



Guided Mark-Up in Metron: TTA Analysis for Canine



Click F11 on your keyboard for full screen display!

Dependent on your screen size, the menu buttons on the Database Browser screen may appear in one or two rows.



Guided Mark-Up in Metron: TTA Analysis for Canine

This online training session will provide you with the details of how to use
"Guided Mark-Up in Metron: TTA Analysis for Canine."



Click F11 on your keyboard for full screen display!

Dependent on your screen size, the menu buttons on the Database Browser screen may appear in one or two rows.

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Guided Mark-Up: TTA Analysis | Canine

What is Guided Mark-Up?

Metron supports a process called "Guided Mark-Up" in which the user is prompted to pick key points in a properly positioned lateral canine stifle radiograph, and Metron then uses those picked points to compute important parameters of the TTA.

For best TTA analysis, the leg should be positioned about 135-degrees bend at the knee.



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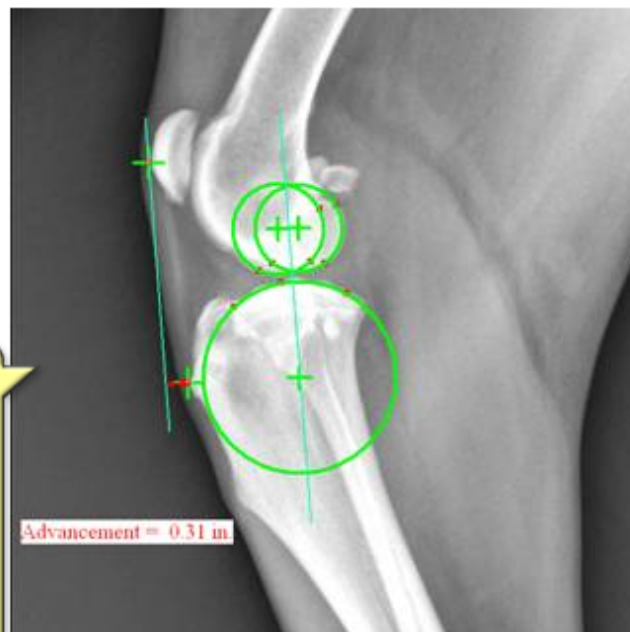
Guided Mark-Up: TTA Analysis | Canine

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What is the Tibial Tuberosity Advancement (TTA) Analysis?
It is a series of five measurements that are used with the Metron algorithms to present you with a complete analysis of the joint.



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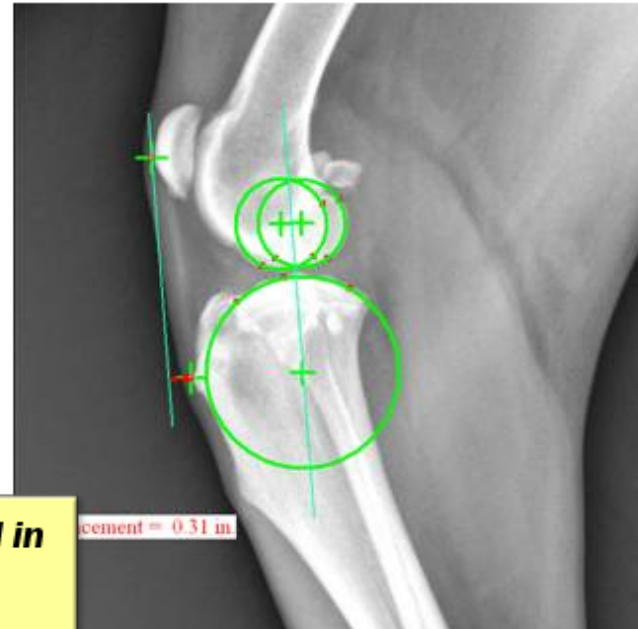
3

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For best TTA analysis, the leg should be positioned about 135-degrees bend at the knee.



This guided mark-up procedure implemented in Metron is based on the recommended procedure as developed by Kyon, Inc. More about the procedure and the required hardware can be learned by visiting www.kyon.ch.

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What is Guided Mark-Up?

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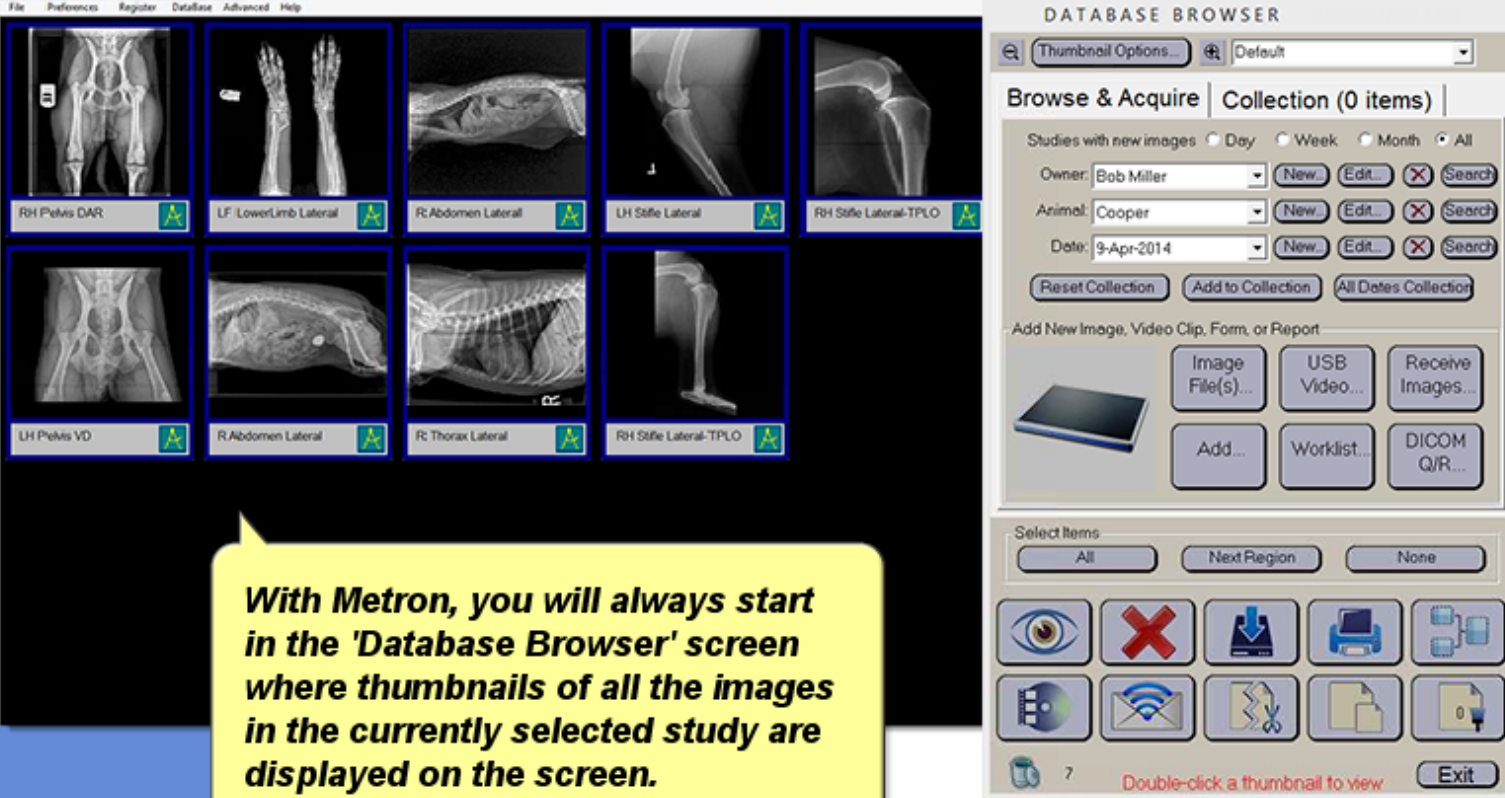
For best TTA analysis, the leg should be positioned about 135-degrees bend at the knee.



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Guided Mark-Up: TTA Analysis | Canine



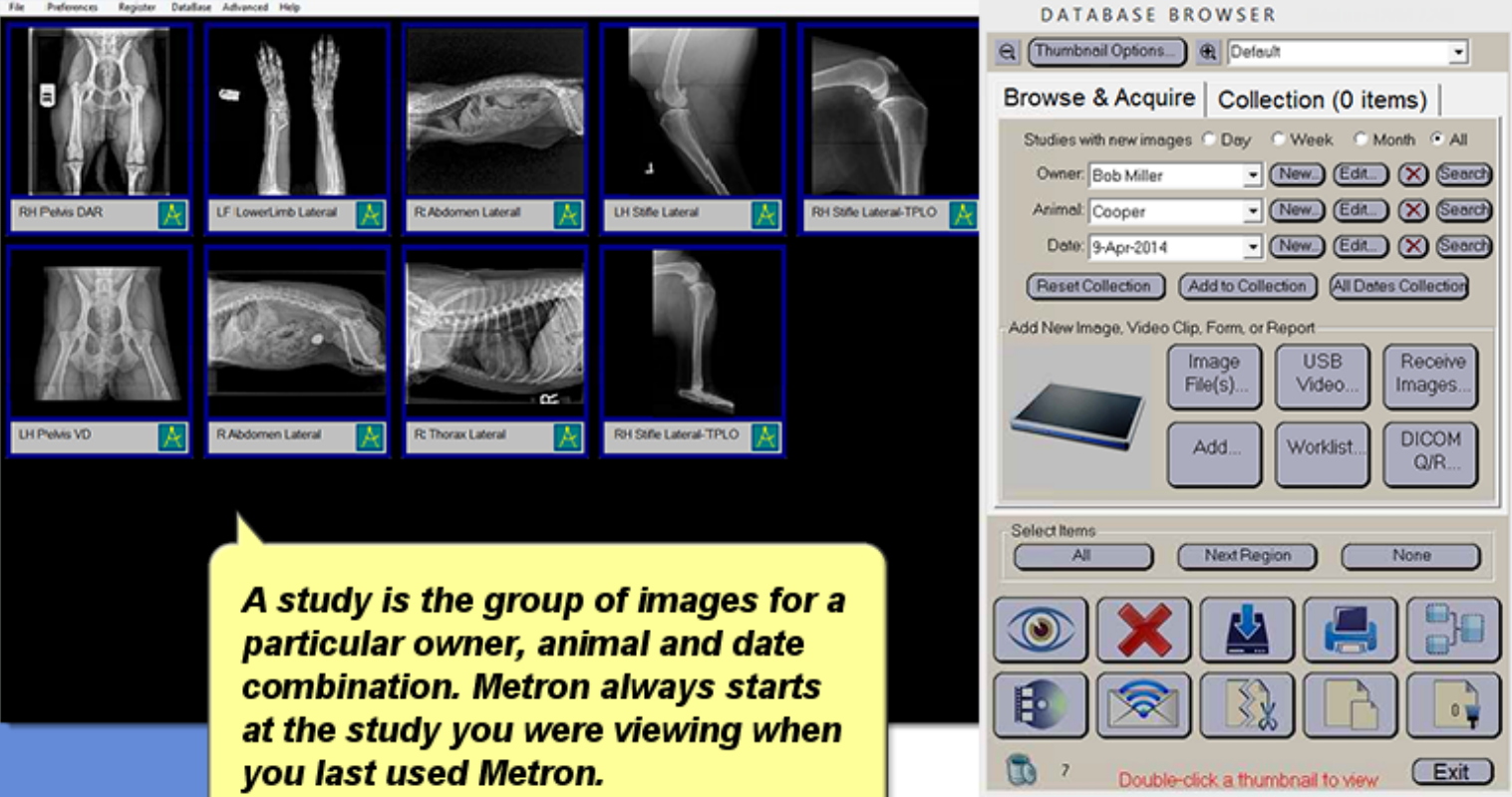
The screenshot displays the Metron software interface. On the left, a grid of eight X-ray thumbnails is shown, each with a label and a green 'A' icon. The labels are: RH Pelvis DAR, LF LowerLimb Lateral, R Abdomen Lateral, LH Stifle Lateral, RH Stifle Lateral-TPLO, LH Pelvis VD, R Abdomen Lateral, R Thorax Lateral, and RH Stifle Lateral-TPLO. On the right, the 'DATABASE BROWSER' window is open, showing a 'Browse & Acquire' section with filters for Owner (Bob Miller), Animal (Cooper), and Date (9-Apr-2014). Below this, there are buttons for 'Add New Image, Video Clip, Form, or Report', including 'Image File(s)...', 'USB Video...', 'Receive Images...', 'Add...', 'Worklist...', and 'DICOM Q/R...'. At the bottom of the browser, there are 'Select Items' buttons (All, Next Region, None) and a grid of icons for various actions like zoom, pan, and print. A red text prompt at the bottom of the browser says 'Double-click a thumbnail to view'.

With Metron, you will always start in the 'Database Browser' screen where thumbnails of all the images in the currently selected study are displayed on the screen.

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The screenshot displays the Metron software interface. On the left, a grid of eight X-ray thumbnails is shown, each with a label and a green 'A' icon. The labels are: RH Pelvis DAR, LF LowerLimb Lateral, R Abdomen Lateral, LH Stifle Lateral, RH Stifle Lateral-TPLO, LH Pelvis VD, R Abdomen Lateral, R Thorax Lateral, and RH Stifle Lateral-TPLO. On the right, the 'DATABASE BROWSER' panel is visible, featuring a search bar, a 'Browse & Acquire' section with filters for Owner (Bob Miller), Animal (Cooper), and Date (9-Apr-2014), and a 'Select Items' section with buttons for All, Next Region, and None. Below these are icons for various actions like Image File(s), USB Video, Receive Images, Add, Worklist, and DICOM Q/R. A red text prompt at the bottom of the panel says 'Double-click a thumbnail to view'. A yellow callout box is overlaid on the bottom left of the image grid.

A study is the group of images for a particular owner, animal and date combination. Metron always starts at the study you were viewing when you last used Metron.

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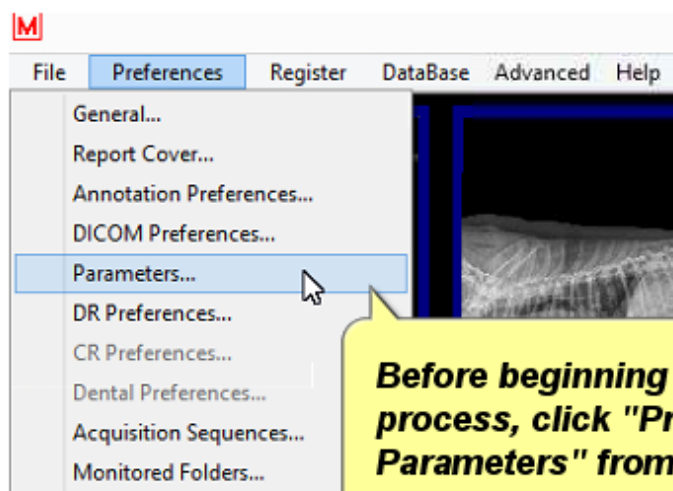
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Before beginning a Guided Mark-Up process, click "Preferences" then "Parameters" from the Metron Database menu bar.

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***User Preferences can
be selected here for
Mark-Up line width...***

User Preferences

Parameter Display

Size: Photos: Radiographs: Background:

☒ Force labels to stay within the image

Guided Mark-Up Complexity

☒ Modern Default (simpler) ☐ Classic Style (more complex)

☐ Use Secondary Breed Matching in Comparison Sets

☐ Exclude if criterion marked 'Not Sure'

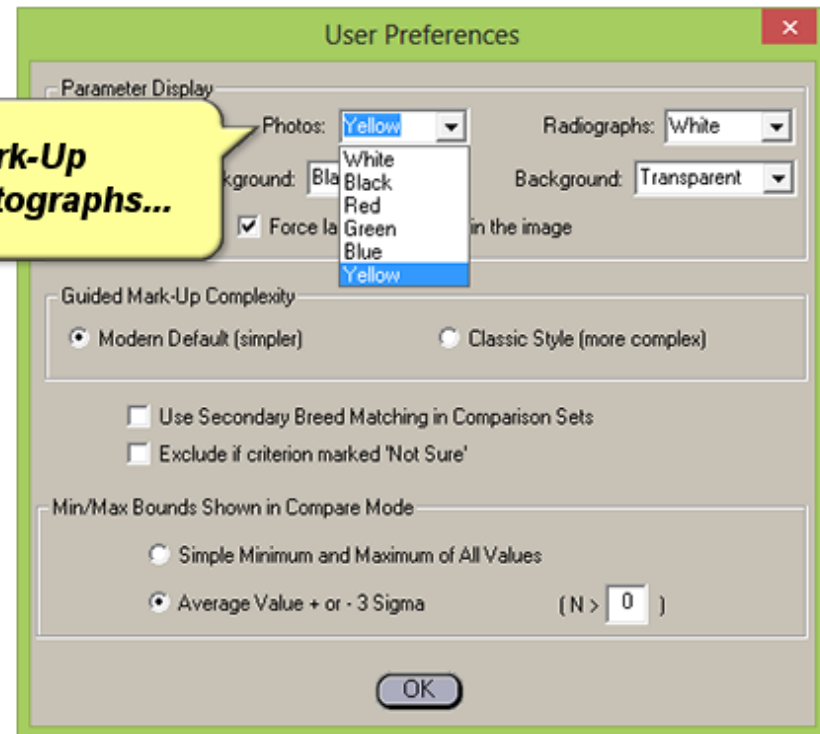
Min/Max Bounds Shown in Compare Mode

☐ Simple Minimum and Maximum of All Values

☒ Average Value + or - 3 Sigma (N >)

OK

***...font color for Mark-Up
description in photographs...***



**and font color for Mark-Up
description in radiographs.**

Parameter Display

Size: **1** Photos: Yellow Radiographs: **White**

Background: Black Background: Tra

☒ Force labels to stay within the image

Guided Mark-Up Complexity

☒ Modern Default (simpler) ☐ Classic Style (more complex)

☐ Use Secondary Breed Matching in Comparison Sets

☐ Exclude if criterion marked 'Not Sure'

Min/Max Bounds Shown in Compare Mode

☐ Simple Minimum and Maximum of All Values

☒ Average Value + or - 3 Sigma (N > **0**)

OK

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All other areas checked are set as Metron default settings and seldom need to be changed.

User Preferences

Parameter Display

Size: 1 Photos: Yellow Radiographs: White

Background: Black Background: Transparent

☒ Force labels to stay within the image

Guided Mark-Up Complexity

☒ Modern Default (simpler) ☐ Classic Style (more complex)

☐ Use Secondary Breed Matching in Comparison Sets

☐ Exclude if criterion marked 'Not Sure'

Min/Max Bounds Shown in Compare Mode

☐ Simple Minimum and Maximum of All Values

☒ Average Value + or - 3 Sigma (N > 0)

OK

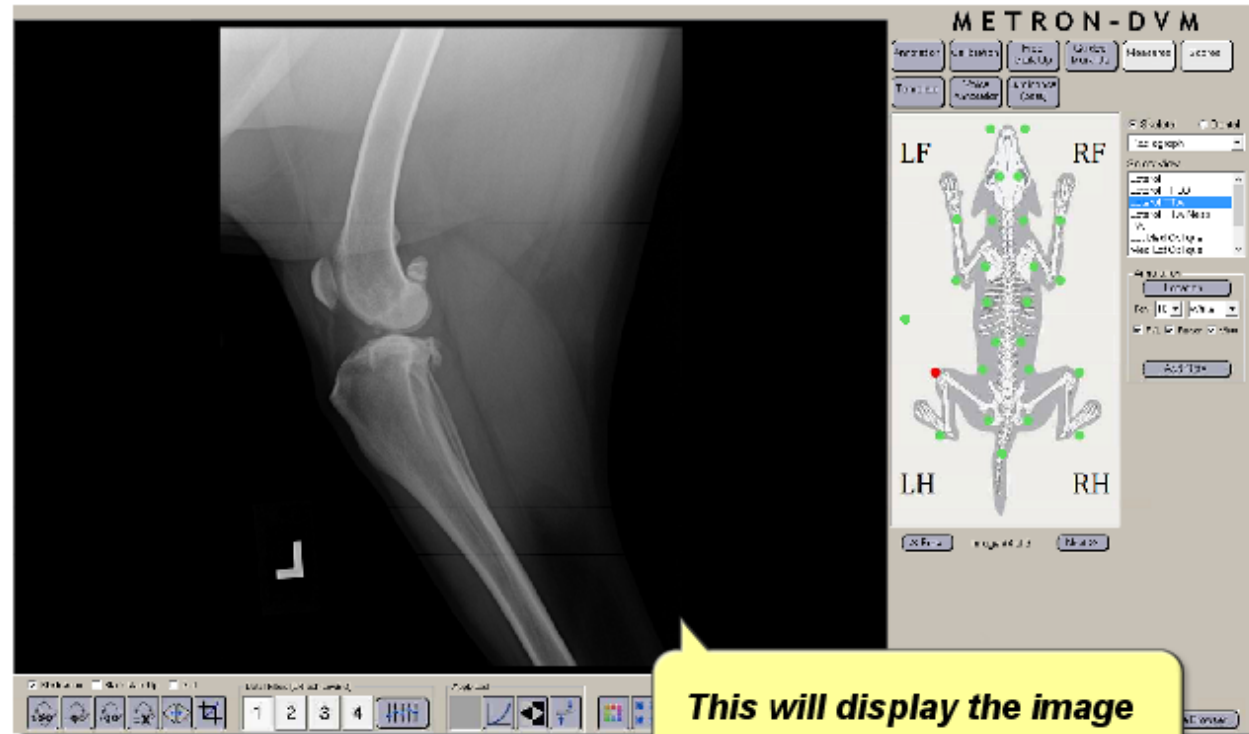
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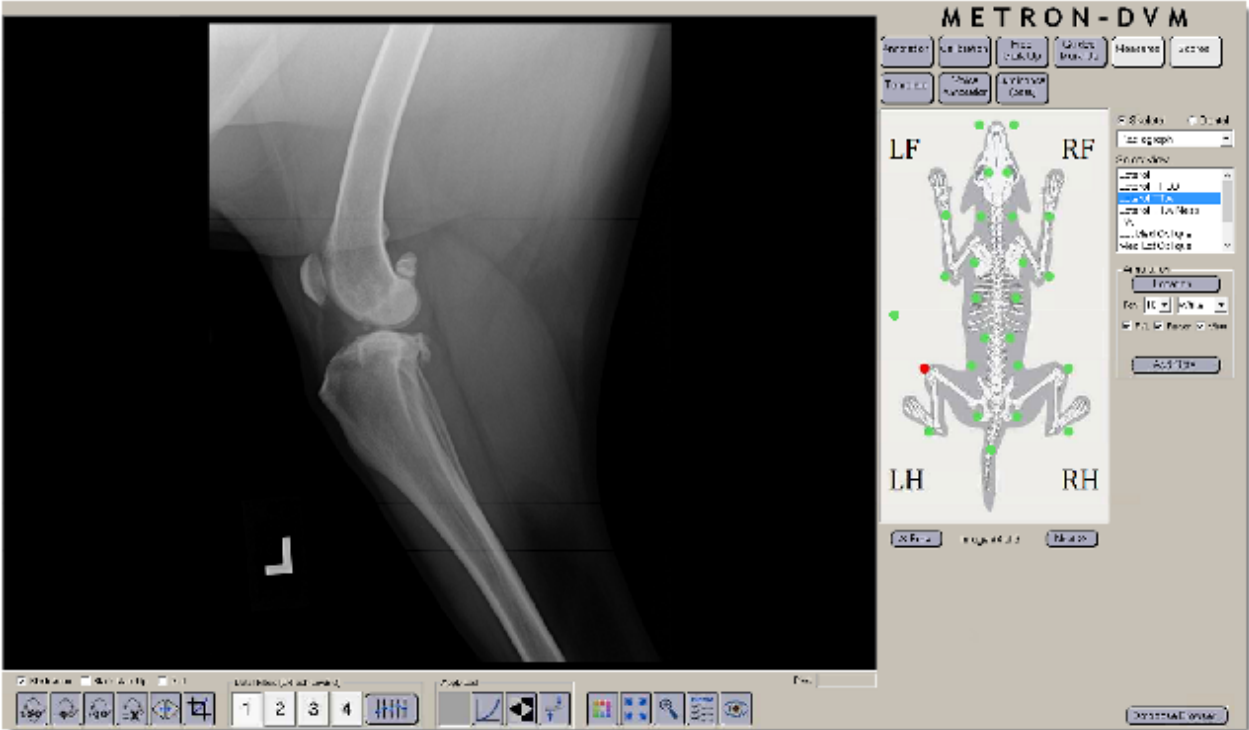
**Select an image by
double clicking on
that image.**

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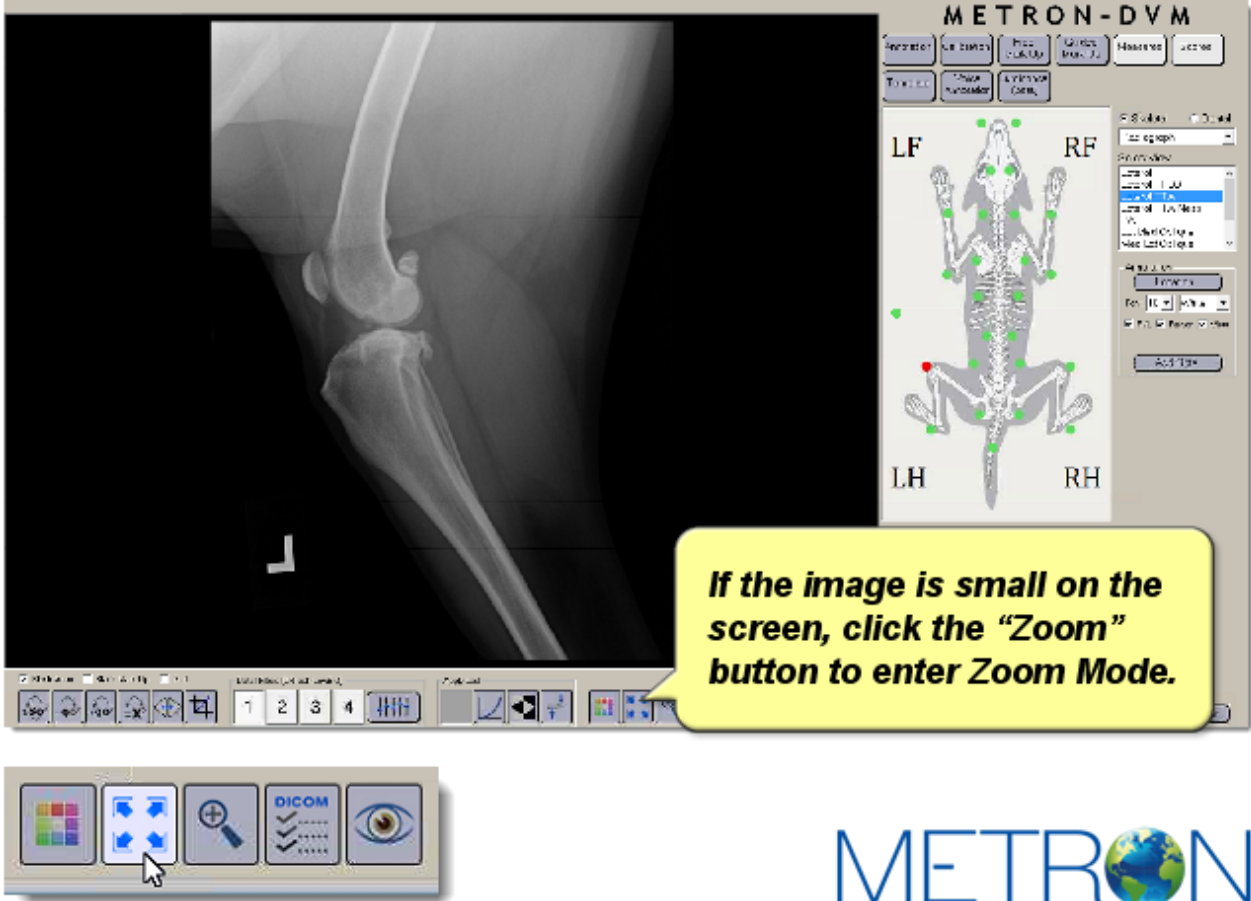
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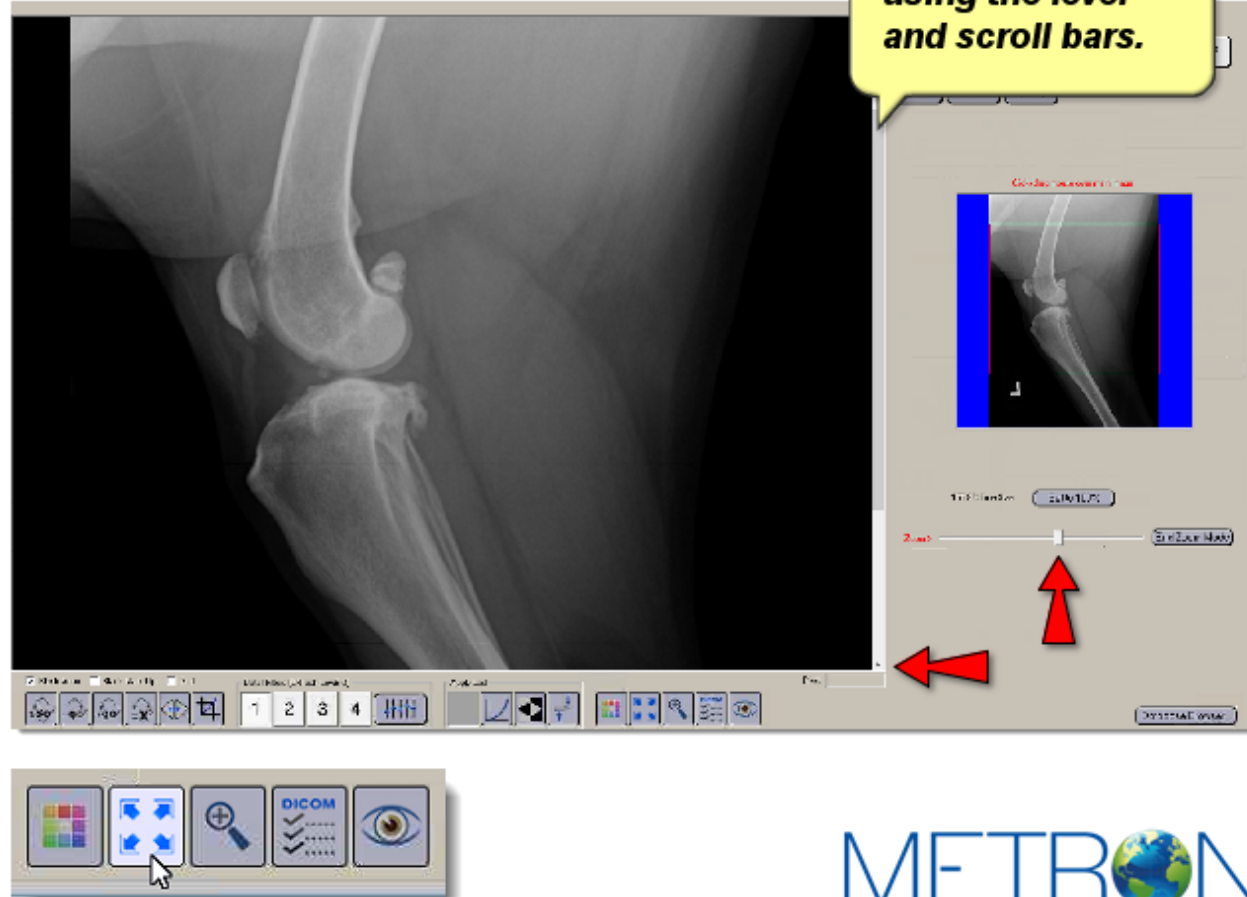
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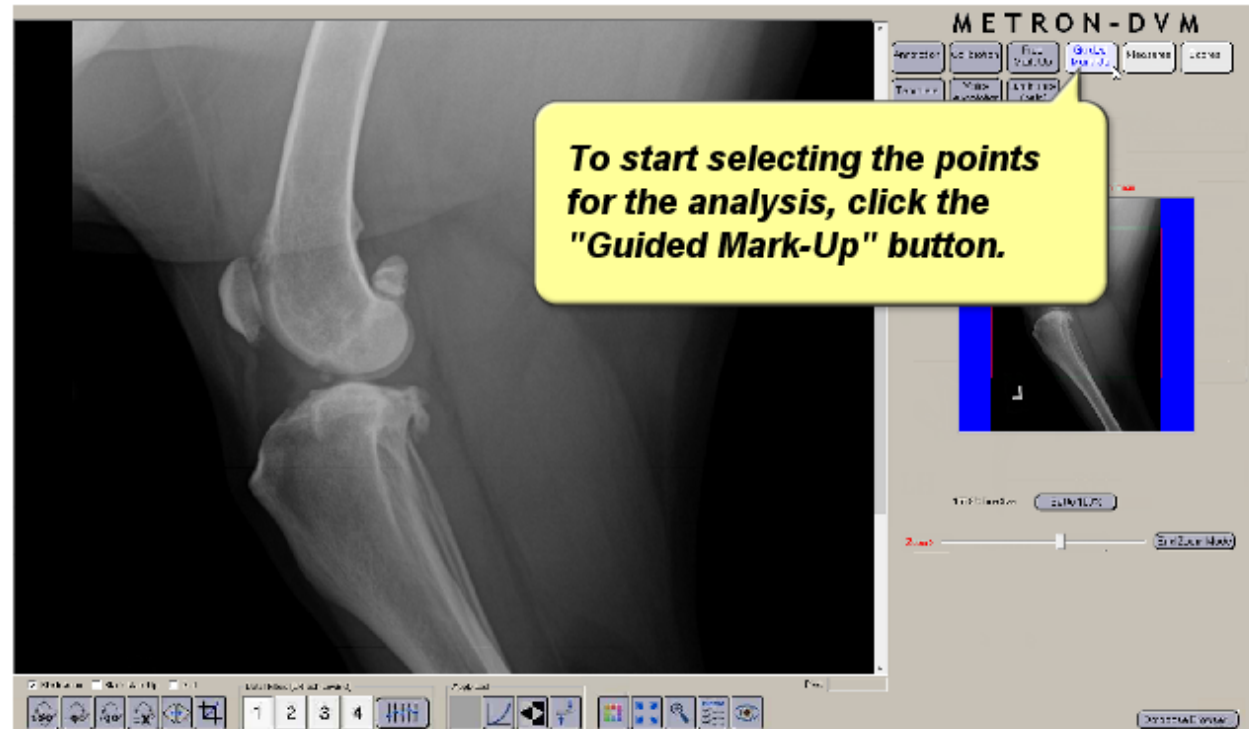
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Adjust the size and positioning of the image using the lever and scroll bars.



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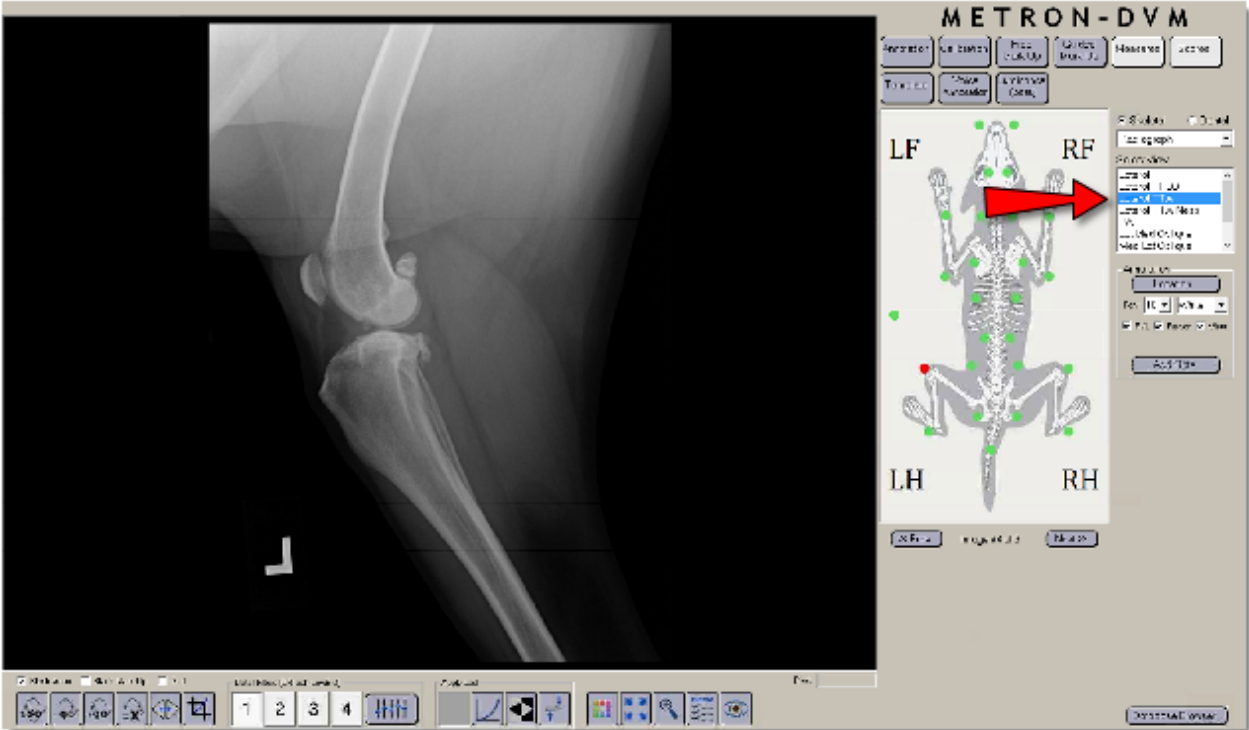




Guided Mark-Up steps you through marking key points on your image. When you click the "Guided Mark-Up" button and you have not previously calibrated this image, you will first be brought to the Calibration panel.

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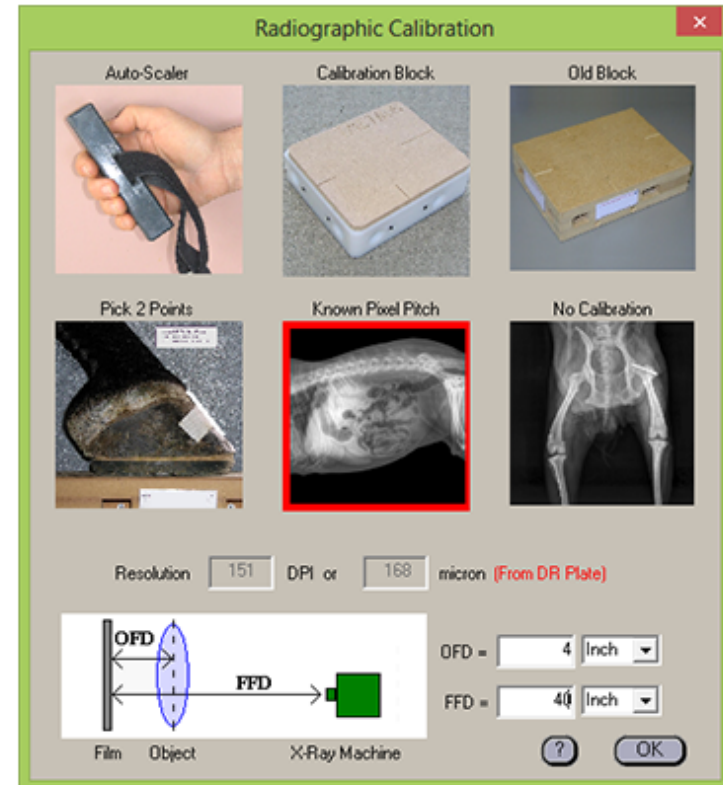
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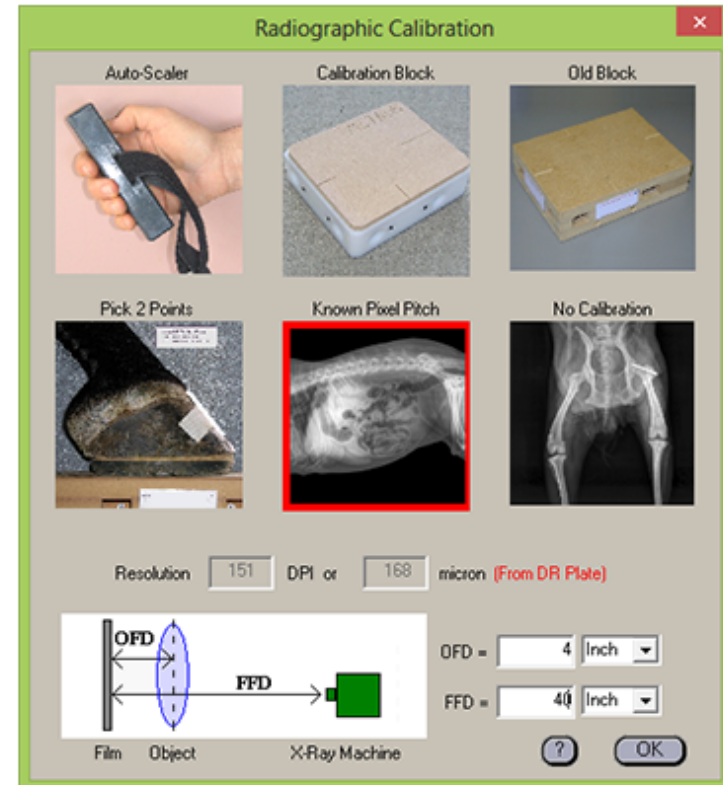
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If the calibration panel pops up, and the image was taken with a CR or DR system controlled by Metron, the entries as shown to the right can be used to calibrate.



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Careful calibration of the image is essential for TTA because the important result of the procedure is that a linear "advancement" value is calculated which helps you to size the hardware required. This value will only be accurate if the calibration is done properly.



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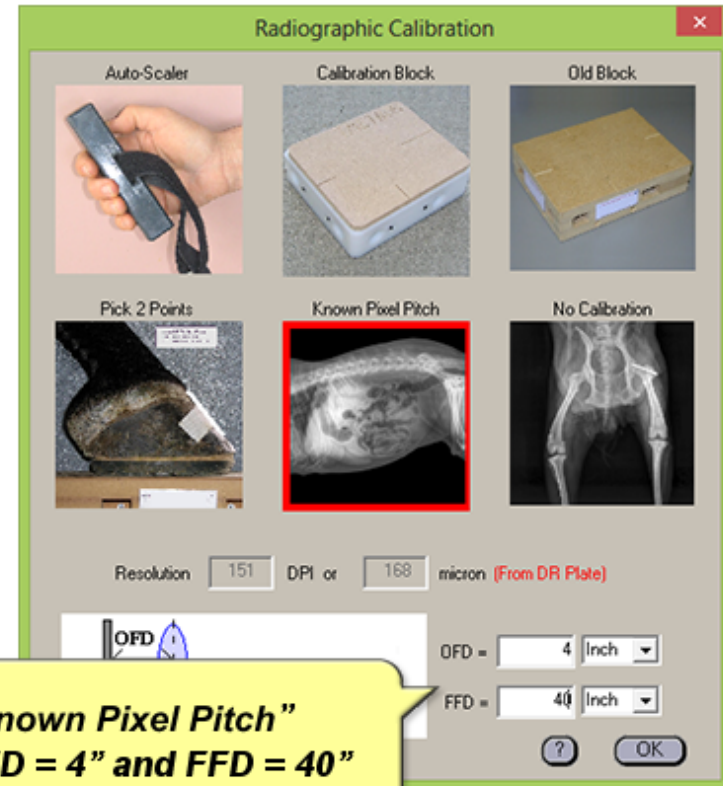
Careful calibration of the image is essential for TTA because the important result of the procedure is that a linear "advancement" value is calculated which helps you to size the hardware required. This value will only be accurate if the calibration is done properly.

While there are several options available in the Metron calibration panel, we recommend the use of the 'Auto Scaler' for ease of use and accuracy. Ideally the Auto-Scaler is placed adjacent to the stifle under study the when the images are taken.



Guided Mark-Up: TTA Analysis | Canine

Careful calibration of the image is essential for TTA because the important result of the procedure is that a linear "advancement" value is calculated which helps you to size the hardware required. This value will only be accurate if the calibration is done properly.



**Use "Known Pixel Pitch"
and OFD = 4" and FFD = 40"
for small animal table.**

The following are the five mark-up steps as indicated on the instruction window.

Step 1:
**"Condyle of the
Femoral Head"**

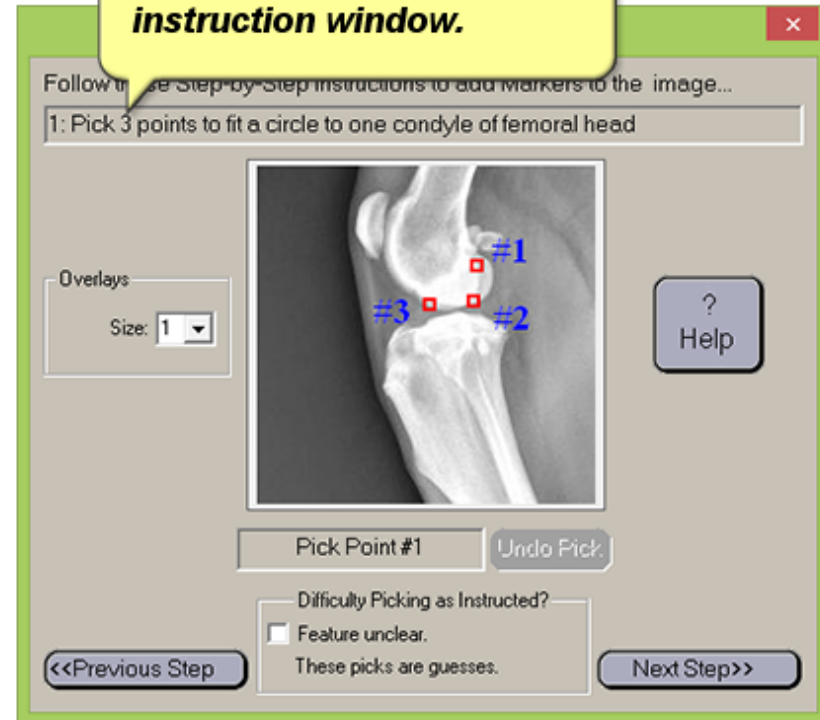


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The following are the five mark-up steps as indicated on the instruction window.

Step 1: "Condyle of the Femoral Head"

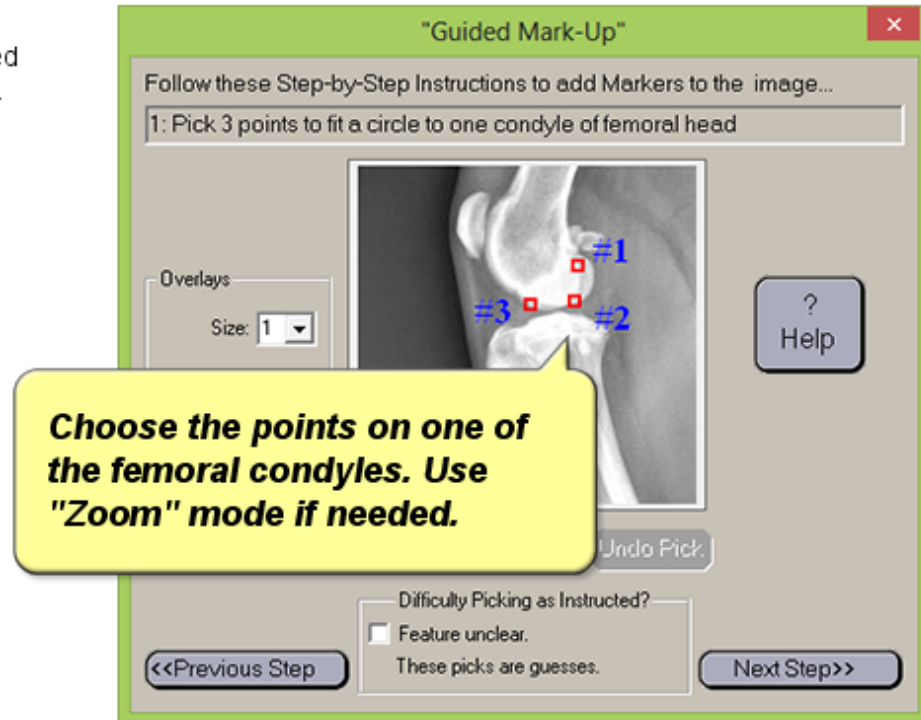
Pick three points on your image as indicated in the instruction window.



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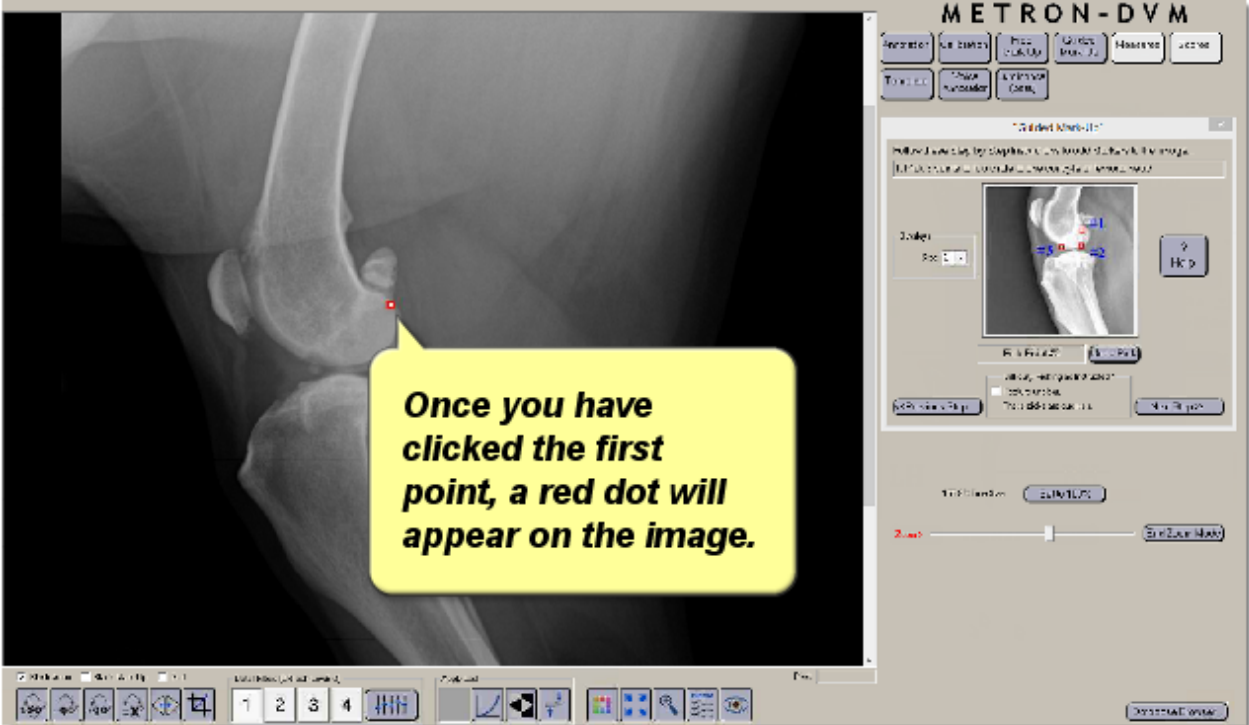
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Step 1: "Condyle of the Femoral Head"



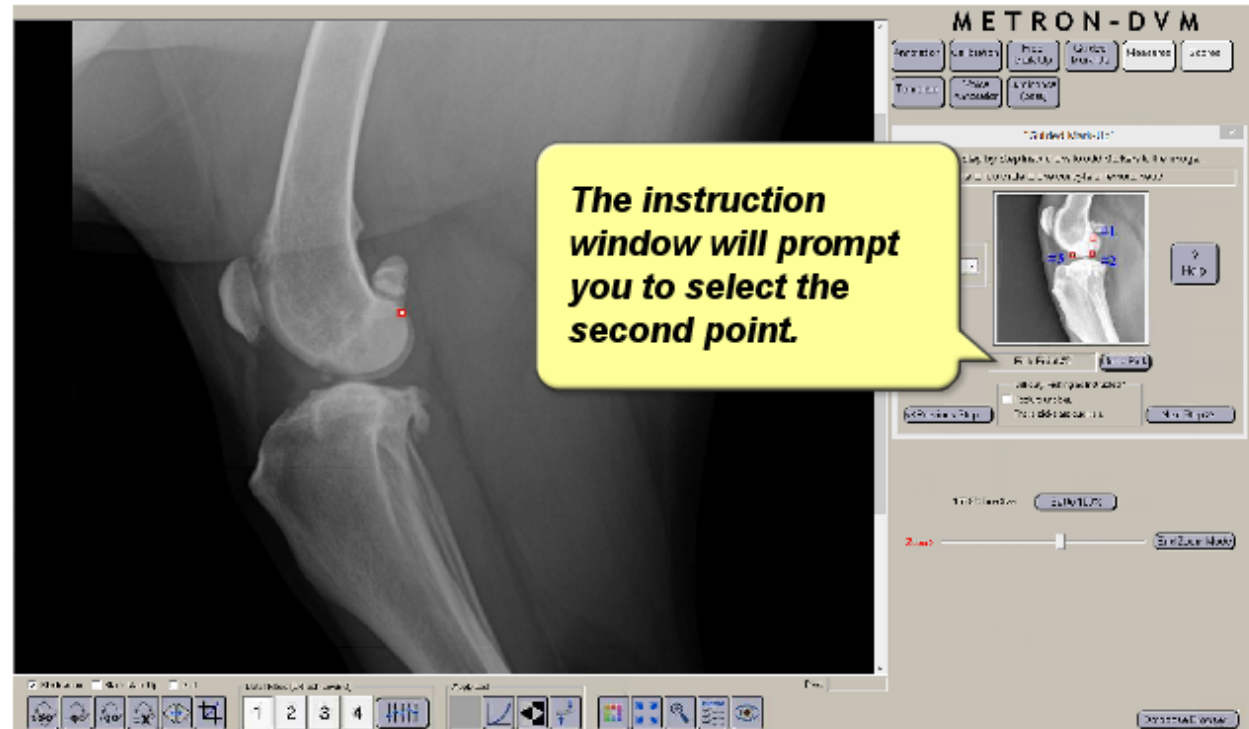
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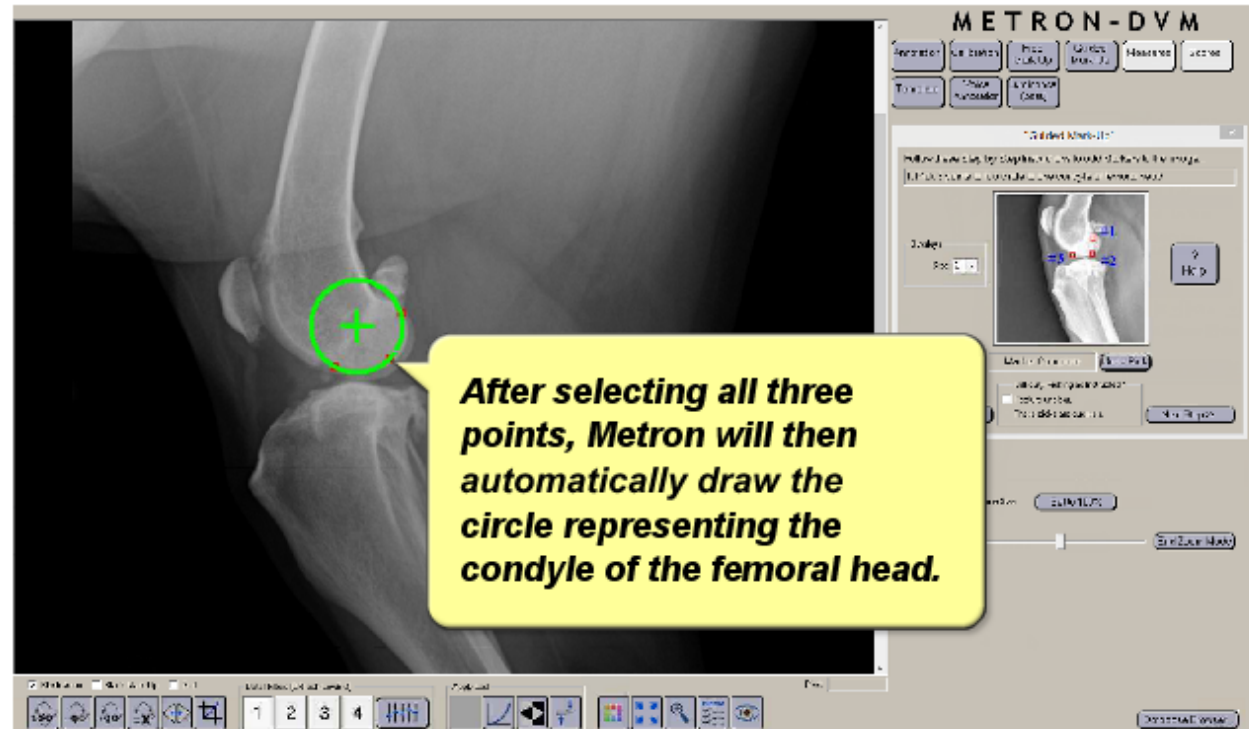
Guided Mark-Up: TTA Analysis | Canine



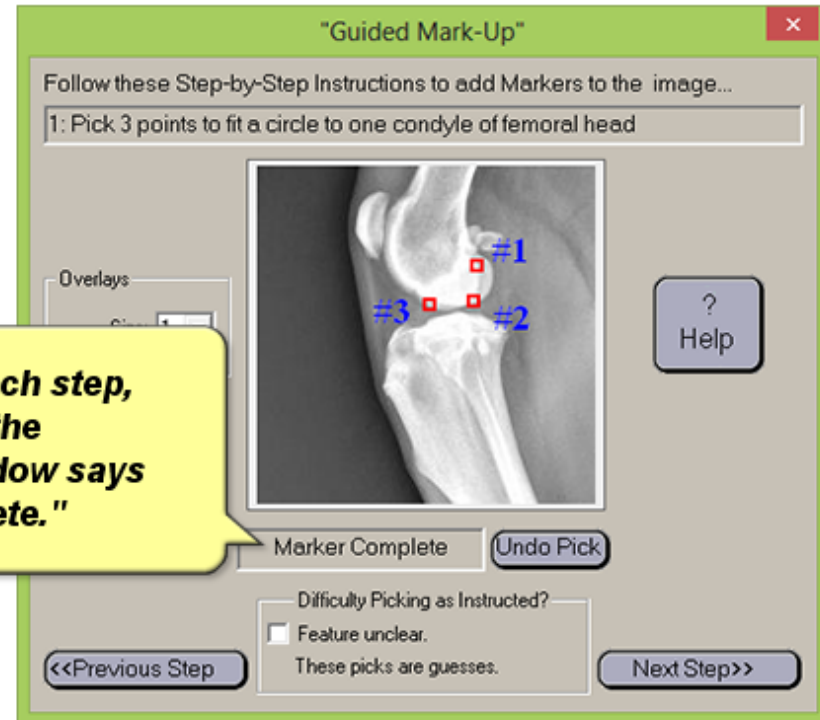
Once you have clicked the first point, a red dot will appear on the image.

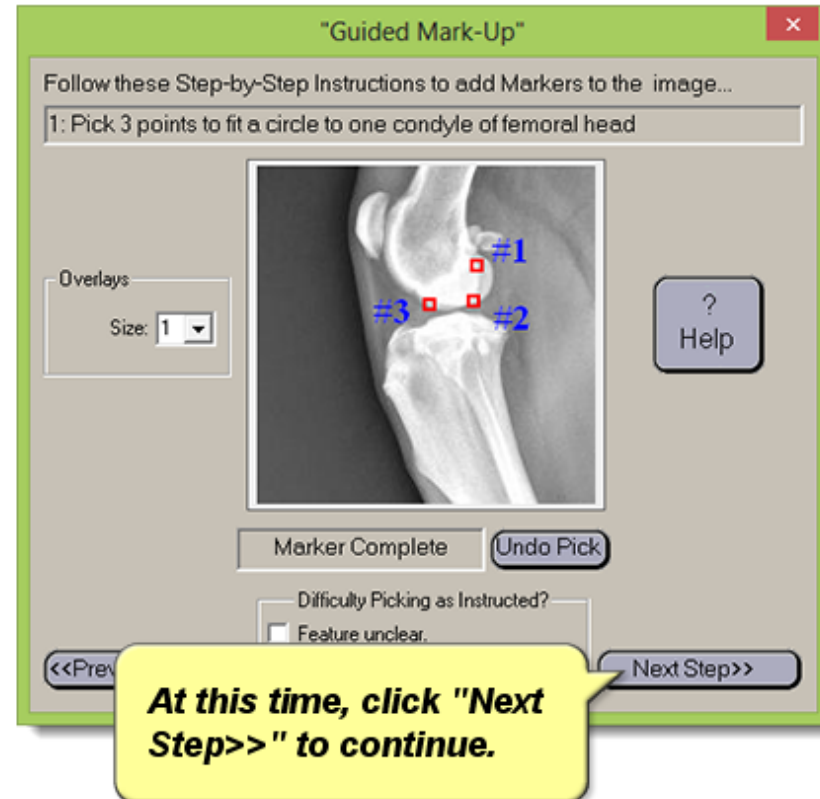
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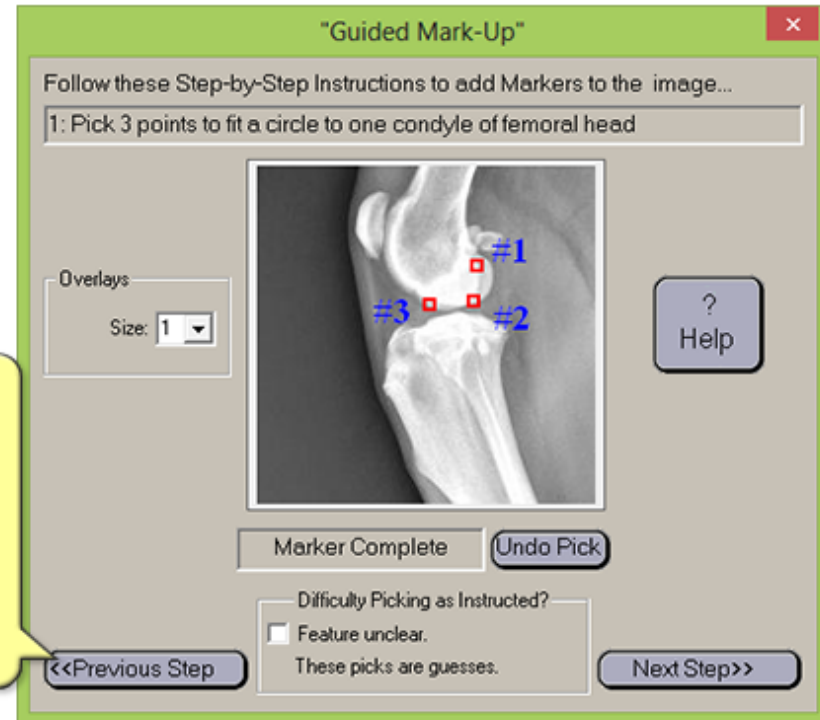


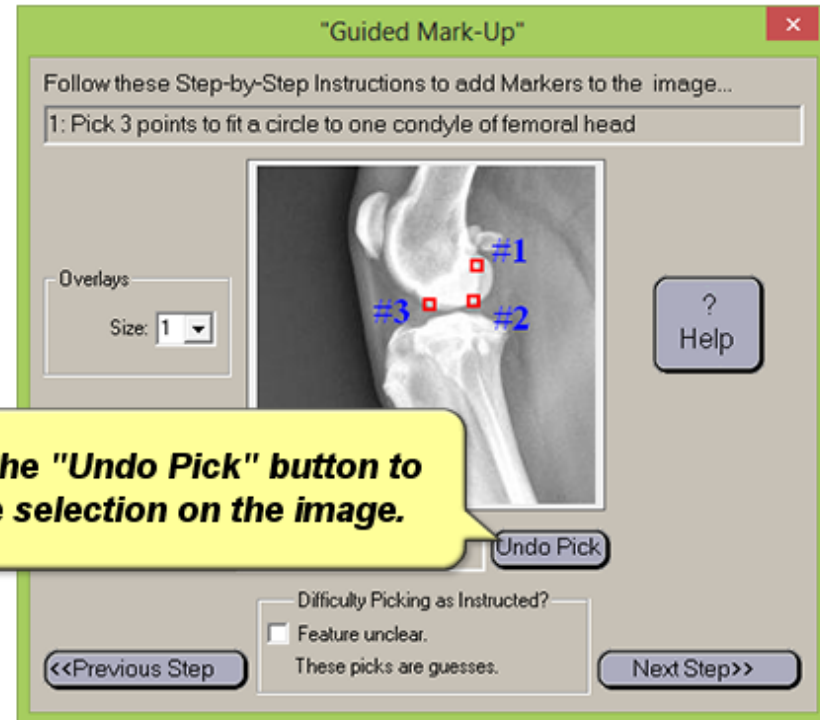
***At the end of each step,
you will notice the
instruction window says
"Marker Complete."***



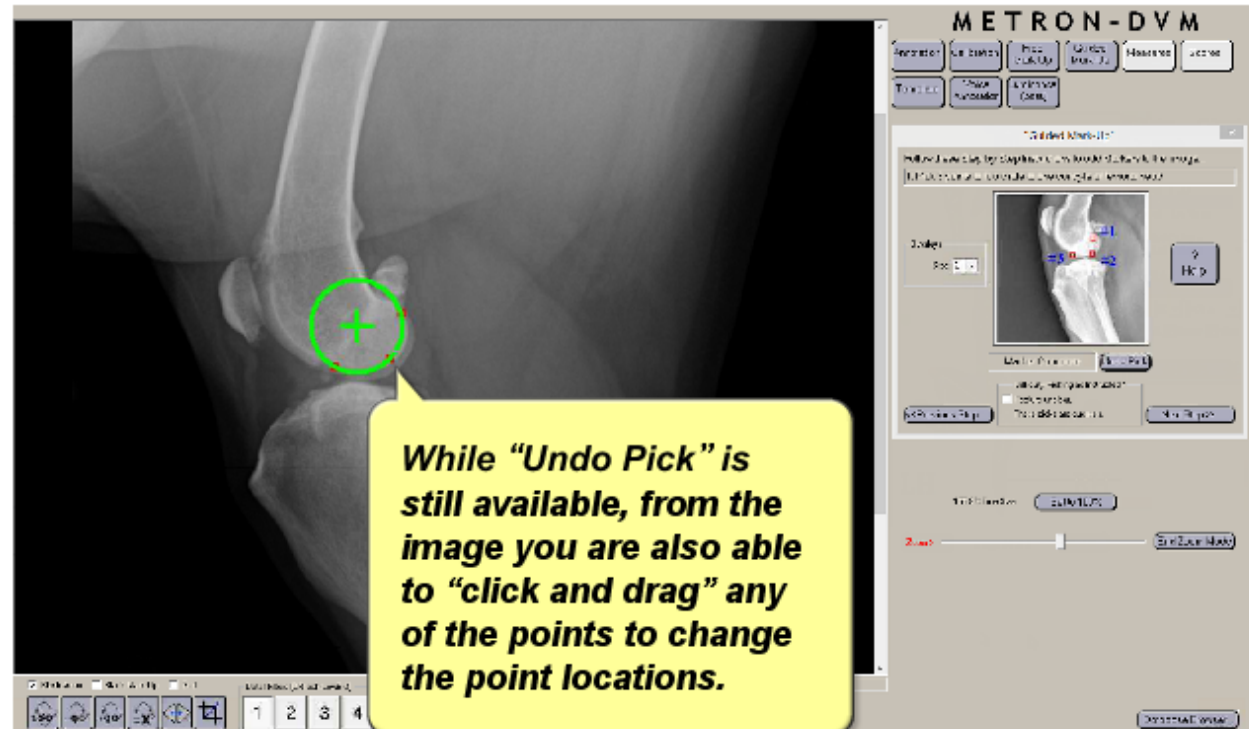


Also, at any point you are able to:
1) Click the
"<<Previous Step"
button to move back
one step at a time.

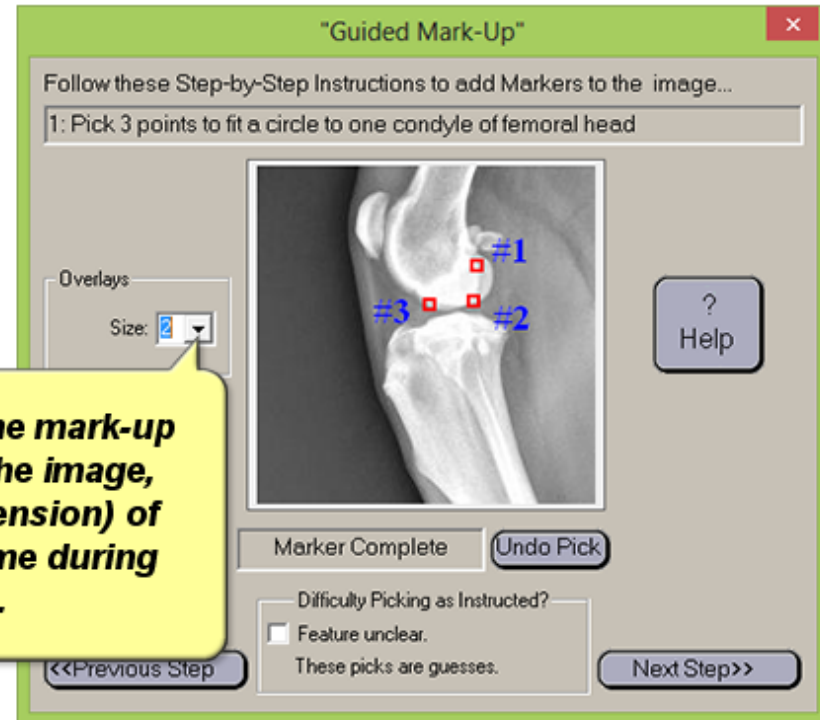




2) Click the "Undo Pick" button to erase the selection on the image.



3) If you have Zoomed and the mark-up seems large and coarse on the image, you can adjust the size (dimension) of the mark-up objects at anytime during the Guided Mark-Up process.





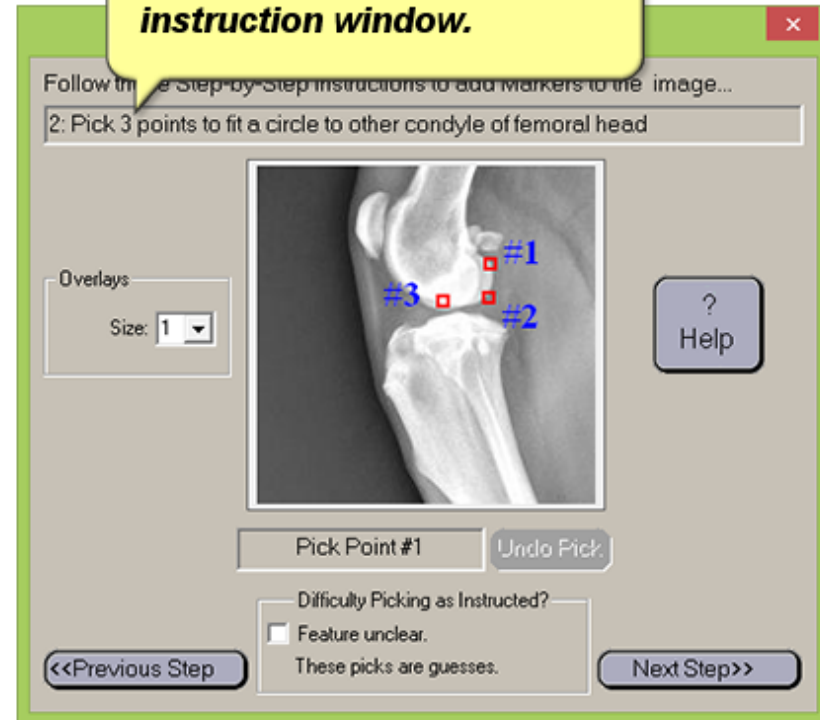
Step 2:
"Other Condyle of
Femoral Head"

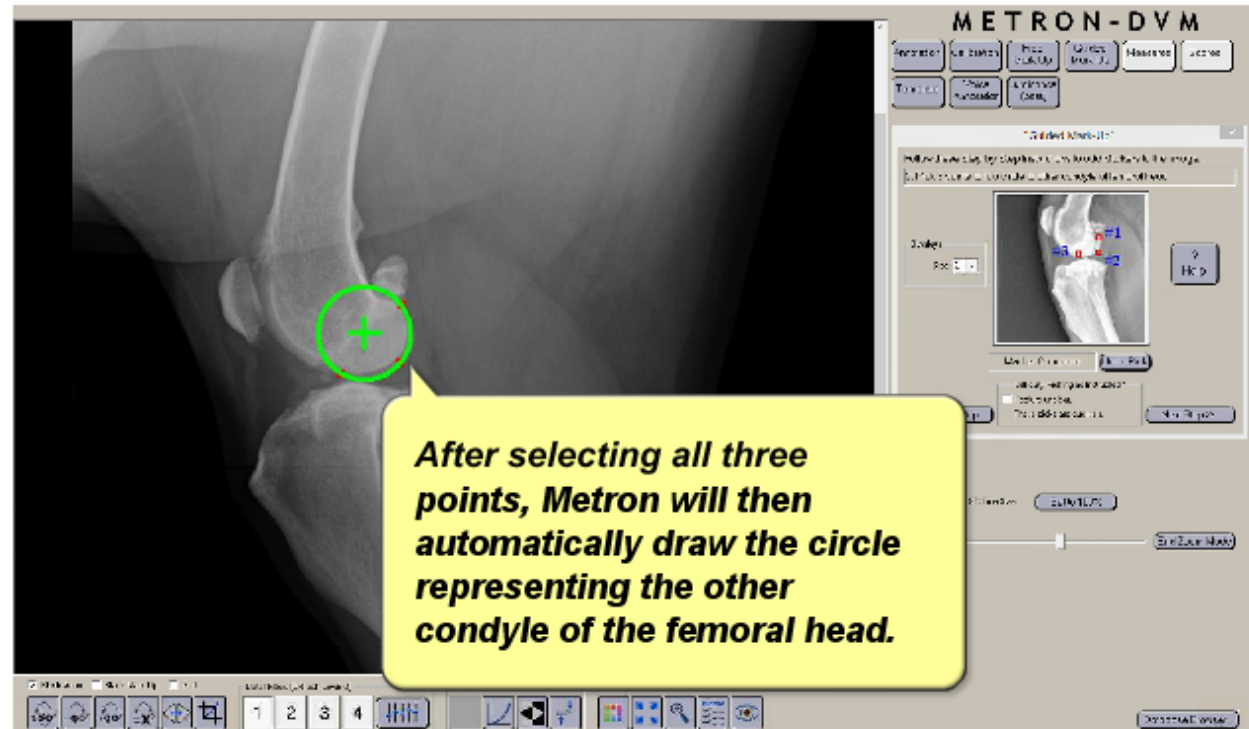


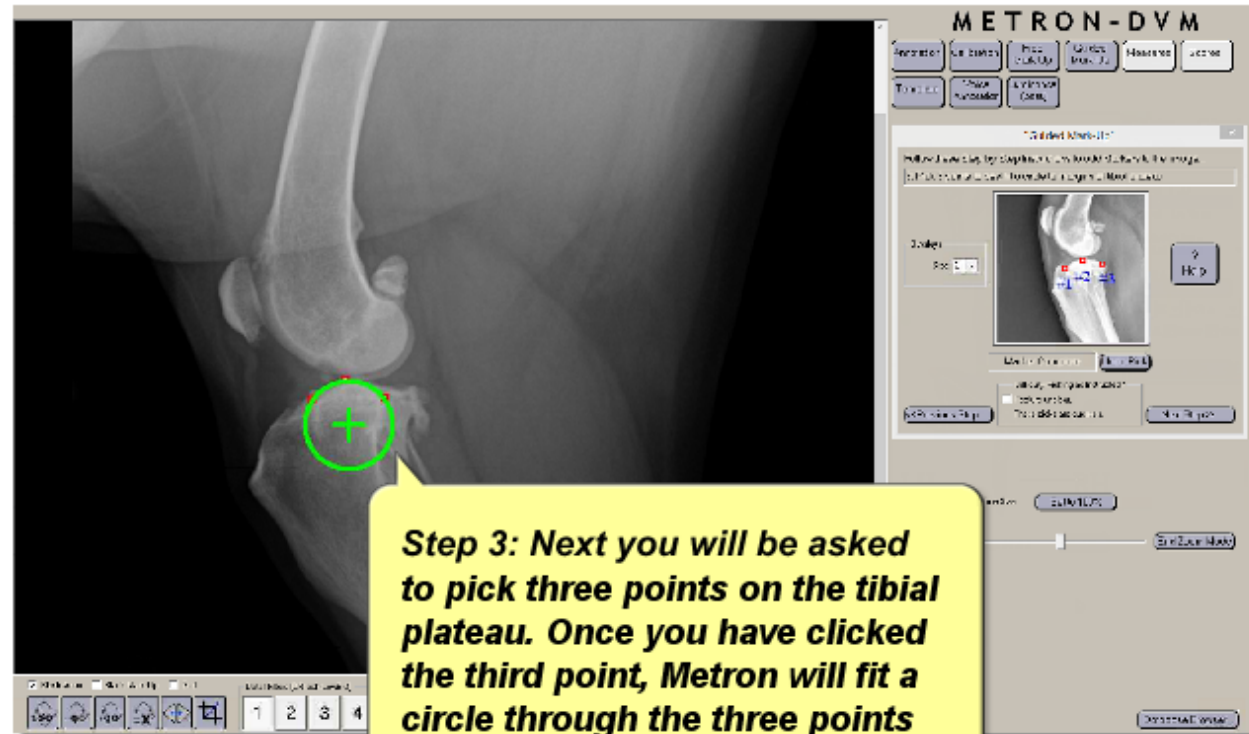
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**Step 2:
"Other Condyle of
Femoral Head"**

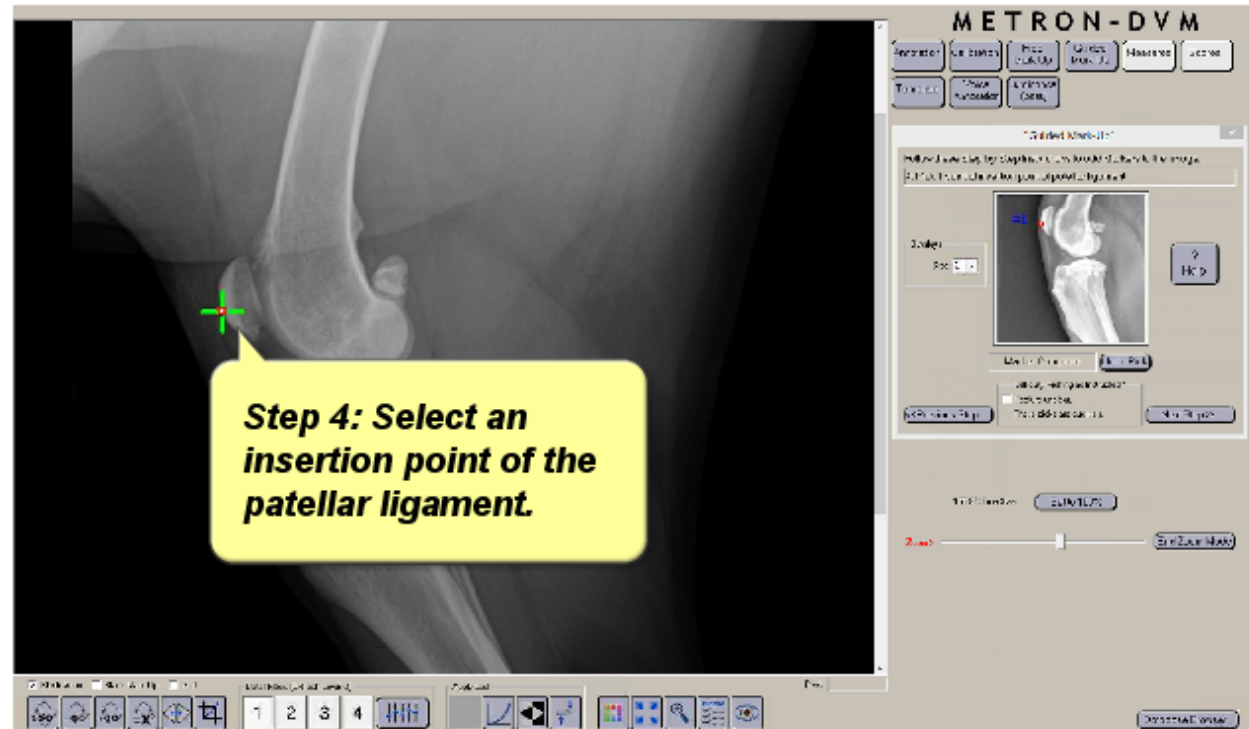
***Pick three points on your
image as indicated in the
instruction window.***

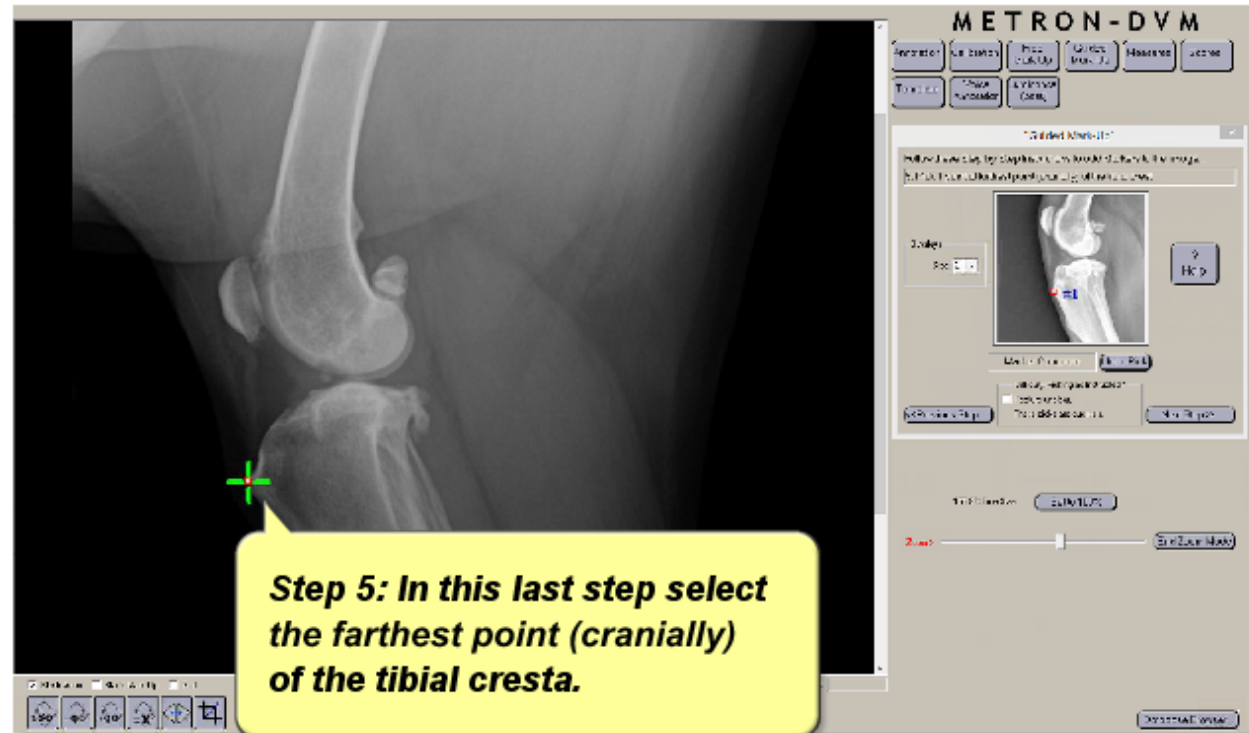




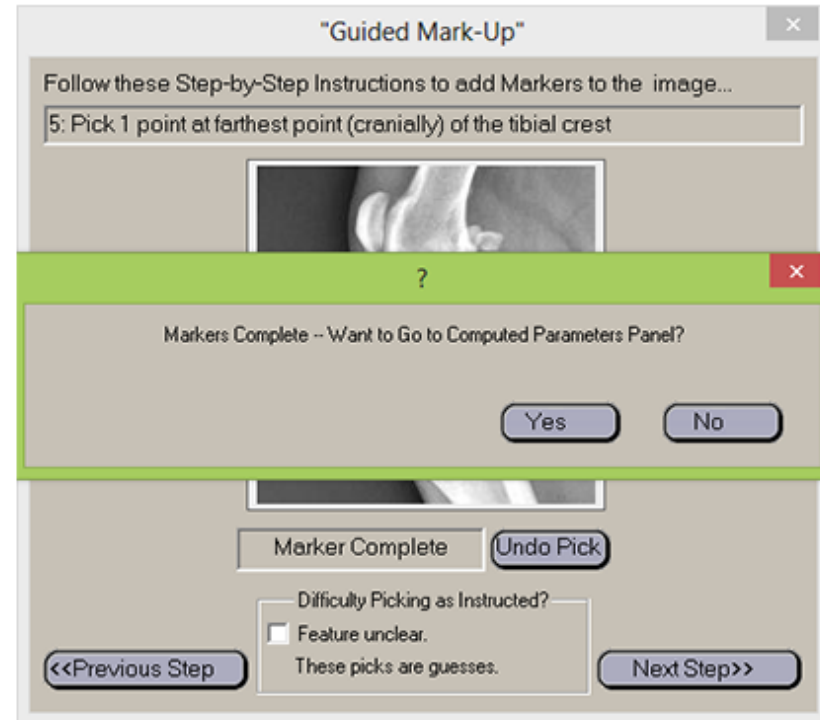


Step 3: Next you will be asked to pick three points on the tibial plateau. Once you have clicked the third point, Metron will fit a circle through the three points you have picked.

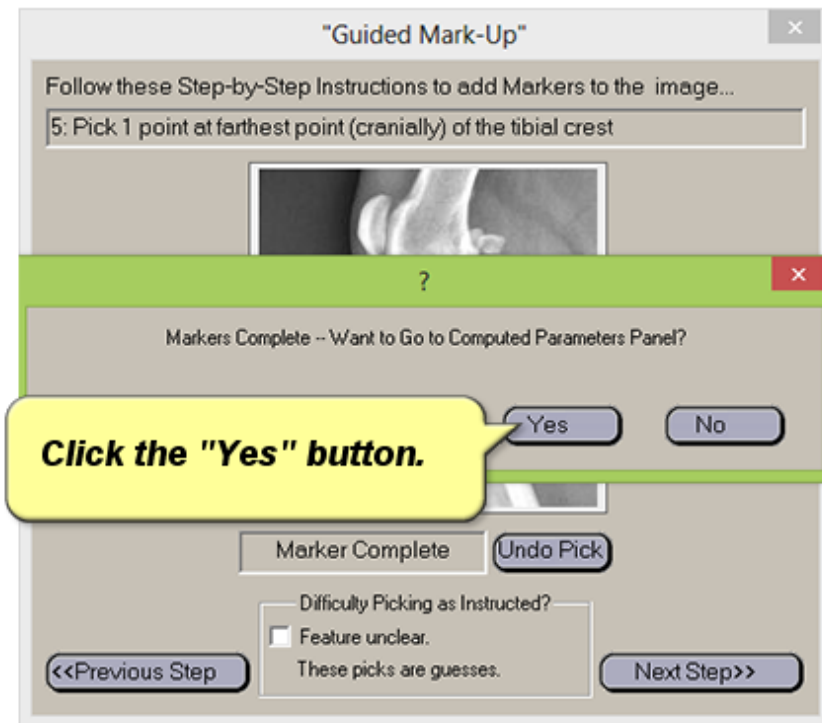




After finishing step five, you are asked if you are ready to have Metron calculate the parameters.

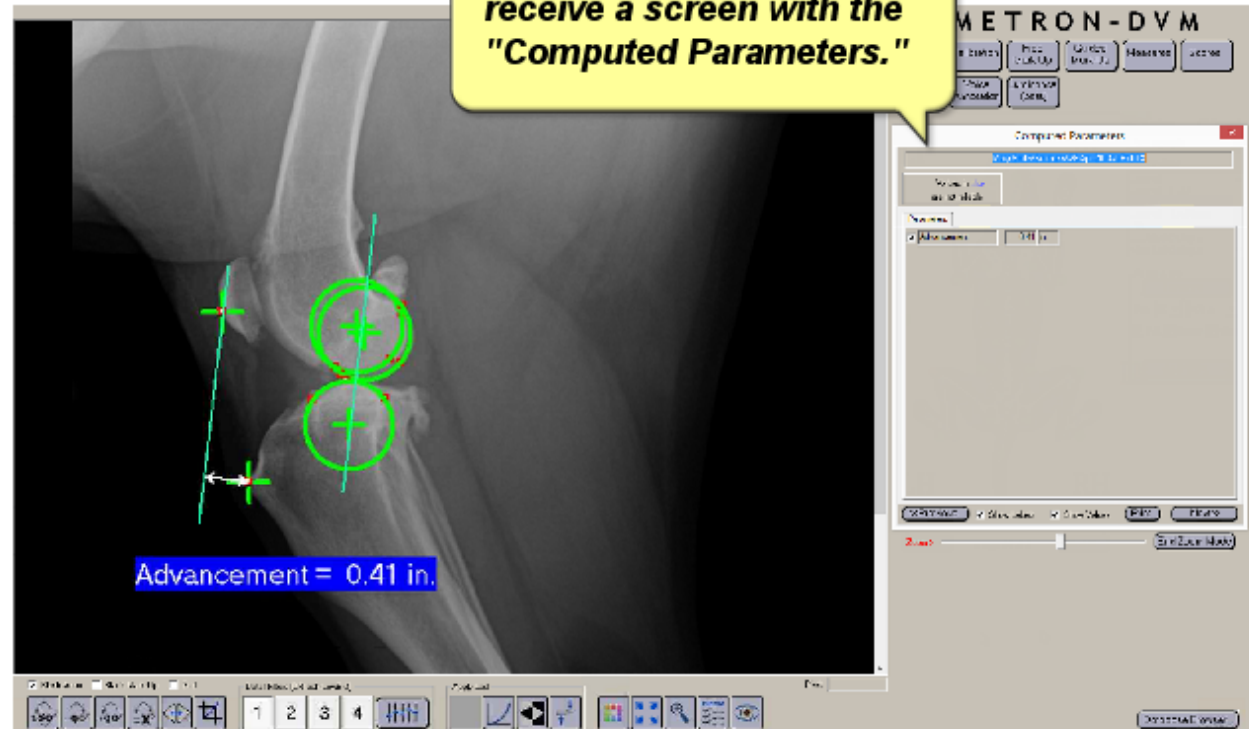


After finishing step five, you are asked if you are ready to have Metron calculate the parameters.

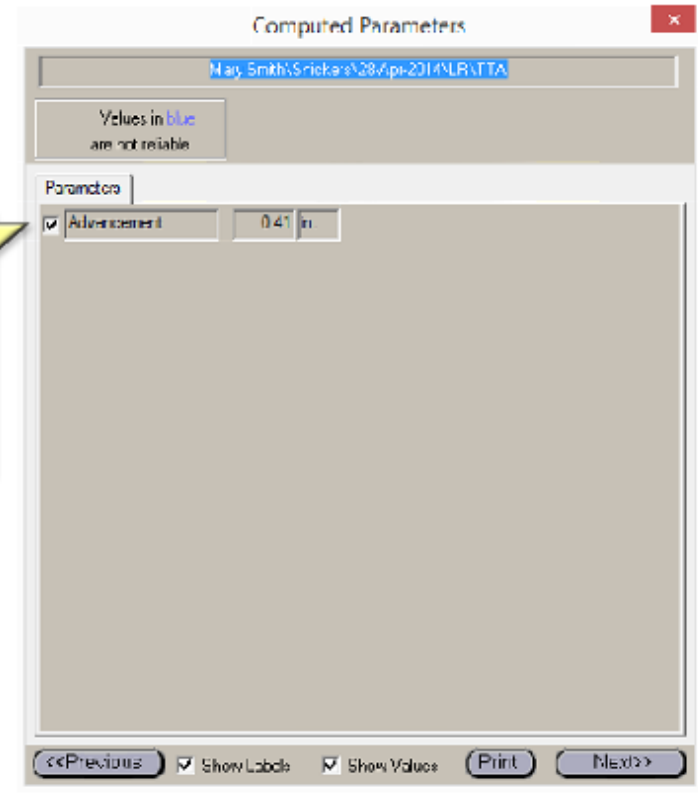


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Once you clicked the "Yes" button, you will receive a screen with the "Computed Parameters."



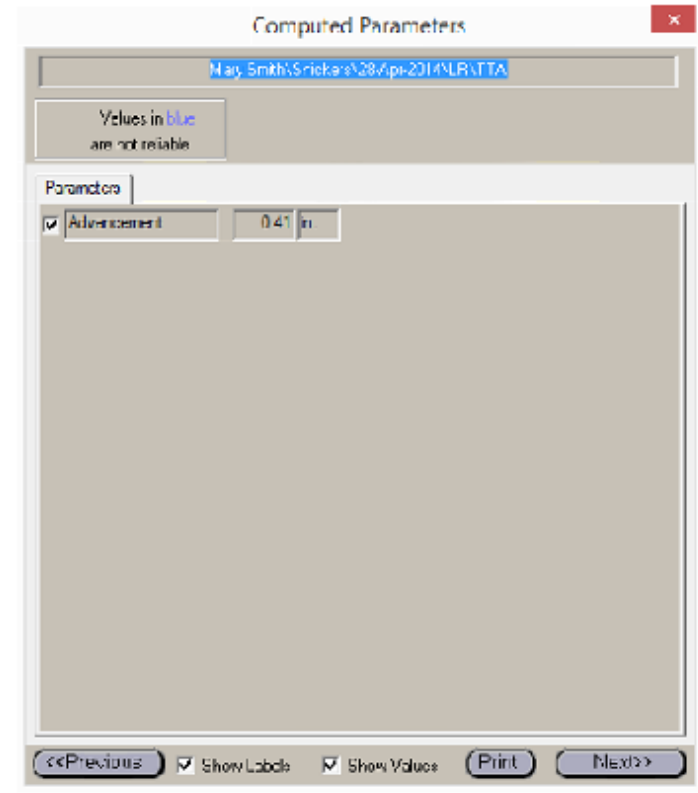
Select the check box to the left of the parameter and the related mark-up will be shown on the image.



Guided Mark-Up: TTA Analysis | Canine

This analysis computes the advancement value. This value can be used to determine the proper size hardware for the TTA procedure. Please reference material from [Kyon, Inc](#) regarding this selection

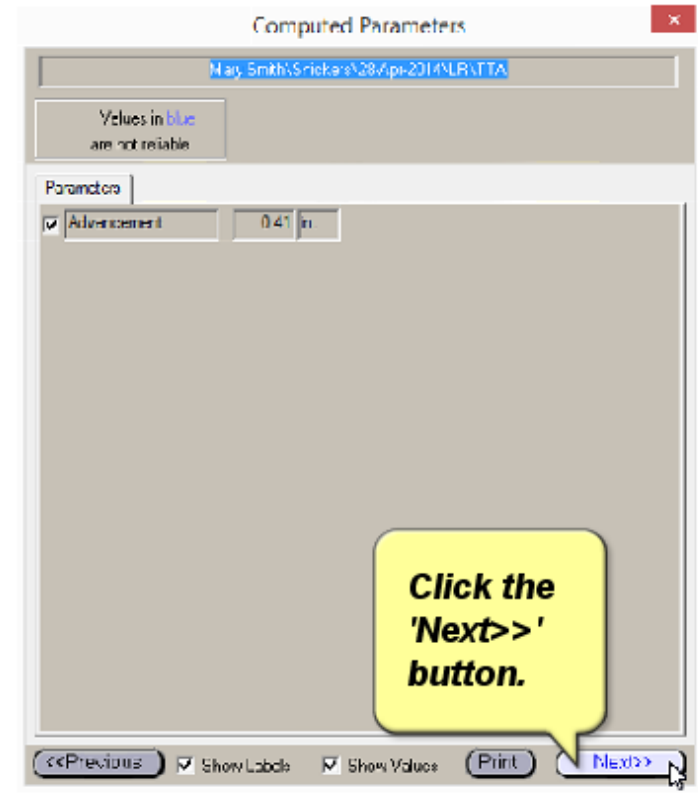
Remember you can select metric or English units under "**Preferences**" and then choose "**General**" in the top menu bar.



Guided Mark-Up: TTA Analysis | Canine

This analysis computes the advancement value. This value can be used to determine the proper size hardware for the TTA procedure. Please reference material from [Kyon, Inc](#) regarding this selection

Remember you can select metric or English units under "**Preferences**" and then choose "**General**" in the top menu bar.



Guided Mark-Up: TTA Analysis | Canine

When you click **"Next>>"**, you are brought to the **"Computed Parameters and Rule-Based Scoring"** window which shows the scores for this animal.

Computed Parameters and Rule-Based Scoring

May Smith/Grickard/20-Apr-2014/LN/TTA

Rule: TTA Load Rule Save Rule Delete Rule

Parameters

Parameter Name	Value	Best when...	Importance
Advancement	0.41	In Between 0.18 and 0.591	High Edit...

<< Previous High/Loss 0 % Score: 100.0 % Print

Guided Mark-Up: TTA Analysis | Canine

When you click "**Next>>**", you are brought to the "**Computed Parameters and Rule-Based Scoring**" window which shows the scores for this animal.

Parameter Name	Value	Best when...	Importance
Advancement	0.41	In	Between 0.18 and 0.591

In the case of TTA, Metron's scoring rule is showing the range of sizes of hardware available from Kyon, Inc. As long as the 'advancement' value is within the displayed range, hardware is available, and the animal is a candidate for the TTA procedure.

Guided Mark-Up: TTA Analysis | Canine

When you click **"Next>>"**, you are brought to the **"Computed Parameters and Rule-Based Scoring"** window which shows the scores for this animal.

Computed Parameters and Rule-Based Scoring

May Smith/Grickard/20-Apr-2014/LN/TTA

Rule: TTA Load Rule Save Rule Delete Rule

Parameters

Parameter Name	Value	Best when..	Importance
Advancement	0.41	In	Between 0.18 and 0.59 High Edit..

If you don't agree with best value range, you can edit the scoring rule by clicking on the "Edit.." button on the far right.

<<Previous High/Loss 0 % Score: 100.0 % Print



Guided Mark-Up in Metron: TTA Analysis for Canine

This completes the "Guided Mark-Up in Metron: TTA Analysis" online training.
Please feel free to view it again or select another online training session to review.



Click F11 on your keyboard to minimize the browser screen
and click the window closed to exit this training session.

