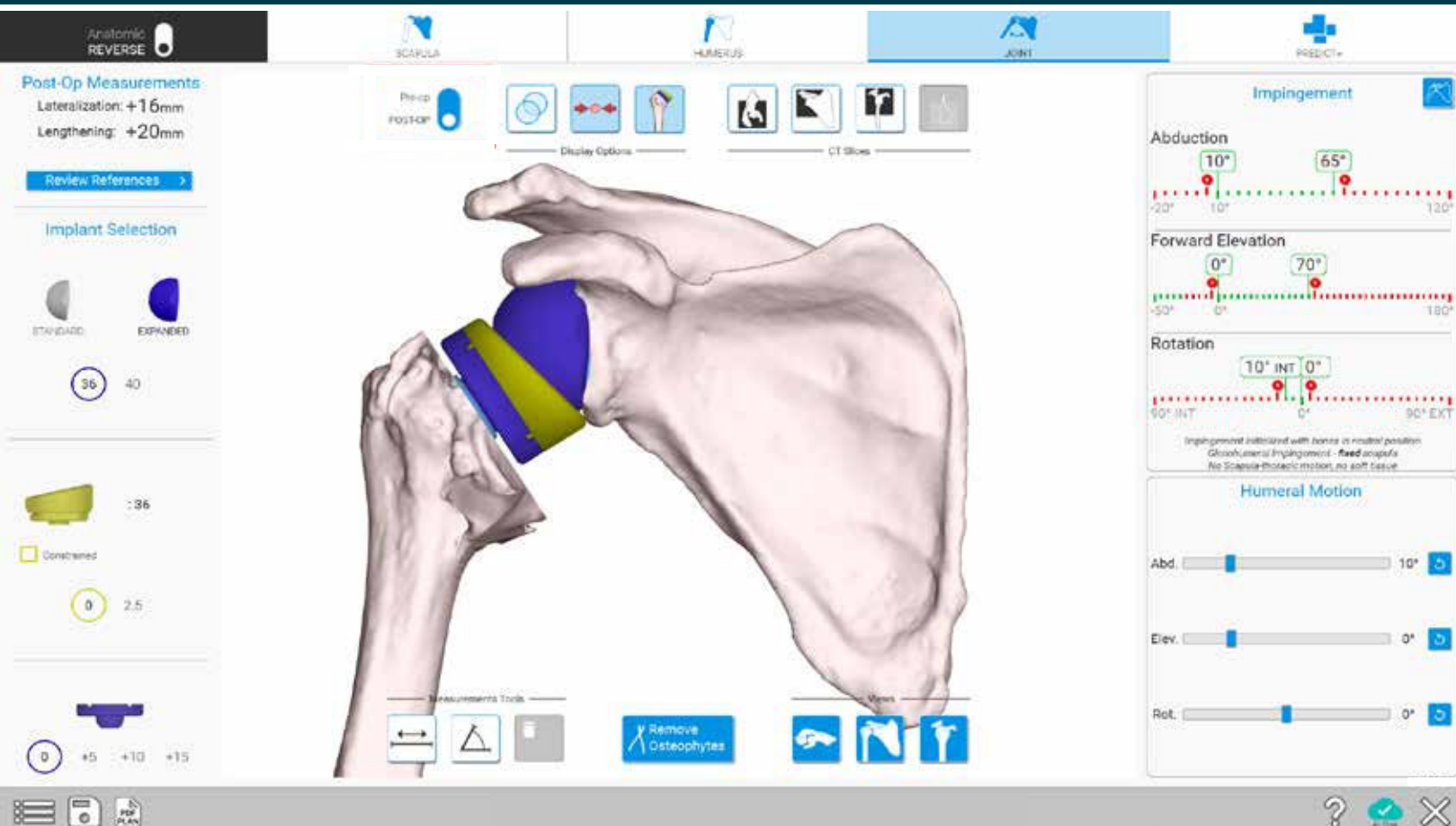


SHOULDER

Software Guide



ai | Shoulder
Planning
App 3.2
& 3.2.1

TABLE OF CONTENTS

SETTING UP & GETTING STARTED	3
DOWNLOADING SOFTWARE	3
LOGGING IN.....	4
CASE MENU.....	5
CREATING A CASE.....	7
GPS SHOULDER CT PROTOCOL	7
CASE CREATION.....	9
IMMEDIATE RECONSTRUCTION.....	11
PLANNING WITH THE SHOULDER PLANNING APP	15
SCAPULA	15
HUMERUS.....	22
JOINT.....	27
PLANNING PDF REPORT	30
CASE EXPORT FOR GPS.....	33
USB REQUIREMENTS & SHORTCUTS	34

The Shoulder Planning App is available for MAC and PC.  

Planning software minimum requirements:

- Shoulder Planning App is qualified for Windows 10 and Windows 11 environments as well as Mac OS 15 (Sequoia) and Mac OS 26 (Tahoe).
- It is recommended to have 8GB or more of RAM, and a screen resolution of a least 1280x800 pixels.
- It is recommended to have at least 10Gb free space on disk.
- It is mandatory to have Administrator rights during software installation.
- If network security measures are implemented (Web filtering, firewall, proxy) it may be necessary to ask the IT department to ensure communication (https, port 443) is possible.
- Graphical hardware must support at least OpenGL v4. Graphics cards and chipsets made after 2010, with up-to-date drivers, should satisfy this condition.

SETTING UP & GETTING STARTED

DOWNLOADING SOFTWARE

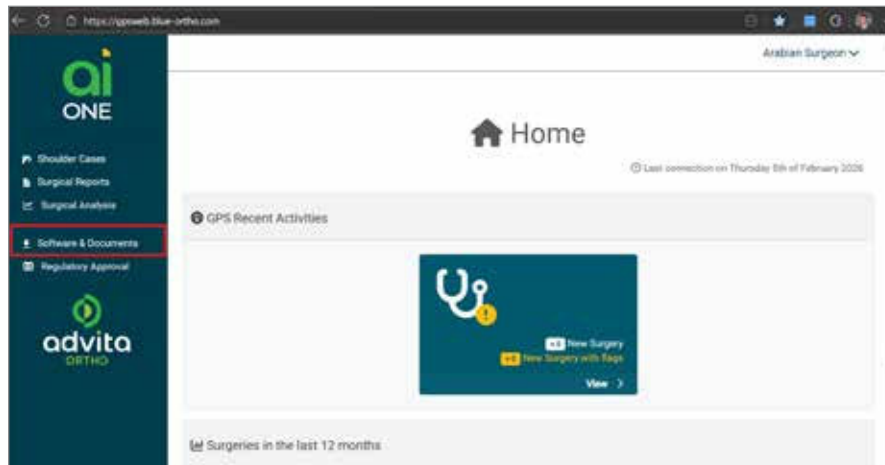


Figure 1

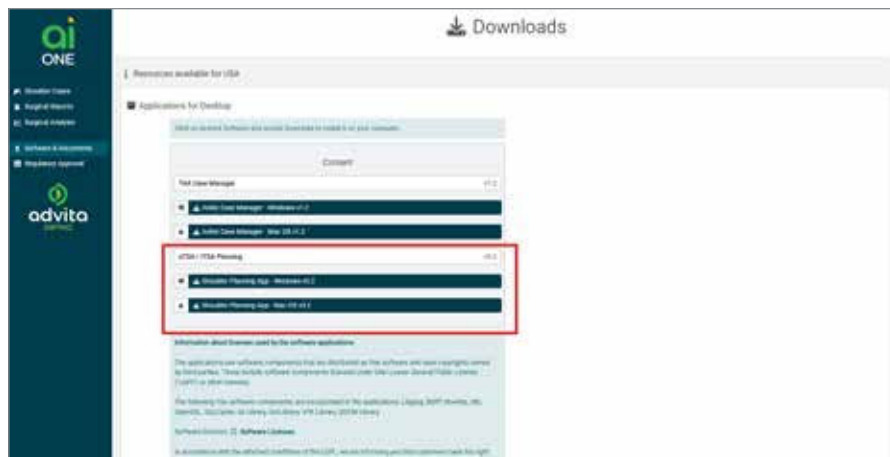


Figure 2

SETTING UP & GETTING STARTED

DOWNLOADING SOFTWARE

Using a web browser (i.e. Chrome, Edge, Safari) navigate to www.aione.advita.com and log in using the surgeon's AI One credentials. Then proceed to click the Software & Documents tab on the left (Figure 1).

Once selecting the Software & Documents tab, click on the blue Shoulder Planning App software download that matches the computer's operating system (Mac or Windows), found under the **Applications for Desktop** section (Figure 2). The installation process will now begin.

Double-click the downloaded file once complete, select **Run** on a PC, and accept any prompts that appear on the screen to complete the installation. If using a Mac, be sure to drag and drop the Shoulder Planning App application tile into the **Applications** folder on the Mac.

SETTING UP AND GETTING STARTED

LOGGING IN



Figure 3

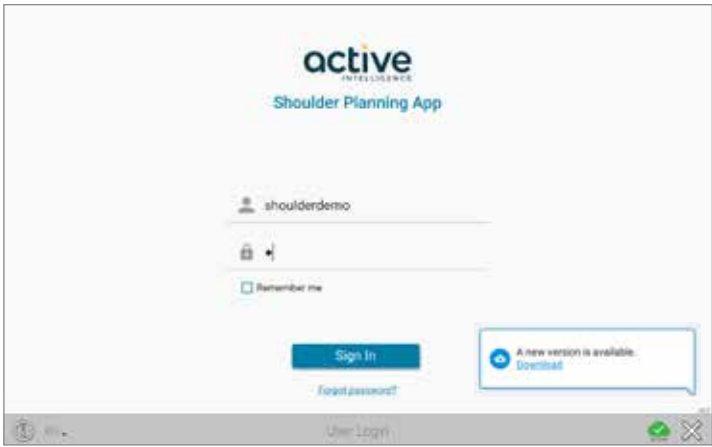


Figure 4

LOGGING IN

The surgeon must have a AI One account to access the Shoulder Planning App and the GPS Shoulder Application. Upon launching the preoperative planning software, a Login Screen will appear and prompt for login credentials (Figure 3).

Note: The login credentials are the same as their Chime and AI One accounts.

Note: Clicking on the ⓘ button displays information about the software, including the version.

Note: If a new software update is available, a pop up will appear on the bottom right corner of the Shoulder Planning App prompting the surgeon to download the latest version (Figure 4).

SETTING UP AND GETTING STARTED

CASE MENU

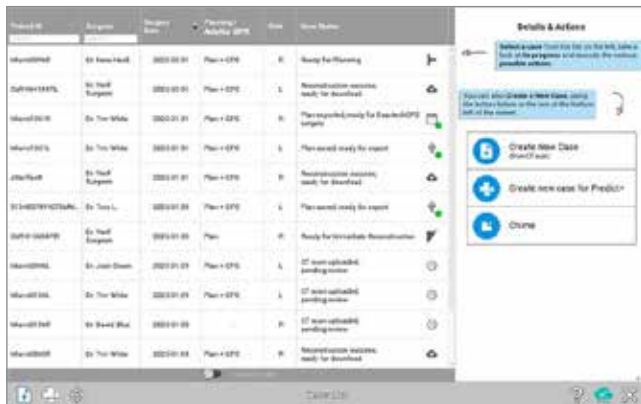


Figure 5

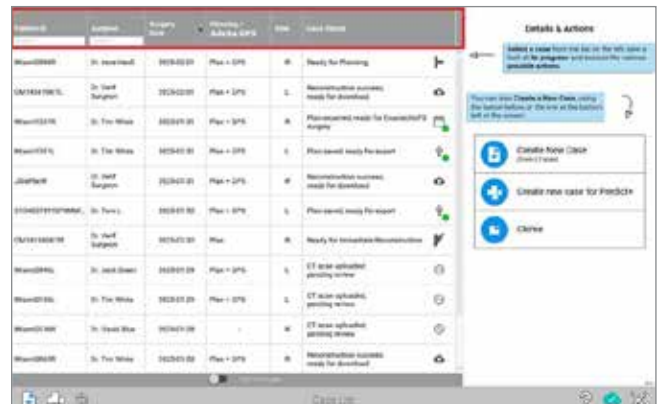


Figure 6

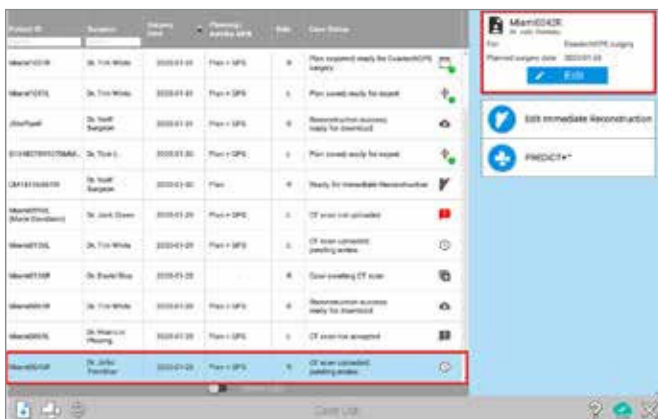


Figure 7



Figure 8

CASE MENU

The Case List menu screen will appear, showing all surgeons pending cases submitted for reconstruction. To view past cases completed, select on the **Hide Past Cases** toggle on the bottom (Figure 5). All cases submitted for reconstruction will be displayed in the case menu (Figure 6). The case menu table displays:

- **Patient ID:** The Patient ID will match what was created once the case was submitted for reconstruction
- **Surgeon:** The surgeon associated for the case
- **Planning/GPS:** If a case was accepted for planning only or for planning + GPS
- **Side:** The side of the patient CT scan for reconstruction
- **Case Status:** The current status for the reconstruction. Press on the question mark on the bottom right of the Shoulder Planning App to review the case statuses.

(1) Editing Case Information

To edit case information, click anywhere on its row within the Case List. The right part of the screen changes and presents the details of the action and the possible actions (Figure 7).

Click on  to modify:

- Patient's name
- Surgery date
- Study ID

Note: Patients' private information is not transmitted to AI One. It is stored encrypted on the computer to preserve patient confidentiality (Figure 8).

When patient information is exported to a USB drive for navigation, the software adds two layers of encryption to the data and can only be opened on a GPS station.

SETTING UP AND GETTING STARTED

CASE MENU



Figure 9



Figure 10

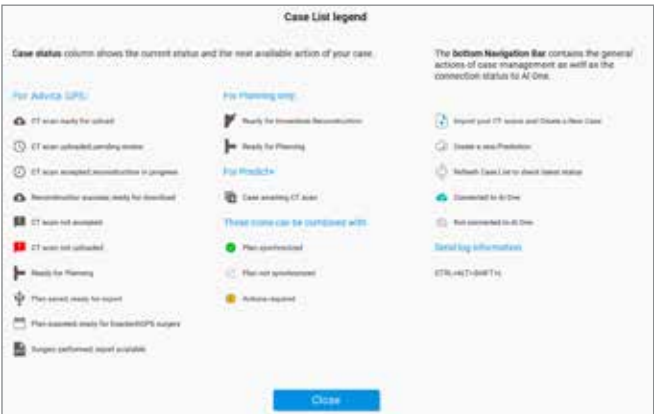


Figure 11

(2) Statuses

If the AI One icon on the bottom right of the screen is **turquoise**, the application is connected to the internet and the statuses are up to date (Figure 9); if the icon is **orange**, the surgeon can still utilize the Shoulder Planning App and the Immediate Reconstruction feature, but the statuses may be out of date, and uploaded cases will not be sent to AI One for reconstruction. If connected and a plan is saved on one computer, then the plan will automatically be updated if the Shoulder Planning App is launched on another computer.

Select the question mark icon on the bottom right of the Shoulder Planning App for the case list icon legend (Figure 10 and Figure 11).

Note: Plans utilizing Immediate Reconstruction are stored on the local computers **ONLY** and are not saved or synced with AI One as they haven't been shared to the AI One server.

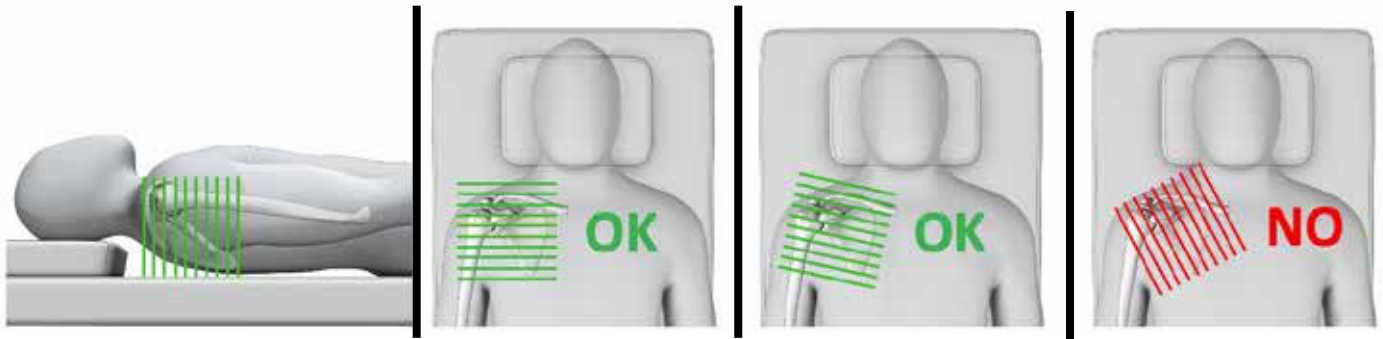


Figure 12

CREATING A CASE

GPS SHOULDER CT PROTOCOL

(1) Prerequisites for the CT Scan Examination Date

It is recommended that the CT exam be performed **less than 6 months** prior to the surgery and must be representative of patient anatomy (ex: no fracture, no surgery between the CT examination and the GPS surgery).

(2) Format

- DICOM Format
- Modality = 'CT'
- Hounsfield encoding
- Uncompressed images
- Non-encrypted and non-anonymized images (*an arbitrary identifier can be used in place of the birth date and gender, but the fields cannot be left blank*)

(3) Resolution

- Pixels are square and constant for all the images.
 - » The minimal resolution for an image is 0.3 x 0.3 mm/pixel (i.e. 512 pixels represent at least 15 cm/6in)
 - » The maximum resolution for an image is 1.0 x 1.0 mm/pixel (i.e. 512 pixels represent no more than 50 cm/20in)
- Keep both the slice thickness and spacing equal and constant for the entire exam, with no overlap.
 - » Minimum distance: 0.3 mm
 - » Maximum distance: 1.25 mm
 - » **The recommended distance is 0.625 mm**
- The CT-scan series should only contain **axial** series as shown (Figure 12).
- Please do not include any sagittal or coronal series when exporting images. Please do not include 3D reconstructions.
- The pitch should be ≤ 1 .

Note: Please refer to the latest CT Scan Acquisition Protocol posted on AI One for guidance when referring patients to imaging centers.

CREATING A CASE

GPS SHOULDER CT PROTOCOL

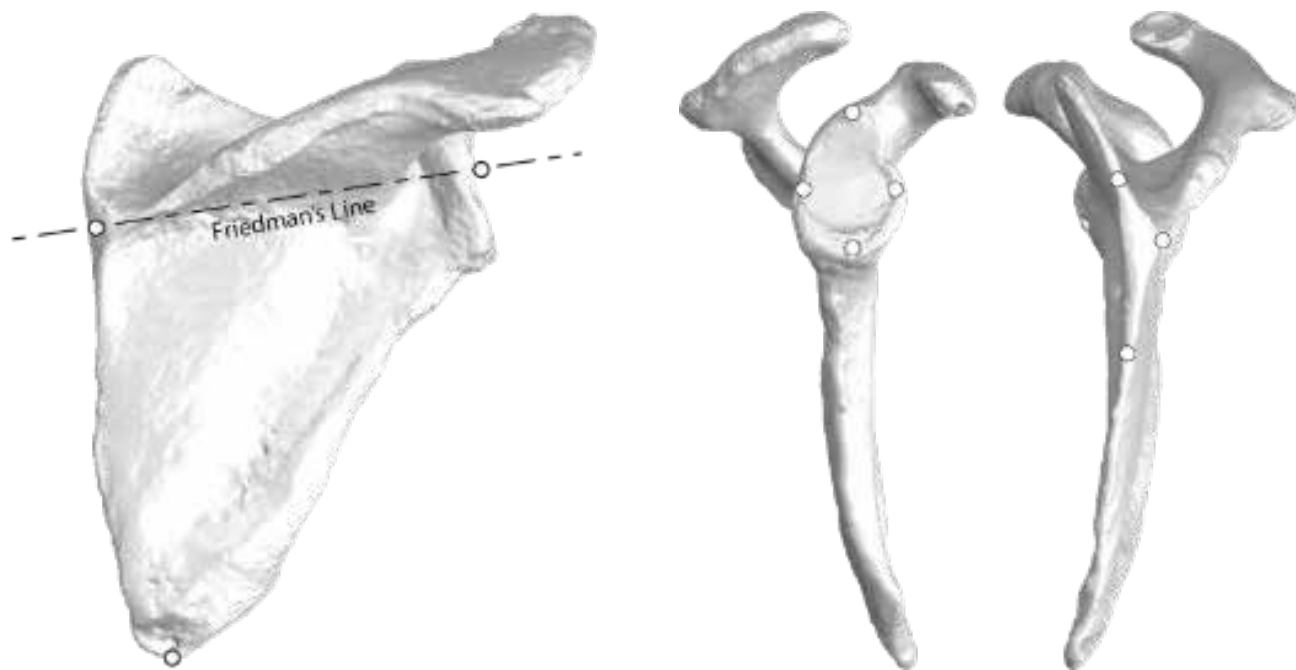


Figure 13

Display Field Of View Should Be Approximately
25-30cm For A Matrix Size 512 X 512

Dimension

The examination includes the entire scapula, complete to medial border and distal tip (*Figure 13*).

Recommendations

- The CT-scan will typically contain between 200 and 450 images.
- The patient must not move during the exam.
- **Injectable contrast must not be used**, as it can occlude imaging and reconstruction of the CT scan.
- Recommendation for machine settings:
kilo volt peak (KVP) ≥ 120 .
- Recommended mA: 240mA or higher
- Recommended filters/reconstruction kernels:
 - » GE: Bone
 - » Toshiba: FC30
 - » Siemens: B41
 - » Philips: L
- Scans can be rejected if the image quality is altered. This can be caused by:
 - » Patient motion during examination
 - » Metallic artifacts
 - » Improper image format
- The series should not include scout images, duplicate images and radiology reports or dosage reports.



Figure 14

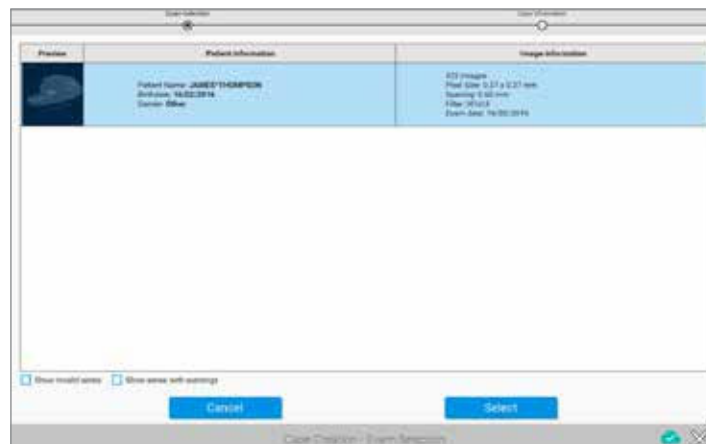


Figure 15

CASE CREATION

(1) Upload CT Scan

From the case menu screen, press the  on the bottom left of the screen to create a case or select **Create New Case** on the right (Figure 14). It is not necessary to select the exact folder containing the series; the software will check all subfolders and propose all adequate series.

Once the folder containing the DICOM images has been located, press **Select**, the software will automatically select the AXIAL series and won't show the other series that do not comply with our protocol (Figure 15).

Note: Surgeons may be able to upload scans that are outside the CT protocol. It's important to review the Image Information column to ensure the upload meets protocol for navigation, specifically paying attention to the pixel size and spacing.

Note: Patient CT scans MUST follow the CT protocol in the user manual prior to surgery for GPS Shoulder cases.

CREATING A CASE

CASE CREATION

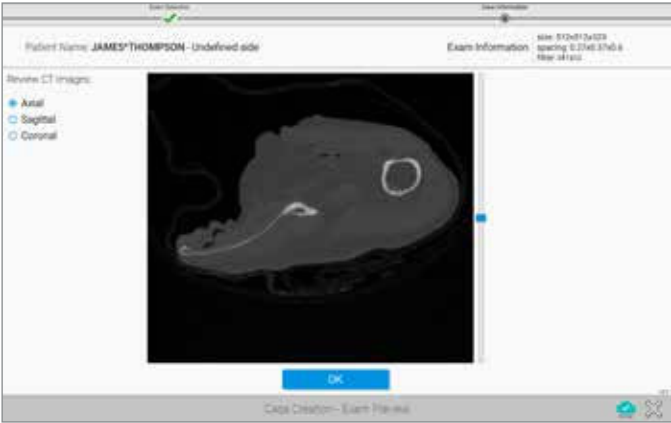


Figure 16



Figure 17

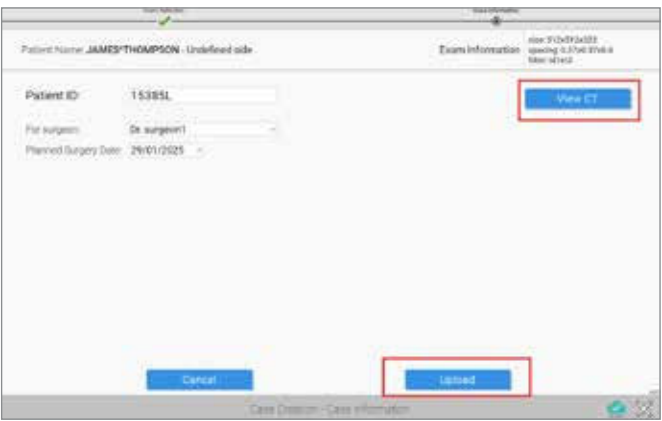


Figure 18

(2) Exam Review

It is then possible to visualize the full exam in the axial, sagittal, and coronal planes. (Figure 16).

(3) Create Patient ID

The surgeon will be asked to enter information regarding the patient's case. Then, the **Patient ID** entered here will be used to de-identify the information transferred for 3D reconstruction (Figure 17).

GPS Sales Rep and Partner accounts will see an additional row of information on this page (Figure 18). The **For surgeon:** text-boxes will appear and feature a drop-down menu of GPS Surgeon accounts that have been associated through

AI One's account manager. In the event that a surgeon does not have a AI One account already, there is an option to select **Other Surgeon** and manually add the surgeon's name. Utilizing this workflow will push GPS cases from the Sales Rep into the Surgeon's account for review once segmentation is complete.

Click on **View CT Scan** on the right to review the CT scans. Once all information is complete, select **Upload** and the case will be uploaded for reconstruction (Figure 18).

Note: This unique identifier (field "Patient ID") is transmitted to the AI One server and must **not** contain patient private information such as patient name or birth date.

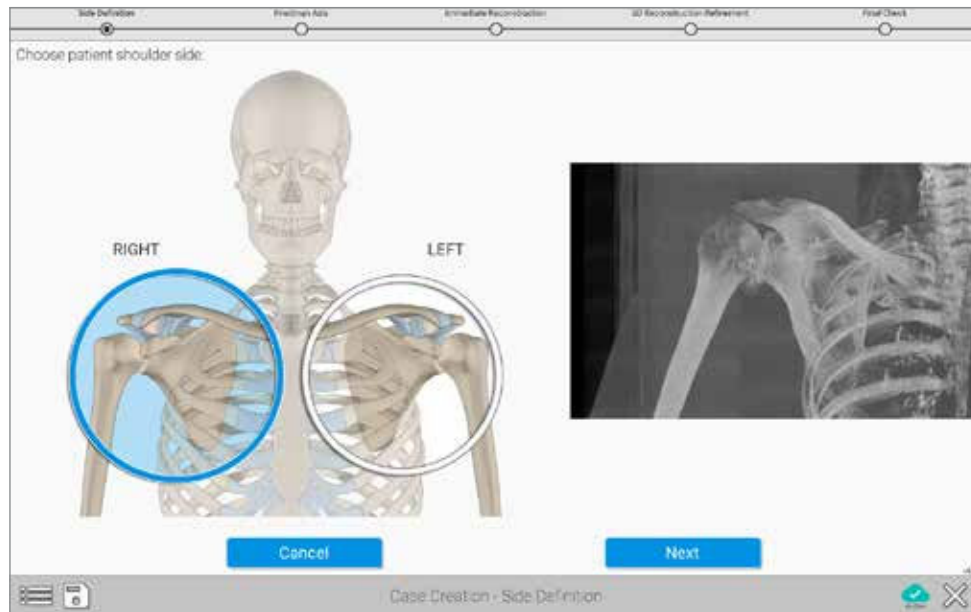


Figure 19

IMMEDIATE RECONSTRUCTION

- While awaiting a manual segmentation, the surgeon can perform an Immediate Reconstruction, as shared in the following pages (Figure 19).
- The result will be a 3D model of the patient **for the scapula planning only. For GPS Shoulder surgery, a manual reconstruction will be delivered with in a few days.**

Once the surgeon receives the 3D model, he/she will be able to perform the planning of the implant and then export the planning for navigation purpose.

CREATING A CASE

IMMEDIATE RECONSTRUCTION

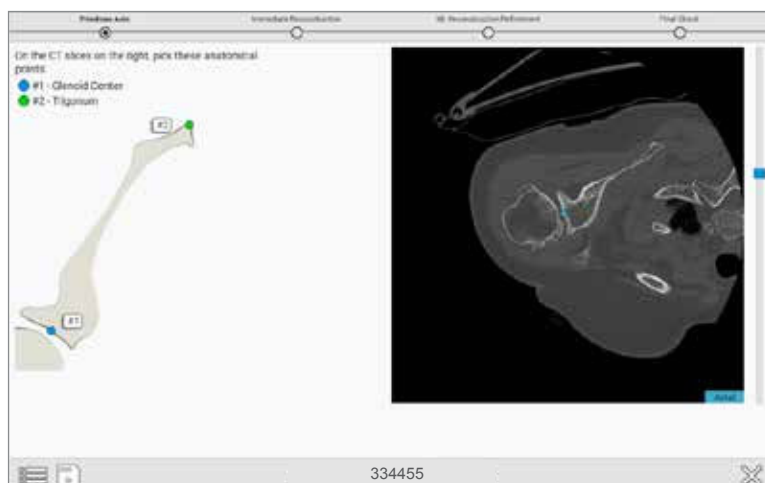


Figure 20

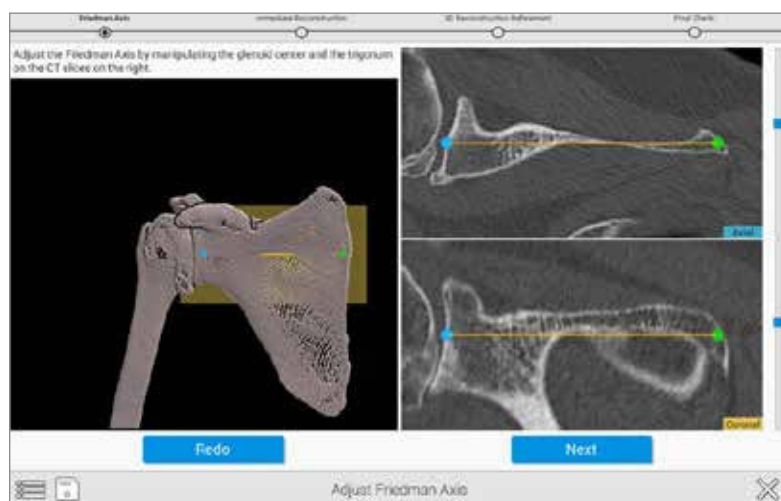


Figure 21

(1) Pick and adjust Friedman's axis:

The first step is to pre-position the glenoid center and the trigonum (Figure 20).

Then the surgeon can adjust Friedman's axis on 2D views, with a 3D view presenting the axis for verification purposes (Figure 21).

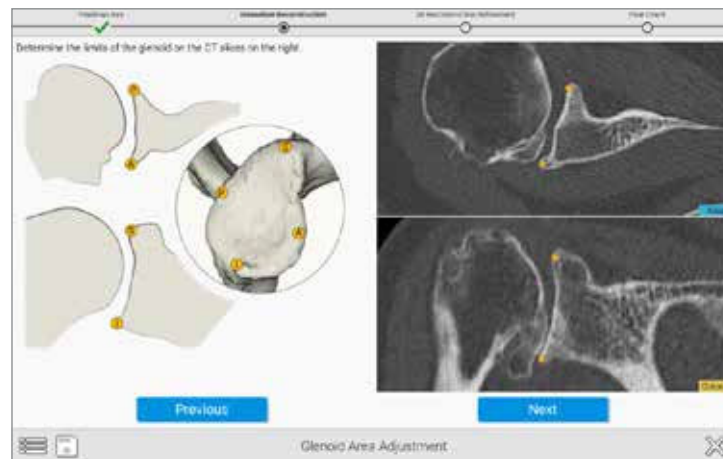


Figure 22

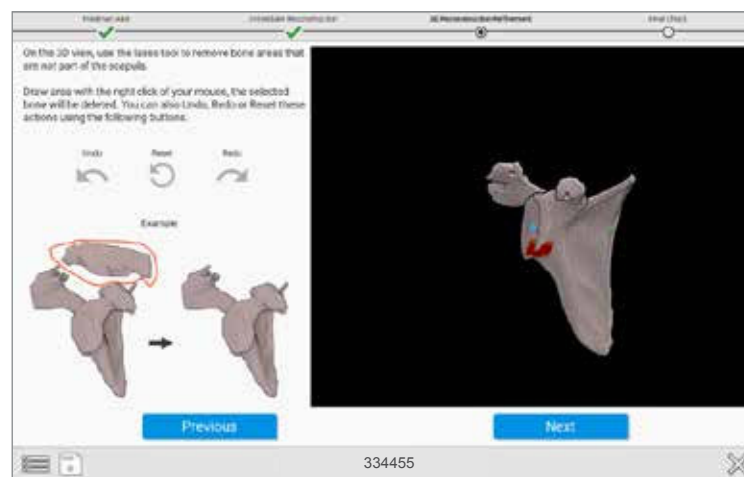


Figure 23

(2) Pick four peripheral quadrant points on the glenoid surface

On the image in the upper right of the screen (*Figure 22*), select the points that correspond with the orange dots on the image on the left side of the screen.

(3) Review the preliminary reconstruction and remove unwanted portions of the reconstruction.

The surgeon can remove unwanted portions of the reconstruction with the **Lasso Tool**. To utilize this, hold down the right click button while drawing a lasso around the area to exclude from the reconstruction (*Figure 23*).

CREATING A CASE

IMMEDIATE RECONSTRUCTION

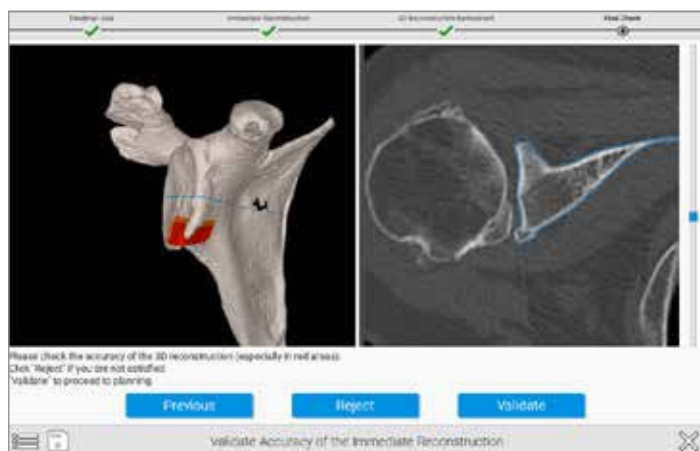


Figure 24

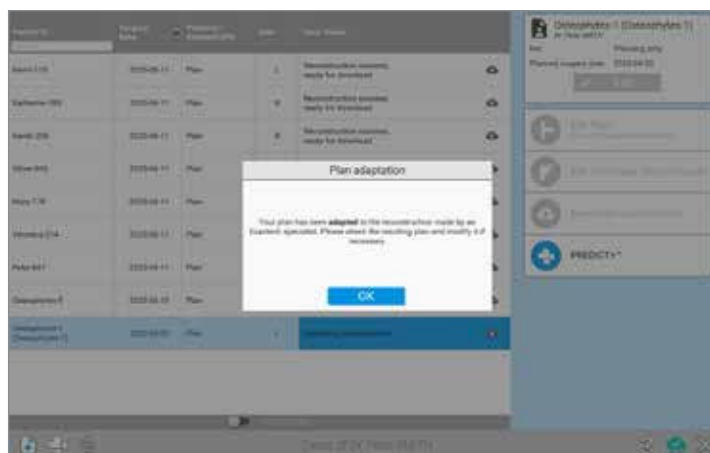
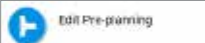


Figure 25

(4) Validate the accuracy of the reconstruction:

Red/Orange areas should be checked for accuracy as the software wants to ensure a proper reconstruction. This is done by using the blue slider bar toggle on the right-hand side to sweep through the individual CT images in the right window pane on the screen. The red areas on the left window pane correlate to sections where the blue outline of the algorithmic model does not correlate with the outline of bone in the CT images. This can be caused by low bone density, cysts, or humeral head impaction, which affects the distinction between the articulating surface of the humerus and surface of the glenoid. Complicated or fused anatomy can lead to errors in this step (Figure 24).

After selecting a case and pressing the , the Shoulder Planning App preoperative planning tool will open the selected case, with the patient's scapula shown in the viewing window.

Note: If using GPS Shoulder software for active navigation, the surgeon must accept the manual reconstruction that has been completed by an Advita specialist and then verify implant placement before uploading the case to a USB drive for use on the GPS system (Figure 25).



Figure 26

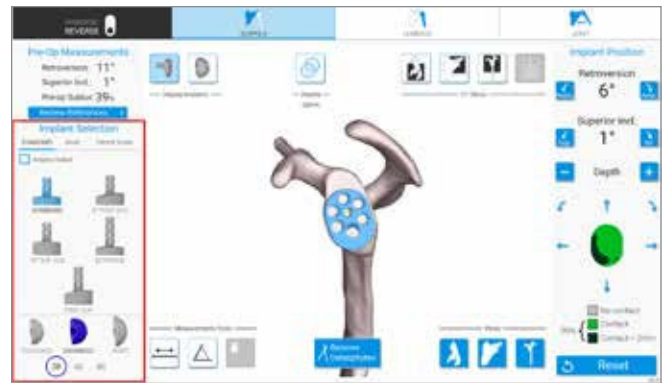


Figure 27



Figure 28

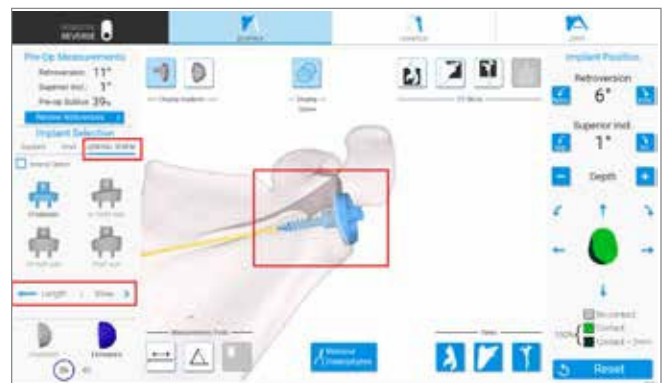


Figure 29

PLANNING WITH THE SHOULDER PLANNING APP

SCAPULA

1) Implant Selection

- When planning the glenoid, there are a variety of options to choose from. First, the surgeon should choose if this will be an anatomic reconstruction or a reverse shoulder reconstruction by selecting the **toggle-button** in the top-left corner of the screen (Figure 26).
- After selecting the type of procedure, by toggling the anatomic/reverse button in the top-left corner of this screen, the corresponding **implants** are displayed on the left side of the screen (Figure 27).

- Under Implant Selection for Reverse procedure, the surgeon can toggle between a Standard Baseplate, a Small Baseplate, and the Central Screw Baseplate (Figure 28). When the surgeon selects to plan a Central Screw Baseplate, then the surgeon can plan the length of the Central Screw (Figure 29).

Note: It is possible to save a plan for both an anatomic and reverse case, and both cases will export to the GPS Station.

Note: Checking the Small Baseplate or Anterior Defect boxes will not change the position of the implant relative to Friedman's Axis. You may toggle back and forth to test without losing your original position selection. Backside contact may adjust depending on the implant selected.

PLANNING WITH THE SHOULDER PLANNING APP

SCAPULA



Figure 30



Figure 31



Figure 32

2) Implant Manipulation

- The implant position may be manipulated by using the menu on the right-side of the screen (Figure 29). Keep in mind when the implant is first selected, the component is centered on Friedman's Axis by default. The green coverage on the implant signifies implant % backside contact.
 - » Grey means no contact with bone
 - » Green means under <.5mm of contact with bone
 - » Dark green means the plan calls for more than 2mm of glenoid bone reaming

Note: Each click is 1mm or 1° of movement.

When planning for an augmented glenoid component, after planning the implant's rotation, it's important to consider reviewing the implant's % backside contact again.

3) Views

- Show/Hide** – Used to show or hide objects within the Shoulder Planning App scapular planning screen (Figure 30).
- Solid 3D Body** – Selected by default when planning. Helps identify perforation of the component outside the cortices (Figure 32).
- Transparent 3D Body** – Helps visualize the placement of the central fixation or peripheral pegs inside the bone as well as backside coverage of the implant (Figure 31).



Figure 33



Figure 34

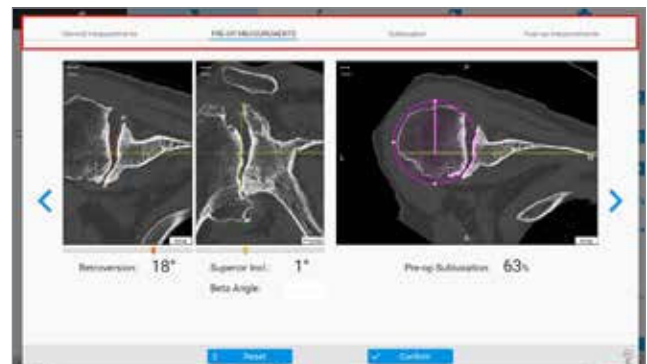


Figure 35

- **CT Views**  – CT Views are used to overlay a CT image onto corresponding 3D scapula slice. Users of the Planning App can sweep through the CT images by dragging the blue slider-bar left or right (Figure 32).
- **Quick Position**  – Quick Position options are used to quickly reposition the entire 3D scapula (Figure 33).

Note: Clicking the “V” key on the keyboard is an effective shortcut to seeing a combined CT & Quick Position view to reference current implant positioning.

4) Adjusting Native Measurements

- The Planning App now showcases native anatomy of the scapula. This allows surgeons to understand the specific patient’s anatomy as it relates to native version and inclination. Selecting the **Section References** guides the user to a screen to more closely look at the glenoid’s native width, height, version, inclination, and subluxation measurements (Figure 33).

Note: These measurements do not affect the angularity the plan shows, as the plan references the auto-selected Friedman’s axis.

PLANNING WITH THE SHOULDER PLANNING APP

SCAPULA

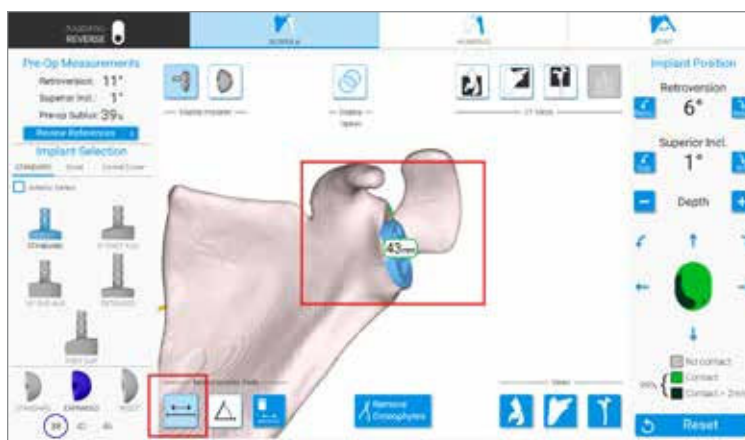


Figure 36

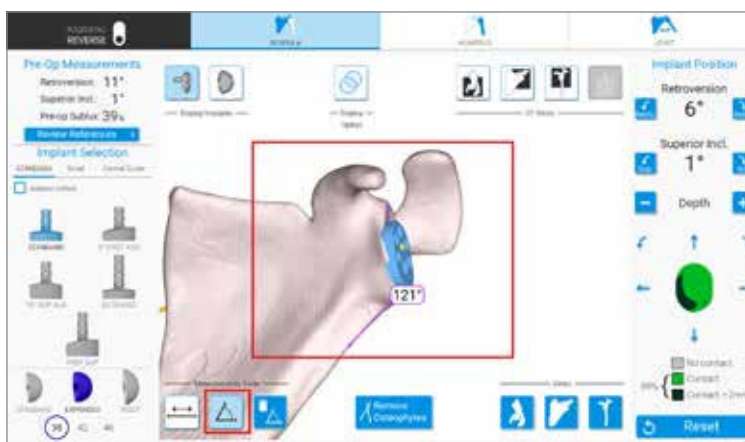


Figure 37

5) Using the Measurement Tool

- To measure distance between two points, select the left-most image from the measurement tools (Figure 35). To select the first point, use the mouse and right-click a point. A small colored triangle will appear. To select the second point, use the same method. A line will automatically span the distance between the two points.

To utilize the angle-measurement tool, select three points by using the mouse right-click (Figure 36). First, select the originating point (the mouse outward point of one of the ends of the desired angle). Then select the second point, which should be the middle of the angle. Then, select the final and third point which will automatically create a colored angular line between the three points with a bubble listing the angle created).



Figure 38

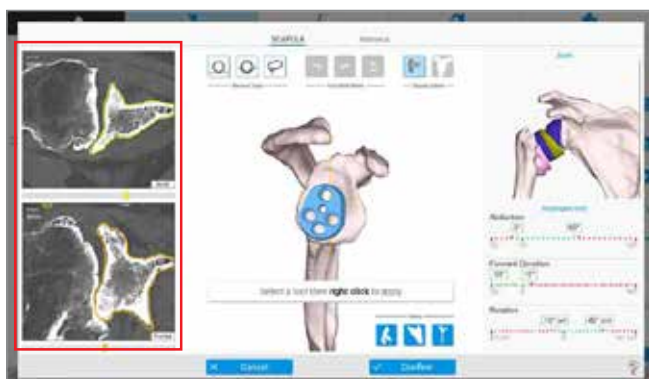


Figure 39



Figure 40

6) Osteophyte Removal Tool

- **Remove Osteophytes** – Select **Remove Osteophytes** button to access the osteophyte removal feature in the Shoulder Planning App (Figure 37)
- **CT Views** – On the left are the Axial and Frontal CT scans of the scapula reconstruction. Use the bar to scroll through the CT scan (Figure 38).

Note: The bone removed using the selected osteophyte removal tool, the modification is shown in **pink**.

- **Removal Tools** – To remove bony osteophytes, select one of the removal tools listed below and then right click to apply. The removed bone on the scapula will be highlighted in **pink** (Figure 39).
 - » **Smooth Tool**  - smooths the bone surface.
 - » **Burr Tool**  - removes the bone surface
 - » **Lasso Tool**  - removes the volume of the bone located within the drawn outline

Note: Once a removal tool is selected, the size of the tool can be adjusted by selecting on the different sphere sizes.

Note: The Lasso tool may not be available for use depending on the condition of the reconstruction (For example, due to topology)

PLANNING WITH THE SHOULDER PLANNING APP

SCAPULA

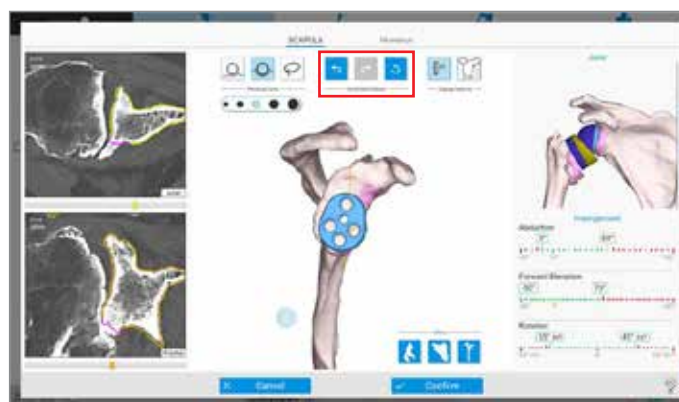


Figure 41



Figure 42

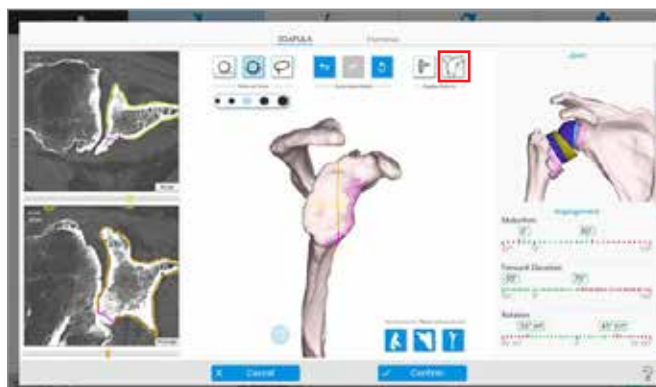


Figure 43

- **Undo/Redo/Reset** – When removing osteophytes, the surgeon can edit their changes on the Scapula by selecting the Undo, Redo, Reset buttons:
 - » **Undo**  – Select the undo button to reverse the last action performed by the surgeon (Figure 40)
 - » **Redo**  – Select the redo button to reapply the last action performed by the surgeon (Figure 40)
 - » **Reset**  – Select the reset button to restore the scapula to its original reconstruction (Figure 40)
- **Display Options** – There are multiple display options that can assist the surgeon when removing osteophytes:
 - » **Show/Hide Removed Bone**  – Once osteophytes are removed, select the show/hide removed bone button to show the before/after modifications made to the original Scapula reconstruction (Figure 41)
 - » **Show/Hide Implant**  – Select show/hide implant button to show/hide the implant planned on the Scapula and more accurately remove surrounding osteophytes (Figure 42)

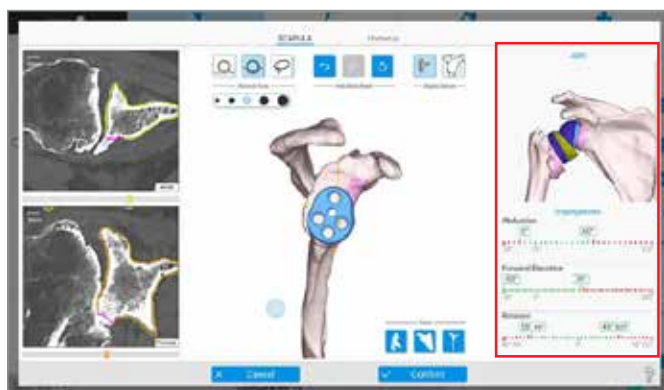


Figure 44

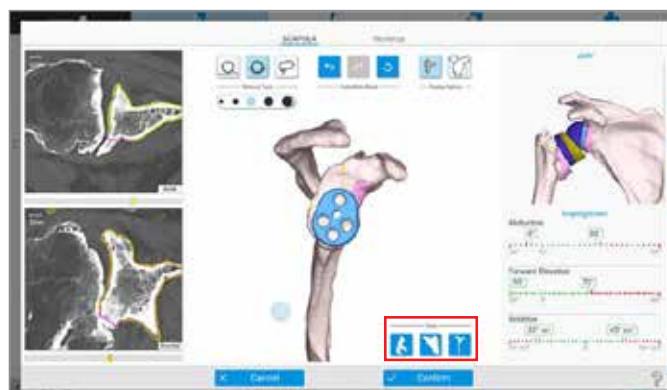


Figure 45

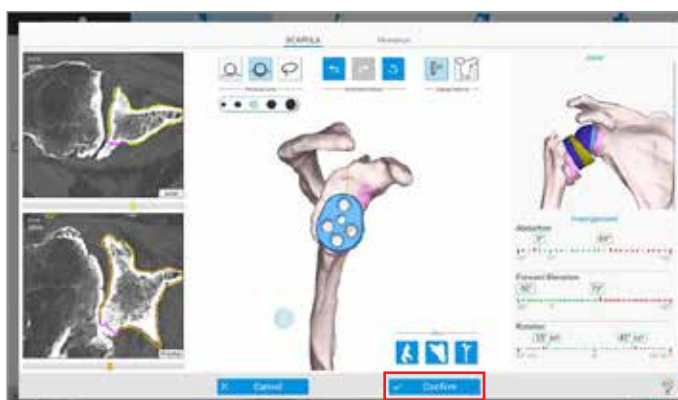


Figure 46

- **Impingement Reference** – The **impingement monitor** simulates the ranges for abduction, forward elevation, and rotation will adjust based on the osteophytes removed. Be sure to have the Scapula and the Humerus implants planned to get a final construct represent the simulated ranges (Figure 43).
- **Quick Position** – Select the **Views Buttons**  to quickly position the scapula in a set orientation (Figure 44).

Once the surgeon is finished removing osteophytes, select the **confirm button** to validate and apply the changes. Be sure to review the native measurements landmarks by selecting the **Review References** button as they could be adjusted (Figure 45).

Note: Osteophytes removed in planning are not reflected in GPS Navigation. Be sure to perform acquisitions on GPS Navigation **BEFORE** removing Osteophytes.

PLANNING WITH THE SHOULDER PLANNING APP

HUMERUS



Figure 47



Figure 48

HUMERUS

1) Implant Selection

- When planning the humerus, there are a variety of options to choose from. First, the surgeon should choose the stem type. Further selections such as stem size, humeral tray (reverse) or replicator plate (anatomic) size, hemisphere or liner size may also be selected from this menu-section (Figure 46).

Note: The Equinox Stemless Humerus options appear by clicking the **Stemless** tab visible at the top of this section when anatomic plan is selected.

2) Implant Manipulation

- Like the scapula planning section, the right-hand side of the Planning App screen (Figure 48) will display buttons that allow for the manipulation of the implant within the humerus.
- For Anatomic Reconstruction Plans, the replicator plate and hemisphere offset toggles will appear within this section. Selecting these buttons will adjust the 3D model to impose the hemisphere onto the replicator plate (Figure 47).

Note: The implant is centered in the humeral canal by default. If adjusting the inclination and implant's location within the canal, the resection level buttons will move aligned with the stem axis.

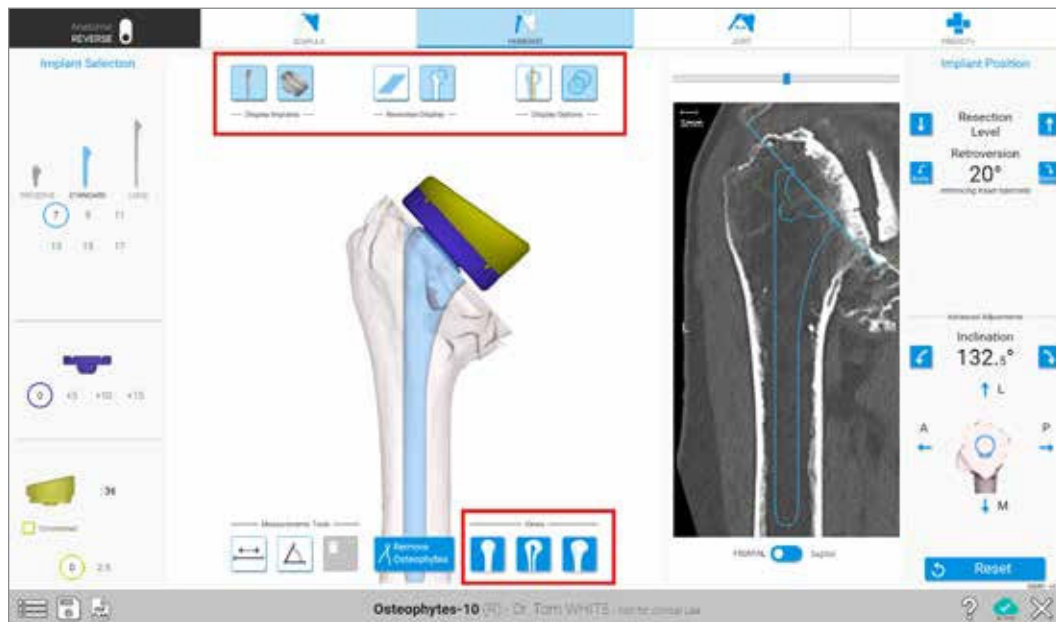


Figure 49

3) Views

- **Show/Hide**  – Used to show or hide objects displayed during the humerus planning step (Figure 48).
- **Transparent 3D Body**  – Helps to identify perforation of the stem outside of the cortices (Figure 48).
- **Cutting View(s)**   – Used to display a larger cut-slice area or add/remove the humeral head on the planning model (Figure 48).
- **CT Panel** – Used with a Frontal or Sagittal toggle to see the position of the stem within the humeral canal (Figure 48).
- **Quick Position**    – Like the glenoid planning section, at the bottom of the planning window there are five Quick Position buttons used to move the entire viewing position of the humeral model shown on the bottom of Figure 48.

PLANNING WITH THE SHOULDER PLANNING APP

HUMERUS



Figure 50

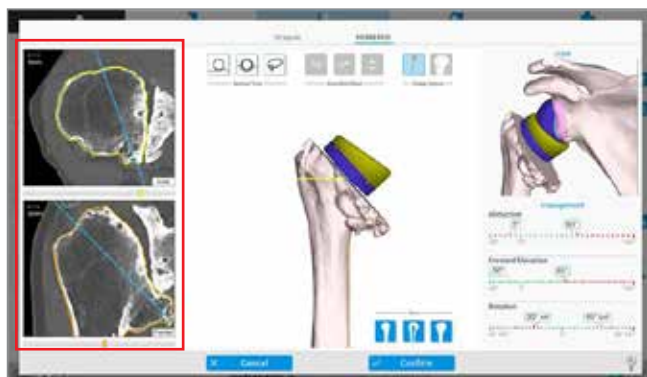


Figure 51

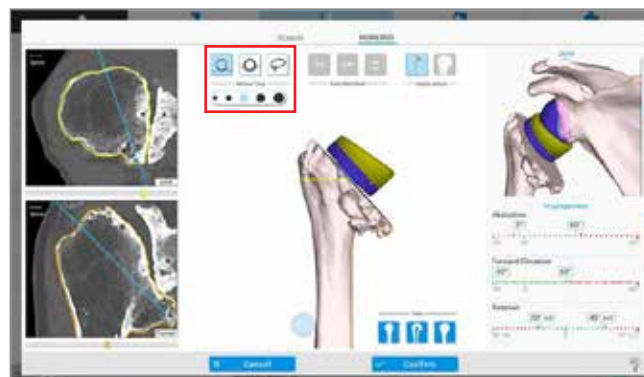


Figure 52

(4) Osteophyte Removal Tool

- **Remove Osteophytes** – Select **Remove Osteophytes** button to access the osteophyte removal feature in the Shoulder Planning App (Figure 49)
- **CT Views** – On the left are the Axial and Frontal CT scans of the humerus reconstruction. Use the bar to scroll through the CT scan (Figure 50).

Note: The bone removed using the selected osteophyte removal tool, the modification is shown in **pink**.

- **Removal Tools** – To remove bony osteophytes, select one of the removal tools listed below and then right click to apply. The removed bone on the humerus will be highlighted in **pink** (Figure 51).

- » **Smooth Tool**  - smooths the bone surface.
- » **Burr Tool**  - removes the bone surface
- » **Lasso Tool**  - removes the volume of the bone located within the drawn outline

Note: Once a removal tool is selected, the size of the tool can be adjusted by selecting on the different sphere sizes.

Note: The Lasso tool may not be available for use depending on the condition of the reconstruction (For example, due to topology)

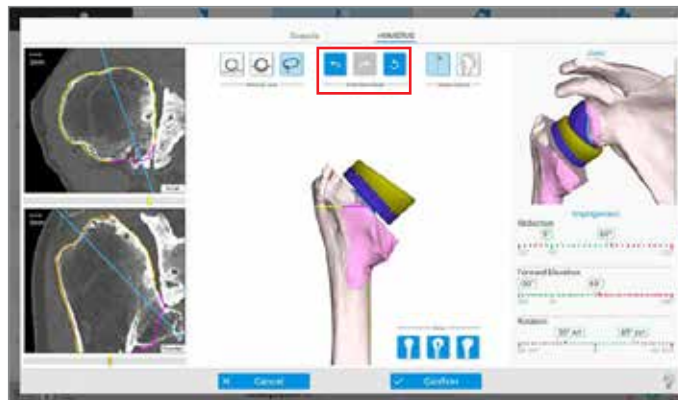


Figure 53

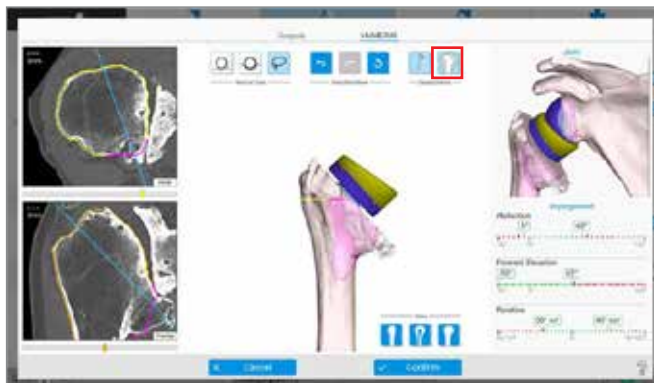


Figure 54

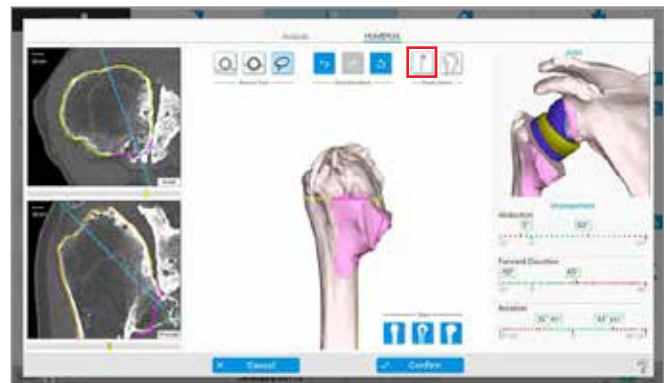


Figure 55

- **Undo/Redo/Reset** – When removing osteophytes, the surgeon can edit their changes on the Humerus by selecting the Undo, Redo, Reset buttons:
 - » **Undo**  – Select the undo button to reverse the last action performed by the surgeon (Figure 52)
 - » **Redo**  – Select the redo button to reapply the last action performed by the surgeon (Figure 52)
 - » **Reset**  – Select the reset button to restore the scapula to its original reconstruction (Figure 52)
- **Display Options** – There are multiple display options that can assist the surgeon when removing osteophytes:
 - » **Show/Hide Removed Bone**  – Once osteophytes are removed, select the show/hide removed bone button to show the before/after modifications made to the original Humerus reconstruction (Figure 53)
 - » **Show/Hide Implant**  – Select show/hide implant button to show/hide the implant planned on the Humerus and more accurately remove surrounding osteophytes (Figure 54)

PLANNING WITH THE SHOULDER PLANNING APP

HUMERUS



Figure 56

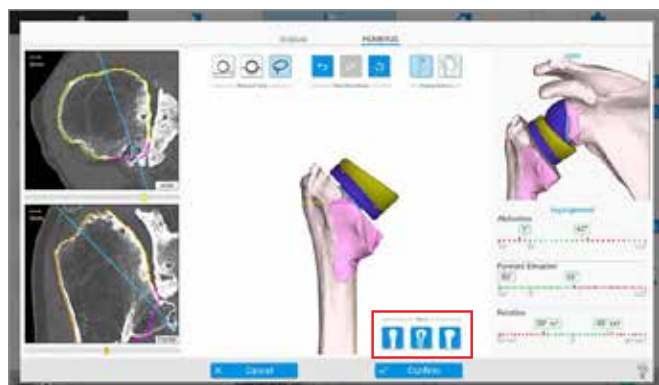


Figure 57



Figure 58

- **Impingement Reference** – The **impingement monitor** simulates the ranges for abduction, forward elevation, and rotation will adjust based on the osteophytes removed. Be sure to have the Scapula and the Humerus implants planned to get a final construct represent the simulated ranges (Figure 55).
- **Quick Position** – Select the **Views Buttons**  to quickly position the humerus in a set orientation (Figure 56).

Once the surgeon is finished removing osteophytes, select the **confirm button** to validate and apply the changes. Be sure to review the native measurements landmarks by selecting the **Review References** button as they could be adjusted (Figure 57).

Note: Osteophytes removed in planning are not reflected in GPS Navigation.



Figure 59

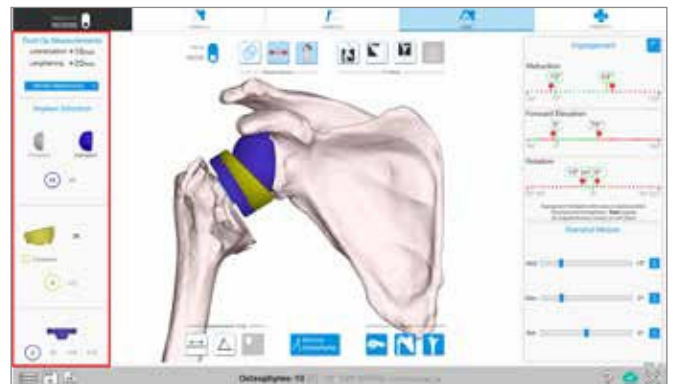


Figure 60

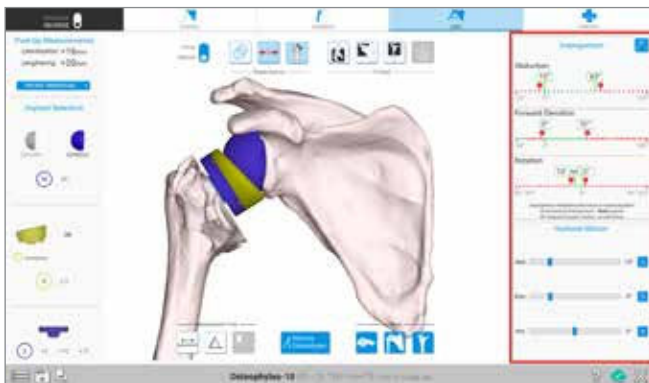


Figure 61

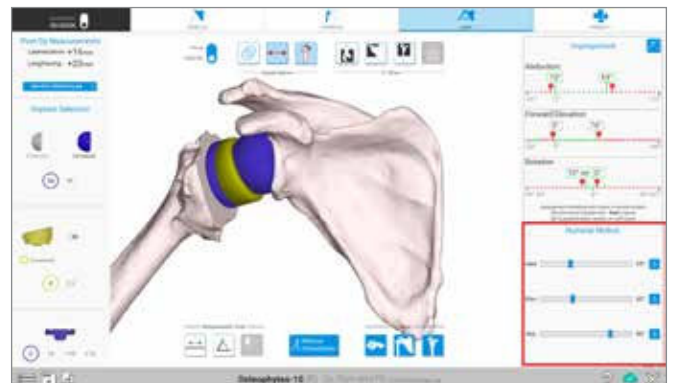


Figure 62

JOINT

1) Setting Neutral Position

- Patient neutral position must be confirmed prior to moving into the impingement planning page. Patient BMI does affect neutral position and should be taken into consideration. Clicking and dragging the lower slider bar changes the neutral position. Position can be changed again after this page, from within the joint planning page (Figure 58).

2) Implant Selection

- The left side of the screen will display the implants based on the plan (anatomic/reverse) that can still be adjusted. Adjustments in the software will affect impingement numbers displayed on the right-side (Figure 59).
- At any point, it is possible to return to the scapula or humerus planning pages to change the planning and then revisit the projected values on the impingement page.

3) Impingement Reference and Humeral Motion

- **Impingement Reference** – The top portion of the right-hand section displays impingement ranges. These simulated ranges are affected by osteophytes and care should be taken to understand how impingement is occurring. Impingement points can be quickly viewed by selecting the red arrow buttons on the border of the unobstructed and obstructed ranges. Clicking these will quickly place the humerus and scapula into points of impingement, adjusting the humeral motion sliders at the bottom of this screen (Figure 60).
- **Humeral Motion** – To view dynamic motion, up to and through points of impingement, the slider bars on the bottom right section of this screen can be used to adjust the position of the humerus (Figure 61).

PLANNING WITH THE SHOULDER PLANNING APP

JOINT

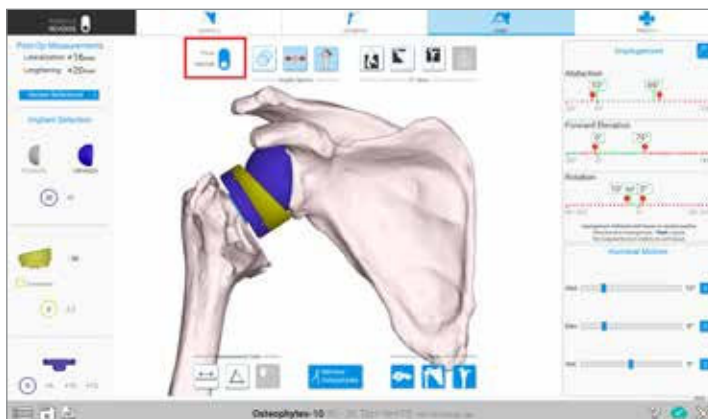


Figure 63

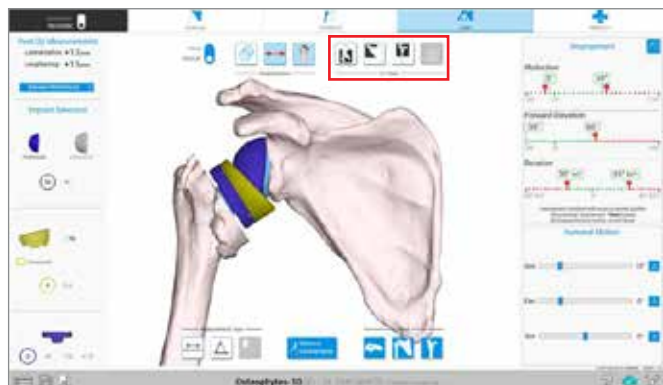


Figure 64

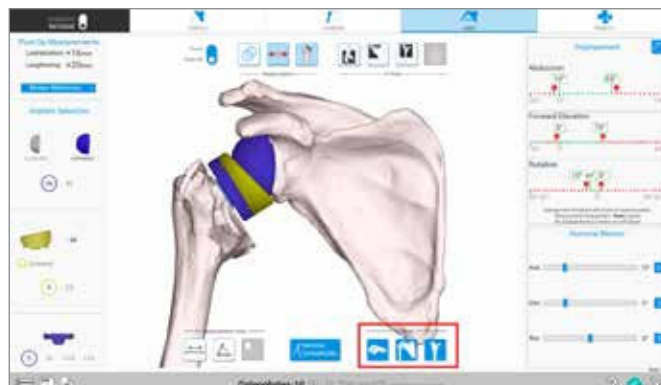


Figure 65

4) Views

- **Pre/Post Op View** – Two selections in the top portion of the planning window display the shoulder anatomy before and after a case has been planned (Figure 62).
- **CT Slices** – Like the glenoid and humerus planning step, a Transparent 3D Body button allows views within the bony anatomy to review implant positioning. The Cut Views can be used to sweep through the bony anatomy while viewing the original CT imagery overlaid onto the 3D shoulder anatomy from various planes (Figure 63).

- **Quick Position** – Buttons to quickly position both the humerus and scapula (Figure 64).

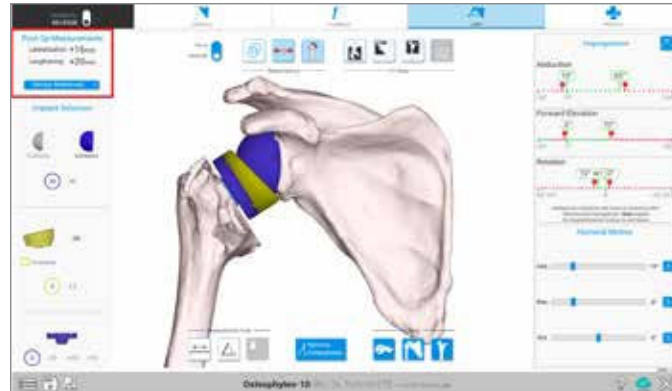


Figure 66

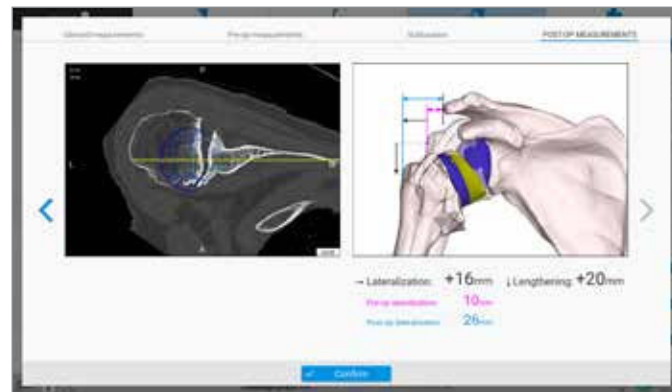


Figure 67

5) Post-Op Measurements

- **Review References** – Lateralization and lengthening, compared to original anatomical position, are referenced. These measurements change based on implant selection (*Figure 65* and *Figure 66*).

PLANNING WITH THE SHOULDER PLANNING APP

PLANNING PDF REPORT

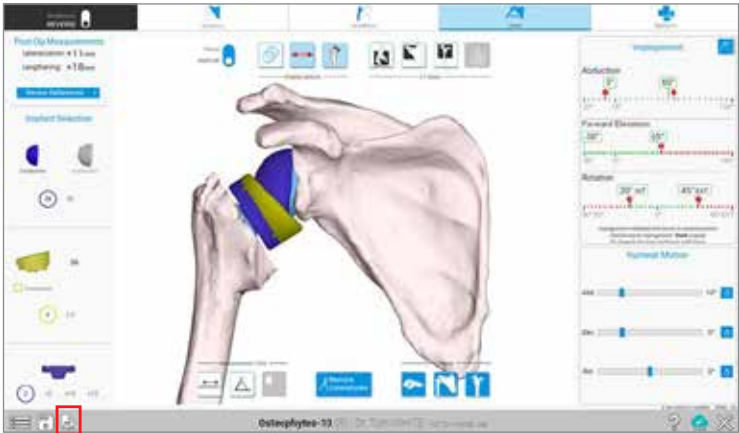


Figure 68



Figure 69

PLANNING PDF REPORT

Once the pre-operative planning is complete, select the **PDF Plan** button on the bottom left to export (Figure 67).

If both Anatomic and Reverse plans were performed, be sure to select both boxes to export both plans. If only one was performed, then be sure to select a box to export (Figure 68).



Figure 70

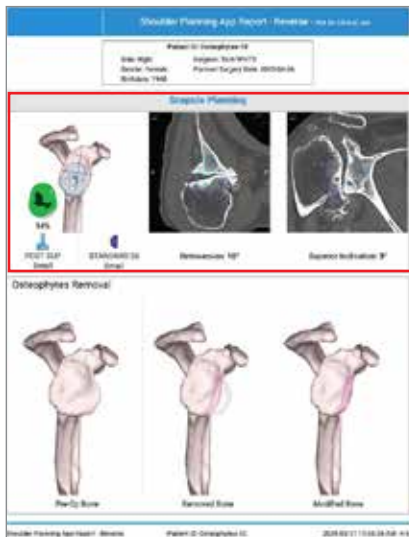


Figure 71

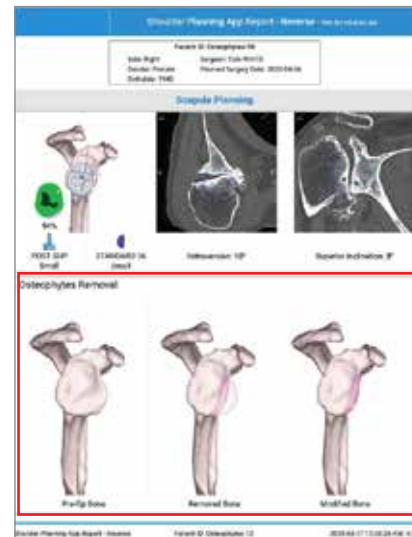


Figure 72

The Planning PDF report will include the following:

(1) Case Overview

- An overview of the exported case like Patient ID, Side, Gender, Birthdate, Surgeon, and the planned surgery date (Figure 69).

(2) Scapula

- **Scapula Planning** – The implant pre-operatively selected with the glenoid heatmap. The Transverse and Frontal CT slices with implant position (Figure 70).
- **Scapula Osteophytes Removal** – Pre-op bone before osteophytes removed, removed bone using the osteophyte removal tool, and modified bone (Figure 71).

PLANNING WITH THE SHOULDER PLANNING APP

PLANNING PDF REPORT



Figure 73



Figure 74

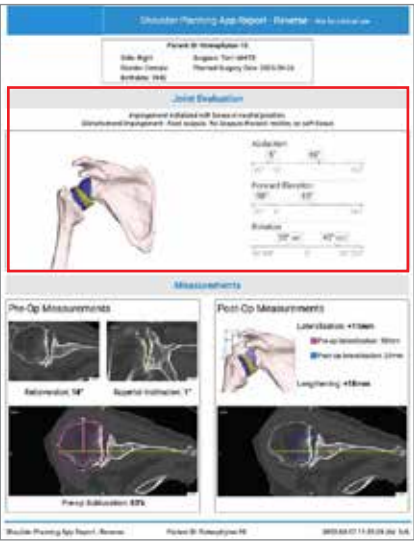


Figure 75

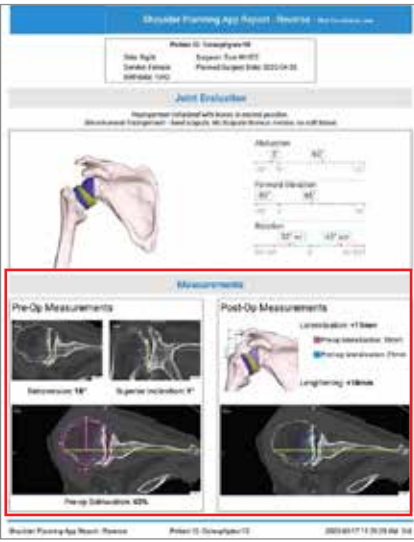


Figure 76

(3) Humerus

- **Humerus Planning** – The implant pre-operatively selected with its position in the humeral canal (*Figure 72*).
- **Humerus Osteophyte Removal** – Pre-op bone before osteophytes removed, removed bone using the osteophyte removal tool, and modified bone (*Figure 73*).

(4) Joint

- **Joint Evaluation** – The final construct based on the implants pre-operatively planned and a summary of the simulated impingement references (*Figure 74*).
- **Measurements** – The pre-op/post-op measurements as well as the lateralization, lengthening, and subluxation measurements (*Figure 75*).

PLANNING WITH THE SHOULDER PLANNING APP

CASE EXPORT FOR GPS

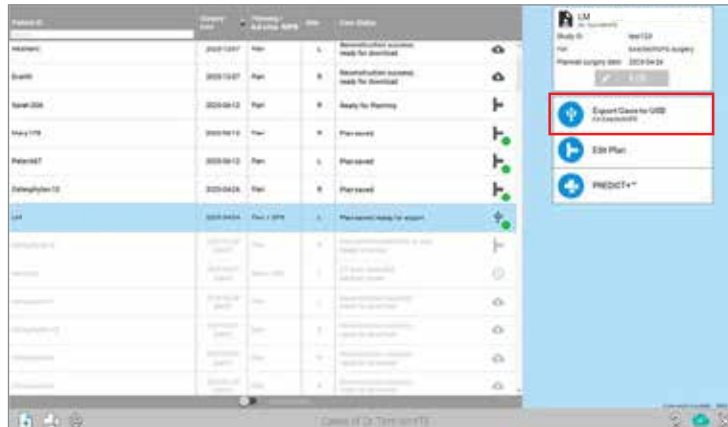


Figure 77

Exporting for GPS surgery, please verify the following elements:

Patient Name: Dr. Tom WHITE
 Birthdate: 1954
 Sex: Female

Export Cancel

Figure 78

USB export

The case T. Durden (none) was successfully exported with 1 plan. Surgery scheduled date 2021-03-10.

Anatomic plan:

Retroversion 12°
 Superior Incl. 1°
 Medium 8° Posterior Augment - Cage.

Planned values are expressed with regard to Friedman axis (in yellow on the 3D view).

OK

Figure 79

CASE EXPORT FOR GPS

To export the case to the GPS Station, go to the Case List menu and select the Case on the left you want to export. The user should then see this button  on the right side of the screen (Figure 76).

Once selected, the software will prompt the user to enter some identifying information (Figure 77). Once complete, press the Export button. Once the plan has been fully exported to the USB drive, a notification will pop up confirming the successful exportation with some annotations about the plan (Figure 78).

Note: GPS Sales representatives may also transfer cases wirelessly with the AUGI app.

Note: The software will automatically add two layers of encryption for the plan when exporting to a USB drive.

PLANNING WITH THE SHOULDER PLANNING APP

USB REQUIREMENTS & SHORTCUTS

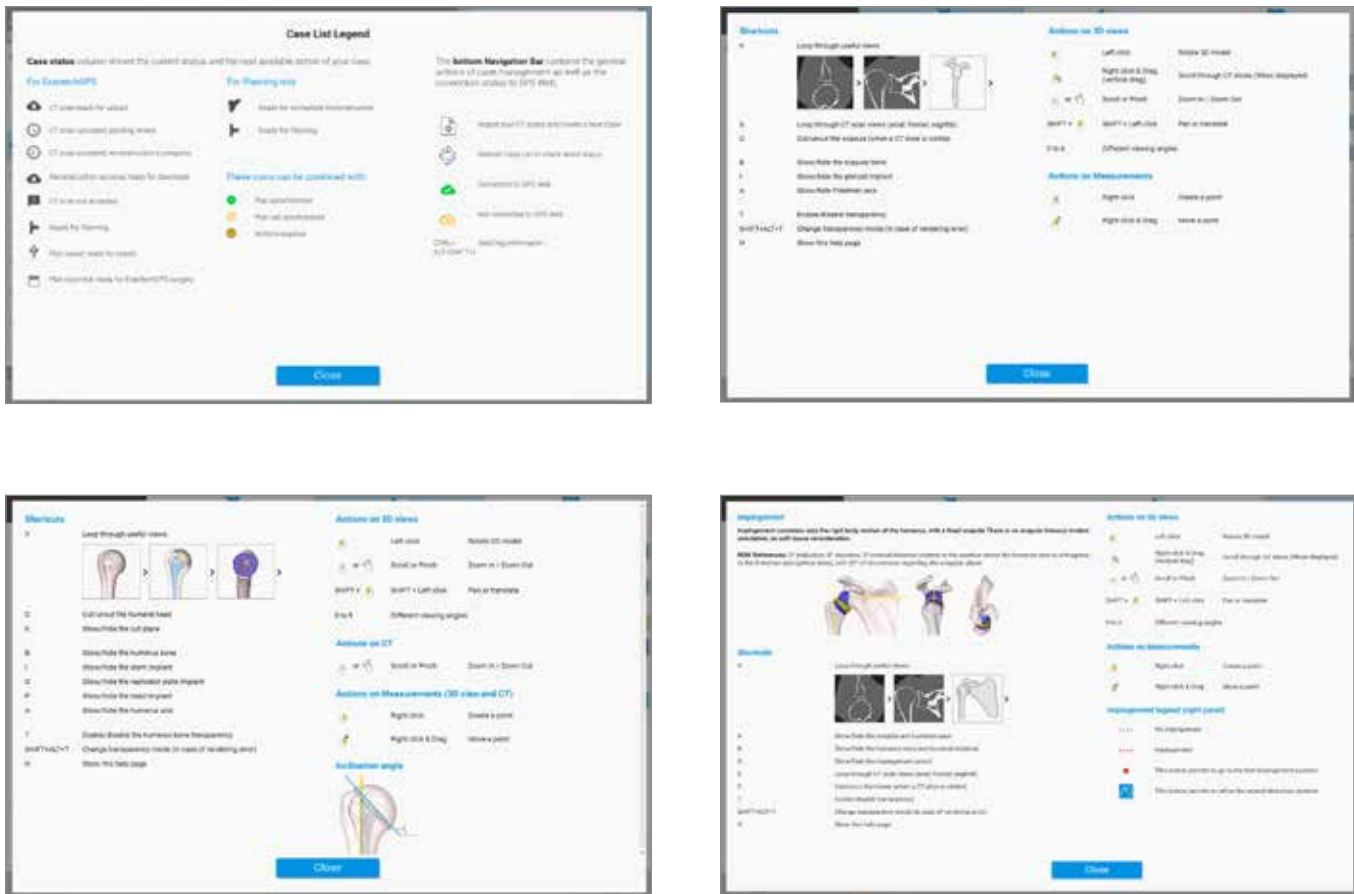


Figure 80

USB REQUIREMENTS

When exporting cases for navigation, it is important to utilize a non-encrypted USB drive. The software will automatically add two layers of encryption for the plan when exporting to a USB drive. The data on the file/USB drive can only be read and de-encrypted with the GPS station.

SHORTCUTS

There are many shortcuts built into the software to ensure efficient use of the Shoulder Planning App.

Clicking the  question mark icon when planning a case will open up many of the options for shortcuts as seen above (Figure 79).

NOTES

The Shoulder Planning App is manufactured by Blue Ortho SAS, an Advita Ortho subsidiary, and distributed by Advita Ortho, LLC.

For additional device information, refer to the manufacturer's Instructions for Use for information including, but not limited to, a device description, indications, contraindications, precautions and warnings. For further product information, please contact Customer Service, Advita Ortho, LLC. 2320 NW 66th Court, Gainesville, Florida 32653-1630, USA. (833) 4-ADVITA.

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