

Revitalization of **Mechanical Technologies** in **Disability and Health care Applications** : A Research agenda

تفعيل التقنيات الميكانيكية في تطبيقات الرعاية الصحية والإعاقة: أجندة البحث

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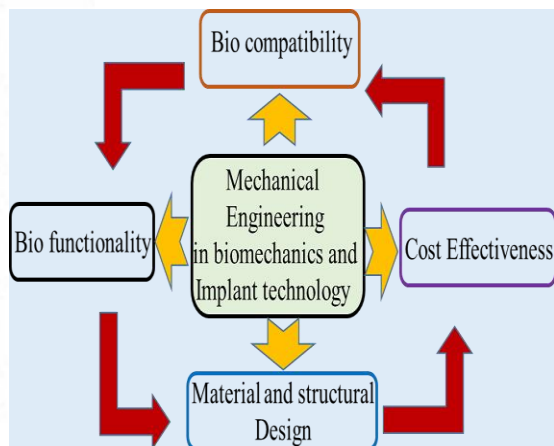
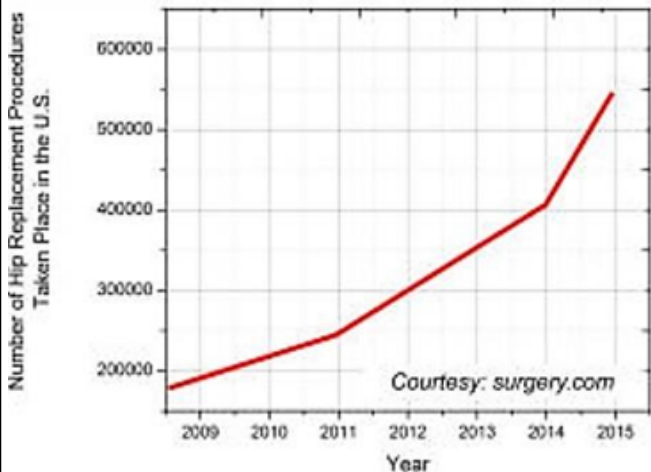
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Research Background and Objectives:

Disability is a complex multidimensional challenge and it can substantially limit major life activities of person. For instance, it is estimated that in KSA, 3.73% of the population has functional disabilities, which limit their independence. One of the most prominent application areas for biomaterials is for orthopedic implant devices. Both osteoarthritis and rheumatoid arthritis affect the structure of freely movable (synovial) joints, such as the hip, knee, shoulder, ankle, and elbow.

Disability Survey 2017, <https://www.stats.gov.sa/sites>



Assistive devices and Technology to Facilitate Activities :Overview of personnel research collaborations

1. [Design Optimization and Integrated Simulation Analysis of a Cable-Driven Ankle Rehabilitation Robot](#) [M.F.Ijaz et al.](#), *JDR*. 2023. Vol. 2(2):89-99. DOI: 10.57197/JDR-2023-0027

2. [A prospective Outlook on the development of exoskeletal knee joints for Prostheses via a Design Concept evaluation Approach](#) [M.F.Ijaz et al.](#), *JDR*. 2023. Vol. 2(1):47-62. DOI: 10.57197/JDR-2023-0006

3. [Supervised Machine Learning to Predict Drilling Temperature of Bone](#) [M.F.Ijaz et al.](#), <https://doi.org/10.3390/app14178001>

4. [Correlation between Postural Stability and Lower Extremity Joint Reaction Forces in Young Adults during Incline and Decline Walking](#) [M.F.Ijaz et al.](#), <https://doi.org/10.3390/app132413246>

5. [Design of an After-Fall-Assistive Device for Elderly Patients by Finite Element Methods](#) DOI: 10.14293/PR2199.000172.v2

6. [The Development of Rehabilitation Orthotic Walker with a Real Time Visual Feedback System of the Gait Symmetry](#)

6. [Finite Element Modelling of a Synthetic Paediatric Spine for Biomechanical Investigation](#) [M.F.Ijaz](#) <https://doi.org/10.3390/ma16134514>

6. [Stability Analysis of Plate—Screw Fixation for Femoral Midshaft Fractures](#) [M.F.Ijaz](#) <https://doi.org/10.3390/ma16175958>

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