

# Optimising Load management



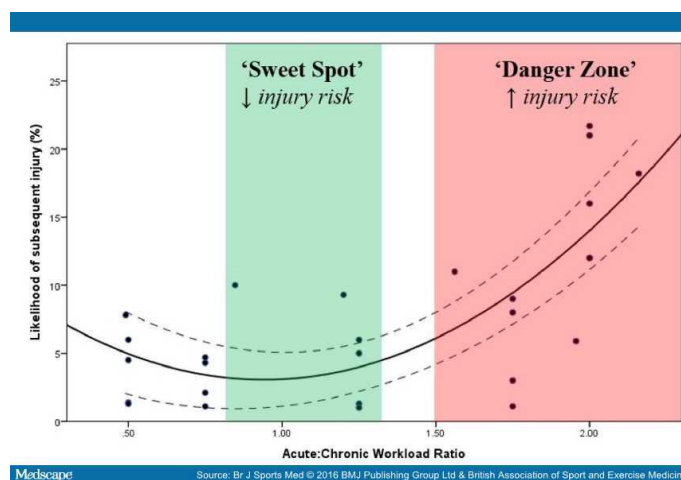
OVENS VALLEY  
PHYSIO & PILATES

Training is *hard work* on the body! Add to that, athletes are usually keen as green beans and sometimes do a little too, much too soon. Our bodies are incredibly adaptive and respond to load. If you go to the gym and pick weights up, your muscles will get stronger. However when we load our bodies **too much, too soon**, our tendons, muscles and joints don't have time to adapt. We have all been there and we know what it's like to be sidelined by an overload injury. At Ovens Valley Physio, our goal is always to get you back running ASAP with an appropriate loading program.

How much is too much?

Well that depends on your **current training history and levels of fitness**. Rates of training progression should correlate to recent training work loads and one of the best ways to measure this is an **acute vs chronic workload ratio (ACWR)**.

**Acute load** is the total work load for the **current week** of training. **Chronic load** is the **average of the previous 4 weeks** work load. Simply, by dividing the acute load by chronic load we can determine the ratio as percentage. The easiest way to measure load is **rating of perceived exertion x duration (minutes)** for each training session, then sum sum of the week's sessions will give you that week's acute load. Research shows that **an ACWR of 0.8 - 1.3 is the 'sweet spot'** for training load being applied to our bodies minimising risk for an overuse injury.



Medscape

Source: Br J Sports Med © 2016 BMJ Publishing Group Ltd & British Association of Sport and Exercise Medicine

## Example of how to measure the ACWR

Week 1,2,3,4:

Monday: 30 min easy run RPE=5  $30 \times 5 = 150$

Tuesday: 60 min gym session RPE=3  $60 \times 3 = 180$

Wednesday: 60 min run with interval training RPE=8  $60 \times 8 = 480$

Thursday: 60 min Run RPE=6  $60 \times 6 = 360$

Friday: 60 min gym session RPE=3  $60 \times 3 = 180$

**Acute load =  $150 + 180 + 480 + 360 + 180 = 1350$**

Week 5: the same as weeks 1-4 but with an additional session on Saturday

Monday: 30 min easy run RPE=5  $30 \times 5 = 150$

Tuesday: 60 min gym session RPE=3  $60 \times 3 = 180$

Wednesday: 60 min run with interval training RPE=8  $60 \times 8 = 480$

Thursday: 60 min Run RPE=6  $60 \times 6 = 360$

Friday: 60 min gym session RPE=3  $60 \times 3 = 180$

**Saturday: 60 min boxing HIIT session RPE=8  $60 \times 8 = 480$**

**Acute load week 5:  $150 + 180 + 480 + 360 + 180 + 480 = 1830$**

**Chronic load ( weeks 1-4):  $(1350 + 1350 + 1350 + 1350) / 4 = 1350$**

**ACWR:  $1830 / 1350 = 1.36$**

You can see in the above example, just by adding in 1 intense boxing session, this person is in the **danger zone with an ACWL=1.36**. After a spike in acute load over  $>1.3$ , you **remain at risk for injury over the next 4 weeks**. HOWEVER a ratio below 0.8 has as much risk of injury as a ratio over 1.3. So there is as much risk in undertraining as there is in overtraining once you are making a return to activity. This is why it is important to minimise periods of rest and use cross training where possible when recovering from an injury.

The ACWR is an amazing, scientific way of measuring load to maximise performance. It can be used to map out training plans, monitor load and progressions and give targets for the appropriate acute load when returning to training.