

Start at the Foot to Reach the Peak Fit

By Dario Fredrick

When most people talk about bike fit the first thing that comes to mind is the saddle, and more specifically saddle height. It makes sense, since proper knee extension is fundamental to producing power and doing so efficiently. It's what we feel most directly when pedaling. The contact at the hands is also very apparent - how far out there you have to reach and the weight into the hands, making the handlebars a keen observation point as well. But unless we experience pain or discomfort in the feet, they seem to take a backseat to the arms and legs. No less important than the contact to saddle and bars are the pedals. Everything starts with the feet.

The foot is the direct connection to transmitting energy to the bike. The orientation and quality of that connection play a direct role in the cyclist's pedaling mechanics and thus power output and efficiency. The body adjusts pedaling mechanics to maximize power transmission at the foot, even if it means using the hip, knee and even the spine and upper body in a suboptimal way. When pedaling, the foot-pedal connection directly influences a chain of events up the body through the legs. If the connection is optimized it allows smooth, efficient and powerful movement of the legs, a more stable contact between the pelvis and the saddle and even a more neutral spine.

Since the body moves in a three-dimensional plane, simply adjusting the fore and aft or even lateral positioning of the feet may not be enough. The connection between the sole of the foot and the shoe, and the lateral angle of the foot at the pedal (tilt or z-plane) must all be considered. Also, not all pedals, cleats and shoes were created equal, so choosing the right setup for the foot's connection to the bike is essential to the optimal fit. The shoe should first and foremost fit your foot well. The foot-bed should be the right width and supportive of the shape of your feet, which may require an aftermarket or custom insoles. Pedals and cleats also vary considerably in their adjustability of foot positioning, so determining the right position and orientation of the feet should direct your shoe/pedal selection process. This is where the experience of a fitting expert really comes in. Remember that computer formulas and video capture are only tools – they cannot substitute the knowledge of a fitting expert.

Each foot may also require a different accommodation or adjustment. We have two distinct sides, two individual hips, shoulders and feet. While one goal in cycling biomechanics is to balance the body and work in a more even, bilateral fashion, we may need to accommodate each foot in a different way to reach that goal. Ultimately, the knee should track in line with the foot and the foot should connect evenly and comfortably to the pedal. Happy feet are the basis of good pedaling mechanics, so start at the foot to reach your peak fit to the bike.

About the author: Dario Fredrick brings a unique blend of experience and well-rounded qualifications to the bike fitting profession. His fitting philosophy is to work with each individual in a holistic fashion without limits or confines of any one fitting system, formula or tool. Contact Dario at dario@wholeathlete.com to optimize your fit today.