# Cycling – Proper Bike Fit

## FACT SHEET

- To prevent injuries when cycling, a fitted bicycle, accurate body positioning and proper knee alignment are essential.

- A proper bike fit depends on accurate frame and handlebar heights as well as seat height, position and tilt.

- The most common overuse injuries from biking affect the neck (48%), knee (42%), groin/buttock (36%), hands (31%) and back (30%).

- Often, overuse injuries can be resolved and future occurrences prevented by adjusting postural alignment and parts of the bicycle.

- To prevent neck pain caused by prolonged, excessive neck extension, raise the bicycle handlebars, raise the seat post or tilt the saddle, slide the seat forward or shorten the stem. Wear the helmet further back on the head and remove the visor. Maintain a straight upper back with the chin tucked down.

- To prevent knee pain, slide the bicycle seat back and raise or lower it and lengthen or shorten the cranks connected to the pedals to maintain knee flexion at 25 degrees at the down stroke with the heel at three o'clock in line with the forefoot. Also, pedal with knees in line with toes, ride in lower gears and on flatter surfaces and use shoe cleats.

- Overuse injuries to the hip can be prevented by adjusting the bicycle seat height, leveling the seat tilt to neutral, raising the handlebars or installing a shorter stem and shortening the pedal crank length. Intermittently standing up while cycling and using a softer, wider seat also may help.

- Hand pain and tingling can be reduced or eliminated by wearing gloves, using padded handlebar tape, frequently altering hand positions, replacing the seat stem with a shorter, adjustable or more upright version and rotating the entire handlebar forward.

- Low back pain while bicycling often is due to excessive bending for long periods of time. To reduce low back pain, raise the handlebars, tilt the saddle nose down, properly adjust the seat height, limit the use of aerobars and dropdown bars and install shorter cranks.

- Foot pain is most commonly caused by weak calf muscles and improperly fitted shoes. Foot pain while bicycling can be reduced by inserting metatarsal pads or rigid arch supports if cycling shoes have enough room and moving shoe cleats back. Sometimes, just loosening the front strap of the shoe can relieve pain.

- Overuse injuries also can be alleviated and prevented by performing strengthening and stretching exercises that target specific parts of the body and improve range of motion. Physical therapists, who are experts in human movement, function, wellness and fitness, can demonstrate proper body alignment for bicyclists and recommend individualized stretching and strengthening exercise programs.

- *Cycling – Proper Bike Fit* is a component of *Move*California, a statewide, public outreach campaign of the California Physical Therapy Association. *Move*California is designed to educate and motivate Californians on the need for an active, healthy lifestyle, as well as the fundamental role physical therapists play in helping individuals attain and sustain such a lifestyle.