A New Approach To Sports Medicine

At Nevada Physical Therapy, we pride ourselves on being up-to-date on the best current evidence in physical therapy. We strive to evolve and improve our model based off this research; clinical expertise without evidence can all too often become confirmation bias after all. If you’ve run into us in the halls or at a game, we may have used those few minutes to tell you about the Acute:Chronic loading model we are employing at the U! While we were lucky enough to be introduced to it over a year ago, it was one of the hallmark themes at the national PT convention last month. It’s always a nice confirmation that the model we tirelessly work on to improve is also in-line with the national conversation on best practice. We hope you enjoy this resource we have put together for you on all things Acute:Chronic!

Spotlight: Dr. Tim Gabbett (gabettperformance.com)

- Dr. Gabbett holds a PhD in Human Physiology (2000) and has completed a second PhD in the Applied Science of Professional Football (2011), with special reference to physical demands, injury prevention, and skill acquisition.

- Tim has worked with elite international athletes over several Commonwealth Games (2002 and 2006) and Olympic Games (2000, 2004, and 2008) cycles. He continues to work as a sport science and coaching consultant for several high performance teams around the world.

- Tim has published over 200 peer-reviewed articles and has presented at over 200 national and international conferences. He is committed to performing world-leading research that can be applied in the ‘real world’ to benefit high performance coaches and athletes.
Tendon Injuries and Workload

While we have discussed the idea of Acute to Chronic workload, we feel it has even broader applications than just RTS or pre-season injury modification. In previous newsletters we have discussed tendinopathy and the slow, heavy approach Nevada Physical Therapy takes in managing these injuries. What is tendinopathy other than the chronic exceeding of the tissue’s maximum recoverable volume (MRV)? In strength and conditioning, it is well-established that the load must be strong enough to elicit change but not so heavy to become detrimental yet this concept continues to be missed in rehabilitation. To take the tendon analogy further, what is a tendon strain if not an excessive acute workload to what the tendon can tolerate? While Gabbett’s work often looks at several weeks at a time, we believe we will see more and more evidence looking at chronic workload as the last several months or even years. (cont’d page 3)
What Have We Been Missing?

With an understanding of the Acute:Chronic Workload evidence, we are able to review past published literature with a more focused lens. Take for example the Preseason Paradox. In 2011, Elliot et al. published a 10-year review on NFL injuries showing more than half (53%) of hamstring injuries occurred in the preseason and also within pre-season compared to in-season practice. While Gabbett’s work had not yet made it into the conversation, it may confirm that even elite athletes are not immune to the Acute:Chronic Workload model. It is likely most athletes, in both professional and collegiate sports, do not arrive to pre-season or fall camp with an acceptable chronic workload.

Too often rehab is under-dosed for what an athlete’s needs are for in-season participation. At Nevada PT we work off percentage progressions of a 10-rep max effort but all too often, the gap from rehab to performance is far too wide. Without a foundation in basic strength theory, it will be very difficult to build that chronic workload. More than half of ACL re-injuries occur within the first 2 months of being cleared for return to sport participation (Grindem et al., 2016) which further supports the broad application of this model. Evidence continues to emerge showing reduced chronic workload capacity may be more of an injury risk factor than previously thought.

(Cont’d from page 2)

This is an extension of the “Envelope of Function” concept popularized by Dr. Scott Dye with the key difference being the addition of discrete values to quantify risk. This may be a “common sense” idea yet we continue to see physical therapists prescribing borderline homeopathic doses for rehab. Every patient has the ability to be appropriately loaded, the key is in the dosage!
How to Calculate Workload

We employ the KISS rule (Keep It Simple, Stupid) when determining workload with both athletes and patients alike. We are looking for a way to quantify what the athlete or patient has been going through, how they have been tolerating and how we can program the coming week based on this knowledge. If working with multiple groups (strength, PT, coaches, ATCs) then it is important each group communicates to avoid underestimating workload. In team settings, we recommend utilizing team captains to rate the training session (30 min after).

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<th>Athlete</th>
<th>mm.dd.yyyy</th>
<th>rpe</th>
<th>duration (min)</th>
<th>load</th>
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<th>duration (min)</th>
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</tbody>
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1) Have athlete or patient rate their workout within 30 min post (but not right after).
2) Multiply by duration of session.
3) Enter into Excel and establish 4 week average.
4) Establish projected week’s workload, ensure under 1.5x previous 4-week rolling average.