



CORNERING

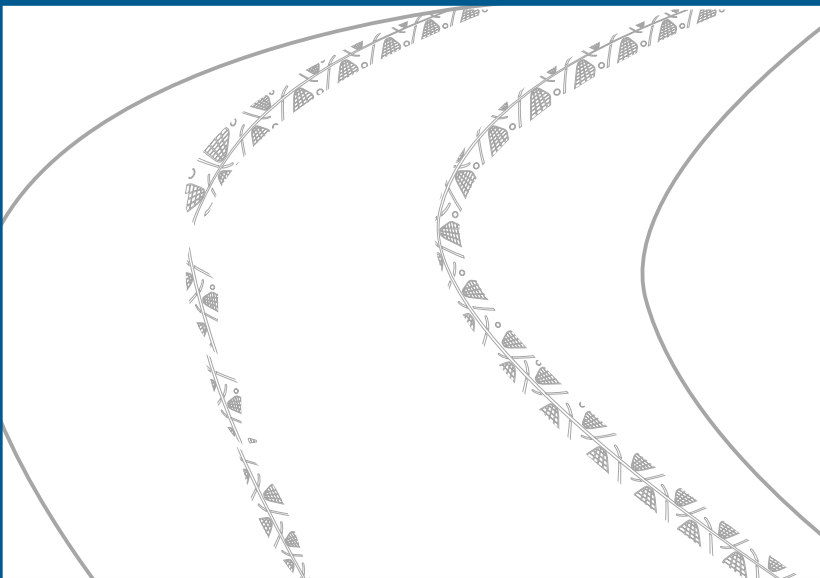
The proportion of sprung to unsprung weight a vehicle has directly effects cornering performance and traction. What is sprung and unsprung weight and how does it effect cornering on a bicycle?

Unsprung weight is the portion of the bicycle and rider that is not suspended (fig A1). The more unsprung weight that is forced to respond to the road, the slower that weight is able to react, resulting in less consistent tire contact with the road. On a rigid bicycle, the vast majority of the weight is unsprung. Sprung weight on the other hand, is the portion of the bicycle and rider that is sus-

pending and does not need to adapt to the road beneath it in order to maintain traction (fig A2). Suspension changes most of what is unsprung weight on a rigid bike into sprung weight, drastically reducing the weight that has to adapt to the road. Suspension takes the load off the wheels and tires, allowing them to react faster and more accurately to the road below them. This reduces tire deflection, keeping tires in more consistent contact with the surface below them and is why suspension enhances traction and allows the rider to corner faster and with greater confidence (fig B1).

performance advantage: **cornering**

cornering traction



Overhead view of inconsistent tire contact (loss of traction) during cornering on an unsuspended bike.

Overhead view of consistent tire contact (traction) during cornering on a suspended bike.

sprung vs. unsprung weight

