

**CHARACTERIZE AND VISUALIZE ORBITAL BLOWOUT FRACTURES**

- One click per orbit
- Compare the size and shape of the healthy and broken orbits
- Visualizations for fracture area, volume and collapse comparisons



**HOW TO GET STARTED**

To start using the software, you will need three things:

- 1) **The installation file** - it is downloaded from the Disior Customer Portal
- 2) **The SSH key** for the secure connection – it is sent to you by email from Disior
- 3) **The Customer ID** – it is sent to you by email from Disior

Go to the Disior Customer Portal, and download the software by using the installation link. Once you open the installation link, it will ask you to “Run” or “Save” the file. Choose Save, and follow the instructions.

Open the installed application, and select “OK”, “Run” or “Next” to all questions. Please note: If the Windows Defender doesn’t give you the “Run” option automatically, you need to click the “More info” link to get the “Run anyway”-button visible.

Once you have installed and run the software, it will create a folder for your computer:  
C:\Users\\AppData\LocalLow\DisiorAnalytics\Orbita

You need to save your SSH key file, called “id\_rsa”, to that folder. The file has been sent to you by email from Disior.

If you can’t find the folder, it might be hidden because of your computer settings. For instructions on how to find hidden files, go to: <https://support.microsoft.com/en-us/help/4028316/windows-view-hidden-files-and-folders-in-windows-10>

When you open the software for the first time, it will ask for the Customer ID. The ID has been sent to you by email from Disior. You only need to enter it once, when you run the software for the first time.

Your software is now ready for use.

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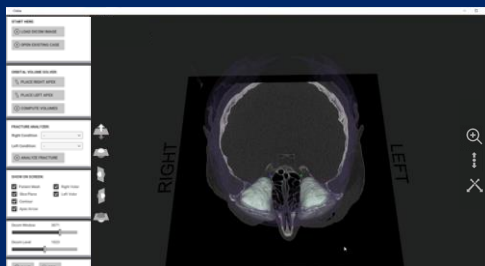
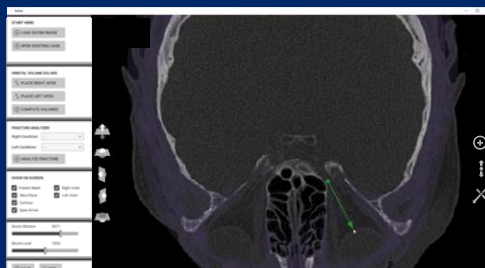
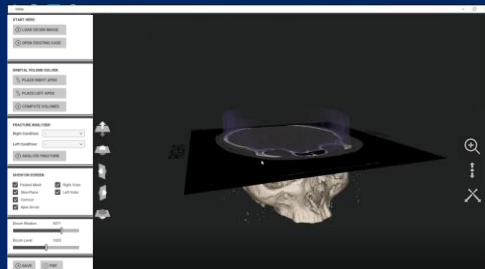
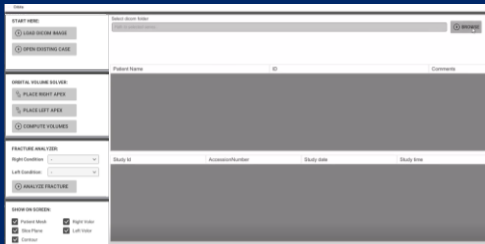
**System requirements:**  
Standard Laptop or Desktop PC with Windows 10  
8 GB RAM  
Dedicated Graphics Cards with 1 GB of memory  
Minimum 1 GB Hard Drive  
Internet connection to Disior Cloud

# UNLEASH THE FULL POTENTIAL OF YOUR IMAGE DATA

## Disior Bonelogic CMF – Quick Guide

### How to Select the Optimal DICOM File

- Use image data set that has been scanned using hard reconstruction kernels
- Select the original primary axial series for optimal use
- The effective slice thickness should be less than 1 mm
- Make sure that no data is missing from the data set



### Load the DICOM File

To get started, open the program on your PC or laptop, and load the DICOM file you want to examine. The program works with standard DICOM data sets, and is not CT scanner specific.

### Examine the CT scan in 2D and 3D

The program automatically creates a model out of your scan. You can examine it either as a 2D plane in coronal, sagittal and axial directions; as a 3D model, or as a combination of the two. On the viewport, you have icons and tick boxes to easily change from one view to another.

### One Click for the Orbital Cavity

To examine the orbital cavities, you set the left and right apex points in place. One click to place the point, and an arrow to give the direction towards the anterior closing.

See the last page for detailed instructions on how to place the Apex Points.

### Set the Wilkman Radius

When the Apex Points are in place, you are asked to set the Wilkman radius, together with Bone and Air Threshold values. Use the default values to get started, except for CBCT scans, where Bone Threshold is recommended to be set at 300 HU.

### The Orbital Volume Models

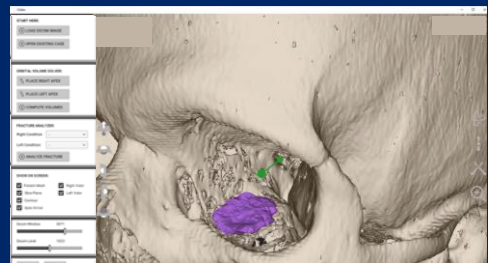
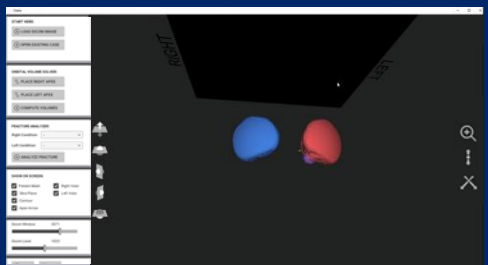
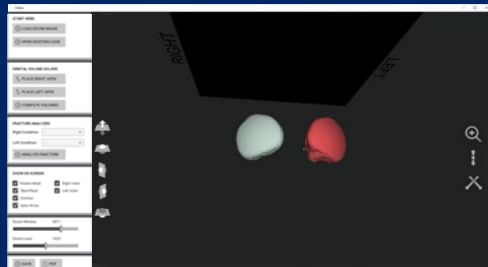
The program tracks the orbital walls for you, and the anterior closing according to a pre-set radius. It shows the shape and volume of the orbital cavity as a "Volor", a 3D model of the area.

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### The Shortcuts

Examine the slice and 3D views with icons and mouse. You can also use the following shortcuts:

- Rotate the item with mouse left key
- Release the icon function with mouse right key
- For precise scrolling of the slice plane, use shift + mouse left key
- For fast scrolling of the slice plane, use the mouse scroll

### The Contours to Track the Shape

Click to hide the volume models, and you can see the contour lines that follow the orbital walls. You can examine the contours both on the slice planes and in 3D view.

### Analyze the Differences

To run the Analyzer, you choose the broken and the intact side, and check them in on the left-hand side panel menu. Click "Analyze" to start tracking the differences in the shape and place of the orbital cavities.

### Examine the Collapsed Area

The Analyzer compares the two orbits. It calculates the difference in size and shape, and as a result, gives you the shape and location of the area.

### Examine the Collapsed Area in Slice Planes

To view the contour lines and the 3-dimensional intersection, that marks the collapsed area, you can either use the slice planes, the 3D view, or a combination. The tick boxes on the left side menu allow you to change views.

### Examine the Collapsed Area in 3D

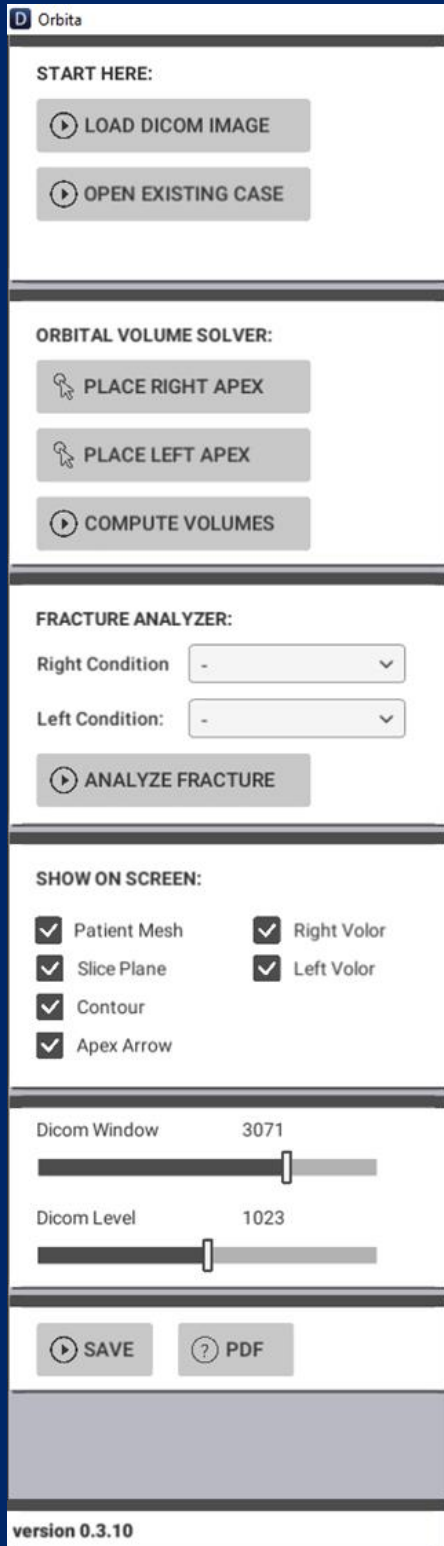
Whether viewing in 3D or slice planes, you have the options to zoom, pane and rotate for the optimal visibility. Viewport icons allow you to examine the image fluently, and quickly change from one view to another.

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## The Control Panel

### Start Here

Load the DICOM image from your computer here, or start working on a previously saved case.

### Orbital Volume Solver

Place the apex point at the nerve canal opening, and point the arrow towards the orbital cavity.

One left-click to place the starting point, and another left click to set the arrow end.

When both apex points are on place, click “Compute Volumes” for the program to start calculating the volumes for the orbital cavities, or “the Volors”.

### Fracture Analyzer

The Analyzer compares the two volors, and calculates the difference in size and shape.

To get started, you need to check the “intact” and “broken” orbits with drop-down menus.

### Show on Screen

The tick boxes allow you to switch elements on and off:

**Patient mesh** is the 3D view of the skull.

**Slice Plane** is the 2D plane. You can switch between axial, coronal and sagittal planes.

**Contour** is the line that tracks the orbital walls on the 2D plane.

**Apex Arrow** hides or shows the Apex Points and Arrows, that you have marked.

**Left volor / Right volor** let’s you choose whether you view the volors in 2D / 3D views.

**Fracture** let’s you choose whether you view the 3D fracture collapse area from the Analyzer.

### Dicom Window and Dicom Level

Adjust the Dicom Window and Dicom Level from the sliders.

### Save and PDF

Use the save-button to save your case, and PDD-button to export it tp a .pdf report.

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## How to Set the Apex Point

### The Location

The Apex points are placed at the optic foramen, or the opening to the optic canal.

Place the two Apex points at the same level of depth and in the middle of the optic canal opening. As the Apex Points, together with the Wilkman Radius, define the anterior closing, the precision in placing these is important.

### The Instructions

**Image 1:** The Apex Point should be placed at the opening of the optic canal.

**Image 2:** This view shows the Apex Point in place with the 3D view (Patient Mesh), without the Slice Plane.

**Image 3:** Zoom-in of the correct location for the Apex Point, marked green. The red points are incorrect.

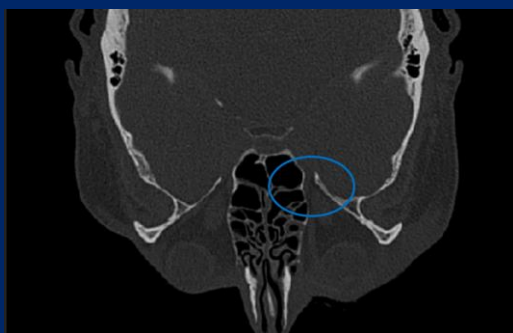
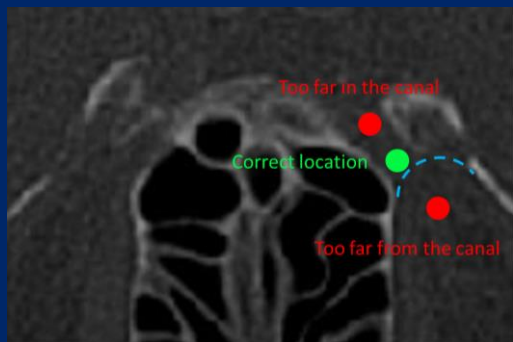
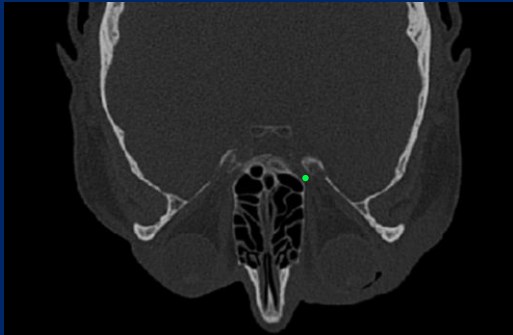
**Image 4:** This view is below the optic canal and shows the superior orbital fissure. Do not place the Apex Point at the opening of the superior orbital fissure or the inferior orbital fissure.

You can scroll the slices in fast steps by using the mouse scroll.

For precise scrolling, either activate the "Move the slice" icon on the left side of Viewport for scrolling with mouse left-hand key, or press down the control key and scroll with the mouse left-hand button.

If the patient's head has been tilted left or right, you might need to move the axial plane up or down between marking the first and the second apex point.

If the patient's head has anterior or posterior tilt, it might require extra attention to get the apex points placed correctly.



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