

Meeting Minutes

Kim Templeton (chair, orthopaedic surgery), David Pisetsky (co-chair, rheumatology), Majorie Delo (sports medicine), Debra Sietsema (National Association of Orthopaedic Nurses), Marjorie Kulesa (National Association of Orthopaedic Nurses, Movement Is Life), Frank Lowe (National Association of Orthopaedic Nurses), Ellen Raney (Pediatric Orthopaedic Society of North America), Kristine Lohr (American College of Rheumatology), Terrie Cowley (Temporomandibular Joint Association)

The impact of sex and gender on the musculoskeletal system was reviewed with the group. The publication, *Does Sex Matter?*, may date to 2000 but is still relevant. This issue could serve to raise awareness about musculoskeletal health and care. The participants were then asked to provide information on what their organizations were working on in this area and potential areas of needed research and/or collaboration.

In the area of sports medicine, there is interest in sex/gender differences in concussion, female athlete triad (athlete energy imbalance), cardiac death (some, but so far not significant, differences), ligamentous laxity among females, and the differences in anterior cruciate ligament injury risk and prevention measures. Some, but not all differences, appear to be impacted by sex hormones.

Almost every disease in the area of rheumatology has been found to have a sex predilection, with females disproportionately represented. However, this is not an area of as much active research as you would think, especially in the area of drug development and differing pharmacokinetics/pharmacodynamics. The American College of Rheumatology has no position statement(s) on this issue, and there frequently is not explicit in the mention of sex and gender in its papers; however, there is interest and research among members of American College of Rheumatology on the reproductive/contraceptive issues of women with rheumatologic conditions. The lack of precision or questions asked about appropriate drug dosage, for both response and side effects, for men and women should be addressed.

The orthopaedic community, primarily through the American Academy of Orthopaedic Surgeons and its Women's Health Issues Advisory Board and the Ruth Jackson Orthopaedic Society, has been active in the area of women's health. However, there has been less discussion of this topic from a sex/gender difference perspective. There are no Academy position statements in this area. Significant areas have been identified in the incidence of osteoarthritis. Differences in outcome after joint arthroplasty have been identified- this is most likely related to both sex and gender. Men are more likely to sustain high impact injuries. Women are more likely to sustain low impact fractures, although men are more likely than women to die after a hip fracture.

Sex and gender medicine is not specifically addressed in the strategic plan of the National Association of Orthopaedic Nurses or in nurse education or continuing nursing education. Gender and Unconscious bias is widely discussed by the Movement is Life Arthritis Caucus (at which the National Association of Orthopaedic Nurses and the US Bone and Joint Initiative have representation). Movement is Life is developing on-line education materials for nursing, which could be a forum for this topic.

Next Steps:

1. It would be best to start working on Sex, which is more straightforward and then move on to Gender, which can be more complicated.
2. Race and Ethnicity should not be forgotten at the same time as studying Sex and Gender.
3. The group decided that to move this agenda forward among the constituent member organizations of the US Bone and Joint Initiative, we first need to increase awareness of these population differences. Information on this topic should be included in the Young Investigators' Initiative and the various public education programs.
4. How can more investigators be engaged in studying this topic? Can some of the US Bone and Joint Initiative's Young Investigator Initiative participants be persuaded? Can they all be persuaded to study the impact of Sex and Gender in every research study?
5. The US Bone and Joint Initiative should champion that data in musculoskeletal studies should be analyzed for what is known about Sex and Gender Differences. General principles should be easy to agree on.
6. Participants should email Dr. Templeton and Dr. Pisetsky with any more details on what they or the organizations they represent know on this topic or are doing with reference to this topic.
7. Dr. Templeton and Dr. Pisetsky will draft a Statement or Position Paper which also can serve as the basis from which to develop further action on the part of the US Bone and Joint Initiative.

- o Current state of knowledge
- o Gaps in knowledge
- o Investigation

The Statement or Position Paper should be submitted for publication (The Rheumatologist and National Association of Orthopaedic Nurses Journal were suggested for consideration, as well as the idea of a series).

8. It was also recommended that the members of the US Bone and Joint Initiative develop position papers on the current status and the need for additional research on the top 20 musculoskeletal conditions for which sex and/or gender-based differences have been identified. This could start with anterior cruciate ligament injuries, fragility (low impact) fractures, and femoracetabular impingement. The goal would be to have these position papers published in a variety of different journals, to reach primary care as well as the spectrum of musculoskeletal health providers.
9. The Burden of Musculoskeletal Conditions in the United States chapter should be expanded.
10. Continued efforts to engage industry in this discussion
11. To what extent are Sex and Gender Differences taught at medical schools?