Scoping review

Surveillance

Device detection

E to I library

Different protocols for reviews – maybe just one

* One on existing survey and device
* One on experience on return to physical activity

Want to establish data of return to physical activity from \_\_

* What recommendations can you provide about return from physical activity
* Daily physical activity recommendations
* Theres a lot of variation in recommendations of surgeons

What is the trajectory

Not much qualitative data (not much surveying)

Nothing really tracked/showed what the worries are about recommending return to physical activity

* Further compromise hip, increase OA risk, limit function in future adulthood

Cp

Surgical outcomes in existing research = looking at pain, gait changes, other movements

Sports medicine studies are most relevant to see return to physical activity

Accelerometer readings

Not much in developing patients

* Not looking at it in same age of kids

SCFE and perthes??? == onset is childhood/later childhood

* Clinical presentation and recommendation are more similar for these

Ddh = detected in infants (younger population)

Protocol:

* Draft with question looking at “tragectories of physical activities and behaviours in children diagnosed with perthes and SFE once deemed recovered”
* Search terms:

Sports journal

Related to PE? ERIC resource

Legg-Calve-Perthes Disease (LCPD)

Slipped Capital Femoral Epiphysis (SCFE)

Developmental Dysplasia of the Hip (DDH)

LCPD and SCFE are more pathologically similar

* So the thinking is the healing would be more similar
* Clinical recommendation should be the same
* Defining healing = radiographic healing
  + Starting to see consolidation and callous formation (need reference)

DDH should be looked at differently

Work on background – send back by august 28th

Schedule

**Healing in SCFE is usually determined by the cessation of pain, restoration of hip function, and radiographic evidence showing the stabilization of the epiphysis without further slippage.**

Legg-Calve-Perthes Disease (LCPD), Slipped Capital Femoral Epiphysis (SCFE), and Developmental Dysplasia of the Hip (DDH) are among the most frequently encountered pediatric hip disorders managed by orthopedic surgeons. Despite their prevalence, the optimal management of these conditions—particularly concerning the timing and type of physical activity (PA) following treatment—remains an area of debate and variation in practice.

LCPD affects approximately 10.8 in every 100,000 children. It is characterized by avascular necrosis of the capital femoral epiphysis of the femoral head. Subsequently, enchondral ossification, in which cartilage is replaced by bone during growth, is compromised. Previous studies have suggested that it is unnecessary to strictly offload weight-bearing as well as to prohibit sport activity. However, it was determined that jumping and physical contact should be avoided. While exact causes of LCPD are not well understood, repetitive damage to the developing femoral head is thought to contribute. Treatment of LCPD is centered around containment of the femoral epiphysis and preventing deformity of the femoral head. Successful healing in LCPD is typically defined by…

SCFE is thought to have an incidence between 0.33 to 24.58 per 100,000 children. It is characterized by displacement of the femoral head from the femoral neck at the proximal epiphyseal growth plate. Treatment is typically operative and focuses on prevention of further displacement of the epiphysis and prevention of osteonecrosis. Healing in SCFE is usually determined by …. Long-term outcomes are assessed based on hip function and the preservation of the joint space.

**SCFE** is a pediatric hip condition with an incidence ranging between 0.33 to 24.58 per 100,000 children. It is characterized by the displacement of the femoral head from the femoral neck at the proximal epiphyseal growth plate, a critical area responsible for bone growth. SCFE typically presents during periods of rapid growth, such as adolescence, and is more common in boys and those with obesity or endocrine disorders. The primary treatment for SCFE is operative, with the main objectives being to prevent further displacement of the femoral epiphysis and to avoid complications such as osteonecrosis – death of bone tissue due to lack of blood supply – or chondrolysis – loss of cartilage. Surgical stabilization is most often achieved through in situ pinning, which secures the femoral head in place while minimizing the risk of additional slippage. Healing in SCFE is usually determined by …. Long-term outcomes are assessed by evaluating the functionality of the hip joint and the preservation of joint space, with a focus on preventing early onset arthritis or other degenerative joint diseases. Early diagnosis and timely intervention are crucial to optimizing outcomes and reducing the likelihood of long-term complications.

**DDH** encompasses a spectrum of hip conditions ranging from mild instability to complete dislocation of the hip joint. DDH is a common condition in newborns, with an estimated incidence of approximately 10 per 1,000 live births in the UK and US. The incidence varies significantly across different racial and ethnic groups, suggesting genetic and environmental influences. DDH typically occurs when the acetabulum, the socket portion of the hip joint, is shallow or underdeveloped, leading to inadequate coverage of the femoral head. This can result in varying degrees of hip instability, from mild subluxation to complete dislocation. **Treatment of DDH is focused on creating an optimal environment for the normal development and growth of the femoral head and acetabulum.** In infants diagnosed early, conservative treatment often includes abduction splinting, such as the use of a Pavlik harness, to maintain the femoral head in the acetabulum and promote proper joint formation. For cases identified later in life, or when conservative measures fail, more invasive interventions such as closed or open reductions may be necessary to achieve joint stability. Healing in SCFE is usually determined by … .**Long-term outcomes of DDH are heavily influenced by the timing and effectiveness of treatment.** Early detection and appropriate intervention are critical in minimizing the risk of long-term complications such as hip dysplasia, osteoarthritis, and the need for hip replacement surgery in adulthood.

Given the burden these conditions place on children and their families, understanding the optimal management strategies, particularly regarding the timing of return to PA, is critical. **Current guidelines, such as Canada's 24-Hour Movement Guidelines for physical activity in children aged 5-17 years, recommend at least 60 minutes of daily moderate vigorous PA (MVPA). These guidelines are well-founded, with ample evidence supporting their role in preventing chronic illnesses such as cardiovascular disease, type-2 diabetes, and in reducing all-cause mortality. Moreover, physical fitness is associated with decreased risks of depression, anxiety, and ADHD . Considering most** Canadian and global children and youth fail to meet the recommended daily MVPA, it is likely those who have recovered from hip pathologies are at an even greater risk of not achieving these guidelines.

Once patients are considered "healed," surgeons typically lift any PA restrictions imposed during the active phases of their conditions**. The challenge lies in the significant variability in recommendations for resuming MCPA and PA in** children and youth post-recovery**, as little literature is available on the optimal type, dose, and intensity of exercise post-treatment. This inconsistency is further compounded by differing opinions among orthopedic surgeons, some of whom express concerns that physical activity may compromise the hip joint and lead to osteoarthritis. Together, these factors underscore** the urgent need to thoroughly examine the PA patterns of those who have recovered from conditions such as LCPD, SCFE, and DDH to better inform clinical recommendations.

This scoping review aims to consolidate and summarize existing literature on returning to PA after treatment for pediatric hip conditions, identifying gaps in research and providing guidance on best practices. Specifically, the review will explore the criteria used to determine when a patient is considered "healed," the types, intensities, and frequencies of physical activities recommended post-healing, the long-term outcomes of returning to PA, and the variations in recommendations among orthopedic surgeons and practices.

A preliminary search of PROSPERO, MEDLINE, the Cochrane Database of Systematic Reviews, and *JBI Evidence Synthesis* was conducted and no current or in-progress scoping reviews or systematic reviews on the topic were identified.