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ORIGINAL ARTICLE

One session of partial-body cryotherapy ($-110\text{ }^{\circ}\text{C}$) improves muscle damage recovery

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Recovery modality; peak torque; muscle thickness; muscle soreness

To evaluate the effects of a single session of partial-body cryotherapy (PBC) on muscle recovery, 26 young men performed a muscle-damaging protocol that consisted of five sets of 20 drop jumps with 2-min rest intervals between sets. After the exercise, the PBC group ($n = 13$) was exposed to 3 min of PBC at -110°C , and the control group ($n = 13$) was exposed to 3 min at 21°C . Anterior thigh muscle thickness, isometric peak torque, and muscle soreness of knee extensors were measured pre, post, 24, 48, 72, and 96 h following exercise. Peak torque did not return to baseline in control group ($P < 0.05$), whereas the PBC group recovered peak torques 96 h post exercise ($P > 0.05$). Peak torque was also higher after PBC at 72 and 96 h compared with control group ($P < 0.05$). Muscle thickness increased after 24 h in the control group ($P < 0.05$) and was significantly higher compared with the PBC group at 24 and 96 h ($P < 0.05$). Muscle soreness returned to baseline for the PBC group at 72 h compared with 96 h for controls. These results indicate that PBC after strenuous exercise may enhance recovery from muscle damage.

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