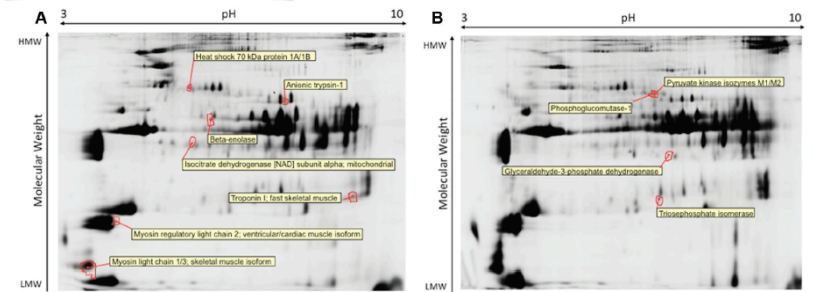
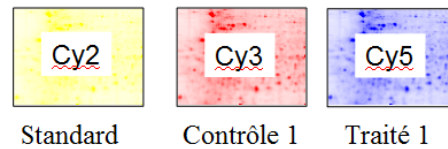
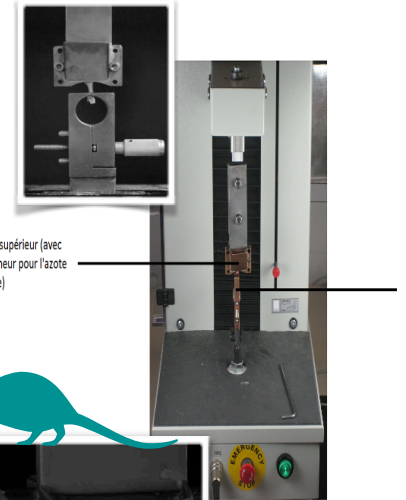
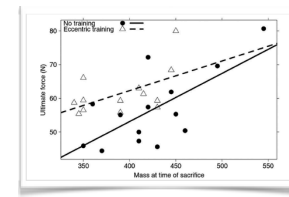
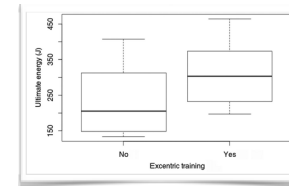
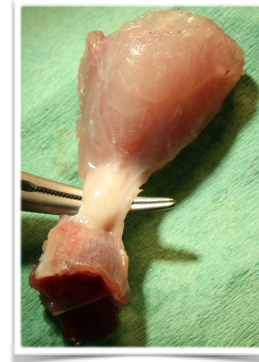
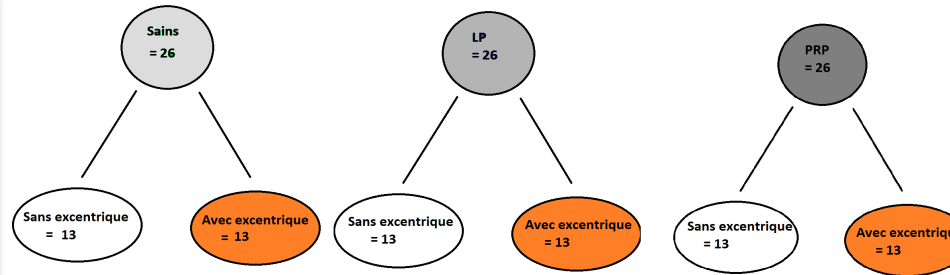


Eccentric training for tendon healing after acute lesion: a rat model

Kaux JF, Libertiaux V, Leprince P, Fillet M, Denoël V, Wyss C, Lecut C, Gothot A, Le Goff C, Croisier JL, Crielaard JM, Drion P

Introduction: Platelet-rich plasma (PRP) injection has been shown to have a beneficial effect on tendon healing after lesion in rats. Furthermore, eccentric exercise seems to improve the mechanical quality of the tendon. A combination of PRP injection and eccentric training might be more effective than either treatment alone.

Methods: Adult male rats were anesthetized, an incision was performed in the middle of their left patellar tendon and an injection of physiological fluid (PF) or homologous PRP was randomly made at the lesion level. The rats were then divided into 2 groups: the eccentric group, undergoing eccentric training 3 times a week, and the untrained group, without any training. So, 6 groups were compared. After 5 weeks, the tendons were removed and their ultimate tensile strength and energy were measured. Tendons were frozen for proteomic analyses when all biomechanical tests were completed. Statistical analysis was performed with linear mixed effect models.



Conclusions: Eccentric training altered the metabolic plasticity of tendon and led to an improvement of injured tendon resistance regardless of the treatment injected (PF or PRP). This study demonstrates the necessity of eccentric rehabilitation and training in cases of tendon lesion regardless of the treatment carried out.