

Effect of Polar Training Load guided Training

Kempele, Finland – 2011 – Radlabor, the leading cycling laboratory in the world at Freiburg, Germany, has conducted a scientific study of the effect of the Polar Training Load feature as guidance to find a balance between training intensity and right amount of rest. The study showed that Training Load guided training program can enhance significantly the quality of your training.

The Training Load is a feature at polarpersonaltrainer.com, telling you how much you can train based on your individual cumulative training load. Training Load value is calculated based on the user's training data and personal information, such as demographics, maximal oxygen uptake (VO_{2max}), and maximum and submaximal heart rate. The training data is gathered using Polar training computers, in this study Polar RS800CX Bike. The value is then visualized with color codes for each day in the online training diary at polarpersonaltrainer.com.

A green color shows that the user has recovered from their previous training sessions and can continue training as planned. Yellow signals that the cumulative training load is at a high level and the user is not fully recovered from their previous training sessions. When the training load is on yellow, the user can train but should avoid high intensity sessions. In the study, subjects were advised to stay below 85% of their HR_{max} during training when their cumulative training load was at the yellow level. The red color indicates that the cumulative training load is very high and the user needs recovery training or rest. In the study, subjects were advised to train below 70% of their HR_{max} and for no longer than 90 minutes per session, when their cumulative training load was at the red level.

There were 22 competitive German cyclists and triathletes in the study, including 11 males and 11 females, who all trained at least 15 hours per week during their season. The subjects were randomized into two groups with equal amount of men and women. Both groups had similar preconditions in terms of training experience and performance level. All subjects trained for 8 weeks with the Polar RS800CX Bike training computer. The study group transferred their training data to polarpersonaltrainer.com and received Training Load guidance while the control group completed their training without the color guidance.

Both groups completed a similar amount of training during the research. However, the study group had fewer but longer training sessions with lower training intensity. They completed on average 49 training sessions with an average heart rate of 133 bpm and an average duration of

133 min. The control group completed on average 55 training sessions with an average heart rate of 138 bpm and an average duration of 116 min. As a result cumulative training load was significantly lower in the study group and they had fewer too intense training sessions. Also study group's power output increased on average more than control group's power output.

Further analysis showed that the study group trained less intense during the 8 weeks and their cumulative training load was significantly lower, resulting in less stress on the body and a lower probability to get sick or injured. Although the intensity of the training was lower, the athletes in the study group achieved slightly higher increase in their performance than the control group. The study proved that Training Load guided training offers more performance improvement with less intense training, and thus can help optimize training intensity and recovery times. This helps prevent overtraining and reduces the risk of illness and injury.

Study has been presented at the ECSS Annual Congress in Liverpool, UK, 6-9 July, 2011.