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Overuse Tendon Conditions: Time to Change a Confusing Terminology

A B S T R A C T & C O M M E N T A R Y

Synopsis: *Correct and specific medical terms should be used to describe certain musculoskeletal conditions.*

Source: Maffulli N, et al. Overuse tendon conditions: Time to change a confusing terminology. *Arthroscopy* 1998;14(8):840-843.

Maffulli and associates revisit the argument that terms such as tendonitis (a condition characterized by acute edema and hyperemia with infiltration of inflammatory cells) and tendonosis (tendon degeneration characterized by an angioblastic reaction with random orientation of blood vessels and abnormal appearance of collagen fibers without clinical or histologic signs of intra-tendinous inflammation) are histopathologic terms and should be used only when the microscopic diagnosis of the condition has been confirmed.

Maffulli et al argue that the suffix “-dynia” attached to the involved tendon’s root word should be used to describe a painful tendon. When describing the clinical syndrome characterized by pain and swelling and impaired performance, they feel the suffix “-opathy” should be used. Hence, Achillobdymia refers to a painful Achilles tendon and Achilles tendinopathy is the term best used to describe the clinical syndrome of pain and swelling of the tendon associated with a decrease in performance.

■ COMMENT BY LETHA Y. GRIFFIN, MD, PhD

As Maffulli et al emphasize, inaccurate use of terminology can lead to significant confusion when trying to provide patients with predictions of clinical course or when attempting to compare clinical outcomes. In the past, these same concerns have been raised over the use of the histopathologic term, chondromalacia, to describe the clinical syndrome of patella pain, making interpretation of the literature regarding this entity confusing. Therefore, the admonition expressed

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by Maffulli et al in their title, "Time to Change a Confusing Terminology" does seem to have merit and all of us should consider heeding their plea. ❖

Knee Joint Accessory Motion Following Anterior Cruciate Ligament Allograft Reconstruction

ABSTRACT & COMMENTARY

Synopsis: Following ACL allograft reconstruction, KT-2000 scores for each patient in the braced group improved while the scores for those in the unbraced group became worse or stayed the same.

Source: Jenkins WL, et al. Knee joint accessory motion following anterior cruciate ligament allograft reconstruction: A preliminary report. *J Orthop Sports Phys Ther* 1998;28(1):32-39.

After treating patients following allograft reconstruction of torn anterior cruciate ligaments

(ACL) for six years, Jenkins and colleagues believed that they were seeing a difference in knee joint accessory motion, as measured by KT-2000 results, in patients who had worn functional braces postoperatively as compared to patients who did not. "The purpose of this retrospective study was to investigate the effect of functional bracing on knee joint accessory motion with ligament arthrometer testing during the first year postoperative." Jenkins et al performed a retrospective chart review and found eight patients whose KT-2000 results had changed during the postoperative period. Five subjects (3 males and 2 females; mean age, 21.2) had not worn braces and three subjects (2 males and 1 female; mean age, 31.3) had received a functional brace called the "Donjoy Defiance Brace" (Smith & Nephew Donjoy, Inc., Carlsbad, CA) during the postoperative period. This knee brace supposedly limits anterior tibial translation throughout the full range of motion with a particular emphasis on limiting it at knee extension. The same physical therapist performed all of the rehabilitation and performed the KT-2000 studies. This examiner had established reliability using this technique in a previous study. The testing procedure was the traditional "manual maximum" done with the KT-2000. The reported results were the differences between the involved and the uninvolved extremity. The important finding of the study was that the KT-2000 scores in each subject in the braced group improved while the scores for the subjects in the unbraced group became worse or stayed the same.

■ COMMENT BY CLAYTON F. HOLMES, EdD, PT, ATC

Jenkins et al found only eight subjects who met their criteria. This indicates that perhaps other allograft reconstruction patients had similar results with KT-2000. In addition, they do not discuss in great detail the rehabilitation and other variables (such as reinjury) in the patients' lives relative to differences in activities post-surgery. They do imply that the patients were actually treated differently in their rehabilitation post-surgery when they state that the control groups were "limited in rehabilitation to activities of daily living and closed kinetic chain activities using only body weight until they had three consecutive months in which their KT-2000 scores were unchanged." Later, they state that subjects in the treatment group "were limited in their rehabilitation to activities of daily living and closed kinetic change activities using only body weight until they received a functional brace." Thus, those in the functional brace may have been rehabilitated more aggressively. However, it is difficult to know exactly what the subjects went through post-surgery. In addition, it is possible that instead of allowing patients to be more aggressive, the brace actually made

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patients more conscious of their condition and they were actually more conservative in their activity. I would caution the reader not to apply the conclusions of this study to the general population of post-ACL reconstruction patients. In my experience, KT-2000 results are similar to the authors' findings in allograft cases when autografts are used. Also, in my experience, the effect of a post-surgical brace has been negligible. This is supported by the paucity of information in the literature indicating the actual biomechanical effects of a post-surgical brace. ❖

Specificity of the Speed's Test: Arthroscopic Technique for Evaluating the Biceps Tendon at the Level of the Bicipital Groove

ABSTRACT & COMMENTARY

Synopsis: *Speed's test is not specific but is a sensitive indicator of either biceps or labral shoulder pathology.*

Source: Bennett WF. Specificity of the Speed's test: Arthroscopic technique for evaluating the biceps tendon at the level of the bicipital groove. *Arthroscopy* 1998;14(8):789-796.

The speed's test usually suggests inflammation or trauma to the biceps tendon or the bicipital labral complex. Bennett analyzed 46 shoulders in 45 patients over a five-month period. The Speed's test was performed preoperatively, and the correlation with pathology encountered at the time of arthroscopy by direct visualization, as well as with a probe, was noted. Of the 46 shoulders that were evaluated, the Speed's test was positive in 40 shoulders.

Biceps and/or labral pathology was present in 10 of these patients. This resulted in a specificity of 13.8% and sensitivity of 90%. Bennett concluded that the Speed's test is a nonspecific test but sensitive for macroscopic bicipital-labral pathology. Bennett also noted that the test was positive in a number of other intrinsic pathological lesions of the shoulder.

■ COMMENT BY JAMES P. TASTO, MD

Speed's test was first described by J. Spencer Speed, MD, of the Campbell Clinic. However, it has been in wide clinical use for years, and it is one of the few tests used to isolate biceps tendon pathology. It is performed with the patient's shoulder forward flexed 90°, elbow fully extended, and the forearm supinated. The examiner

then gives resistance to the arm at the level of the forearm as the patient actively forward flexes the shoulder.¹ If pain is reproduced anteriorly, this is felt to be a positive Speed's test.

The biceps tendon is in close proximity to a number of components of the rotator cuff. A false-positive Speed's test may be present in a number of pathological lesions of the shoulder. Recently, there have been some tests described by O'Brien and others to attempt to identify SLAP lesions in the shoulder, which also appear to have a high percentage of surgical patients showing positive tests.²⁻⁵ The specificity and sensitivity of this test has been reported by a number of authors and is quite varied. The take-home message from this article is that a Speed's test should be performed while doing a complete shoulder examination, and a positive test will probably indicate the presence of biceps tendon pathology but may also indicate a number of other pathological lesions, many of which affect anterior shoulder structures. ❖

References

1. Canale ST, et al. *Campbell's Operative Orthopaedics*. 9th ed. 1:784.
2. Liu SH, et al. A prospective evaluation of a new physical examination in predicting glenoid labral tears. *Am J Sports Med* 1996;24:721-725.
3. Kibler WB. Specificity and sensitivity of the anterior slide test and throwing athletes with superior glenoid labral tears. *Arthroscopy* 1995;11:296-300.
4. Clark JM, Harriman DT III. Tendons, ligaments and capsule of the rotator cuff: Gross and microscopic anatomy. *J Bone Joint Surg* 1992;74A:713-725.
5. Walch G, et al. Tear of the supraspinatus tendon associated with hidden lesions of the rotator interval. *J Shoulder Elbow Surg* 1994;3:353-360.

Meniscal Repair— Does Age Matter?

ABSTRACT & COMMENTARY

Synopsis: *Properly selected meniscal tears can be repaired effectively, regardless of patient age.*

Source: Barrett GR, et al. Clinical results of meniscus repair in patients 40 years and older. *Arthroscopy* 1998;14(8):824-829.

The majority of meniscal tears occurring in patients older than the age of 40 are degenerative,

complex tears not amenable to repair. In Barrett and colleagues' cases over a six-year period, 47 meniscal tears (6%) in the 40 years and older age group were repairable. Most tears involved the peripheral third of the meniscus in a vertical or bucket handle configuration. Tears were repaired with an inside-out suture technique in all but six patients in whom the tear was repaired with the T-Fix all inside repair method. Sixty percent of patients had concomitant anterior cruciate ligament (ACL) reconstruction.

After excluding workers comp patients and their one failed ACL reconstruction patient, Barrett et al evaluated 37 patients with a minimum two-year follow-up. Clinical evaluation by history, examination, and radiographs revealed an overall healing rate of 86.5%. Those patients with more chronic tears, horizontal or complex patterns, tear lengths greater than 2 cm, or tears extending into the central, avascular portion of the meniscus had a trend toward failure of the repair, but these variables did not achieve statistical significance given the small number of patients in each group. Patients with ACL reconstructions healed 95% of repairs, whereas those with ACL stable knees not requiring reconstruction healed only 73% of meniscal repairs. This difference was statistically significant.

■ COMMENT BY DAVID R. DIDUCH, MD

The importance of the meniscus has been firmly established for load transmission, joint stability, congruity, and shock absorption. Preserving as much meniscus as possible, ideally by meniscal repair, helps prevent future degenerative changes in a directly proportional manner.

Many factors have been demonstrated to affect healing rates for meniscal repairs.^{1,2} Concomitant ACL reconstruction, with the large hemarthrosis filled with growth factors bathing the repair within the fibrin clot, yields healing rates of 85-95% in the literature and in this study. Isolated repairs in ACL-stable knees have healing rates of 50-80%, compared to 73% in this study. Other factors are related to tear characteristics: vertical tears without complex patterns heal better, tears involving the vascularized outer third of the meniscus also do better, and smaller tears (< 2.5 cm in length) also heal better.

Although increased patient age may make repairable tears more uncommon due to age-related weakening of the meniscus resulting in a more degenerative, complex tear pattern, patient age has not conclusively been shown to affect healing rates. Barrett et al have shown healing rates comparable to those in the literature for younger patients. This study effectively affirms that conventional criteria for meniscal repairability should

drive the decision toward meniscal repair rather than patient age. ❖

References

1. Cannon WD Jr, Vittor JM. The incidence of healing in arthroscopic meniscus repairs in ACL reconstructed knees versus stable knees. *Am J Sports Med* 1992;20:176-181.
2. Cooper DE, et al. Meniscal repair. *Clin Sports Med* 1991;10:529-548.

Surgical Repair of Acute Ankle Sprains

ABSTRACT & COMMENTARY

Synopsis: *Operative treatment appears to provide no significant advantage over nonoperative treatment for an isolated injury of the fibular collateral ligaments of the ankle; therefore, the less costly and risky nonoperative course should be pursued.*

Source: Povacz P, et al. A randomized, prospective study of operative and nonoperative treatment of injuries of the fibular collateral ligaments of the ankle. *J Bone Joint Surg* 1998;80-A(3):345-351.

A prospective, randomized comparison of operative and nonoperative treatment of acutely torn lateral collateral ligaments of the ankle was carried out in 146 adults. These were isolated injuries of the fibular collateral ligaments ranging from moderate to severe as measured by an objective stress test that quantified the degree of talar tilt. Patients were randomly assigned to operative or nonoperative treatment groups. Operative treatment included surgical repair of the disrupted ligaments within 72 hours of the injury combined with plaster cast immobilization for six weeks. For the nonoperative treatment, the patients were given an elastic wrap and then placed in an air cast 3-7 days after the injury and told to wear the brace for six weeks. The patients were followed for a minimum of two years, and there were no detectable differences between the two groups with regard to the degree of joint laxity, as measured on stress x-ray, or functional results. The only significant difference between the two groups was the amount of time lost from work with the operative group being out of work for an average of seven weeks post injury while the nonoperative group lost a mean of only 1.6 weeks. Povacz and associates conclude that operative treatment

provides no significant advantage over nonoperative treatment for an isolated injury of the fibular collateral ligaments of the ankle.

■ **COMMENT BY JAMES D. HECKMAN, MD**

Over the last few years, there has been increasing interest, at least among some surgeons, in moving forward quickly with surgical repair of acutely torn, grossly unstable lateral ankle ligaments, especially in competitive athletes. Surgical intervention has been justified by the belief that early repair allows return to full levels of competition at an earlier stage. Most of the patients in this series were young adults who sustained their injuries during athletic activity. The number of severe ankle sprains, as demonstrated by complete instability of the ankle (a tibiotalar tilt of more than 20°) was relatively small (17 in the nonoperative group and 19 in the operative group). But even the results in this subgroup of patients showed no difference between the two methods of treatment. While it is difficult, if not impossible, to absolutely prove that there is no difference between any two treatment methods, the fact that no statistically significant differences were noted in the study leads me to conclude that regardless of the severity of a lateral ankle sprain, even in a competitive athlete, there is no need to proceed immediately with surgical repair. There is a good chance that the athlete will recover to his or her previous functional level with closed treatment. Until such time as studies such as this clearly demonstrate an advantage of surgical treatment over nonoperative treatment, the less costly and less risky nonoperative course should be pursued. ❖

Helmet Removal in Football Injury: Is it Safe?

ABSTRACT & COMMENTARY

Synopsis: *There is a need for carefully monitored helmet and shoulder pad removal by at least three and preferably four trained people.*

Source: Donaldson WF, et al. Helmet and shoulder pad removal from a player with suspected cervical injury. A cadaveric model. *Spine* 1998;23(16):1729-1733.

This study by Donaldson and colleagues identifies the risk of cervical position change even when using the current guidelines of the National Athletic

Trainers Association (NATA) for helmet and pad removal. In this study, two types of cervical instability were experimentally produced and cervical position was evaluated fluoroscopically during helmet and pad removal. In the first experiment, a transverse base of dens osteotomy was performed to create C1-C2 instability in three cadavers. Thereafter, video fluoroscopy was done while the helmet and shoulder pads were removed by personnel trained in the technique recommended by NATA. "In cadavers with C1-C2 instability, the mean change in angulation was 5-47° and space available for cord was 3.91 mm." With pad removal, space available for cord was 2.64 mm in the C1-C2 instability model. Similarly, in three cadavers, C5-C6 instability was created by a posterior cervical release and helmet and shoulder pad removal was done under fluoroscopy. As seen in atlantoaxial instability, helmet and pad removal created abnormal cervical motion at the C5-C6 level. In these segments, space available for cord was decreased to 3.87 mm and flexion-extension occurred. In helmet removal, flexion was 9.32° and shoulder pad removal extended the neck 8.95° for an approximate total of 18°. Donaldson et al conclude that there is a need for carefully monitored helmet and shoulder pad removal by at least three, and preferably four, trained people. Unfortunately, they made no suggestions to improve safe equipment removal. Clearly, they desire to educate clinicians on the limitations of the current technique of helmet and shoulder pad removal. In a commentary on this article, J. P. Albright, MD recommends continuing the use of NATA guidelines as reasonable.

■ **COMMENT BY ROBERT C. SCHENCK, Jr., MD**

The gravity and frequent inevitability of cervical injuries makes this new study an important area of debate. On-the-field removal of helmet and shoulder pads in a suspected cervical injury is not recommended. The current recommendation of on-the-field removal of a face mask only still stands. Shoulder pad and helmet removal should be performed in a supervised environment, ideally in an emergency room. Transfer of the athlete with helmet (taped to a backboard) and pads in place is recommended. Airway management is primary, and quick-cut tabs on modern helmets allow the face mask to be flipped up for management of the athlete's airway. However, controversy now exists on the process of helmet and shoulder pad removal in the controlled medical setting. One shortcoming of this study is its basic model—the cadaver. Flexion-extension studies of cervical injuries (plain radiographs) are useful and safe when performed in an awake patient under his or her own control. The risk

of helmet and shoulder pad removal noted in the cadaver model may be lessened in an awake patient with cervical muscular control. Certainly, in an unconscious patient, this information is even more important and signifies the appropriate risk. Helmet and pad removal in a suspected cervical injury is best performed with three or four trained personnel, in a well-controlled medical facility, with an alert and communicating patient. This review acknowledges that there are different guidelines, and a consensus of on-the-field management is in progress but still requires further clarification. ❖

Meniscal Repair in the Young Athlete

ABSTRACT & COMMENTARY

Synopsis: *Repair of a torn meniscus in the adolescent patient can lead to full healing in a high percentage of cases.*

Source: Mintzer CM, et al. Meniscal repair in the young athlete. *Am J Sports Med* 1998;26:630-633.

The effectiveness of surgical repair of torn knee menisci is believed to vary both with the extent and severity of the meniscal tear and the age of the patient. Mintzer and colleagues applied a standard technique of surgical repair of the torn meniscus to a group of adolescent athletes seen and treated at one institution. This is a retrospective review of the results of the treatment of all the patients so managed over a 10-year period. There was a minimum follow-up of two years and an average follow-up of five years. The patients ranged in age from 11 to 17 years. There were 12 medial meniscal repairs and 17 lateral meniscal repairs. More than half of the patients had anterior cruciate ligament (ACL) tears that were reconstructed arthroscopically at the same time the meniscal surgery was performed; indeed, 13 of the 17 lateral meniscal repairs also had a torn ACL. There was considerable delay from injury to surgical treatment, ranging from three days to 27 months and averaging a little bit more than six months.

All tears were in the posterior horn of the menisci and 28 of the 29 tears were within 2 mm of the meniscal-synovial junction, involving either the "red on red" zone (22 of 28) or the "red on white" zone (6 of 28). The tears had an average length of 2.3 cm, ranging from 1.5 to 3 cm in length.

The follow-up evaluation included a history, physical examination, and a SF-36 health status survey. Knee function was documented by the use of standardized knee function scores.

Most significantly, virtually all patients returned to their pre-injury level of activity and no patient underwent additional surgery to treat recurrent meniscal abnormalities. Physical examination demonstrated no intra-articular effusions, no joint line tenderness, no positive McMurray's test, and, thus, virtually no clinical signs of persistent meniscal pathology. The patients' functional scores indicated that 85% were functioning at extremely high physical activity levels and all but two patients returned to their previous level of athletic activity.

■ COMMENT BY JAMES D. HECKMAN, MD

This is an impressive retrospective review of one surgeon's experience with meniscal repair. Mintzer et al conclude that in this adolescent population, properly selected meniscal tears should be repaired surgically and that an excellent result can usually be expected. They were very selective with regard to the lesions that they chose to repair: those near the meniscal-synovial reflection. In addition, they aggressively reconstructed a torn ACL whenever it was present. Doing so certainly provides additional stability for the knee and protects the meniscus from a subsequent repeat tear.

Mintzer et al attribute their 100% rate of healing in part at least to the fact that there may be "...a greater potential for healing based on more extensive vascularity of the younger menisci." Certainly, the patients' youth worked in their favor.

It seems to me that it is imperative that we become as aggressive as possible about the repair and retention of knee menisci in adolescents. This article demonstrates that they do have an excellent potential to heal as long as the tear is near the meniscal-synovial junction. Removal of a torn meniscus in such a young person probably will predispose him or her to degenerative changes in the years to come.

One of the shortcomings of this article is that Mintzer et al do not have objective evidence of healing as demonstrated by biopsy or re-look arthroscopy (except for one patient). Thus, we are dependent upon the history and physical examination to draw the conclusions from this study. Certainly, the clinical course has been quite good for virtually all the patients and re-look arthroscopy, with or without biopsy, would be hard to justify. MRI scans of a selected number of these patients, however, could have demonstrated the quality of the repair and the structure of the retained repaired meniscus.

Mintzer et al expressed distress that the average time from injury until surgery was more than six months. This delay did not appear to affect the surgical result adversely. However, it is the hope of Mintzer et al that this article will raise the level of awareness of the potential for effective surgical treatment, both among primary care physicians and even surgeons "...who did not think that such young patients could have meniscal tears that would need to be addressed surgically." Certainly, one of the take-home messages from this article is that adolescents who have sustained knee injuries and who may have a torn meniscus should be evaluated promptly by a surgeon versed in the arthroscopic techniques of surgical repair. ❖

Physical Fitness, Physical Activity, and Functional Limitation in Adults Aged 40 and Older

ABSTRACT & COMMENTARY

Synopsis: *Active individuals, as determined either by their level of physical fitness or physical activity, reported less functional limitations than unfit, sedentary participants, and such was true for both moderately fit as well as more highly fit men and women and was independent of known potential risk factors such as cigarette smoking, alcohol consumption, and body mass index.*

Source: Huang Y, et al. Physical fitness, physical activity, and functional limitation in adults aged 40 and older. *Med Sci Sports Exerc* 1998;30(9):1430-1435.

This article from the university of south Carolina's Prevention Center School of Public Health and the Cooper Institute for Aerobics Research distinguishes physical activity and physical fitness,

relating each to the prevalence of functional limitations in middle and upper socioeconomic adults aged 40 and older. Unlike physical activity, the relationship of physical fitness to such limitations has not been previously extensively examined, but Huang and associates argue it may be a better parameter to relate to functional imitations since fitness can be measured more objectively and accurately than self-reported physical activity.

Of the 3495 men and 1175 women followed for an average of 5.5 years, 350 (7.5%) reported at least one functional limitation in daily activity. Women, at all fitness levels, reported a greater incidence of functional limitations than did men. As expected, active individuals, as determined either by their level of physical fitness or physical activity, reported less functional limitations than unfit, sedentary participants, and such was true for both moderately fit as well as more highly fit men and women and was independent of known potential risk factors such as cigarette smoking, alcohol consumption, body mass index, etc.

■ COMMENT BY LETHA Y. GRIFFIN, MD, PhD

In an attempt to encourage a greater segment of the population, especially those in the 40 or older age range, to exercise regularly, health professionals recently re-evaluated the minimal quantity and quality of exercise needed to develop and maintain cardiorespiratory and muscular fitness and to see if a less vigorous regimen than the previously recommended 3-5 days a week of 20-30 minutes of continuous exercise done at 75-85% of maximum heart rate was realistic. Their effort culminated in a revised position statement by the American College of Sports Medicine (issued in 1998) on minimal exercise standards. This statement encourages a fitness program for each individual that provides "the proper amount of physical activity to obtain maximal benefit at the lowest risk" with an emphasis on encouraging lifestyle changes to ensure a lifetime of physical activity.¹

The American College still recommends a 3-5 day frequency of exercise but at an intensity from 55% to 90% maximal heart rate depending on one's initial fitness level. The recommendation for the duration of

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activity was revised from 20 to 30 minutes of continuous exercise to 20 to 60 minutes of exercise throughout the day performed for a minimum of 10 minute bouts, with a suggestion that lower intensity activities be attempted for longer durations.

This position also suggests that resistance and flexibility training should be an integral part of an adult fitness program but once more emphasizes moderation, stating that one set of 8-10 exercises each repeated 8-12 times 2-3 days a week is adequate for a resistance program. Exercises should be selected that condition the major muscle groups.

The National Institutes of Health, the American Heart Association, and the Office of the Surgeon General have also recently issued statements encouraging all Americans to be physically active, emphasizing the benefits of such activity in reducing the incidence of many chronic diseases including hypertension, osteoporosis, obesity, and coronary artery disease. ❖

Reference

1. American College of Sports Medicine Position Stand. The recommended quantity and quality of exercise for developing and maintaining cardiorespiratory and muscular fitness, and flexibility in healthy adults. *Med Sci Sports Exerc* 1998;30(6):975-991.

CME Questions

15. The term rotator cuff tendonitis best describes which condition?
 - a. Inflammation of the rotator cuff tendons
 - b. Pain localized to the rotator cuff insertion
 - c. Degeneration of the rotator cuff
 - d. Swelling and impaired function of the supraspinatus tendon
16. Bracing of the knee after ACL reconstruction may be beneficial:
 - a. when allograft has been used to reconstruct the ACL.
 - b. when instability is present postoperatively.
 - c. when the graft fails.
 - d. when muscular weakness prevents full rehabilitation.
17. Speed's test is performed with the upper extremity in which of the following positions?
 - a. Arm elevated 90°, elbow flexed 45°, forearm supinated.
 - b. Arm elevated 90°, elbow fully extended, and forearm pronated.
 - c. Arm elevated 90°, elbow fully extended, and forearm supinated.
 - d. Arm extended 90°, elbow flexed 45°, and forearm fully pronated.

18. The healing rate of meniscal repair is highest when:

- a. the ACL is intact.
- b. a torn ACL is simultaneously repaired.
- c. a torn ACL is not simultaneously repaired.
- d. the ACL is debrided.

19. In an athlete with a suspected on-the-field cervical spine injury:

- a. helmet removal can be performed for life-threatening injury problems.
- b. the helmet should be taped/immobilized to a backboard for transport to a medical facility.
- c. on-the-field practice allows face mask removal in the presence of a physician.
- d. shoulder pads should be removed on the field if possible with transport of the athlete on a backboard.

20. As measured by clinical evaluation, the success rate in adolescents of the repair of meniscal tears when the cases are selected appropriately can approximate:

- a. 100%.
- b. 80%.
- c. 60%.
- d. 50%.

21. When comparing operative vs. nonoperative treatment of acute lateral collateral ankle ligament injuries, the only statistical significance that could be identified was:

- a. prolonged time to return to work after surgical treatment.
- b. less instability after surgical treatment.
- c. more pain after nonsurgical treatment.
- d. greater disability with nonsurgical treatment.

22. Physical activity is associated with:

- a. a decreased incidence of chronic diseases such as osteoporosis, hypertension, and coronary artery disease.
- b. a lowering of the maximal oxygen carrying capacity of the blood.
- c. an increase in resting heart rate and blood pressure.
- d. improvement in functional limitations only in nonobese adults.
- e. an increase in the resting respiratory rate in adults older than 40.

Readers are Invited . . .

Readers are invited to submit questions or comments on material seen in or relevant to *Sports Medicine Reports*. Send your questions to: Robin Mason—Reader Questions, *Sports Medicine Reports*, c/o American Health Consultants, P.O. Box 740059, Atlanta, GA 30374. For subscription information, you can reach the editors and customer service personnel for *Sports Medicine Reports* via the Internet by sending e-mail to robin.mason@medec.com. You can also visit our home page at <http://www.ahcpub.com>. We look forward to hearing from you. ❖

In Future Issues:

Muscle Cramps and Nitric Oxide
Cardiovascular Risks to Young Persons on the Athletic Field