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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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## Keywords:

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  $-110^{\circ}\text{C}$ , and the control group ( $n = 13$ ) was exposed to 3 min at  $21^{\circ}\text{C}$ . 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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