REST HUB
Recovery Ready

Compression Overview

Sports Compression Garments (SCG)

These garments (i.e., tights, tops, socks) are designed to apply external pressure to the limb.

The high elastane components create a negative fit, whereby the garment is smaller than the limb size.

Potentially aid recovery by:

- Minimising the effects of muscle soreness.
- Improving blood flow, venous return, and lymphatic flow.
- Removal of metabolites and delivery of nutrients to the muscle.

Further research is required to fully understand the effects of SCG on performance and recovery. Inconsistent research outcomes may be the result of varying research designs, anthropometric variations, inconsistent fit guides, inadequate external pressure, and differing durations of wear.

Summary of key findings relating to compression garment use[1]

- Reduced muscle oscillation during exercise.
- Amplified sensory input and somatosensation (i.e., touch, pressure, pain perception).
- Blood indices likely unchanged (e.g., lactate, markers of muscle damage).
- Reduced muscle soreness and swelling.
- No negative effects on physical performance.
- Increased skin (but not core) temperature at the point of coverage.
- Heart rate and cardiorespiratory measures largely unchanged.

Considerations

- **Size:** Ensure SCG are the correct size and fit. SCG should be a challenge to get on and the compressive pressure should be noticeable without feeling restricted in movement.
- **Garment:** For post-exercise recovery, select garments covering as much of the limb as possible to optimise recovery and performance outcomes. For long-haul travel, Class II medical grade compression socks are the most appropriate form of compression, minimising swelling and reducing the risk of developing deep vein thrombosis.
- **Sleep:** There is no apparent additive benefit to sleeping in SCG overnight.
- **Longevity:** Depending on usage, garments may need replacing every ~6 months. If the SCG starts to feel easy to put on, it is likely time to replace it with a new SCG.
- **Care:** To maintain functionality, wash according to manufacturer guidelines (typically with cold water and hand or delicate wash). Do not put in a dryer, over a heater, or in the sun. When putting on SCG, be mindful not to pull from the top of the garment or allow the fabric to bunch up. Follow manufacturer guidelines and pull on/up gradually. Once on, ensure the fabric is even throughout with no creases or folds.

Intermittent Pneumatic Compression (IPC)

IPC (e.g., Normatec, Blackroll boots) is commonly used to enhance post-exercise recovery status.

These devices consist of inflatable sleeves containing multiple compartments that sequentially inflate and deflate to apply pressure across the associated area (e.g., hip, lower, or upper limb).

Applies dynamic compressions to the veins in the limbs, facilitating the muscle-pump action, increasing venous return and blood flow.

Can be programmed to apply up to ~5 times the compression level of standard SCG.

Potentially aid recovery by:

- Reducing perceived muscle soreness and intramuscular swelling.
- Enhancing blood flow.
- Removal of metabolites and delivery of nutrients to the muscle.
- Improving exercise performance and recovery.

However, evidence remains contradictory, in part, due to differences in IPC prescription (i.e., level of pressure, duration) across research studies.

Considerations

- **Application:** Implement as part of a periodised recovery program. May be useful as a passive form of recovery (i.e., watching TV, reading etc.), or between training sessions/competitive events in lieu of access to alternate recovery strategies.
- **Duration and intensity:** Typically worn for between 20-60 minutes. For initial use, start at a low intensity and short duration, gradually increase intensity or time to establish optimal comfort and duration.
- **Rehabilitation:** May be used to complement physical therapy or during phases of rehabilitation. Following an acute soft tissue injury, ensure appropriate support staff are consulted to determine if, and when IPC use may be suitable.
- **Supplementary strategy:** May be implemented as required on rest days, when soft tissue therapy is unavailable, and post-travel.
- **Hygiene:** Clean regularly with disinfectant wipes (e.g., V-Wipes), especially when shared between multiple athletes.

Recommended Reading

[1] Weakley J, Broatch J, O'Riordan S, Morrison M, Maniar N, Halson S. Putting the squeeze on compression garments: Current evidence and recommendations for future research: A systematic scoping review. Sports Med. 2022 May; 52(5):1141-1160. doi: 10.1007/s40279-021-01604-9.

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Brown F, Jeffries O, Gissane C, et al. Custom-fitted compression garments enhance recovery from muscle damage in rugby players. J Strength Cond Res. 2022 Jan 1;36(1):212-219. doi: 10.1519/JSC.0000000000003408.

Cochrane D, Booker H, Mundel T, Barnes M. Does intermittent pneumatic leg compression enhance muscle recovery after strenuous eccentric exercise? Int J Sports Med. 2013 Nov;34(11):969-74. doi: 10.1055/s-0033-1337944.

Dupuy O, Douzi W, Theurot D, Bosquet L, Dugué B. An evidence-based approach for choosing post-exercise recovery techniques to reduce markers of muscle damage, soreness, fatigue, and inflammation: A systematic review with meta-analysis. Front Physiol. 2018 Apr 26;9:403. doi: 10.3389/fphys.2018.00403.

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