DR. KAISEN YAO, MD

ORTHOPEDIC SPORTS MEDICINE SURGEON

Physical Therapy Protocol

Tibial Stress Fracture (Nonoperative)

Northwell Health • Department of Orthopedic Surgery & Sports Medicine • Dr. Kaisen Yao, MD

Patient Name	Date of Diagnosis	Prescribing Surgeon
		Dr. Kaisen Yao, MD

General Guidelines & Precautions

- Non-weight bearing with crutches for 3 to 6 weeks, with complete rest from running, jumping, and impact activity.
- Once the leg is pain-free after the non-weight-bearing period, begin a staged progression: 25% partial weight bearing, then 50%, then full weight bearing as tolerated, advancing one level every 2 weeks.
- Any return of pain at the fracture site means dropping back to the last pain-free level for 1 to 2 weeks before advancing again.
- No jogging or running until 3 months from diagnosis, then wean into a gradual walk-jog progression.
- Maintain conditioning with non-impact cross-training throughout, and address training load, footwear, and bone health along the way.

PHASE I
Protected Non-Weight Bearing

TIMEFRAME
WEEKS 0–6

Goals:
Unload the tibia to allow bone healing, resolve pain, and maintain overall conditioning.

Precautions:
Strict non-weight bearing with crutches for 3 to 6 weeks. No running, jumping, or impact, and no activity that reproduces pain at the fracture site.

Interventions:
Non-weight-bearing crutch gait training including stairs; hip, knee, and ankle range of motion; non-impact core and hip strengthening; upper body conditioning.

Criteria to Progress:
A minimum of 3 weeks non-weight bearing, no pain at the fracture site at rest or with daily activity, and clearance from Dr. Yao to begin loading.

PHASE II

Progressive Weight Bearing

TIMEFRAME

WEEKS 6–12

Goals:
Restore a normal, pain-free gait through a staged return to full weight bearing.

Interventions:
Advance to 25% partial weight bearing, then 50%, then full weight bearing as tolerated, holding each level for 2 weeks; gait training to eliminate limp; stationary bike, pool, and elliptical as tolerated; progressive hip, calf, and quadriceps strengthening; addition of a bone stimulator device on a case-by-case basis.

Precautions:
Advance only while pain-free. Pain at the fracture site with a new level means returning to the previous level for 1 to 2 weeks and notifying Dr. Yao's office. No impact activity in this phase.

Criteria to Progress:
Full weight bearing with a normal, pain-free gait, no tenderness over the fracture site, and no pain with single-leg stance or heel raises.

PHASE III

Return to Running

TIMEFRAME

MONTHS 3–4

Goals:
Reintroduce impact loading through a graded walk-jog progression.

Precautions:
No jogging before 3 months. Run on level, forgiving surfaces on alternating days only, and stop the session for any pain at the fracture site.

Interventions:
Begin walk-jog intervals every other day, progressing jogging duration before speed or distance and increasing weekly running volume by no more than 10 percent; low-impact cross-training on off days; continued hip, calf, and single-leg strengthening; low-level plyometrics as tolerated; continued use of a bone stimulator device on a case-by-case basis.

Criteria to Progress:
Twenty to thirty minutes of continuous pain-free jogging, symmetrical single-leg strength and hop tolerance, and no pain the day after running.

PHASE IV

Return to Sport

TIMEFRAME

MONTHS 4–6+

Goals:
Return to full-speed running, cutting, and sport.

Interventions:
Progressive speed work, hills, plyometrics, agility and cutting drills, and sport-specific retraining built on a gradual weekly load progression.

Return to Work/Sport:
Full return requires a completed pain-free running progression, symmetrical strength and hop testing, and clearance from Dr. Yao. Training volume, footwear, and bone health should be reviewed before resuming a full training load.

Discharge Criteria:
Pain-free at the fracture site with full training, symmetrical strength and balance, and an established maintenance and load-management program.

This protocol is a general guideline. Because healing timelines for stress fractures depend on fracture location, symptom response, and individual healing, progression must be individualized by the treating physical therapist in coordination with Dr. Yao's office and confirmed against follow-up imaging.