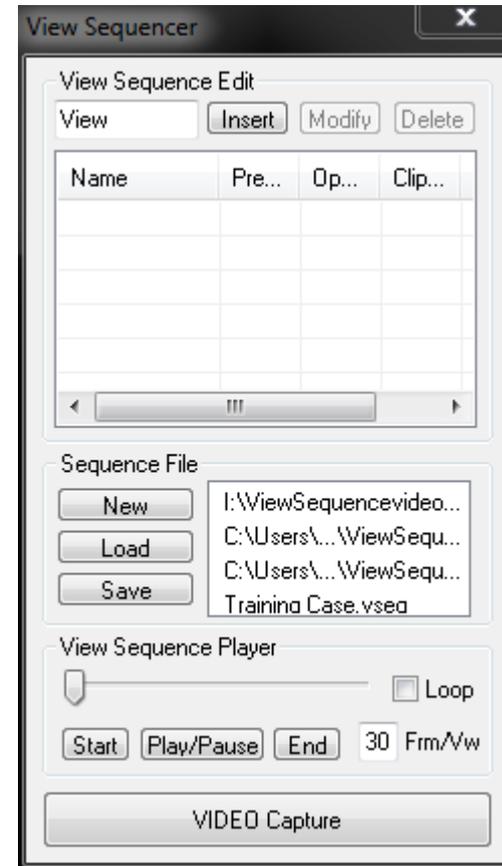


Video Creation in Invivo

- This slideshow will give a step-by-step guide on how to make a video of a CT scan using the Invivo5 software.
- The Knee Replacements and Amputation CT scan from the Table Image Library is used for demonstration.
- The video that this guide was used to make can be accessed on YouTube.

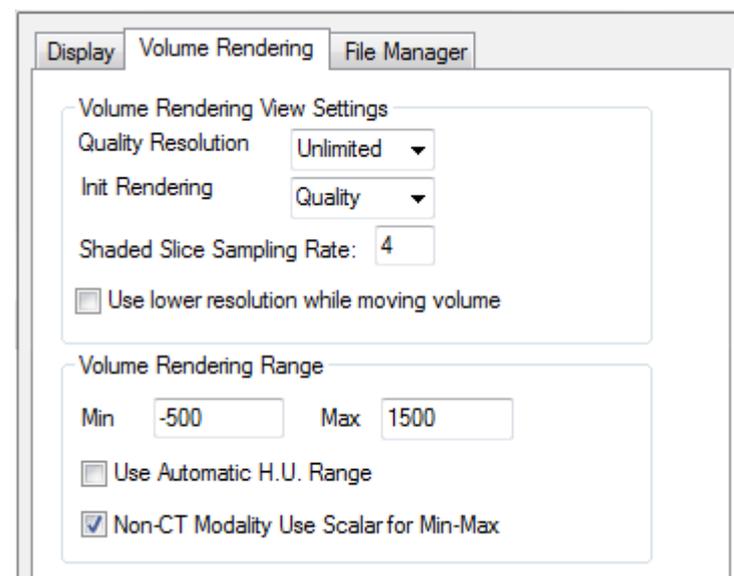
Getting Started

- Open a CT scan in Invivo5 software.
- Adjust Visual Quality (see next slide).
- Click on Volume Render tab.
- Click the  icon to remove text from rendering window.
- Click the  icon to launch the View Sequencer.
- To add a scene to the view sequencer, click 'insert'.
- To make a change to an already inserted scene, click modify.



Maxizing Visual Quality

- Click on File --> Preferences... and click on the 'Volume Rendering' tab. Before a movie is captured, change to the following settings:
 - Quality Resolution set to 'Unlimited'.
 - Init Rendering to 'Quality'.
 - Shaded Slice Sampling Rate to '4'.
 - Use lower resolution while moving volume set to unchecked.
- Use standard CT scan Volume Rendering Range of "Min = -500" to "Max = 1500".



Basic Controls

<i>Control</i>	<i>Movement</i>	<i>Result</i>	<i>Description</i>
Left Click	Drag	Rotate	Rendering will rotate about the scanning region's geometric center point.
Shift + Left	Drag	Pan	Rendering will pan in the dragged direction.
Ctrl + Left Click	Drag	Zoom in/out	Rendering will become larger or smaller.
Spacebar + Left Click	Drag	Spin	Rendering will spin along the plane of the screen.

Scene One

Setting	Value
Camera Angle	Frontal View
Volume Visibility	Full Volume
Rendering Type	Bone
Opacity	50%
Brightness	100%
Contrast	50%
Clipping Plane	Not Enabled

- 100% brightness used to show muscular and cardiovascular systems



Scene Two

Setting	Value
Camera Angle	Frontal View
Volume Visibility	Full Volume
Rendering Type	Bone
Opacity	50%
Brightness	100%
Contrast	50%
Clipping Plane	Not Enabled

- Scene Two is identical to Scene One. This allows for a brief pause at the beginning of the video to establish the full volume before any movement begins.



Scene Three

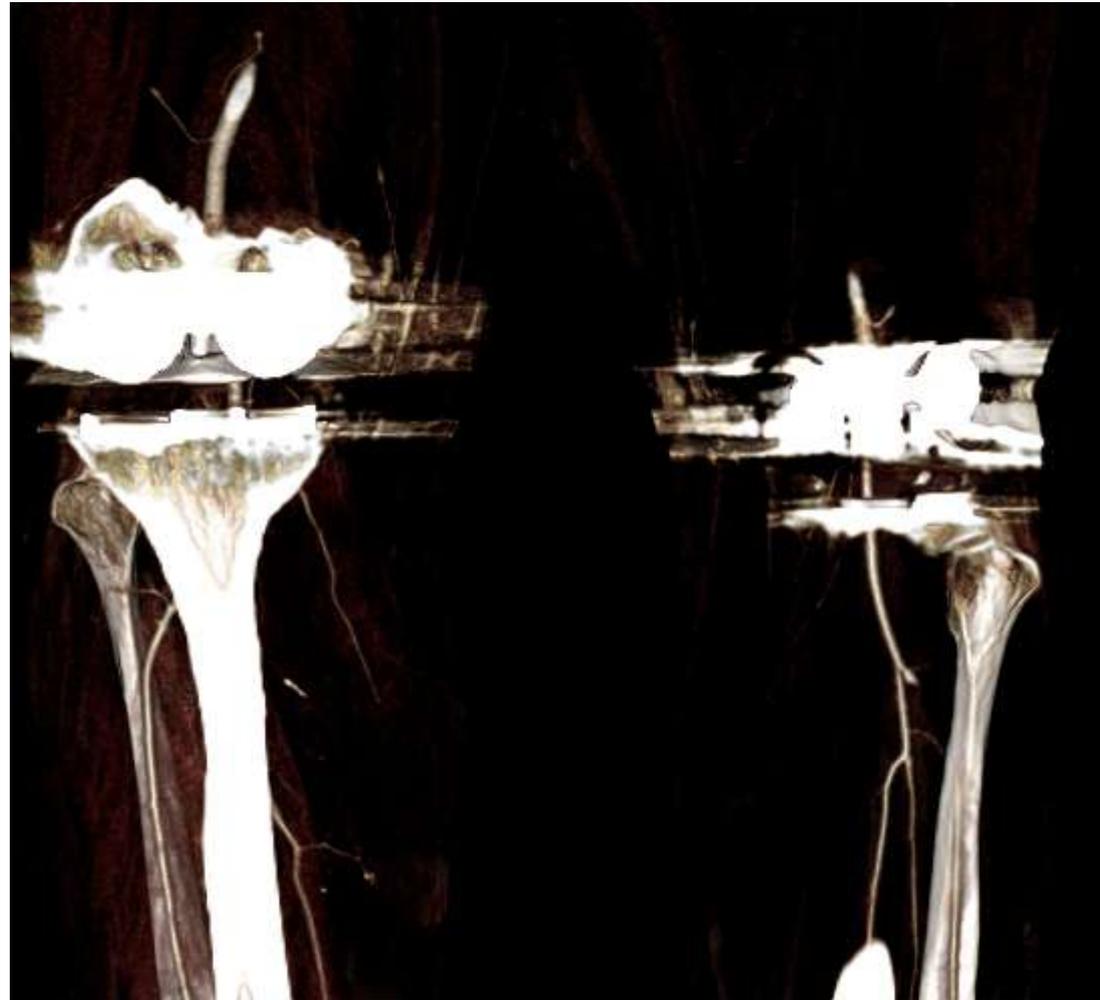
Setting	Value
Camera Angle	Right ¾ View
Volume Visibility	Zoom on Knees
Rendering Type	Bone
Opacity	50%
Brightness	80%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 0%

- A coronal clipping plane is added with 0% slider bar progress. This is done to establish the correct initial clipping plane location before the clip through is animated.



Scene Four

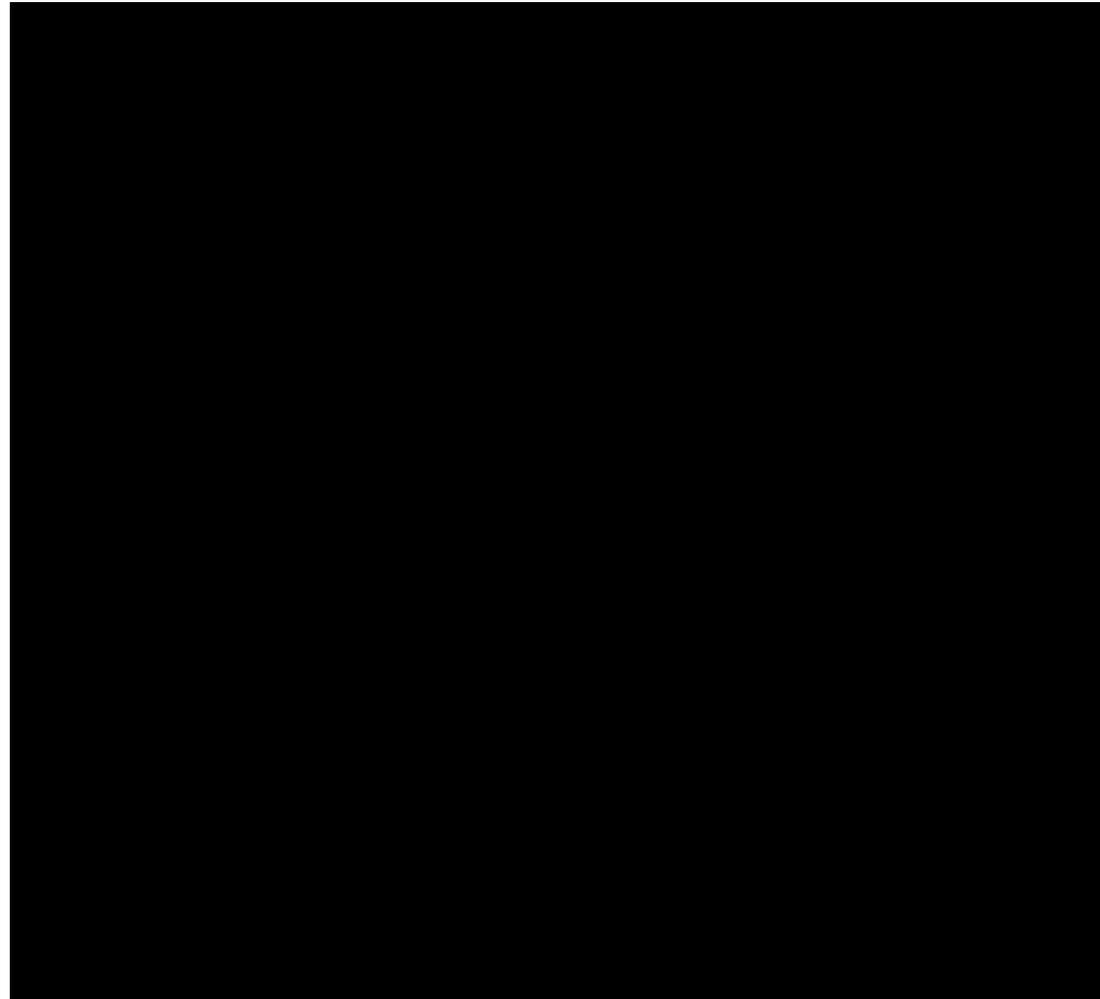
Setting	Value
Camera Angle	Frontal View
Volume Visibility	Zoom on Knees
Rendering Type	Bone
Opacity	50%
Brightness	80%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 40%



Scene Five

Setting	Value
Camera Angle	Left $\frac{3}{4}$ View
Volume Visibility	Zoom on Knees
Rendering Type	Teeth
Opacity	50%
Brightness	80%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 80%

- The Bone to Teeth rendering change occurs while the screen is black to create a more natural transition. This avoids any abrupt change in the appearance of the volume.



Scene Six

Setting	Value
Camera Angle	Frontal View
Volume Visibility	Zoom on Knees
Rendering Type	Teeth
Opacity	50%
Brightness	80%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 40%



Scene Seven

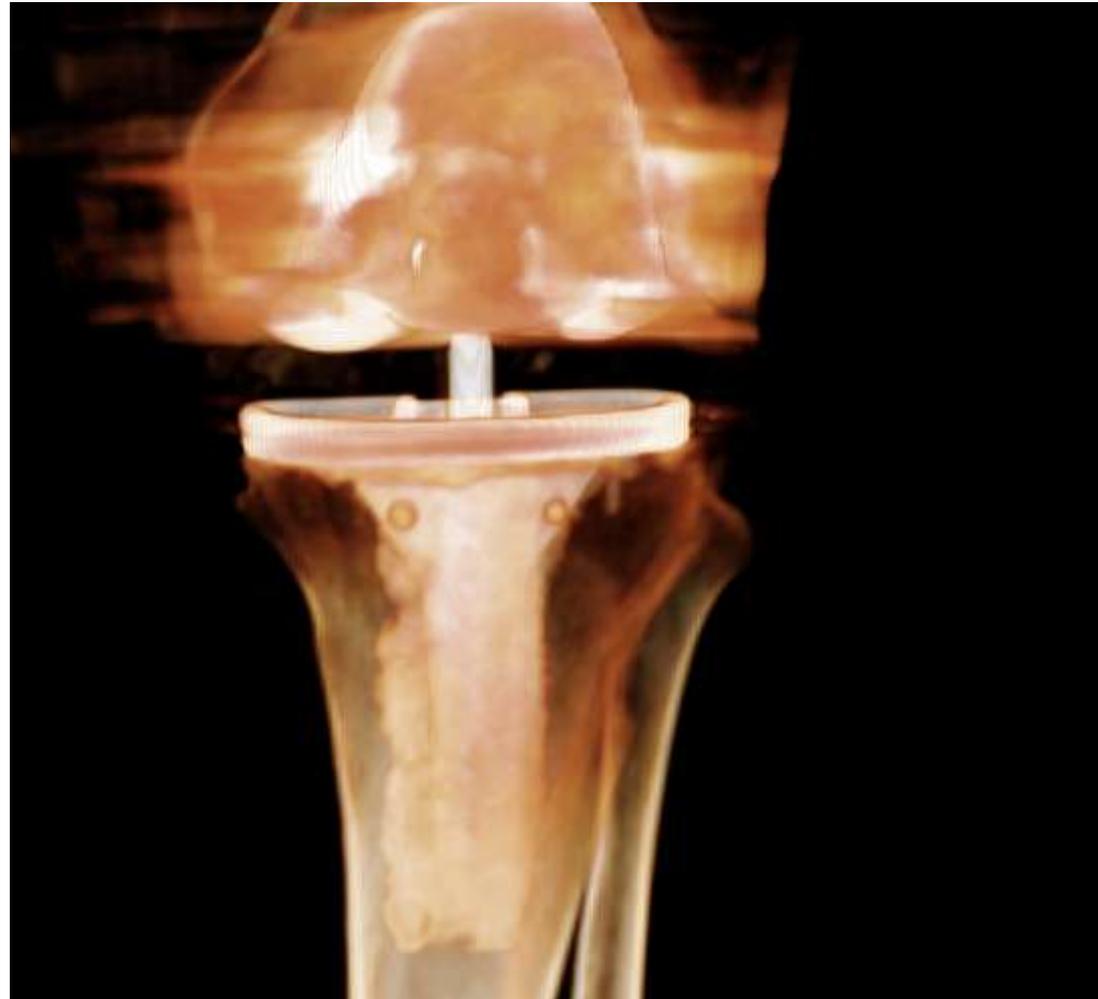
Setting	Value
Camera Angle	Right $\frac{3}{4}$ View
Volume Visibility	Zoom on Implant
Rendering Type	Teeth
Opacity	50%
Brightness	80%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 0%



Scene Eight

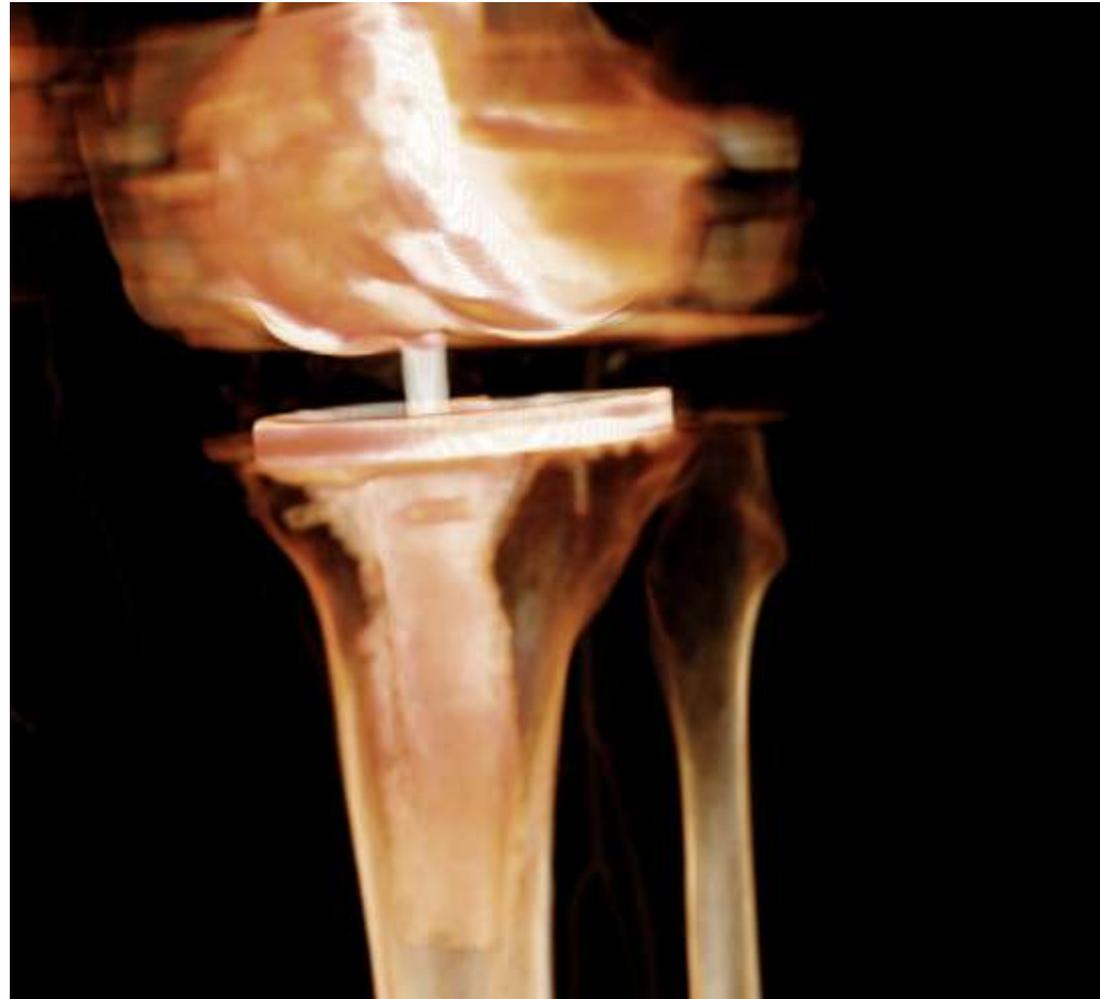
Setting	Value
Camera Angle	Frontal View
Volume Visibility	Zoom on Implant
Rendering Type	Teeth
Opacity	50%
Brightness	60%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 0%

- Brightness is reduced to get a better view of the knee implant.



Scene Nine

Setting	Value
Camera Angle	Left $\frac{3}{4}$ View
Volume Visibility	Zoom on Implant
Rendering Type	Teeth
Opacity	50%
Brightness	60%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 0%



Scene Ten

Setting	Value
Camera Angle	Frontal View
Volume Visibility	Full Volume
Rendering Type	Teeth
Opacity	50%
Brightness	60%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 0%



Scene Ten

Setting	Value
Camera Angle	Frontal View
Volume Visibility	Full Volume
Rendering Type	Teeth
Opacity	50%
Brightness	60%
Contrast	50%
Clipping Plane	<ul style="list-style-type: none">• Enabled• Coronal• 0%



Video Capture Settings

- File Location
 - Choose file name and saved location of the video
- Codec
 - Anatomage recommends the Xvid Codec which is available for a free download at <https://www.xvid.com/>. This codec has a strong compression rate while maintaining good visual quality.
- Video Frames and Playing time
 - The ratio of Frames/View to Frames/Sec will determine the Total Play Time of the video.
 - For most videos, 75 Frames/View and 30 Frames/Sec are recommended.
 - If a slower video is desired, 150 Frames/View and 30 Frames/Sec are recommended
- Ending Logo
 - A static ending image can be played for a variable amount of time at the end of the video.

