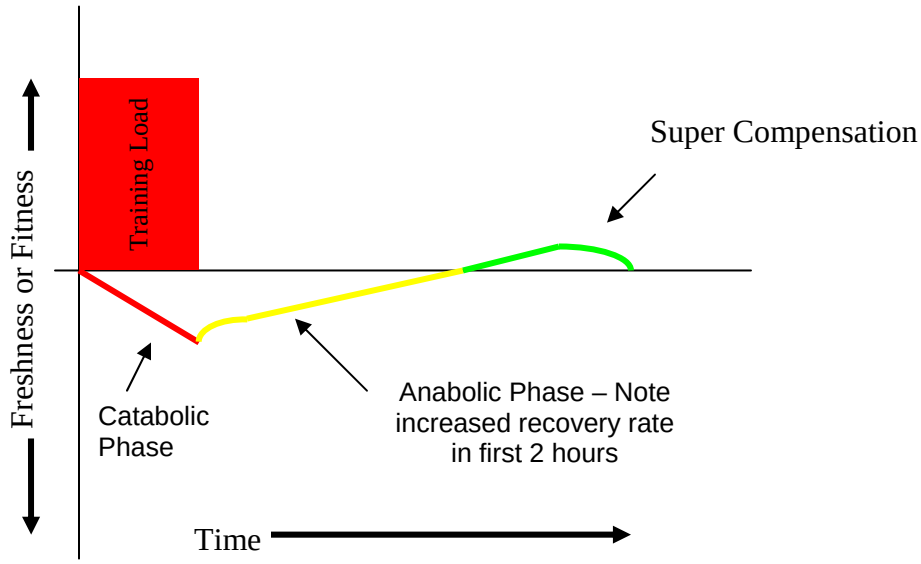
This next report is on the presentation by Massimo Testa, M.D. on the lesson's he has learned as an endurance athlete, physician, and team doctor for teams like 7-Eleven, Motorola and Mapei. Max currently is working in Utah running the Intermountain orthopedic hospital's sports medicine department.

Dr. Testa started the discussion reviewing training approaches for the 1970's that some people are still using. He named this approach Race Imitation. This approach does have some positive adaptations but has more than a few negatives and more importantly a huge limitation, which is the overall development of an athlete. This approach, from a simplistic view seems to make sense since it is very specific in its duplication of race needs. This approach also shows quick initial improvements but as mentioned the athlete soon reaches a plateau that cannot be overcome sticking to this approach. Another issue with this approach is the lack of individualization which is critical in success of athlete development.

Dr. Testa then moved on to defining some of the aspects that need to be considered in the creation of a better training approach. The first aspect he defined was the needs of "the sport", or the creation of a Functional Model. He defined the needs of or the Functional Model first in a broad sense for sports in general. The things to be considered are the muscular or biomechanical requirements, energy or metabolic demands, skills or technical aspect and lastly the tactical component. With the sports functional model defined Dr Testa then mentioned his next lesson, which is the defining of or the measurement of the Athlete. He suggested starting with health, genetics, trainability, psychological strength and desire to or the ability to learn skills and strategy. With an examination of both the sport and the athlete complete he said it was time to train. Before moving on to specifics he defined one more thing, training itself. Training, as defined by Dr. Testa, is the organized load of physical and psychological stressors, structured and repeated to improve the athlete's performance in a specific sports event, sounds a lot like periodization. His next step was a showing the model of the stressor or training load and the physiological response - Diagram below.



With the ground work laid Dr. Testa really emphasized that training must be specific not only to the rider and their limitations and strengths but to the event and the races the athlete want to compete in. He also emphasized that while all the principles of training (increased training load, recovery, specificity, periodization, individualization and consistency) are extremely important Recovering from training stress is the most important.

Max then went into some specifics on adaptations and mechanisms for training certain energy systems. While his info was very good the subject is better handled in other reports.

In the last part of his presentation, Testa made some interesting statements regarding training parameters (Volume, Intensity, Density which is the work/rest ratio, Frequency and Recovery), Testing and with the statements on testing his opinion on training devices showed itself. Regarding the training parameters, he felt volume was more important in the early phase of a road cyclist career. While I agree completely, I find that when ever an athlete changes level, volume or I like to say "width of Base" needs to be emphasized again. He has learned that Intensity is the key factor in most cases for athletic improvement and as mentioned earlier Recovery is the most important. As for testing, Testa talked about measuring intensity using Heart Rate or physiological response and Power or external load. He mentioned that testing or determining training regime using Max HR testing doesn't correlate well due to a few factors. If using HR it is better to use metabolic response to exercise or in other words you must periodically (and somewhat often) test using a metabolic cart. This is why I feel measuring external load, specifically power output using power meters, is much better due to its practical application. Testa mentioned that while lab testing has its place it often will not give information as useful and practical as field testing. He expanded with lessons specifically about performance testing. He said testing and retesting must be in matching conditions (rest, hydration, weather etc), testing should be sports specific, sets of tests are better than a single test, test results are for coaches and athletes then for the lab, and testing is data to evaluate individual changes not to compare different athletes.

Dr. Testa closed his presentations with the following conclusions:
Training is a gradual process, finalized to athletic performance
Training is multi-factorial and specific to athlete and sport
Training improvements follow the respect of training "rules" – Recovery is essential
Monitoring training is a must for the Coach

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