



Guided Mark-Up in Metron: Norberg Hip 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: Norberg Hip Analysis for Canine

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



Click F11 on your keyboard for full screen display!

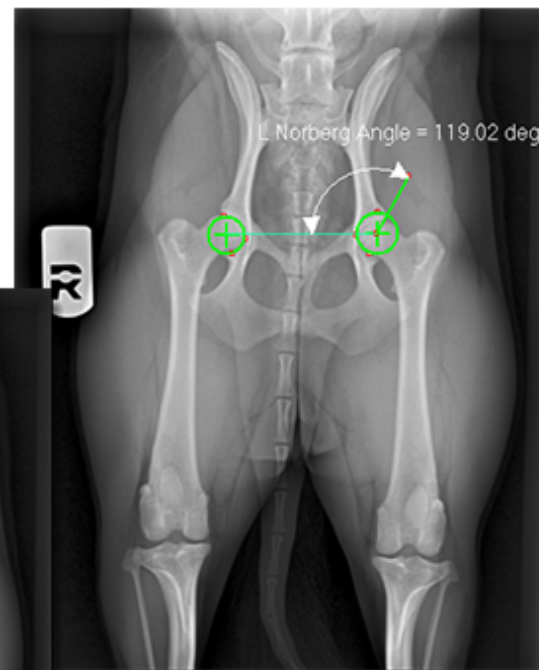
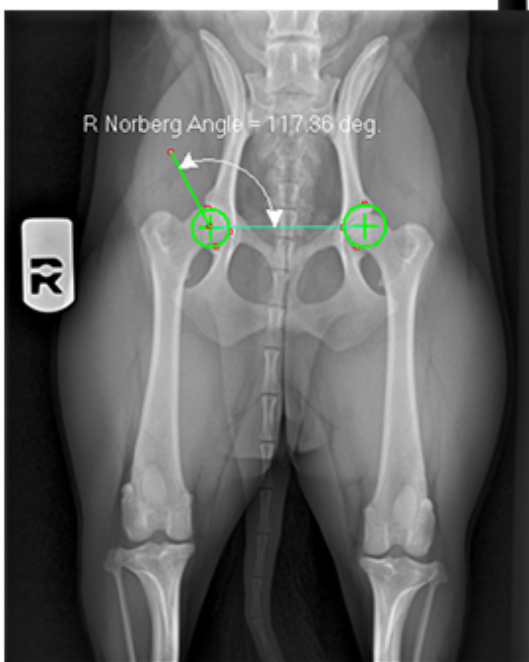
Dependent on your screen size, the menu buttons on the Database Browser screen may appear in one or two rows.

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Guided Mark-Up: Norberg Hip 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 the VD radiograph of the canine pelvis. Metron then uses those points to compute the two Norberg Hip angles for the animal.



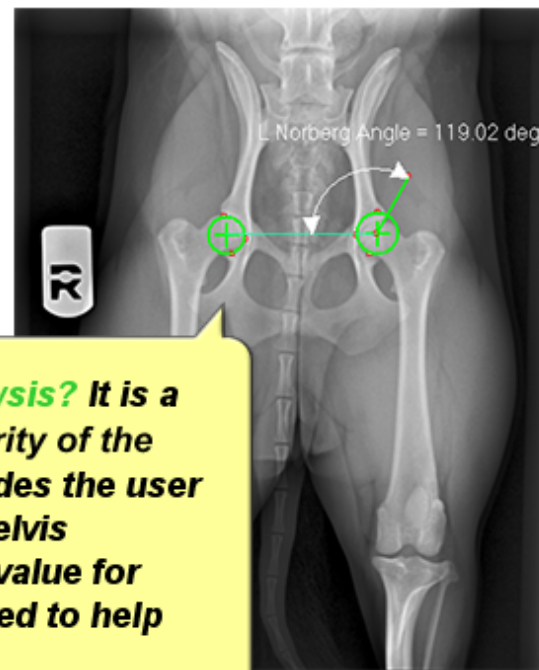
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Guided Mark-Up: Norberg Hip Analysis | Canine

What is Guided Mark-Up?

Metron supports a process called "Guided Mark-Up" in which the user is prompted to pick key points in the VD radiograph of the canine pelvis. Metron then uses those points to compute the two Norberg Hip angles for the animal.



What is the Norberg Hip Analysis? It is a means of assessing the integrity of the hip joints in dogs. Metron guides the user to pick key points in the VD pelvis radiograph, then computes a value for each joint that can then be used to help assess the joint quality.

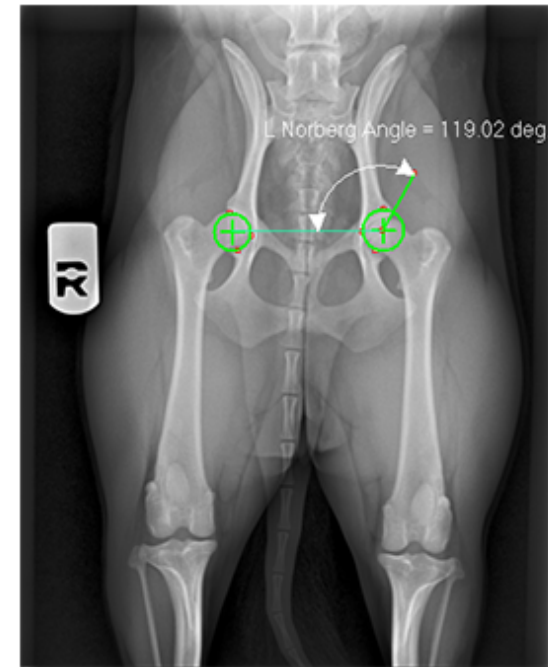
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Guided Mark-Up: Norberg Hip Analysis | Canine

What is Guided Mark-Up?

Metron supports a process called "Guided Mark-Up" in which the user is prompted to pick key points in the VD radiograph of the canine pelvis. Metron then uses those points to compute the two Norberg Hip angles for the animal.



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Guided Mark-Up: Norberg Hip Analysis | Canine



The screenshot displays the Metron software interface. On the left, a grid of X-ray thumbnails is shown, each with a label and a small green icon. The labels include: 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 search filters for Owner (Bob Miller), Animal (Cooper), and Date (9-Apr-2014). It also includes buttons for 'Browse & Acquire', 'Collection (0 items)', and various options for adding new images or reports. A yellow callout box with a speech bubble icon contains the text: '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.'

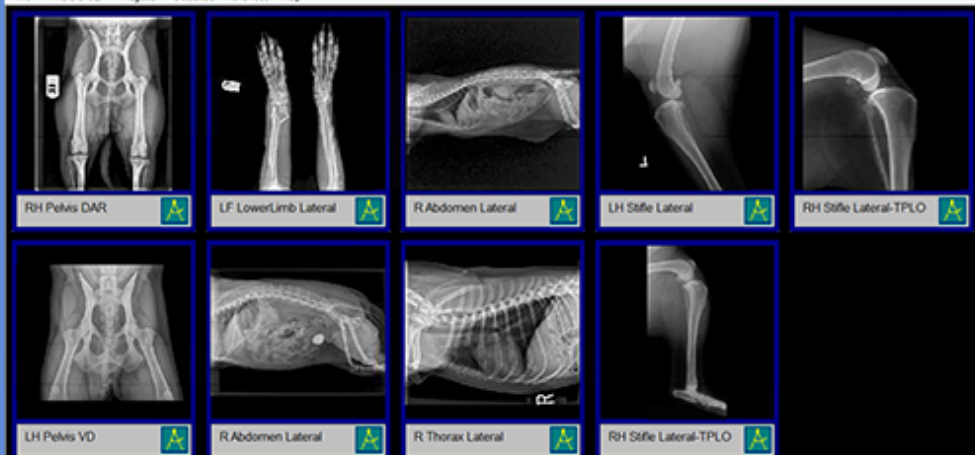
With Metron, you will always start in the 'Database Browser' screen where thumbnails of all the images in the currently selected study are displayed on the screen.

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File Preferences Register Database Advanced Help



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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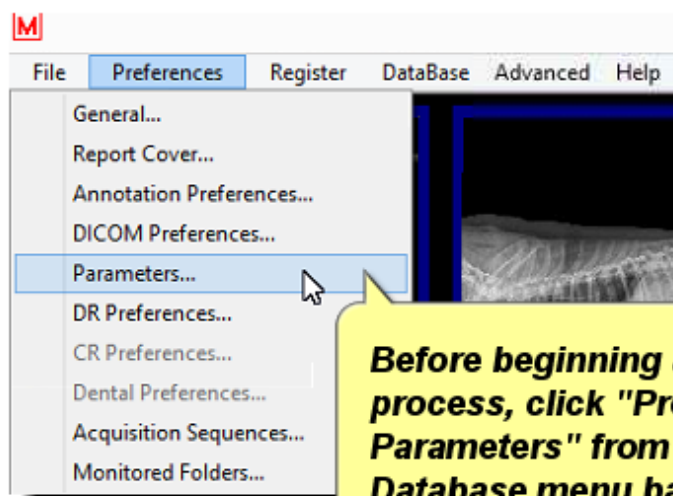
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Guided Mark-Up: Norberg Hip Analysis | Canine

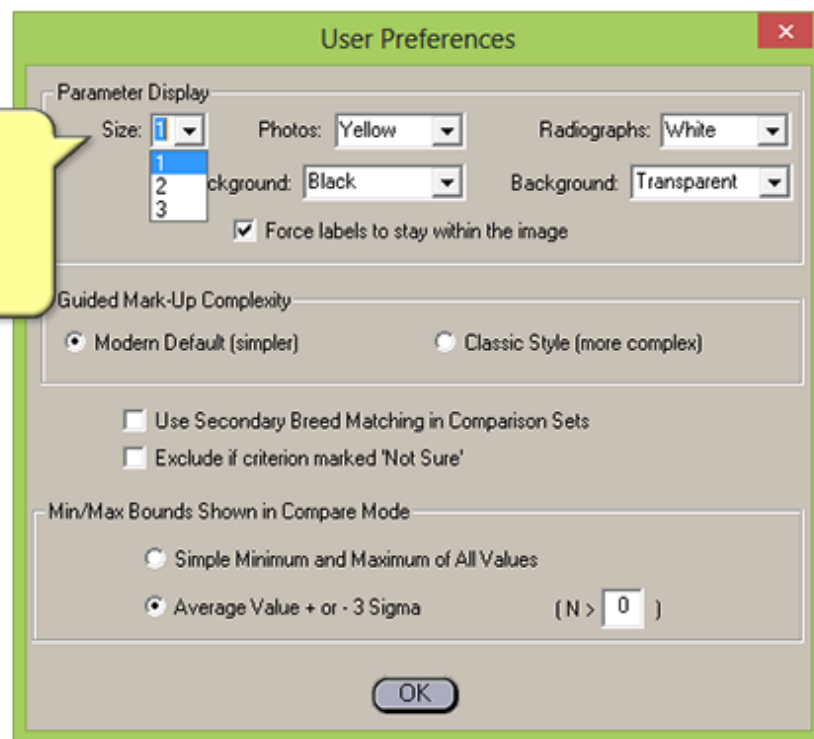


Before beginning a Guided Mark-Up process, click "Preferences" then "Parameters" from the Metron Database menu bar.

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



The 'User Preferences' dialog box is shown with a green title bar and a red close button. It contains several sections: 'Parameter Display' with dropdowns for 'Size' (1, 2, 3), 'Photos' (Yellow), 'Radiographs' (White), 'Background' (Black), and 'Background' (Transparent), along with a checked checkbox 'Force labels to stay within the image'; 'Guided Mark-Up Complexity' with radio buttons for 'Modern Default (simpler)' and 'Classic Style (more complex)'; and 'Min/Max Bounds Shown in Compare Mode' with radio buttons for 'Simple Minimum and Maximum of All Values' and 'Average Value + or - 3 Sigma' (with a field for N > 0). An 'OK' button is at the bottom.

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

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

User Preferences

Parameter Display

Photos: **Yellow** (dropdown menu open showing: White, Black, Red, Green, Blue, Yellow)

Radiographs: White

Background: Transparent

☒ Force labels in 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

**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

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

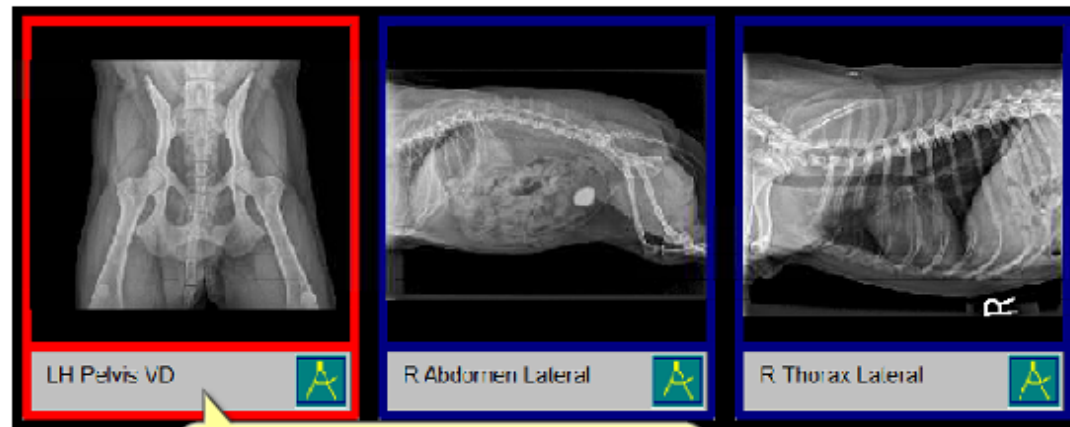
☐ Simple Minimum and Maximum of All Values

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

OK

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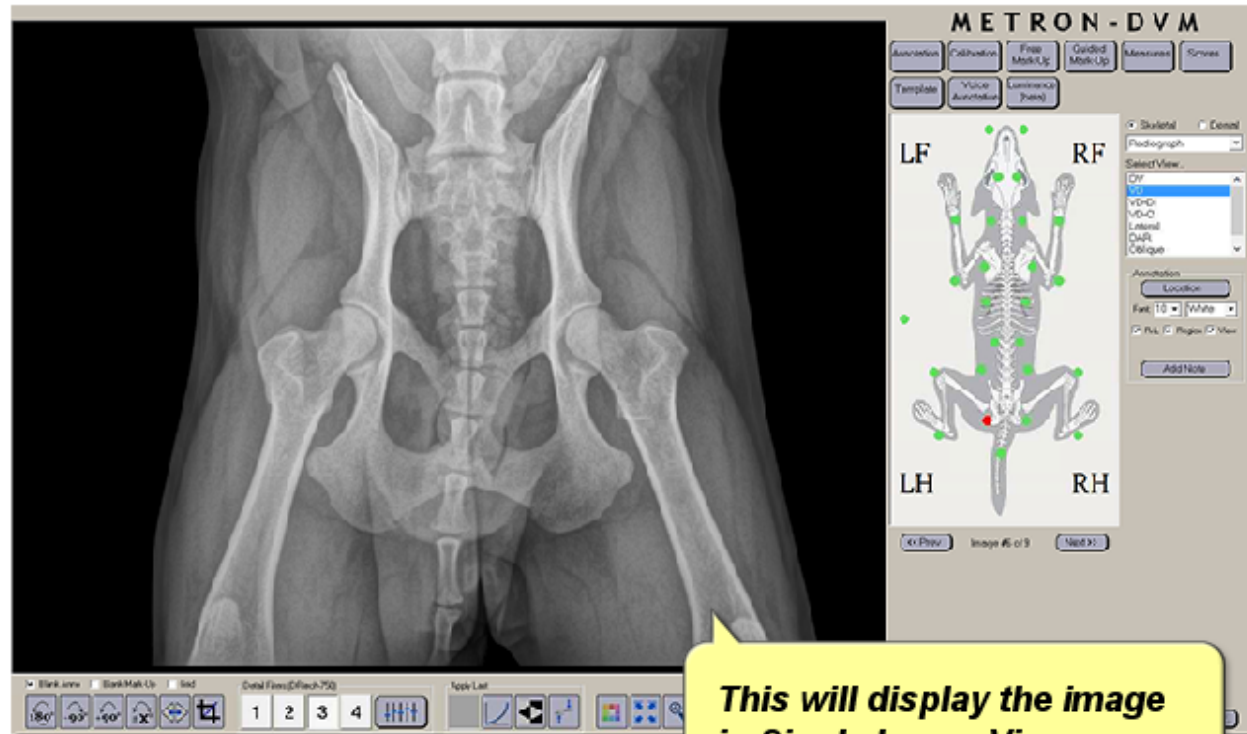
Guided Mark-Up: Norberg Hip Analysis | Canine



Select an image by double clicking on that image.

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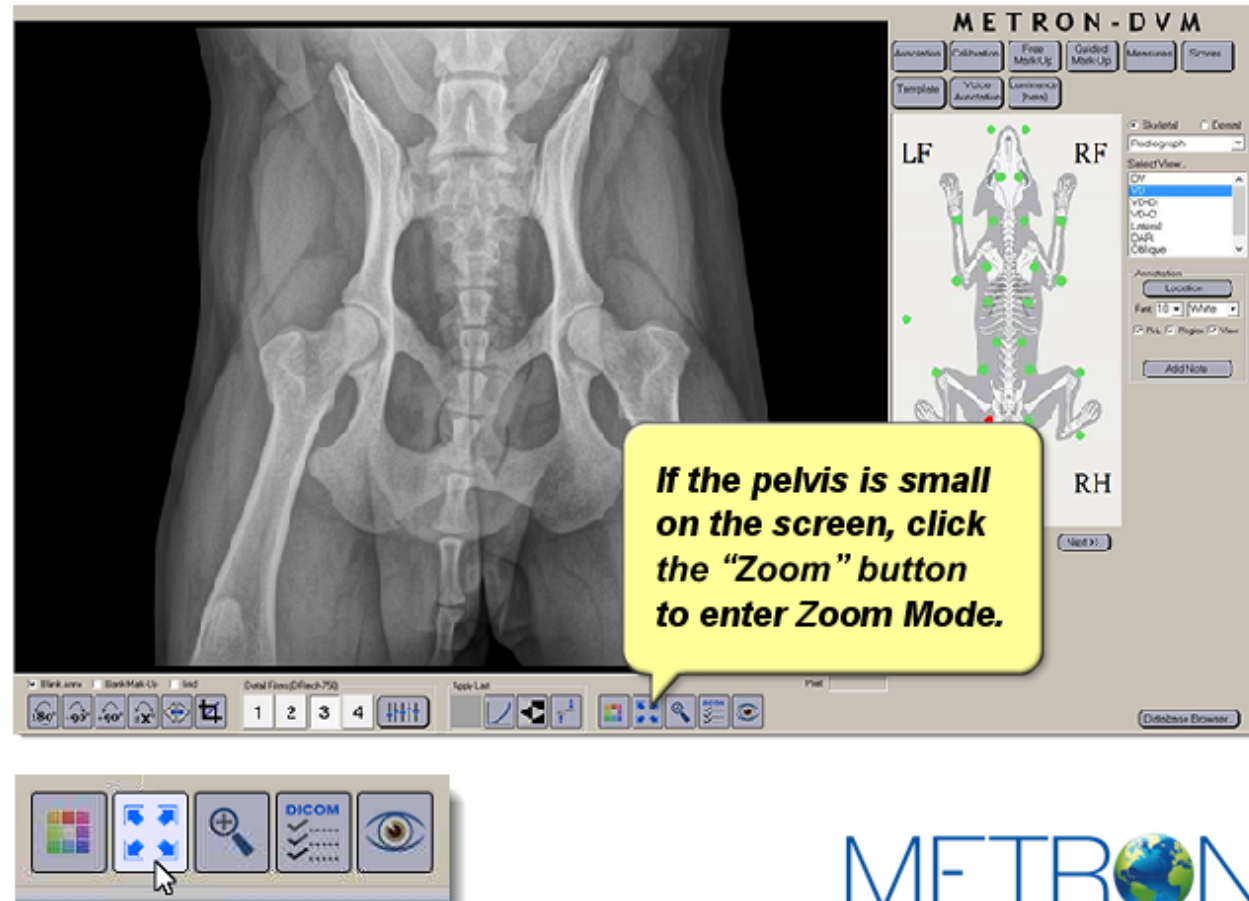
Guided Mark-Up: Norberg Hip Analysis | Canine

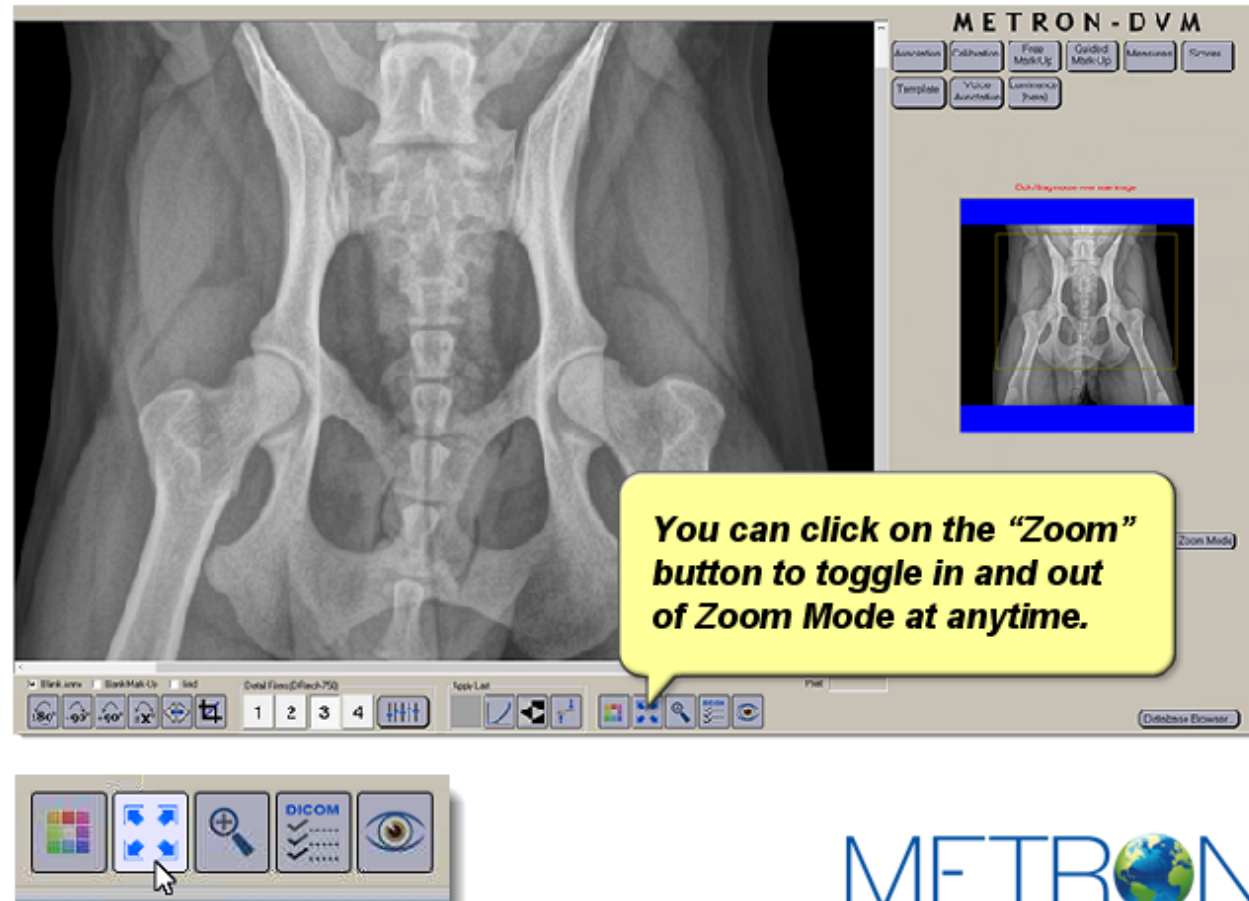


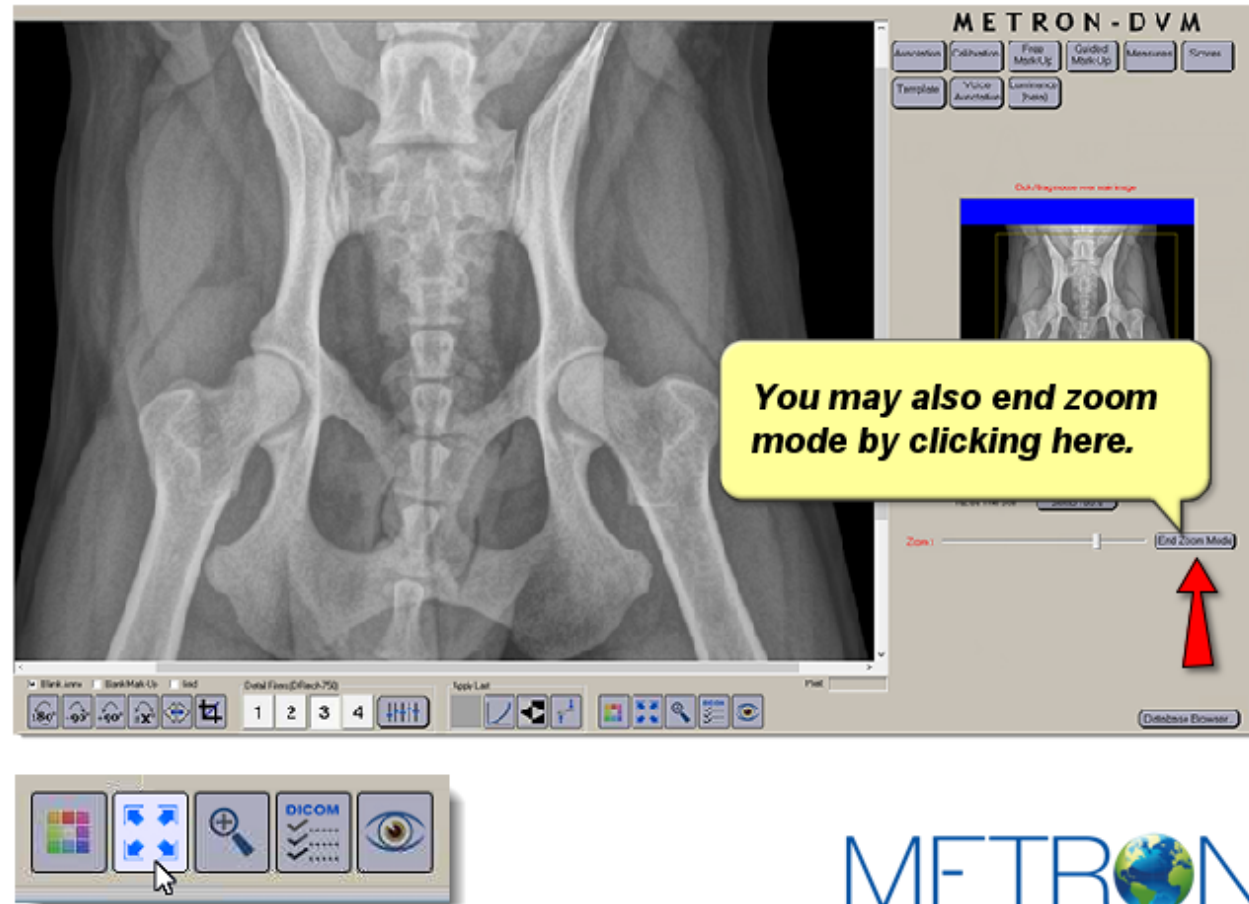
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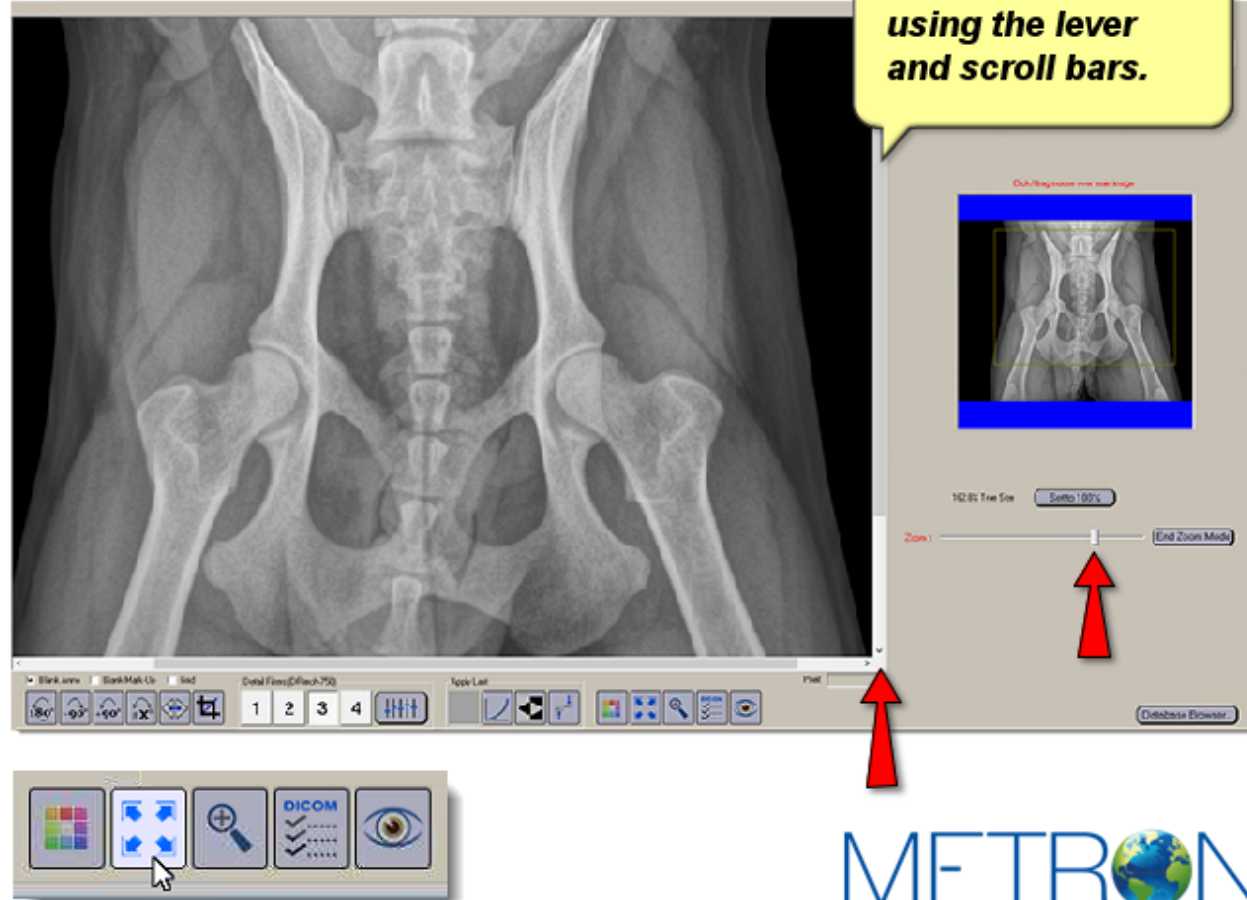




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Guided Mark-Up: Norberg Hip Analysis

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





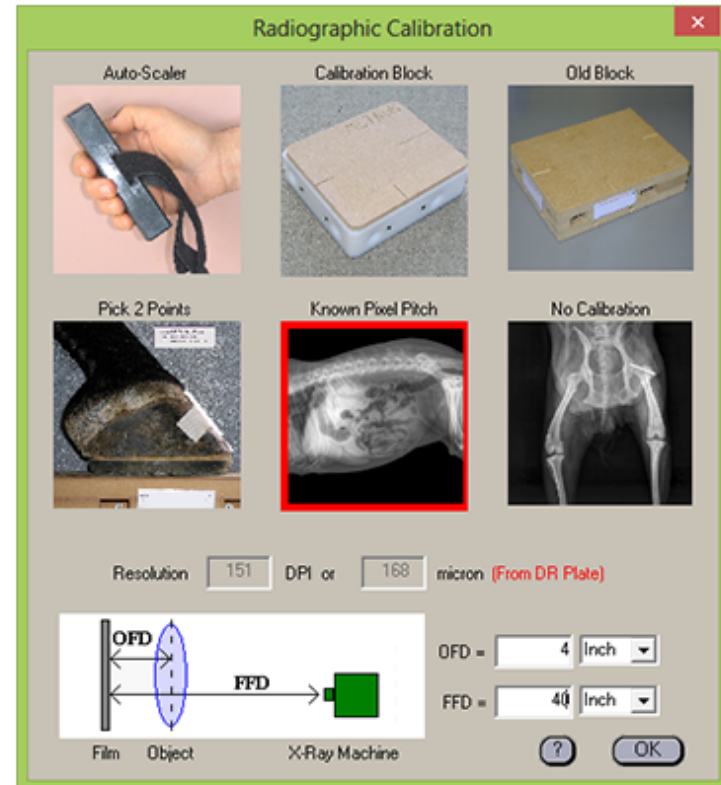


Guided Mark-Up steps you through marking key points on your image. When you click the "Guided Mark-Up" button and you have not previously calibrated this image, you will first be brought to the Calibration panel.

Guided Mark-Up: Norberg Hip Analysis | Canine

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.

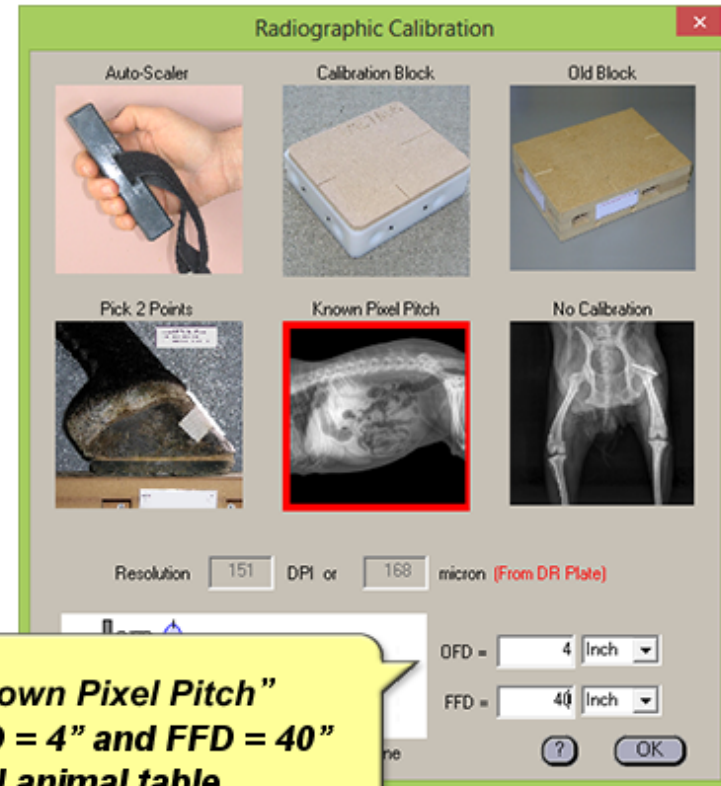
In fact, the Norberg Hip method does not require careful calibration, since only angles are measured.



Guided Mark-Up: Norberg Hip Analysis | Canine

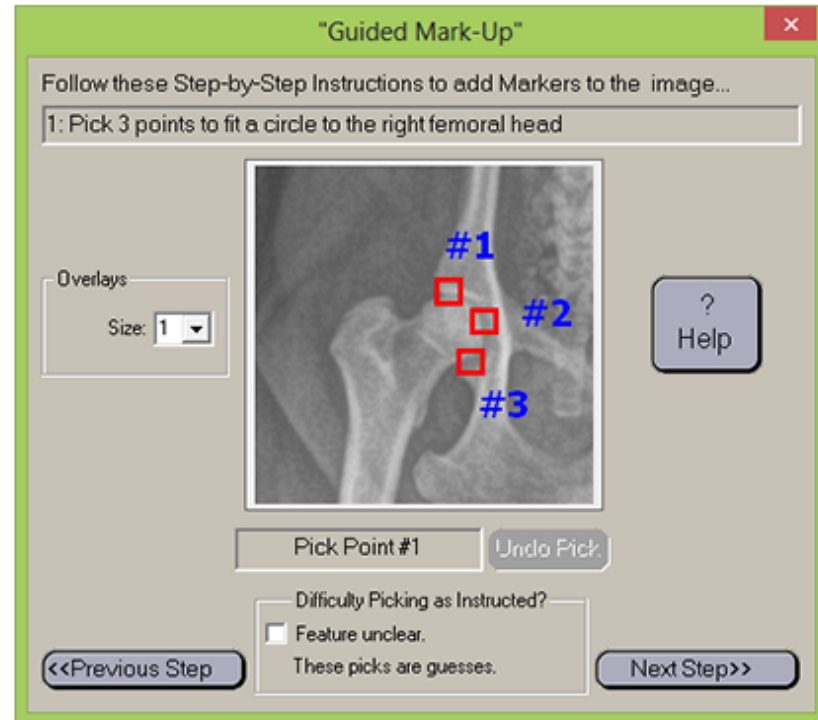
If the calibration panel pops up, and the image was taken with a CR or DR system controlled by Metron, the entries as shown to the right can be used to calibrate.

In fact, the Norberg Hip method does not require careful calibration, since only angles are measured.



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

Step 1:
"Right Femoral Head"

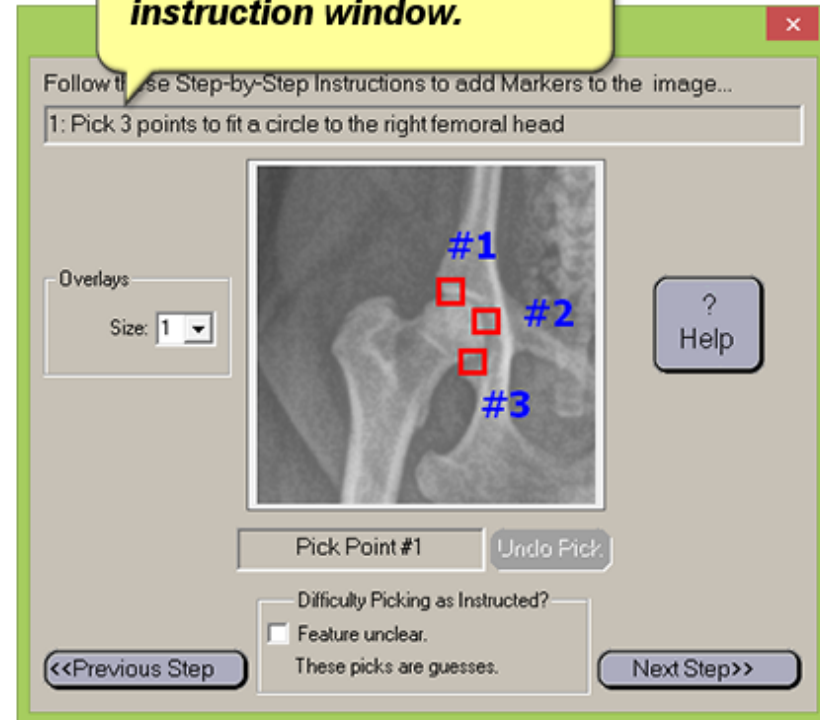


Guided Mark-Up: Norberg Hip Analysis - Canine

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

Step 1:
"Right Femoral Head"

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



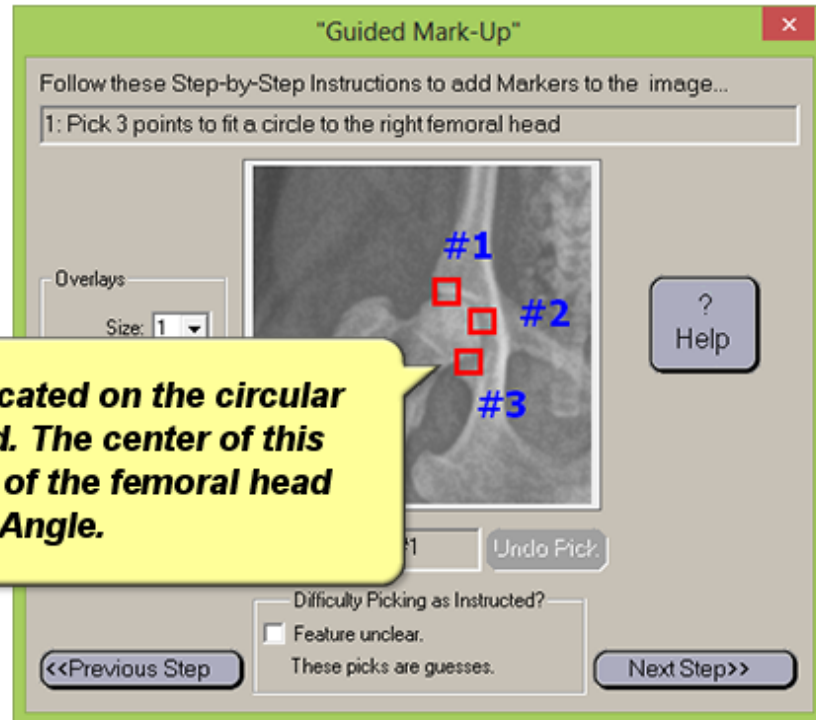
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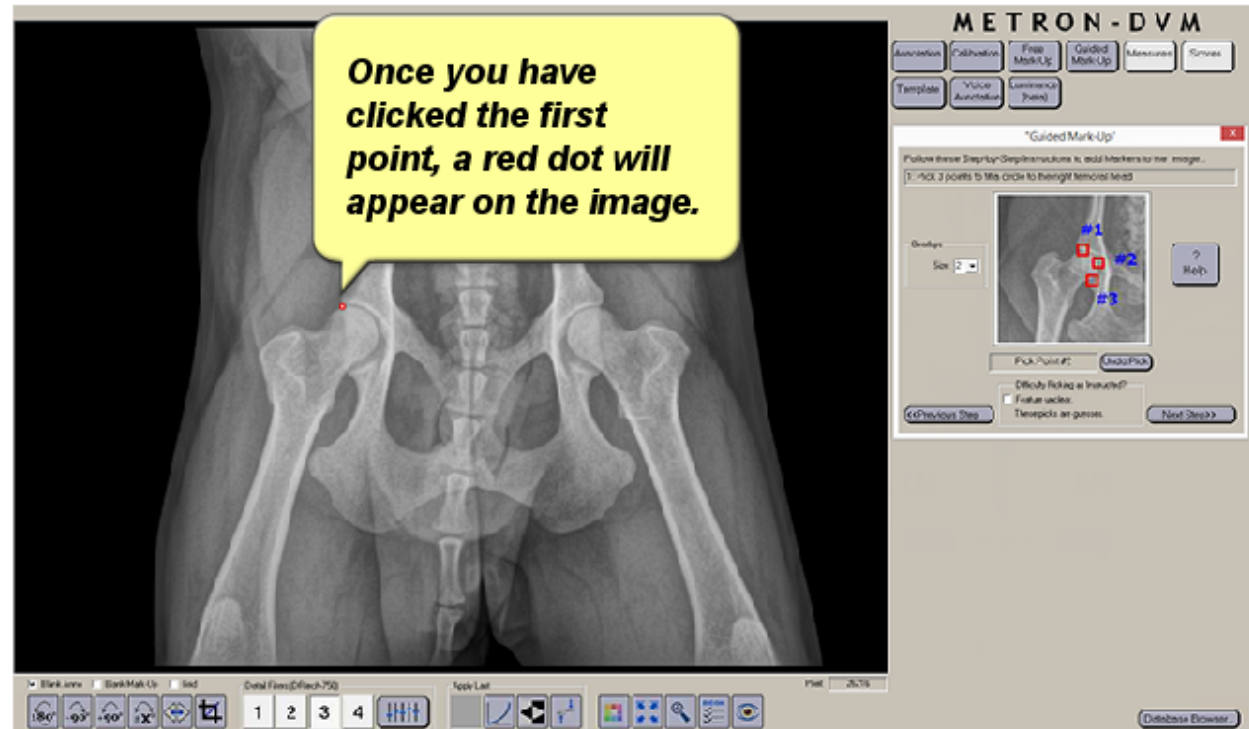
Guided Mark-Up: Norberg Hip Analysis | Canine

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

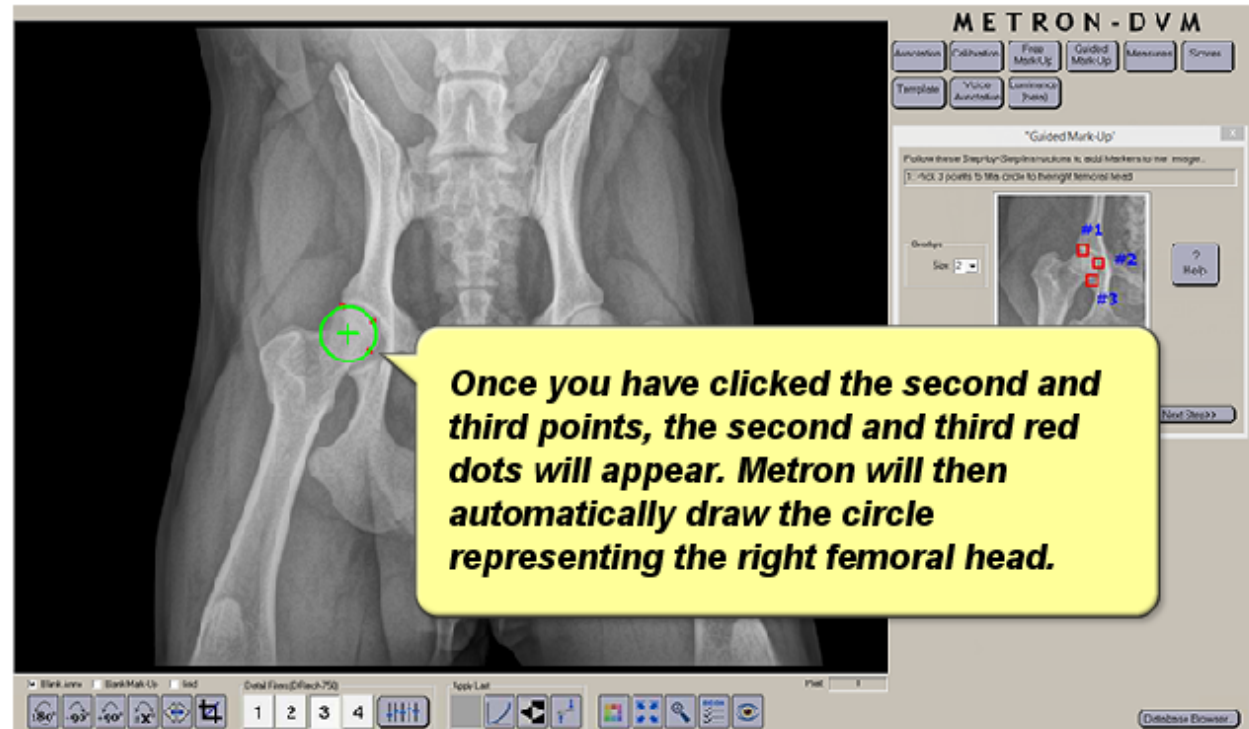
Step 1:
"Right Femoral Head"

These three points should be located on the circular portion of the right femoral head. The center of this circle will be used as the center of the femoral head for construction of the Norberg Angle.

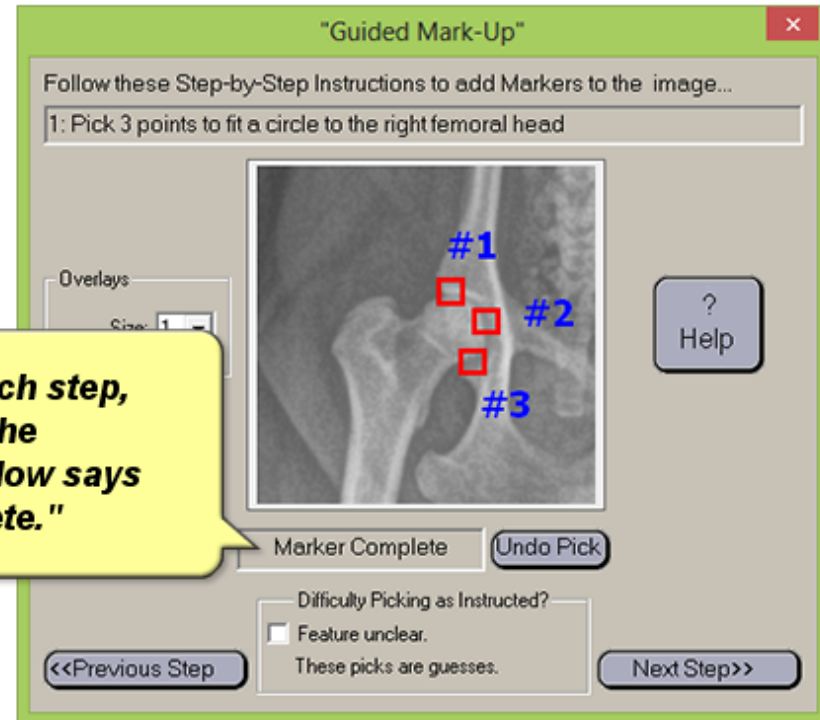


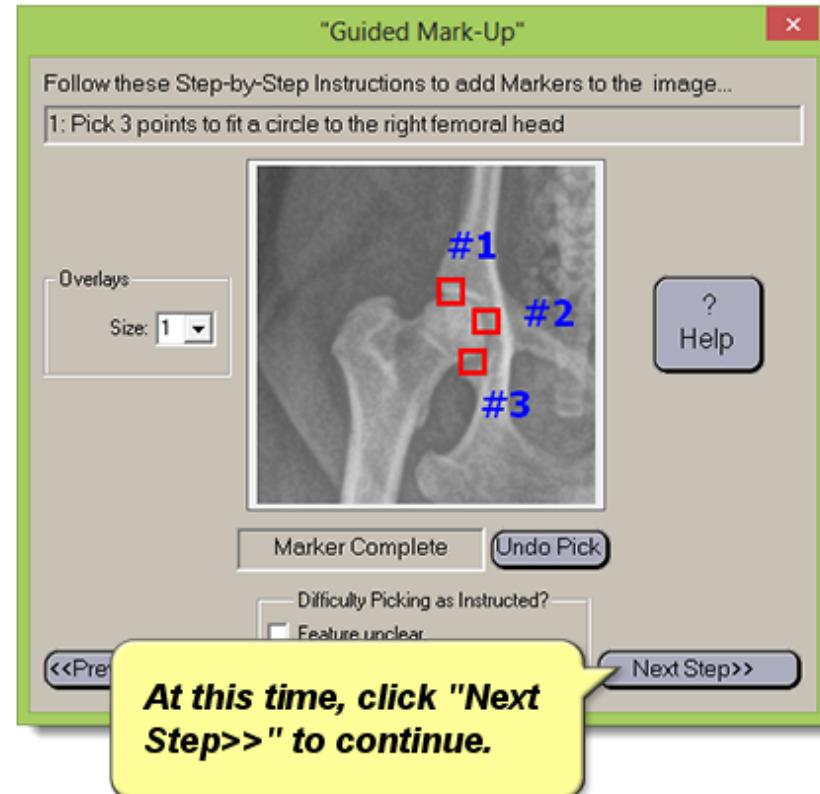




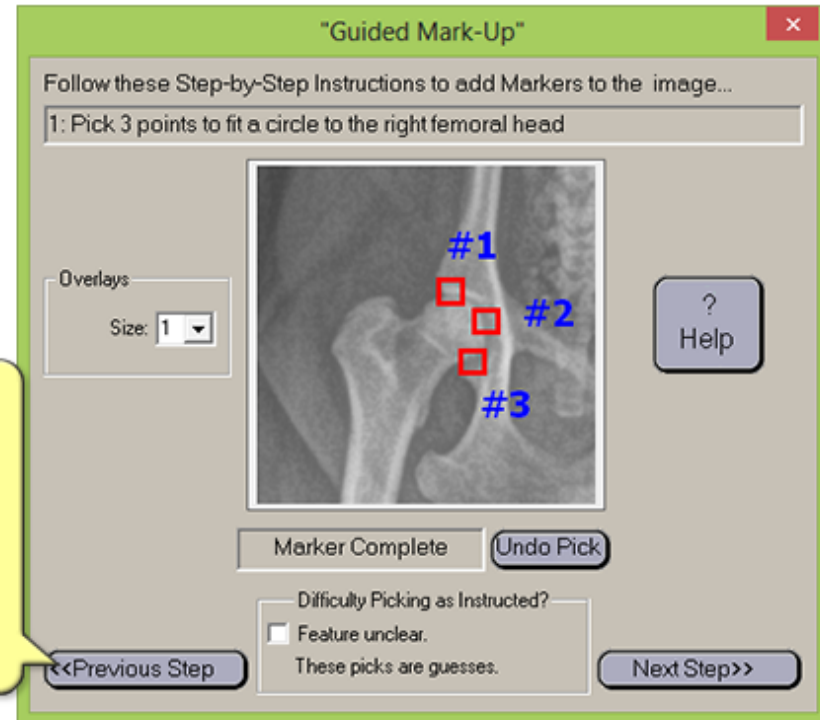


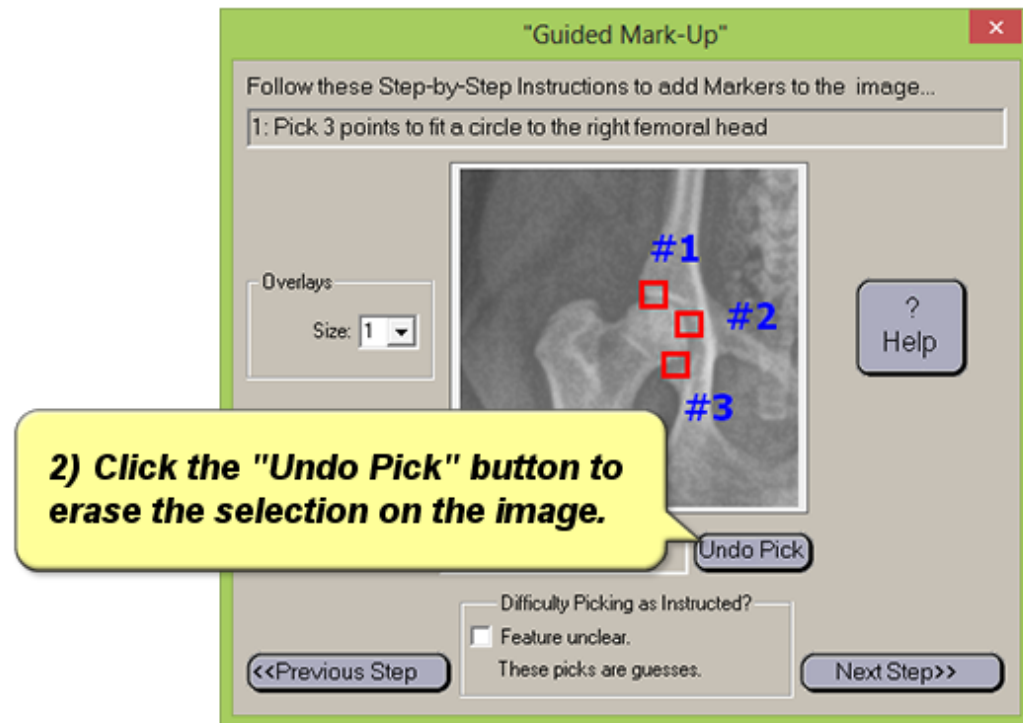
***At the end of each step,
you will notice the
instruction window says
"Marker Complete."***

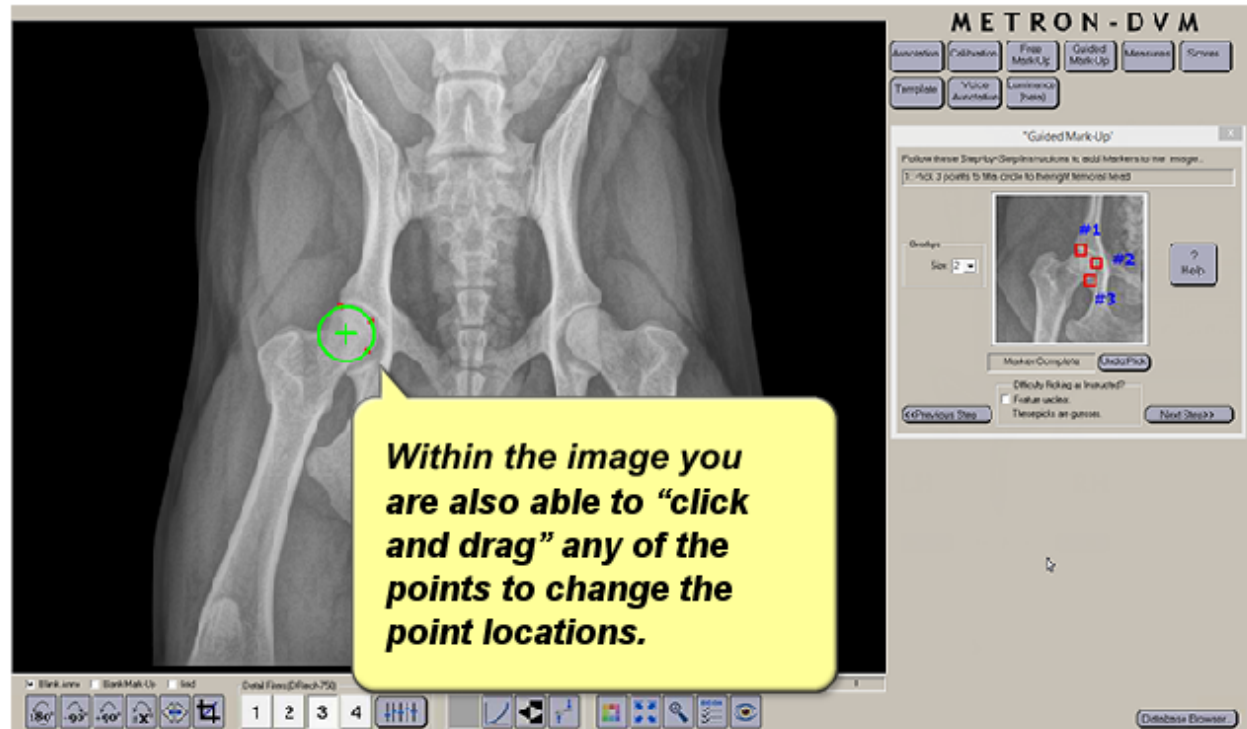




Also, at any point you are able to:
1) Click the
"<<Previous Step"
button to move back
one step at a time.

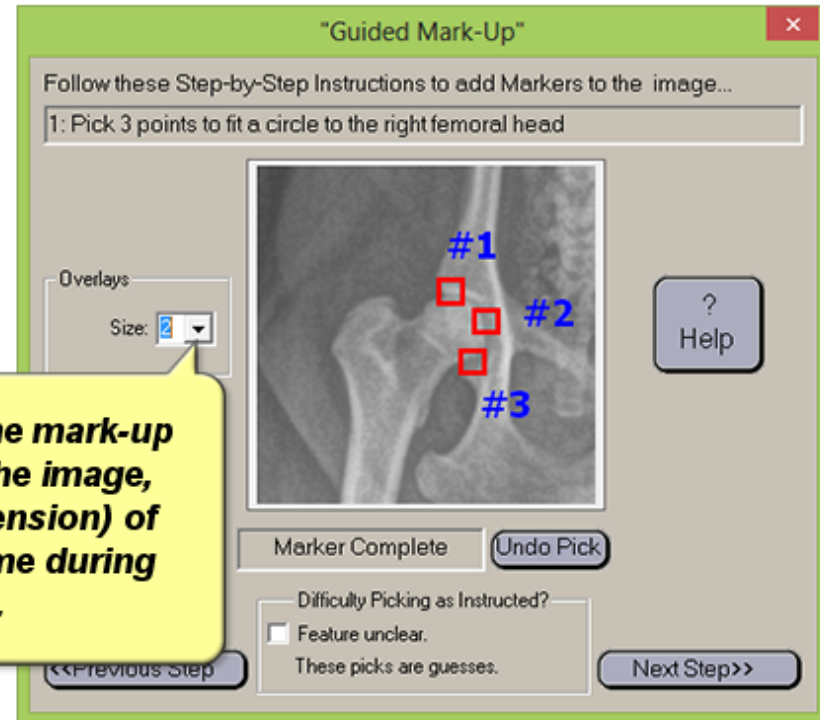


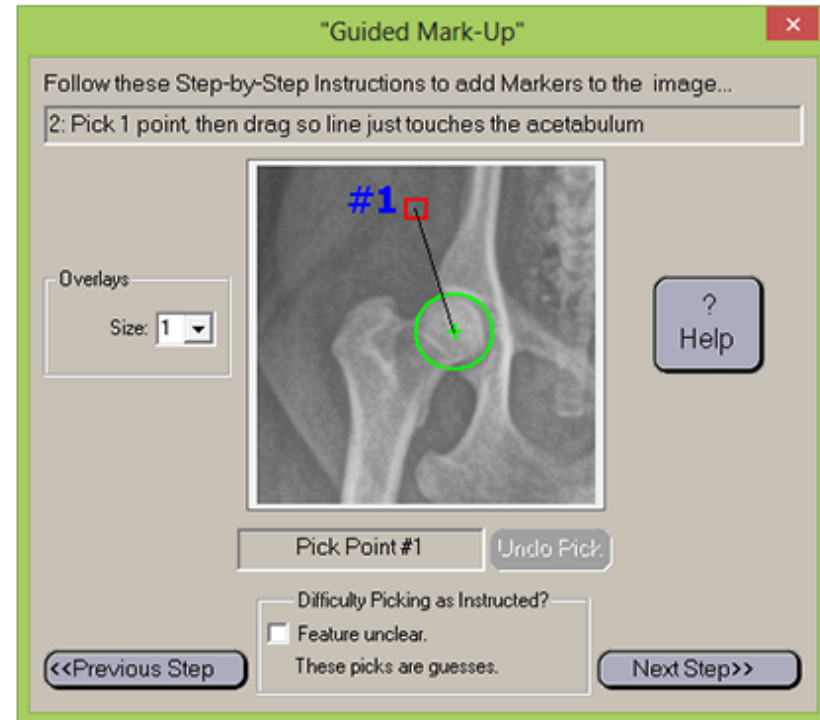






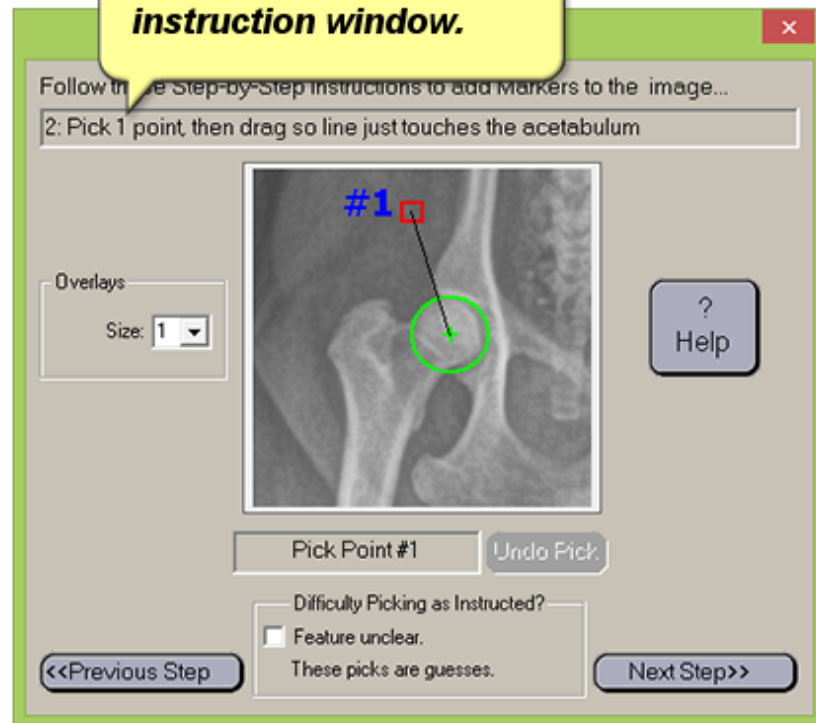
4) If you have Zoomed and the mark-up seems large and coarse on the image, you can adjust the size (dimension) of the mark-up objects at anytime during the Guided Mark-Up process.



**Step 2:
"Right Acetabulum"**

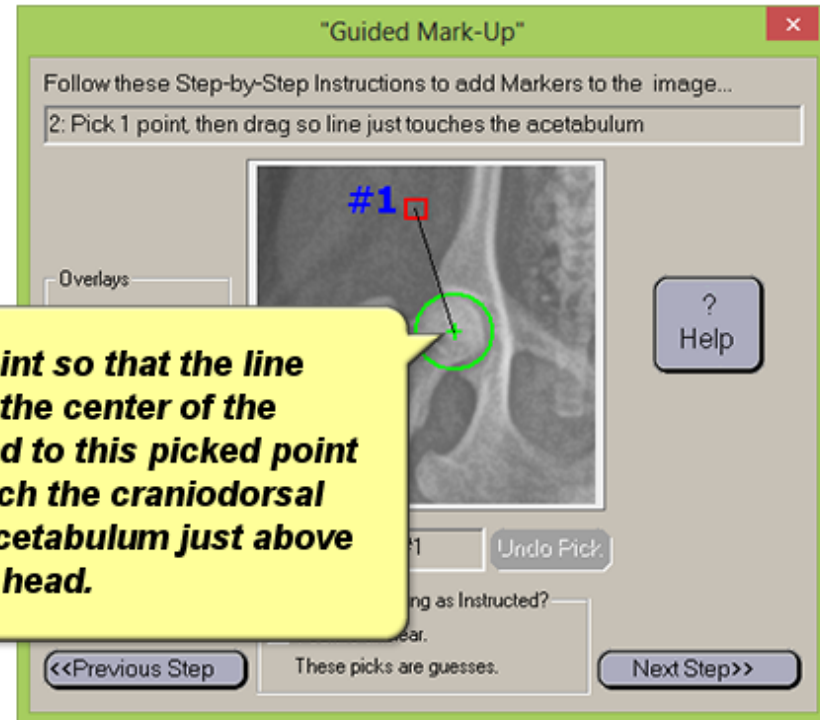
**Step 2:
"Right Acetabulum"**

Pick a point on your image and drag it as indicated in the instruction window.



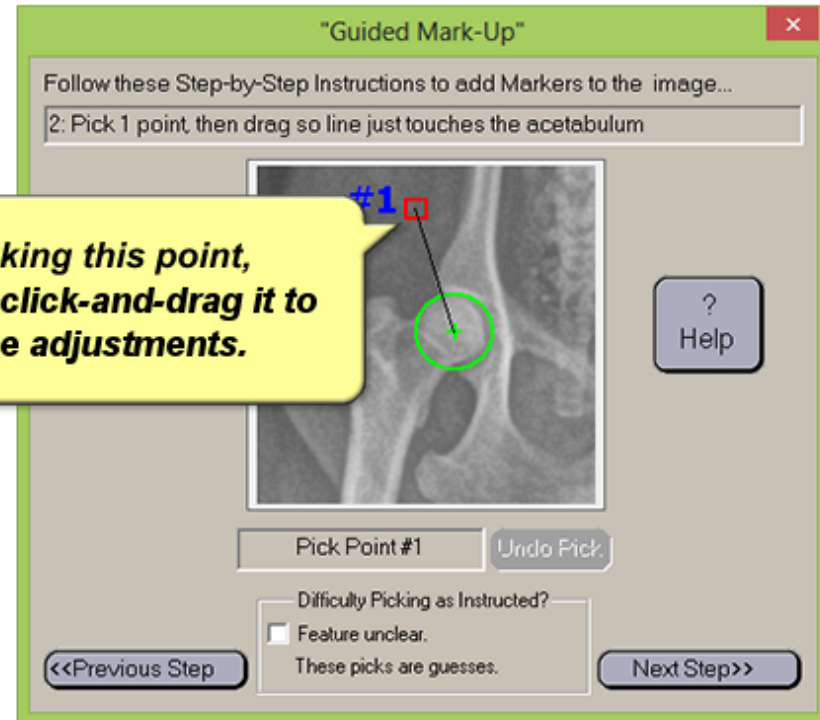
**Step 2:
"Right Acetabulum"**

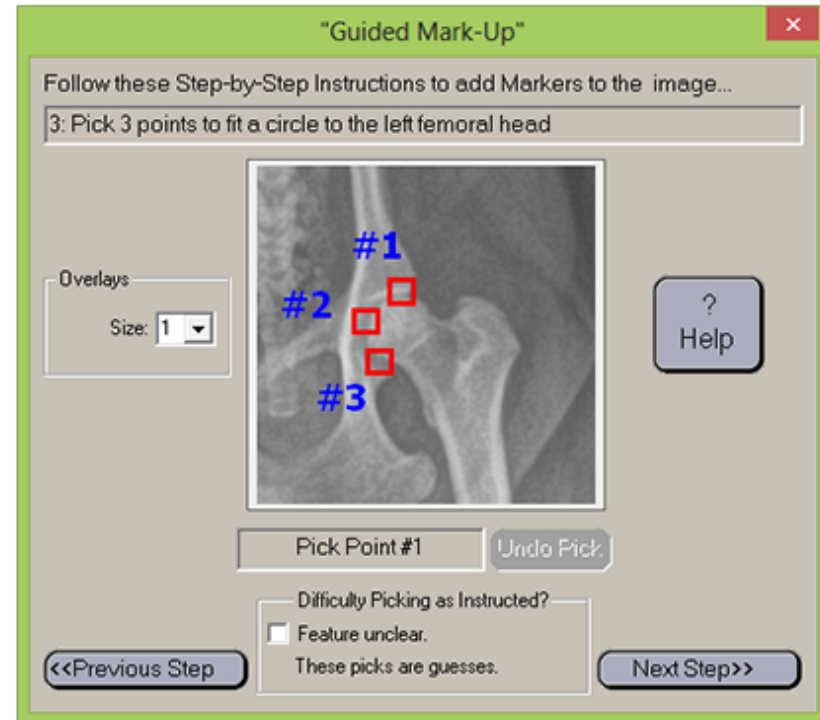
Pick one point so that the line connecting the center of the femoral head to this picked point will just touch the craniodorsal rim of the acetabulum just above the femoral head.



**Step 2:
"Right Acetabulum"**

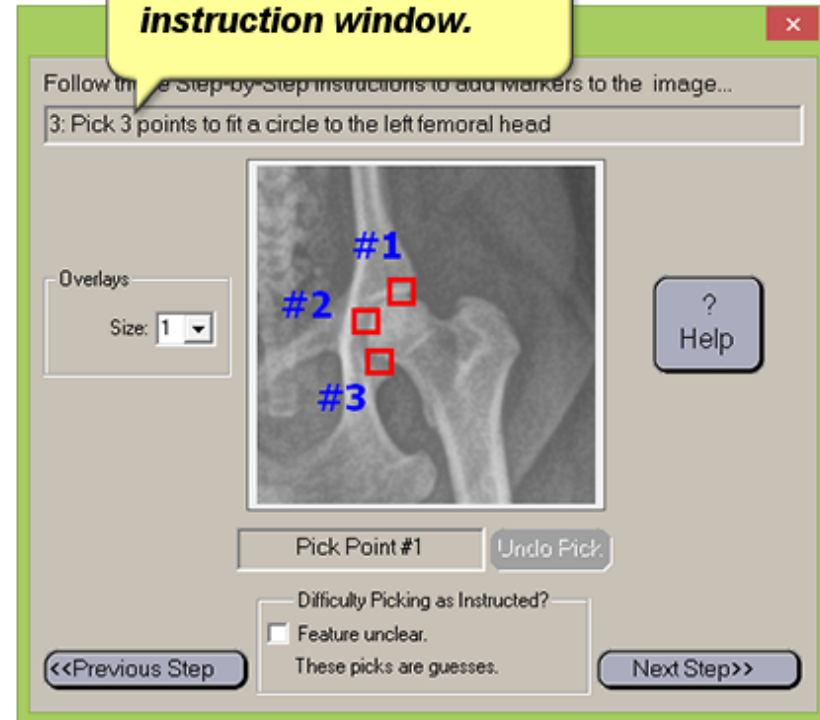
After picking this point, you can click-and-drag it to make fine adjustments.



**Step 3:
"Left Femoral Head"**

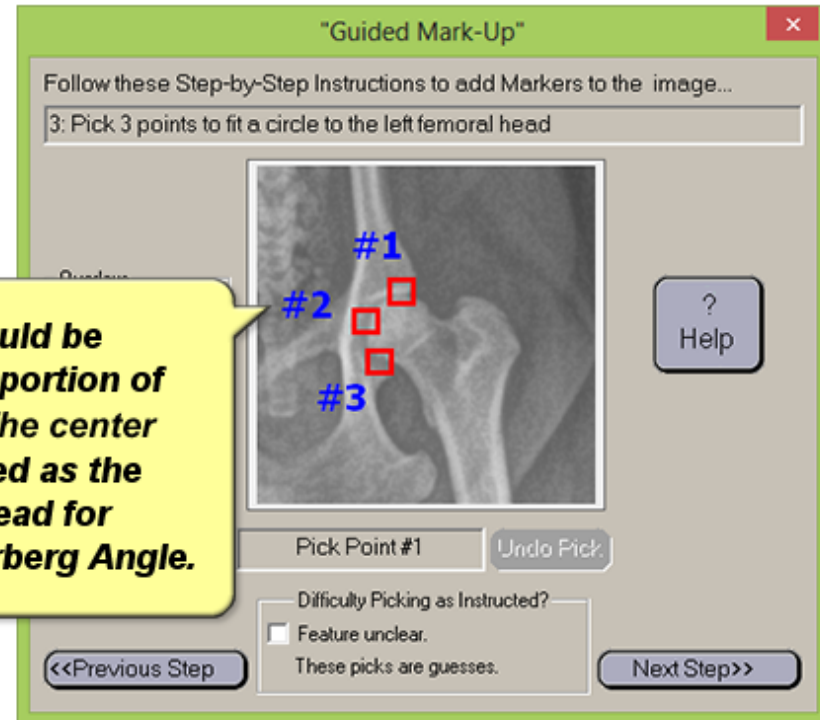
**Step 3:
"Left Femoral Head"**

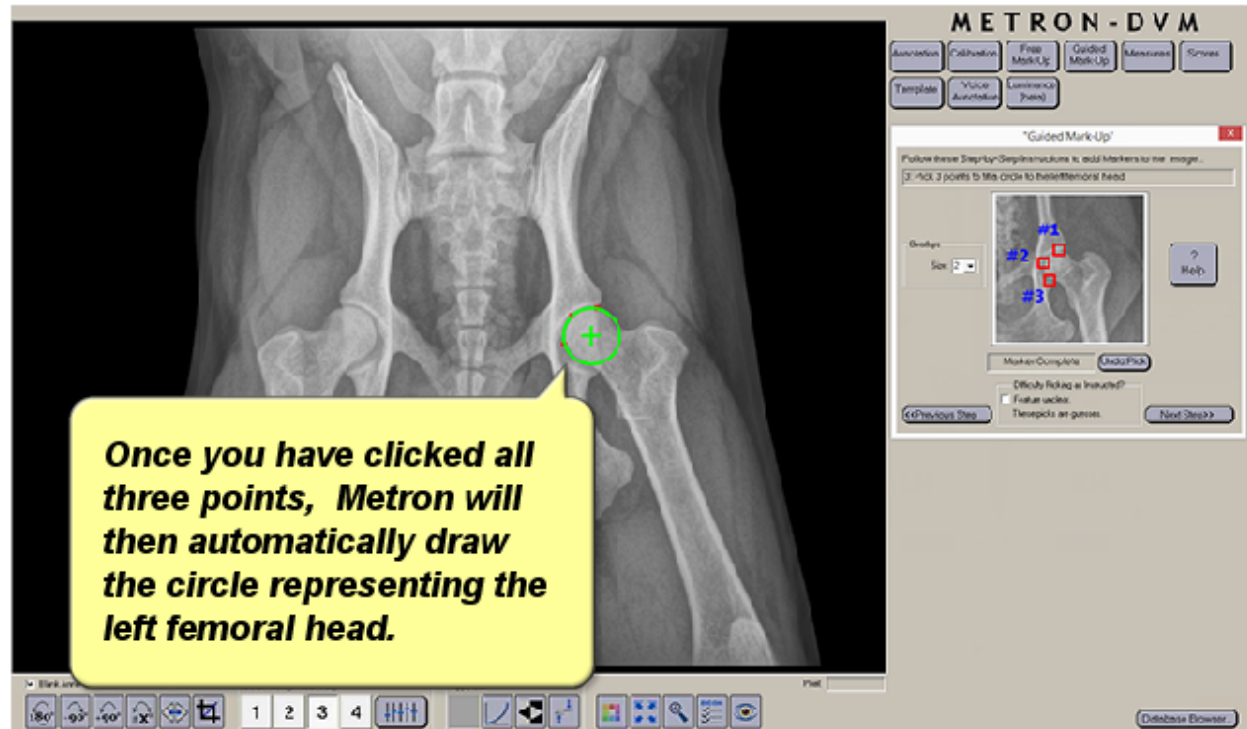
***Pick three points on
your image as
indicated in the
instruction window.***

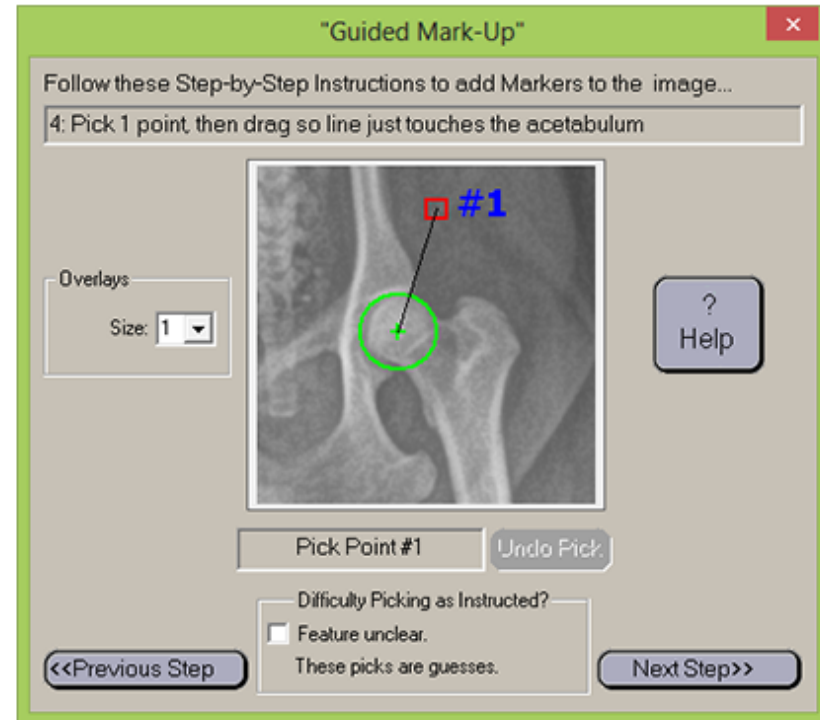


**Step 3:
"Left Femoral Head"**

These three points should be located on the circular portion of the left femoral head. The center of this circle will be used as the center of the femoral head for construction of the Norberg Angle.

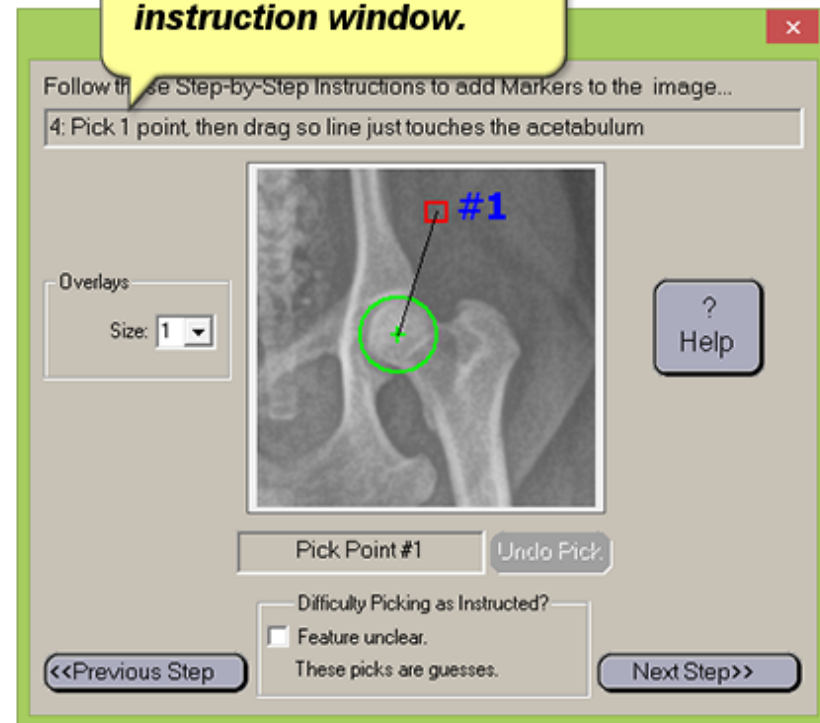




Step 4:
"Left Acetabulum"

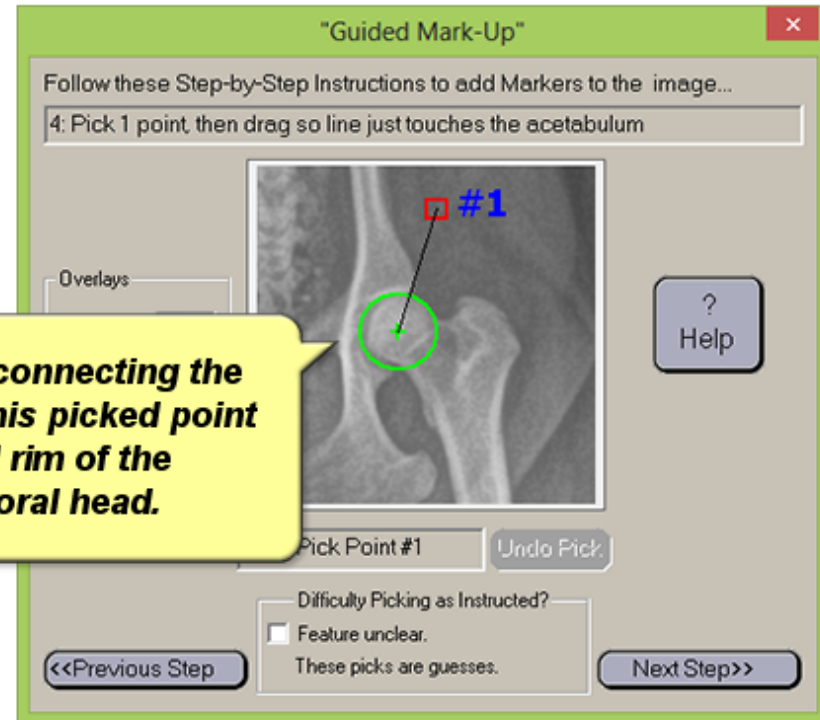
**Step 4:
"Left Acetabulum"**

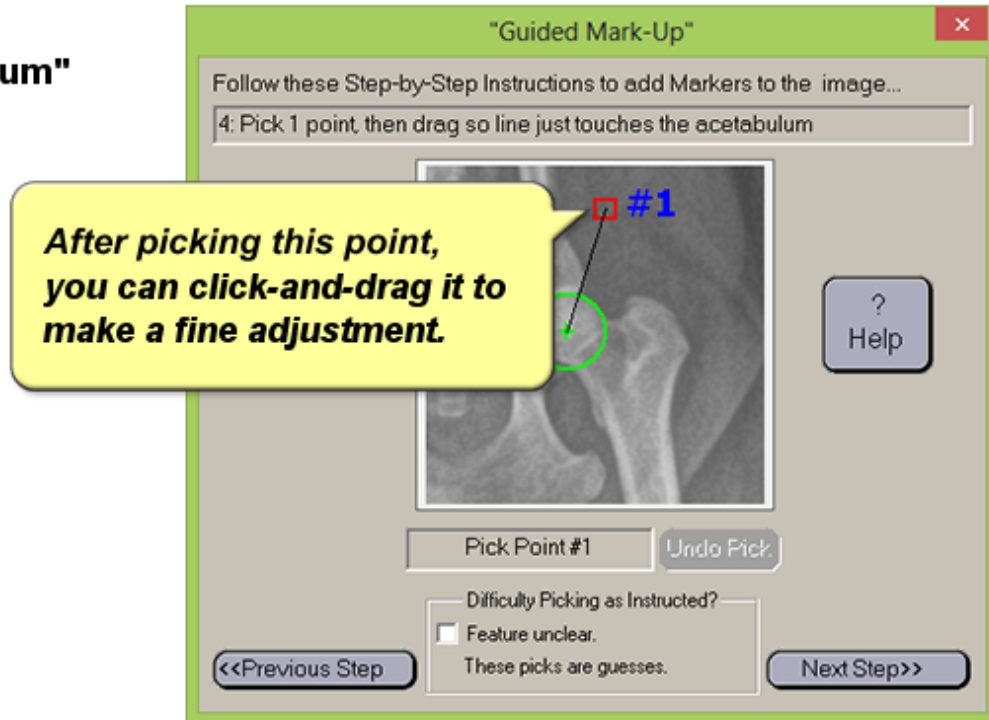
Pick a point on your image and drag it as indicated in the instruction window.



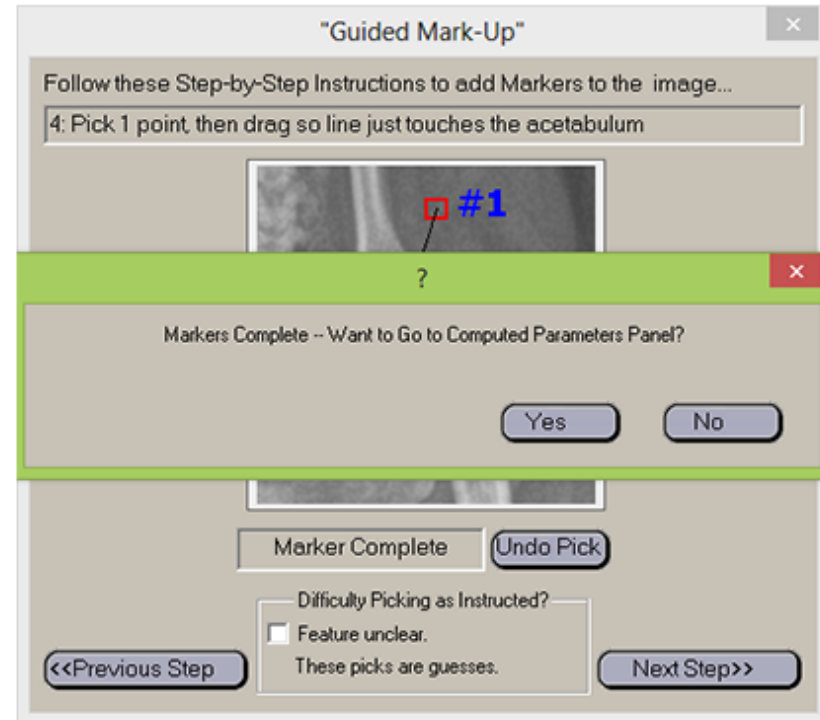
**Step 4:
"Left Acetabulum"**

Pick one point so that the line connecting the center of the femoral head to this picked point will just touch the craniodorsal rim of the acetabulum just above the femoral head.

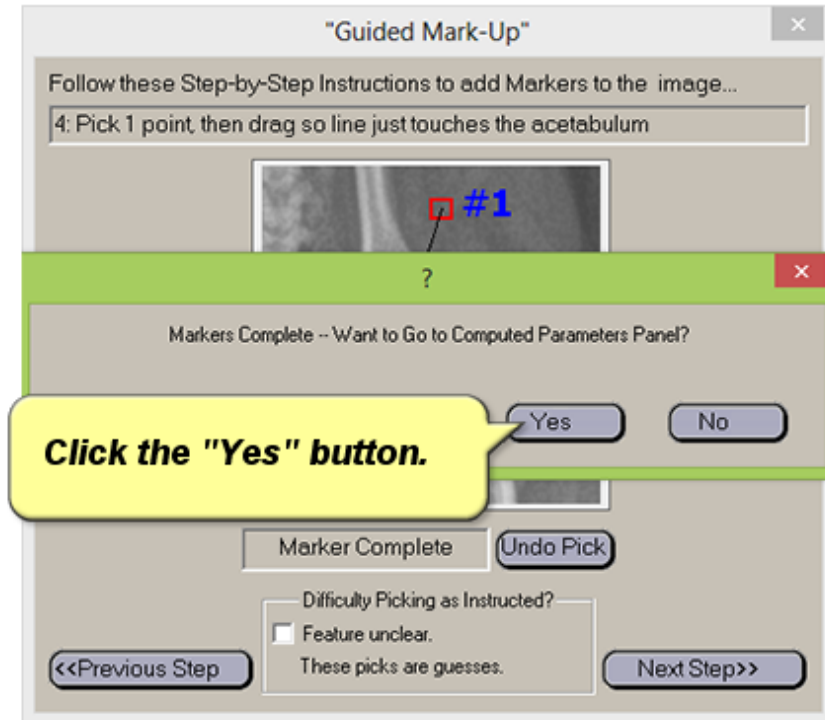


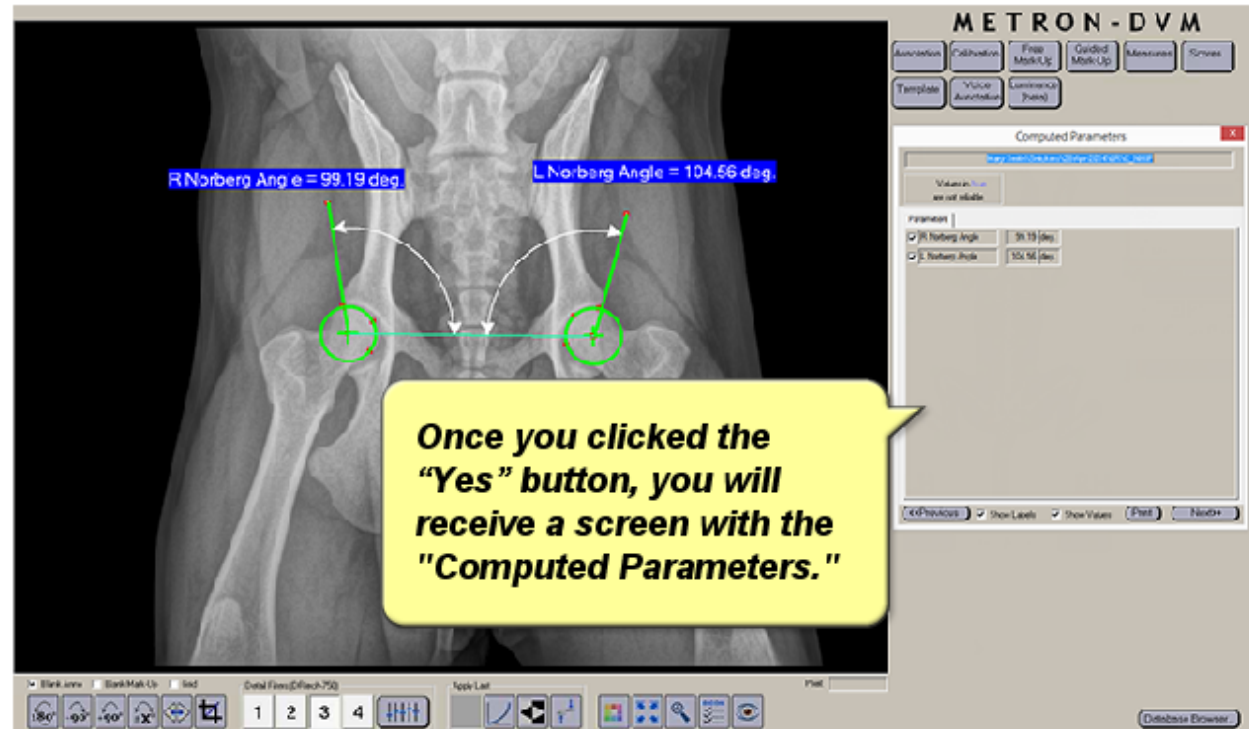
**Step 4:
"Left Acetabulum"**

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



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





Guided Mark-Up: Norberg Hip Analysis | Canine

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

Computed Parameters

Major Smith's University of Applied Sciences

Values in blue are non-adjustable

Parameters

☒ R Norberg Angle	95.19	deg.
☒ L Norberg Angle	101.56	deg.

<<Previous ☒ Show Labels ☒ Show Values Print Next>>

Guided Mark-Up: Norberg Hip Analysis | Canine

Our analysis computes two values. The first is the **Right Norberg Angle**. The second parameter is **Left Norberg Angle**.

The literature on canine hip suggests that values of the Norberg Angle greater than 103 degrees indicate a "good" hip joint.

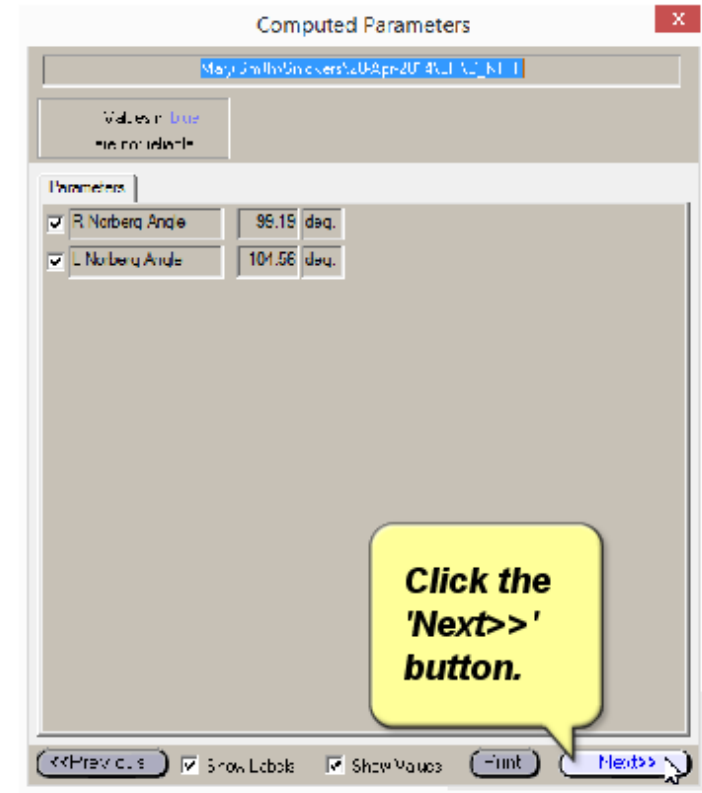
The screenshot shows a software window titled "Computed Parameters" with a red close button. At the top, there is a text field containing a file path: "Mary Smith\Documents\08Apr2014\CT_Vet_K1.L". Below this is a section labeled "Values in Use" with a sub-label "no modification". The main area is titled "Parameters" and contains a table with two rows of data. The first row shows "R Norberg Angle" with a value of "96.15" and units of "deg.". The second row shows "L Norberg Angle" with a value of "101.56" and units of "deg.". At the bottom of the window, there are navigation buttons: "<<Previous", "Show Labels", "Show Values", "Print", and "Next>>".

Parameters	Value	Units
☒ R Norberg Angle	96.15	deg.
☒ L Norberg Angle	101.56	deg.

Guided Mark-Up: Norberg Hip Analysis | Canine

Our analysis computes two values. The first is the **Right Norberg Angle**. The second parameter is **Left Norberg Angle**.

The literature on canine hip suggests that values of the Norberg Angle greater than 103 degrees indicate a "good" hip joint.



Guided Mark-Up: Norberg Hip Analysis | Canine

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

The screenshot shows a software window titled "Computed Parameters and Rule-Based Scoring". At the top, there is a text field containing "May 3 11:18:58 AM 28-Apr-2014 L.F.D. N.F.F." and three buttons: "Load Rule", "Save Rule", and "Delete Rule". Below this is a tabbed interface with the "Parameters" tab selected. The main area contains a table with the following data:

Parameter Name	Value	Unit	Best when...	Importance
II Norberg Angle	99.19	deg.	At Least 103.000	High Edit...
I Norberg Angle	71.4	deg	At Least 71.000	High Edit...

At the bottom of the window, there are navigation buttons: "<<Previous", "Highlight Low", a numeric input field set to "0", a label "%", a "Score" label, a numeric input field set to "90.7", another label "%", and a "Print" button.

Guided Mark-Up: Norberg Hip Analysis | Canine

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

In the scoring panel for Norberg Hip, the value(s) will be highlighted in red (indicating poor hip joint(s)) if the value of the Norberg Angle is less than 103 degrees.

Computed Parameters and Rule-Based Scoring

May 3 10:10:10 AM 2014 / F / D / H / F

Hip: Norberg Hip Load Rule Save Rule Delete Rule

Parameter Name	Value	Best when...	Importance
R Norberg Angle	99.19	At Least 103.000	High
L Norberg Angle	104.06	At Least 103.000	High

<< Previous Highlight Low 0 % Score 90.7 % Print

Guided Mark-Up: Norberg Hip Analysis | Canine

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

Computed Parameters and Rule-Based Scoring

May 3 10:10:58 AM 2014 / F / D / H / F

File: Norberg Hip Load Rule Save Rule Delete Rule

Parameter Name	Value	Unit	Best when...	Importance
II Norberg Angle	99.19	deg.	At Least 103.000	High Edit...
I Norberg Angle	71.4	deg.	At Least 103.000	High Edit...

If you don't agree with the value of "At least 103.000", you can edit the scoring rule by clicking on the "Edit..." button to the far right.

<<Previous Highlight Low 0 % Score 90.7 % Print



Guided Mark-Up in Metron: Norberg Hip Analysis for Canine

This completes the "Guided Mark-Up in Metron: Norberg Hip Analysis for Canine" 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.

