# Department of Biomechanics

## Doctoral Degree
## 2013

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| **Author** | **:** | **Amany Aid Abd El Twoab.** |
| **Title** | **:** | **Mathematical Calculation of Hip Joint Reaction Force While Walking on Different Ramps.** |
| **Dept.** | **:** | **Department of Biomechanics.** |
| **Supervisors** | **1.** | **Salam Mohamed El Hfez.** |
| | **2.** | **Enam khalefa Rawy Omran.** |
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| **Degree** | **:** | **Doctoral.** |
| **Year** | **:** | **2013.** |
| **Abstract** | **:** | |
| **The purpose of this study was to investigate the effect of walking up four ramps of different slopes (0°- 5º- 10º- 15º) on the resultant of hip joint reaction force (JRF), the resultant total ground reaction force (GRF), the hip flexion and extension moments and the angular displacement of the right hip joint in two different positions. Results revealed that there was a significant difference among the four tested ramps for the resultant of hip joint reactions force and the ground reaction force. However, there was no significant difference among the four tested walking ramps for each of hip flexion and extension moments.** | | |
| **Key words** | **1.** | **Gait.** |
| | **2.** | **Inclined Surfaces.** |
| | **3.** | **JRF.** |
| | **4.** | **GRF.** |
| | **5.** | **Hip Moments.** |
| **Arabic Title Page** | **:** | **الحساب الرياضى لقوة رد فعل مفصل الفخذ أثناء المشى على أسطح مختلفة الميل.** |
| **Library register number** | **:** | **3119-3120** |

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| **Author** | **:** | **Mariam Abdul Moneem Abdu.** |
| **Title** | **:** | **Interaction Relations among Physiotherapy Team and Human Factors.** |
| **Dept.** | **:** | **Department of Biomechanics.** |
| **Supervisors** | **1.** | **Mohamed E. Saad** |
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| **Degree** | **:** | **Doctoral.** |
| **Year** | **:** | **2013.** |
| **Abstract** | **:** | |

**Background: Attention is increasingly devoted to our society's needs and health care. Several changes require immediate attention concerning many aspects of care that are found in medical facilities and home. These changes in the location of care involve more people, more professions, who are sometimes performing difficult tasks, with unfamiliar equipment, in environments not designed to support these activities. All of these factors need to be addressed, and among the most critical are the human-systems interactions, also known as human factors. If the demands of providing or self-administering health care exceed a person's capabilities, then the safety, efficacy, and efficiency of that care will suffer. Purpose: The current concern of this study is to draw our attention and confirm the interaction relations among physical therapy profession and human factors. Subjects and methods: Seven physical therapy judges who were expert more than 20 years in the academic part of physical therapy field and forty one physical therapy participants who were expert no less than 10 years in the practical part of physical therapy field participated voluntarily in this study. Eight questionnaire items were answered three times from judges and participants with a week delay between them. The reliability test of the questionnaire and the average of three responses of each judge and participant were calculated and analyzed using International Business Machines (IBM) of Statistical Package of Social Sciences (SPSS). Results and Discussion: The findings showed that coefficient alphas of judges' and participants' responses were 0.92 and 0.91 respectively, which indicated high internal reliability (interrater reliability). Also, the findings demonstrated that there is a strong agreement on all questionnaire items from judges and participants that proved the strong interaction relations among physical therapy team and human factors. Conclusion: This survey study proved the strong interaction relations among the physiotherapy team and human factors that represent an important step for understanding of health and sickness. In turn, this may help the physiotherapists and all healthcare professions to design the most effective and efficient treatment and successful rehabilitation programs for patient.**

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| **Key words** | **1.** | **Physical Therapy Team.** |
| | **2.** | **Human factors.** |
| | **3.** | **Ergonomics.** |
| **Arabic Title Page** | **:** | **العلاقات التداخليه بين فريق العلاج الطبيعي والعوامل البشريه.** |
| **Library register number** | **:** | **3307-3308.** |