早稲田大学スポーツ科学学術院スポーツ科学研究センター　主催

第196回スポーツサイエンス研究会

日時　2019年3月27日（水）　14:00より

場所　早稲田大学 所沢キャンパス 100号館 210教室

演題

Healing processes and profiles in patients with an Achilles repair; microcirculation and morphomechanics

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The healing of ruptured tendons passes through three main phases containing distinctive cell and molecular cascades. Currently, the tendon research field is actively exploring the microcirculatory and mechanical profiles for enhancing tendon healing. Our studies have shown that (1) changes in the inter-limb microcirculatory levels (THb and StO2 levels in the repaired tendon versus the noninjured one) shortly after (ie, 1, 2, and 3 months) acute Achilles tendon repair were correlated with self-reported symptoms and functional performances at 3 and 6 months after surgery(2017); (2) early after the repair, there are decreases of fascicle length, muscle thickness, and mechanical properties in the proximal aponeurosis of the medial gastrocnemius in their repaired legs (2017); (3) combined effects of the dynamic morphomechanical changes in the calf muscle after an Achilles tendon rupture are related to functional deficits (2019) and (4) a four-week vibration intervention, as an adjunctive treatment, starting at two weeks post-operation demonstrated lower total hemoglobin and oxygen saturation, respectively, at three and six months after the repairs (2nd revision, 2019). the purpose of this presentation is to provide ideas of physical strategies, as well as the appropriate times of intervention, for enhancing rehabilitation outcomes in athletes.

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