The adequacy of medical school education in musculoskeletal medicine.


**BACKGROUND**

Musculoskeletal injury is an increasingly common reason for people to seek help from a health care provider. In fact, it is determined to be the second most common reason that a patient will consult a physician — the most common reason being upper respiratory illness (the common cold).

The delivery of musculoskeletal care is spread across a broad spectrum of practitioners. However, physicians are still considered to be the ones with the greatest level of knowledge in this area. They are also the ones that will be making decisions about what types of adjunctive care will be most appropriate for the patient. Therefore a comprehensive understanding of musculoskeletal problems is necessary for the practicing physician.

There has been significant discussion of the issue that the training physicians receive in medical school is not adequate to prepare them to deal with the scope of musculoskeletal disorders they will commonly see in practice. This study was constructed to measure the level of knowledge about musculoskeletal disorders of physicians who have completed basic medical school and are starting their specialty residencies.

The study was conducted at the University of Pennsylvania School of Medicine with 85 new medical residents. The medical residents represented 37 different medical schools, and many of them were considered to be some of the best medical schools in the country. Each resident took this basic knowledge exam. Of the 85 residents taking the exam 70 of them (82%) failed the exam.

The average (mean) score on the exam was 59.6%. The exam had been reviewed by the chairpersons of 154 different orthopedic residency programs. The minimum score they recommended to indicate basic competence in musculoskeletal knowledge was 73.1%. The average score (59.6%) quite clearly indicates a level below what is considered minimum competence.

**DISCUSSION**

Given the high incidence of orthopedic problems, it is evident that adequate knowledge in orthopedics is necessary for physicians in practice. This study clearly demonstrates that there is inadequacy in medical school education in musculoskeletal disorders.

The authors in this study had also evaluated the background education that these medical residents had in the orthopedic field prior to taking this exam. Some of them
had completed medical school with no rotation in orthopedics at all. Others had taken a course in orthopedics that was a required course, but the course was often not of sufficient length to give a thorough understanding of scope of problems they might encounter. The average duration of these courses that had been taken as a required course was 2.1 weeks.

Other students had taken elective courses in orthopedics that were of greater length. However, the authors note that many of the longer courses may not have had the proper focus in the topics that were addressed during that course. They state that one of the problems with many of these courses is that the elective rotations tend to emphasize highly specialized areas of orthopedic surgery rather than common outpatient services.

One of the other things that I found interesting about this test and the scores on it related to the specific topic areas within the field of orthopedics. There were three questions on the test that were answered with less than 30% accuracy. Each of these questions was related most closely to muscular anatomy and kinesiology. In reading the questions on the test it was evident that there was a strong emphasis on more surgical aspects of orthopedics. So, one question this raises is whether there is a bias in the education toward surgical management of various problems, and less emphasis on conservative treatments that would require a greater knowledge of functional anatomy and kinesiology. The questions on which the medical residents performed worst were:

1. A patient has a disc herniation pressing on the 5th lumbar nerve root. How is motor function of the 5th lumbar nerve root tested? Answer: Extension of the toes (only 20% got this question correct)
2. What muscle(s) control(s) external rotation of the humerus with the arm at the side? Answer: infraspinatus or teres minor (only 28% got this question correct)
3. What muscle(s) is/are involved in lateral epicondylitis (tennis elbow)? Answer: credit given for any wrist extensor listed (only 18% got this question correct) Although this is not enough information to draw a definitive conclusion, there is a significant trend here. It is evident that the limited training available in orthopedics is definitely slanted toward the surgical aspects of orthopedics. The physicians are the ones most of us consider to be the experts. However, if the physicians have such poor training in functional anatomy and kinesiology, who are the specialists in this area?

Massage practitioners are regularly dealing with musculoskeletal disorders in their client population. To fully understand the nature of these complaints a thorough understanding of functional anatomy and kinesiology is essential. One thing that I think is very apparent from this study is that we should not necessarily rely on an individual to have specialized knowledge in musculoskeletal disorders simply because that individual is a physician. There are certainly other political and legal ramifications of this issue, but I think that this gives increasing responsibility to the massage practitioners who are treating clients with many of these problems.