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English 1102

30 March 2018

The Past, Present, and Future of Sports Medicine

Nearly 213 million people participate in athletic or fitness activities in America annually (Sheu, et al). Furthermore, over 8.6 million people above the age of five sustain a sports-related injury each year (Sheu, et al). The diagnosis, treatment, and prevention of these injuries is known as sports medicine (Millard-Stafford). As the world has become more immersed in a highly intellectual realm of technological advances, the treatment plan for injured athletes has become more cutting-edge (Martinez). These technological breakthroughs have allowed the field of sports medicine to become a major component in fostering sports-related injuries, thus enabling athletes to heal and regain their places on the field quicker and more effectively than before (Millard-Stafford).

According to George Snook, sports medicine originates back to Herodicus, a likely teacher of Hippocrates, around 460 B.C. At that time in history, trainers were required to be educated in therapy, dieting, and massage (Snook). With the medical progression and knowledge of human anatomy and physiology, the techniques used to treat athletes and their ailments evolved over the years into what it is today (Snook). In modern times, sports doctors are trained to help with nutrition, sprain, fractures, dislocation, brain trauma, exercise recommendations, physical examinations, and decision-making regarding an athlete’s ability to return (Purses).

Thirty years ago, physicians were advising athletes to take months of rest and immobilization to their injuries (Richards). Twenty years ago, long rests were still recommended, but cautious therapy and mobilization of the injury were becoming more popular (Richards). Ten years ago, physicians began leaning towards aggressively pursuing tissue repair and regeneration by scraping and strengthening the injured tissues (Richards). Now, doctors focus on tissue regeneration and pinpointing the exact location of inflammation or abnormalities to get athletes back in action while remaining effective as possible (Richards).

In the National Football League, a hit to the head resulted in the player being sidelined for just a few plays or none at all (Martinez). Players now are immediately removed from the game, given concussion tests, and typically remain sidelined for the rest of the game and the next game (Martinez). Retired football players who received multiple hits to the head were not diagnosed with concussions and were unaware of the damage repetitive trauma caused (Purses). Years after their playing career have ended, the side effects began to kick in; chronic traumatic encephalopathy, memory loss, and speech issues are a few of the many issues football players may struggle with (Purses). With today’s knowledge, the treatment differs than it did thirty years ago, for doctors are able to pull players before they risk injuring their brain’s past the point of recovery (Purses).

Surgery differs drastically in today’s medical practices compared to twenty or thirty years ago (Martinez). Most surgeries performed thirty years ago were open surgeries that left six-inch scars, caused more soft tissue damage, and needed more operating time (Harner, et al). Today, arthroscopic surgeries are common practice which is not as invasive, leaves a one-inch scar, and gives surgeons a better view of what they are looking at (Martinez). Most importantly, through arthroscopic surgeries, athletes are able to get out of hospitals and back onto the track, field or court faster than ever (Martinez). In the past, tearing the anterior cruciate ligament, commonly referred to as an ACL, meant a year’s worth of recovery (MacMillian). Notable athletes such as National Football League Most Valuable Player Adrian Peterson and Olympic Gold Medalist Lindsey Vonn tore their ACL’s and were both able to return to action in nine months and ten months respectively (MacMillian). One process that has been introduced triggers tissue regeneration and repair rather quickly is known as platelet-rich plasma injections (Richards). Patients go to the doctor’s office, have platelets removed from their blood, and receive injections of the PRP into the injured tissue in one visit (Richards). Professional athletes have been seen in the media using this techniques because of how it returns them to the field faster than ever (Richards).

The future of sports medicine is very bright, and one of those bright spots is stem cell therapy (Richards). Stem cells are removed from bone marrow or fat and, very similarly to PRP injections, administered into the damaged tissue (Richards). Upon injection, these stem cells morph into any kind of tissue it has been placed into (Richards). This forthcoming idea means that athletes can avoid major surgery and lengthy recovery times while healing their tendons, ligaments, or other tissues back to normal (Richards).

A huge innovation being brought about in sports medicine is the genetics aspect (Wood). Genetics have not been looked at within the sports realm because of the necessity for it with cardiovascular diseases, nervous system issues, and oncology, and many times, a sports injury is simple to treat (Wood). However, the genetic makeup of athletes can lead to very important information on how to properly treat and what to avoid when dealing with injuries (Wood). By knowing the athletes’ genetics, doctors are able to determine which athletes are more susceptible to certain issues, such as dehydration and arthritis, and evade the treatments that will not work for that patient (Wood). In addition, genetics in sports medicine will get players back to work faster and minimize side effects of other treatments (Wood).

Technology in the sports medicine field is also becoming more advanced (Dyrda). Athletes can now wear suits that monitor the body and detect when and where injuries occur, especially with detecting a concussion (Max). Advanced ultrasounds are also becoming more available to scan a portion of the athletes’ bodies to ensure the exact location for treatment (Dyrda). Robots have been introduced for guidance on surgeons in the operating room to allow the doctors to see their alignments better (Dyrda). New bandages are being created that contain microcurrents that shock and stimulate the wound, resulting in a faster healing process for the wound (Max). Some braces are now being made to apply a slight pressure to the treated area which speeds up the healing process (Max). These new technological innovations are revolutionizing sports medicine and are only going to become more advanced in the future (Dyrda).

Sports medicine has been around since 460 B.C. and the evolution of this field has come a long way (Snook). From trainers being equipped with basic knowledge on dieting and massages in the Hippocrates age (Snook), sports physicians are now able to fix and repair bones and other injuries, administer physical examinations, diagnose concussions, and much more (Pursers). With the advancement of technology in the last fifty years, the understanding and knowledge about the treatment and injuries of athletes has drastically increased (Richards). Athletes are now able to return to practice and competition faster than ever, and those recovery hours are only going to get shorter (Martinez).

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