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How to use video to assess bike biomechanics

By Susan V. Farago

Proper bike fit is a critical component to cycling. Hours are spent adjusting everything from handle bars and stem length to seat height and cleat positioning. What is often overlooked is the biomechanics of the rider. An easy way to identify biomechanical issues is to video tape a rider on a trainer. Most digital cameras have a video recording capability and videos can be played back in slow motion on any computer. Follow these steps:

- 1) Rider warms up on trainer for 10 minutes
- 2) Coach video tapes rider at each angle and load listed below.

(Example: First video clip is rider at high cadence at each angle. Repeat for additional loads.)

VIDEO ANGLES

- 1) Right and left sides - identifies pedal stroke foot flexion and overall body position
- 2) Front side (get low, near tire, and make sure knees are visible simultaneously) - identifies any imbalances in leg position relative to top tube and to each leg
- 3) Top tube looking down at stem (make sure knees are visible simultaneously) - identifies any imbalances in leg position relative to top tube
- 4) Behind - identifies hip rocking issues, improper foot rotation and any heel "kick-out" (if using float pedals), and inward knee collapse

INTENSITY LOADS

- 1) High cadence, minimal resistance
- 2) low cadence, big gear
- 3) Other, rider specialty, etc...

Assessing biomechanics is a quick and inexpensive way to ensure the rider is getting the most out of their training and a great way to ward off potential over-use injuries.

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