

INSTITUTIONALIZED OVERTRAINING

Overtraining has been of concern to coaches over the past few years since training loads have been increased to the point of often being excessive. The avoidance of overtraining has been a central focus of sports science and sports medicine education. There are two common scenarios with regard to coping with overtraining in sports.

1. If a coach develops an annual plan that includes predicted periods of lessened training stress as a precaution to avoid overtraining or maladaptation, it is possible that athletes will come to expect periods of reduced strain. They usually learn that they must have such "recovery" periods otherwise they cannot perform well.

2. If a coach frequently quizzes athletes about the symptoms of overtraining or maladaptation, it is possible that athletes will be sensitized to such symptoms and will exaggerate their slightest existence. In more extreme cases, they become neurotic and imagine the symptoms even though they really do not exist at a critical level. Athletes learn to be weaker rather than stronger in the face of continued exercise stress and overtraining symptom emphasis.

Both the above illustrations exaggerate the symptoms and onset of overtraining. The institutionally validated emphasis on appropriate symptoms and the state causes athletes to expect to feel stress symptoms, often in a neurotic manner. Some athletes even become obsessed with transitory and minor symptoms, particularly those which originate from stresses outside of the sport. That obsession often becomes strong enough to the point that activity is limited because of the way the athlete feels even though assertive activity may be the best therapy to alleviate the outside-of-sport stress symptoms themselves. Thus, the well-meaning coach who does not want to push athletes into excessive and unnecessary long-term fatigue states may actually be producing a counter-productive psychological state in athletes. An athlete's ability to work to the fullest potential is compromised by anticipations of the symptoms and fear of overtraining.

The term "institutionalized overtraining" is used to label this effect. That label recognizes that the origin of the complicating sensitization and expectation is derived from the directing body (i.e., the coach).

Modern coaching actually requires athletes to endure greater amounts of relevant work because the overall volume of training is still one of the most significant factors associated with sporting success. Institutionalized overtraining is counter-productive to this aim.

To avoid its occurrence, the following steps can be taken.

- (a) Do not plan periods of decreased overload for "recovery" purposes.
- (b) Do not plan transitional training phases where fitness is partially lost.
- (c) Instead, demand consistent high quality technical performance at practices. When performance quality deteriorates, allow athletes to terminate participation in that practice segment. This facilitates each

individual's capacity to tolerate particular levels of strain, avoids performing in detrimental excessive fatigue states, and allows athletes better in-session recovery.

(d) The orientation of athletes is turned from trying to complete all training, to completing the greatest volume of quality training possible. This is particularly beneficial for avoiding maladaptation and has the concomitant benefit of increasing the volume of quality performance and decreasing the volume of inferior performance.

(e) Since athletes are encouraged never to enter excessively fatigued states, the likelihood of their entering an over trained state is greatly reduced. With that reduction, it becomes unnecessary to plan for unloading macro cycles.

(f) Athletes are continually challenged to do more quality training. The neurotic imagination of symptoms that happens with institutionalized overtraining is avoided.

(g) The success of this approach is dependent upon the sole criterion for cessation of a training stimulus: When performance decreases, despite a compensatory increase in effort, the practice item should be terminated.

(h) For the coach, the following decision making activity is appropriate:

- i. Take note of the performance standard that is initially displayed in the training segment.
- ii. When an athlete's technique begins to deteriorate note its effect on performance.
- iii. When performance deteriorates despite increased effort on behalf of the athlete, terminate the athlete's involvement in that segment.

This procedure will stimulate athletes to perform the greatest possible amount of quality training while avoiding overtraining or excessive maladaptation. They will not become neurotic about overworking, but rather, will be encouraged to continually "push the envelope" of performance capacity by (a) overriding natural and/or cultural inhibitions, (b) increasing performance efficiency so that a greater volume of work can be accommodated given a finite performance capacity, and/or (c) increasing the volume of beneficial training and reducing the amount of irrelevant training. It is the last item that is perhaps the most important. Since an athlete has a finite capacity for exercise and performance, it is in his/her best interest to use as much as possible of that capacity in relevant training. Many modern sports programs are being side-tracked by "circus" training, that is, activities which have little to none to counter-productive relationships with intended competition performances. Examples of circus training are: attending "specialized training" camps where programs are not related to the long-term program of development hopefully being undertaken by serious athletes; altitude training camps where the requirements for performance are altered from those required at sea-level; performing "test sets" of training stimuli which have no relationship to actual competitive performances; training with heavy weight programs when such activities have been shown to have little benefit for or relationship to performance and may even be the seeds of injury; competing in contests which do not fit with training objectives; and performing activities to indulge sports science "testing." These examples of dubious activities which are creeping into modern training programs all interfere with consistent training and detract from the opportunities to indulge in relevant activities.

This alternative approach to training will not produce over trained states because athletes should never be overstressed. Each training stimulus will terminate when its benefits (the repetition of a particular quality of work) are no longer evident. Even when outside-of-sport stresses are transferred into practice, the diminished capacity of an athlete on that day will be accommodated by this approach.

This procedure contrasts markedly with the consistently excessive training program, the extended program that eventually produces overtraining, and the neurotic expectation of over trained states and symptoms. With the consistent expectation to perform with quality there may be no ceiling to possible performance improvement.

This training orientation is very dependent upon the motivation of athletes to do quality training. It demands that if quality performances cannot be produced then recovery is the next best option. Large percentages of training time performing less than optimal exercises and technique would be forsaken. Some critics would claim that this description is a disguise for a high quality -- low volume orientation. Nothing could be further from the truth. It is a method for generating the greatest volume of quality training.

Appropriate motivation will be developed if contingencies that support quality performance are constructed. This most probably will need at least some behavioral goal to be set for every training segment, and at a minimum, perhaps a weekly evaluation of performance change (improvement). Athletes need to have the incentive to constantly strive for the greatest volume of quality training possible. As soon as a below-quality performance occurs they are encouraged to recover rather than to persist with degraded quality while accruing greater levels of detrimental general fatigue.

There are two high profile coaches who program this form of training. Mike Spracklen, arguably the best rowing coach in the world, the current Head Coach of Men's Sweep for US Rowing, and Gregg Troy, the Head Coach of Swimming at The Bolles School in Florida, employ each ingredient of the model.

In San Diego, California, prospective members of the US Men's Eight-oar Crew train mainly in pair-oar boats. At most training sessions all crews row together and are able to see how they are faring in comparison to each other. That competitiveness is an incentive to perform with quality. Each week, all crews perform a time-trial over racing distance. Over time, those athletes with the best technique, physical capacity, and psychological strength will be identifiable. It is those athletes who will be selected for the USA's main boat.

Within Mike Spracklen's program there is nothing said about athletes who drop out of a segment of a training session or have a practice off to have extra recovery. The system that finally locates the athletes with the greatest capacity to do the highest quality of race-simulation type training, will eventually discover those athletes with a lesser capacity. It also should be recognized that Coach Spracklen also programs periods

of moderate stress so that the volume of quality rowing actually performed in a season is extremely large when compared to other high profile rowing programs. This is not a "survival of the fittest" program for it is remarkable how many young men are able to adapt to the increased volume of high quality work, something which they have never before experienced.

Coach Spracklen goes further. He attempts to program training sessions which avoid excessive debilitating fatigue. Instead of falling into the traditional pattern of training early and late in the day with long sessions, he ensures opportunities for his rowers to get adequate night and between-practice-sessions rest. Recognizing that in a two-hour practice session it is usually the last half-hour that is of the worst quality but the greatest fatigue, he often programs three practice sessions a day, each being approximately one and a half hours. The detrimental latter portion fatigue of the two-hour practice is avoided, the less stressful shorter practices require less recovery between sessions, and so a greater volume of adaptive and quality training is performed each day and across the particular training phase.

The underlying feature of Mike Spracklen's coaching is the relentless pursuit of vast amounts of excellence in technique. No weakness is institutionalized into the US Men's Sweep Rowing program.

Gregg Troy attempts to extend the work capacity of his swimmers to their greatest levels (Rushall, 1994).

1. He does not allow his swimmers to ever lose conditioning. There are no days off for recovery.
2. During the winter he does not like his swimmers to enter many competitions. If there are too many races, then swimmers do not get the opportunity to "set up" properly for racing," which he implied, is an important skill and set of procedures.
3. Coach Troy's programs are long-term oriented. He wants his swimmers to compete well on only a few identified occasions. He stressed that it is of no value to sacrifice training for lesser level competitions.
4. Any recovery that occurs is done on an individual basis. There is no planned "team" recovery period.
5. During a taper or period of rest, Coach Troy and the athlete work together to determine the most successful course of training. He cited the example of how little work Greg Burgess does in the last week of a taper and yet he still performs well in races.

This alternative perception of overtraining, on the surface, appears to contradict popular approaches to the phenomenon. However, it is an improvement. Current practice usually has athletes working hard for the full duration of a training session. When the session is completed, usually because no more time remains, athletes are then released to recover before the next scheduled practice. There is no guarantee in this form of time management that: (a) athletes will recover between practice

sessions ; (b) the total work of the individual practice session is beneficial; (c) the physical stimuli experienced are accommodated for each individual; and (d) athletes will not become preoccupied with tolerating general fatigue and its personal manifestations. Those weaknesses are removed by this alternative approach to handling training stress and the phenomenon of overtraining.

If a sporting program emphasizes overtraining and the fear of it, the ability to sustain quality training and to explore alternative methods for extending exercise tolerance capacities will be weakened.

Reference: Rushall, B. S. (1994). Impressions from US Swimming's 1994 National Team Coaches' Meeting. *NSWIMMING Coaching Science Bulletin*, 5(2), 1-7.