The Latest on Recovery

Recovery is the process of allowing your body to adapt to the training stimuli presented to it by a well-delivered structured training program and much the same way coaches periodise muscular endurance, strength, power, speed and lactate tolerance, coaches also need to program the recovery of their athletes. Recovery strategies are essential to mediate fatigue and prevent an athlete over-training or over-reaching and are not processes only put in place for competitions. In December 2011, the Australian Institute of Sport (AIS) ran their Inaugural AIS Recovery Symposium attended by coaches, sport scientists and sporting administrators as a way of communicating some of the latest information on recovery strategies being utilised around the world. Strategies from electrical muscle stimulation to compression garments were discussed with some of the proven performers more accessible and affordable for surf coaches than you may think.

Sleep

Along with hydration, sleep is an undisputed king of recovery strategies. An athlete receiving insufficient sleep (<6 hr per day) may have substantially disrupted memory, learning, energy consumption, regulation, growth and immune function. A recent study out of South Australia that looked at nearly 3,000 nights of sleep for over 200 athletes found 88% of elite athletes slept less than 8 hr per night with swimmers ranging between 6.3 and 7.5 hr per night due to their early starts. They also identified elite that athletes fell asleep faster (within 6 min) during an afternoon nap compared to the normal population (7.1 min) which is referred to as 'sleep latency'.

So what to do?

- Identify adequate sleeping opportunities – e.g. delaying starting times, not staying up late
- Identify problems as fast as possible – e.g. monitor sleep latency – the faster the athlete falls asleep may indicated a higher level of fatigue
- Improve your athlete's sleep hygiene – e.g. environment comfortable bed, dark/quiet/temperature controlled room) and behaviour (earlier to bed, no TV in bed)
- Develop a routine – e.g. time to bed, pre-bed routine
- Avoid tablets – e.g. medication results in no "deep" sleep which is where the recovery occurs, potential rebound effects
- Limit napping to less than 1 hr; ideally 30-45 min maximum
- May take 4-5 days to fully recover from a poor night sleep (late nights included: e.g. clubbing)
- Sleeping in on the weekend may result in issues on Monday – extend weekday sleep instead

Hydrotherapy or water-based therapy

A number of variations exist for hydrotherapy such as iced- or cold-water immersion (CWI), hot-water immersion (HWI) and contrast water therapy (CWT) as well as a variety of recommended temperatures for each of those methods. Coming out of the AIS Recovery Symposium via research and practical experiences at the AIS, recommendations were as follows:

Water temperatures:	10-15°C for cold
	38-40°C for hot
Duration:	10-15min for CWI or CWT
	CWT: 1:1 for cold:hot immersion (e.g. 2min cold, 2min hot)
Depth:	Standing preferred – up to shoulders (sitting or standing)
Method:	Contrast water therapy best for muscle damage

Additional considerations:

- Skinfolds – lower the skinfolds the lower the ability to tolerate the cooler water
- Environmental conditions – e.g. CWI may not be suitable in sub 18°C air temperature
- Demands of the competition – e.g. highly explosive powerful movements vs. long, slow aerobic movements
- Timing of the recovery method – e.g. not suitable prior to (within 1 hr) of explosive efforts, when the next session will be
- Familiarity and athlete acceptance – e.g. not trialling something new at a competition
- Temperature regulation – if unable to maintain recommended temperatures for cold, warmer waters (20-22°C) could be used but with a longer duration (20 min) – helpful when dealing with melting ice

Perhaps surf lifesaving is at an advantage over many other sports in that we have the perfect recovery facility on almost every beach around Australia...the ocean. Providing the water temperature is around 20°C or less, the best form of recovery may be standing for 15min, neck deep in the ocean or even in a pool back at your accommodation!

And here's why...The compression aspect (hydrostatic pressure) will be up to 7 times that of your typical compression garment for your lower limbs and although the water temperature is slightly higher than recommended, it will still result in a cooling effect as long as the water temperature is below that of your skin (typically 30-34°C) and core body temperatures (typically over 37-38°C) after exercise).

Additional recovery suggestions:

- Compression garments – mixed results in the research but above all, athletes perceive their recovery has been enhanced, also there are no negative effects – so why not wear them! Suggested wearing these as long as they are comfortable e.g. after competition and/or training, even sleeping in them after competition provided they are not perceived as uncomfortable (sleep hygiene)
- Nutritional strategies – 10-20g protein after-exercise is suggested so small tub of yoghurt (approx 30g) and chocolate milk (approx 20g) is shown to be beneficial; chocolate milk also aides carbohydrate replacement and has been shown to be more effective than commercial fluid replacement drinks like Gatorade.
- Massage and stretching – no scientific basis as recovery strategies and massage may be detrimental to DOMS or delayed onset muscle soreness although both are still widely used

So in summary, the places we train and live already provide effective recovery facilities which need to be utilised by coaches not only following competition but also during the typical training week. Combining additional recovery strategies such as compression garments, appropriate nutritional strategies and ensuring adequate hydration can substantially increase your athlete's ability to recover, but effectively planning that combination and making it habitual is without doubt, the key to successfully mediating training and competition fatigue.

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