Injury to the hamstring origin usually occurs when sudden forcible contraction of the hamstring muscles against resistance causes excessive eccentric overload, as in sporting activities such as gymnastics and sprinting (Gidwani and Bircher, 2007). Hamstring origin injuries are rare when considered alongside mid-substance hamstring muscle tears (Kujala et al, 1997). Hamstring strains most often occur in the biceps femoris and the most common location is near the musculotendinous junction (Armfield et al, 2006).

Frustration with hamstring strains is not only explained by the high prevalence of these injuries ranging between 12 to 25%, but also by the prolonged duration of symptoms, poor healing responses and a high risk of re-injury rate of 12–31% (Woods et al, 2004; Croisier et al, 2004). Hamstring origin strains have been shown to have a longer recovery time with proximity to the ischial tuberosity as estimated by palpation and MRI resulting in significantly longer time to return to pre-injury level (Asking, 2008). Investigation into athletes who sustained hamstring strains close to the ischial tuberosity, found 47% did not return to their respective sport at all, whilst the remaining 53% had an average time back to play of 31 weeks. Additionally the same study also found that dancers who sustained a hamstring strain, 87% of which were located to the proximal semimembranosus tendon, had an average return to sport time of 16 weeks. Recovery time of hamstring strains involving over 50% of the cross sectional area result in a recovery period longer than 6 weeks, whereas normal imaging findings result in a recovery period of approximately 1 week. (Rettig et al, 2009)

The vast majority of proximal hamstring injuries are strains at the musculotendinous junction that are best managed non-operatively (Klingele et al, 2002) However injuries to the hamstring origin should be held with a high index of suspicion as they can result in an avulsion fracture of the ischium, an avulsion of the ischium apophysis, or a pure avulsion
of the hamstring tendons themselves (Gidwani and Bercher, 2007). Research has shown that in cases where there are displaced injuries of ischial apophysis and pure tendon avulsions surgical treatment provides for best outcomes. (Brucker et al 2005)

There is little consensus on the optimal treatment and rehabilitation for hamstring muscle strains (woods et al 2004). A review of the literature shows a lack of clarity in reporting the location of hamstring strains making it unclear as to how affective certain rehabilitation programmes are in treating specific types of tears i.e. origin. Preventive strengthening and flexibility training have been proven to not only decrease the incidence of injury to the hamstring muscles but also to result in a decreased likelihood of recurrence (Klingele and Sallay, 2002). Crosier et al (2008) found that muscle strength abnormalities increase the risk of recurrent hamstring injuries and concluded that an individualised rehabilitation program emphasizing eccentric training based on specific deficits contributes to a decrease in symptoms on return to sport. However there is also evidence to suggest that rehabilitation program consisting of more progressive agility and trunk stabilization exercises are more effective than a program emphasizing isolated hamstring stretching and strengthening in promoting return to sports and preventing injury recurrence in athletes suffering an acute hamstring strain (Sherry and best, 2004).

Whether the re-injury is attributed to insufficient rehabilitation and early return to sport or the persistence of pre-existing risk factor the treating physician must have the ability to assess the degree of injury, knowledge of the reparative process of healing muscle, and an understanding of the rehabilitative and preventative measures for hamstring injury (Miller and Wiesel, 2010).


