



User Manual for Jaw-X 1.3 (US Patent #7848551)

2011-06-04

Installation

Insert CD in the computer or start installation by clicking the *Install.exe* file. You will need to install the software on each machine you want to run it on. After installing the first computer you may create the Jaw-X database where all tests will be stored. If you are running a network it is practical to create the database on the server, please see instructions below.

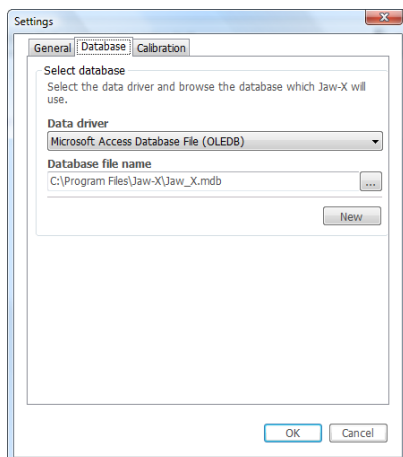
In case you are running the imaging software DentalEye of version 3.1.647 or higher, a new plug-in will automatically be added to DentalEye that makes the integration easy. From DentalEye just mark the image you wish to measure and click the **Jaw-X** icon. Jaw-X will be launched and the image is automatically transferred as well as the patient data.

Setting up Jaw-X

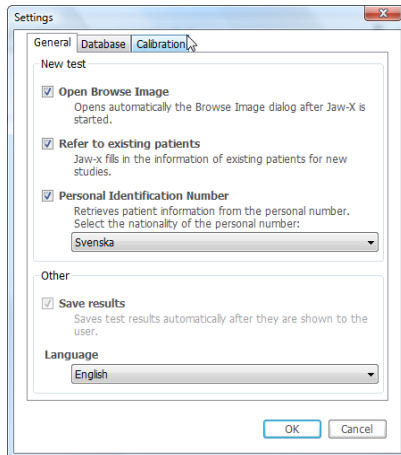
Launch Jaw-X from the icon on the desktop.



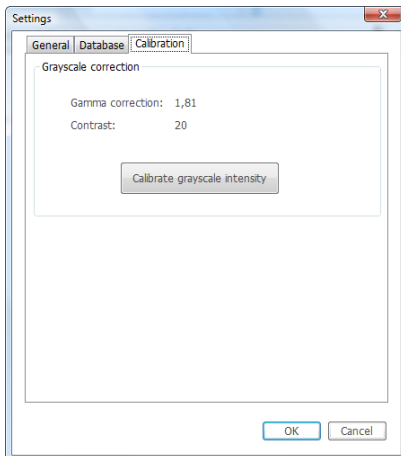
At the upper right in the Jaw-X window you will find the **Options** icon.



The *Database* tab takes you to Setting up a connection with an existing Jaw-X database or creating a new database by clicking on *New*. It is advisable to have all computers in the practice to store in the same database.



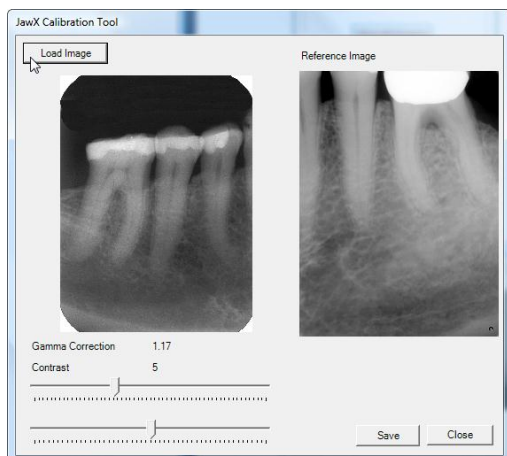
The *General Settings* tab takes you to some options that will help you to set up Jaw-X for your needs.



Select the *Calibration* tab where you will calibrate the image settings from a reference image. The calibration is important since different sensor systems, image plate systems and software image enhancement tools result in a variation of image quality.

Here is where the standard calibration for the computer is done using an image exposed with the X-ray system you normally use. Make sure that the image is exposed in the normal place (between the premolars in the **mandibular**), use normal settings.

NOTE If you need to calibrate again, maybe just for one particular image, there is an option available in the menu where you measure an image.



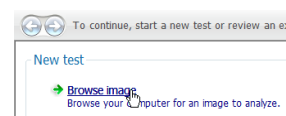
Press the **Calibrate grayscale intensity** button. Then press **Load image**, browse for and select a typical image with the typical settings that you will be using for the tests.

There are two sliders below the left image. The task is to adjust the image with the sliders so that it will be equal to the reference image in the right window. Most important are the root and bone areas of the image.

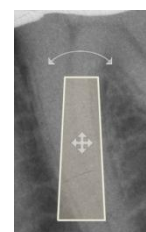
Save and close when you are ready. From now on this will be your standard setting for grayscale intensity.

Workflow without direct integration

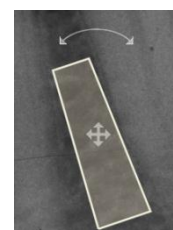
1. Export the image to be measured from the imaging software. A folder designated for exported images will make it easier to find it from Jaw-X.
2. Launch Jaw-X.
3. Click on **Browse image**.
4. Select image or click the **down** arrow to browse for the folder containing the images.



5. Drag the measuring template to a place between the premolars in the lower jaw using *drag and drop*.



6. Rotate the measuring template by dragging in the area where the bent arrow is displayed. It is important to place the measuring template where the bone structure is visible. The software will ignore the root area, thus the measuring template can even be placed partly over the root area, if the space is too narrow.



*Place the base of the measuring template above apex as high up as possible but still below the **approximal compact**. If the image is not good enough it is necessary to retake.*

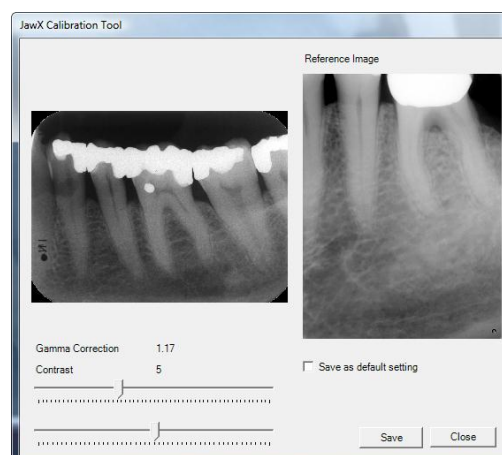
7. When you are ready click the *right* arrow at the top left to continue to the next page.



8. If the brightness or contrast of the image differs from the usual, you need to calibrate this particular image. This is done with the calibration tool, click the **calibration** icon at the top right side of the window.



9. The same calibration tool is launched as when you did the initial calibration when you started with Jaw-X. You will find the description under *Setting up Jaw-X* above. Use the slide bars to make the left image as equal as possible to the reference image on the right. This calibration will be used for this image only. However, if you want to make



this calibration your new standard you can tick the box *Save as default setting*. After clicking *Save* and *Close* you are back at the test window, see note 5 above.

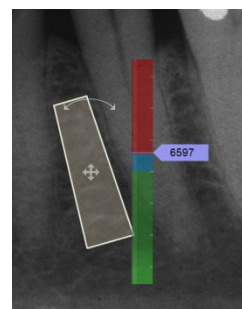
10. When you have placed the *measuring template* click the right arrow to continue.



11. The next window shows the result of the analysis. The result is presented as a value and placed on a scale to indicate the risk. **Red** signifies that the result indicates weak bone and thus a risk for osteoporosis.

Blue indicates that the result is borderline.

Green indicates that the bone is healthy.



NOTE Continue to the next window. Answering the questions will add quality to the result and make it more accurate.

12. In this window, add the information regarding the patient and the image. When the compulsory fields have been completed the right arrow at the top is lit up and you may proceed to the result page.

Patient Information 2009-02-24

Complete the following fields.

Patient ID: 21
 Name: Ann Fan
 Gender: Female
 Age: 63
 Weight (kg): 58

Test information 2009-02-24

Complete the following fields.

Image date: 2008-09-30

Have you suffered any bone fractures?
 Yes No

Have you, your parents or siblings suffered any bone fractures?
 Yes No

Have you been or are you under treatment with cortisone or anti-depressive medicine?
 Yes No

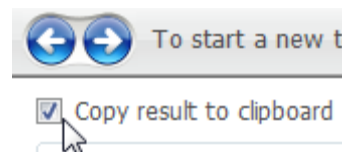
Do you smoke tobacco regularly?
 Yes No

Do you suffer from or have suffered from eating disorder (Anorexia nervosa)?
 Yes No

Notes

When you continue to the next step the results from the bone measure is compiled with the information in the anamnesis. The different variables combined provide a more accurate result than the bone measurement alone.

13. If the box *Copy result to clipboard* is marked, you will be asked if this is ok, since this will overwrite the current content of the clipboard. The purpose of using the clipboard is to allow you to paste the result to the practice management system or to a Word document.



If you want this every time click on *Always* and this will be the default procedure. If you do not want it, unmark the box and you will not be prompted to make the choice again.

14. The result page presents the data that was used and a result derived from the test. Jaw-X presents the result as one of three alternatives:

No probable risk.

Observation is recommended.

It is recommended that the patient undergoes further examination.

The result is weighed with the data entered and the weight/age factor. They may escalate the result. Thus a patient with a good trabecular structure but other negative data will be presented with the result *Observation is recommended*.
The result is automatically stored in the database.

15. The result may also be printed by clicking on the **Print** icon.



Workflow with direct integration to an imaging software

All dental imaging software may be integrated with Jaw-X, we will provide the necessary specification of imaging software companies.

1. In the imaging software mark the image to be used for the measure, then click the **Jaw-X** icon or menu entry.

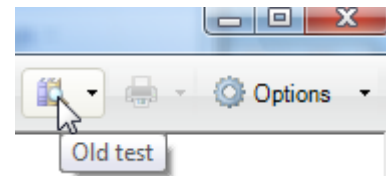
Next step, see note 5 in the list above.

In the information window most data are already filled in, since they have been copied from the imaging software.

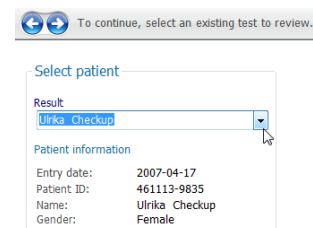
Retrieve old test

As Jaw-X is launched without selecting an image but closing the *Browse for an image* window. The icon for **Old tests** will be lit up.

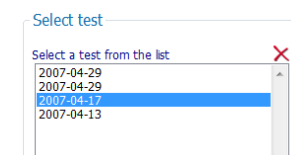
Patient data, image information and result are saved in the database and may be retrieved, if needed. One purpose of doing this is to add values from a test performed at a hospital or health center, e.g. a DXA test.



Select patient from the list of previous patients by clicking the *down* arrow beside the name field.



Below you can see a list of all tests done on this patient. Select one. If you need to delete a test, mark the test and click the red X.



Jaw-x

At the bottom of the window there is a place to enter the result from other tests performed with other equipment. This entry is available for quality assurance. Click the **Save** button to save.

Report from medical center			
Where	Type	Result	
<input type="text" value="Karolinska Hospital"/>	<input type="text" value="DXA"/>	<input type="text" value="xxxxx"/>	<input type="button" value="Save"/>