

## **The Relationships Between Injury Status, Self-Reported Pain, Injury History and the Functional Arm Scale for Throwers<sup>®</sup> (FAST) in Baseball Athletes.**

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**Purpose:** To examine the relationships between self-reported injury status and pain, upper extremity injury history, and health-related quality of life (HRQOL) in baseball athletes. **Subjects:** 149 baseball athletes [Healthy (n=88): pitcher=39, infielder=24, outfielder=12, catcher=11, designated hitter=1; Injured (n=61): pitcher=31 infielder=14, outfielder=14, catcher=2; age = 20.0±2.0 years; high school=6; junior/community college=31; collegiate=101; professional=1)]. **Methods:** Baseball athletes were asked to complete a demographic questionnaire that included two sections. The first section was completed by all athletes and included questions regarding health, sport, and injury status. Athletes self-reported injury, affected side, affected body part, acute/chronic, and condition. Injured athletes only completed the second section that included questions related to injury location and type, pain, history of surgery, and participation status. All subjects were also asked to complete the Functional Arm Scale for Throwers (FAST), a region-specific, self-report scale for the arm specific to throwing athletes. Scores were calculated for the FAST total score (F-T), FAST pitching module (F-PM), pain (F-P), impairment (F-I), functional limitation (F-FL), disability (F-D), and societal limitation (F-SL) subscales. Point bi-serial correlations were used to examine relationships between injury status, self-reported pain, upper extremity injury history, participation status, and FAST scores. All results of statistical significance are reported as  $P \leq 0.05$ , two-tailed. **Results:** Injury status (healthy, injured) was significantly related to the F-T (61/149, 41%;  $r=.68$ ), F-PM (61/149, 41%;  $r=.63$ ), F-P(61/149, 41%;  $r=.59$ ), F-I(61/149, 41%;  $r=.59$ ), F-FL(61/149, 41%;  $r=.64$ ), F-D(61/149, 41%;  $r=.73$ ), F-SL(61/149, 41%;  $r=.40$ ) and F-PM(31/70, 44%;  $r=.63$ ). In the injured athletes, higher FAST scores were significantly related to those who had surgery on the currently injured arm (21/57, 37%) for the F-T ( $r=.30$ ) and F-D( $r=.44$ ). Participation status (unlimited = 9/57, 16%; limited = 24/57, 42%; no participation = 24/57, 42%) was significantly related to F-T ( $r=.58$ ), F-P( $r=.48$ ), F-I( $r=.38$ ), F-D( $r=.82$ ), and F-FL( $r=.46$ ). The number of days out of participation was significantly, positively related to F-FL( $r=.36$ ). Injury type (acute, chronic, condition), use of pain medications, and number of days in pain were not significantly related to F-T or any of its subscales ( $r=.02-.27$ ). Participation status (unlimited=4/27, 15%; limited=8/27, 30%; none=15/27, 56%) was

the only significant relationship in injured pitchers (n=31) for the F-PM( $r=.55$ ). **Conclusions:** The presence of injury in baseball athletes is significantly, positively correlated to the FAST. A history of surgery and decreased participation (status and number of days out) were significantly, positively correlated to FAST scores in injured baseball athletes. The inability to participate was significantly, positively correlated to F-PM scores in injured pitchers. **Clinical Relevance:** The FAST appears to discriminate between the healthy and injured baseball athletes tested. A history of surgery, decreased participation, and increased number of days out of participation were related to higher FAST scores, indicating diminished HRQOL in injured baseball athletes. **Word Count:** 447

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**Purpose:** To examine the relationships between self-reported injury status and pain, upper extremity injury history, and health-related quality of life (HRQOL) in baseball athletes. **Subjects:** 149 baseball athletes [Healthy (n=88): pitcher=39, infielder=24, outfielder=12, catcher=11, designated hitter=1; Injured (n=61): pitcher=31 infielder=14, outfielder=14, catcher=2; age = 20.0±2.0 years; high school=6; junior/community college=31; collegiate=101; professional=1)]. **Methods:** Baseball athletes were asked to complete a demographic questionnaire that included two sections. The first section was completed by all athletes and included questions regarding health, sport, and injury status. Athletes self-reported injury, affected side, affected body part, acute/chronic, and condition. Injured athletes only completed the second section that included questions related to injury location and type, pain, history of surgery, and participation status. All subjects were also asked to complete the Functional Arm Scale for Throwers (FAST), a region-specific, self-report scale for the arm specific to throwing athletes. Scores were calculated for the FAST total score (F-T), FAST pitching module (F-PM), pain (F-P), impairment (F-I), functional limitation (F-FL), disability (F-D), and societal limitation (F-SL) subscales. Point bi-serial correlations were used to examine relationships between injury status, self-reported pain, upper extremity injury history, participation status, and FAST scores. All results of statistical significance are reported as  $P \leq 0.05$ , two-tailed. **Results:** Injury status (healthy, injured) was significantly related to the F-T (61/149, 41%;  $r=.68$ ), F-PM (61/149, 41%;  $r=.63$ ), F-P(61/149, 41%;  $r=.59$ ), F-I(61/149, 41%;  $r=.59$ ), F-FL(61/149, 41%;  $r=.64$ ), F-D(61/149, 41%;  $r=.73$ ), F-SL(61/149, 41%;  $r=.40$ ) and F-PM(31/70, 44%;  $r=.63$ ). In the injured athletes, higher FAST scores were significantly related to those who had surgery on the currently injured arm (21/57, 37%) for the F-T ( $r=.30$ ) and F-D( $r=.44$ ). Participation status (unlimited = 9/57, 16%; limited = 24/57, 42%; no participation = 24/57, 42%) was significantly related to F-T ( $r=.58$ ), F-P( $r=.48$ ), F-I( $r=.38$ ), F-D( $r=.82$ ), and F-FL( $r=.46$ ). The number of days out of participation was significantly, positively related to F-FL( $r=.36$ ). Injury type (acute, chronic, condition), use of pain medications, and number of days in pain were not significantly related to F-T or any of its subscales ( $r=.02-.27$ ). Participation status (unlimited=4/27, 15%; limited=8/27, 30%; none=15/27, 56%) was the only significant relationship in injured pitchers (n=31) for the F-PM( $r=.55$ ). **Conclusions:** The presence of injury in baseball athletes is

significantly, positively correlated to the FAST. A history of surgery and decreased participation (status and number of days out) were significantly, positively correlated to FAST scores in injured baseball athletes. The inability to participate was significantly, positively correlated to F-PM scores in injured pitchers. **Clinical Relevance:** The FAST appears to discriminate between the healthy and injured baseball athletes tested. A history of surgery, decreased participation, and increased number of days out of participation were related to higher FAST scores, indicating diminished HRQOL in injured baseball athletes. **Word Count:** 447