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## Athletic Trainers' Value in Physician Practice

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Physician practice setting, athletic training residencies, quality improvement

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## EDITORIAL

We are excited to announce a new partnership with the Athletic Trainers in the Physician Practice Society (ATPPS). The Clinical Practice in Athletic Training journal will partner in a double-blind peer review process of submitted abstracts and serve as the official host of ATPPS Conference Proceedings. The mission of ATPPS is to serve as the leading advocate for athletic trainers in physician practice, providing education and resources to improve patient care and experience. As you know, the vision of Clinical Practice in Athletic Training is to provide an outlet for the practicing athletic trainer to share their story, successes and failures, in terms of patient services and practice advancement. This partnership will allow athletic trainers in the physician practice to share their story through our journal.

In this issue, we will show case the 2020 ATPPS Conference abstracts and an editorial from the ATPPS President, Forrest Pecha. We asked Forrest to help our readers understand athletic trainers in physician practice through a few questions developed by the Senior Editorial Staff.

**Eberman:** What is the range of responsibilities you see an athletic trainer in physician practice doing in their day-to-day work?

**Pecha:** This is a great question. Athletic trainers are working at every level within the physician practice setting (PPS) and hospitals, from entry-level patient access/triage to C-Suite decision-making. Athletic trainers' knowledge and background in musculoskeletal disorders and general medicine provide the foundation to be successful as clinicians in the PPS and beyond. Athletic trainers are found in many specialty areas within healthcare: Orthopedic and Sports Medicine, Pediatrics, Trauma, Emergency Departments, Primary Care and Family Medicine, Neurology, Concussion clinics to name a few.

Some states may have restrictions on athletic trainer practice and not just in PPS. But typically you might find an athletic trainer in a physician practice engaged in any number of roles with varied responsibilities, including, but not limited to patient triage (limiting unnecessary patient visits), rooming patients, taking patient vitals, taking patient histories, completing physical exams, ordering appropriate radiographs based upon exam, interpretation of radiographs, chart reviews of past medical history, intake of the patient presentation, order entry, scribing, patient education, instructing and providing home exercise programs, discharging patients, charting/documenting (per institution and CMS guidelines), along with any clinical administrative responsibilities. Athletic trainers are also found assisting in surgical cases and clinical procedures, support or giving injections, and diagnostic ultrasound. Many of these skills typically fall

within the parameters of an athletic trainer's educational preparation and within state practice acts, with a few exceptions.

**Eberman:** What are essential skills and experiences a hiring manager might be looking for from an athletic trainer in physician practice? How does someone acquire and improve upon these skills if they are unable to complete a residency?

**Pecha:** As I mentioned, athletic trainers have the foundational knowledge in musculoskeletal pathologies and general medical conditions. When reviewing and interviewing candidates, hiring managers will often look for professional traits such as experience in the setting and roles and responsibilities performed during those times. Equally important is the candidate's personal traits such as willingness to learn and grow within the position, quest for knowledge, commitment to patient care and provider care model, drive and ambition. I have said many times during presentations, "Athletic trainers are highly qualified healthcare professionals in non-emergent settings. Athletic trainers are prepared to handle the most challenging situations if they occur. In the PPS athletic trainers also need to think forward and anticipate how the day will flow and address the challenges before they happen; to be proactive rather than reactive."

Athletic training residencies are defined by the program specialty area. Some of the residencies within the specialty area of orthopedics are housed within the PPS, which allows for understanding the roles and responsibilities through socialization to the setting. For an athletic trainer who has not completed one of the residencies housed within the PPS, there are opportunities to learn from those who are working and successful currently working in the setting. A lot of how an athletic trainer will be able to practice, will be determined by the hospital/institution or provider they are working with. Learning about potential work site in

preparation for interviewing or through the interview process can help to understand what the role of an athletic trainer is within the facility. It can also keep an athletic trainer from being surprised by what they can and cannot do in their position upon hiring.

The National Athletic Trainers' Association Committee on Practice Advancement (COPA) provides resources for the emerging settings including physician practice (Website: <https://www.nata.org/professional-interests/emerging-settings/physician-practice>) and similarly the ATPPS (Website: <https://atpps.org/>) also provides resources for those interested in PPS. In addition, social media groups may help to socialize to physician practice through communication and community with other providers within the setting. Athletic Trainers considering working in this setting should be cautious when looking for training opportunities and assure that that the training is coming from credible content driven by athletic trainers or physicians. We recommend you review our position on the Orthopedic Physician Extender Certification (OPE-C), as this is an example of an educational opportunity that may be redundant to an athletic trainer's professional preparation (Website: <https://atpps.org/atpps-statement-opec/>).

**Eberman:** What are some common metrics in physician practice that help demonstrate value to the organization?

**Pecha:** Athletic trainers have been shown to demonstrate their value within the PPS across many metrics and across the varying healthcare delivery models seen in this setting. Much of the work being done focuses on metrics highlighted within the Triple and Quadruple Aims for healthcare reform. From the current literature in the PPS, common metrics include: patient access or throughput (the ability to see more patients with in the same amount of time), documentation strategies to reduce physician burnout, physician

satisfaction with hiring athletic trainers, patient satisfaction when athletic trainers are part of the patient care team, and the reduction of unnecessary referrals, visits, and ancillary testing. More information and published articles can be found at <https://atpps.org/publications-research-and-documents/>.

**Eberman:** How does an athletic in physician practice increase revenue and return on investment? In your opinion, what is the value of an athletic trainer in physician practice?

**Pecha:** Another great question... and hard question to answer definitively. Return on investment and the value of athletic trainer is highly dependent on what the goals of the provider or institution are. Athletic trainers have been able to demonstrate their value in numerous ways (as indicated from the publications described above). These may not always translate specifically to what the institution's needs are. I suggest always starting with asking the question, "What are the needs of the institution/provider?" This will help the organization identify how the athletic trainer will be able to demonstrate value. This will change depending on the health care delivery model. If the institution/provider is working in a fee-for-service model, improving patient throughput is a great and easy way to demonstrate value and return on investment. The Financial Impact of an Athletic Trainer Working as a Physician Extender in the Orthopedic Practice was a landmark article describing the impact of athletic trainers in PPS (Website: <https://secureservercdn.net/198.71.233.64/wzr.9ab.myftpupload.com/wp-content/uploads/2018/07/The-Financial-Impact-of-an-Athletic-Trainer-Working-as-a-Physician-Extender-in-Orthopedic-Practice.pdf>). In value-based care or accountable care delivery models, access, patient and physician satisfaction are important indicators.

**Eberman:** A majority of attendees at the 2020 ATPPS Conference were Young Professionals. What advice do you have for those young professionals interested in physician practice?

**Pecha:** I would suggest:

1. Reach out to those who have paved this professional path for advice and suggestions on how they achieved success. Don't try to reinvent the wheel.

2. Identify the best training opportunities you can, to prepare yourself for the position. This may be through the form of residency training and/or continuing education opportunities. Again, be aware of the quality of the educational opportunity and know where the education is coming from.

3. Continue to have open conversations, with the physician/team you are working with on how to improve your skills and support in providing patient care.

And 4. Continue to challenge yourself and the ability to work to the top of your scope of practice.

**Eberman:** What are career advancement opportunities within a physician practice setting?

**Pecha:** There are many opportunities to advance within the PPS or hospital setting. We are seeing more and more athletic trainers advancing into clinical leadership, managerial, director positions, up to C-Suite roles (CEO, COO, CFO). The ATPPS has members serving in all these roles and for athletic trainers who have aspirations to rise to these positions, we will do our best to provide connections. Members of the ATPPS can connect with other members and make requests through this contact form (Website: <https://atpps.org/contact/>).

# Mesenchymal Stem Cells: Sources, Clinical Applications and Outcomes for Common Musculoskeletal Conditions

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## ABSTRACT

**Background:** The clinical use of Mesenchymal Stems Cells (MSC) in musculoskeletal medicine has become increasingly recognized in the medical field as a promising treatment modality. MSCs have been defined as spindle shaped cells that are capable of rapid proliferation and self-renewal contained within several tissues including bone marrow, synovial and adipose tissue, blood and periosteum. MSCs are currently being used in clinical trials for musculoskeletal purposes including the enhancement of tissue regeneration, bone and cartilage defects and tissue repair. Currently a variety of stem cell products, methods and applications are being used which can provide many misconceptions for the most appropriate use of this modality in orthopedics. The decision for the functionally relevant cell type is important to understand for providers to have the most effective outcomes.

**Methods:** Common methods of evaluating the effect of MSCs in orthopedics include patient rated outcomes, advanced imaging comparisons, arthroscopic evaluation after treatment and gene expression analysis. A comprehensive literature review was conducted to evaluate the most high-level evidence available for MSC's being utilized in orthopedics. This is important to understand for

clinicians to make informed decisions for the most appropriate clinical applications of MSCs.

**Conclusion:** Despite the many positive outcomes being demonstrated with MSC therapies, in the literature for various orthopedic conditions, the magnitude of these positive effects have been diverse due to the lack of standardization of the MSC cell product. Further research is required to provide an insight into long term outcomes relative to other treatment modalities. Additionally, research must also determine if the use of MSC therapies can become a viable treatment option for musculoskeletal pathologies in orthopedic practices to use with standardized products and processing methods.

**Clinical Bottom Line:** The literature for MSC therapy outcomes that have been observed in clinical trials have been lacking standardization with regards to how stem cells are being obtained, processed and utilized for musculoskeletal conditions. Further research is required to provide an insight into long term outcomes relative to other treatment modalities. Additionally, research must also determine if the use of MSC therapies can become a viable treatment option for musculoskeletal pathologies in orthopedic practices to use with standardized products and processing methods.

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# Unique Shoulder Arthroscopies: Snapping Scapula Syndrome and Scapular Nerve Entrapment

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## ABSTRACT

**Anatomy Review:** The scapula provides the stable base for glenohumeral motion and provides origins and insertions for 17 muscles. The scapulothoracic (ST) joint lacks synovial lining and cartilaginous interface. The anterior scapula glides over the thoracic wall between several bursal and soft tissue planes.<sup>1,2</sup> The suprascapular nerve emerges from the superior trunk of the brachial plexus (C5, C6) and travels across the posterior triangle of the neck of the scapula through the suprascapular and spinoglenoid notches. The suprascapular nerve innervates half of the rotator cuff musculature, the infraspinatus and supraspinatus. Snapping Scapula Syndrome (SSS) occurs when the ST articulation impinges on bony or soft tissue structures including a hooking or excessive angulation of the superomedial scapula or bursal inflammation.<sup>1,2,3,4</sup> Patients experience pain with overhead activities accompanied by palpable and/or audible crepitus. Suprascapular Nerve Entrapment (SNE) can occur at the suprascapular notch, affecting both supraspinatus and infraspinatus muscles or at the spinoglenoid notch affecting only the infraspinatus muscle.<sup>5,6,7</sup> Extravasation of glenohumeral synovial fluid, due to a torn posterior labrum, can cause a ganglion cyst to appear secondarily. A spinoglenoid cyst

causes a patient to have atrophy of the infraspinatus, weakness with external rotation, and posterior shoulder pain or tenderness.

**Patient A:** The patient was a 30-year-old female. Chief complaint of worsening left posteromedial scapular pain for 6 months with clicking, cracking, and popping of scapula. Recent treatment included 4 months of physical therapy and ST injection by outside MD. Injection provided significant relief and decreased crepitus. Physical exam revealed audible and palpable posterior crepitus with active and passive ROM, tenderness along posteromedial border of scapula. Due to success of previous injection and current worsening symptoms, she consented for diagnostic scapulothoracic arthroscopy.<sup>1,2,3,4</sup> Positioned prone on Wilson frame, max internal rotation/"chicken wing" positioning of arm, surgeon stands opposite surgical side.<sup>3,4</sup> Intra-operative findings included diffuse scapulothoracic bursitis and prominent superomedial scapular border that were addressed with a bursectomy and recession respectively. At 2 days post-op, she had no palpable/audible crepitus with 90° AROM/PROM and tenderness along scapula. Physical therapy focused on ROM and scapular stabilization. At 3 months post-op, she had no tenderness long medial scapular border and no recurrence of palpable or audible crepitus.

## Discussion Scapulothoracic

**Arthroscopy/Bursectomy:** This procedure is indicated when there is pain at the superomedial border of the scapula with painful, audible and/or palpable crepitus that has responded well to injections but failed other conservative measures. Advantages include easy visualization of ST bursa and superomedial border of scapula

with minimal tissue disturbance.<sup>1,2,3,4</sup> Care should be taken to ensure superficial periosteal layer of superomedial scapula border remains intact. Although long term results are limited, patients have improved outcome scores are 2 years post-op with primary and revision procedures.<sup>2</sup> Injury to the chest wall, thoracic cavity, and dorsal scapular nerve and/or artery is possible if portals are not made appropriately (<3m from medial border of scapula).<sup>3,4</sup>

**Patient B:** The patient was a 39-year-old female. Chief complaint of worsening right shoulder pain and weakness for 1 year with insidious onset and failed conservative measures including physical therapy, NSAIDs, and activity modifications. Physical exam revealed marked weakness with external rotation, infraspinatus fossa atrophy and positive special tests including Neers, Hawkins, and External Rotation Lag. MRI revealed posterior labral tear, spinolaminar labral cyst (2.7cm) extending into spinoglenoid notch, and edema within infraspinatus. Study was otherwise normal. Due to failed conservative treatment, the patient was consented for arthroscopic posterior Bankart repair and spinoglenoid cyst decompression.<sup>5,6,7</sup> Cyst was decompressed with switching stick/shaver and posterior labral tear (10-6 o'clock) was repaired with Ultra Tape and 4 Micro-Raptor knotless anchors. Given physician's standard Posterior Bankart rehabilitation protocol which included 4 weeks in sling with abduction pillow. At 7 months post-operation, she has regained infraspinatus fossa bulk, significant strength on operative side yet continues to have decreased strength when compared to uninvolved side. ROM is equal bilaterally.

### Discussion Scapulothoracic

**Arthroscopy/Bursectomy:** Spinoglenoid notch cysts can be treated in several ways including physical therapy and/or NSAIDs, needle aspiration, labral repair, and cyst excision/decompression +/- labral repair.<sup>5</sup> When treated operatively, patients can be

positioned in beach chair or lateral decubitus. The cyst can be viewed/decompressed in the subacromial or intra-articular spaces.<sup>5,6,7</sup> In this case, the patient was in lateral decubitus and the cyst was decompressed intra-articularly. Literature shows no recurrence of surgical decompressed cysts at 6 months post-op (n=21) versus 45% recurrence with needle aspiration (n=11).<sup>5,6</sup>

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## Patient Satisfaction with Athletic Trainers Working in a Physician Practice Setting

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### ABSTRACT

**Background:** Recent changes in healthcare administration via the introduction of the Triple Aim by the Institute of Healthcare Improvement have challenged healthcare institutions to improve the efficiency and effectiveness with which services are provided, while also enhancing patient experience. These changes have facilitated the hiring of clinical support staff from varying backgrounds with the aim of ensuring the goals of the triple aim are met within the clinical environment. Recently orthopedic practices have begun to include certified athletic trainers in the healthcare delivery team due to their advanced base of musculoskeletal knowledge. Previous literature has observed increased efficiency and revenue in physician practices where certified athletic trainers (ATs) are included in the healthcare team. However patient satisfaction with certified athletic trainers as healthcare providers in a physician practice is yet to be measured.

**Methods:** Design: Cross-sectional, descriptive. Setting: Physician clinic. Participants: New patients (NP) and guardians of minors who are NP presenting for evaluation in a primary care sports medicine practice. Intervention: A 10-item survey

consisting of six-point Likert-scale items was developed in order to assess patient satisfaction with ATs in the domains of interpersonal care, technical care and global satisfaction within a physician practice setting. The survey was offered during a 23-month period to new patients in a physician clinic when ATs were involved with healthcare delivery during the initial encounter. Responses were collected via an electronic platform. Descriptive statistics were calculated, and mean scores were calculated for each Likert scale item and domain.

**Results:** A total of 186 completed surveys were analyzed. Mean score and standard deviation were:  $M = 5.76$  for interpersonal care,  $M = 5.78$  for technical care, and  $M = 5.81$  for global satisfaction.

**Conclusion:** In this study among new patients presenting for musculoskeletal care in an orthopedic physician clinic, participants reported high satisfaction with the technical, interpersonal, and overall care provided by athletic trainers. ATs may be an asset to the orthopedic physician practice with regard to patient satisfaction within the model utilized at study sites.

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# Simple Squat Assessment: Post-Intervention Changes to Pain and Function

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## ABSTRACT

**Background:** Squatting to toilet seat height is a movement pattern most people do daily. Simple verbal and tactile feedback while squatting can improve an individual's ability to squat safely and efficiently. The Simple Squat Assessment (SSA) is a screening and intervention tool used to assess an individual's ability to squat to toilet seat height. Purpose: To determine if intervention through the SSA will improve function and decrease pain when squatting to toilet seat height.

**Methods:** 690 participants were enrolled in the SSA. Participants were asked to squat to toilet seat height (43cm) and were scored from 0-3 for function. Performance improvement was indicated if a participant received a score of 0 or 1. A score of 3 indicated the ability to squat under control, without assistance of hands, without pain, and with proper form. A score of 2 indicates the ability to squat under control, without pain, without assistance, but with improper form. A score of 1 indicates the individual must use hands for assistance to perform this test under control. A score of 0 indicates the individual is unable to perform or has increased pain rated from 0-10 on the pain scale. Pain scores were assessed using a 0-10 visual analog scale (VAS). Intervention consisted of verbal and tactile feedback to

improve form. The participant was then re-tested, re-scored, and asked to re-evaluate their pain post-intervention.

**Results:** 690 participants (137 Males, 553 Females). (Males-  $44.7 \pm 18.5$  yrs, Females-  $47.9 \pm 17.0$  yrs). 565 individuals scored a 2 or 3 on the SSA. 125 individuals scored a 0 or 1 (110 participants-0, 15 participants-1) and were treated with intervention. 54.4% (68/125) of participants who scored a 0 or 1 were able to improve their score to a 2 or 3 post intervention. 77% (95/125) reported a decrease in pain through intervention.

**Conclusion:** Application of the SSA identifies those individuals who would benefit from simple intervention to reduce pain and improve form of a functional movement that all able individuals must perform daily. Squat mechanics can be improved in a short amount of time that can improve everyday movement.

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