# CHRONIC ANKLE INSTABILITY CLINICAL PRACTICE GUIDELINE

## Chronic Ankle Instability (CAI) Overview

### Definition

CAI is characterized by the ankle's tendency to "give way" during normal activities, even without true mechanical instability.

### Development

- May develop after a single event or as an ongoing process.
- Leads to functional ankle instability and the subjective feeling of instability.

### Prevalence

Up to 40% of acute ankle sprains can develop into CAI.

### Development

Termed CAI if instability persists for over 6 months.

| Hypotheses and Contributing Factors | |
|---|---|
| **Loss of Mechanoreceptors** | CAI may develop due to the loss of mechanoreceptors in the ankle joint |
| **Clinical Laxity** | • A confounding factor in CAI, not present in all patients with perceived instability.<br>• Less than 50% of CAI patients show true clinical laxity, while 20% of copers (individuals who cope with instability) show clinical laxity |
| **Combination of Factors** | CAI likely results from poor proprioception, impaired strength, and patient perception. |

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## Classification of CAI

1. **Mechanical Instability:** Loss of normal anatomic restraint to lateral ankle stability.
2. **Isokinetic Testing:** No earlier than 12 weeks post-surgery.

## Proprioception and Management

**1. Key Management Strategy:** Proprioception is crucial in managing CAI.

**2. Performance:** Patients with CAI show reduced performance on proprioceptive and functional tests, including:

- Y-Balance test
- Single-leg balance test
- Hop testing

**3. Training Strategies:** Proprioceptive and neuromuscular control training improve

## Disclaimer

- Progression is time and criterion-based, depending on soft tissue healing, patient demographics, and clinician evaluation.
- For questions, contact Dr. Sujan Gogu's clinic

## Phase I- Acute Phase of Rehab and Return to Activity

| Phase | Category | Details |
|---|---|---|
| **Phase I: Acute Phase of Rehab** | **Neuromuscular Control/Balance Training** | • Optimize active stability through proprioceptive and balance exercises.<br>• Includes single-leg stance, squatting, heel raises, lunges, and dynamic movements |

| Phase | Category | Details |
|---|---|---|
| | | • Uses tools like wobble boards, trampolines, and destabilization devices. |
| | **Strengthening Exercises** | • Improve ankle stability and strength<br>• Includes band strengthening, ankle strengthening in different planes, and foot intrinsic exercises<br>• Progresses from seated to functional movements. |
| | **Manual Therapy** | • Improve ankle dorsiflexion and joint mobility<br>• Techniques may include talocrural and subtalar joint mobilizations, and soft tissue mobilization. |
| | **Bracing/Taping** | • Use taping or bracing for ankle stability<br>• Options include low dye taping, ankle taping, K-tape, and figure 8 braces.<br>• Avoid continuous use to maintain natural muscle recruitment. |
| | **Discharge Criteria / Criteria to Progress** | • Achieve 90% range of motion compared to the uninvolved ankle<br>• Functional improvements measured by outcome tools (e.g., FAAM scores) and reduced perceived instability. |

## Phase I- Return to Sport Considerations

| Category | Details |
|---|---|
| **Risk Factors** | |
| **Modifiable (Strong)** | • Indoor and court sports |

| Category | Details |
|---|---|
| | • High-intensity training > 3 days/week<br>• Poor neuromuscular control (impaired proprioception) |
| **Non-modifiable (Strong)** | • Female<br>• Younger age<br>• Higher BMI and height<br>• Hindfoot and midfoot alignment (hindfoot varus, midfoot cavus) |
| **Examination** | |
| **Foot Alignment** | • Standing foot alignment<br>• Neurovascular exam (Repeated sprains may propagate peroneal neuropathy) |
| **Systemic Hypermobility** | • Beighton Scale for Systemic Hypermobility |
| **ROM** | • Weight Bearing DF lunge |
| **Strength** | • Dynamometry |
| **Mechanical Instability** | • Anterior Drawer Test<br>• Talar Tilt |
| **Functional Instability** | • Y-Balance<br>• Foot Lift Test |
| **Functional Hop Testing** | • Hop Testing |
| **Differential Diagnosis** | • Chronic Ankle Instability<br>• Peroneal Neuropathy<br>• Peroneal Tendinopathy |
| **Manual Therapy** | • Talocrural joint mobilizations<br>• Hindfoot, midfoot mobilizations<br>• Soft tissue mobilization PRN |
| **Corrective Interventions** | • ROM (emphasis on dorsiflexion)<br>• Ankle strength, foot intrinsic strengthening<br>• Hip/core stability |

| Category | Details |
|---|---|
| | • Balance/proprioception progressions into functional movement training |
| **Outcome Tools and Testing** | • Consider patient-reported outcome measures<br>• FAAM<br>• TSK-11<<br>• Functional Testing<<br>• Balance<br>• Foot Lift Test<br>• Functional Hop Testing |
| **Criteria for Return to Sport/Discharge** | • Subjective Outcome Measure > 90%<br>• DF Lunge > 7.5 cm<br>• Y-Balance > 90% composite<br>• Foot Lift Test < 5 errors<br>• Functional Hop Testing > 90% LSI<br>• Physician clearance (if required) |