Abstract. The Sciatic Functional Index (SFI) is widely used to evaluate functional recovery after sciatic nerve injury, primarily in the rat, and more recently shown useful in the mouse. This quantitative, non-invasive method allows tracking of regeneration capability, visible in the gait of the animal. Using a Martin micro needle holder, carrying a force measured to be 49.2 N, the left sciatic nerve was crushed for 60 s. We accumulated data from walking tracks collected preoperatively and 1, 7, 14, 21, and 28 days after injury. SFI values were first calculated in the traditional manner. Then using the preoperative values as the normal value in the postoperative calculations, SFI was again calculated; this isolated the calculations to either injured or contralateral leg giving a "split" plot. The traditional SFI calculations resulted in typical shaped graphs for both rats and mice. However, the "split" SFI calculations showed how rats and mice differ in their recovery from sciatic nerve injury. The mouse graph shows the intact leg remaining stable and the injured leg having functional impairment, which then recovers. The rat graph showed functional impairment of the injured leg, however, the intact leg had an increase in SFI values as if to compensate until the injured leg showed recovery.