# **The Impact of Ankle Mobility on Pain Prescription in Patients with Haglund Syndrome**

Submitted by  
[Your Name]

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SUPERVISOR: [Supervisor's Name]

University Institute of Physical Therapy  
Faculty of Allied Health Sciences  
The University of Lahore  
[Year]  
[Date]

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# INTRODUCTION

Haglund Syndrome, often referred to as 'pump bump,' is characterized by a bony enlargement on the back of the heel. This condition is typically exacerbated by rigid footwear, leading to inflammation of the retrocalcaneal bursa and irritation of the Achilles tendon. The prevalence of Haglund Syndrome varies, often affecting individuals who wear high-heeled shoes or engage in activities that place stress on the heel.  
  
The pathophysiology involves the abnormal prominence of the heel bone rubbing against the Achilles tendon, causing pain and swelling. Anatomically, this condition primarily affects the retrocalcaneal bursa and the Achilles tendon insertion point.  
  
Definition and Description  
Haglund's deformity is a condition where a bony enlargement on the back of the heel irritates the surrounding tissues. It often leads to inflammation of the retrocalcaneal bursa and the Achilles tendon, causing significant pain and discomfort. This condition is frequently observed in individuals who wear high-heeled shoes or engage in repetitive heel-striking activities.  
  
Prevalence and Incidence  
Haglund's deformity is relatively common, particularly among women and athletes. Studies show that it affects about 10-15% of the population, with a higher incidence in those aged 20-50 years. The condition is also known to have a genetic predisposition.  
  
Pathophysiology and Applied Anatomy  
The pathophysiology of Haglund's deformity involves the development of a bony enlargement at the posterior aspect of the calcaneus. This prominence leads to mechanical irritation of the Achilles tendon and the retrocalcaneal bursa, resulting in inflammation and pain. The condition is often exacerbated by tight or ill-fitting footwear, which further irritates the affected area.  
  
Rationale of Study  
Understanding the impact of ankle mobility on pain prescription in patients with Haglund Syndrome is crucial for developing effective treatment strategies. Improved ankle mobility may reduce the mechanical stress on the Achilles tendon and retrocalcaneal bursa, potentially alleviating pain and enhancing patient outcomes. This study aims to explore this relationship and provide evidence-based recommendations for clinical practice.

# LITERATURE REVIEW

Research indicates a strong association between footwear choices, particularly high-heeled shoes, and the development of Haglund Syndrome. Studies also suggest that improved ankle mobility can alleviate symptoms by reducing tension on the Achilles tendon and retrocalcaneal bursa. Various therapeutic approaches, including physical therapy, orthotic devices, and in severe cases, surgical intervention, have been explored to manage this condition effectively.  
  
Footwear and Haglund Syndrome  
Tight, rigid shoes are a significant contributing factor to the development of Haglund Syndrome. Studies have shown that individuals who frequently wear high-heeled shoes or rigid footwear are at a higher risk of developing this condition. The constant pressure and friction exerted by such shoes lead to irritation and inflammation of the retrocalcaneal bursa and Achilles tendon.  
  
Ankle Mobility and Pain  
Limited ankle mobility can exacerbate the symptoms of Haglund Syndrome by increasing the mechanical load on the affected areas. Research indicates that improving ankle mobility through targeted exercises can help reduce pain and improve functional outcomes in these patients. Exercises such as calf stretches, ankle dorsiflexion, and plantarflexion movements have been shown to increase ankle range of motion and decrease pain levels.  
  
Therapeutic Interventions  
Non-surgical treatments such as physical therapy, orthotic devices, and anti-inflammatory medications are commonly used to manage Haglund Syndrome. Physical therapy focuses on improving ankle mobility, reducing inflammation, and strengthening the surrounding muscles. Orthotic devices, such as heel lifts and custom insoles, can help alleviate pressure on the heel and reduce pain. Anti-inflammatory medications, including NSAIDs, are often prescribed to manage pain and inflammation.  
  
In severe cases, surgical intervention may be necessary to remove the bony prominence and relieve pain. Surgical options include removing the bony enlargement, addressing any associated soft tissue inflammation, and repairing or lengthening the Achilles tendon if needed. Post-surgical rehabilitation focuses on restoring ankle mobility, strength, and function.  
  
Recent Advances in Treatment  
Recent studies have explored the use of minimally invasive surgical techniques and regenerative therapies in the treatment of Haglund Syndrome. Techniques such as endoscopic calcaneoplasty and platelet-rich plasma (PRP) injections have shown promising results in reducing pain and improving function in patients with Haglund Syndrome. These approaches aim to minimize tissue damage, reduce recovery time, and enhance healing.

# OBJECTIVES

- To assess the impact of ankle mobility on pain levels in patients with Haglund Syndrome.  
- To evaluate the effectiveness of different therapeutic interventions aimed at improving ankle mobility and reducing pain.  
- To provide recommendations for clinical practice based on study findings.

# OPERATIONAL DEFINITION

\*\*Haglund Syndrome:\*\* A condition characterized by a bony enlargement on the back of the heel, leading to inflammation and pain.  
  
\*\*Ankle Mobility:\*\* The range of motion available at the ankle joint, including dorsiflexion, plantarflexion, inversion, and eversion.

# MATERIALS AND METHODS

\*\*Study Design:\*\* Cross-sectional study.  
  
\*\*Setting:\*\* Data will be collected from [Specify Hospital/Clinic].  
  
\*\*Duration:\*\* The study will be conducted over six months following approval.  
  
\*\*Sample Size:\*\* A sample size of [Specify Number] patients will be selected based on inclusion criteria.  
  
\*\*Sampling Technique:\*\* Convenience sampling.  
  
\*\*Inclusion Criteria:\*\*  
- Patients diagnosed with Haglund Syndrome.  
- Ages 18-65.  
- Both genders.  
  
\*\*Exclusion Criteria:\*\*  
- Patients with other heel pathologies.  
- History of ankle or foot surgery.  
  
\*\*Methodology:\*\*  
Participants will undergo an assessment of ankle mobility and pain levels using standardized tools. Data will be collected through physical examinations, patient questionnaires, and imaging studies if necessary. The primary outcome measures will include pain intensity (measured on a visual analog scale), ankle mobility (measured using a goniometer), and functional status (assessed using the Foot and Ankle Ability Measure).

# DATA ANALYSIS

Data will be analyzed using statistical software to determine the correlation between ankle mobility and pain levels. Descriptive statistics will summarize demographic data, while inferential statistics such as Pearson’s correlation coefficient will assess the relationship between variables. Multiple regression analysis may be used to control for potential confounding factors.

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# PROFORMA

\*\*Questionnaire:\*\*  
- Demographic details  
- Pain assessment (0-10 scale)  
- Ankle mobility evaluation

# CONSENT FORM

\*\*Participant Information:\*\*  
This study aims to assess the impact of ankle mobility on pain levels in patients with Haglund Syndrome. Participation is voluntary, and you may withdraw at any time.  
  
\*\*Consent for Participation:\*\*  
I, [Participant's Name], consent to participate in this study. I have been informed about the nature, purpose, and potential risks of the study.