

Causes of Knee Pain in Bicycling

Factor	Possible Result
Anatomy	
Leg-length discrepancy	ITB stretch on shorter leg, posterior knee stress
Wide pelvis	Lateral knee stress (increased Q angle)
Pes planus and/or pronation	Medial knee pain
Internal tibial rotation	Patellar malalignment
Muscle weakness of quadriceps, hamstrings, hip flexors, gluteus	Fatigue-induced alterations in pedaling technique that transfer stress to other parts of the kinetic chain
Leg inflexibility	ITB syndrome
Bike Fit	
Saddle too high	Knee extension that irritates the ITB, stress on biceps tendon, patellofemoral loading, hips stressed by rocking while pedaling, posterior knee pain
Saddle too low	Stress on patellar and quadriceps tendons
Saddle too far forward	Stress on anterior knee from pedaling in hyperflexed position
Saddle too far back	ITB stretch from excessive forward reach for pedal, stress on biceps tendon
Crank arms too long	Increased forces on the entire knee; patellar tendon and quadriceps tendon are most affected
Internally rotated cleats	Patellar tendinosis, tibial rotation stress on anterior knee
Externally rotated cleats	Medial knee stress
Training	
Rapid increase in distance or intensity	Muscle tightness, microtrauma
Excessive hill work (on bike)	Cartilaginous breakdown, chondromalacia
Pushing high gear ratio	Medial knee stress
Hill running (on foot)	Medial knee stress (uphill), tight quadriceps (downhill)
Deep leg squats	Increased stress on entire knee

ITB = iliotibial band