

Foot and Ankle Update

Casper Orthopedic Associates



"Getting the Correct Size Bike"

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Cycling Injuries

An improper bike fitting can lead to lower extremity injuries. Too low or too forward seat position predisposes to patello-femoral pain. Iliotibial band syndrome (pain on the lateral knee) is associated with too high a seat position and hyperpronation of the foot. Hyperpronation of the foot can also lead to medial tibial stress syndrome (shin

splints. Lastly, low seat position can lead to plantar fasciitis and achilles tendinitis. In recreational bikers, the quadriceps and low back muscles are usually strong. Muscle imbalance can predispose to lower extremity stress syndromes. Exercises to balance the strength of the lower extremity and increase flexibility are useful in preventing lower extremity injuries.

Sizing the Bike

Correct Fitting Bike:

1. Crotch to top tube of bike distance
1-2 inches on-road; 3-6 inches off-road
2. Seat position (Figures 1 and 2)
Knee at 30 degrees with pedal at lowest
Line drawn from tibial tubercle
bissects front pedal when pedals
in 3 and 9 o'clock position
3. Handle bar position (Figure 3)
Tip of saddle to center of handle bar
= distance olecranon to tip long finger
Bar height (measured below saddle)
2-4 inches on-road; 2 inches off-road

Figure 1



Figure 2

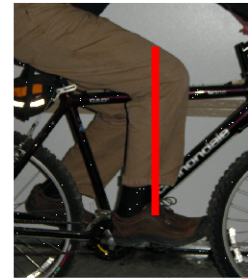
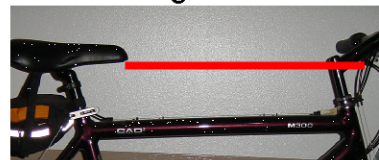


Figure 3



Handle Too High

Conclusion

Correct bike adjustment will increase the efficiency of the cycling effort and decrease the incidence of injuries. Additionally, the use of helmets, elbow pads, knee pads, and wrist guards are essential depending on cycling conditions.



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