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Use of Return to Sport Testing for Prevention of Bleeding Episodes Following an Acute Injury in the Hemophilia Patient

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Abstract

Use of Return to Sport Testing for Prevention of Bleeding Episodes Following an Acute Injury in the Hemophilia Patient. Rachel Horton, PT, DPT, CSPS. Objective: Return to sport testing, specifically hop and drop vertical tests, have been utilized in the general athletic population following ACL tear or other injury in determination of readiness to return to high level activities and sports with minimized risks of re-injury. This case study looked at the ability to utilize these same tests for a hemophilia patient recovering from femoral nerve damage and resultant quad atrophy due to a prolonged iliopsoas bleed to return to activity without reinjury or rebleeding into the involved muscles. Methods: A 10 year old moderate FVIII patient recovering from muscle damage related to a severe iliopsoas bleed completed the Y-balance test, single leg broad jump on one foot, triple broad jump on one foot, the single leg triple crossover hop test and drop vertical jump over 4 time points, starting at approximately 12 months post injury and ending at 18 months post injury. Objective measurements were collected for each task in addition to video analysis using Hudl Technique. In addition, the Patient Specific Function Scale (PSFS) and Tampa Scale-11 (TSK-11) were completed at time points 1 (12 months post injury) and time point 4 (18 months post injury). Summary: There was a decrease in distance hopped on the injured lower extremity from time point 1 to time point 2 on the single hop test by 1.8cm and on the triple hop test by 12.1cm. Injured v. non-injured leg comparisons at time point 1 was 81% for single hop and 87% for triple hop. At time point 2, comparisons were 80.1% for single hop and 78% for triple hop. There was no appreciable difference in distance hopped in braced v. non-braced conditions at time point 2. Despite decreases in measured hop distance, video analysis demonstrated an improvement in mechanics during both hop tests and also drop vertical test. No collapse of the injured leg was noted during time point 2. Conclusion: Return to sport testing was successfully utilized in this patient's physical therapy program to provide valuable information on creating appropriate return to activity timelines and demonstrating remaining limitations which allowed for his program to be more tailored to him. However, with decreased performance demonstrated at time point 2, return to sport testing was utilized as just one component in a full physical exam and discussion with the patient's HTC care team. Additionally, use of video analysis proved to be beneficial in demonstrating improvement in form when improvement in measured distance was not present. Age is an important factor to consider when selecting return to sport tests.