

*Physical Disabilities  
Through the Lifespan*



# Musculoskeletal Issues

July 22, 2003



## State of the Field

- Since our society considers cost containment paramount, it was felt that musculoskeletal research should include total cost over time, consumer participation in research projects, and research based in community environment. The research should also evaluate practical approaches for users in the field.



## Problems/Concerns/Issues

- Roles of osteoporosis, body composition, physical and instrumental functioning, cognition, affect, and social activity. In falls leading to hip fracture, 18-33% of persons with hip fractures die in one year.
- Does sequence of repair in hip fractures apply to other areas?



## Problems/Concerns/Issues

- Understanding changes in bone mass and development of osteopenia in children
- Need for light, durable, functional and attractive prostheses and orthoses for elderly
- Physiology of exercise? How to motivate persons to exercise? Examine cultural differences. What are outcomes and goals for enhancement of participation?

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## Problems/Concerns/Issues

- How to improve dissemination of information about new or alternative clinical approaches, technologies, and equipment to the community
- Population-specific exercises needed. Why don't some people respond to exercise while others do?



## Problems/Concerns/Issues

- Techniques for clinical instructions for visually-impaired patients
- Manufacturers produce products based on reimbursement rather than on need.



## Research Priorities

- Longitudinal studies on overuse syndromes, pain & disabilities in multiple populations. Study improved biomechanics, ergonomics, new technologies on risk of overuse
- Engineering research associated with fast prototyping methods and automated foot alignment for more feasible prostheses; more attention to improved functioning of partial foot prostheses/orthoses and ankle-foot orthoses





## Research Priorities

- Does exercise affect outcomes, task performance, and quality of movement?
- What is optimal exercise dose and how is it determined? Focus on underlying biology and physiology of exercise and relationship to disease, age, exercise adherence, cultural differences, etc.





## Research Priorities

- What practice conditions facilitate long-term learning and transfer of motor skills?
- Examine bone density in ambulatory children with CP and changes with aging.
- Develop inexpensive, useful & sexy prostheses for the elderly.