



# **Equinosis Q with Lameness Locator® Use Cases**

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# ABC EQUINE

## VETERINARY SERVICES

### Trial Report

Case #:

Owner:

Test

Horse:

Horse 5

Trial: Straight Line

Date: Wednesday, June 5, 2019 at 1:31 PM

Surface: Asphalt

Blocks:

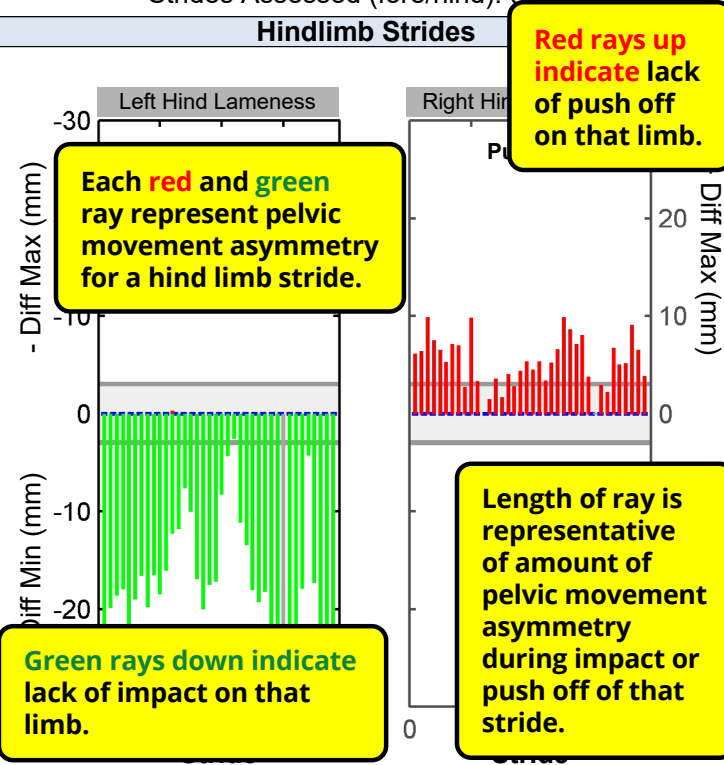
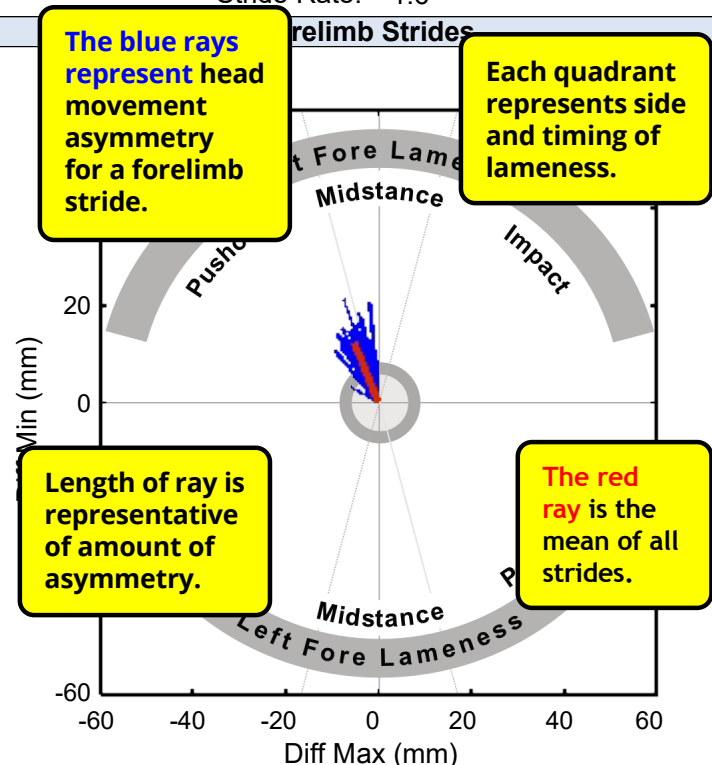
Attending:

Analysis Settings: Default - Delta = 0.1

### Quantification of Asymmetry

Stride Rate: 1.6

Strides Assessed (fore/hind): 39/37



### Lameness Metrics

Ref Range for Max/Min Head: +/-6 mm

Diff Max Head: Mean: -5.2 mm SD: 2.3 mm

Diff Min Head: Mean: 12.3 mm SD: 4.5 mm

Ref Range for Total Diff Head: 8.5 mm

Total Diff Head (V)

Ref Range for Max/Min Pelvis: +/-3 mm

Diff Max Pelvis: Mean: 5.3 mm SD: 2.5 mm

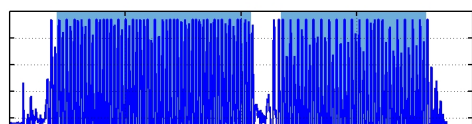
Diff Min Pelvis: Mean: -17.1 mm SD: 6.6 mm

Total Diff Pelvis (V)

Q Score

Mean measurements of all strides (and standard deviations that indicate the stride to stride variability).

### Stride Selection



### Trial AIDE

There is "no" evidence of LF lameness.  
 There is "strong" evidence of "mild" RF pushoff lameness.  
 There is "strong" evidence of "moderate/severe" LH impact lameness.  
 There is "strong" evidence of "mild" RH pushoff lameness.  
 There is insufficient evidence to suggest which limb is primary.

**Straight line trial AIDE** (auto-interpretation and degree of evidence) reports strength of evidence for lameness (taking into account stride to stride variability) in each limb and a relative amplitude (severity). If multiple limb lameness is present, a consideration of potential primary versus compensatory lameness is also provided. For instance, in this example, the LF lameness may be compensatory for a primary LH lameness.



# ABC EQUINE

## VETERINARY SERVICES

### Lunging Comparison Report

Case #:

Owner:

Horse:

Trial 1: Lunge Left

Date: Friday, August 25, 2017 at 11:28 AM

Attending:

Surface: Loose sand

Blocks:

Trial 2: Lunge Right

Date: Friday, August 25, 2017 at 11:29 AM

Attending:

Surface: Loose sand

Blocks:

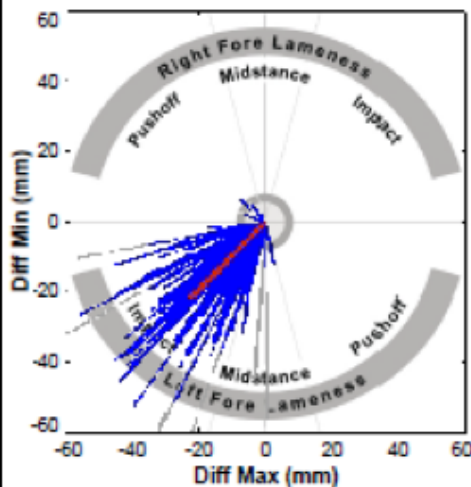
#### Quantification of Asymmetry

Default - Delta = 0.1  
1.5

Analysis Settings  
Stride Rate

Default - Delta = 0.1  
1.5

#### Forelimb Assessment

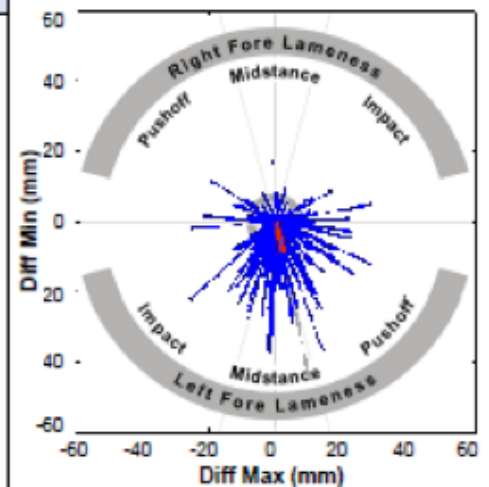


**Diff Max Head**  
-22.6 mm Mean: 2.3 mm  
11.8 mm SD: 10.5 mm

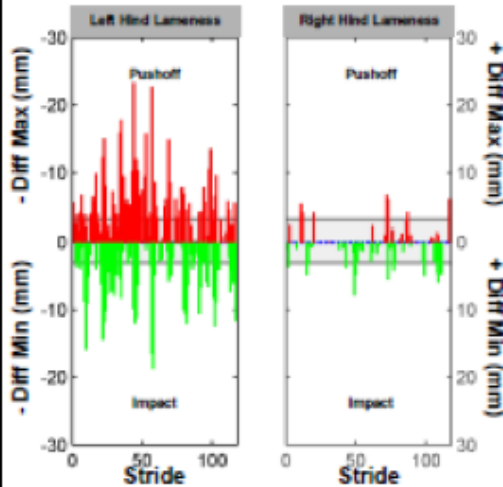
**Diff Min Head**  
-21.6 mm Mean: -8.9 mm  
11.6 mm SD: 10.7 mm

**Total Diff Head (Vector Sum)**  
31.3 mm 9.2 mm

**Strides Assessed**  
110 131



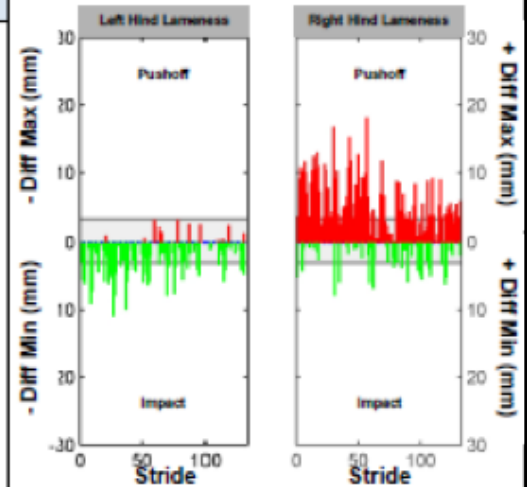
#### Hindlimb Assessment



**Diff Max Pelvis**  
-4.2 mm Mean: 4.8 mm  
5.4 mm SD: 4.3 mm

**Diff Min Pelvis**  
-3.0 mm Mean: -1.0 mm  
5.2 mm SD: 3.7 mm

**Strides Assessed**  
117 132



#### Lunge AIDE

There is evidence of LF impact lameness lunging to the left. There is evidence of LF pushoff lameness lunging to the right. However, on soft surfaces the head movement pattern lunging to the right is seen in some normal horses.

**Lunging (comparing lunge left to lunge right)** - Asymmetric head and pelvic movement is common in normal horses lunging due to torso tilt toward the center of the circle. Because of the increased variability between horses, circle size, and surface characteristics, there are no established reference ranges. However, inertial sensors can be used to identify unexpected patterns of asymmetry based on surface characteristics. AIDE statements describe evidence of lameness based on amplitude, pattern (impact or push off) and large differences between left and right.



# ABC EQUINE

## VETERINARY SERVICES

### Flexion Comparison Report

Case #:

Owner:

Horse:

Trial 1: Before Flexion/ManipulationDate: Thursday, November 9, 2017 at 12:30 PMAttending: Dr. Deborah SieberSurface: Packed dirt

Blocks: \_\_\_\_\_

Trial 2: LH Distal Limb FlexionDate: Thursday, November 9, 2017 at 12:30 PMAttending: Dr. Deborah SieberSurface: Packed dirt

Blocks: \_\_\_\_\_

#### Quantification of Asymmetry

Default - Delta = 0.1

1.4

Analysis Settings

Stride Rate

Default - Delta = 0.1

1.4

#### Forelimb Assessment

Diff Max Head

-4.9 mm Mean: -6.7 mm

7.0 mm SD: 2.1 mm

Diff Min Head

-3.6 mm Mean: -2.5 mm

4.3 mm SD: 7.5 mm

Total Diff Head (Vector Sum)

6.1 mm 7.1 mm

Strides Assessed

8 7

#### Hindlimb Assessment

Diff Max Pelvis

-1.9 mm Mean: -9.0 mm

7.5 mm SD: 4.9 mm

Diff Min Pelvis

7.0 mm Mean: 5.1 mm

7.9 mm SD: 11.1 mm

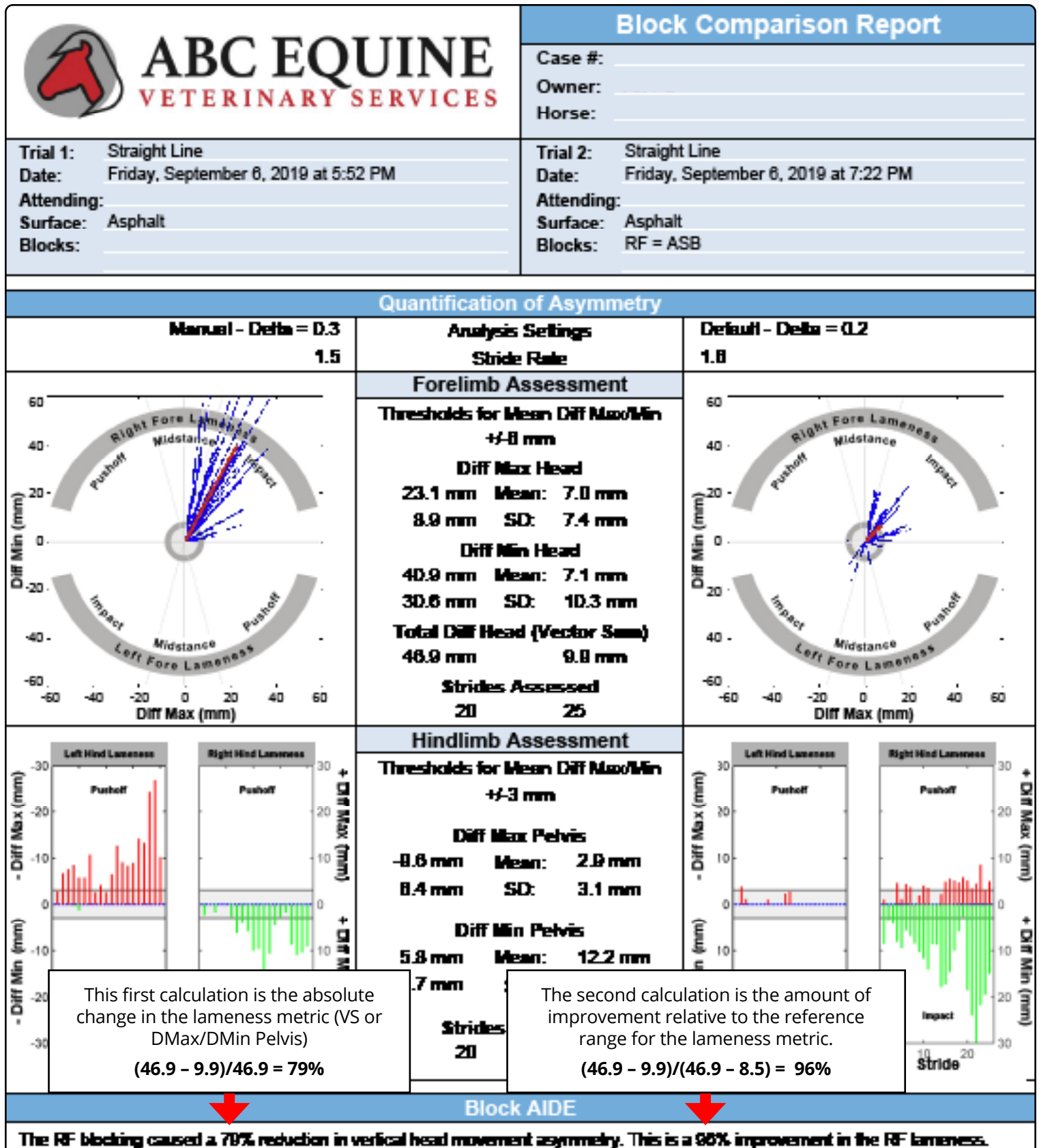
Strides Assessed

9 8

#### Flexion AIDE

The LH flexion test caused a moderate LH pushoff lameness. The LH flexion test did not change the RH impact lameness.

**Flexion (and Manipulation) Comparisons** - Compare pre and post flexion or other manipulation test trials to assess response in the flexed (or standing) limb. The second example is a LH distal limb flexion. Notice in both instances, the rays got longer, indicative of a positive response.



**Blocking Comparison** - Compare straight line trials before and after block for easy visual inspection of change. Blocking AIDE calculates per cent improvement. This example illustrates a RF lameness before and after an abaxial sesamoid block. In the blocking AIDE, the first calculation is the absolute change in the lameness metric. The second is the amount of improvement toward the reference range.





# ABC EQUINE VETERINARY SERVICES

## Recheck Comparison Report

Case #:

Owner:

Horse:

Trial 1: Straight Line

Date: Friday, September 6, 2019 at 8:15 PM

Attending:

Surface: Asphalt

Blocks:

Trial 2: Straight Line

Date: Thursday, October 24, 2019 at 1:20 PM

Attending: Dr. Laurie Tyrrell

Surface: Asphalt

Blocks:

### Quantification of Asymmetry

Default - Delta = 0.1

1.7

Analysis Settings

Stride Rate

Default - Delta = 0.2

1.4

#### Forelimb Assessment

Ref Range for Max/Min Head:  
+/-6 mm

##### Diff Max Head

-1.8 mm Mean: -2.2 mm  
11.9 mm SD: 2.1 mm

##### Diff Min Head

-13.7 mm Mean: -1.8 mm  
16.7 mm SD: 2.2 mm

##### Total Diff Head (Vector Sum)

13.9 mm 2.8 mm

##### Strides Assessed

24 22

#### Hindlimb Assessment

Ref Range for Max/Min Pelvis:  
+/-3 mm

##### Diff Max Pelvis

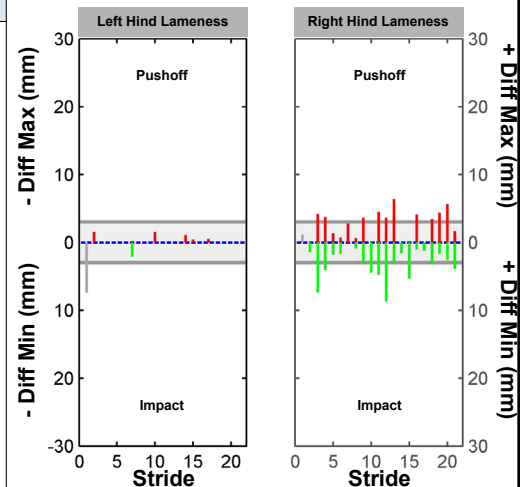
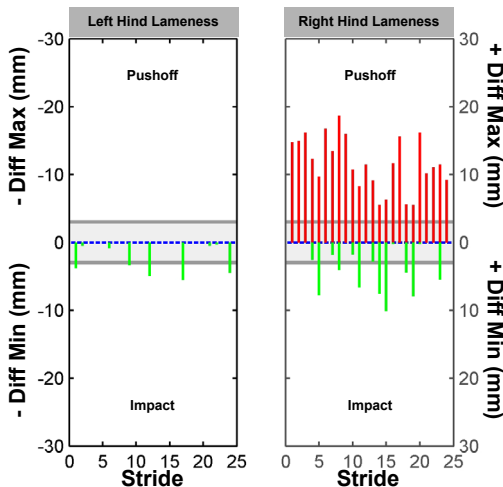
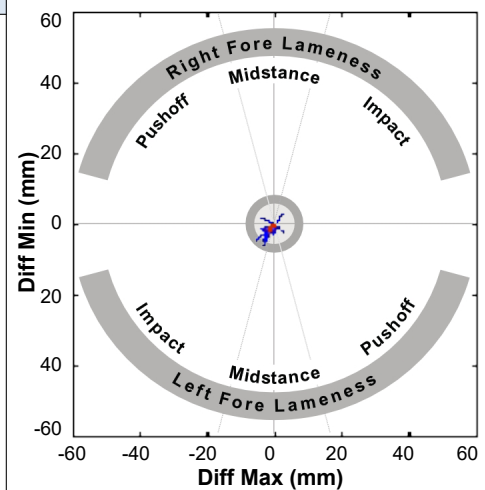
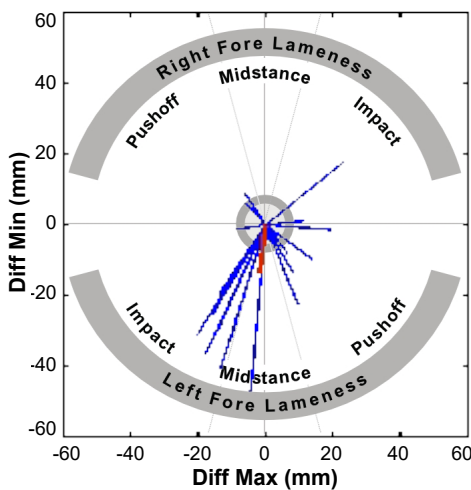
11.7 mm Mean: 2.3 mm  
3.9 mm SD: 2.4 mm

##### Diff Min Pelvis

1.6 mm Mean: 2.9 mm  
4.4 mm SD: 2.4 mm

##### Strides Assessed

24 20



### Recheck AIDE

The LF lameness at time 1 is no longer present at time 2.

The RH pushoff lameness at time 1 is no longer present at time 2.

There was no impact type hindlimb lameness at time 1 or time 2.

**Recheck Comparison Report** - Compare straight line trials from two different days to assess change. Evaluate treatment or rehabilitation progress. Recheck AIDE provides percent improvement of lameness at time 1 compared to time 2, as well as identifies new lameness not present at time 1.



# ABC EQUINE VETERINARY SERVICES

## Ridden Evaluation Comparison

Case #:

Owner:

Horse:

Trial 1: Ride LeftDate: Sunday, November 5, 2017 at 2:48 PMAttending: Dr. Deborah SieberSurface: Hard (generic)

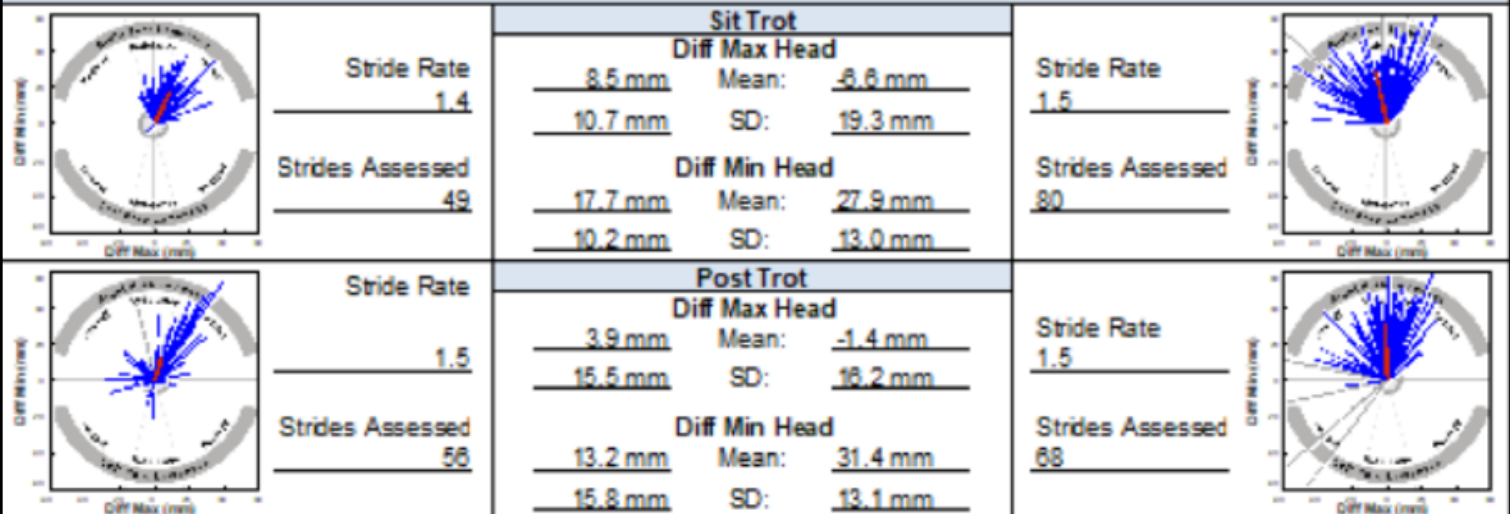
Blocks:

Trial 2: Ride RightDate: Sunday, November 5, 2017 at 2:48 PMAttending: Dr. Deborah SieberSurface: Hard (generic)

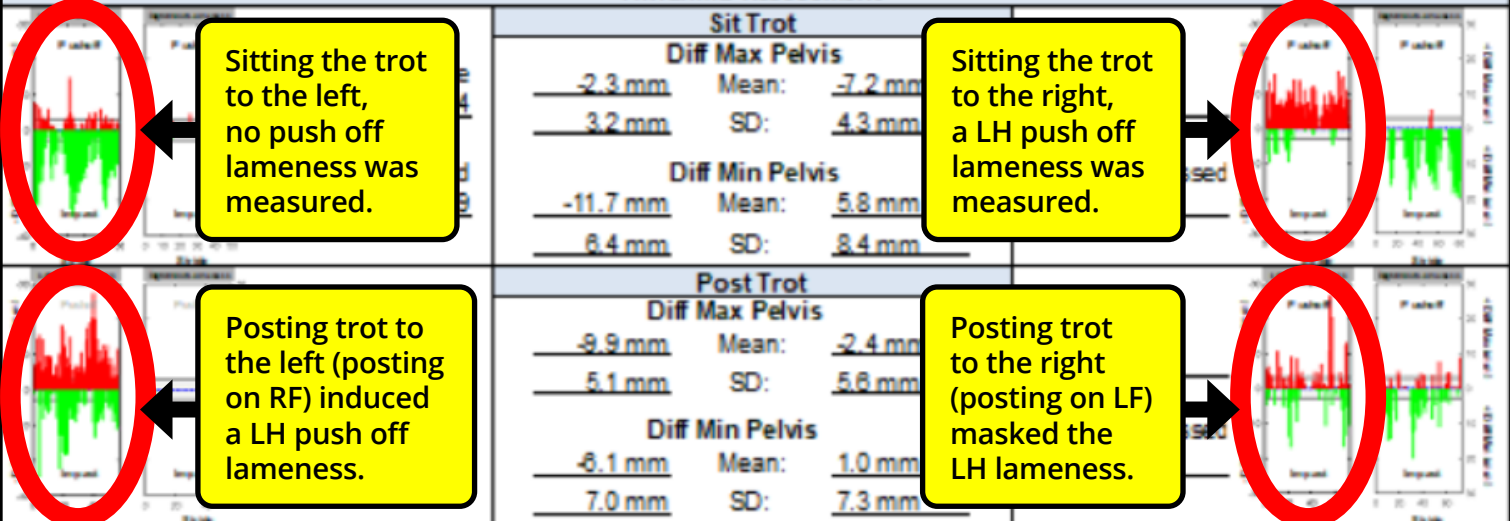
Blocks:

### Quantification of Asymmetry

#### Forelimb Assessment



#### Hindlimb Assessment



Sitting the trot to the left, no push off lameness was measured.

Sitting the trot to the right, a LH push off lameness was measured.

Posting trot to the left (posting on RF) induced a LH push off lameness.

Posting trot to the right (posting on LF) masked the LH lameness.

#### Rider ADE

Sit Trot: There is evidence of RF impact lameness riding to the left. There is evidence of RF pushoff lameness riding to the right. There is evidence of LH impact lameness riding to the left. There is evidence of LH pushoff lameness riding to the right. The impact pattern riding in both directions is seen somewhat less in normal horses riding on hard surfaces.

PostTrot: There is evidence of RF impact lameness riding to the left. There is evidence of RF pushoff lameness riding to the right. There is evidence of LH impact lameness riding to the left. There is evidence of LH pushoff lameness riding to the right.

**Ridden Evaluation (with Rider Module)** - The rider sensor tracks rider activity (sit versus post trot) and provides separate analyses in one report (riding to left compared to riding to right, similar to the lunge evaluation). Posting can suppress upward movement of the pelvis creating a false push off lameness in the contralateral hind limb to which the rider is posting, seen here to the left. It can also mask a push off lameness in the opposite hind limb, seen here to the right.