



## FSEM / WFATT 2014



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The sporting hip, groin and hamstring – a complete picture  
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### **SEM 105 Reproducibility and reliability of SCAT3 and King Devick concussion assessment tools in junior rugby players - preliminary results**

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**Introduction:** The validity of two common neuropsychological tests, SCAT3 and King-Devick (KD), used in assessment and monitoring of concussion is not well established. Recent research also suggests elements of SCAT3 scoring are open to interpretation unlike KD which has well defined scoring systems. The aim of this study was to compare reliability of the widely used SCAT3 to the KD which is purportedly less open to error in measurement. **Methods:** Under-18 male Irish amateur rugby players (n=22) from Dublin were recruited following parental and individual consent. At pre-season training camp each player underwent repeat SCAT3 and KD tests. Tests were conducted in randomised order, 5 days apart (4 tests per individual), at the same time of day; and with the same pre-test routine following an easy training day. Preliminary analysis of repeat test data included; intra-class correlation (ICC) for repeatability; scedasticity and systematic bias (Bland Altman), and relative reliability was expressed as percentage technical error of measurement (%TEM). **Results:** Initial ICC was 0.58 and 0.51 for SCAT3 and KD, respectively. Bland Altman plot indicated a small positive bias in KD but not SCAT3; and %TEM for SCAT3 (~17%) was higher than for KD (~9%). **Discussion:** Preliminary results indicate that KD, although less repeatable and exhibiting a possible learning effect, may be a more reliable concussion assessment tool than SCAT3. However, %TEM of both assessment tools is currently above recommended levels (<5%) that would make either test valid for clinical application. Further evaluation with n=30-40 players is currently underway to further evaluate initial findings.