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Caution urged in using PRP or stem cells to treat young athletes' injuries

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Physicians, parents and coaches should be cautious when considering treating injured young athletes with platelet rich plasma (PRP), stem cells or other types of regenerative medicine, says a nationally recognized sports medicine clinician and researcher at the University of Miami Miller School of Medicine and UHealth Sports Medicine Institute.

"While regenerative medicine appears to have promise in many areas of medicine, little is known about the safety or effectiveness of these treatments for bone, cartilage, ligament or muscle tissue injuries in children and adolescents," said Thomas Best, M.D., Ph.D., professor of orthopedics, family medicine, biomedical engineering and kinesiology, and team physician for University of Miami athletics and the Miami Marlins. "Everyone wants a young athlete to get back to sports as quickly as possible, but it is important to look first at treatments that have been shown to be effective, before considering unproven options."

Best was the lead author of a new collaborative study, "Not Missing the Future: A Call to Action for Investigating the Role of Regenerative Medicine Therapies in Pediatric/Adolescent Sports Injuries," published May 15 in the *American College of Sports Medicine's Current Sports Medicine Reports*.

"Evidence from laboratory and veterinary research suggests that mesenchymal stem cells (MSC) may provide an alternative treatment option for conditions that affect muscle, tendons, ligaments, and

cartilage," said the authors. "This evidence, however, is based largely on studies in adults and it remains unknown whether these results will be duplicated in our younger populations."

Young athletes are vulnerable to a wide range of injuries, including overuse of arm, shoulder and leg muscles, ligaments and joints in sports like baseball, tennis, soccer and golf, said Best, who is past president of the American College of Sports Medicine (ACSM). "Unregulated clinics may sound attractive to parents and youngsters seeking aggressive regenerative therapy," Best said. "But far more scientific research is necessary to determine if those treatments are helpful in overcoming sports injuries and, more importantly, without serious short- or long-term side effects."

The new ACSM study grew from an August 2016 meeting of sport medicine clinicians, researchers, and a bioethicist who felt that a call to action was urgently needed to understand the current evidence, risks and rewards, and future directions of research and clinical practice for regenerative medicine therapies in youth sports. The meeting was supported by the National Youth Sports Health and Safety Institute, a partnership between the American College of Sports Medicine and SanfordHealth, a Midwest HMO.

The collaborative study included a seven-point call to action:

1. Exercise caution in treating youth with cell-based therapies as research continues.

2. Improve regulatory oversight of these emerging therapies.

3. Expand governmental and private research funding.

4. Create a system of patient registries to gather treatment and outcomes

data.

5. Develop a multiyear policy and outreach agenda to increase public awareness.

6. Build a multidisciplinary consortium to gather data and promote systematic regulation.

7. Develop and pursue a clear collective impact agenda to address the "hype" surrounding regenerative medicine.

Reflecting on the evidence, the study's authors wrote, "Despite the media attention and perceived benefits of these therapies, there are still limited data as to efficacy and long-term safety. The involvement of clinicians, scientists and ethicists is essential in ourquest for the truth."

Provided by University of Miami Leonard M. Miller School of Medicine

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