Implementation of Proprioceptive Neuromuscular Facilitation post mesenchymal stem cell procedure secondary to Legg-Calve-Perthes disease: A Case Report
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BACKGROUND:
Legg-Calve-Perthes is a common pediatric disease that is characterized by osteonecrosis of the femoral head.1 Causing in changes to the femoral head, and resulting in pain and limitations in function.

METHODS:

RESULTS:

Outcome Measures | Pre | Post
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Pediatric QOL | 42% Disability | 37% Disability
10 meter walk | 8.5 seconds (1.18m/s) | 7.2 seconds (1.39m/s) ± 
| Right | Left | Right | Left
Romberg- eyes open | 30sec | 30sec | 30sec | 30sec
Romberg- eyes closed | 7sec | 26sec | 30sec | 30sec
Sharpened Romberg-eyes open | 22sec | 30sec | 30sec | 30sec
Sharpened Romberg-eyes closed | 7sec | 20sec | 26sec | 30sec
Single leg stance (stable surface) | 28sec | 30sec | 30sec | 30sec
Single leg stance (unstable surface) | 5sec | 18sec | 30sec | 30sec
Single leg single hop | 4 in | 10 in | 15 in + | 26 in +

PRE

POST

Manual Strength Testing (out of 5)

| Manual Strength Testing (out of 5) | Right | Left
--- | --- | ---
Hip ABD | 4- | 4-
Hip Ext | 3+ | 3+
Hip ER | 4- | 4-
Hip IR | 4- | 4-

Clinical Relevance
The purpose of this case report is to determine if the PNF rolling technique can improve strength, balance, range of motion, lower extremity power, and gait speed in a male pediatric patient with Legg-Calve-Perthes disease post femoral core decompression with mesenchymal stem cell (MSC) injection.

CONCLUSION:
PNF rolling is a low-level treatment, but still requires proper timing and stabilization to coordinate both extremities and the trunk to “reset” the body and prepare it for higher-level functional movements.²

CLINICAL RELEVANCE
The addition of PNF rolling to traditional physical therapy promoted basic proprioception, core engagement, and body awareness which is necessary to maintain strength and ROM gains. Once the patient was able to coordinate the extremities and the trunk, he reported less pain and ambulated with minimal compensations.