

## **Keeping on-track in the off-season**

*Maintaining fitness over the winter months pays dividends down the road*

**BY CHARLES HOWE**

It seems like only yesterday that we enjoyed more than 14 hours of daylight, and the main hindrances to training (apart from finding enough time) were periods of high heat/humidity, and dodging any impending rain showers. Soon (December 21, to be precise), daylight will fall to just over 9 hours, and it stays below 10 hours from November 11 through January 30. Similarly, average daily high temperature wallows in a 'trough' below 40° F from December 6 – March 1. Combine this with an average annual snowfall between 60 and 100 inches – depending on just where you're located – and quite clearly, winter conditions present a much more formidable challenge to cyclists in Northeast Ohio, but overcoming them and training consistently through the off-season will benefit your performance significantly next year.

### ***Keep it specific***

Recently, I was surprised to hear a local competitive cyclist declare "I shut cycling down in late September and start training for a half-marathon in late November." Cross-training has its place, but if peak performance is the goal, it should be used in addition to, not in place of cycling. Of course, any consistent aerobic exercise during the off-season is better than none, but such a major shift in training focus as this requires time to adjust to the new activity, during which training must be reduced, and then a similar transition period when cycling is taken back up again. Furthermore, only a portion of fitness gains from running transfer to cycling, so the net result is less fitness than if cycling had remained the core (or exclusive) training activity throughout the same period. In fact, any supplementary training at all is really a concession to recovery from injury, personal preference (mental need for a change), or limiting weather conditions, the latter being why numerous professional cyclists spend their off-season at warmer, dryer locales where they can ride steadily throughout the winter, albeit with a reduced training load. Consistent, specific training is truly the key.

So after 7-10 days of complete rest at the end of the competitive season (mid- to late-September), take advantage of the autumn months – some of the best riding all year – by logging as many miles as possible within previous levels of training. Start back up with a weekly load of perhaps half what you averaged at the peak of summer training, made up of primarily steady-state, aerobic rides lasting 1½-4 hours, at light to moderate intensities, punctuated by an occasional group ride. Because your underlying fitness base remains largely intact, training load can be increased more aggressively than in the spring, say by 60-75 minutes a week.

The purpose of this phase is to rest and recover from the competitive season, then to stabilize, rebuild, and maintain fitness levels; it may actually be viewed as the start of the next season, and although some of this fitness will be lost once training is inevitably reduced by falling temperatures and heavy snows, productive training in the autumn will allow you to maintain a higher level of fitness through the winter months, and start from a higher level in the spring.

After 3-4 weeks spent restoring aerobic fitness, you can add some specific training for any event you are preparing for, while maintaining or still increasing aerobic capacity. If you plan on doing an October century ride, for instance, increase the duration of your long weekend ride steadily until you reach 5-6 hours the Sunday prior, and choose terrain that is similar to the targeted event. At the other extreme, cyclocross races last less than 60 minutes, with several run-ups, or dismounts, each lap. Substituting a cyclocross workout for a weeknight tempo ride will both hone your technique as well as provide specific conditioning for the anaerobic energy systems that are taxed more heavily in this type of competition.

### ***Moving indoors***

Nearly everyone ends up training inside only as a dreaded last resort, when weather or schedule preclude an outdoor ride, and by all means, hit the road if it's clear/dry enough and you're up to braving the elements. In all likelihood, however, this will be sporadically possible, at best, by early December. An indoor program is therefore crucial, but its effectiveness depends on several factors:

1. temperature control – training indoors lacks the ~20-25 mph cooling headwind that is almost constantly present outdoors, which can cause significant thermal stresses to accumulate. Since this compromises the level of intensity (power output) you can maintain, there is no advantage, and probably a significant *disadvantage*, to training at elevated temperatures, unless you are specifically attempting to prepare for exercise in the heat (this is analogous to avoiding higher elevations, unless preparing specifically for competition there.) Thus, every attempt should be made to minimize thermal stress, so that you can maximize the training load. This means staying hydrated, keeping the room cool (at least under 70° F, and ideally below 65°), and using a high-velocity “air circulator” fan that can move at least 2000 cubic feet per minute. Direct the air flow at your head and upper body, but position the fan to the side, so it does not blow directly in to your eyes.
2. a “high-inertia” trainer – the type of load generator (magnetic, fluid, centrifugal clutch, air) a stationary resistance trainer has is actually less important than whether it has a sufficiently massive flywheel. If this is lacking, it can be much more difficult to sustain the same level of intensity indoors for a given period of time, as compared to what could be accomplished outdoors.
3. motivation – a reasonable, yet challenging workout plan, supplemented with complimentary activities as needed, can help to sustain consistent training throughout the off-season.

Stationary resistance trainers have some subtle differences and benefits as compared with training on the road, and may even be a preferable alternative (or supplement) to outdoor training. The most basic (and obvious) difference lies in the nature of the resistive load imposed, and many units do not have a heavy enough flywheel to faithfully simulate the kinetic energy changes so typical of road cycling, nor do most load simulators replicate the almost constant changes in grade and terrain experienced outdoors (a flat road and no wind being practically non-existent in the real world). Each factor contributes to the wide and rapidly varying nature of power output outdoors, even during relatively steady-state efforts. Indoor trainers, on the other hand, even when not in ergometer mode, impose a much more even load for a given speed, as becomes quickly apparent if a powermeter is used to verify resistance.

(Some trainers have an ergometer, or “erg” setting, which maintains a constant workload across a number of pedal cycles. That is, when cadence drops, resistance increases, and vice-versa, such that the product of the two – power output – remains constant. This feature allows the rider to “set and forget” a specific power level, and ensures that an unvarying intensity is maintained. What makes the erg seem more difficult is that load is relentless; you can’t ease off for more than a brief moment, so you either ride at the set load, or you stop.)

### ***Maintenance routine***

How you constitute indoor workouts will depend on your particular characteristics and abilities, the sort of events you compete in, what your outdoor rides are like, the training phase you are in, and so forth, but it makes sense to balance indoor training with outdoor rides that are more variably-paced. When the latter is not possible, you could structure indoor workouts to include some short, high-power intervals that induce more neuromuscular than metabolic stress, and having recognized the limitation to monotonic indoor training, some like to throw in frequent out-of-the-saddle “surges” to up the intensity. To best replicate outdoor cycling, however, the variations in power wouldn’t be completely random, since you would want them to occur within a certain frequency range. That is, varying the power on even a minute-by-minute basis doesn’t really mimic what happens outdoors . . . the changes would have to be more often than that. On the other hand, a sudden doubling of the power requirement in middle of a pedal stroke wouldn’t be ideal either, since, unlike cycling outdoors, you don’t have as much stored kinetic energy to help carry you through the “dead spot.”

As applies to the off-season, when training opportunities are likely to be limited and priorities must be set, the primary training focus should be to maintain as much cycling-specific aerobic fitness as possible; if anything is sacrificed, it should be neuromuscular power, which the demands of racing and outdoor riding allow to be recovered quickly, once weather conditions permit consistent outdoor training in the spring.

### ***Crossing over***

Tolerance for indoor training varies with the individual; some can spin steadily for several hours, staring at a gray basement wall all the while, whereas others will struggle to do 45 minutes at a time, even with the distraction of an i-Pod or video display. Similarly, varying resistance to cold temperatures will limit outdoor riding for some more than others.

This is where cross-training can be truly beneficial, again, so long as it remains supplementary to a 'consistent core' of 4-5 cycling workouts per week. Speed-skating and cross-country skiing compliment cycling best and need the shortest adjustment period, but opportunities for them may be limited. Running is simple, inexpensive, and readily available, but requires greater care in the transition period from cycling than non-impact activities, as it is deceptively easy to start out too ambitiously, and end up with delayed-onset muscle soreness (DOMS). Ease into things by simply walking at first, for 30 minutes or so at a time, several times the first week, then begin jogging in the last quarter-mile (~2 minutes). Increase this gradually by a quarter-mile every other time out, until you can jog continuously for 30 minutes.

To summarize, training on the road is more specific, whereas indoor workouts are more controllable and create a better aerobic overload, so optimal results may be obtained using an appropriate combination of the two approaches, or by manipulating force and cadence during indoor training sessions. During the off-season, stationary resistance trainers can be used to stabilize and maintain cycling fitness at a significant percentage of that achieved from peak summer training loads, allowing you to start at a higher level of fitness when outdoor training opportunities become more available in the spring.

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