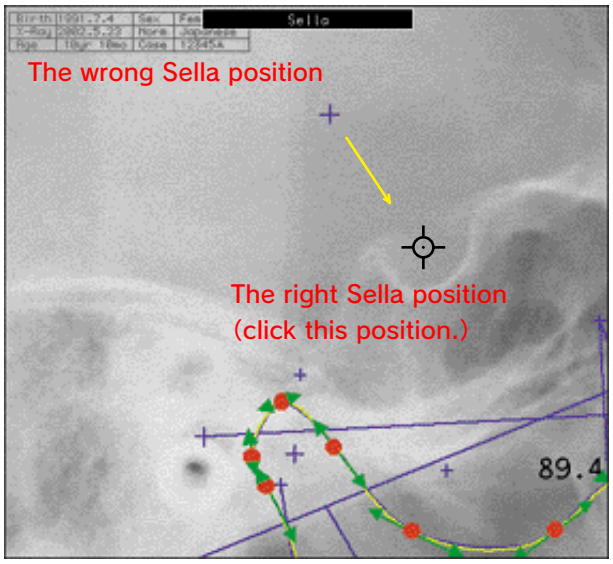
8-3. Correct a measurement point



· To correct a measurement point, click the Correction tool  .

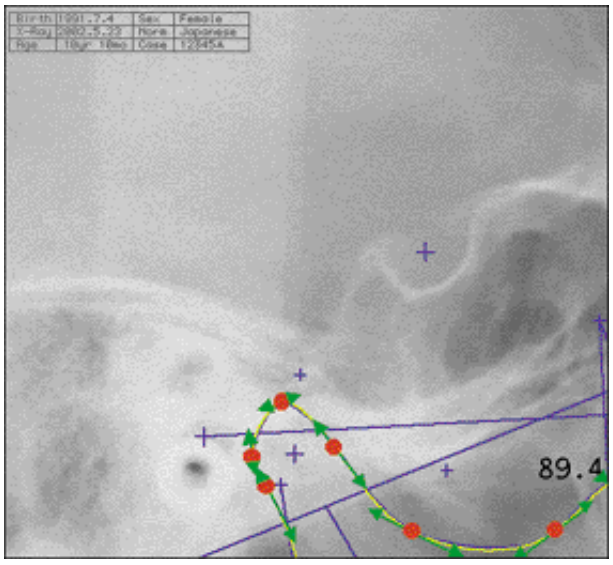
A cursor changes into the circle when you draw a cursor close to the measurement point to correct. And that point, click the mouse once.

· Click the left button.



Then, the name of that measurement point appears clearly on the screen with the computer's voice.

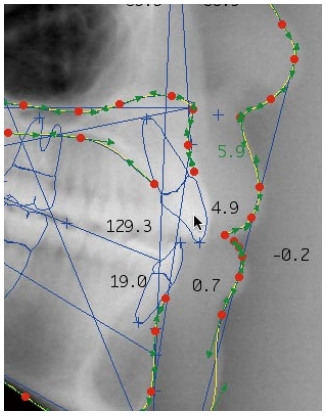
· Confirm it, and click the right position with a mouse.

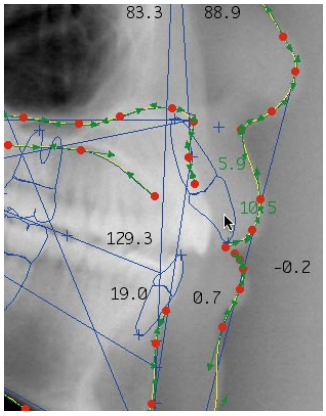


As you see, the position(Sella) has been corrected.

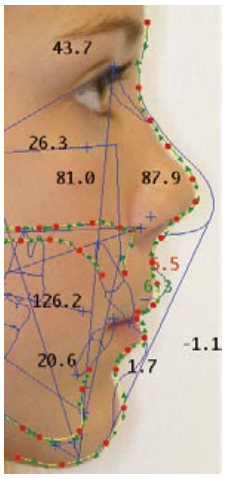
◎ You can revise the position of the tooth of the trace.

Drag the inside of the shape of the tooth and can move the whole tooth.

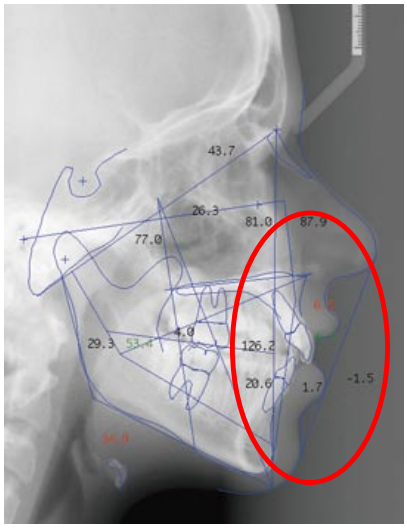


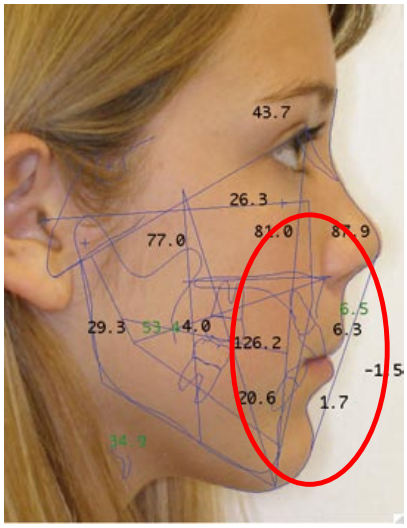


8-4. X-rays and Photo input the trace of the soft tissue separately.

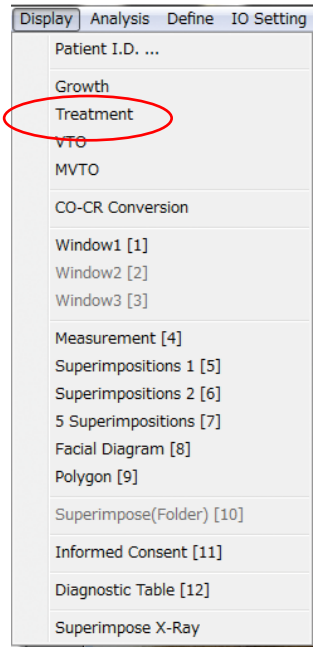


・Trace it with X-rays image.
・Change it in a color photo.
・Revise a soft tissue with a  "Correction" tool and save it.
・Soft tissue is made separately.





9. A morphing of a lateral color image



The image morphing function in AtoZ, which can simulate a post treatment prediction, is effective to motive the patient. We will go into detail about how to use.

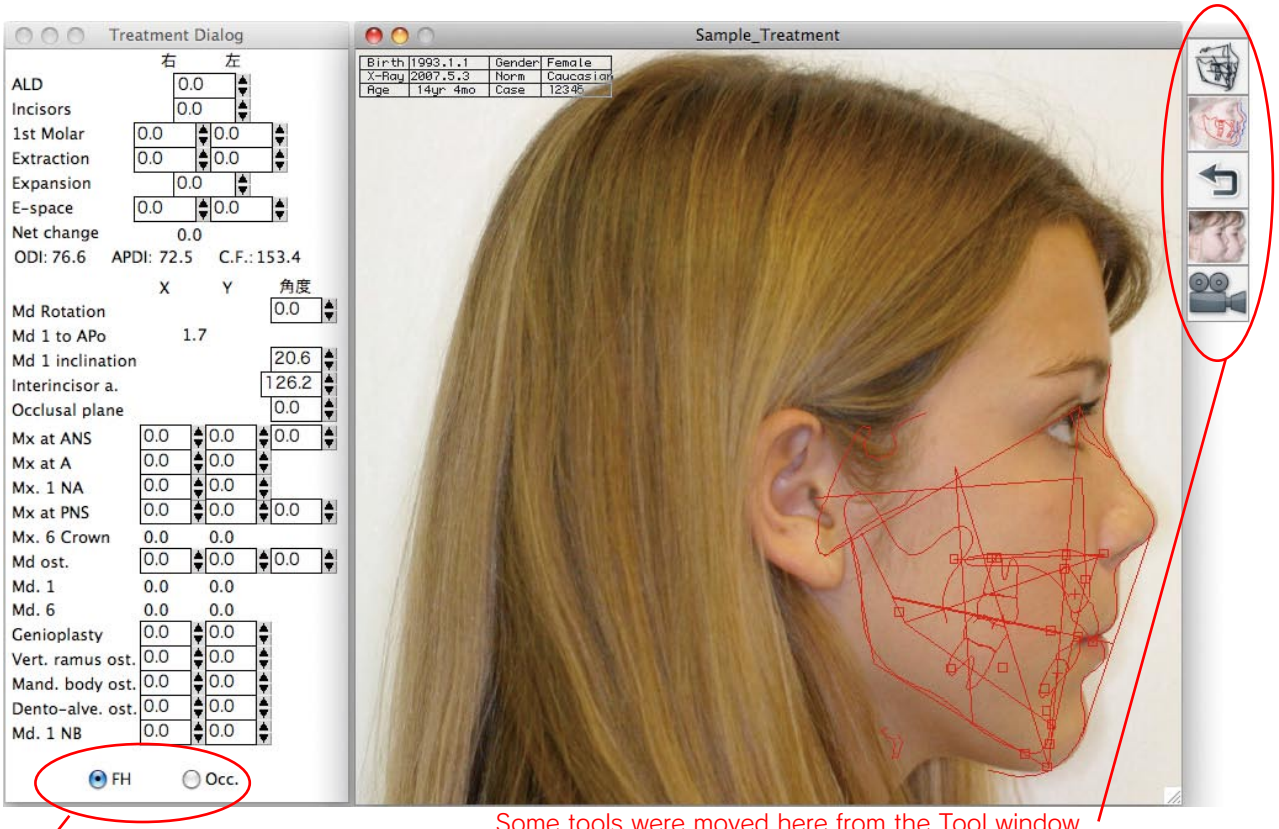
· Open the patient data to do a morphing.

· Click the "Treatment" in the View menu.

Then, "Treatment Dialog" and "Treatment Window" open as the figure below.

You can input numerical value to the dialog box directly or move a box on a trace.

They work in conjunction with each other, so you can choose more convenient way to run a simulation.



Some tools were moved here from the Tool window.

Change treatment in FH and Occlusal plane.

When you point the arrow cursor inside of a box and drag it, the cursor will change to a plier for the orthodontic treatments, or to a scalpel for the surgical treatments.

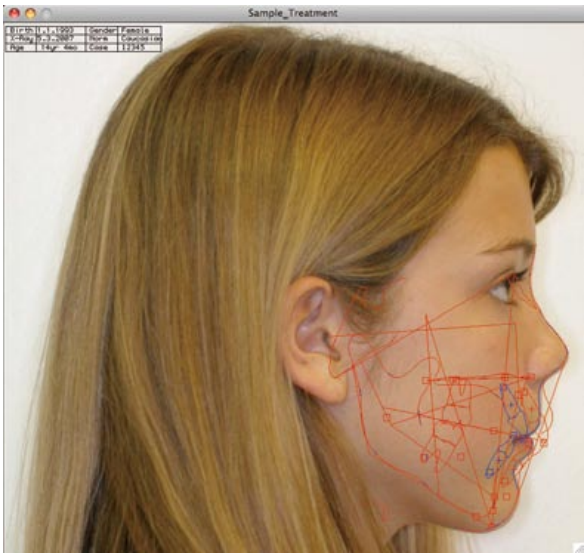
· To translate a tooth image, put the arrow cursor on it and drag.

· To change a dental angle (inclination), drag the box on a root apex or a head.

· To rotate a whole maxilla, drag "the box of PNS" while holding the control key.

· To move a whole maxilla, drag "the box leaning to PNS" while holding the control key.

We will move an image actually to explain the image morphing function here.
・Translate upper and lower incisors to the front.



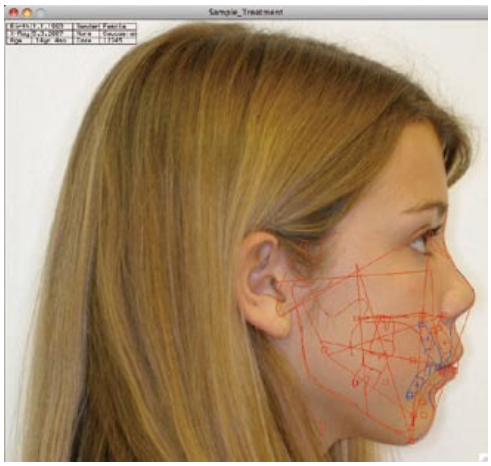
When you move the trace box on a color photo, the numerical values in the "Treatment Dialog" will be changed in conjunction with it.
※ On the contrary, to move the trace box on a color photo, when you change the numerical value in the "Treatment Dialog" and click the Morphing tool.

・Click the Trace change tool here.
You can display the line to compare the amount of change of a soft tissue.

A blue line : "a current soft tissue line"

A red line : "a soft tissue line after a treatment"

・Click the Trace change tool.
The Trace change tool is a toggle button.
You can change the blue line display on or off by clicking the Trace change tool.



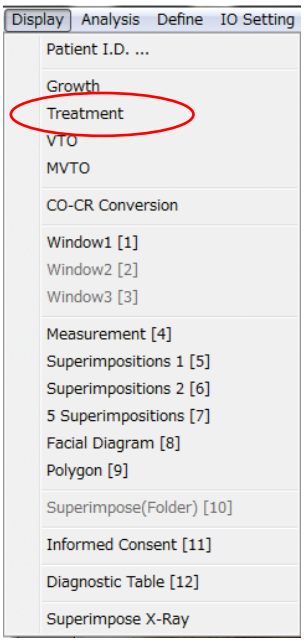
・Click the Morphing tool next.
As you see, an image has changed as the left figure.

◎ How to use the frontal treatment

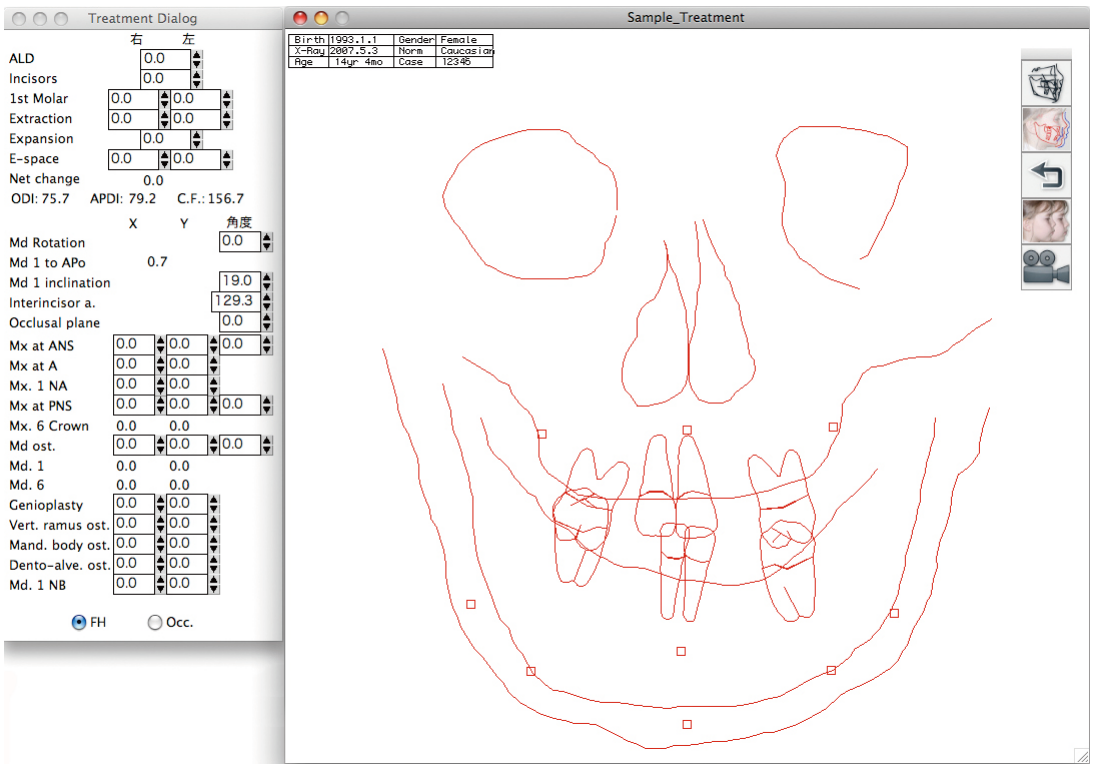
Orthodontic,orthognathic and surgical treatments can be simulated only by dragging the trace.

1. Open the frontal file which the points and lines was input, and choose the "Treatment" of the View menu.

Then, click the frontal icon of the Tool window. 



2. Drag the tiny boxes directly to simulate it.
A frontal doesn't have a treatment function by input of numerical value in the "Treatment Dialog".
You must input 4 lines to simulate like the figure.



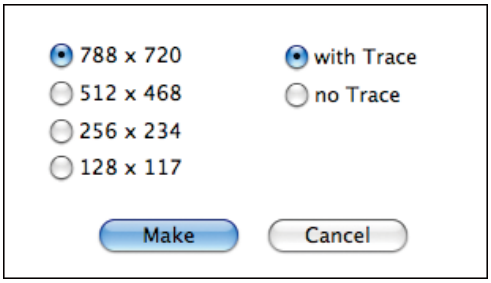
◎ Morphing movie

We achieved to display not only the images after a simulation, but also perioperative changes of patients as movie. You can see both frontal and rateral on either Windows or Macintosh software.

Operation

Open the patient's file first, and select "Treatment" from the menu. Input the value in a dialog box or drag the box on a trace.

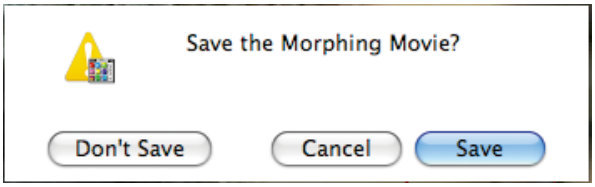
The peritreatment trace appears when you click the trace change button  , and it changes into the facial configuration after a simulation when you click the molfing button.  To create a morphing movie, click the animation create button. 



Select the size and trace(with or without), and click the create button. And a movie is created and the movie window appears.

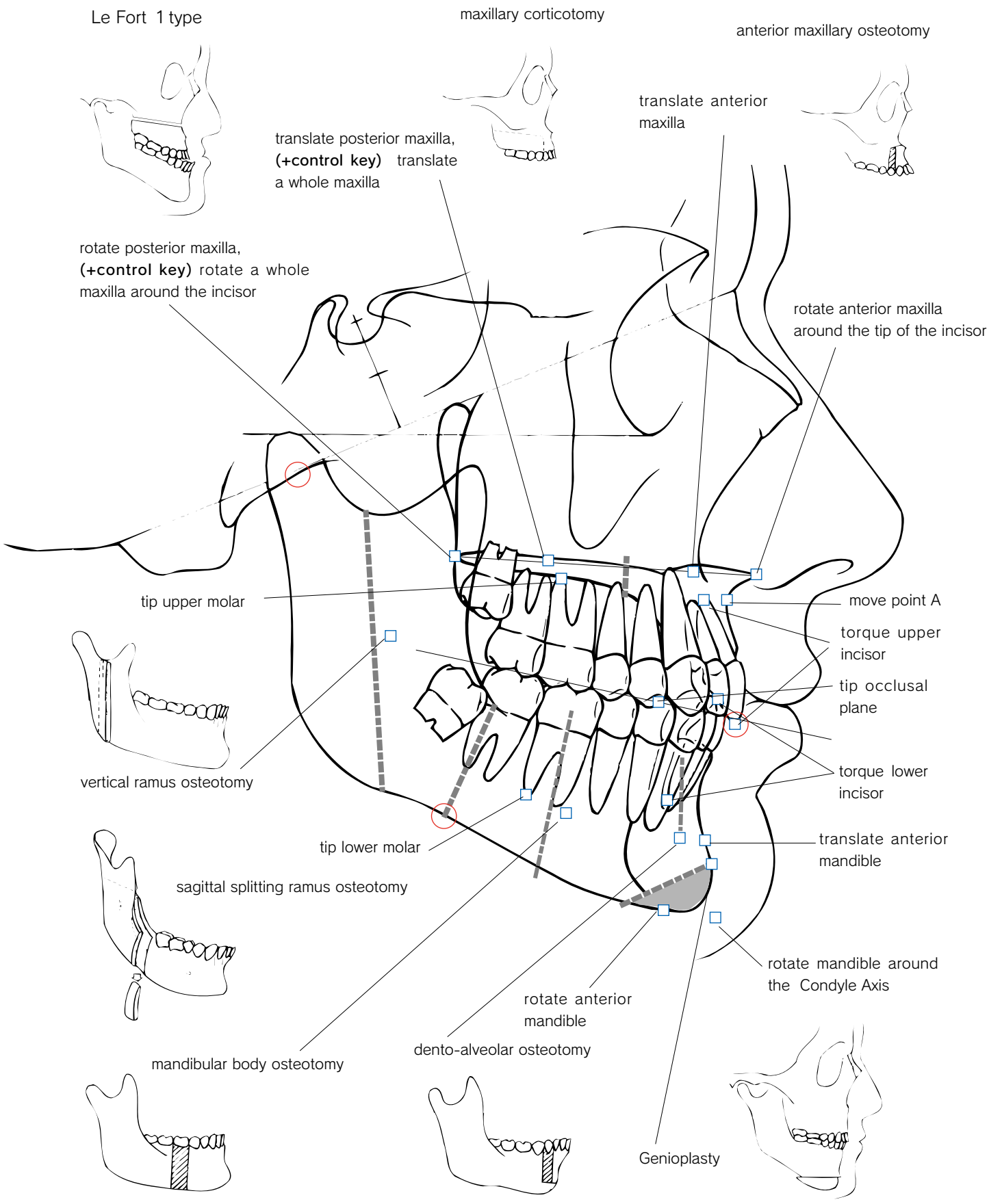
Macintosh

Windows

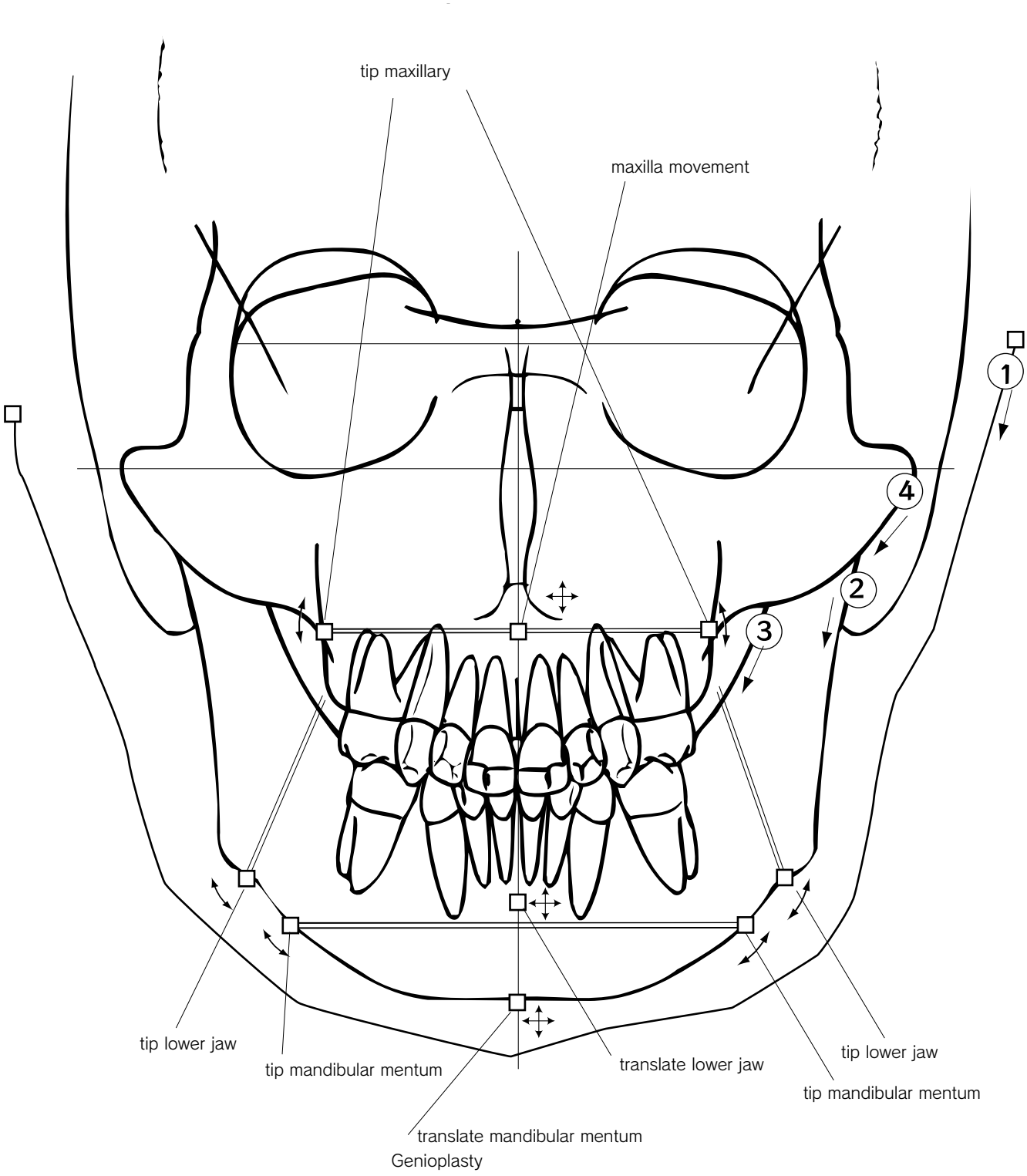


For Mac, click the play button on the bottom-left to play, and select save or not when you close the window.

A simulation position in a Treatment



A simulation position in a Treatment (frontal)

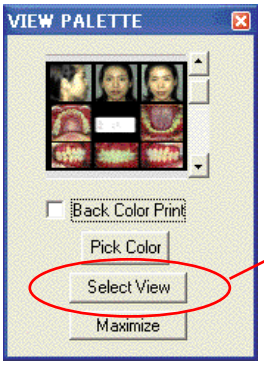


10. How to display an image of before-and-after treatment comparison

This chapter provides a description about the method to display before-and-after treatment predicted Morphing images at the same time.

· Click the View Layout tool  .
"View Palette" appears.

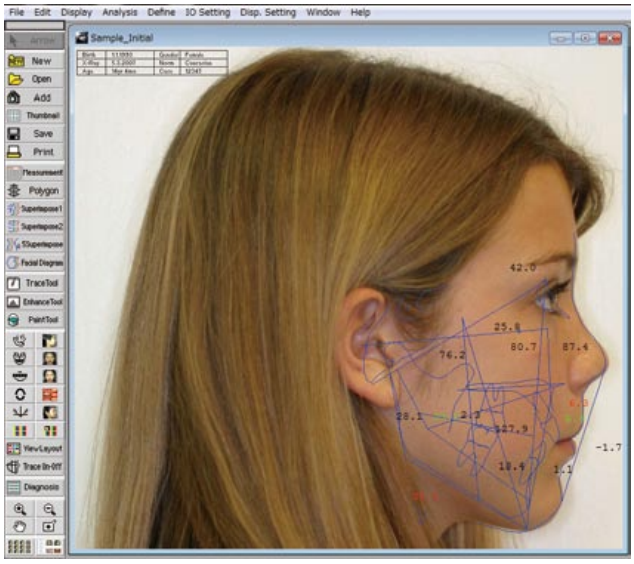
There are 28 kinds of image display formats in AtoZ.
The 23rd format is a "comparative image display mode".



When you click the "Select View" button, the forms to choose appear. You can choose a form from the list.

When you open two windows, two comparative images appear. And when you open three windows, three comparative images appear.

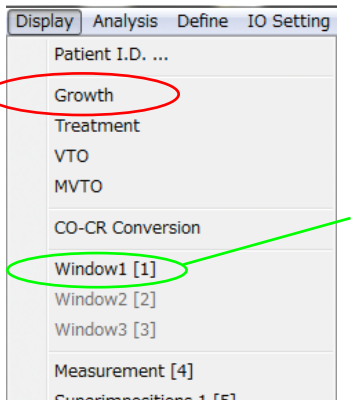
11. Superimpose



You can display a superimpose only when two or three windows are opened.

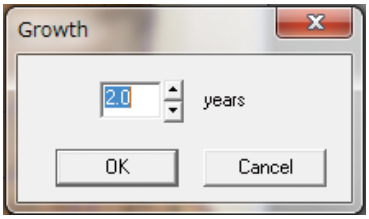
We will open an initial file, carry out "growth" and "treatment from the growth", and then superimpose those three data.

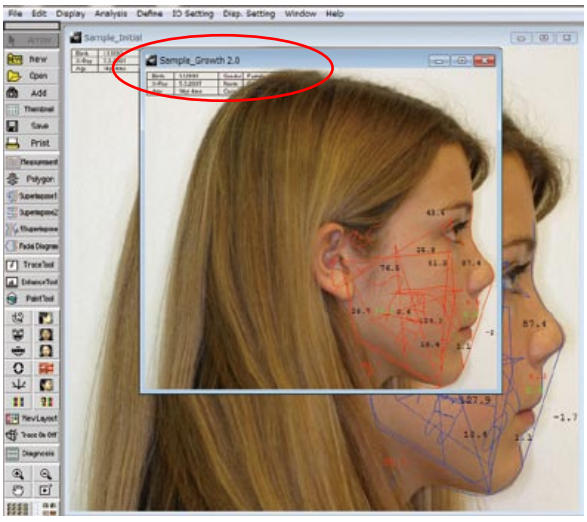
・Open an initial file first.



・Click the "Growth" in the View menu.
・Input years to the Growth dialog box.
We input [2.0] (years) here as an example, and click the [OK].

When you see the View menu, only the letters of "Window 1" are black. You can see that the initial file is the "Window 1" from this.





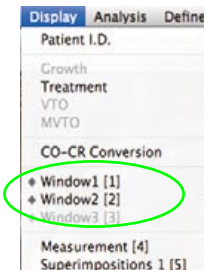
The "Growth 2.0" window opens.
Note that the red circle display as the left figure.

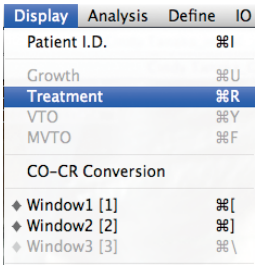
・Click the View menu here.

◆ Window 1 [1]
◆ Window 2 [2]

Therefore, you can see...

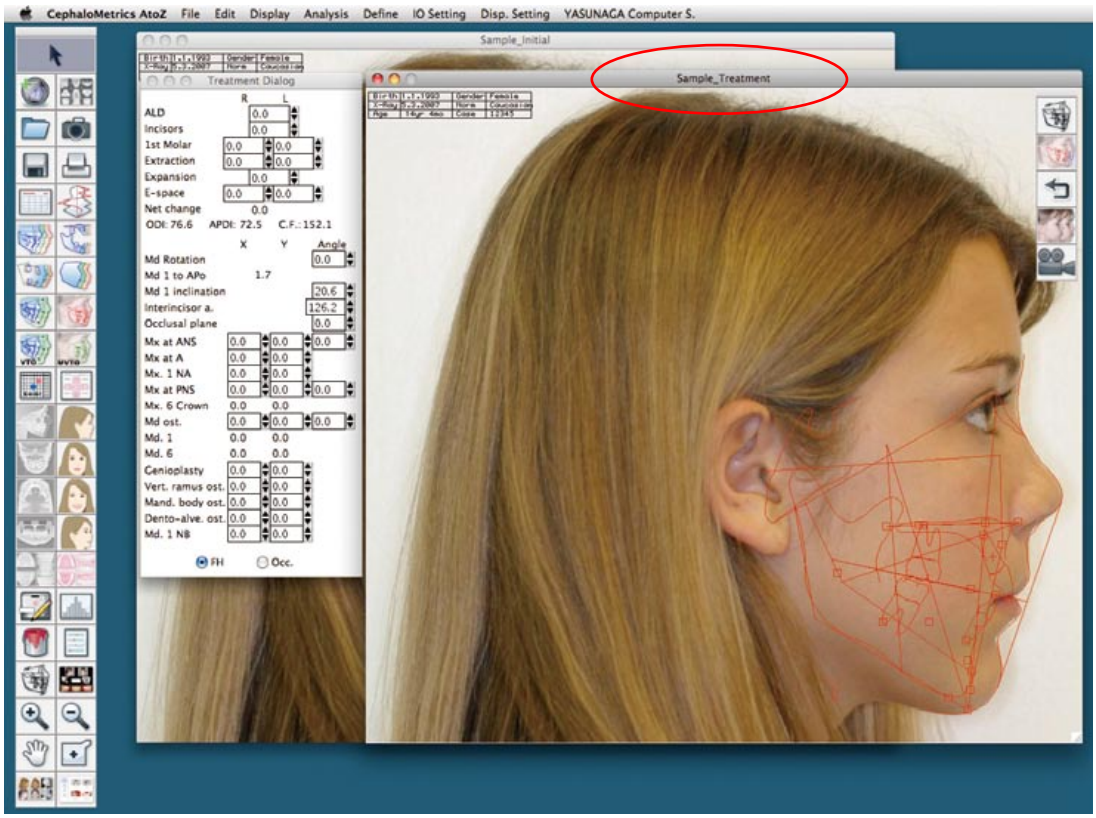
linitial file = Window 1
Growth file = Window 2

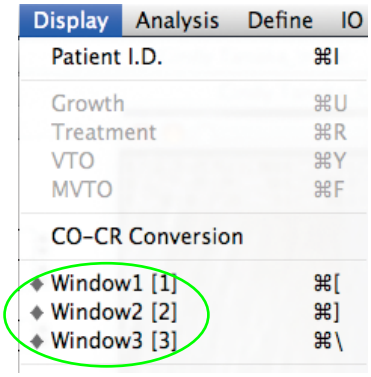




· Next, click the "Treatment" in the Display menu with a Growth file indicated.
Then, the "treatment" window in the treatment file opens.
Note that a red circle display as the left figure.

※ Note that this treatment file also reflect the contents of a Growth.



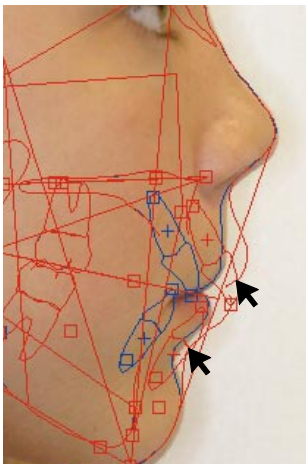


· Click the View menu here again.

◆ window 1 [1]
◆ window 2 [2]
◆ window 3 [3]

Therefore, you can see...

Initial file = Window 1
Growth file = Window 2
Treatment file = Window 3



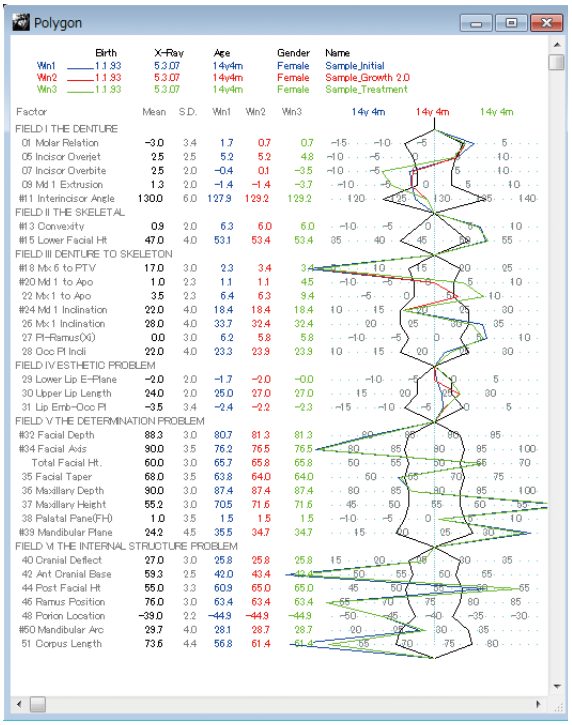
・To see a variation in the data, translate the incisor of both upper and lower to the front in the treatment file window.

Superimpose1,
Superimpose2,
Polygon

Each superimpose is available as you click button of Superimpose1 tool, superimpose2 tool, and Polygon tool with three windows of initial, Growth and Treatment opened.

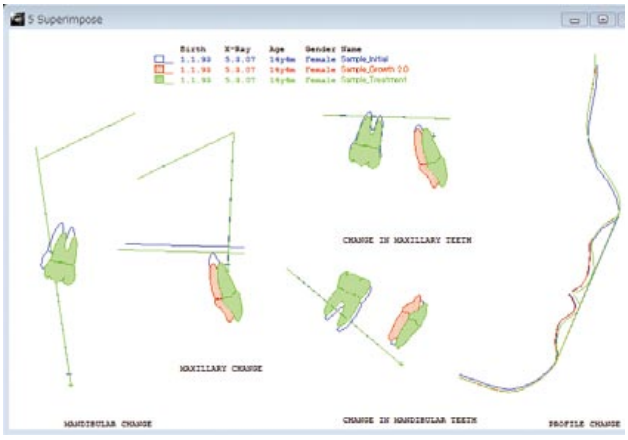
Superimpose1

Polygon



Superimpose2

5Superimpose of Ricketts

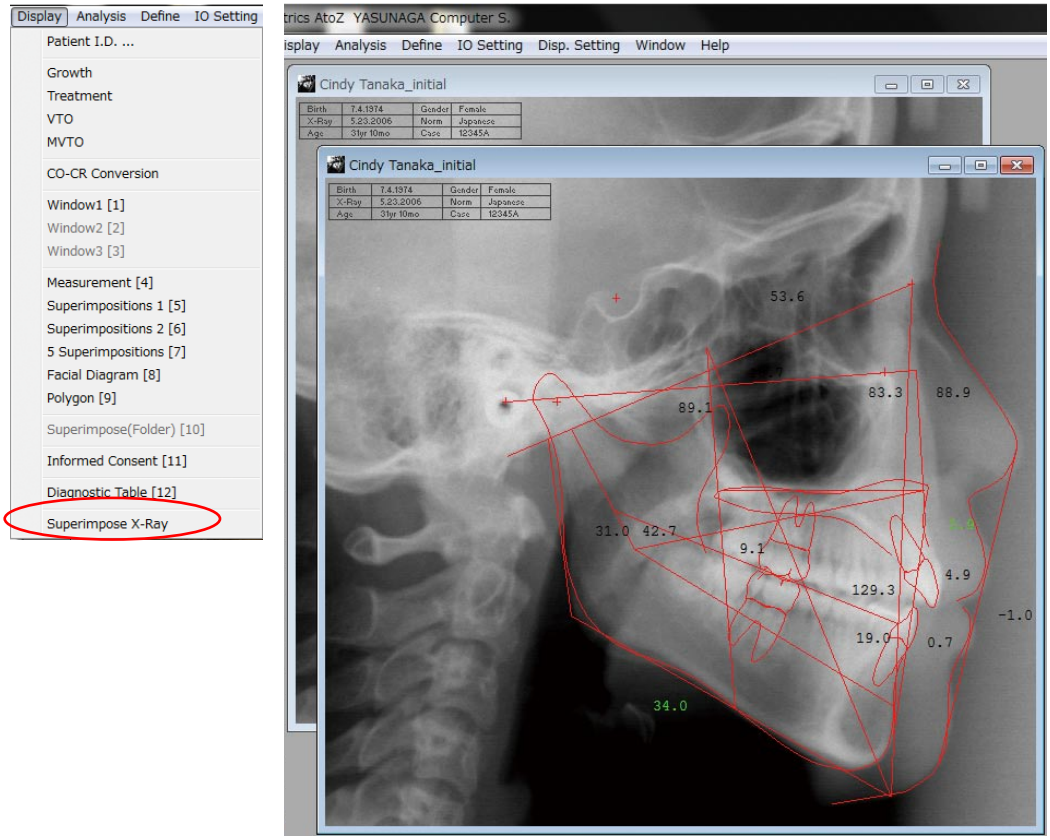


◎ Superimposition of X-ray images

You can display the superimposition of X-ray images .

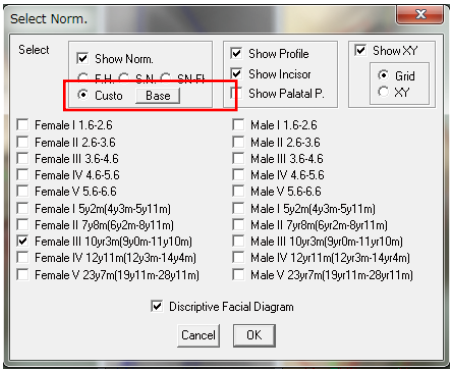
・Open the two X-ray images to superimpose.

・Choose the "Superimpositions X-Ray" in the View menu.



You can adjust an image density with the scroll bar. You can rotate and translate an image freely, and compare the images front and behind.
Also the doctors who use digital X-ray machines can superimpose images on the screen.

◎ A position of a Facial Diagram superimposition and a reference plane customization

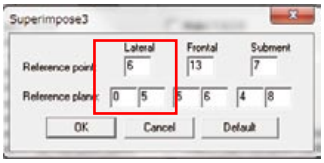


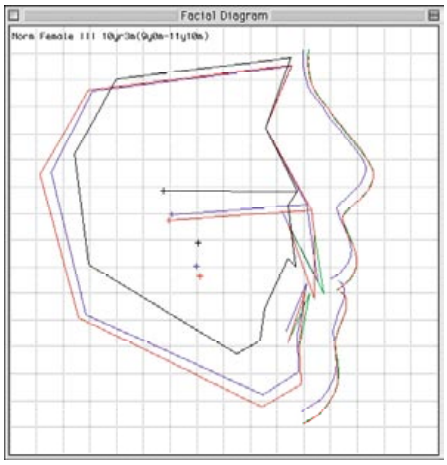
You can customize a position of a Facial diagram superimpose and a reference plane.

・Click the Facial Diagram tool.

The Select dialog box appears.

・To customize, click the radio button in the "Custom", and then the "BASE" button.





The Superimpose3 dialog box appears.

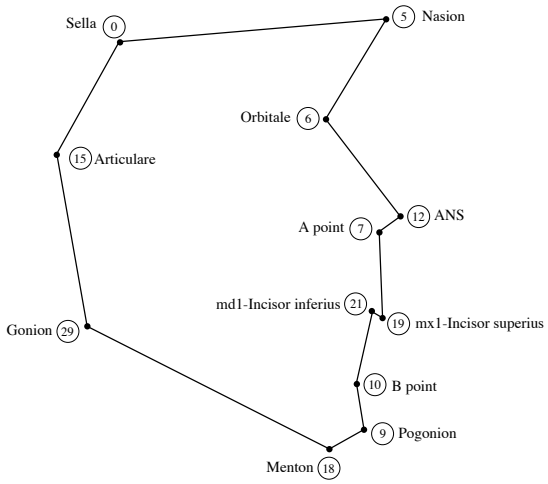
・Define a reference plane and "Lateral" reference point.

reference point: 6 (Orbitale)
reference plane: 0 (Sella) 5 (Nasion)

・Input it, and click the "OK" button.

Yoshiko Kawamoto .initial
Yoshiko Kawamoto .Growth 2.0
Yoshiko Kawamoto .Treatment

The superimpose of three data and the standard value appear as the figure.



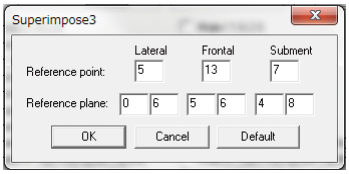
The 12 points which compose a Facial Diagram

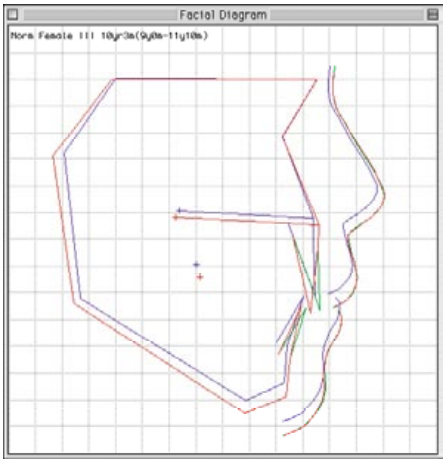
<Note>

※ The values inputted to a reference point and plane are the same as the value ina user analysis definition.

※ You can display the standard values only if you use of the 12 points for the reference points and the reference planes as the left figure.

(If not, the standard values don’ t appear.)





Therefore, when you superimpose the N point on the FH plane…

reference point: 5 (Nasion)

reference plane: 1 (Porion) 6 (Orbitale)

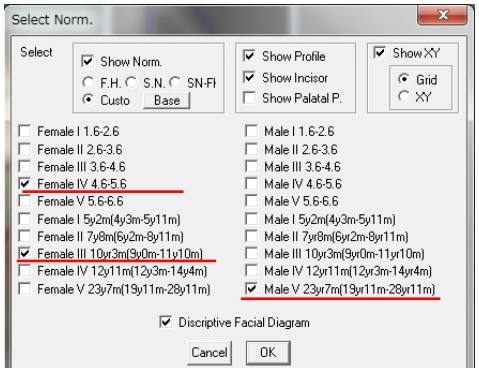
・Input the values, and click the "OK" button.

Yoshiko Kawamoto .initial

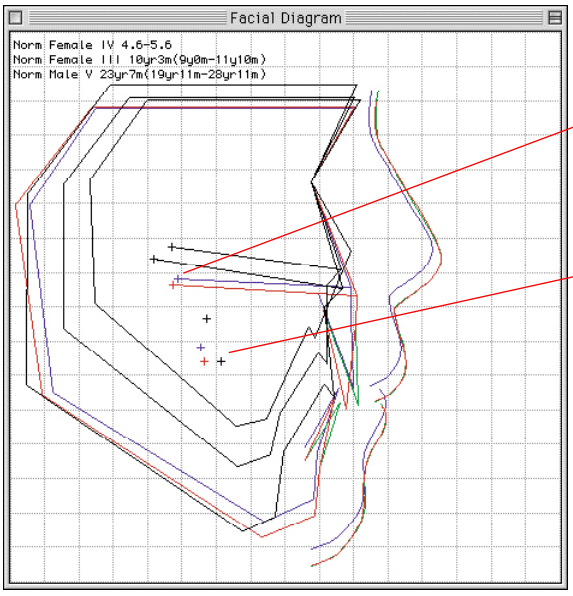
Yoshiko Kawamoto .Growth 2.0

Yoshiko Kawamoto .Treatment

Then, the superimposition of three data appear as the figure. But the standard values don’ t appear.



You can display up to 3 standard values at the same time.

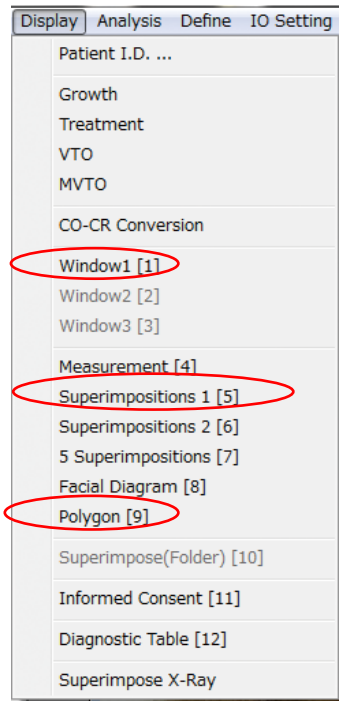


PNS

Median of the occlusal molar

※ These are patient's data, not the standard values.

12. Print



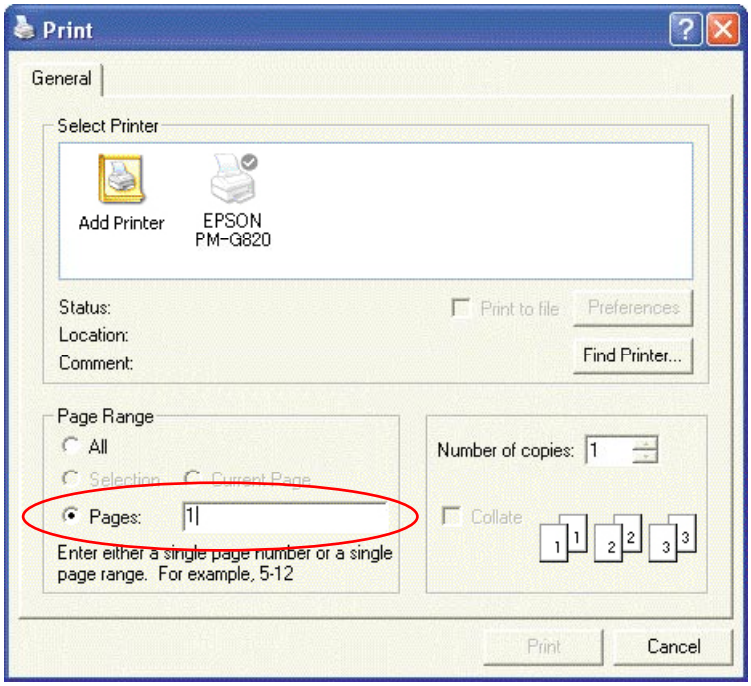
The parenthetic number in the View menu shows the page number to print.
In a word, when you want to print only "the window 1", specify a page number with "1".

・When you want to print parenthetic, input "5" to the page box.

Window 2
The result of the "growth" prediction, "VTO" and "MVTO" in the View Menu appear.
Window 3
A treatment simulation of the "Treatment" in the View Menu appears.

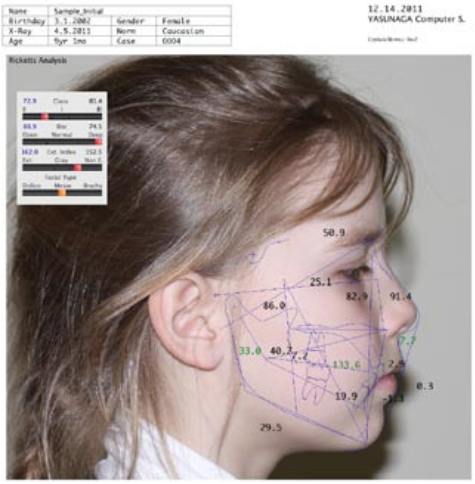
・To print out, click the Print tool  .

・A printer driver starts. For example, when you want to print the polygon, click the radio button in "the designated page", and input "9" in the blank.

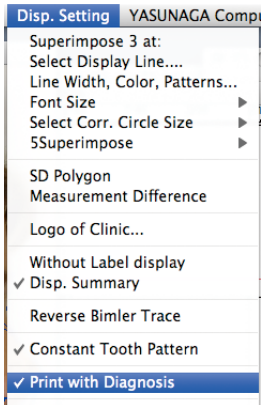


◎ Ricketts analysis items

When you select A4 or US letter-size to print out the existing Ricketts analysis over two analysis items, the analysis item appear over 2 pages. Now you can print out the items into page. And also, you can print out measured values eliminating overlap with the image to improve visualization.



Furthermore, you can print out a Daiagnosis with anything bu Downs & Kim analysis, when you check "Daiagnosis print" o the display setting menu.



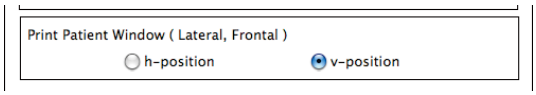
◎ Setting of a print direction

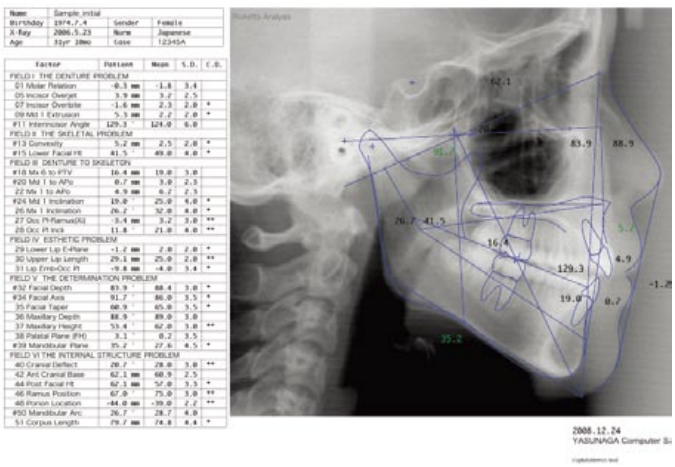
Now you can switch between A4 vertical and horizontal print for the trace of the patient window and X-ray image. Due to a large number of positions in output samples from abroad, we added a wide print option.

Operation

・You click "Line Width, Color, Patterns..." on the Disp. Setting setting menu.

・Check the "v-position" botton

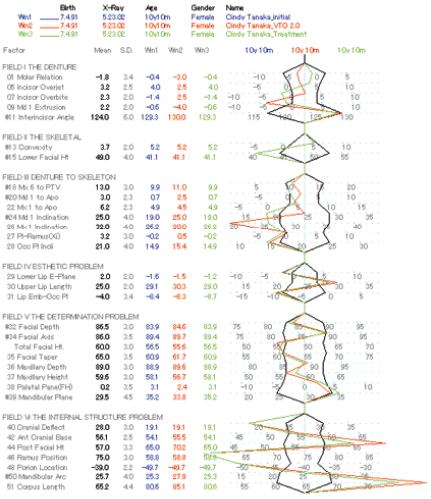




13. Copy and paste

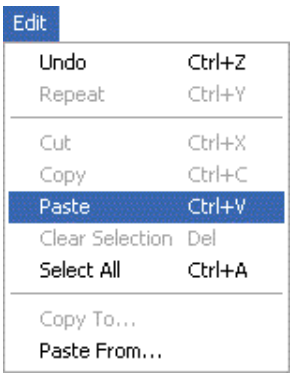
You can copy and paste any data which were made with AtoZ.(In such cases as the X-ray image, the color photo, the measurement value, the facial, the polygon, the treatment, VTO, the superimpose and the gallery) on other software.
This chapter provides a description to paste a polygon to Word document, for example.

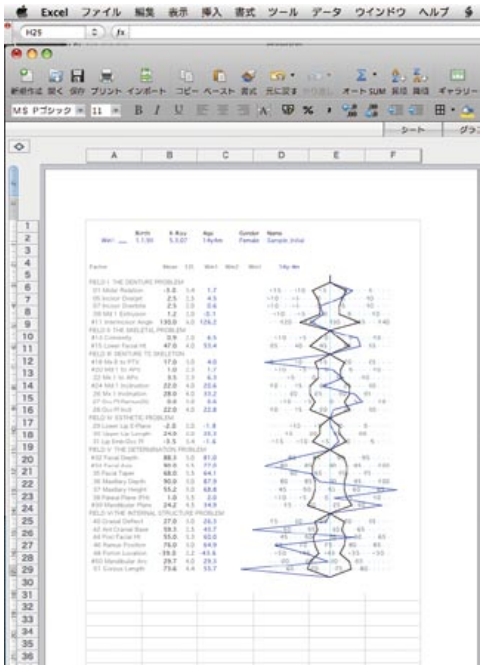
(1) Open a patient data file with AtoZ, and display a polygon.



(2) Click the polygon once to activate. And Click the "copy" in the Edit menu.

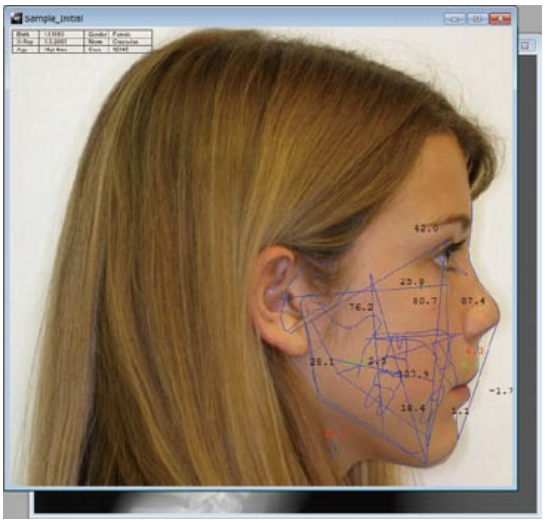
(3) Start Excel, and click the "paste" in the Edit menu.
You could paste a polygon on Excel with this.
You can paste it on PowerPoint, Word, Illustrator, and so on in the same way.

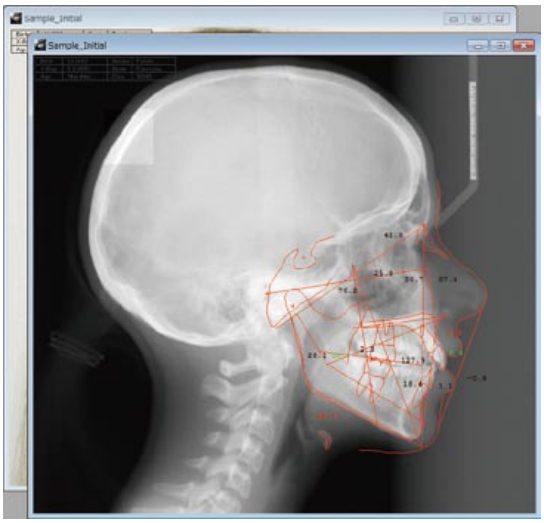




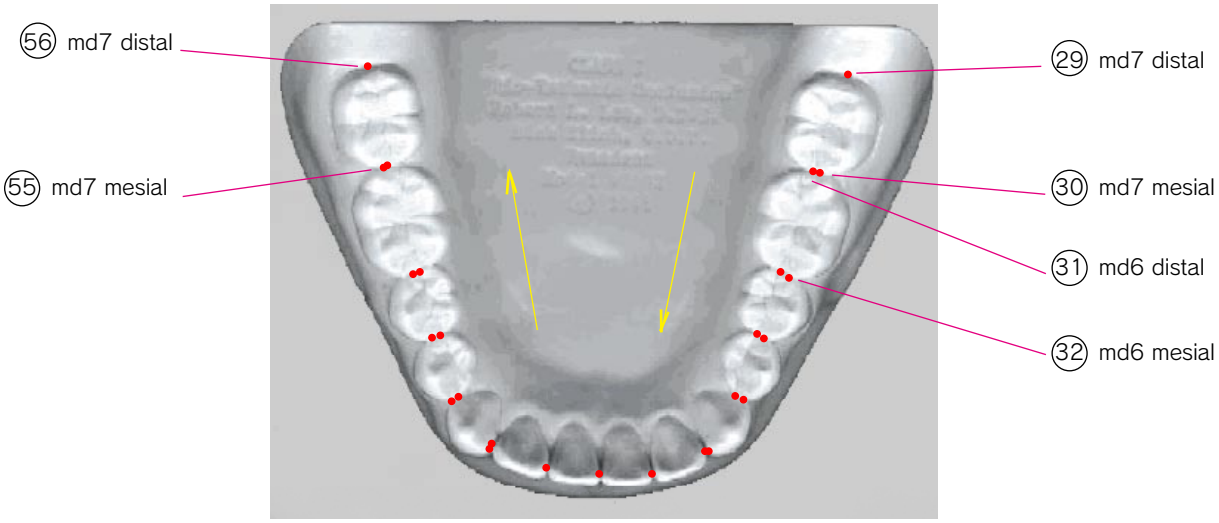
Bit of advice

This column provides descriptions about the condition that a window is active.
"Active" means "available".
When you click the "copy" with many windows opened, a computer copies only the active window contents.
As the figure below, a color image window is active in the left figure, and a X-ray image is active in the right.
To make the window active, just click the desired window with a mouse.

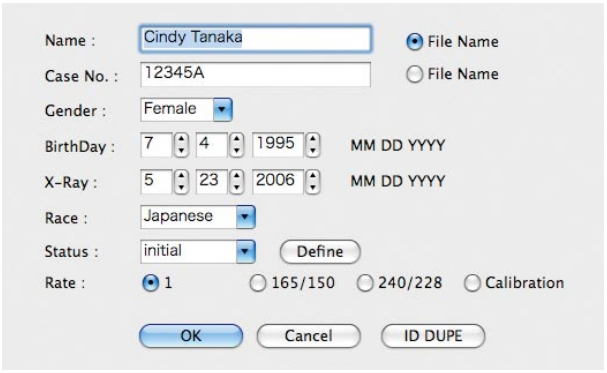




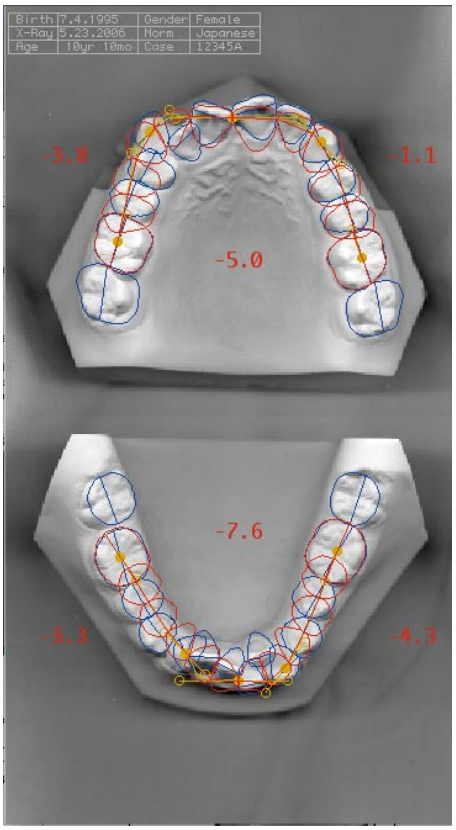
・Next, input the lower model point.: Click the Tracing tool again.  , and Input 28 points as the figure below.



・Click the Arrow tool  to terminate a point input session.
If you don't input patient's data yet, the "Patient I.D." dialog box appears.
・Enter the "Patient I.D.".

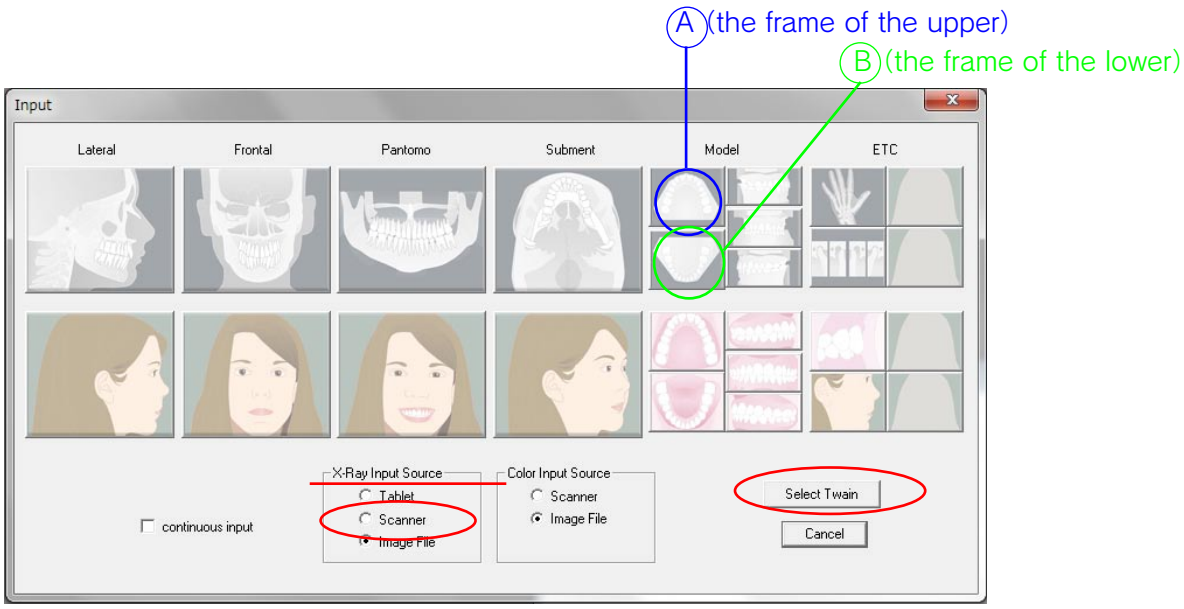


・When you finish filling out the "Patient I.D.", Click the "OK" button.
Input data and an ideal arch appears.

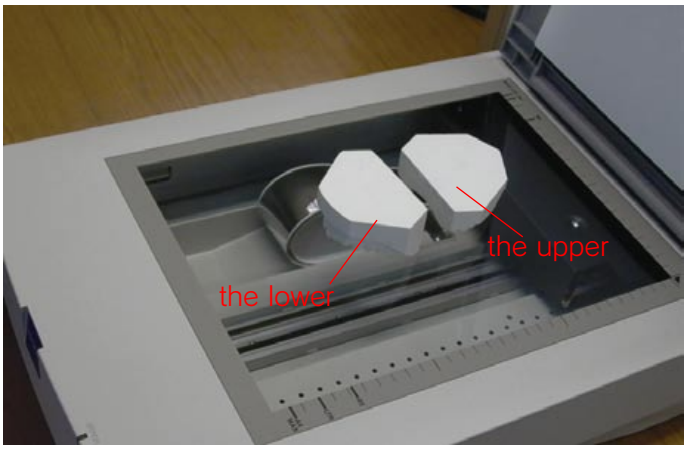


14. About a Model analysis

· Click the New tool  in AtoZ or the Add tool  .
Input dialog box appears.



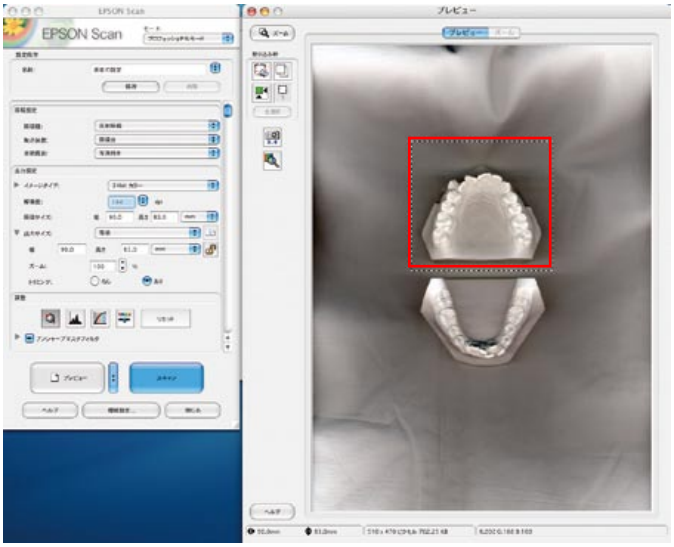
· Turn on the "Scanner" radio button in the "X-Ray Input Source".
· Click the "Select Twain" to choose Twain of an active scanner.



· Open the cover of a scanner.
· Set the upper and the lower model horizontally to the scanner.
· Cover the model with a cloth instead of the cover, because the upper cover isn't closed. (The white cloth is best.)
※ The active scanner is EPSON ES-2200.
※ Don't cover a part of a glass on the top of a scanner with cloth. (It causes faulty operation.)
※ You choose "a manuscript base" in "the manuscript kind" items of the scanner driver because a transparent UNIT isn't used when you import a model. (Subsequent page reference.)

· Click the button of A (the frame of the upper model) if you are ready to import.

The Scanner Twain driver starts. (EPSON ES-2200)



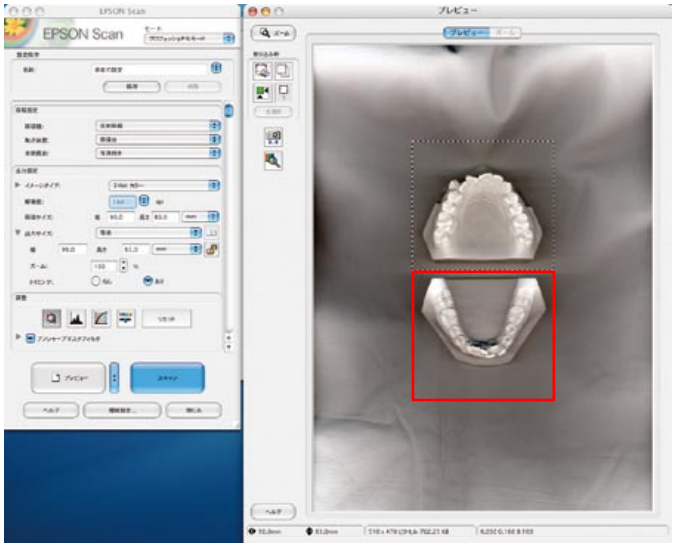
・Choose the "manuscript base" in the "manuscript type", and Click the "preview" button.

If you have a setting save data, push a "setting preservation" button, and Read it.
If not, save a data, referring to the setting data as the left.

・Drag the center of the import frame displayed on the preview screen with a mouse.
・Set the frame to adjust the upper model to be located inside.
・If you finish the setting, Click the "scan" button.

Setup example; EPSON ES-2200

Manuscript type : manuscript base
Image type : 24bit color (standard)
Output unit : screen / WEB
Resolution : 144 dpi
Manuscript size : 1024 × 936 Pixel
Output size : 1024 × 936 Pixel (90 × 83mm)
Zoom : 100 %
Trimming : On

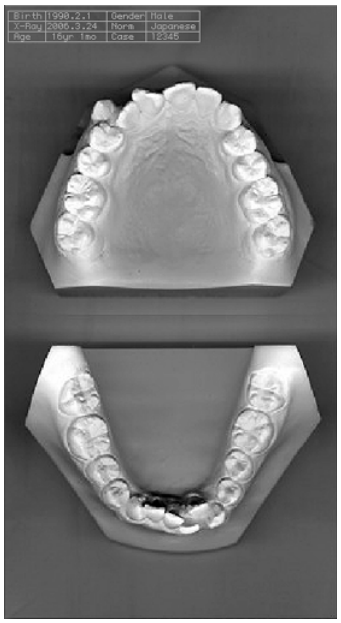


・Click the button: B (the frame of the lower model), and import the lower next.

The import frame size of both the upper and the lower are same. So, you can read the setting of the upper, and just move the import frame to the lower model.

・If you finish the setting, click the "scan" button.

The upper and the lower model images were imported into AtoZ with this.



the model imported into AtoZ

This is the imported model.

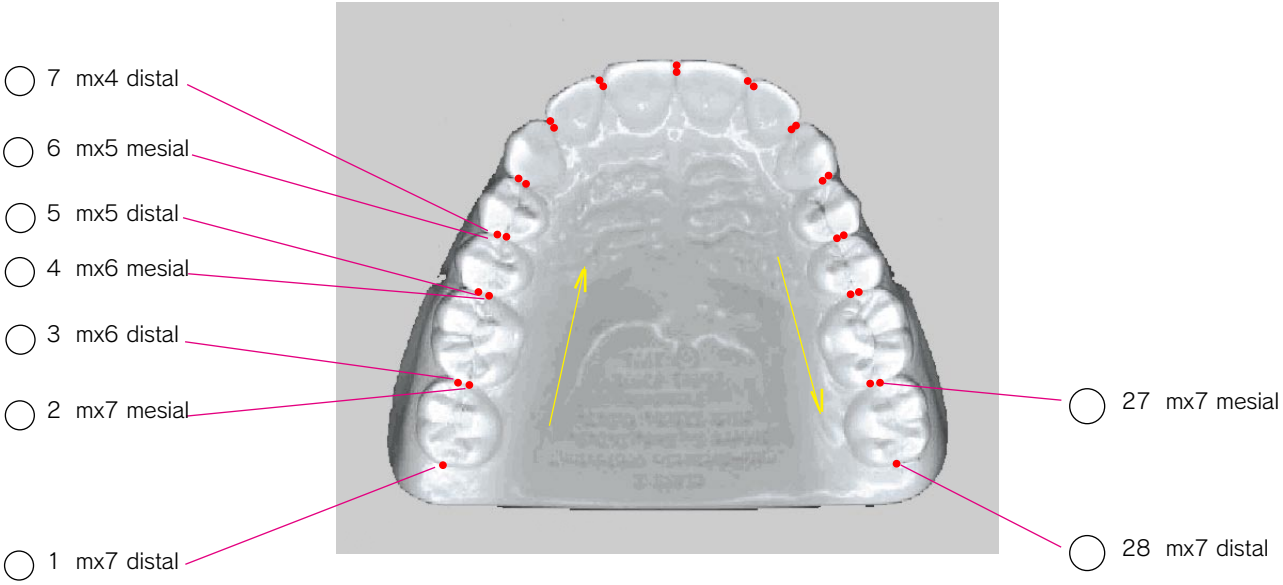
You input points from now.

· Before that, Expand a screen with a Loupe tool (expansion)  , and display the upper model with a Hand tool. 

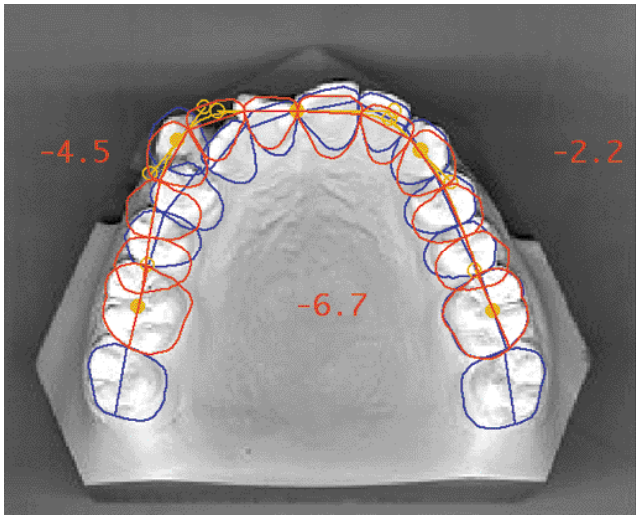
· Click the Tracing tool  , and input 28 points from ① mx7 right upper: distal to ㉘ mx7 left upper: distal.

※ You can't analyze A child's model.

※ When there is a missing teeth, input a hypothetical point.



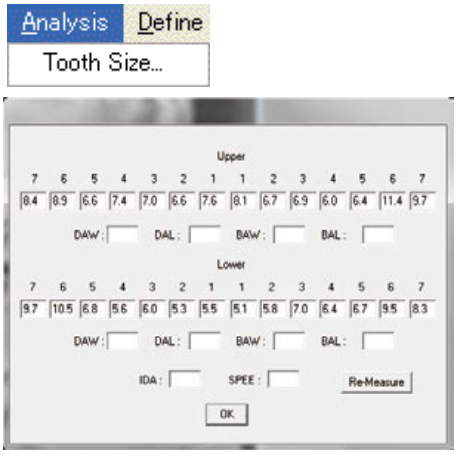
· If you finish the upper point input, drag an image with a Hand tool  , and display a lower model.



An entered tooth line・・・・・blue line
An ideal arch・・・・・・red line

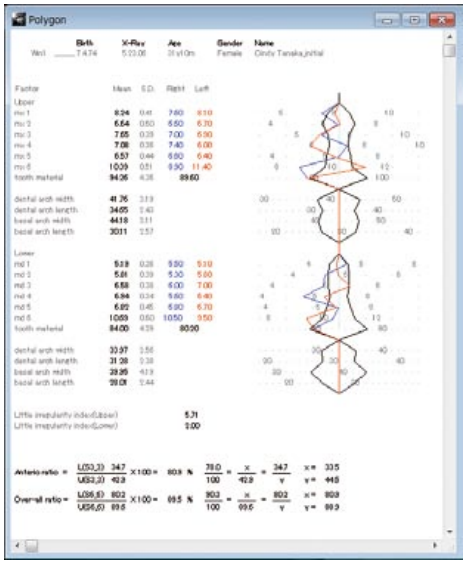
There are total five anchor points on the ideal arch (●) , including the canine tooth × 2, the second big molar × 2 and the center point of the front tooth. You can change the arch position by dragging them with the Arrow tool. 
If you drag a handle (◯) , the size of the arch will be changed.

And, you can display the polygon of the Model Analysis and the input dialog box of the slide gauge data when you manipulate as the following with a Model Analysis indicated.

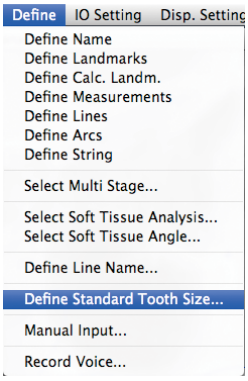


・Click the "Correct Tooth Size..." in the Analysis menu.
A dialog box as the left figure appears.

You can input slide gauge data here.

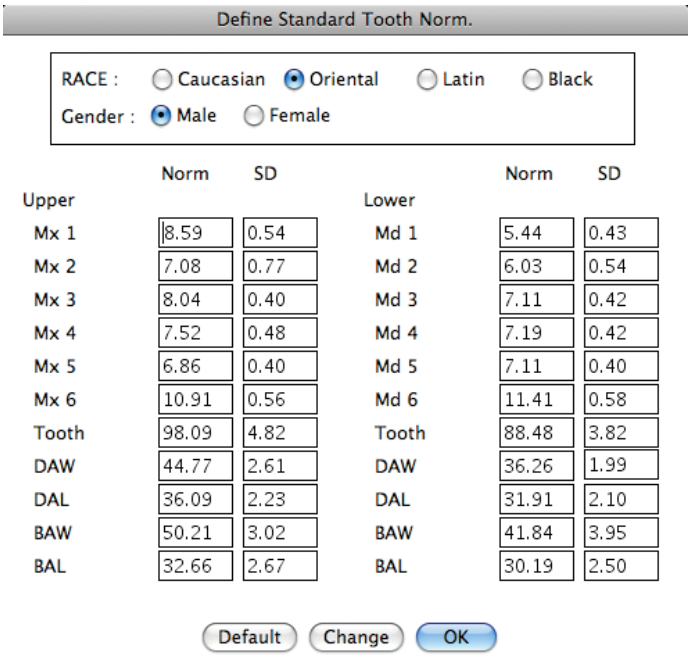


 When you click the Polygon tool, the polygon of the model data appears.



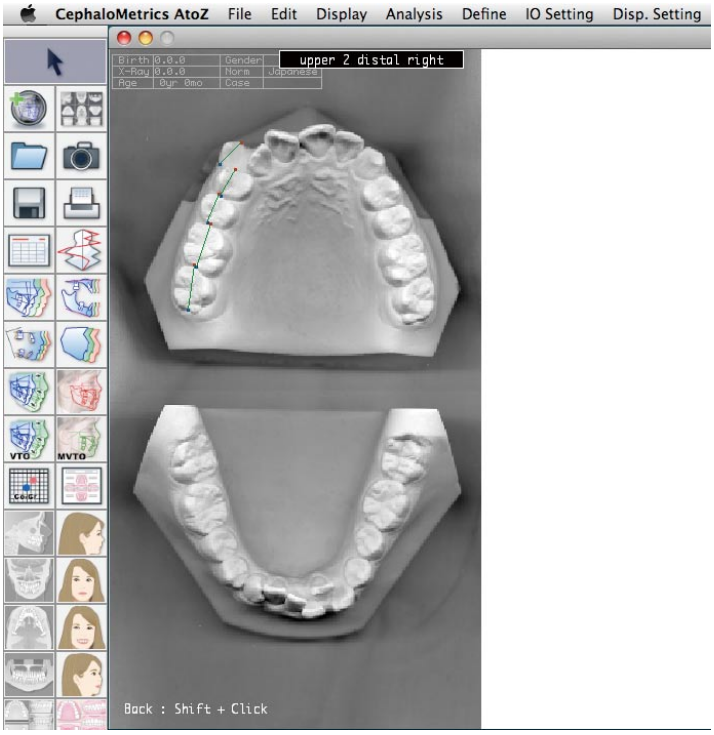
A dialog box appears when you click the "Define Standard Tooth Size..." in the Define menu.
You can establish the Norm and SD values with this dialog box for each race and sex.

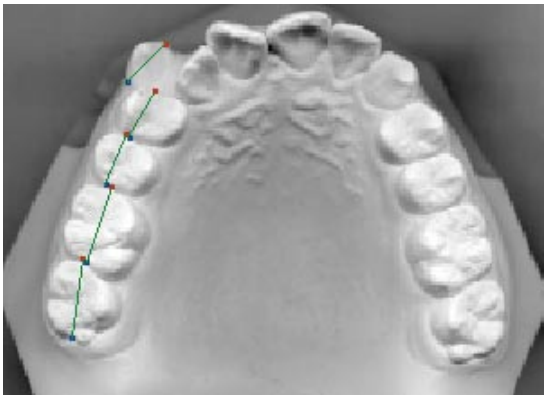
※ To active the change, you should input the numerical value and click the "Change" button after you input.



◎ Model modification and Additional function

When you input a model with mesial and distal data, you can see the width among a blue, red, & green point. To undo it, hold down the Shift key while click a mouse button.
For the model image import: To calibrate, import the image with a scale that was taken by digital camera.

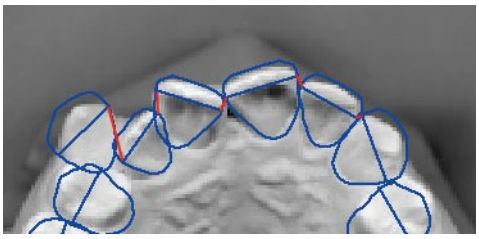


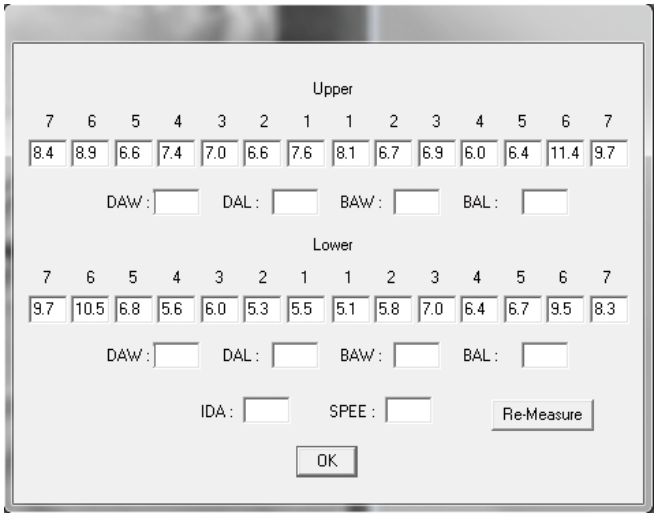


◎ For Little Irregularity Index of a model

Upper Little Irregularity Index and Lower Little Irregularity Index have been added to a model image with polygon.

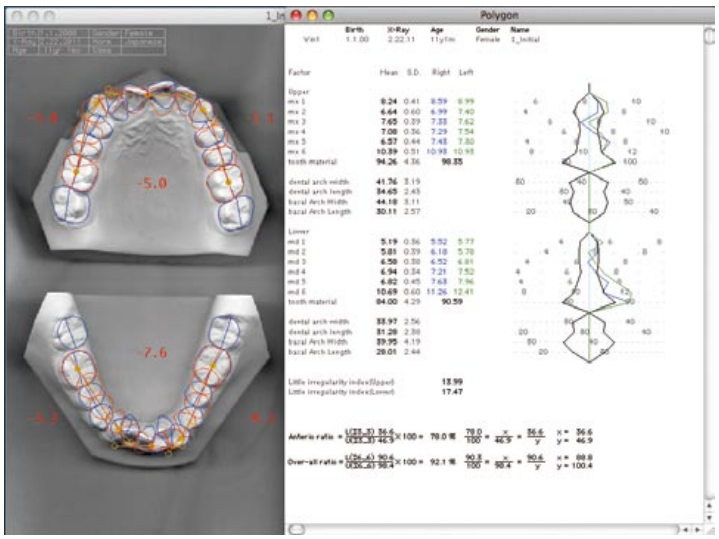
For Little Irregularity Index: It figures out the sum of the mesial & distal between the sum total of Kon centrifugal between canines.





Also other dental arch width & length display have been added to the upper & lower with a model polygon image. After measuring with a slide gauge, input those values into the Tooth size ... on the analysis menu.

The model Image with polygon has been changed as follows.



◎ How to make the informed consent document by the Thumbnail tool

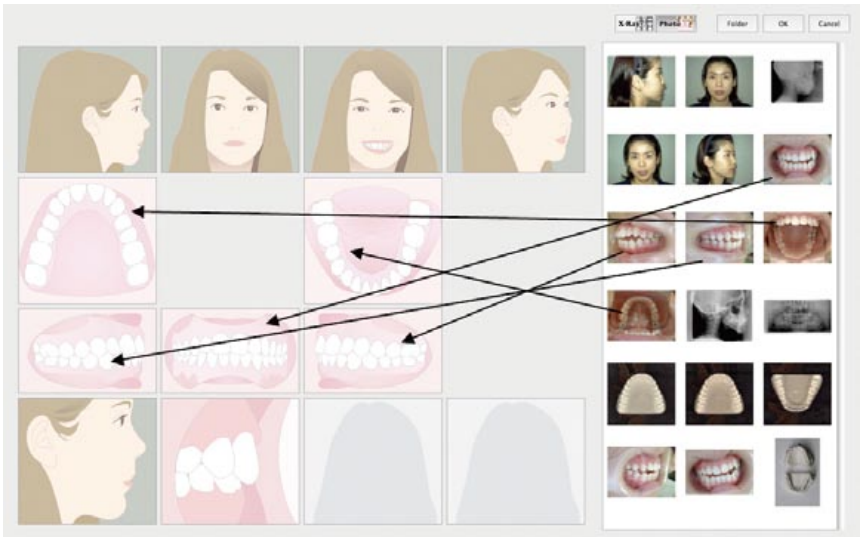
How to make the informed consent document which used CephaloMetrics AtoZ is explained.

1. Take pictures in the oral cavity of the patient with a digital camera, and take image data in the computer with card reader and so on.
※ Photography parts are six places of "maxillary surface" "mandible" "the left oblique side" "the front" "the right oblique side" and "the overjet" in the oral cavity.
You make the folder which gave the name which was suitable for the desk-top computer. You copy all the image data of the digital camera into that folder entirely. (It is all right even if the image which failed in the photography mixes.)
※ The picture quality setting of the digital camera is to refer to the following. A computer may freeze when the data size of an image to paste is too big. Be careful.

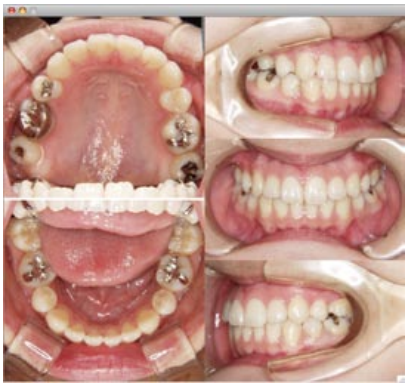
Number of record pixels : 640 × 480 pixel,
The picture quality mode : low ～ middle resolution (BASIC, NORMAL)
The data size of 1 frame : 300-500KB, File format : JPEG

When you want to preserve an image with high quality, it is suggested that you use the batch function of "Adobe Photoshop Ver.5.0 and more". You can make the image data downsized for AtoZ, and you can paste it.

2. Start AtoZ, and click the Thumbnail tool.
A JPEG thumbnail input dialog box appears.
3. Click the "Folder" button, and specify the folder which copied an image.
Then, all the image data inside the folder are shown by a thumbnail list.
Drag and drop an image to the respectively fixed position in the oral cavity, and take it in AtoZ.
And, arrange "the overjet" to the position on the upper left of the bottom step of ETC.

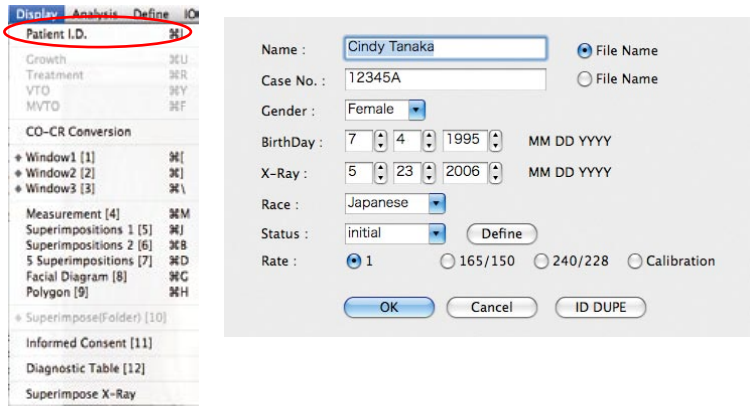


4. Press the "OK" button.
You can confirm that an image inside the oral cavity was taken in as a file of AtoZ.



5. Click the "Patient I.D." of the View menu.

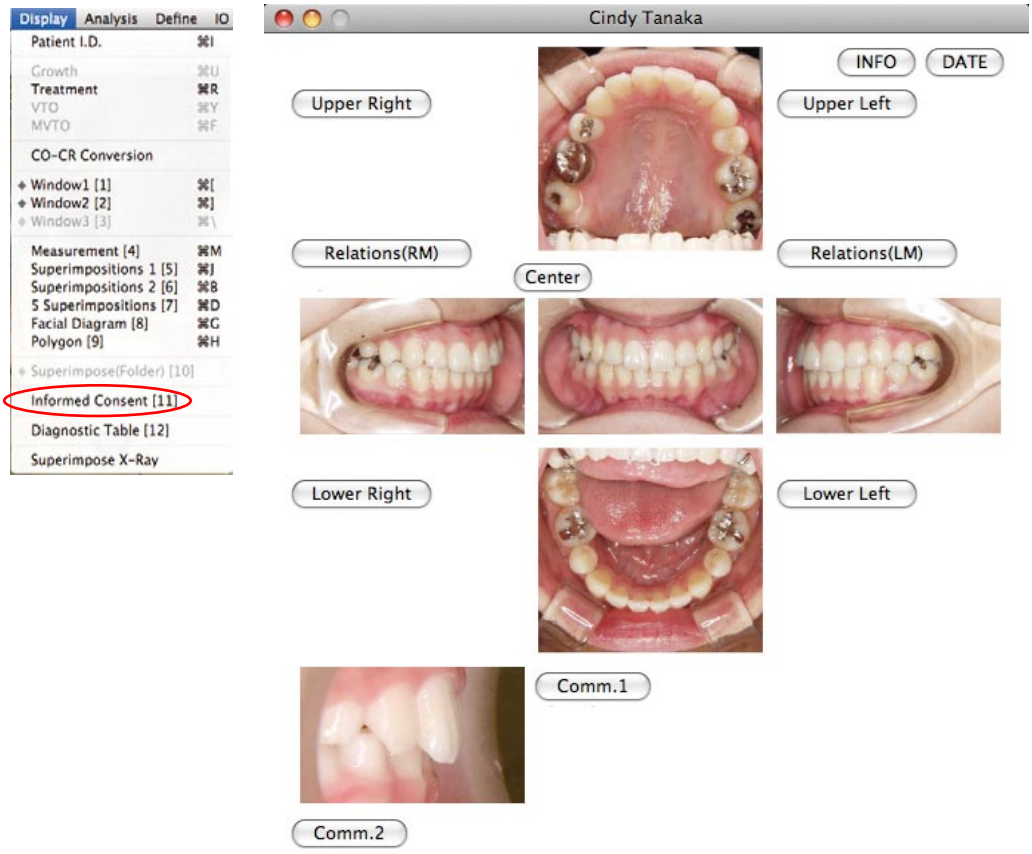
If a dialog box appears, input data in each of the blanks.

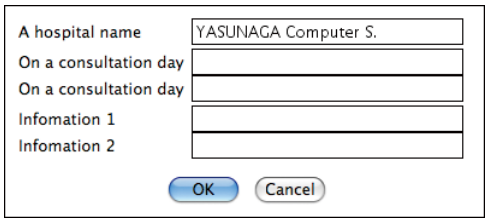


· Input a patient's data.
· Input either "m" (male) or "f" (female) to "Sex".
· Input "j" to "Race" in case of a Japanese.
· Whatever you input to "Status", it is all right. You input the word which shows the condition of the file.
Example : initial, 1st, A ...etc.

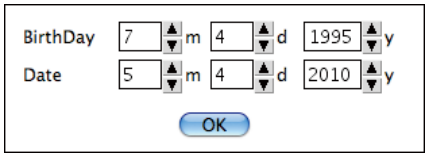
· If your input is finished, press the "OK" button or the return key.

6. Click the "Inform [11]" of the View menu.
Images in the oral cavity taken in is arranged automatically, and the dialog box of the informed consent is displayed.





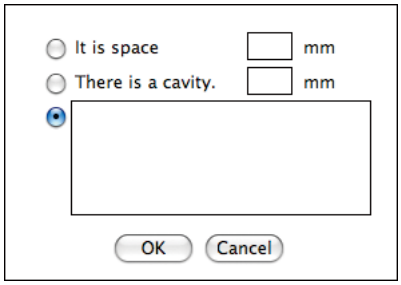
7. Click the "INFO" button to input information of your clinic.
You can input respectively favorite information to each item of "A hospital name", "On a consultation day" and "Information 1 and 2". You can input it until 88 characters in "Information 1and 2". (So, more than 89 characters is not printed.)
And, these items are memorized all the time unless you change contents once it is input.



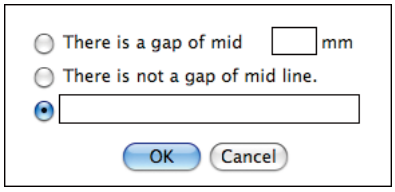
8. Click the "DATE" button.
The item of "BirthDay" is input automatically because it links with the "Patient I.D.".
Input the day when you took pictures in the oral cavity to "Date". (Or, you can input the day when you print a document, and have an interview with the patient.)

9. A dialog box appears respectively when you press the button of "Upper Right", "Upper Left", "Lower Right", "Lower Left", "Center", "Relations (RM)" and "Relations (LM)".
You can choose one each respectively. You can input comment until 28 characters into blank column.

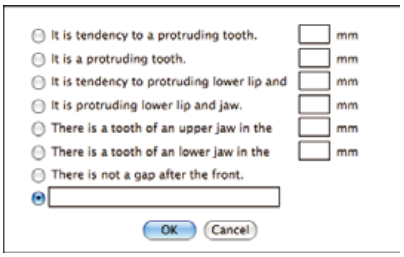
"Upper Right", "Upper Left",
"Lower Right", "Lower Left"

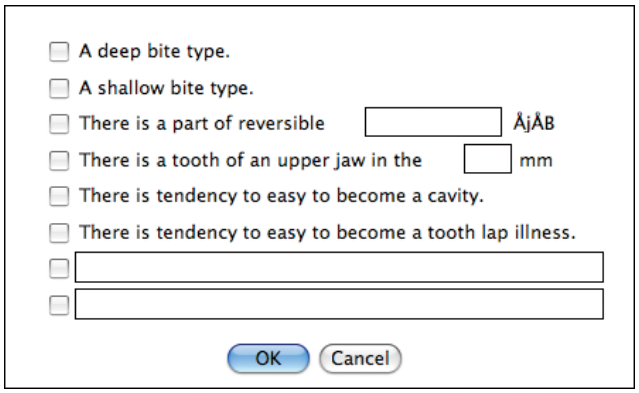


"Center"



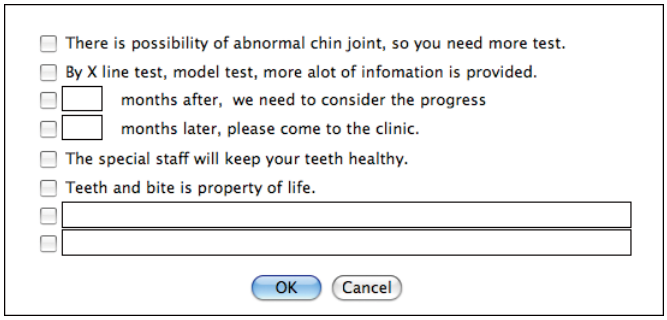
"Relations (RM)" , "Relations (LM)"





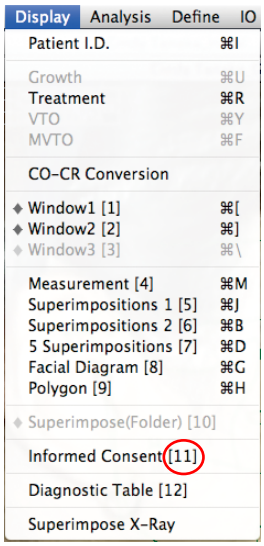
10. Press the "Comm1" button.

You can display even which to 5 items.
(When you choose more than 5 items, AtoZ deletes the one after automatically. You can input comment until 65 characters into blank column.)



11. Press the "Comm 2" button.

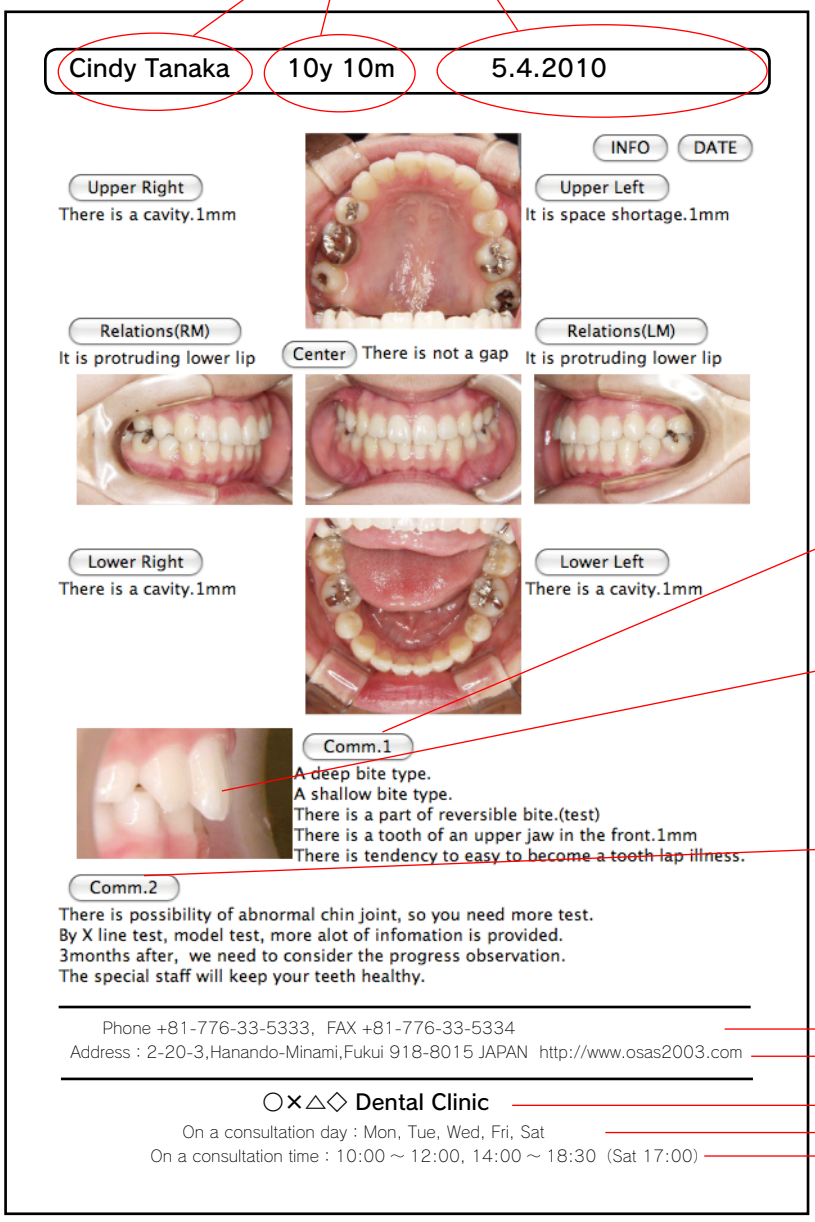
You can display even which to 4 items.
(When you choose more than 4 items, AtoZ deletes the one after automatically. And, you can input comment until 100 characters into blank column.)



12. When you print an informed consent document, you set up a page in "11".

13. An output example is shown in the following.

Days from the birthday when it is input with 「DATE」 until the consultation day are calculated, and it is indicated as an age. And, these items links with the items of "BirthDay" of "Patient I.D.".



"Comment 1" can be displayed to 5 items.

"The jet image" taken in the position of ETC is indicated in this position.

"Comment 2" can be displayed to 4 items.

"information 1" of "INFO" button

"information 2" of "INFO" button

"a hospital name"

"On a consultation day" 1

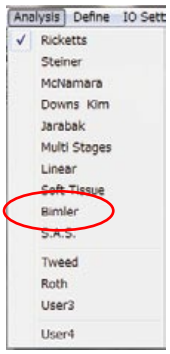
"On a consultation day" 2

◎ How to use a Bimler analysis

1. Start AtoZ, and open a lateral X-ray image.

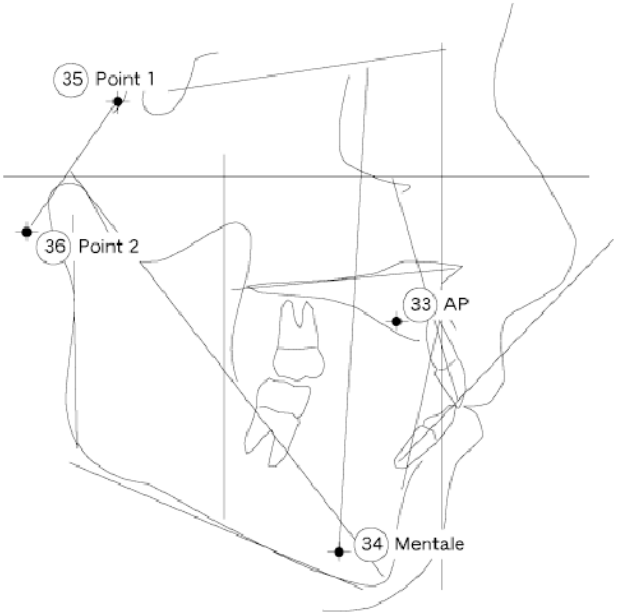
2. Choose "Bimler" of the Analysis menu.

3. Click the Tracing tool of the Trace tool window.



4. Input 36 points for the Bimler analysis.
You must input 4 new points which aren't used to other analyses for the Bimler analysis. That is the point of the following demanded after the 32nd point "PAC" input.
You input these points in order, too.

※ Pay attention because the voice of the computer doesn't come out.



The additional 4 points of the Bimler analysis

33 AP

34 Mentale

35 Point 1

36 Point 2

5. Input 4 lines in succession after 36 points input.

Attention

4 points of only Bimler are not in the right position even if you open the file which only 32 points and 4 lines are input to and you choose "Bimler" of the Analysis menu.
But, you can correct 4 new points to the right position with the Correction tool.

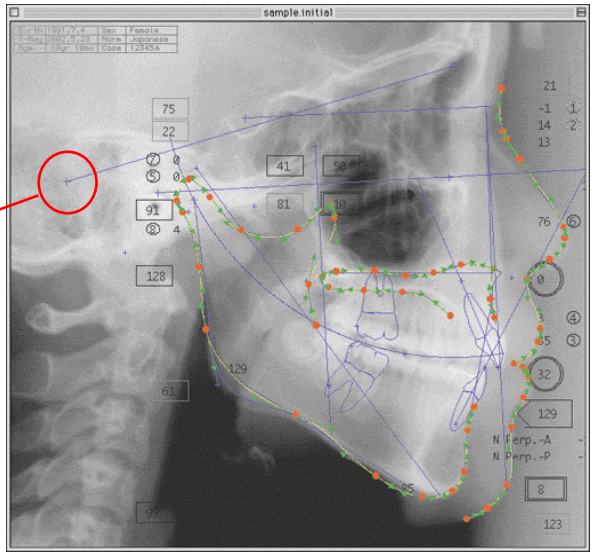
· Click the Correction tool  to correct 4 new points.

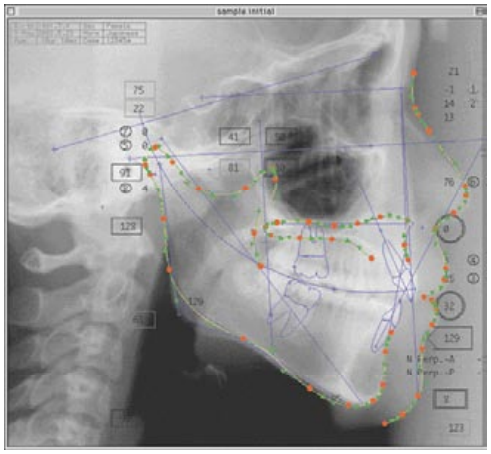
4 new points are collected into the position where it was marked the red circle of the figure.

· Correct 4 points referring to this textbook "9-3. Correcting the measurement point" in the right position.

※ Because you can input only 32 points by the Template input, correct 4 new points identically.
※ The undefined points added newly are collected into the position of the red circle with an original analysis of "User4",too.

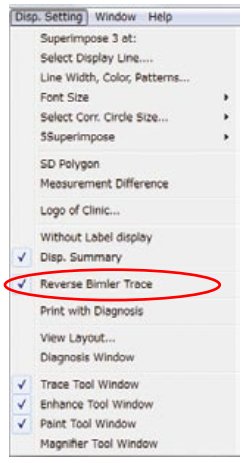
The undefined points are collected around this red circle.

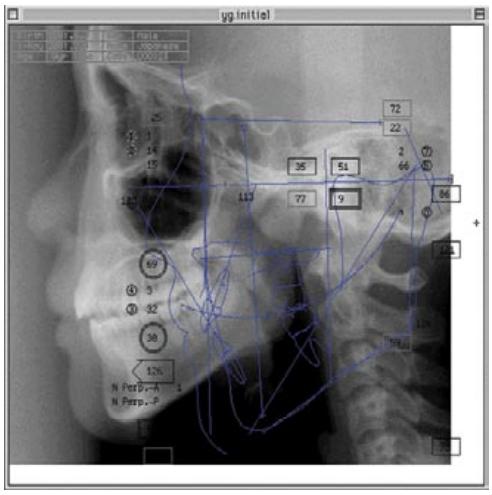




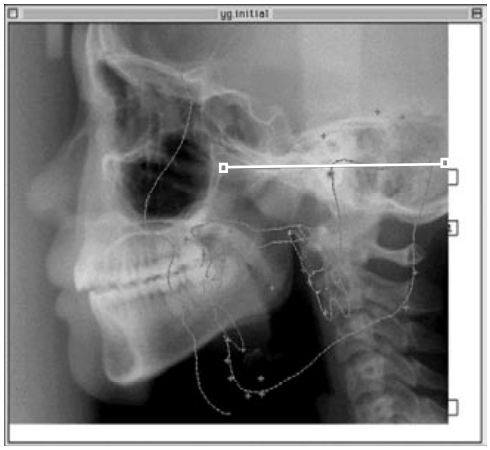
Bimler analysis (indication for the right)

6. When you click the Arrow tool after imput, you can indicate a Bimler analysis (indication for the right).
And, click the "**Reverse BIMLER Trace**" of the Disp. Setting menu when you change it to the indication for the left.

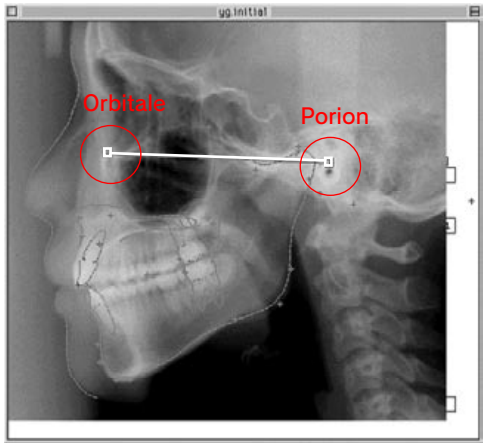




7. Only trace changes into the indication for the left.
Next, click the Flip tool. 
The X-ray image turns over for the left, too.
But, it isn't correspond to the trace.



8. Click the Position Tool  with pressing
Win: control key
Mac: option key
to fit a trace with the X-ray image.
Then, it becomes the trace correction mode like a figure.

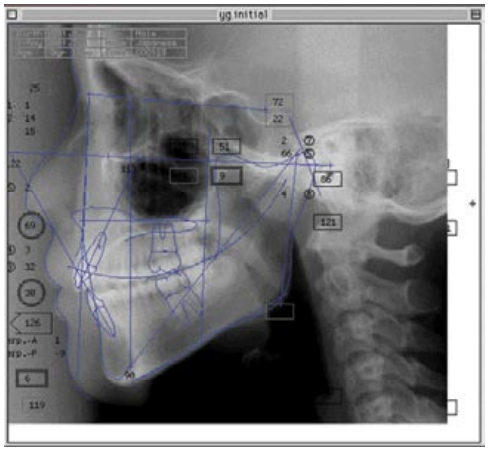


9. Move the white boxes.

(1) Drag the right box to the position of Porion first.

(2) Put it together with turning the left box to the position of Orbitale.

10. You could position it like this.



Bimler analysis (indication for the left)

◎ SAS Analysis (Abput additional point).

If you wish to use SAS analysis, you have to add 14 points and three lines.

Before you input point, you select " SAS Analysis " in Analysis menu.

you input 32 point, and you input 14 point for SAS.

Next, you input regular 4 lines, after you have to input three SAS lines. you can see below.

---------- SAS Point --------

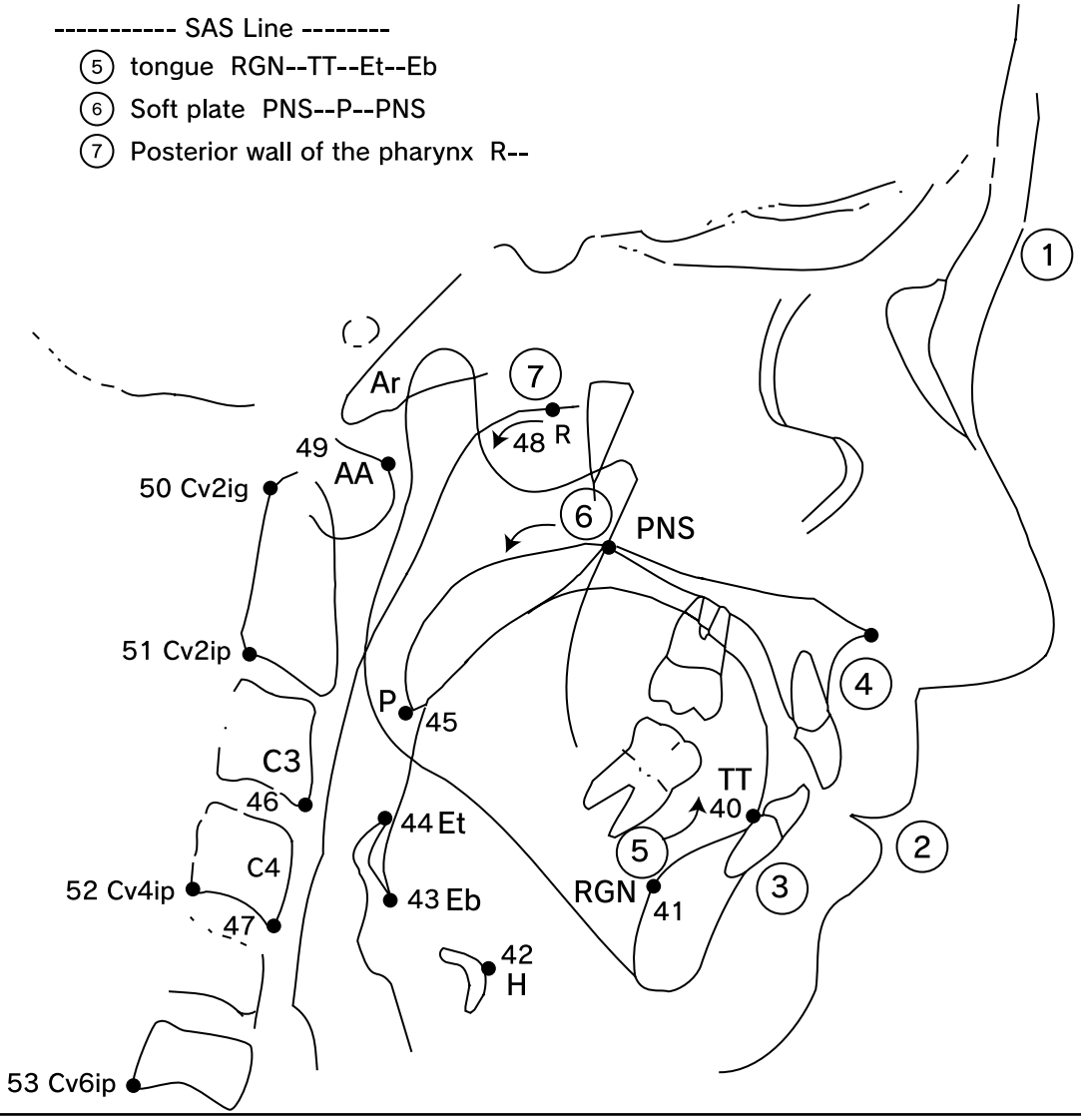
40	TT	tongue tip
41	RGN	retrognathion
42	H	hyoidale, the most anterior and superior point of the hyoid bone.
43	Eb	base of epiglottis, the deepest point of the epiglottis.
44	Et	tip of epiglottis. the most superior point of the epiglottis.
45	P	palate point. the most inferior tip of the soft palate.
46	C3	Third cevical vertebra, the most anterior inferior point of it.
47	C4	Fourth cevical vertebra, the most anterior inferior point of it.
48	R	root of pharynx
49	AA	Anterior arch of the atlas vertebra
50	Cv2ig	Tangent point at the superior, posterior extremity of the odontoid process of the second cervical vertebra
51	Cv2ip	Most infero-posterior point on the body of the second cervical vertebra
52	Cv4ip	Most infero-posterior point on the body of the fourth cervical vertebra
53	Cv6ip	Most infero-posterior point on the body of the sixth cervical vertebra

---------- SAS Line --------

⑤ tongue RGN--TT--Et--Eb

⑥ Soft plate PNS--P--PNS

⑦ Posterior wall of the pharynx R--



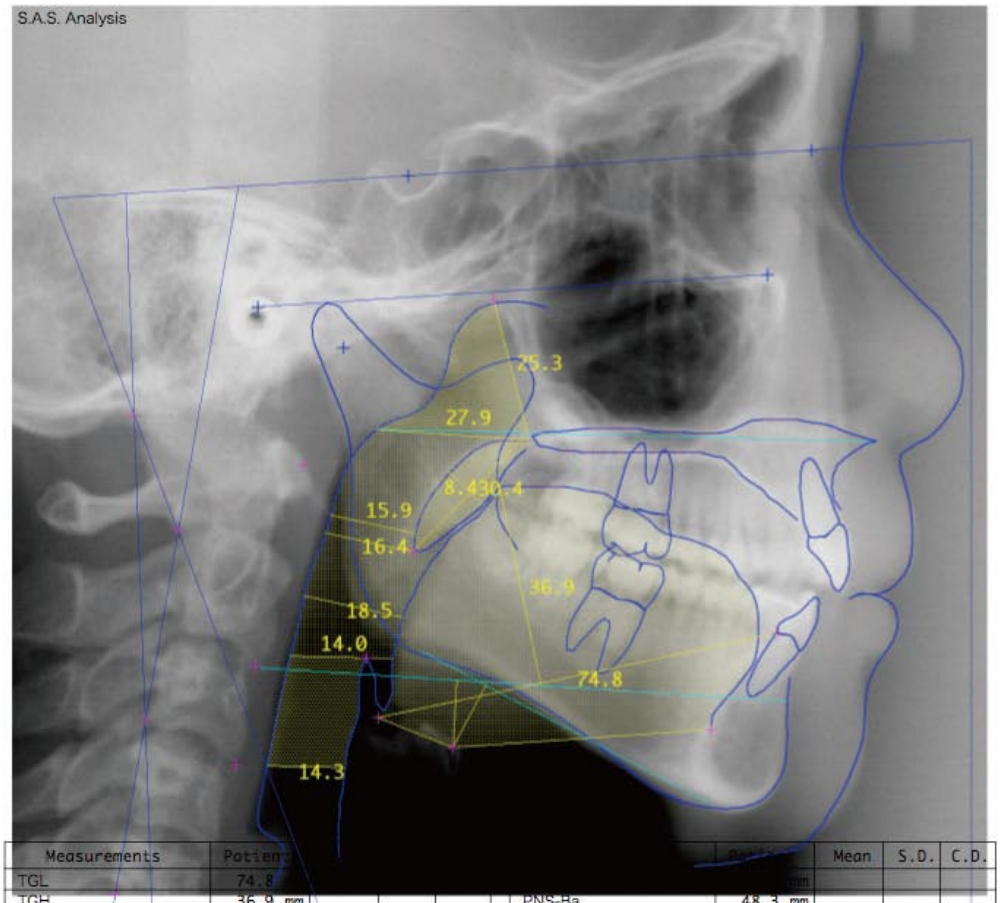
Examples of Printing SAS analysis

Name	Cindy Tanaka initial		
Birthday	1991.7.4	Gender	Female
X-Ray	2002.5.23	Norm	Japanese
Age	10yr 10mo	Case	12345A

2010.2.10
YASUNAGA Computer S.

CephaloMetrics AtoZ

S.A.S. Analysis



Measurements	Patient						Mean	S.D.	C.D.
TGL	74.8 mm								
TGH	36.9 mm				PNS-Ba	48.3 mm			
PNS-P	30.4 mm				MFH(N-ANS)	33.8 °			
MPT	8.4 mm				LFH(ANS-M)	55.9 °			
SPAS	15.9 mm				Go-Me	73.7 mm			
MAS	16.4 mm				Ar-Go	44.3 mm			
IAS	18.5 mm				ANS-OP	29.2 mm			
VAL	59.1 mm				OP-M	42.2 mm			
MP-H	13.0 mm				Overjet	3.4 mm			
H-H1	12.5 mm				SN-PP	5.0 °			
H-RGN	47.5 mm				SN-OP	16.1 °			
C3-H	39.2 mm				SN-MP	31.5 °			
PNS-AA	41.8 mm				YA	66.0 °			
GoGnH	14.6 mm				Facial Axis	93.5 °			
Soft palate area	1.7 S				Gonial Angle	128.5 °			
Oropharynx	7.7 S				U1 to SN	99.4 °			
Tongue area	25.1 S				L1 to MP	97.1 °			
Nasopharynx	2.7 S				FA	83.4 °			
Hypopharynx	2.8 S				H-VL	14.7 mm			
SNA	91.0 °				MP	31.5 °			
SNB	83.8 °				SNP	83.4 °			
ANB	7.1 °				TFH	55.3 °			
SNpog	83.4 °				ANS-Me	72.9 mm			
S-N	74.2 mm				McN-A	1.0 mm			

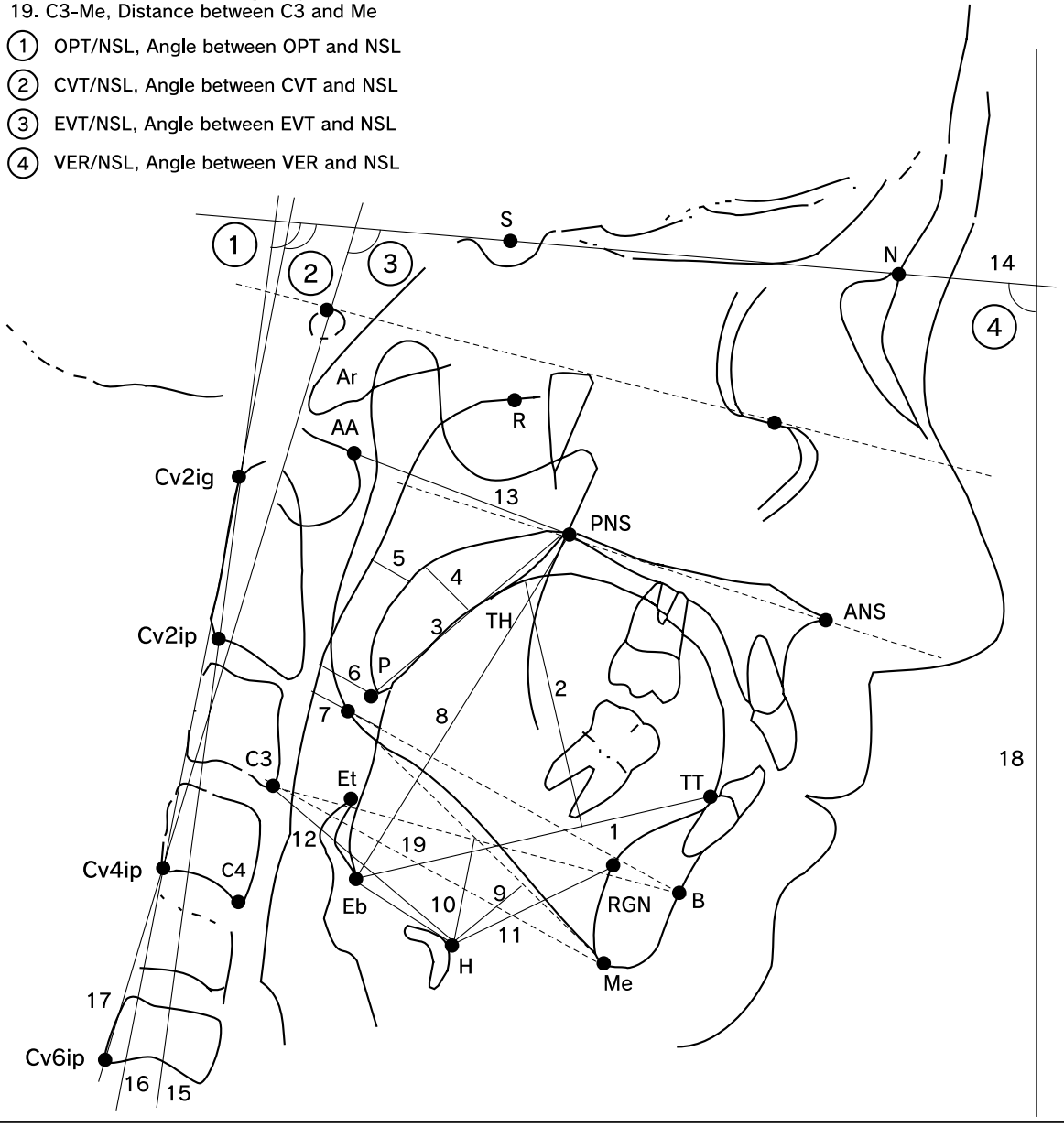
1. TGL, tongue length. The linear distance between TT and Eb.
2. TGH, tongue height. The linear distance between a point on the most superior curvature of the tongue dorsum and the base of a line drawn perpendicular to the TT-Eb line.
3. PNS-P, soft palate length. The linear distance between PNS and P.
4. MPT, maximum palate thickness. The maximum thickness of the soft palate measured on a line perpendicular to the PNS-P.
5. SPAS, superior posterior airway space. The thickness of the airway behind the soft palate along a line parallel to the Go-B point plane.
6. MAS, middle airway space. The thickness of the airway along a line parallel to the Go-B point plane through P.
7. IAS, inferior airway space. The thickness of the airway along a line extended through the Go-B point plane.
8. VAL, vertical airway length. The linear distance between PNS and Eb.
9. MP-H, mandibular plane to hyoid. The linear distance along a perpendicular from H to the mandibular plane.
10. H-H1, vertical hyoid. The linear distance between H and a perpendicular to the C3-RGN plane.
11. H-RGN, horizontal hyoid. The linear distance between H and RGN.
12. C3-H, The linear distance between H and C3.
13. AA-PNS, The linear distance between AA and PNS.
14. NSL, Nasion-Sella line (N-S)
15. OPT, Line through Cv2ig and Cv2ip
16. CVT, Line through Cv2ig and Cv4ip
17. EVT, Line through Cv4ig and Cv6ip
18. VER, True vertical (the gravity-determined vertical)
19. C3-Me, Distance between C3 and Me

(1) OPT/NSL, Angle between OPT and NSL

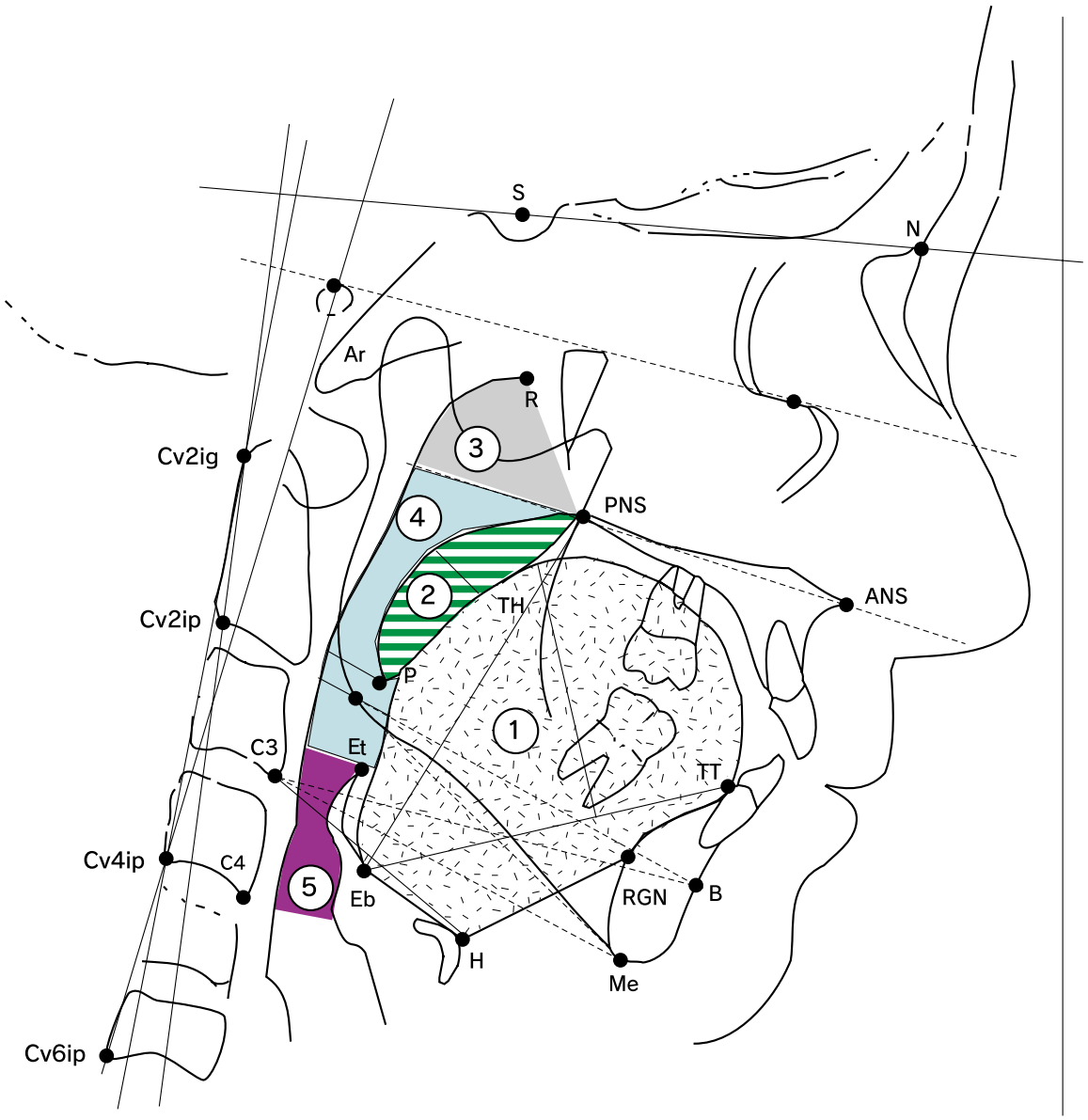
(2) CVT/NSL, Angle between CVT and NSL

(3) EVT/NSL, Angle between EVT and NSL

(4) VER/NSL, Angle between VER and NSL



1. Tongue, the area outlined by the dorsal configuration of the tongue surface and lines that connect TT, RGN, H, and Eb.
2. Soft palate, the area confined by the outline of the soft palate that starts and ends at PNS through P.
3. Nasopharynx, the area outlined by a line between R and PNS, an extension of the palatal plane to the posterior pharyngeal wall, and the posterior pharyngeal wall.
4. Oropharynx, the area outlined by the inferior border of the nasopharynx, the posterior surface of the soft palate and tongue, a line parallel to the palatal plane through the point Et, and the posterior pharyngeal wall.
5. Hypopharynx, the area outlined by the inferior border of the oropharynx, the posterior surface of the epiglottis, a line parallel to the palatal plane through the point C4, and the posterior pharyngeal wall.

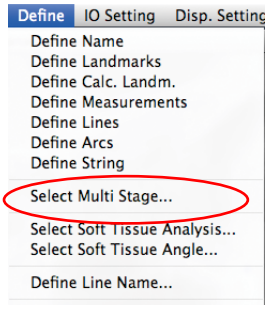


◎ Multi Stage Analysis (Japanese norm)

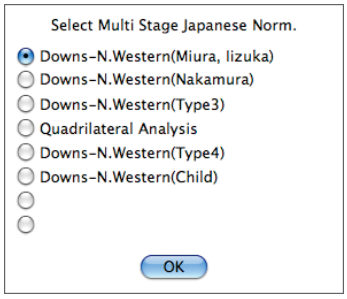
The analyses registered at present are Downs-N.Western (Miura and Iizuka) and Downs-N.Western (Nakamura) and Downs-N.Western (Type3).
You can't make a Multi Stage Analysis freely like an original analysis. Make contact to our company when you want to register the analysis of other universities.

・Open the X-ray image that point input was finished in advance.

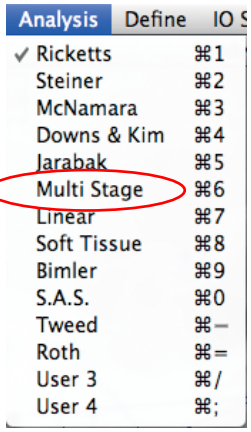
1. Click on "Select Multi Stage..." of the Define menu.



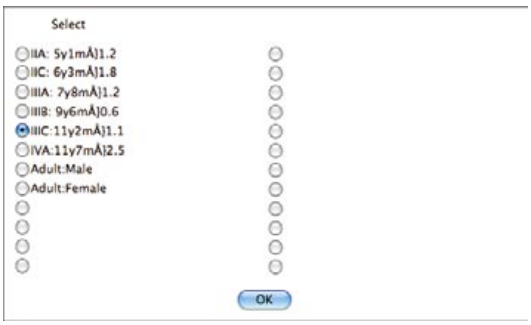
2. Choose the standard value of an analysis to use.
Click on "Downs-N.Western (Miura and Iizuka)" here for example, click the "OK" button.



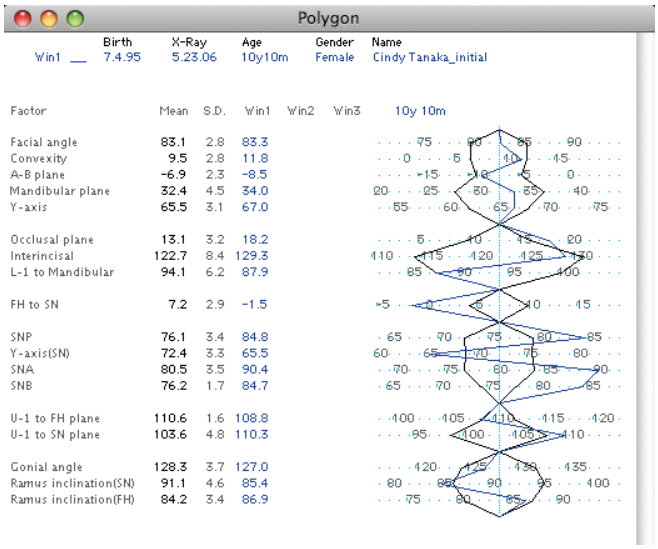
3. Click the "Multi Stage" of the Analysis menu.



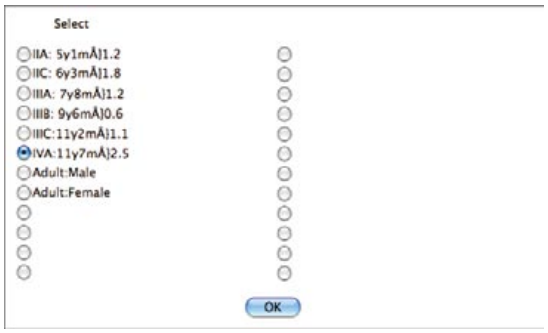
4. The "Select" dialog box appears.
Standard value is chosen automatically by the age of the patient computed from "BirthDay", "X-Ray" and "Sex"that it is input in the "Patient I.D.".
A "IIIC : 11y2m ± 1.1" is chosen. And, it is possible that you choose other standard value, too.
・Press the "OK" button after the confirmation.

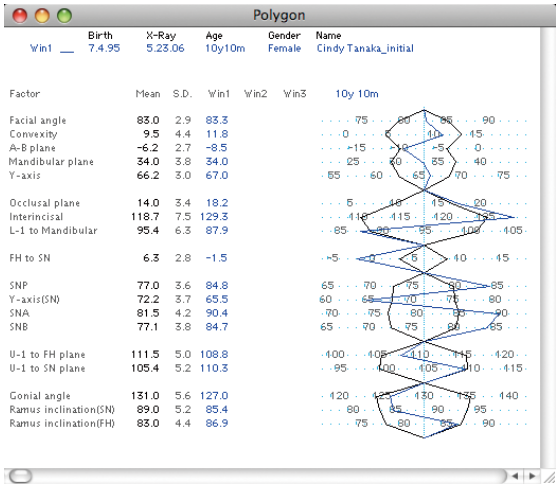


5. Click the Polygon tool. The polygon window appears.

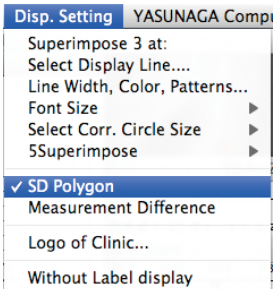


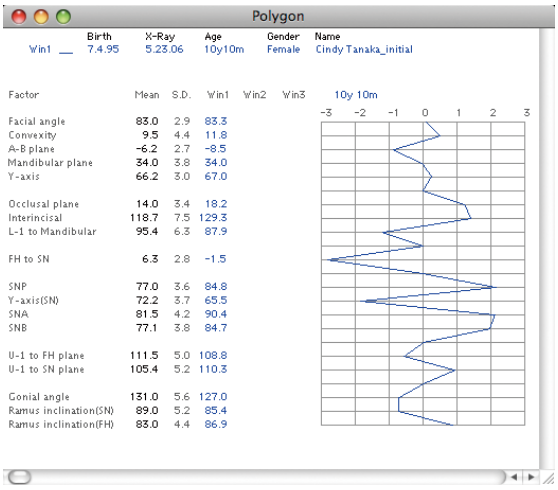
6. The polygon window like a figure is indicated when you choose a "IVA : 11y7m ± 2.5" at the "Select" dialog box on trial.
You know that standard value changes automatically by the sex and the age from this.

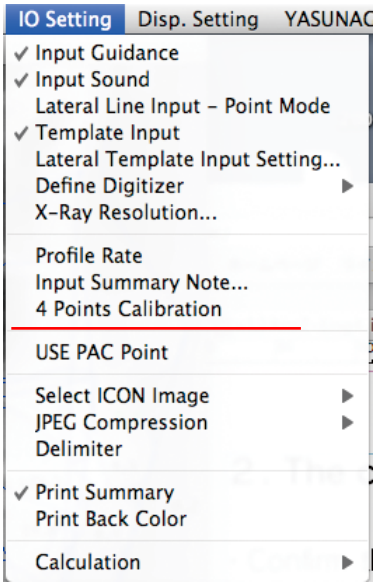




At this time, the polygon window like a figure appears when a check is added to the "S Polygon" of the Disp. Setting menu. You can choose favorite indication by clicking on the "SD Polygon".







2. The choice of the 2 Points Calibration

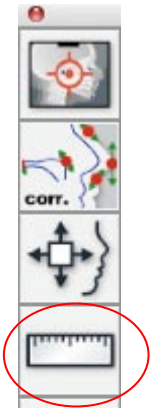
· Confirm that a tick mark doesn't have it about the "4 Points Calibration" of the IO Setting menu.

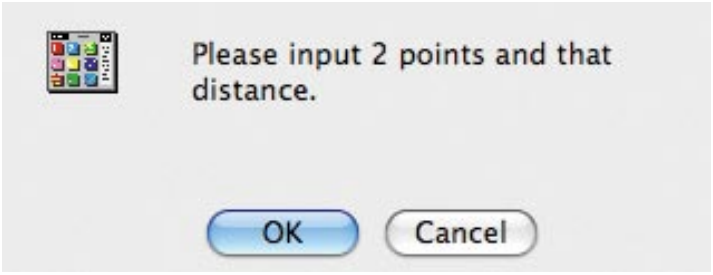
※ You can give a mark by clicking the "4 Points Calibration", and it can be removed.

※ You can use a 4 points calibration when a tick mark has it about the "4 Points Calibration".

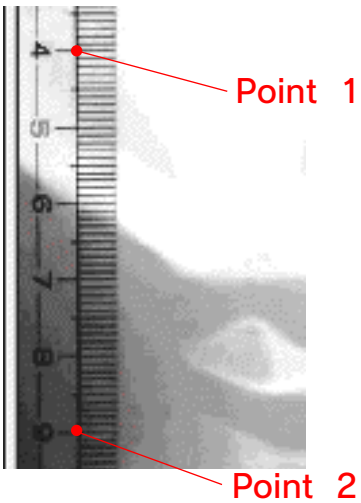
3. Click the Measure tool of the Trace tool window.

After the following dialog box appears, click the [OK] button.





4. Input two optional points in image.



· After [Point 1] is displayed, click on one optional point in screen.
· After [Point 2] is displayed in succession, click another optional point.
· Input [Point 1] and [Point 2] as the figure for example.

※ Even if two optional points aren't parallel to a X axis or Y axis, it is all right in case of 2 Points Calibration, if the distance is accurate.

About the image calibration

You must surely calibrate it when you take the JPEG file of the X-ray in AtoZ (when you take in an X-ray image from the digital X-ray machine).
The value of the distance analysis isn't correct even if you analyze it as it is because a JPEG file doesn't have information on the size from the first.
Therefore, the image calibration operation which gives a JPEG file information on the size is necessary.

※ The standard of the size must be taken by the inside of the X-ray image to calibrate.
When you take X-ray, you must take pictures of the scale which becomes the standard of the size together to calibrate.

The method of the 2 Points Calibration

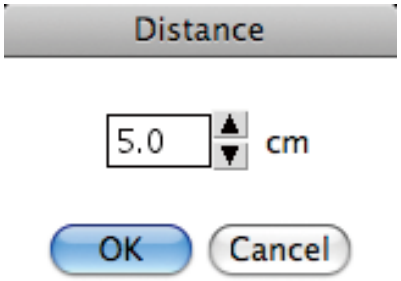
1. Take the JPEG file of the X-ray in AtoZ.

・Turn on the radio button of "Image File" in the "X-ray Input Source".
・Click the X-ray image button of "Lateral".

・Adjust a frame in the JPEG intake dialog box, and press the [OK] button.

The X-ray image is taken in AtoZ as the figure.

5. Input a distance between two points.



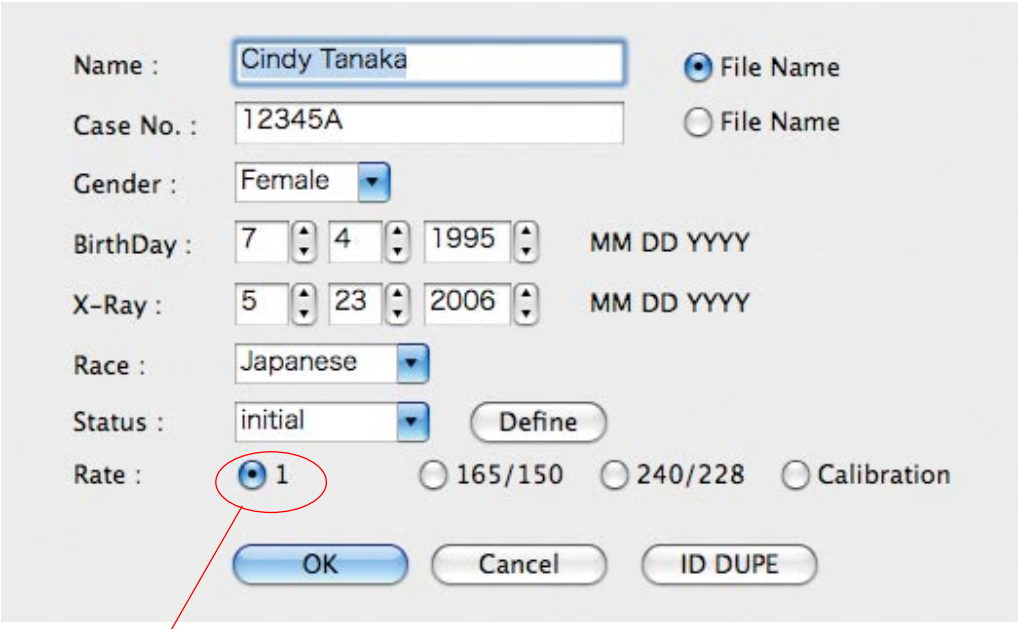
· Input a distance between two points.
· Click the [OK] button.

The operation of the 2 points calibration is completion in the above.

Attention

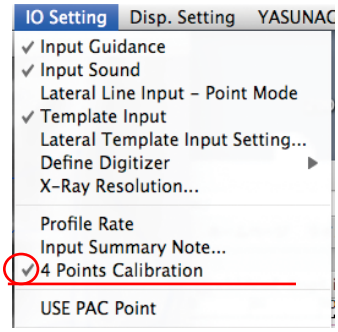
※ 1. You can calibrate respectively and independently for "Lateral","Frontal" and "Subm.".

※ 2. When you want to cancel the calibration.
· Click the "Patient I.D." from the View menu.
· Click the radio button except for "Calibration" with the "Rate" of the dialog box.
(But, be careful because all calibrations ("Lateral","Frontal" and "Subm.") are canceled at a time.)



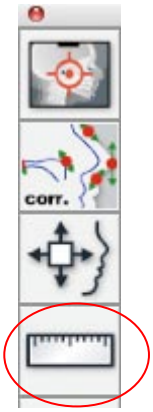
"Rate" is "1" in case of the X-ray machine to use in the general clinic.
You can cancel the calibration if you click "1".

The method of the 4 Points Calibration



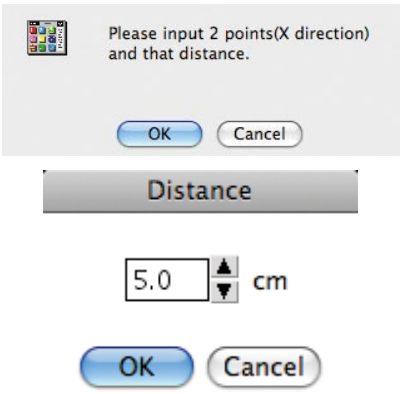
1. Confirm that a tick mark has it about the item of the "4 Points Calibration" of the IO Setting menu.

※ You can give a mark by clicking the "4 Points Calibration", and it can be removed.
※ You can use a 2 points calibration when a tick mark doesn't have it about the item of the "4 Points Calibration".
※ You can use a 4 points calibration when a tick mark has it about the item of the "4 Points Calibration".



2. Click the Measure tool button of the Trace tool window.

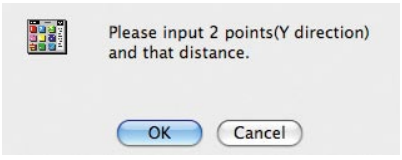
3. Input two parallel optional points to the X axis, and input that distance.



※ Be sure to input it in parallel in the X axis. If it isn't parallel, the value of the distance measurement isn't correct.

After you input two parallel points, the dialog box to input a distance is displayed.
・Input that distance, and click the [OK] button.

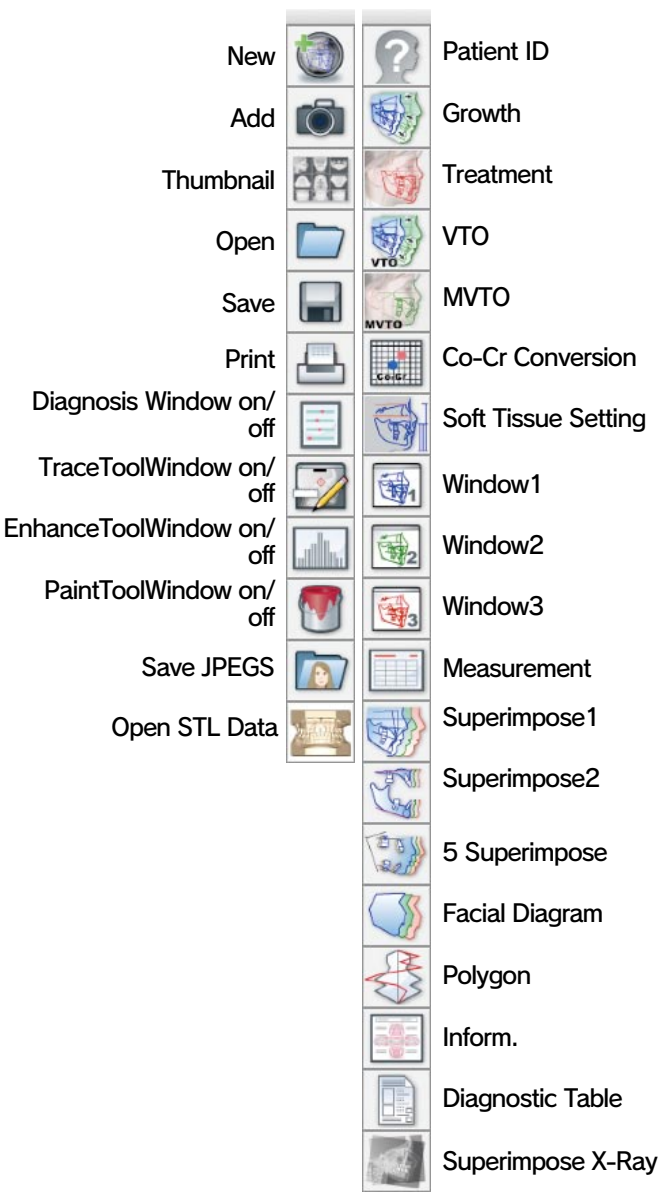
4. Input two parallel optional points to the Y axis, and input that distance.

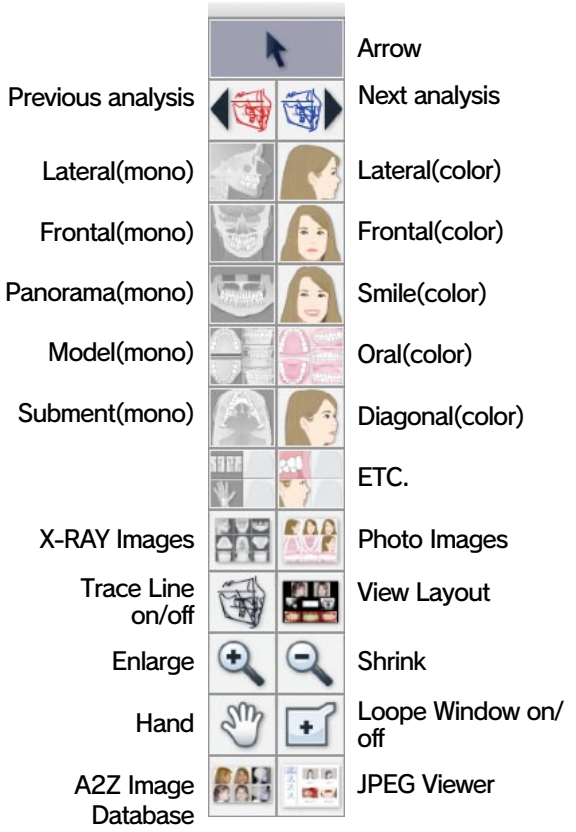


※ Be sure to input it in parallel in the Y axis.If not, the value of the distance measurement isn't correct.
After you input two points, the dialog box to input a distance appears.
・Input that distance, and click the [OK] button.
The 4 points calibration is finished.

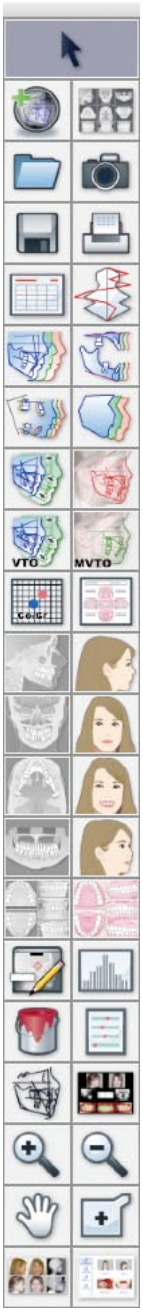
Tool window

Type1





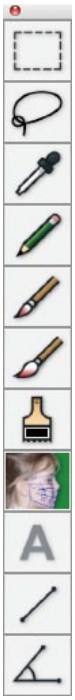
Type2


Arrow
New
Thumbnail
Open
Add
Save
Print
Measurement
Polygon
Superimpose1
Superimpose2
5 Superimpose
Facial Diagram
Growth
Treatment
VTO
MVTO
Co-Cr Conversion
Inform.
Lateral(mono)
Lateral(color)
Frontal(mono)
Frontal(color)
Subment(mono)
Smile(color)
Panorama(mono)
Diagonal(color)
Model(mono)
Oral(color)
TraceToolWindow on/ off
EnhanceToolWindow on/ off
PaintToolWindow on/ off
Diagnosis Window on/ off
Trace Line on/off
View Layout
Enlarge
Shrink
Hand
Loope Window on/ off
A2Z Image Database
JPEG Viewer

Trace Tool Window

Tracing
Correct Point
Positioning
Calibration
Bisector
Cross Line
Parallel Line

Paint Tool Window

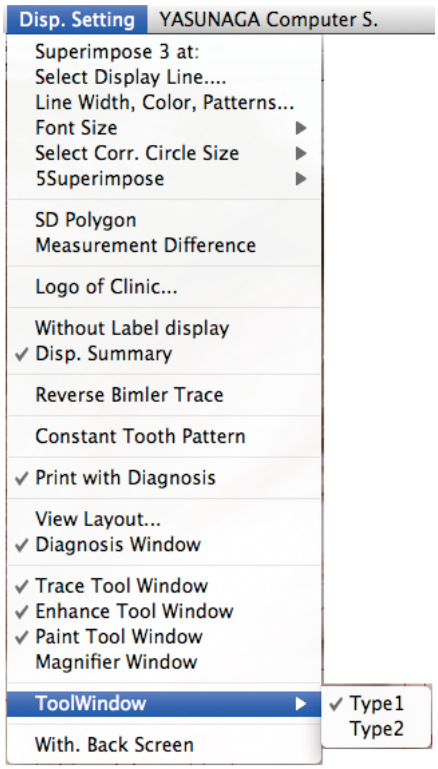


Framing
Lasso
Syringe
Pen
Brush1
Brush2
Brush3
Fill
String
Length
Angle

Enhance Tool Window

Restore
Undo
Framing
Shade off
Softness
Sharpness
Enhance
Emboss
Custom
Brightness
Reverse Video mode
Reverse image

Change Tool Window Type



About the Tool window

It attached importance to the easiness to use, and the Tool window grew big, and easy to see. It is collected in every related matters, and you can be handled more easily.

Arrow: To terminate a digitizing session, click the Arrow tool. Then, the input of the analysis points is finished. It uses for the operation as well that you move a tooth when you predict treatment.
New: When you input a first patient's data, click the New tool surely.
Open: To open a kept file, click this tool. This tool displays the dialog box to select a file.
Add: When even one data are already input, click this tool to add data.The same dialog box appears as when you click the New tool.
Thumbnail : This tool displays the thumbnail dialog to input. You can take it in with confirming the JPEG image data taken with a digital camera by the thumbnail list.
Save: This tool displays the dialog box to save a file.
Print: This tool displays the print dialog box.You can print the document made with AtoZ.
Measurement : This tool opens a measurement window.
Polygon: This tool displays the polygon of the measurement value.
Superimpose1 : This tool displays the superimposition and a dialog box to choose a potision for superimpose.
Superimpose2 : This tool displays the superimposition in the upper and the lower respectively.
5Superimpose : This tool displays 5 superimpose of Dr.Ricketts by one scene.
Facial Diagram : This tool displays a Facial diagram.
Trace Tool : You can open the Trace tool window indicated at the upper right of the screen, and you can close it. (toggle button)
Enhance Tool : You can open and close the Enhance tool window at the center of the right in the screen.
Paint Tool : You can open and close the Paint tool window on the bottom right of the screen. Click the each buttons to change a view.

The lateral X-ray		The lateral color photo
The frontal X-ray		The frontal color photo
The panorama X-ray		The smiling photo
The model photo		Five sheets of color photos in the oral cavity
The X-ray of the "Subm."		The picture taken from the oblique front of the face
The additional image		An additional image (You can indicate that in the view layout when you take in an overjet in this frame.)

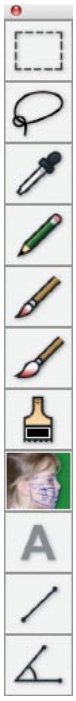
View Layout : The View palette is displayed.You can choose a favorite view layout by moving a scroll bar inside the palette. There are 25 kinds of gallery formats.
Trace On-Off : You can choose whether a trace in X-ray and color photo are indicated or not.
Summary Win : This tool opens and closes a diagnosis window.
Loope Tool : When you click this button, you can expand an image, and it can cut it down.
Hand Tool : You can move an image by dragging an expanded image.
Loope Tool : You can open and close a Loope window by clicking this.
Image Browser Tool : You can open the image Browser window by clicking this.
Jpeg Browser Tool : You can open the Jpeg Browser window by clicking this.
※ Tools about the Morphing was moved into the dialog box indicated when "the treatment" of the View menu is carried out.

Trace tool window

Tools about the trace are collected. You can input a point by using these tools, and you can correct it. There are Position tool to fit a trace and an image, and Measure tool to proofread a distance. There is an Angle Bisectors tool which looks for Gnathion which is a bisectrix at the time of the point input.

Enhance tool window

You can process an image in the part enclosed with the frame, or the whole of the image. You can customize a setting, too.
You can inverse the negative/positive of the image and the direction of the image. When you can't do it well, you can take back a process, and you can restore the first image. You can fix an image until you are satisfied.

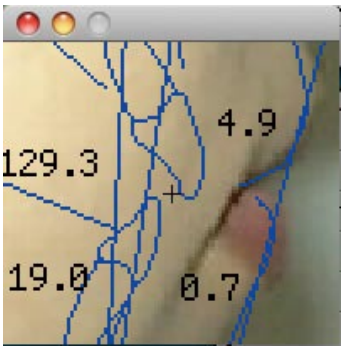


Paint tool window

You can copy and paste the part which surrounded it with "the frame" and "the lasso". You take in the color of the place where you specified it with a dropper, and you can paint it by using that color with the pen and the brush in the favorite thickness.
When a border is unnatural after the morphing, you can correct it with the Smog tool. You can use it properly in conformity with the correction point because there is smog of two size.

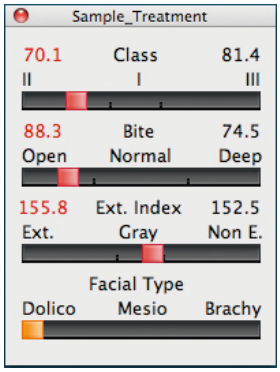
Loupe window

The Loupe window function which always zoomed in the neighborhood of the mouse cursor was added newly.
It is very convenient at the time of the analysis point input and so on because you only move a mouse in the part which you want to see extensively.
You can open and close the window by pressing the Loupe tool. You can close it when you aren't handled.



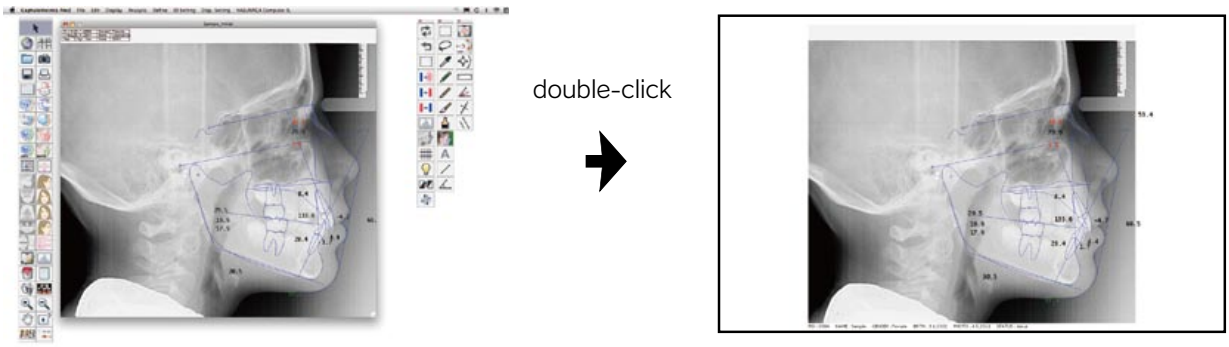
Diagnosis summary window

The diagnosis of the skeletal pattern by APDI, ODI, CF and Ext.Index of Dr.Kim, the tendency of the open bite, decision whether to extract a tooth, it becomes the standard which you choose.
The standard to judge a relapse after the treatment is adopted.
It is the digital display which is easy to see. When you diagnose of orthodontics and oral surgery, a clinical experience over the past 4,000 case of Dr.Kim is very useful.
And, the facial type of Dr.Ricketts is indicated, too.

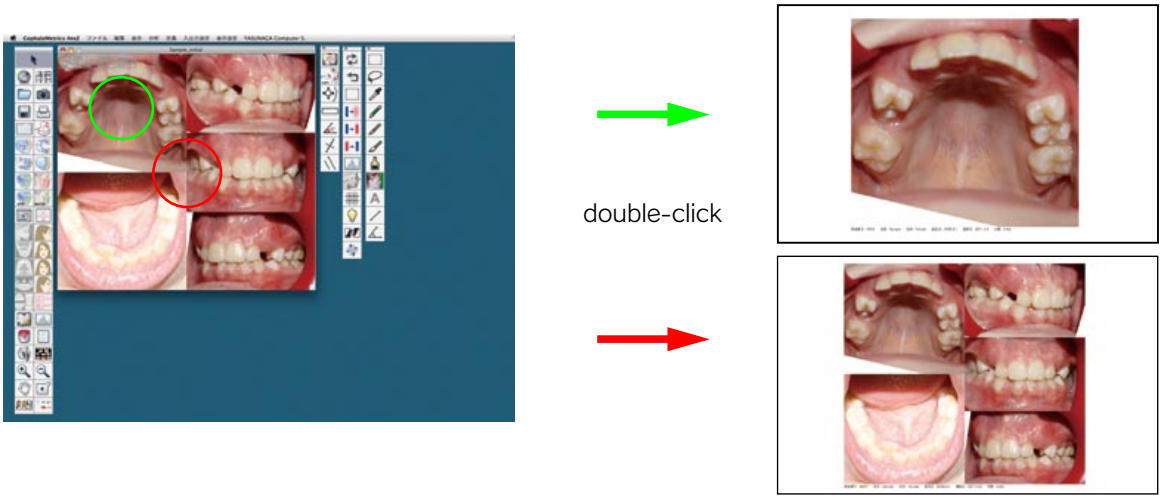


The enlargement display function of the image

The window changes to full screen when you double-click on the image. The image of the patient' s X-ray is displayed in the whole of the screen. When you click on somewhere on the screen, you can go back normal.



For example, if you want to see only an upper jaw with full screen mode, double-click on the upper jaw in oral case. If you want to enlarge all images in oral case, double-click on the center of the window.
In oral case, the way of being enlarged display is different whether you double-click each image or click on the center of the window.



When you double-click more than two images opened, you can compare enlarged images.

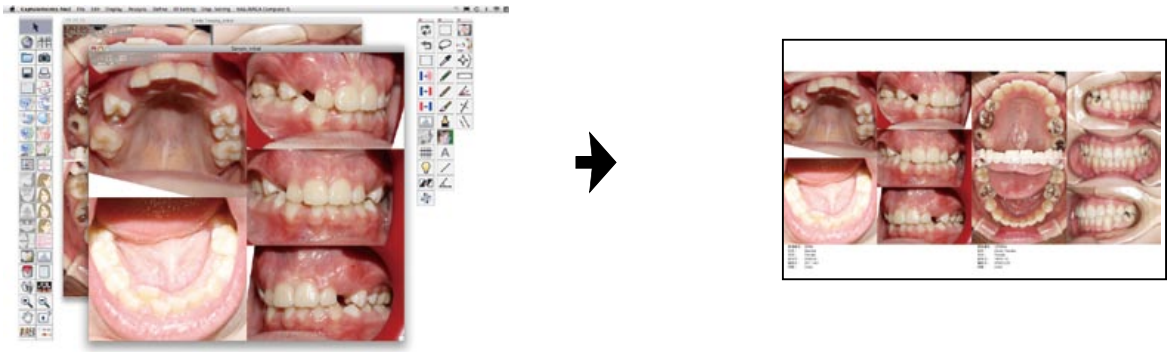
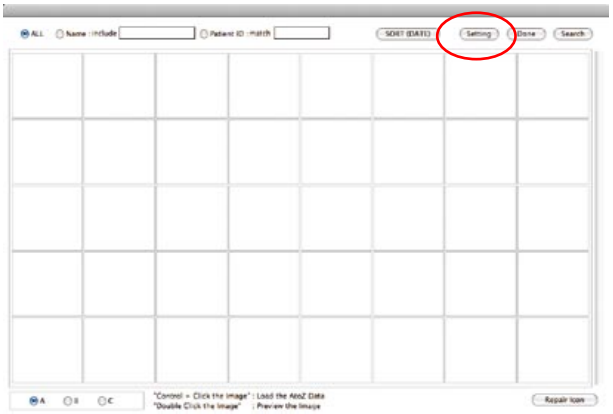


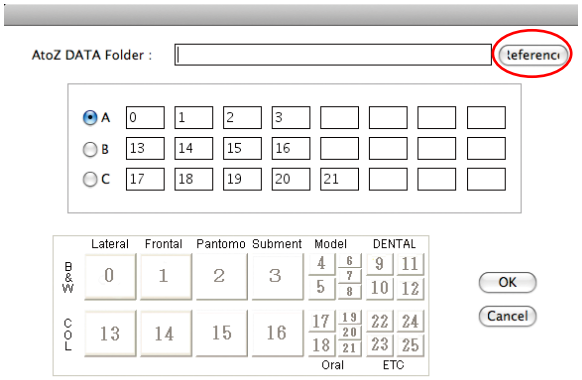
Image Browser function

You can look out over the patient image in a particular patient folder or all patients' folder.
The layout of the image can be set up freely. That can be defined to three patterns.

1. Click the "Image Browser" from the File menu.
   Press the "Setting" button first, and then the "Image Browser" window appears.



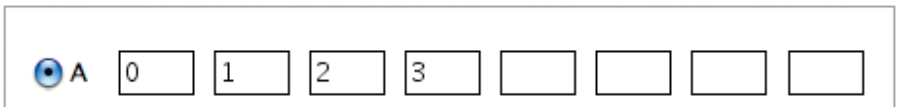
2. Click the "Reference" button, and select the data of the patient.



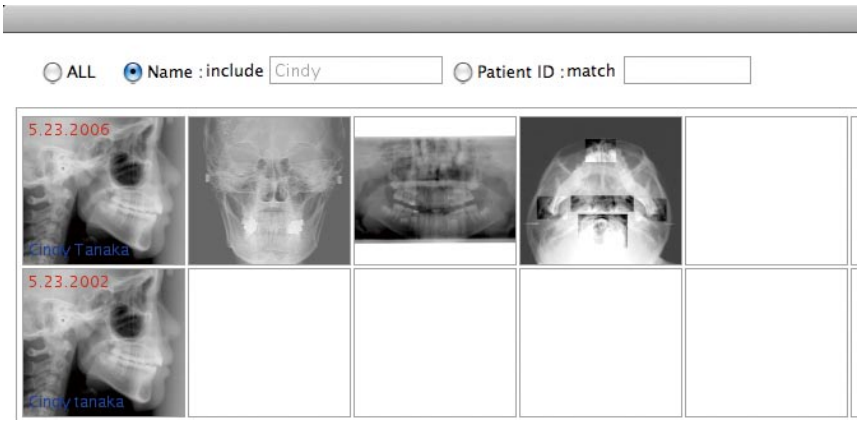
For example: Cindy Tanaka
AtoZ Data Folder:
Desktop-> Patient folder-> "C" ->
Cindy Tanaka
Layout:

0. Cephalo
1. Frontal X-ray
2. Panorama
3. Subment

3. Input the number such as 0, 1, 2, 3 on "A" layout menu. And then, click "OK" button to save this setting.

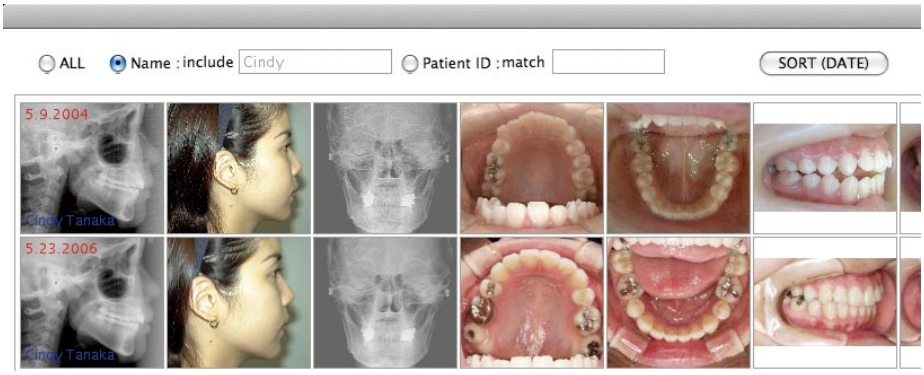


4. If you look it up with a name, turn on the radio button of "Name", and input the patient's name, and click the "Search" button.
If you look it up with a patient number, turn on the radio button of "Patient ID", and input the number.
The image of data in AtoZ DATA Folder can be displayed.



※ You can always change the order of images to arrange with the “Setting” button.

< Layout : 0,13, 1, 17, 18, 19, 20, 21>



Add the date & name display to the database indication function

The date & name add to display to the database indication function.(that function has been added from Ver.8.a.) It is more convinient when you explainto the patient. Furthermore, you can get the expanded image with a full screen when you click the thumbnail two times. It helps to appeal to the patients more effective.

JPEG image database features

It is now possible to access and view image data in JPEG format. Patient's folder and image are displayed on the left and right side of the screen respectively. Double-click an image to zoom in.

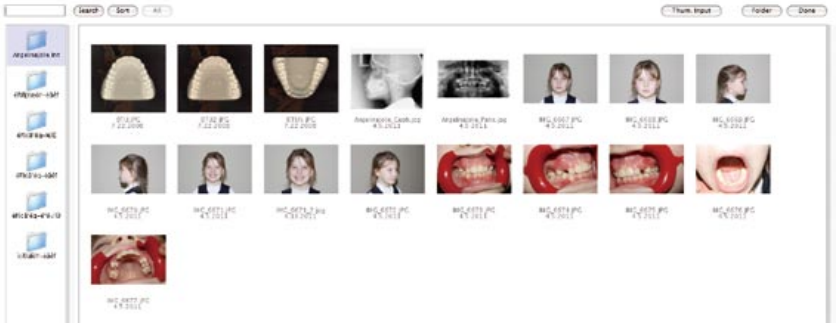
Operation

・Click the "Jpeg Browser" tool. 

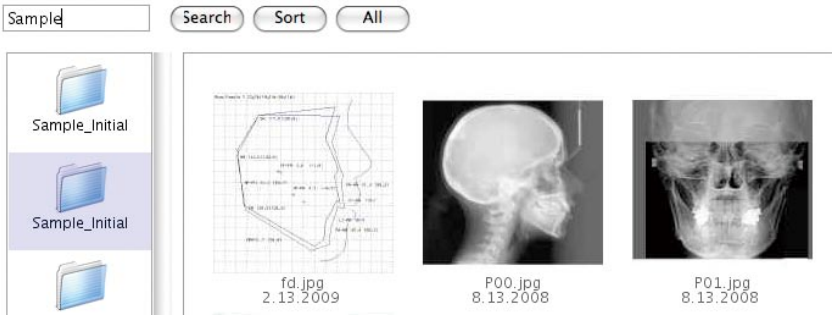
・Choose a list of images. Click the "Folder" button in the top right corner and choose a folder you want to open.

・Folder name is displayed in the left window. JPEG images inside a folder will be listed as you click a chosen folder.

・Double-click an image you want to zoom in, it will be shown in full screen.



You can search a displayed folder now. Input text into a box at the upper left, and click a "search" button. When you return to a list, click a 'All' button.



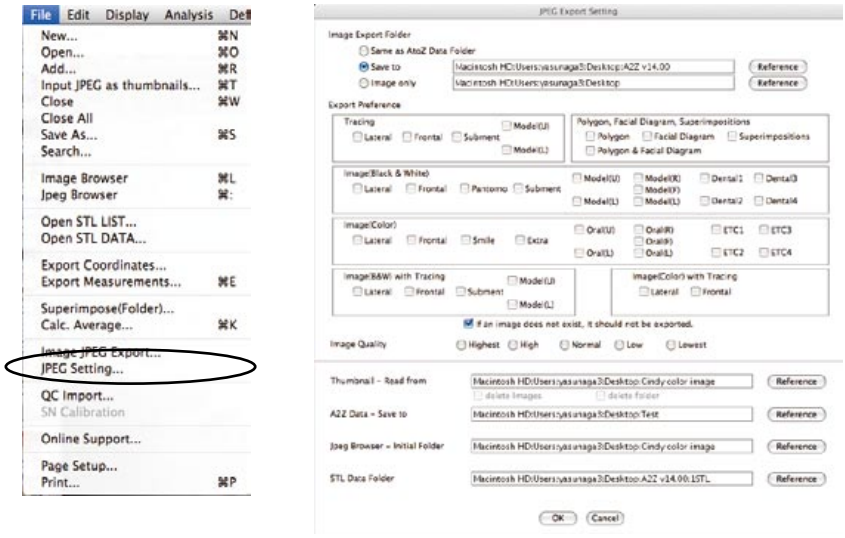
・When "Thumb. input" is clicked, it moves to a thumbnail input.

JPEG output function

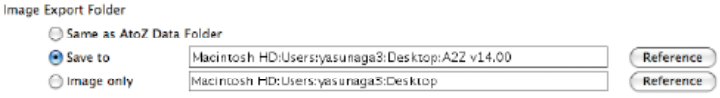
You can output the file that you scaned a picture into AtoZ with JPEG image data. Existing AtoZ allows you to copy & paste only one by one data to other applications, but now you can output some data at one time, and it will expand your data preparation. You can output even a trace alone without a facial configuration with JPEG image data.

Operation

When you select "JPEG Setting", a image output setting (JPEG) window appears.

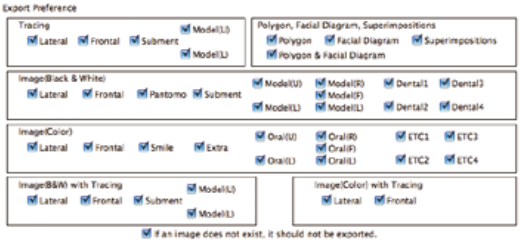


First. set the output direction. Select the same direction on the" image output folder" as the patients data on AtoZ. or new direction by the radio button. Click the "Reference" button for new setting, and select the folder of the save direction.



Next, check the radio button of the image that you want to output on the "Image output setting"

Select the image compression rate, and click the OK button on the "Image compression".

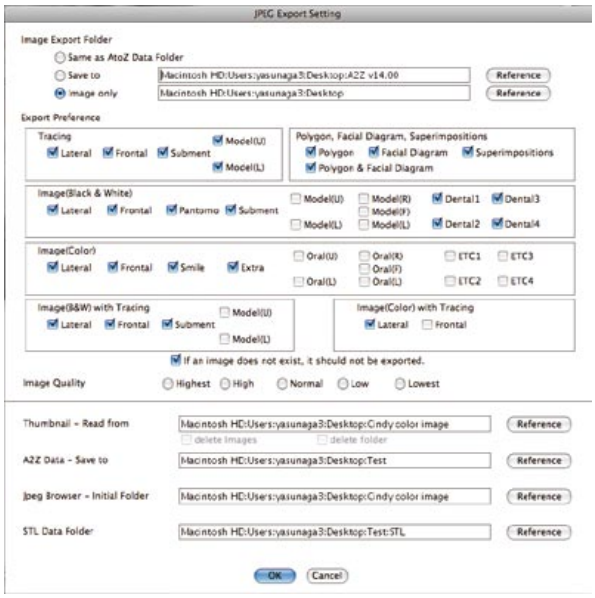


The output setting has done with this. When you save the AtoZ data, the JPEG images are output to the specified folder at the same time.

The JPEG image is output every time you save until you change the setting. If there is no need to save, you should uncheck every box on the "Export Preference".

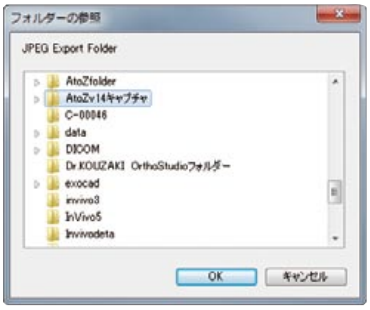
Output JPEG images without saving AtoZ data.

Without saving AtoZ data, you can export JPEG image files.
1. In advance, make settings what JPEG image is exported. Go to the "JPEG Setting" in the "File" menu.
2. Check images as you want to export and click the "OK" button.

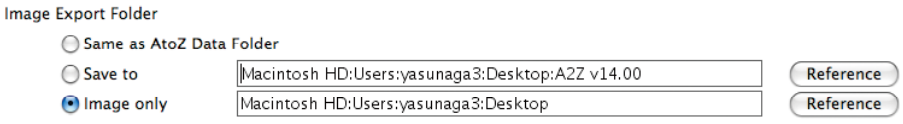


3.  Choose "Save JPEGS" on the tool, or select "Image JPEG Export" in the "File" menu.

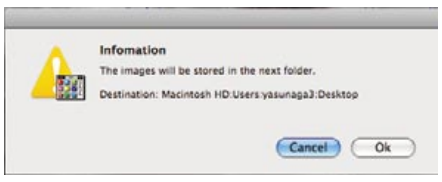
4. Choose a folder to export JPEG image, and click the "OK" button. And then, JPEG images are exported.

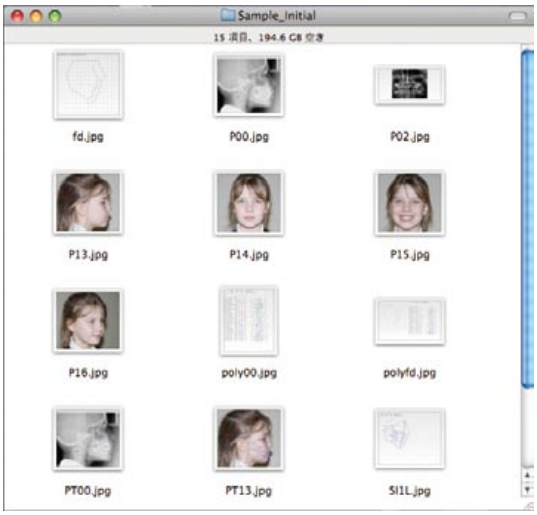


* If you turn on the "Image only" radio button and specify the folder in "Image Export Foder," when you click "Image JPEG Export" in "File" menu, the message as following appears. If you click the "OK" button, the images are saved in the folder including images in the specified location.



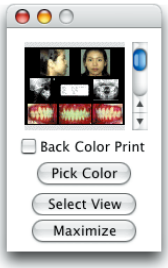
Select the  "JPEG image save"tool or "image Jpeg output" on the "File" menu, and click the OK. JPEG images are output.



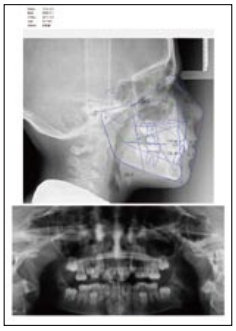


◎ View layout

View layout palette varies when selects view layout of setting menu by the following view palette is indicated, and operating a right bar. An image in a palette varies by changing scroll bar in a palette. You select favorite view layout.



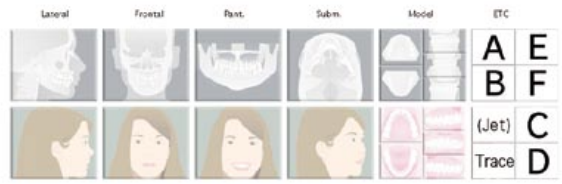
Two formats were added in Ver.14.



・About 12 picture layout

Operation

Input the image used for 12 pictures layout. (Refer to the figure below.)

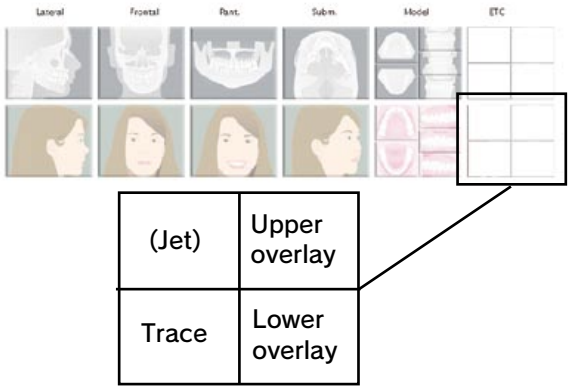


When you click the view layout tool on the tool window, a view palette appears. Click the "Select View" on the view
palette, and select the 32nd format (12 pictures layout) on the view format list.

・About Specified submittal case for Japanese Orthodontic Society (3 pcs)

Operation

Import the image that you trace by yourself on a scanner or with the JPEG image to the last line of ETC. (Refer to the figure below.)

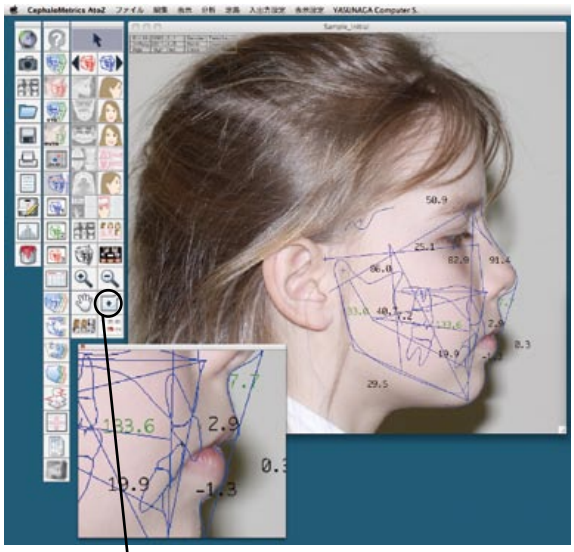


Open the three files as the image before an operation, after the dynamic treatment, and after an operation.

When you click the view layout tool on the tool window, a view palette appears. Click the" Select View" on the view palette, and select the format for a specified submittal case for the test on the view format list.

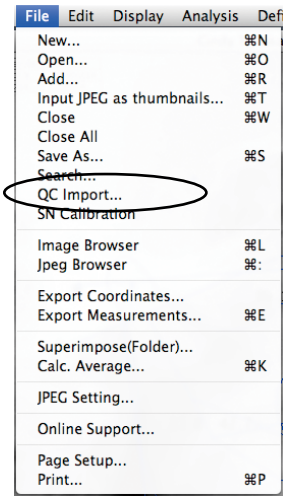
◎ Loupe (magnifying glass) window

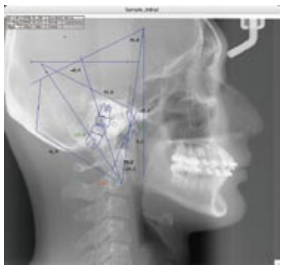
We newly provide a Loupe window tool.
A Loupe window appears to expand the surrounding area of a mouse cursor, when you click a Loupe window tool on the tool window. To close, click the Loupe window tool again.

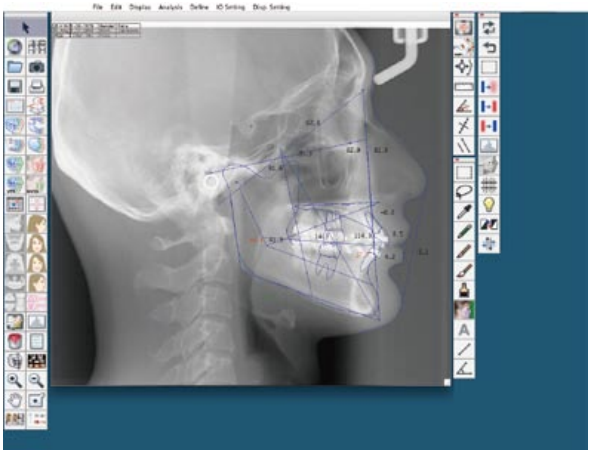


Loupe (magnifying glass) window tool

For expansion & reduction of the display window
You can change the window size by dragging on the right corner of it with a mouse. Along with it, the image is expanded or reduced.







◎ "ANGLE" tool 

Put three points to the X-rays image and display an angle.

◎ Quick Ceph data import

You can open Quick Ceph Image data file directly with AtoZ. This feature is available only in Mac version.

Operation

・Send QuickCeph data to CephaloMetrics AtoZ. Image and lateral trace will be presented.

As for a X-ray image and lateral trace, image size and position do not match when Quick Ceph data are opened. The trace is displayed in actual size, but the image resolution is obscure. So, you must calculate the image resolution to measure the distance between Sella and Nasion and calibrate these two points.

The QC data of soft and hard tissue lines are not converted and should be inputted manually.

Display 3D models

AtoZ supported STL data in Ver.14.
It can do indication in 3D of the model.

We support SLT data used CAD/CAM software on Ver. 14, and 3D models can be displayed. For example, STL data created by "Maestro 3D scanner", which is a dental model scanner, can be imported directly into AtoZ. 3D models imported into AtoZ can be displayed the measurement of the distance and angle and can be rendered overjet/ overbite.

As well as image data on AtoZ, 3D model data can be shared and accessed on each dental chairside within local area network.

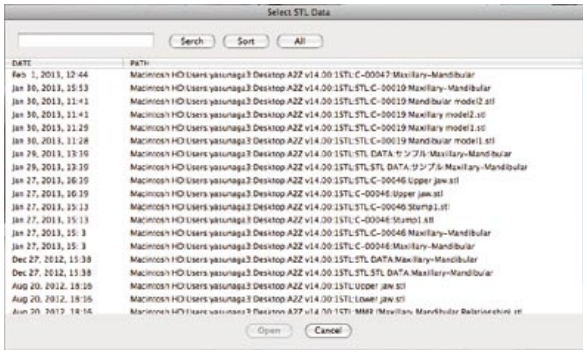
To import STL data from list view

Browse the folder including SLT data with list view, In advance, you should gather STL data into one folder.

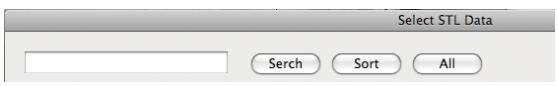
1. Select a folder to browse. Click the "JPEG Setting" in the File menu.
2. Specify a folder to browse on "STL Data Folder". Click the "Reference" button to define the folder.

3. Click "OK" button and close the "JPEG Export Setting" window.
4.  Click the "Open SLT Data" tool or the "Open STL LIST" in the File menu.

5. Display the list of SLT data within specified folder.

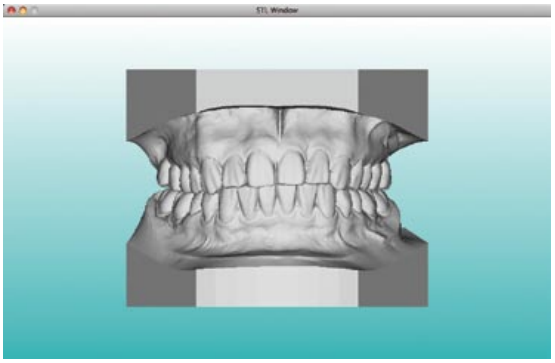


About top 3 buttons



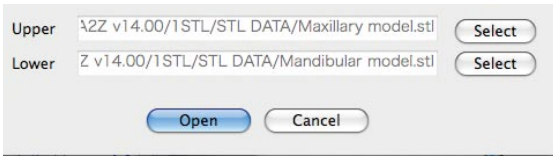
"Seach" button: To display only desired files.
Input folder name including STL data on left textbox. Click the "Search" button, and then data matched partially with folder name appears. Click the "All" button to return to list view.
"Sort" button: Change the order of sort by name or date modified.

5. Select data as you like, and click the "Open" buton. Or, double-click data file to import.

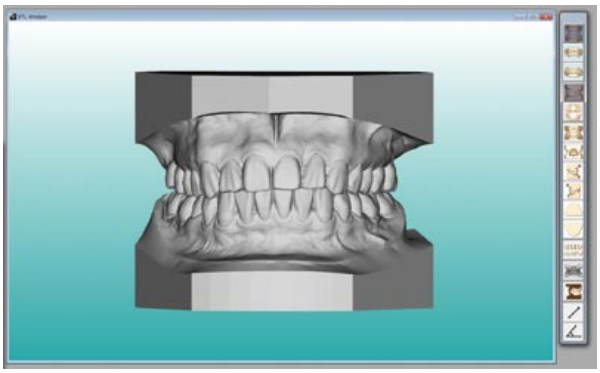


To import SLT data respectively

1. Click the "Open STL DATA" in the File menu.
2. Import STL data of an upper model and a lower model respectively.
Click the "Select" button to specify folders.



3. Click the "Open" button to import 3D model.

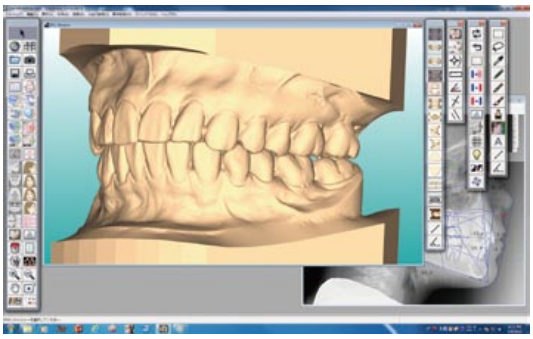


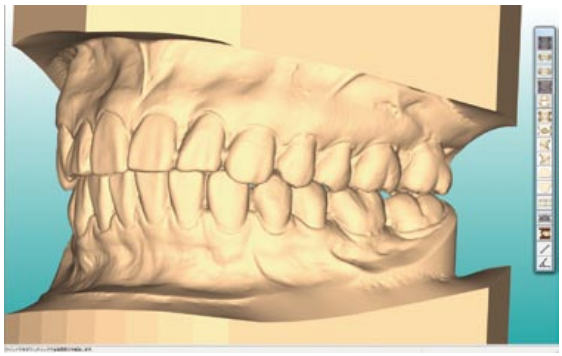
How to control 3D models

Shrink/Enlarge models: Scrolling up or down with mouse wheel

( Shift + scrolling up or down in the "slice" tool activated.)

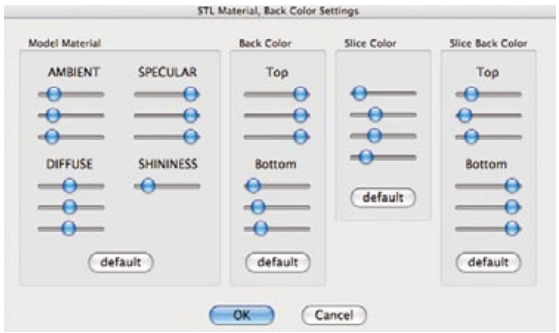
Move : Drag models holding right click.
Rotete : Drag models holding left click.





Change colors

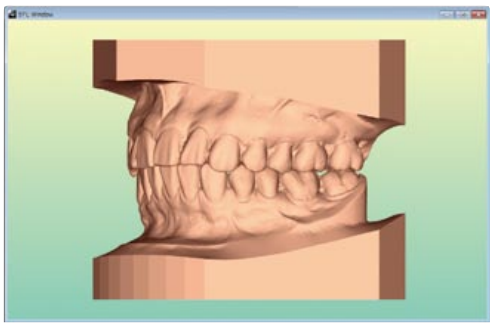
1. Click the "STL Model Material, Back Color Settings" in the Disp. Settings on menu.
2. Click the "OK" button after adjusting each slder bar.



Red
Green
Blue

The color is set in RGB.
The upper row is Red, the middle is Green, the lower is Blue.

Click the "default" button to be restored to default color settings.



About model toolbar

Show all : Show maxilary and madibular

Show maxillary : Only show maxillary

Show mandibular : Only show mandibular

Close mode : Show close model

Open mode : Show open model

Front view : Orients the front

Back view : Orients the back

Right view : Orient right

Left view : Orient left

Top view : Orient above

Bottom view : Orietnt below

Gallary : Show 6 models side by side

Mesh : Show in mesh

Slide : Show overjet/overbite

Length : Mesure the distance

Angle : Measure the angle

Show all

Show both maxillary and mandibular.

Show maxillary

Show only maxillary.

Show mandibular

Show only mandibular.

Close mode

Show close model.

Open mode

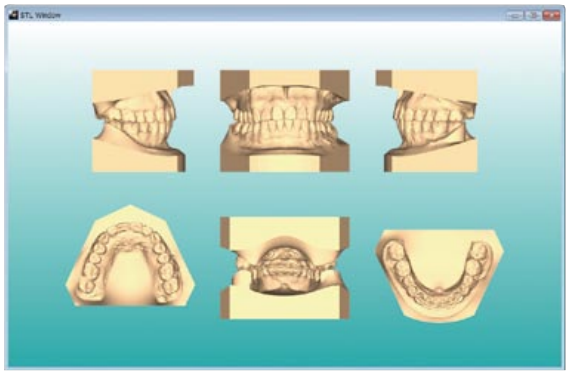
Show open model.

Front, Back , Right, Left, Top and Bottom view.

Rotate model in the direction respectively.

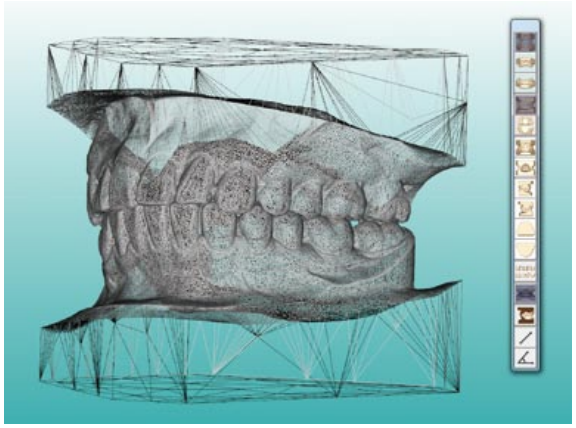
Gallary

Click it and show 6 models side by side. If you click again, restore to its original view.



Mesh

Click it and display models in mesh. If you click it again, restore to its original view.

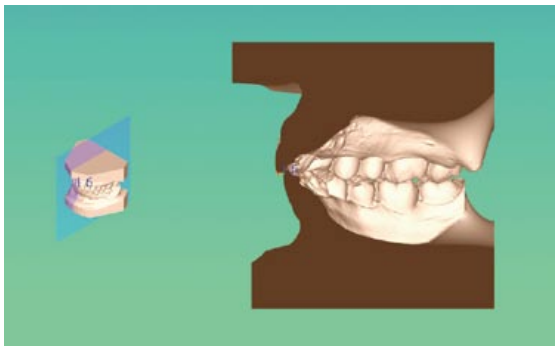


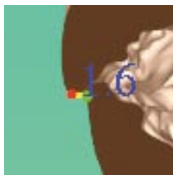
Slice

Display overjet/overbite to click this tool. Click it again when you finish it.

Adjust the slice location with scroliing mouse wheel when you confirm how you want to display the little dental model with slice. You can measure the distance of overjet/overbite with the "Length" tool. If you click again, restore to its original view.

In slice mode, Shift+Scroll up or down to shrink or enlarge models.

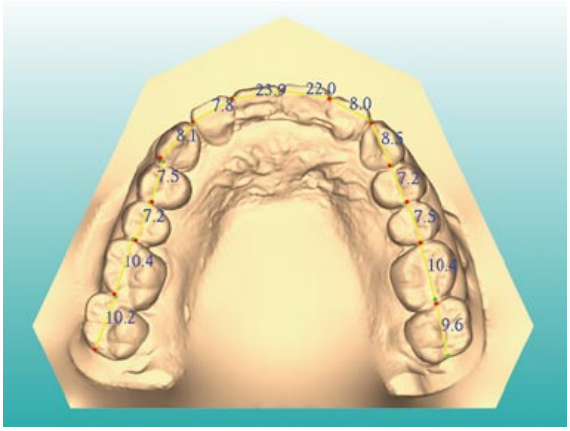




Length

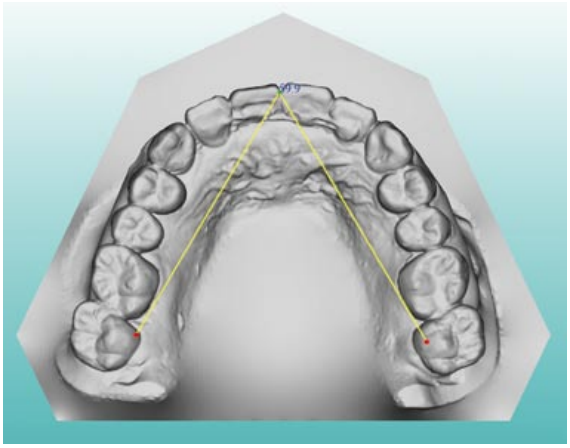
Click it and put two points as you like with Ctrl+left click. And then, the distance between these two points appears.

You can measure the distance many times. Exit to measure the distance to click the "Lengh" tool again.



Angle

Put three points as you like with Ctrl+left click, and the angle among three points appears. You can measure the angle many times as well. Exit to measure angle to click the "Angle" tool again.



15. Make analysis by yourself!

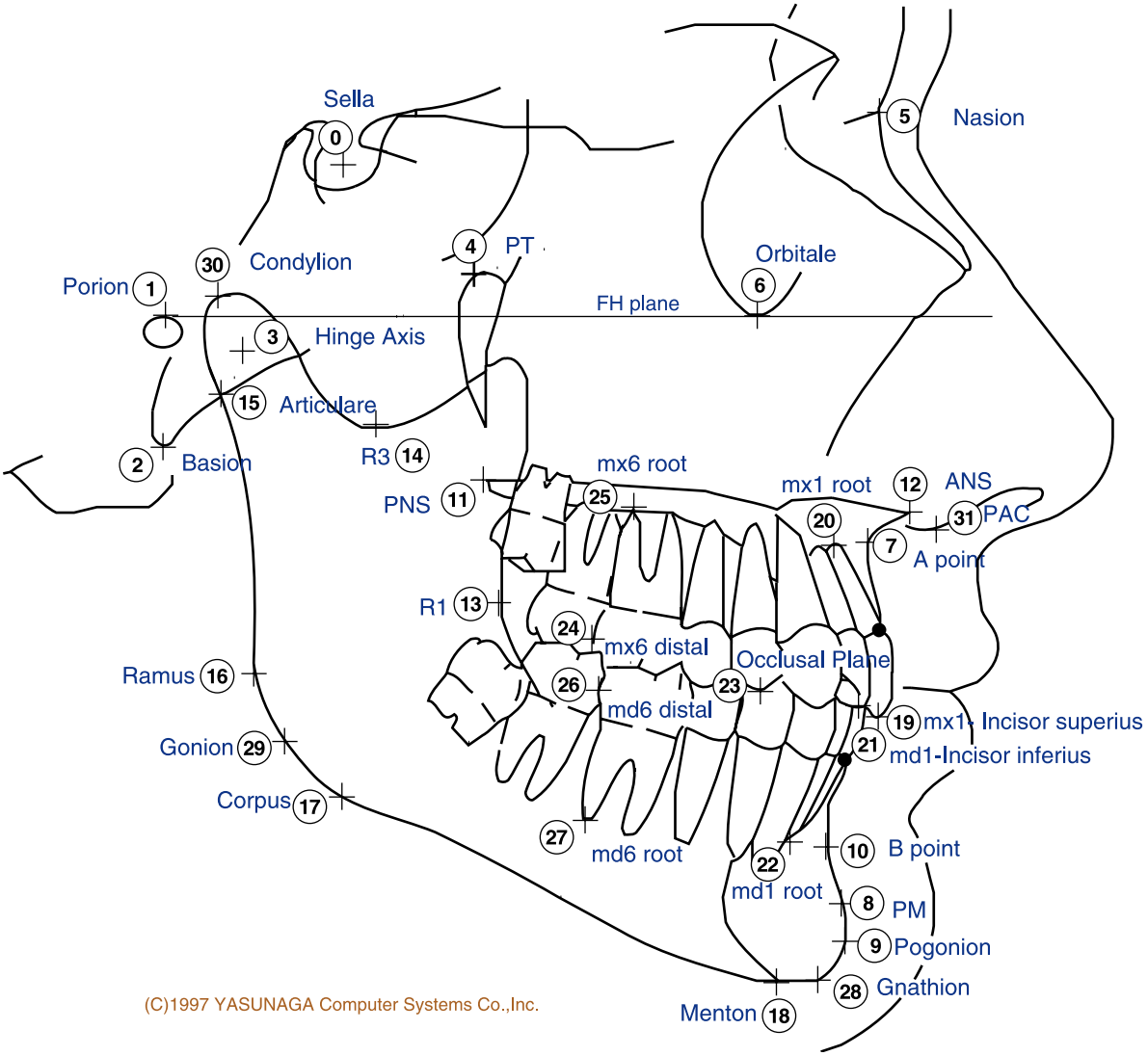
15-1 User analysis definition

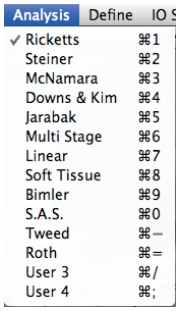
Let us try to analize of ourselves.
You can adopt User1, User2, User3 and User4 (all of this four) for a lateral, a frontal and trace of a submentovertex...

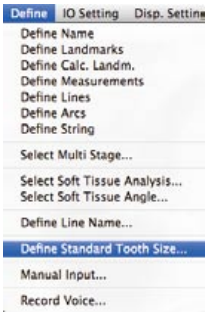
Analysis to define a user exchanges a combination of analysis that there is already, and one analysis can gather up necessary measurement item.

Analysis of User4 defines necessary measurement point by researches newly and can analyze it.
As for you, a screen, print can define display segment of a line to output.

A measurement defines the data which are input already even if the re-input of X-rays film is not done in order to collect the statistics, and new data are provided.
Because User4 can do point addition, attention is necessary for data handling.







For first you name your analysis please.
And select analysis name of emphasized user define of shadow character among analysis menu:
You select Tweed or Roth or User 3. Because check mark appears before a name of analysis, you understand it which was selected. You try to select Tweed for trial here.
All the changes in the future are done for Tweed analysis.

In case of lateral, analysis to have on of user define is four analysis of Tweed, Roth, User3, User4.

15-1-1 A definition of analysis name

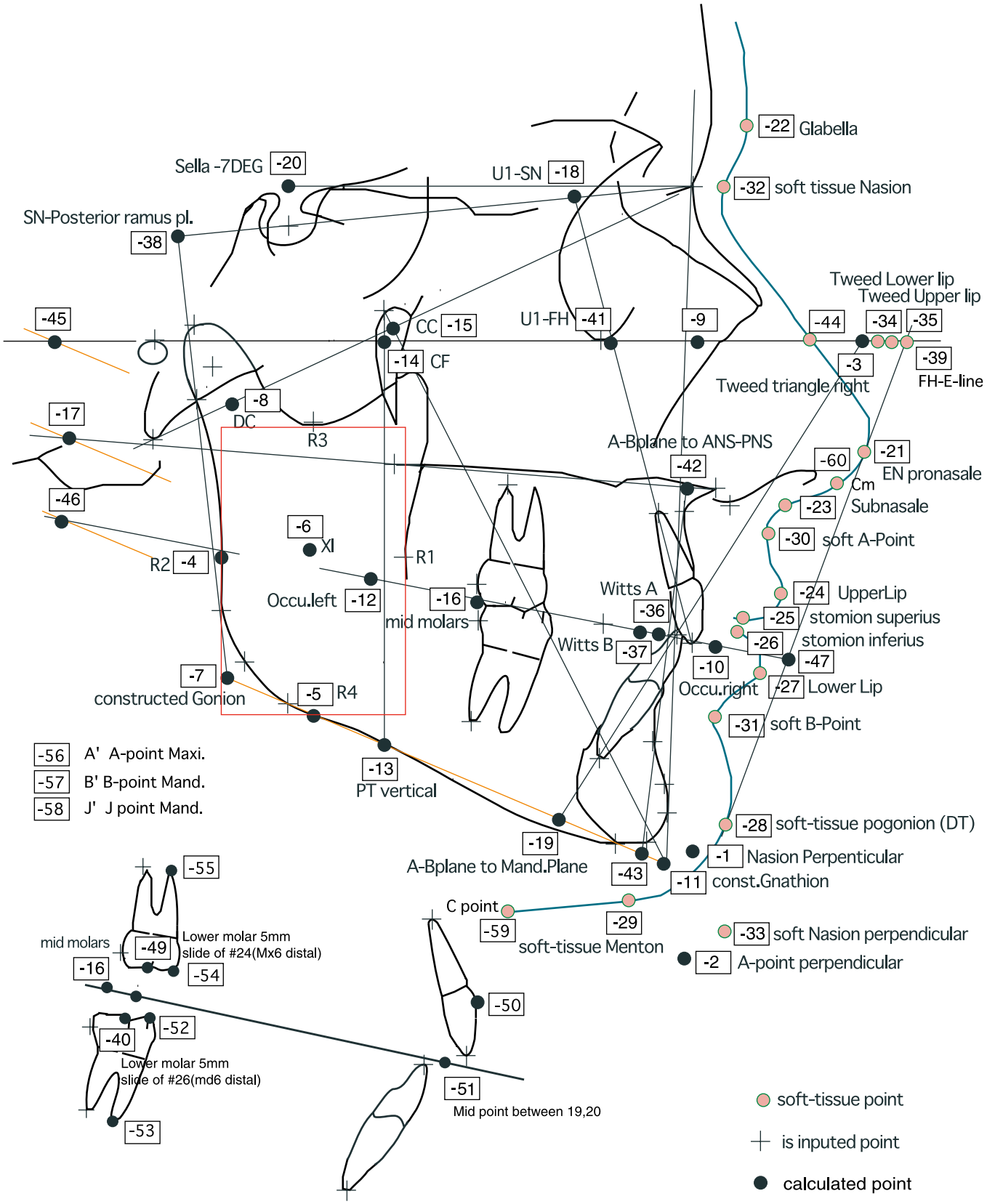
By define menu, you select a define of analysis name next and type 'Green' (you do not mind by a name of yourself) and click OK button.
It is assumed drag by a menu of analysis, and Green analysis is listed with Ricketts, Steiner in the same way, and graphics display of every time 'Green' and a measurement of

Table 1 Inputed lateral analysis 32 points

No. name	Input analysis point
0. Sella	: A constructed point in the middle of the sella turcica.
1. Porion	: Most superior point of external auditory meatus
2. Basion	: Most inferior point of external auditory meatus
3. Hinge Axis	: Hinge of Condyle
4. PT-point	: The junction of the pterygomaxillary fissure and the formmen rotundum
5. Naison	: 'V' notch of frontal and nasal bone
6. Orbitale	: Most inferior point of the orbital contour
7. Point-A	: Deepest point between ANS and the prosthion
8. PM	: Point where curvature changes between B-point and Pogonion
9. Pogonion	: Most anterior point of the symphysis
10. Point-B	: Deepest point between Pogonion and the lower incisal alveolus
11. PNS	: Tip of the Posterior Nasal Spine
12. ANS	: Tip of the Anterior Nasal Spine
13. R1	: Deepest point on the curve of the anterior border of the ramus
14. R3	: Most inferior point of the sigmoid notch of the ramus
15. Articulare	: Intersection of inferior cranial bas ～ surface and posterior surface of condyle
16. Ramus	: Lower point of a tangent of the posterior border of the ramus
17. Corpus	: the point of a tangent of the inferior border of the corpus; mandibular plane left
18. Menton	: Most inferior point on the synphyseal outline
19. mx1 Incisor superius	: Tip of the crown of the upper incisor
20. mx1 apicale Incisor	: Root apex of the most anterior maxillary central incisor
21. md1 crown	: Tip of the crown of the mandibular central incisor
22. md1 root	: Root apex of the most anterior mandibular central incisor
23. Occlusal plane	: Midpoint between upper and lower first bicuspid, or upper and lower incisor
24. mx6 distal	: Distal contact point of maxillary first molar 2mm above occlusal plane
25. mx6 root	: Distal buccal root of maxillary first molar
26. md6 distal	: Distal contact point of mandibular first molar 2 mm below occlusal plane
27. md6 root	: Distal root of mandibular first molar
28. Gnathion	: on the born Gnathion, gnathion is the point of intersection of these two planes.
29. Gonion	:on the born Gonion, A constructed point, the intersection of the lines tangent to the posterior margin of the ascending ramus and the mandibular base.
30. Condylion (Co)	: It is the most superior point on the condylar head.*
31. PAC	: Dr.Kim's PAC,use for ODI, APDI palatal plane instead of ANS-PNS palatal plane.

Table 2

No.	A measurement point got by a calculation
-1	Nasion perpendicular
-2	A-point perpendicular
-3	Right point of Tweed triangl
-4	R2 (Ricketts)
-5	R4 (Ricketts)
-6	Xi-point (Ricketts)
-7	constructed Gonion
-8	DC-point The point in the center of the condyle neck along the Ba-Na plane (Ricketts)
-9	intersection, line from #1 to #6 with #5 to #7
-10	occlusal plane, right
-11	constructed Gnathion
-12	occlusal plane, left
-13	lowest pt. of Pterygoid Vertical (perp.)
-14	CF (Pterygoid Vert- Frankfurt Horizontal) (Ricketts)
-15	CC (Nasion Basion - Facial Axis) (Ricketts)
-16	mid molars (between distal contact points)
-17	intersection, line from palatal pl.(#12 to #11) with mand. pl.(#18 to #17)
-18	intersection, long axis of mx1 and Sella-Nasion
-19	intersection, long axis of md1 with mandibular plane
-20	Sella minus sseven degrees (Burstone)
-21	EN pronasale, tip of the nose
-22	G Glabella
-23	Sn Subnasale
-24	upper lip
-25	stomion superius - upper embrasure
-26	stomion inferius - lower embrasure
-27	lower lip
-28	soft-tissue pogonion (DT)
-29	soft-tissue Menton
-30	soft A-point (superior labial sulcus)
-31	soft B-point (inferior labial sulcus)
-32	soft tissue Nasion
-33	soft Nasion perpendicular
-34	intersection of line lower lip-Pogonion and FH(Tweed)
-35	intersection of line upper lip-Pogonion and FH(Tweed)
-36	A-point projected to the occlusal plane(WITS)
-37	B-point projected to the occlusal plane(WITS)
-38	intersection, line from SN(#0,#5)with posterior ramus pl.#15 to #16
-39	defined
-40	Point of 5mm right side of mid molars (-16)
-41	Mx1 to FH, line from #19 to #20 with #1 to #6
-42	A-B.to ANS-PNS, line from #10 to #7 with #11 to #12
-43	A-B.to Mand., line from #7to #10 with #17 to #18
-44	defined
-45	Tweed Triangl left (FH to Mandib. Pl)
-46	inter section Mand. pl to Occlusal pl
-47	inter section E-line to Occlusal pl

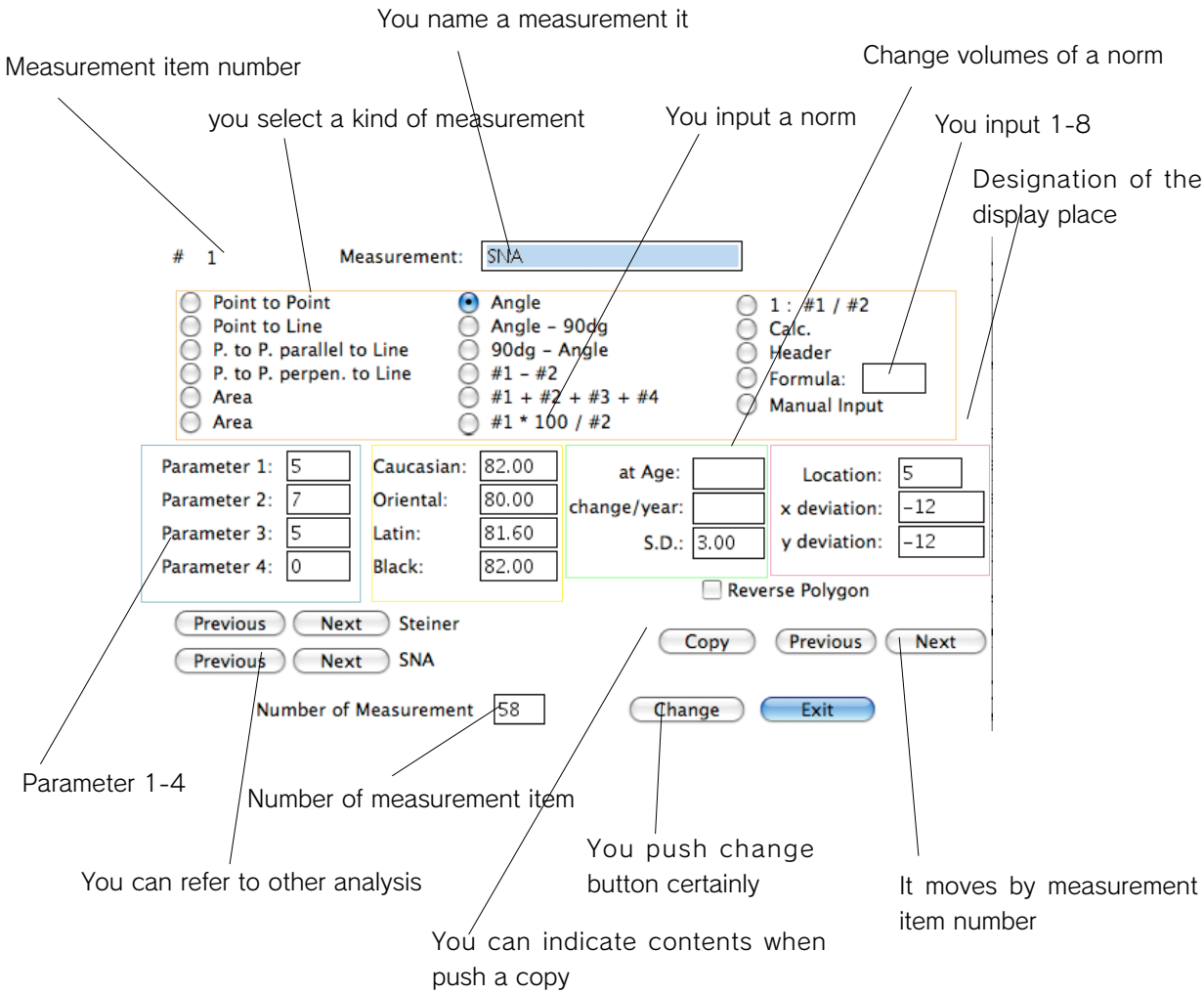


Green analysis get when you click 'Green' from now on.

A position of input lateral analysis point

Point number of the input order is different.
Point number of analysis point to use with user define refers to a number of a another table.

Measurement item setting dialogue



15-2 Definition of measurement item

15-2-1 A define of measurement item

As to Analysis point and measurement point you area requested to input a number respectively from among 0 ～ 31 and -1 ～ -47 instead of name of a point in order to define a measurement. These numbers are assigned to each analysis

Table3 Kind table of measurement

Measurement	Parameter 1	Parameter 2	Parameter 3	Parameter 4
Point to Point (Figure1)	1st Point	2nd Point	not use	not use
Point to Line (Figure2)	Point	Initial point of straight Line	End point of straight Line	not use
P. to P. parallel to Line (Figure3)	1st Point	2nd Point	Initial point of straight Line	End point of straight Line
P. to P. perpen to Line (Figure4)	1st Point	2nd Point	Initial point of straight Line	End point of straight Line
Angle*1 (Figure5)	Initial point of the first Line	End point of the first Line	Initial point of the second Line	End point of the second Line
Angle- 90dg (Figure6)	Initial point of the first Line	End point of the first Line	Initial point of the second Line	End point of the second Line
Area*2 (Heron's Formula) (Figure7)	1st Point	2nd Point	3rd Point	(4th Point)
Area*3 (Area among line) (Figure8)	Line No. (After the 4th)	not use	not use	not use
#1 - #2	Measurement 1	Measurement 2	not use	not use
#1 + #2 + #3 + #4	Measurement 1	Measurement 2	Measurement 3 (or not use)	Measurement 4 (or not use)
#1* 100 / #2	Measurement 1	Measurement 2	not use	not use
1: #1 / #2	Measurement 1	Measurement 2	not use	not use
Calc.	99 (measurement number #99)	1 ～ 4 (1: × 2: ÷ 3:+ 4:-)	constant value	not use
Header	Header can insert an explanatory note and prose in a list without measuring it.			
Formula	1 ～ 8 (You cannot change the calculation definition of Procedure. It is supported by us.)			
Manual Input	Manual Input can input arbitrary numerical value.			

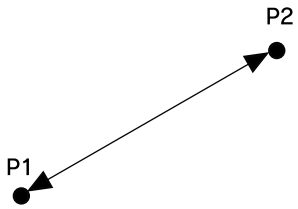
Calculating formula reads Procedure (1-8).Seven Procedure is offered now. If there is a demand, it may be added.

Procedure 1 (Undefined)	x=Calculation 1*0.4+Calculation 2*0.2-35.16 (Reference)
Procedure 2 (Cagliari)	x=Calculation 1-(Calculation 2/Calculation 3)
Procedure 3 (Tweed Z angle)	The small angle of the angle with the FH plane of each tangent lines from Soft pogonion to Upper lip and Lower lip.
Procedure 4 (ODI)	Dr. Kim's ODI
Procedure 5 (APDI)	Dr. Kim's APDI
Procedure 6 (CF) Combination factor	Dr.Kim's CF、CF=ODI+APDI
Procedure 7 (EI) Extraction Standard	Dr.Kim's Extraction Index = ODI + APDI -(130-Interinsaisal) / 5 - Lower-Lip - Upper Lip
Procedure 8 (Adjusted ANB)	ANB revision of Freeman

*1 **Important** : When you calculate an angle, a mark of the measurement value is reversed or, in the case of the thing which an angle does not expect, replaces a parameter.(Parameter 1 ⇄ 2, 3 ⇄ 4)When it is predicted that measurement values exceed 180 degrees, please use a supplement.
*2 The Heron's formula calculates an area surrounded with three points. However, it calculate the area of the irregular quadrilateral when you input the fourth point.
*3Input the number of the line after the fifth which you input in a line into parameter 1.The number of the line is as follows. 0:Upper profile Line 1:Lower profile Line 2:Mandibular Line 3:Maximally Line 4 ～ :Line
When the line traces it clockwise, the area becomes plus value when you trace it counterclockwise, it becomes minus value.

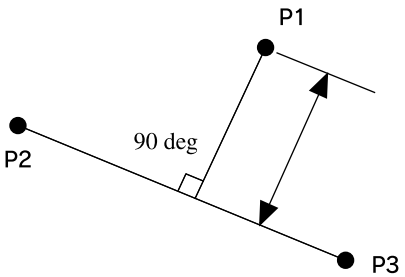
Note : measurement 1、measurement 2、measurement 3 are the number of the measurement item of the measurement result.

Figure 1



distance P1-P2
Point to Point

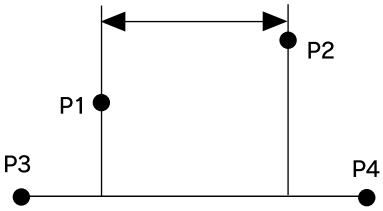
Figure 2



distance P1 from P2-P3
Point to Line

Figure 3

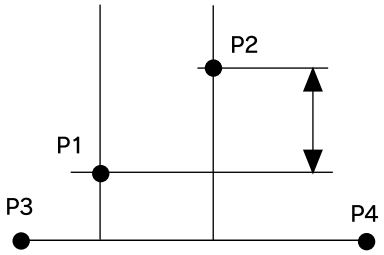
Ao-Bo etc
Over jet



distance P1-P2 parallel to P3-P4
P. to P. parallel to Line

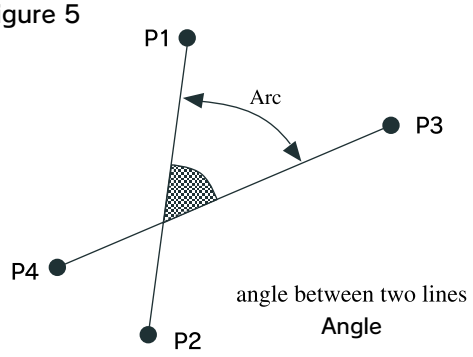
Figure 4

Over bite



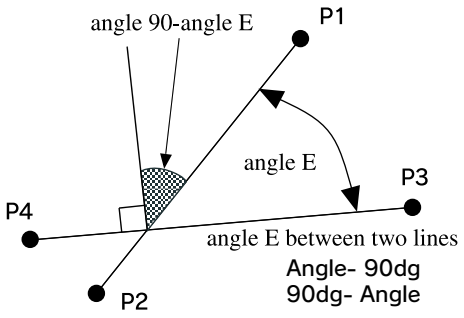
distance P1-P2 perpedicular to P3-P4
P. to P. perpen to Line

Figure 5



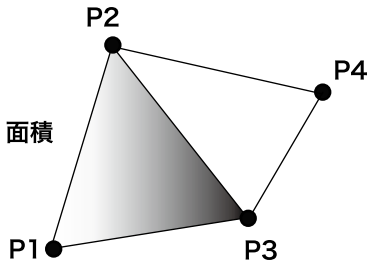
angle between two lines
Angle

Figure 6



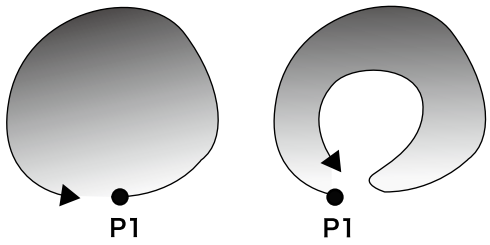
angle E between two lines
Angle- 90dg
90dg- Angle

Figure 7



Area (Heron's Formula)

Figure 8



Area (Area among line)

◎ Explanation of kind of measurement

Point to Point (Figure 1)
Distance between two points.

Point to Line (Figure 2)
Distance from a point to segment.

P. to P. parallel to Line (Figure 3)
Distance between the two points which are parallel to segment.

P. to P. perpen to Line (Figure 4)
Distance between the two points which are perpendicular to segment.

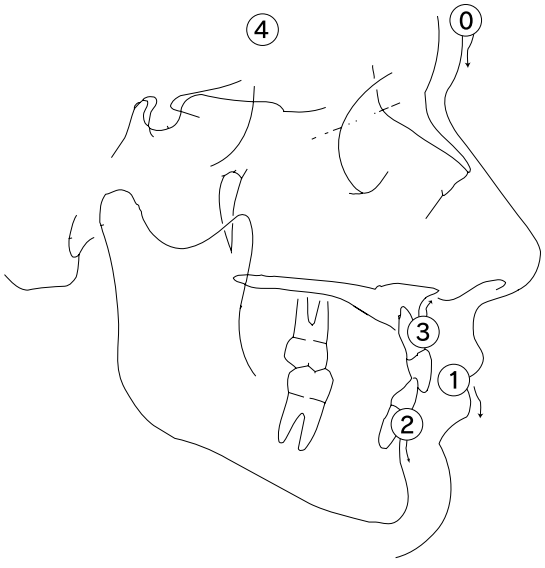
Angle (Figure 5)
An angle between two segments.
Important : When you calculate an angle, a mark of the measurement value is reversed or, in the case of the thing which an angle does not expect, replaces a parameter. (Parameter 1 ⇄ 2, 3 ⇄ 4)When it is predicted that measurement values exceed 180 degrees, please use a supplement.

Angle- 90dg (Figure 6)
Subtract 90 degrees from an angle.

90dg- Angle (Figure 6)
Subtract an angle from 90 degrees.

Area (Heron's Formula) (Figure 7)
The Heron's formula calculates an area surrounded with three points. However, it calculate the area of the irregular quadrilateral when you input the fourth point.

Area (Line) (Figure 8)
Input the number of the line after the fifth which you input in a line into parameter 1.The number of the line is as follows.
0:Upper profile Line 1:Lower profile Line 2:Mandibular Line 3:Maximally Line 4 ～ :Line



#1 - #2
Subtract a measurement item from the measurement item.
Ex:SNA-SNB=ANB

#1 + #2 + #3 + #4
Add a measurement item and a measurement item.

#1* 100 / #2
（# 1 measurement item ÷ # 2 measurement item ） X 100 (%)

1: #1 / #2
（# 1 measurement item ÷ # 2 measurement item） 0.00 ～ 1.0

Calc.
Constant is multiplied, divided, added, and subtracted from the measurement item.
Parameter 1 : measurement item
Parameter 2 : Input 1-4(1: × 2: ÷ 3:+ 4:-)
Parameter 3 : Input the fixed number

Header
Header becomes an annotation and a blank line that the measurement item doesn't enter. Annotation of group of analysis such as Skeletal,Denture,Soft tissue etc.

Formula
Procedure 1-8 are defined internally. In the frame at the right of the calculating formula, number (1-8) of the procedure is input.
Following calculation 1, calculation 2, and calculation 3 are the numbers of the measurement item input to parameter 1-3.

Procedure 1 x=Calculation 1*0.4+Calculation 2*0.2-35.16
ANB Revision=SNA*0.4+SNB*0.2-35.16
Procedure 2 (Cagliari)
x=Calculation 1-(Calculation 2/Calculation 3)
Procedure 3 (Tweed Z angle)
The small angle of the angle with the FH plane of each tangent lines from Soft pogonion to Upper lip and Lower lip.
Procedure 4 (ODI) Dr. Kim's ODI
Procedure 5 (APDI) Dr. Kim's APDI
Procedure 6 (CF) Dr.Kim's CF、
CF=ODI+APDI
Procedure 7 (EI) Extraction Standard Dr.Kim's Extraction Index = ODI + APDI -(130-Interinsaisal) / 5 - Lower-Lip - Upper Lip
Procedure 8 (Adjusted ANB) ANB revision of Freeman

Manual Input
Input the numerical value that I cannot measure from X-rays into the weight or height. You can find "Height and S-N distance" and "the coefficient of correlation of the ANB angle".

point, measurement point.

Attention: You do not seem to confuse a number of analysis point of the input order at inputting a number of measurement measurement point at defining it and trace of Chapter 4 and do it. A number of a measurement point inputs analysis point input from direct trace by a positive number in case of measurement define. The measurement point that it was calculated from input analysis point, and was defined inputs it by a minus. A number and a position of a measurement point are indicated in a figure.

You can use all measurement points got by input 32 analysis point and calculation of 47 in order to make analysis of oneself. You use these analysis point and a measurement point and can define a measurement of the greatest 60 items.

15-2-2 Practice of item define

You start it by selecting 'Tweed' analysis by analysis menu in order to define a new measurement value. You select define 'of' analysis item by define menu next. Dialog box of definition of analysis item appears. You use this dialog box and can define measurement item of maximum 60.

Analysis item number (No. 1), measurement name is indicated by leaning to the left of screen. There is the round button which seems to be added to the 12 radio which can be checked with a mouse under. There is each it for the correspondence to measurement contents of ten different types. Those each is explained from figure 1 figure 10. There are four parameter input boxes (1-4) in the left side.

Please watch definition contents of measurement of Tweed before defining a measurement of oneself. You can watch to click (previous) (next) button on the right of screen. 15 measurement values are registered in Tweed already. It is established whether it is how many registered by number of analysis item under a screen (60 or less).

For example, measurement number No. 1 is defined as angle measurement of ANB. ANB is an angle between two segments of a line of a segment of a line which connects segment of a line and Nasion (# 5) and Sella (# 0) to tie Point-A (# 7) to with Nasion (# 5).

First (next) you push a button and proceed measurement number to No. 16 to add Facial angle (Facial depth angle) here.
All the contents of dialogue box of measurement definition become a blank.

You name a measurement it
You input a new name of measurement item into title box. You input it with Facial angle.

You select a kind of measurement
Because a kind of measurement is angle measurement, a check of radio button clicks an angle.

The input of parameter 1-4
You establish a parameter while referring to a table of analysis point. Table 3 are explanation of parameter to define a measurement of analysis. A number of analysis point refers to table 1, table 2.

You input a number of a point of both ends of the first segment of a line.
(in a box of parameter 1 and 2 , 5 and 9)
You input a number of a point of both ends of the second segment of a line next.
(in a box of parameter 3 and 4 , 6 and 1)
It is possible to define an angle by inputting it.

A measurement name	: Facial angle
radio button	: Angle
Segment of a line 1	Parameter 1: 5 (Nasion)
	Parameter 2: 9 (Pogonion)
Segment of a line 2	Parameter 3: 6 (Orbitale)
	Parameter 4: 1 (Porion)

Input a norm
You need to input a norm into a measurement value.
You input a value provided as a result of study of a user whether a value of a norm depends on literature.As a norm, you have defines according to each race of Westerner, Oriental,Latin or Black. Because Tweed analysis does not compare it with a norm, a column of a norm is turned into blanks. The next standard age, change volume between years, a value of standard deviation do not input it when you do not input a norm.You push TAB key in order to go along from a box to a box.

In this place

White men	:86.5
Japanese	:86.0
Latin	:88.0
Blacks	:86.2

You input as it.

Input standard age and change volume between years (a growth rate)
You input the year change volume thought that the age that a norm is applied and a norm change with growth. If a norm does not change by growth, you will turn a box into a blank.

Input standard deviation
You input standard deviation in order to validate a norm. There is a norm 4 according to a race, but can input only one standard deviation. You input standard deviation value for a racial norm to utilize most.

Input display position of measurement value on trace

You can indicate a measurement value on trace. A value measured by the value that let you in these three boxes of the display place, x direction and y direction decides a position output by a screen and trace of print.

When a measurement value (No.16 SNA) wants to indicate it near a point of intersection of FH plane on trace and Nasion and Point A, you input it with thought, display place -9. You input it as follows in order to show the position that moved to X, Y direction it.

The display place -9 (intersection #1-#6、#5-#7)
X direction -12 (the place to -12 mm)
Y direction -8 (the place to -8 mm)

This indicates a value in 8 mm the left to a place of 12 mm to the lower part of analysis point of -9. Positive number of X direction is indicated here by the right direction of analysis point. Negative number is indicated by the left direction of analysis point. Positive number of Y direction is indicated on analysis point here by a direction. Negative number is indicated under analysis point by a direction. A unit of X and Y coordinate is mm. You turn a box of the display place into a blank when you do not want to indicate a measurement value in trace.

Register changed contents

You click a button (Change) and register measurement value No. 16. This stores measurement value No.16 defined in C.O.I.INFO file newly. You click a button (next) if you want to still add it and go to measurement value No. 17.

Change of number of analysis item (60 or less)

Because you added it one to an item defined already, you change analysis item (60 or less) in 16.

Register changed contents

You click a button once again (a change) and register yourself. This saves number of analysis item registration in C.O.I.INFO file. Facial angle of No. 16 that was registered itself with when number of analysis item was 15 is not indicated.

An end

You click a button (End) and are finished.

15-2-3 Copy a measurement from other analysis

You search measurement define of analysis used already (Soft Tissue analysis is excluded) and copy it and can use it in order to reduce work of a define of measurement. You will turn analysis item into a copied number.

There are five buttons in the left lower part of dialogue window.

(previous) (next) analysis name

You click the previous, the next button in order to select analysis name considered to want to call it.

(previous) (next) the measurement item name

You click the previous, the next button in order to select a measurement value in the analysis.

(copy)

It copies contents.

You move to the input place with a mouse and input it when want to change contents. Please do not forget that you push a (Change) button in order to save.

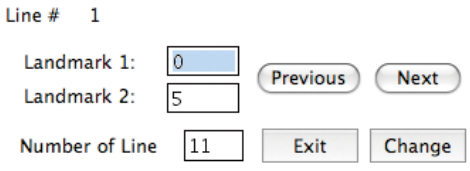
15-2-4 A definition of a segment of a line

You define a segment of a line as facial plane or FH line as an additional line freely, and trace can indicate it. You select a define of display segment of a line by define menu in order to define a line of trace. Dialog box to define a line of trace of Tweed analysis that is to be shown in the following appears.

As for Line # 1 ,0 (Sella) and 5 (Nasion) that is SN plane is defined. Number of a segment of a line is 11.

You click the (next) button if you add it and register with the twelfth. You can pass the line which was defined by default by clicking (next) or (previous). You input two numbers of a point that want to define a segment of a line. You click a Change button after having defined it certainly.You click (next) afterwards. It can define a segment of a line to maximum 25 segment of a line.

You input number of a line if [subj] defined all segment of a line. It is not indicated when you will not enter with 15 if defined 15 segment of a line in all. You click a Change button after the input certainly.



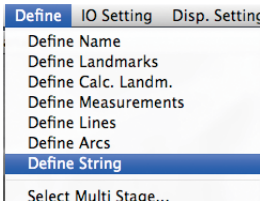
You click END button in order to finish an editing for segment of a line define.

15-2-5 Characters on a trace

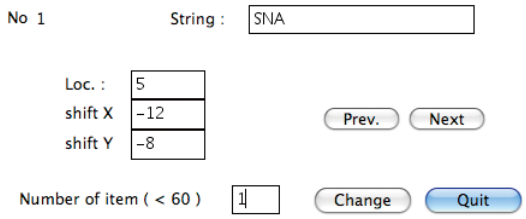
The original analysis definition allows to display the analysis item names on a trace.

Operation

Select the original analysis on the used analysis menu.Select the "Define Strings" on the definition menu.



Input the chracter strings to display, and input a measure point number in a indcation location box, and the distance from the pointi in each X & Y axial direction boxes. Click the change button to register. Note that inputting the data is not enough to register, you should click the change buttonto register.



Click the next button to continue. When the all input of strings have done, register the number of items: ex. Register "3", when you define three character strings. If you don't register it, the character strings doesn't appear.
Click the done button finally.

15-3 Analysis definition of User4

When you want to analyze your original new measurement, there would be a case where you need another analysis points added. So It is possible here to define an arc as a function and add some more analysis points using only this User4. Analysis definition with this User4 is an analysis that a user can add analysis points additionally.. It is possible to add 40 points of analysis points by analysis of User 4. A procedure to define a definition of analysis name and a measurement is same as contents described the above.

For example, a definition adds some measurements point newly to do Sassouni analysis used with surgery orthodontics well.

And it is segment of a line indication of trace by Sassouni analysis, and a display of arc is necessary, but it is possible to define an arc.

15-3-1 Definition of addition point

Except analysis point decided already, you can define addition of new analysis point.

You can define analysis points from 60 to 99 with point define of define menu newly. Shown as follows, and dialog box appears.

- You input a name of new analysis point into name box.
- You click change button certainly.
- You click the next button and input a name of next point.

You click a button previous or next to move to other analysis points.The additional analysis point is 40 points where can be registered itself with begins from No. 60 to No. 90. As for the number of each analysis point, number is indicated by the top of dialog box.

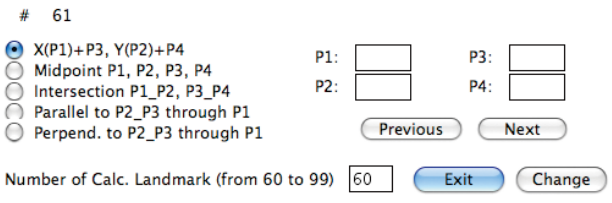
You input number of analysis point (59 or more 99 or less) after a name of each point was defined. In case of 59, it judges that there is not additional analysis point. You input right number and click change button certainly. Number of analysis point is not stored so. You click end button when over in order to go out of analysis point addition editing.

15-3-2 Definition of a point to demand by a calculation

In a define of a measurement point of define menu, a user can define a center of gravity or a measurement point of points of intersection by a calculation from an input point newly.

60 measurement point to demand by a calculation from No. -1 to No. -60 is reserved by a system. A user defines it 39 points from No. -61 to No. -99 and can use it.

Procedure is alike with a define of analysis item of define menu with Chapter 7,2-2 well. You select analysis of User 4 of analysis menu with a mouse. And you select a define of a measurement point of define menu. Dialog box as follows appears.



There are five calculation methods. These detailed figures are shown with figure E from figure A of the following pages.

You click next or previous button till a measurement point to demand by the calculation that wants to be changed appears. You click one radio button. You click change button certainly after you input point numbers, and having defined it. nd you continue a define with the next button.

If making of all calculated measurements point was finished, you input number of total into a box of number of a measurement point to demand by a calculation (60 or more 99 or less). Attention: Number of 59 or less must not input it.

You push change button certainly and enter after the input. You click end button and are finished.

A measurement point of -61 or more -99 is usable by this.

About five calculation methods

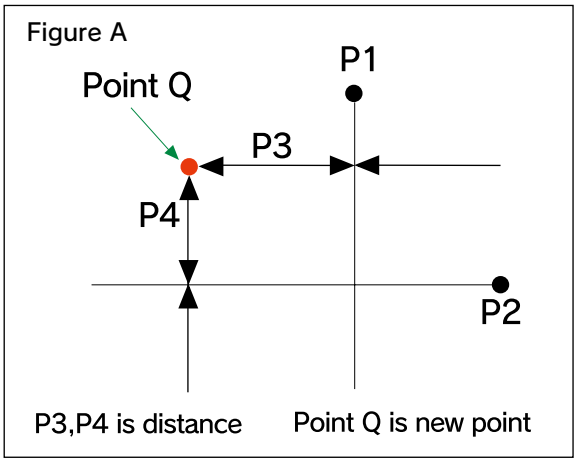


Figure A parallel movement Point Q
P1, P2 are measurement points P3, P4 are distance

Parallel movement (figure A)

A new measurement point (point Q) is the position where P3 (distance) moved to x direction from measurement point P1 (x coordinate).
and the position where P4 (distance) moved to y direction from measurement point P2 (y coordinate). A unit of distance is mm.

You input a number of a measurement point (#) into P1 and P2 of a box. You input a value of an offset of x direction and y direction into P3 and P4 of a box. X axis, the right of horizontal direction is positive. Y axis, the upper of vertical direction is positive .

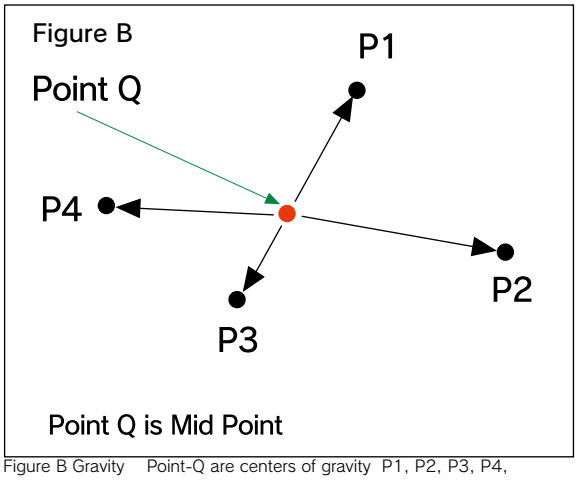


Figure B Gravity Point-Q are centers of gravity P1, P2, P3, P4,

A center of gravity of a point (figure B)

New measurement point (point Q) is the center of gravity of measurement point P4 from point P1. It adds all coordinate value, and it is calculated by dividing it by number of a point.

Coordinate x and y of new point Q, It is defined by

$$x=(x1+x2+x3+x4)/4$$
$$y=(y1+y2+y3+y4)/4$$

You input a number of a measurement point into P4 from P1 of a box. You input 'no' into parameter P3 or P4 when you get two points or three points of centers of gravity.

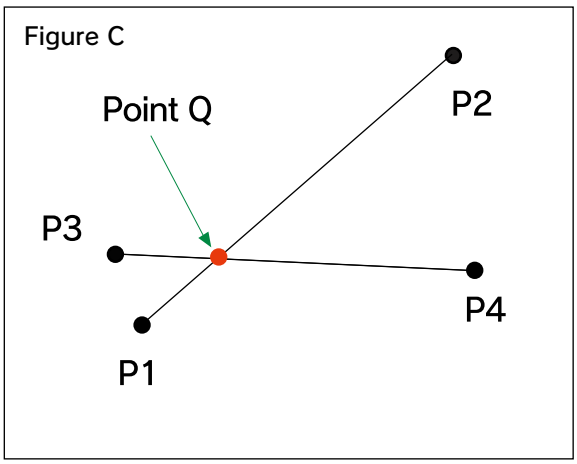


Figure C Intersection Point Q
segment of a line P1-P2, segment of a line P3-P4

A point of intersection (figure C)

A new measurement point (point Q) is a point of intersection of two segment of a line. In other words point Q is a point of intersection of segment of a line P1-P2 and segment of a line P3-P4. You input a number of a measurement point into parameter box.

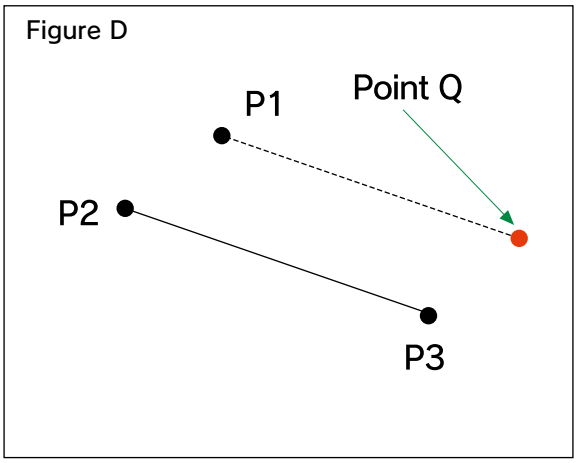


Figure D Parallel point point Q
Segment of a line P2-P3 P1 measurement point

A parallel point (figure D)

A new measurement point (point Q) is the position where distance between P2 and P3 and same distance moved to from P1 on a segment of a line which went through P1 in parallelism in segment of a line P2-P3. In other words, it makes parallelogram P1, P2, P3, Q with these four points. You empty unused parameter box P4.

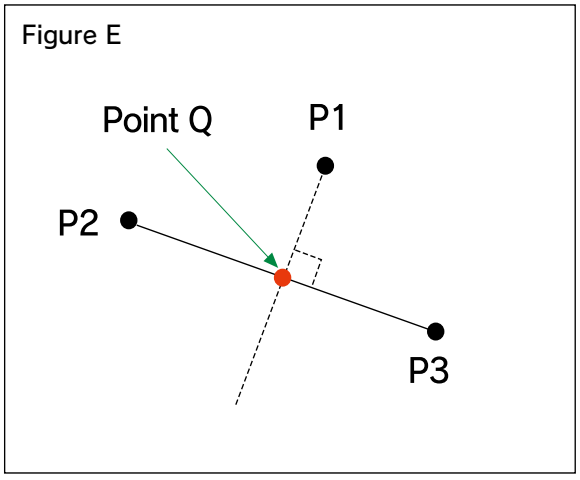


Figure E Perpendicular line Point Q P2-P3 is a segment of a line
P1 is measurement point

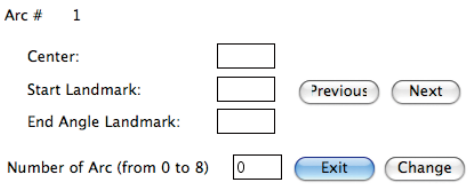
A perpendicular line (figure E)

A new measurement point (point Q) is a point of intersection of a perpendicular line with segment of a line P2-P3 from measurement point P1. You input a number of a measurement point into parameter box P1, P2, P3. You empty unused parameter box P4.

15-3-3 A definition of an arc

You can define a display of maximum eight arc for Sassouni analysis. You define starting point P2 of arc (a measurement point) and terminal P3 of arc (a measurement point) as center P1 of rotation that is to be shown with figure F (a measurement point). An arc is from a starting point to a terminal on the second radius segment of a line.

You select a define of an arc of define menu. The following dialog box appears. Three analysis points of an input or calculated measurement point input a number of the center of arc, a starting point and a terminal. After the input, you click change button certainly.



You input number of arc if finished a define of an arc.
After the input, you click change button certainly.
You click end button, and please be finished.

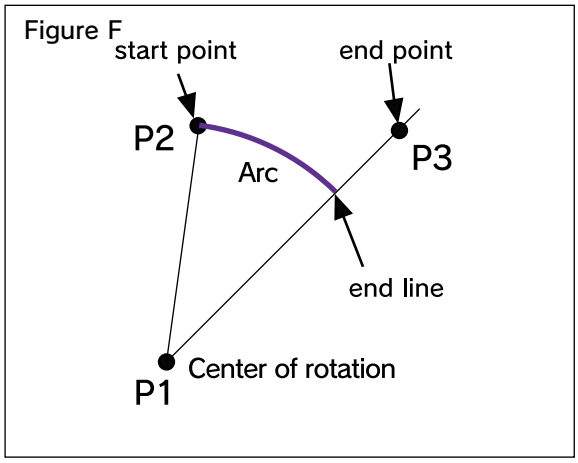


Figure F A display of an arc
P2 is a start of arc, P3 is terminater point of a corner, P1 is the center of rotation

15-4 To return to original Tweed analysis

You did define, but can change it back into a default in we shipment when you want to still replace it by copying original C.O.I.INFO.

Please consult me when you do not understand it with

point define of a define of analysis, a define of a measurement point, a define of analysis item, a define of display segment of a line, a define of an arc.

15-5 Analysis definition of a frontal

A frontal defines analysis as a lateral in the same way, too and has point addition on.

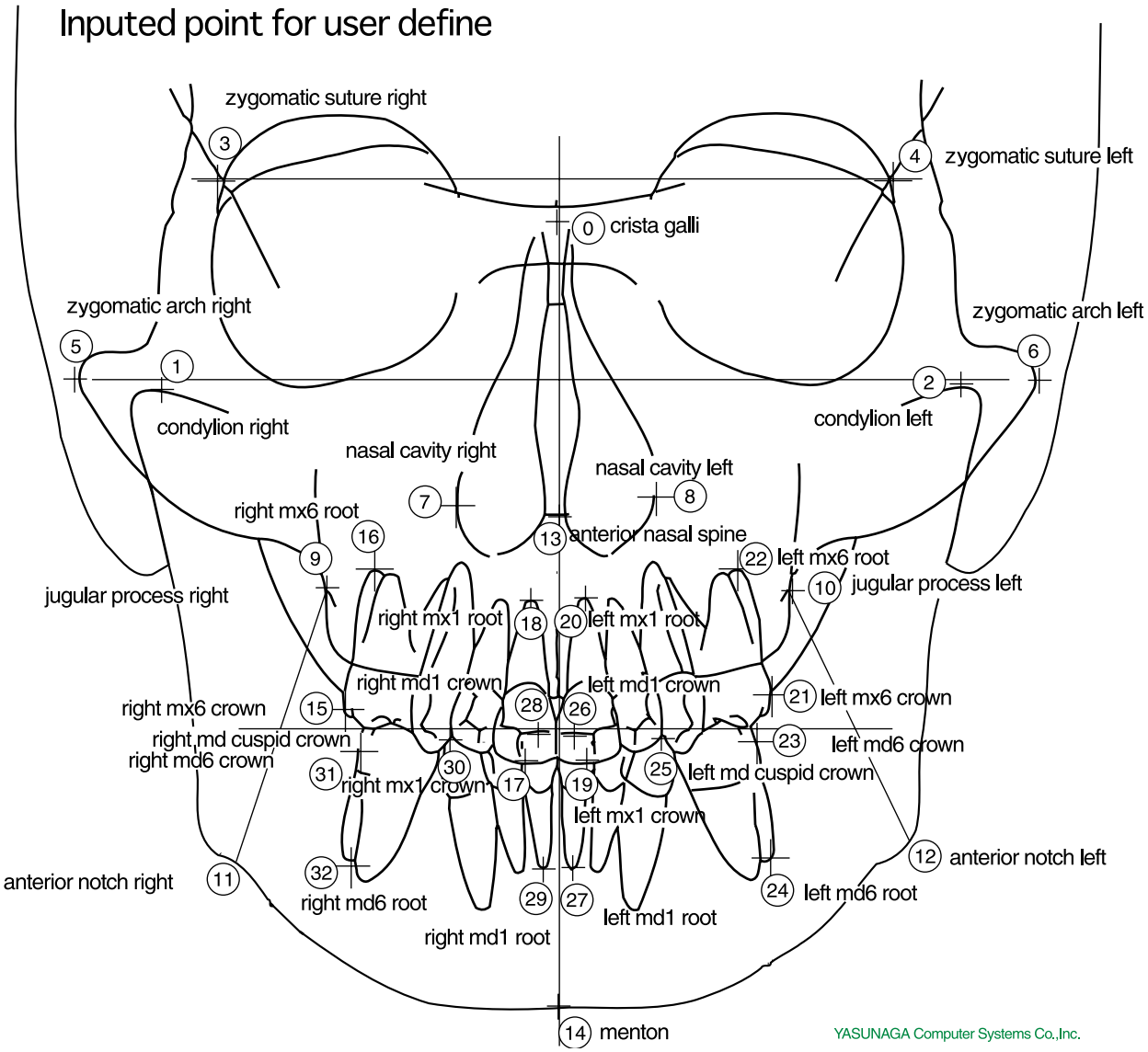
15-6 Analysis definition of a submentovertex

A submentovertex defines analysis as a lateral in the same way, too and has point addition on.

Table 4

33 measurement point for frontal analysis

No.	Name	Explanation
0.	crista Galli	Cg crista Galli
1.	condylion left	most superior aspect left
2.	condylion right	most superior aspect right
3.	zygomatic suture right	zygomatic Bilateral points on the medial margin of the zygomatico-frontal suture, at the intersection of the orbits.
4.	zygomatic suture left	zygomatic frontal suture at intersection of orbits left
5.	zygomatic arch right	zygomatic center of the root of zygomatic arch mid-points, right
6.	zygomatic arch left	zygomatic center of the root of zygomatic arch mid-points, left
7.	nasal cavity right	point on the outline of the nasal cavity at the widest area in frontal perspective right
8.	nasal cavity left	nasal cavity at the widest area left
9.	jugular process right	intersection of zygomatic buttress and outline of tuberosity right
10.	jugular process left	intersection of zygomatic buttress and outline of tuberosity left
11.	antigonial notch right	point at lateral inferior margin of the antigonial protuberances right
12.	antigonial notch left	left
13.	anterior nasal spine	tip of anterior nasal spine just below the nasal cavity and above the hard palate
14.	menton	point on inferior border of symphysis directly inferior to mental protuberance and below center of trigonium mentali
15.	right mx 6 crown	most buccal point at molar crown
16.	right mx 6 root	tip of buccal root of molar
17.	right mx 1 crown	midpoint of incisor edge
18.	right mx 1 root	tip of incisor root
19.	left mx 1 crown	midpoint of incisor edge
20.	left mx 1 root	tip of incisor root
21.	left mx 6 crown	most buccal point at molar crown
22.	left mx 6 root	tip of buccal root of molar
23.	left md 6 crown	most buccal point at molar crown
24.	left md 6 root	tip of buccal root of molar
25.	left md cuspid crown	tip of cuspid crown
26.	left md 1 crown	midpoint of incisor edge
27.	left md 1 root	tip of incisor root
28.	right md 1 crown	midpoint of incisor edge
29.	right md 1 root	tip of incisor root
30.	right md cuspid crown	tip of cuspid crown
31.	right md 6 crown	most buccal point at molar crown
32.	right md 6 root	tip of buccal root of molar


Inputed point for user define
zygomatic suture right
3
4
zygomatic suture left
0
crista galli
zygomatic arch right
zygomatic arch left
5
1
6
2
condylion right
condylion left
nasal cavity right
nasal cavity left
7
8
right mx6 root
16
13
anterior nasal spine
9
22
left mx6 root
10
jugular process left
jugular process right
right mx1 root
18
20
left mx1 root
right md1 crown
left md1 crown
21
left mx6 crown
right mx6 crown
15
28
26
right md cuspid crown
23
left md6 crown
right md6 crown
31
30
25
left md cuspid crown
right mx1 crown
17
19
left mx1 crown
12
anterior notch left
anterior notch right
11
32
24
left md6 root
right md6 root
29
27
left md1 root
right md1 root
14
menton
YASUNAGA Computer Systems Co.,Inc.

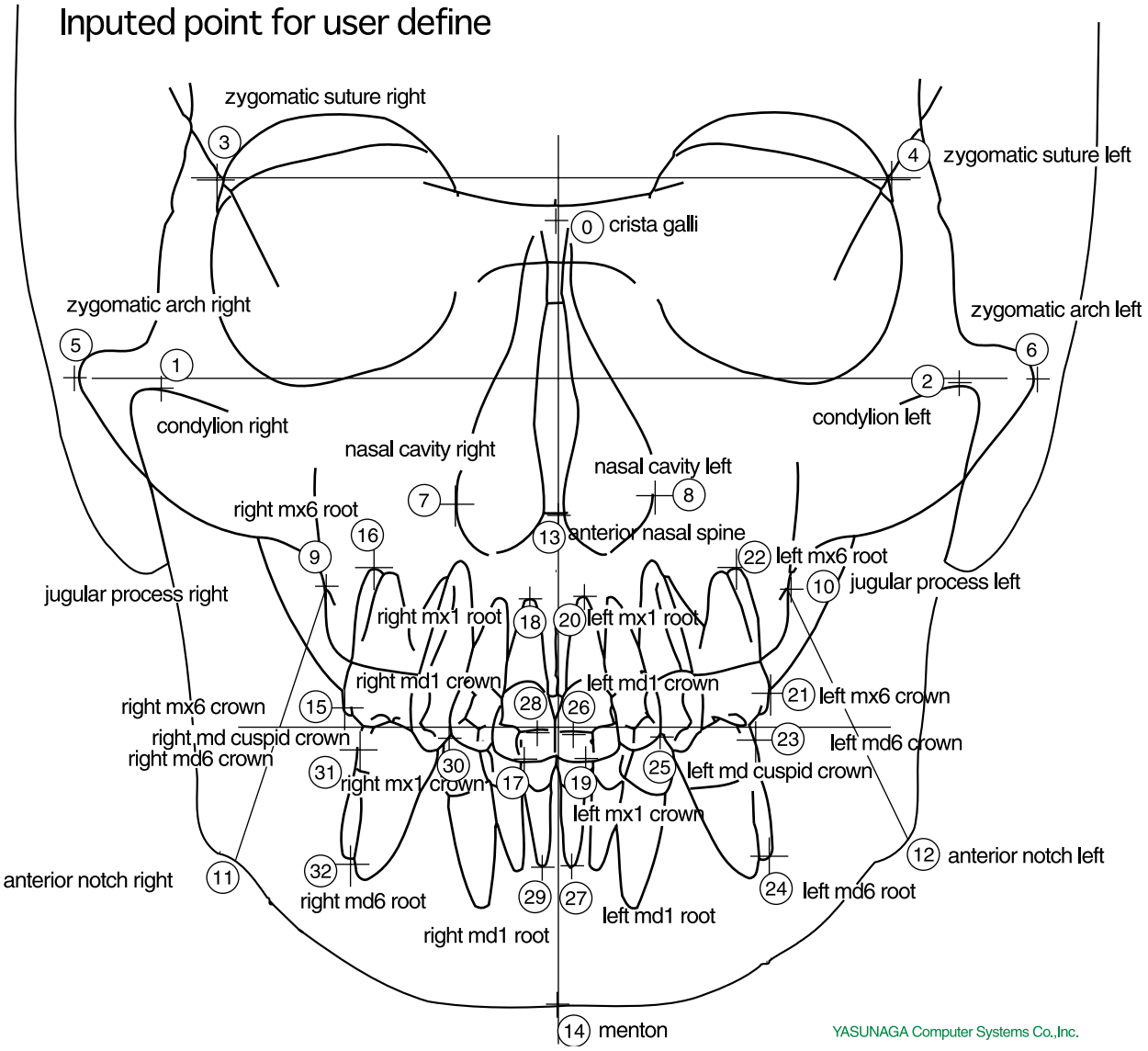
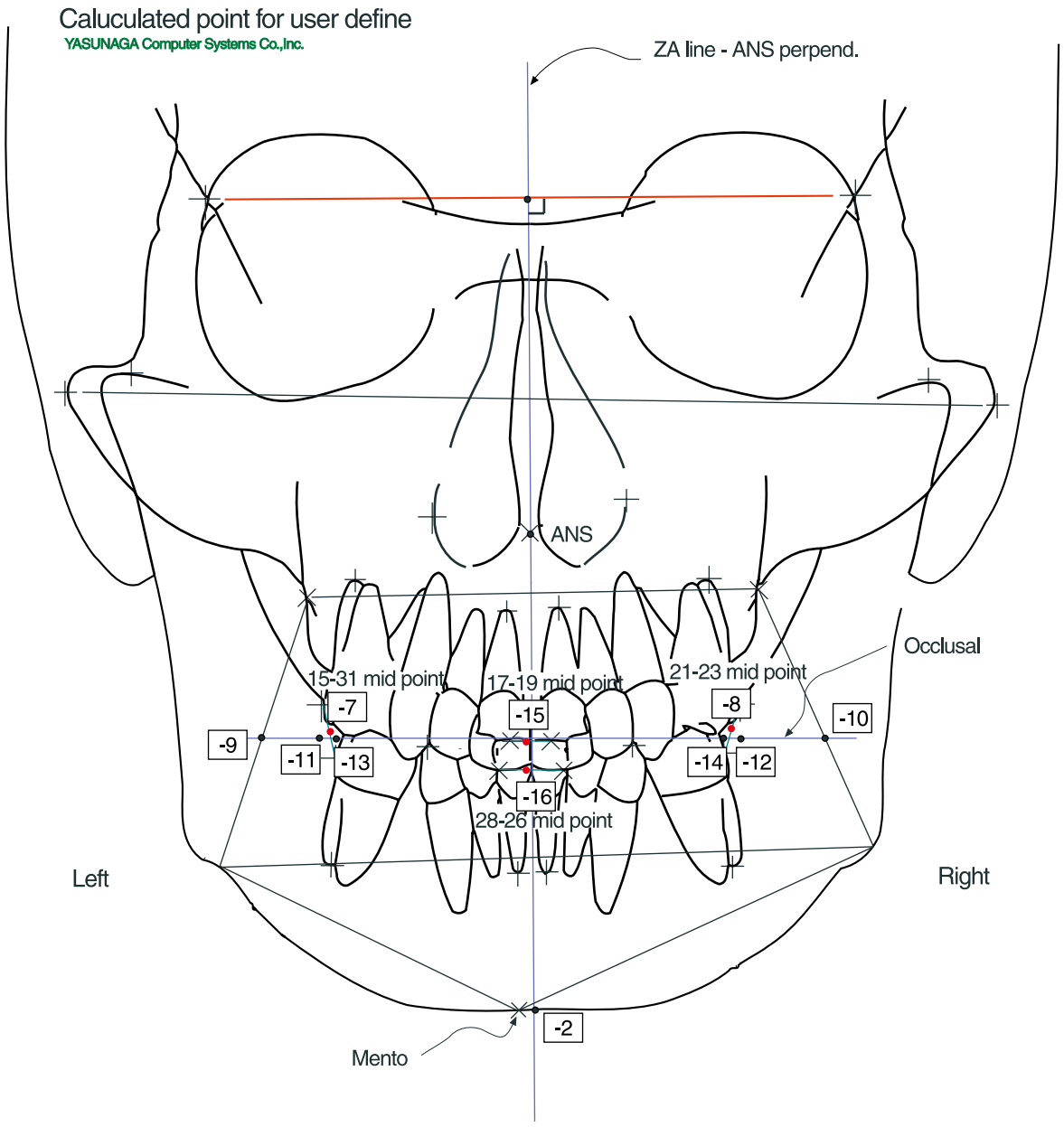


Table 5

25 points that were defined for frontal analysis define

-1: perpendicular from ANS to ZL-ZR plane
-2: perpendicular from ANS to ZL-ZR plane (menton)
-3: perpendicular from Co-Left to Cg-ANS Line
-4: perpendicular from Co-Right to Cg-ANS Line
-5: perpendicular line from ZL to Cg-ANS Line
-6: perpendicular line from ZR to Cg-ANS Line
-7: left molor (#15-#31) mid point (occlusal left)
-8: right molor (#21-#23) mid point (occlusal right)
-9: intersection of occlusal plane and Frontal facial plane left
-10: intersection of occlusal plane and Frontal facial plane right

-11: perpendicular line from left mx6 crown to occlusal plane
-12: perpendicular line from right mx6 crown to occlusal plane
-13: perpendicular line from left md6 crown to occlusal plane
-14: perpendicular line from right md6 crown to occlusal plane
-15: upper incisor(#17-#19) mid point
-16: lower incisor(#28-#26) mid point
-17: perpendicular line from ME to Cg-ANS line
-18: perpendicular line from ZA to Cg-ANS line
-19: perpendicular line from AZ to Cg-ANS line
-20: perpendicular line from NC to Cg-ANS line
-21: perpendicular line from CN to Cg-ANS line
-22: perpendicular line from JL to Cg-ANS line
-23: perpendicular line from JR to Cg-ANS line
-24: perpendicular line from AG to Cg-ANS line
-25: perpendicular line from GA to Cg-ANS line



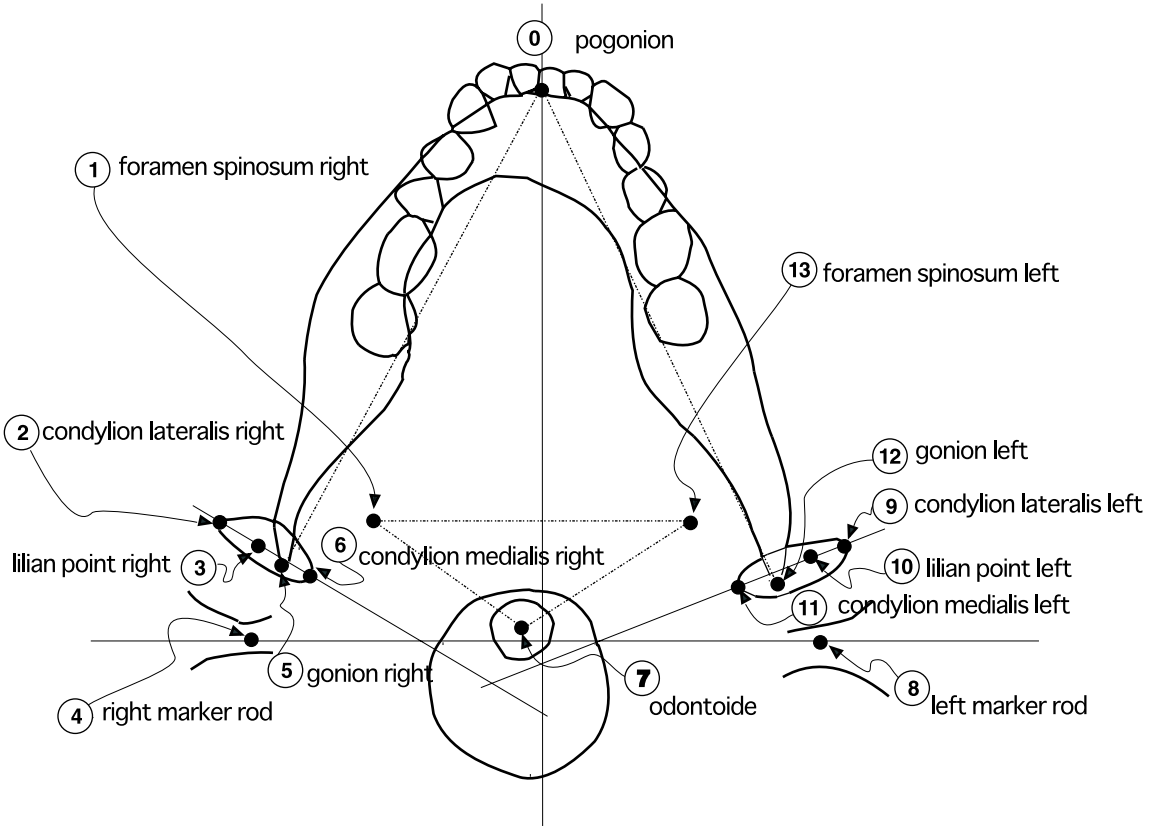


Table 6

14 measurement point for submentovertex analysis

0. Pogonion
1. Foramen spinosum right
2. Condylion lateralies right
3. Lilian point right
4. Right maker rod
5. Gonion right
6. Condylion mediais right
7. Odontoide
8. Left marker rod
9. Condylion lateralies left
10. Lilian point left
11. Condylion mediais left
12. Gonion left
13. Foramen spinosum left

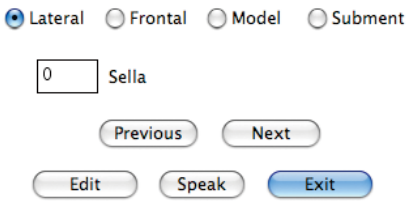
15-7 Recording of voice

Macintosh:

You edit it and can register a sound at inputting a point with a voice of user confidence.

A sound is registered with C.O.I.Sound file. You will take backup before doing sound editing.

You use sound of define menu. In shipment, a lateral, a frontal, a sound of each analysis point of a submentovertex are registered. You click Try button to check a sound.
A Sella and a sound do it in an example of lower part.
You can see you off with the next button successively.



You will try to put a real sound next. You click radio button of lateral frontal model submentovertex of sound editing for the purpose. You select analysis point with the front and the next button. You try to check actually, what kind of sound is registered with the try button.
The following dialogue is indicated when you click sound editing button.

Loud speaker mark changes by size of voice when you sends in a voice toward computer attached microphone. You push recording button and tape it. You stop temporarily when you push recording button once again. You push play button and confirm contents. You push save button if good and enter.

It returns in a dialogue of a point.
You confirm it with Try button.
You push sound editing when you want to do sound editing sequentially and can follow. You end recording of voice with end button when you want to be finished.

Windows version: please read instructions of SoundBlaster of Windows.