

Broadcast Summary

<u>Treating the Cyclist</u> With Warren Hutson feat. Hollie

Warren Hutson

Elite Road Cyclist- between 1966 and 1968

First osteopath to assist with the British Olympic Association's cycling team. Lectured across the country to a whole range of practitioners.

Treating the Cyclist

[Warren classes] anybody who rides a bike as a cyclist, no matter if it's recreational, going to work, racing or otherwise.

Following techniques can be applied to all manner of cyclists.

The bike and the person needs to be set up correctly to get the best possible performance out of both machines.

Title of Warren's usual talk is 'Fit the Body to the Bike'

The bike is adjustable but not adaptable.

- The body is adaptable but can only compensate within limits.
- Human body makes contact with the machine at three points.

The handlebars, the seat and the pedals.

If points are not settled correctly: risk of overuse injuries and even specific problems.

Purchasing a Bike

Sometimes sees patients before the purchasing of a bike.

On recommendation of bike shops.

Good bike shops will actually set up a bike as near as they possibly can to the rider.

<u>The Set-Up</u> [Slide One Below]



The hands on the handlebars are actually on the brake hoods. Relaxed mode during uphill riding. Nose of the seat, just poking up from the front of his shorts. The feet on the pedals at the bottom.

Feet are fastened on with cleats.

Main things to consider:

Posture Correct Positions Adjusting the Bike Looking at Posture Height Posture Length Saddle Position.



The reach is from the front of the saddle to the handlebars.

Body length + measurement of the shoulder to the handlebars.

Good pointer is a 90 degree angle between back and arm.

Saddle height is the most important part of the bike.

To ensure seat, handlebars and pedals are right.

Measured from the seat to the pedals at the bottom of their turning circle.

Measure from the hip to the ankle and foot size (barefoot)

Stand but lean on the saddle and your toes should be able to perch on the floor.

Adjustments can be made to:

The height of the seat

The height of the handlebars

The length of extension

The crank length of the pedal

Saddle position (forward and backwards)

On flat terrain, the saddle tends to be slightly further forward. On hilly terrain, the saddle tends to be slightly backward. Professionals may adjust saddle by half a cmto suit race scenario. Track sprinters or pursuit tend to tilt seat slightly forward.

Crank length 90 degrees at the top of the pedal turning circle- 35-40 degrees at vertical point.

Cleats

Cycling shoes now have slight curvature to promote power.

Inside leg measurement gives you crank length.

If correct, knee should be at 90 degrees at the top of the pedal turning circle.

Must start the process with the bike on a level surface.

Cleats important for anyone riding at club or racing level.

Enable you to pull backwards with the other leg.

Increases your power from around 50% to 80/90% of your power ratio. Lines on the shoe depict cleat placement.

Acts as a basis, variables such as injuries or leg length may require an

alteration to cleat placement.

Poor cleat positioning can contribute to back pain as well as ankle, knee and hip problems.

Both during cycling but also acute pain which lasts.

Somebody with forefront varus may experience knee hip and gluteal pain.

Hip Flexor muscle also important as it can cause lumbar pain. With forefoot varus, cleats with a bit of movement can be helpful. Otherwise, fixed cleats are best else you make create more problems. Cleats should be changed regularly due to wear.

Mountain Bike- differences?

The two biggest things on the mountain bike are the bigger tires and bigger frame. Handlebars are straight.

The seat should be set slightly further back.

Even 0.5cm could make a difference of 20 or 30 watts of energy per pedal per side.

Seat:

Seat often 'slightly downhill' for women due to wider pelvis. Wider seats for women not really necessary- more padding can result in more soreness.

Saddle height and 'height of reach' slightly higher.

More control and better vision into the distance.

Handlebars should be width of the shoulders.

Extra leverage is required for control.

Too wide and slight incorrect twists of the wheel to one side could make you lose power.

Upwards titling seat is the main difference to road-bikes to aid with climbing.

Compensation for a significantly shorter leg?

Anything over 0.5cm or more considered a significant difference. Remove the cleat from the shoe.

Put 50% or a third of the leg length difference between the shoe and the cleat.

NB: Do not put this difference in the shoe as that will just push the foot forwards.

The 'non-specialist' Practitioner

Taking a normal Case History can determine whether a bike could be contributing. Most osteopaths/practitioners can look at the mechanics of a person.

Easiest thing to do would be to get somebody in on their bike and get them to turn the pedals backwards.

With specifics in terms of reach length etc. refer to local cycling shops.

Single shops often better for this.

Ask around for recommendations.

The extent to which set-up is appropriate for very casual cyclists

Depends on whether the pain/problems are specifically related to when the person cycles.

Knee problems:

Bent pedal, wrongly-positioned cleat or incorrect saddle height.

Cleats first port of call but if not, look at use of pedal (right up to the heel is incorrect).

Can be corrected with toe clips.

Panniers are recommended and should balance with one either side, preferably on the front wheel.

Rucksacks are bad if you're in a racing/mountain bike position for anything longer than 5/6 miles.

Injuries

When the pedal is horizontal, if the knee is too far forward or back, you'll get patellofemoral knee pain.

Adjust seat forward or backwards to correct.

Other than traumatic ones like a torn meniscus, not many other knee-based injuries.

If cleat is set-up wrong, the TFL down the outside of the tibia can cause a

problem.

Any problem that may be both related to being on the bike and off it must be aided in both spheres.

Orthotics would have to be made as if they're for a high heel.

Semi-rigid orthotics have cushioning which helps prevent Achilles tendon problems.

Need to be comfortable.

Lower-back pain:

time.

To solve, there's a lot of variables to consider-

How quickly the back pain is coming on.

Depends on the time.

Consideration of what types of training they are doing.

Much to do with the reach of the bike.

Move the saddle as long as it doesn't alter the angle of the knee. There are stretches to relieve this pain.

Warren views mechanical and overuse injuries as the same thing.

Overuse of something incorrect that's actually caused the problem.

Treat injuries as you would normally- same thing, we just put 'sports' in front of injury.

Look at moving the treatment back a bit but try to keep them active in their sport.

Reduce a two and a half hour ride by an hour then build-up 10% at a

If you correctly identify problem and ladder training back, not much fitness is lost. Always aims to get people back into sport in a month, if possible.

Be specific and assert that the athlete musn't rush back and do too much. Neck Pain

Could be related to pelvic tilt and the reach of the bike, as well as the width of the handlebars.

Helmets may aggravate neck pain, but it's better than a fractured skull.

The Correct Action of the Ankle whilst cycling

Some people will dorsiflex.

Should really be plantar flexed to 90 degrees. Dorsiflexion can cause calf or Achilles injury.

Psoas Region

Can be overstrained

If the foot is too far back in the pedal stroke, the rider can't use the hip flexor to properly pull it up.

The tilt of the pelvis is altered. (not in its normal anatomical ntation)

orientation)

It tilts too far forward and this causes the hip flexor to not function properly.

[See Slide Eight]

Pelvis is actually slightly postural. The curvature of the lumbar spine has been lost.

Both it and the thoracic spine have gone kyphotic.

The cervical spine goes lordotic.

In this position, the pelvis goes up, backwards and moves forward in the seat.

vratt





The correct position.

Following the straight line from the glenohumeral joint, straight through the sacrum to the back of it.

This gives you the correct posture.

Back leg at 85 degree angle with the knee bent.

If not, the psoas muscle doesn't tend to work properly.

Difference in Approaches between Sports and Injuries Golf:

A lot of amateur golfers don't warm-up.

Cyclist do warm-up.

From Warren's own experience, he'd ride a 25 mile time-trial course as a warm up with last 6 miles at 80%, increased from 60%.

Warren disagrees with Eyal Lederman's opinion that warming up makes little difference.

Golf isn't a one-sided sport, contrary to popular belief.

The stroke comes the whole way through.

Power is in the one direction but the posture isn't.

The shape of the body in the position, an almost C shape can lead to back trouble, You have to be stood fairly straight over the ball.

Spinning Classes or Bikes at the gym.

Injuries can happen.

Reach tends not to be a problem because of the short period of time that you are on the bike.

Saddle length is more important.

Sit on the bike and put your heel on the pedal when it's at the bottom of its stroke. Your leg should be straight.

Cyclist Training- Winter/Summer Crossover

Gym training during the winter can just keep your general fitness up over the winter months. Important to remember that any fitness gained will be lost within 3-4 weeks of the

switch back out onto the bike.

Ticking over general fitness in the gym once a week during the season can be helpful.

Winter training is not necessary to build power, but rather to maintain your general fitness.

Isometric/isotonic exercises better for cyclists?

Depends on the aim.

If muscle is lost through injury, isometrics can help get the tone back.

Standing-up on the pedals

If the pedal is not pushed down at the correct moment, the bike actually moves back, losing momentum.

Stay in the seat if possible as you can drive more.

However, getting up is sometimes needed to stretch the back.

<u>Gears</u>

Designed to keep you at the optimum revs of approx. 18 revs per minute.