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Study finds break-away bases effective in professional baseball

College and professional minor league baseball players sustained 80 percent fewer sliding injuries on "break-away" bases than on traditional stationary base, in a study presented at the American Orthopaedic Foot and Ankle Society (AOFAS) Winter Meeting.

The study looked at 19 teams that played NCAA and professional minor league baseball games using both break-away and traditional bases for two consecutive seasons. The teams played 498 games on stationary bases (away games) and 486 games on break-away bases (home games). Players sustained ten sliding related injuries during games when traditional bases were used and only two during games when break-away bases were used. Furthermore, the amount of time missed as a result of break-away base injuries was significantly less than time loss due to stationary base injuries. Season ending injuries only occurred on stationary bases.

"This compares favorably with our earlier studies of sliding injuries among recreational softball players which suggested a 98 percent reduction in injuries and a 99 percent reduction in health care costs," said David H. Janda, M.D., Director of the Institute for Preventative Sports Medicine, Ann Arbor, Mich. and principal author. "The study shows that break-away bases are cost effective and safer than standard stationary bases and decrease the number and severity of injuries both at the recreational and high performance level."

Dr. Janda pointed out that college and professional baseball players receive sliding instruction and develop better techniques than recreational players, and, therefore, do not sustain as many injuries. Nevertheless, significant numbers of sliding injuries occur among high performance athletes even at the major league level. (Last year Dione Sanders of the Atlanta Brave, Chris Sabo of the Cincinnati Reds, Dave Gallagher of the New York Mets and several other major league players missed games due to injuries sustained sliding into bases.) According to Dr. Janda, the study suggests that breakaway bases should be used at the major league level as well as during minor league, college and recreational league games.

"Professional baseball could prevent serious injuries to players and significantly reduce costs by using break-away bases," said Dr. Janda. "Furthermore, adoption of break-away bases by the major leagues would set an example for recreational softball and baseball. If all recreational leagues used break-away bases, we could virtually eliminate the almost 2 million injuries and \$2 billion in health care costs that occur among recreational players every year."

Team physicians, athletic trainers, managers and administrative staff recorded and documented base sliding injuries during the current study. They counted only injuries that led to a player's removal from competition. During the two seasons studied, the observers recorded a total of 2,028 slides on break-away bases. The bases broke away approximately 554 times or about three percent of the time. The only two break-away injuries included a shoulder contusion sustained when the player slid head first into the base and it did not release, and an ankle fracture sustained before the player reached the base. (He did not make contact with the base.) Of the ten sliding injuries sustained on stationary bases, three were knee injuries and seven were ankle sprains. The average time missed from participation due to ankle sprains was 12 days. Of the three knee injuries, one was a medial collateral ligament sprain and resulted in the player missing one month from the season. The two remaining knee injuries consisted of meniscus tears, both required surgery and both resulted in season ending injuries. Following the study, the researchers surveyed team players, managers and administrative staff of all schools and baseball organizations involved in the study.

All teams expressed satisfaction with the bases and all planned to continue using them. Umpires and managing staff alike stated that the use of break-away bases did not alter the game in an adverse manner. The umpires reported no difficulty with judgment calls (safe versus out calls) when the bases released. The rubber mat left when bases broke away allowed continuation of play.

The break-away base used in previous studies and this study has receiving holes that fit into grommets on a rubber mat. The rubber mat lies flush with the infield surface and is anchored to the ground with a metal post similar to that used with a standard stationary base. Break-away bases dislodge with only one fifth the force needed to move a stationary base from its mooring.

The teams involved in the study included minor league teams from Fayetteville, North Carolina; Watertown, New York; St. Catharines, Ontario, Canada; Geneva, New York; London, Ontario, Canada; Niagara Falls, New York and Dunedin, Florida as well as teams from LeMoyne College, Bucknell University, Shippensburg State University, Swathmore College, Elizabethtown College, Gettysburg College, and Eastern Michigan University.

Other authors of the study, "Sliding Injuries in College and Professional Baseball - A Prospective Study Comparing Standard and Break-Away Bases," included Richard Maquire, Bucknell University, Lewisburg, Pa.; Derek Mackesy, M.D., Ann Arbor, Mich.; Richard Hawkins, M.D., Vail Colo.; Pete Fowler, M.D., Professor of Orthopaedic Surgery, University of Western Ontario, London, Ontario, Canada; and Joel Boyd, M.D., Minneapolis, Minn.