



Junior Development Programme

2 Why limit junior rollout?

We are often asked why Cycling Australia requires juniors to limit the gearing on their bikes so they can only achieve a certain “rollout” (i.e. the distance a bike will travel with one complete turn of the pedals).

There are three aspects to this.

The **first** is one of health and safety. Young bones that are still developing are susceptible to damage from being over-loaded. For this reason, schools will usually not allow students to undertake weight training until they are aged 16. The same applies on a bike; - pushing overly big gears either up hills or in fast accelerations can overload developing bones and cause permanent damage.

The **second** reason is training and conditioning. It is not natural to pedal a bike at much more than 70-80rpm. Riders actually have to train to be able to “comfortably” pedal at very high revolutions, - in excess of 140rpm in a sprint situation, and around 100rpm on normal endurance rides. Gear restrictions force young riders to develop high cadence (revs) which will stand them in great stead when they join the elite grades.

On the track, it is self evident – because track bikes are a single gear, the only way to go faster is to pedal faster.

The same also applies in certain situations on a geared road or mountain bike. While you do have a certain number of gears to go faster, on a fast descent a rider will “run out of” gears, - i.e. they will be going so fast that even their top gear cannot keep pace without spinning the legs very fast. This situation also arises in a sprint finish, or where there may be a very short sprint where acceleration is essential so the need to start in a low gear means the legs spin very fast early in the acceleration.

There is a coaching adage – *“If you can’t spin, you can’t win”*. When you see the success of Australian riders overseas, who come from a small nation where cycling is a minor sport compared to the European powerhouses, - it is hard to fault the rollout policy as an essential training and development component.

The **third** reason is that it reduces the competitive advantage that juniors who physically develop early (or naturally stronger juniors) might have over others in their age groups thus making the age groups more competitive and providing incentive for less-strong juniors to keep at it. Pedaling speed (cadence) becomes more important where the size of the gears are restricted and this reduces the advantage that natural strength provides.