

Immediate Functional Progression Program for Adolescents with Active Spondylolysis

Immediate Functional Progression Program (IFPP)

Athletes with an active spondylolysis randomized into the IFPP group will be referred to physical therapy (PT) immediately and begin as soon as possible (<1 week from diagnosis) two times per week. Athletes will not use a soft or rigid lumbar brace at any time in the IFPP. Athletes will follow up with their physician every four weeks until discharge and cannot return to their sport before their first physician follow-up visit at four weeks. Among adolescents, there is wide variability in size and strength in the athletes, as well as the specific demands of the sport. The IFPP serves as a guideline for the intervention types performed at each stage instead of a strict exercise protocol. These guidelines allow for tailoring exercises to the athlete's symptoms, sport, and participation level.

Phase I ([Video Explanation of Phase I](#)) ([Video Sample Exercises Phase I](#)) ([Criteria Testing Phase I](#))

As the athlete has a healing bone stress injury, Phase I of the program is performed in a static and neutral lumbar position, allowing for muscle activation and strengthening while avoiding undue stress on the injured pars interarticularis. Additional interventions focus on symptom relief as well as strengthening and mobility of the hips and shoulders. Athletes progress to Phase II when they meet the criteria to pass Phase I (see chart below). The athlete is assessed at each session to determine if they meet the requirements to begin the next step of the functional progression program.

Phase II ([Video Explanation of Phase II](#)) ([Video Sample Exercises Phase II](#)) ([Criteria Testing Phase II](#))

As the athlete's symptoms improve and the athlete progresses into Phase II, functional exercises are performed throughout all lumbar motions. In Phase II, exercises are performed in all lumbar movements, with extension and rotation motions and exercise promoted, not avoided. Although repetitive forceful extension and rotation are thought to be the injury mechanism, and end-range extension stresses the pars interarticularis, these motions are functional and necessary in most sports. Athletes will perform a gradual progression into extension, beginning with flexion-neutral to work lumbar extensors, partial lumbar extension ~0-50% of ROM, and finally, full lumbar extension (100% of ROM). Once the athlete meets the criteria of Phase II, they progress into the final phase of the IFPP for return-to-sport activity.

Phase III ([Video Explanation of Phase III](#)) ([Video Sample Exercises Phase III](#)) ([Criteria Testing Phase III](#))

Phase III's primary goal is to reintegrate the athlete back into their sport activity. As the athletes' progress through the third phase and meet the return-to-sport criteria, they will be cleared to return to sport by the treating physical therapist. Athletes will not be released to return to sport before their first physician follow-up visit at four weeks. The athlete will be required to perform sport-specific exercises in therapy and gradually return to their sport activity. Once the athlete meets all the return-to-sport criteria, they will be discharged from PT and cleared to return-to-sports activity.

Return-to-Sport Criteria: The athlete must meet all below criteria to be cleared to return to sport. Athletes will not be told the return-to-sport criteria as this may encourage athletes to underreport pain to be cleared sooner.

1. Pain-free repetitive motion to end-range in all cardinal lumbar directions.
2. Completion of two weeks of return-to-sport activity in physical therapy without pain.
3. 100% on the Youth Back Activity Questionnaire



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Phase I Immediate Functional Progression Program

<ul style="list-style-type: none">• Core strengthening in neutral spine	Criteria to begin Phase II Good core stability in neutral spine (clinician judgement) Pain free repeated extension (x10 reps) Pain free repeated flexion (x10 reps)
<ul style="list-style-type: none">• Treat directional preference if identified	
<ul style="list-style-type: none">• Hip strengthening	
<ul style="list-style-type: none">• Peri-scapular strengthening	
<ul style="list-style-type: none">• Flexibility exercises	
<ul style="list-style-type: none">• Manual Therapy as needed	
<ul style="list-style-type: none">• Modalities for pain PRN (use sparingly)	

Phase II Immediate Functional Progression Program

<ul style="list-style-type: none">• Core strengthening in functional range	Criteria to begin Phase III Able to run full speed and extend lumbar spine without limitations Able to sit and able to flex at lumbar spine without limitations Able to jump without pain Pain free for two consecutive visits during extension, rotation, and flexion exercises) Attended > 6 physical therapy visits
<ul style="list-style-type: none">• Hip and peri-scapular strengthening	
<ul style="list-style-type: none">• Flexibility exercises	
<ul style="list-style-type: none">• Manual Therapy (use sparingly)	
<ul style="list-style-type: none">• Jogging/Running	
<ul style="list-style-type: none">• Jumping	

Phase III Immediate Functional Progression Program - Return to Sport

<ul style="list-style-type: none">• Return to sport activity with focus on functional return to all aspect of sport.	Return to sport criteria Pain free at end range of all lumbar motions Completed 2 weeks of return to sport activity in physical therapy without pain. 100% on the Youth Back Activity Questionnaire

Questions about this treatment program?
Contact: Mitchell Selhorst, PT Mitchell.Selhorst@Nationwidechildrens.org



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