



PHYSICAL TESTING  
**PROTOCOL**

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**BRASIL** LACROSSE

# PURPOSE AND GOVERNANCE

The Confederação Brasileira de Lacrosse (CBL) has established this Physical Testing Protocol to ensure a fair, transparent, and evidence-based Olympic selection process for the National Men's and Women's Sixes Teams.

## THIS DOCUMENT SERVES TO:

- Provide standardized testing procedures
- Ensure equal evaluation criteria for all athletes
- Align Olympic selection with international high-performance standards
- Protect competitive integrity and athlete accountability

All testing data submitted for Olympic consideration must comply fully with the procedures outlined herein.



# OLYMPIC SIXES LACROSSE ATHLETE PERFORMANCE BENCHMARKS

Elite athletes preparing for Olympic Sixes competition must consistently demonstrate advanced technical proficiency, tactical intelligence, physical resilience, and execution under international-level tempo. The Sixes format demands versatility, rapid decision-making, and sustained performance in continuous transition environments.

Sixes field players must be complete, two-way athletes capable of impacting the game offensively and defensively without positional specialization limiting versatility.

## OFFENSIVE & TECHNICAL EXECUTION

### **Athletes must demonstrate:**

- Advanced bilateral stick proficiency – ability to pass, receive, and shoot with both hands at full game speed.
- Passing and receiving on the move – maintain rhythm/ control without breaking stride.
- Rapid ball movement and release mechanics – immediate shooting or redistribution upon reception.
- Finishing efficiency under time constraint – ability to receive and release within 1.0–1.5 seconds in scoring areas.
- Shot versatility and placement control – intentional variation of angle, trajectory, timing, and pipe location.
- Ball security under defensive pressure – maintain possession through contact and congestion, including stick protection and awareness of vulnerable stick positioning.
- Finishing through contact and at speed – convert opportunities while absorbing physical pressure or attacking in transition.
- Effective dodging and separation ability – create advantage through change of speed, direction, and deception.
- Purposeful cutting and off-ball movement – execute clean, well-timed cuts and continuously reposition to create passing lanes and destabilize defensive shape.
- Spatial exploitation – recognize and attack seams within compact defensive systems.

## DEFENSIVE IMPACT & POSSESSION VALUE

### **All field players must defend. Athletes must demonstrate:**

- On-ball containment at international pace – disciplined approaches without over-committing.
- Efficient bilateral footwork and recovery speed – maintain leverage and re-engage immediately when beaten.
- Physical balance and contact control – absorb and apply legal pressure without losing positioning.
- Purposeful stick checks – disruptive but controlled, minimizing fouls.

- Slide awareness and seam protection – anticipate breakdowns and defend high-danger interior space.
- Pick defense proficiency – switch or fight through without compromising structure.
- Transition defensive urgency – sprint recovery to neutralize numerical disadvantages.
- Ground ball competitiveness in traffic – convert contested possessions at a high rate.
- Clean outlets and low turnover clearing – initiate transition efficiently following defensive stops.

## TACTICAL INTELLIGENCE (GAME IQ)



### **Athletes must demonstrate:**

- High-level defensive and offensive awareness – read slides, recoveries, matchups, and spacing in real time.
- Recognition of transition moments – identify and exploit unsettled or numbers-up situations immediately.
- Fast, accurate decision-making under constraint – process information and execute at international tempo.
- Understanding of Sixes pace and spacing principles – maintain rhythm without over-handling or stalling possession.
- Clear, proactive communication – organize defensively and signal offensive opportunities under continuous play.

## COMPETITIVE COMPOSURE & CONSISTENCY



### **Athletes must demonstrate:**

- Execution under pressure – technical precision in late-clock, tight-score, and qualification-level environments.
- Emotional discipline – controlled responses to goals, turnovers, officiating and staff decisions.
- Sustained effort at elite tempo – consistent impact across continuous up-and-down Sixes play.

## GOALKEEPER STANDARDS (SIXES-SPECIFIC)

In Sixes, the goalkeeper is both a defensive anchor and primary transition initiator. The position demands elite reaction ability, rapid processing speed, and confident leadership.

## SHOT-STOPPING & CREASE CONTROL

### Goalkeepers must demonstrate:

- Elite reaction speed at close range.
- Efficiency against quick-release shots ( $\leq 1.5$  seconds).
- Ability to sustain performance during high-volume shot sequences.
- Strong pipe-to-pipe movement mechanics.
- Rebound control and recovery positioning.
- Composure in 1v1 and high-percentage interior scenarios.

## TRANSITION INITIATION & DISTRIBUTION

### Goalkeepers must demonstrate:

- Immediate outlet recognition following saves.
- Ability to initiate fast break within 2–3 seconds of possession.
- Accurate long and mid-range distribution.
- Composure and decision-making under ride pressure.
- Recognition of numerical advantage before full defensive recovery.

## TRANSITION INITIATION & DISTRIBUTION

### Goalkeepers must demonstrate:

- Command presence and continuous vocal organization.
- Early identification of slides, picks, and matchup threats.
- Tempo control in critical game moments.
- Short memory following goals conceded.
- Emotional stability and consistency in high-stakes Olympic qualification environments.



# REQUIRED PHYSICAL ASSESSMENTS

All assessments must be conducted under standardized conditions and properly documented. Testing procedures follow internationally accepted sport science standards and are consistent with high-performance evaluation models adopted by elite federations and Olympic development programs.

## COUNTERMOVEMENT JUMP (CMJ)

### Objective

- To assess lower-body explosive power and neuromuscular readiness. The CMJ is widely used to monitor neuromuscular fatigue throughout the competitive season.

### Required Equipment

- Smartphone capable of slow-motion recording (ideally 240 fps)
- Video analysis application (e.g., My Jump Lab or VertVision)
- Tripod or stable support to prevent vibration
- If available, contact mats or force platforms

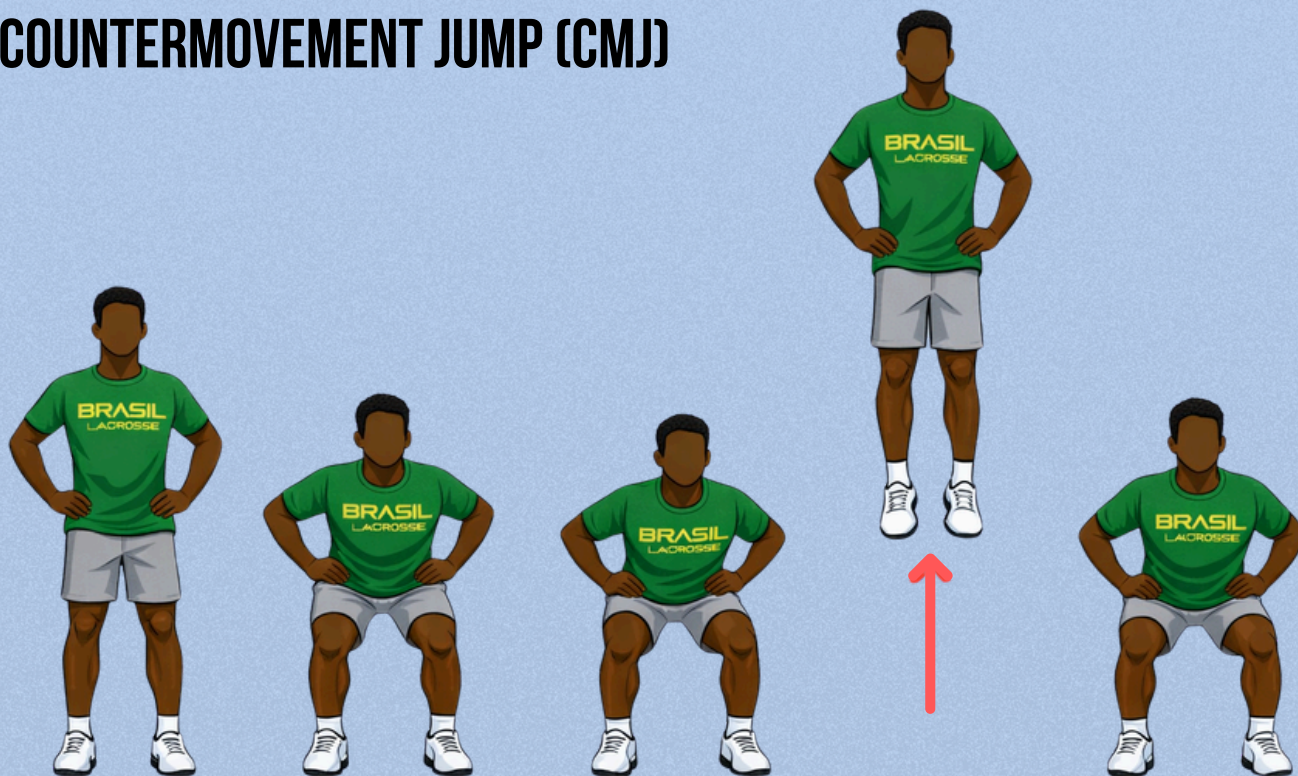
### Protocol (Bosco-based protocol)

- Camera Positioning: The device should be placed on the ground or on a low tripod, approximately 1.5–3 meters from the athlete, focusing on foot contact.
- Warm-Up: 5–10 minutes of general warm-up prior to testing.
- Attempts: Three maximal trials with 60 seconds of rest between attempts. Record either the best result or the mean value.

### Execution

- Starting Position: Athlete upright, feet shoulder-width apart, hands fixed on hips (to isolate lower-body contribution).
- Countermovement: Rapid self-selected descent (typically ~90° knee flexion) immediately followed by explosive vertical extension.
- Flight Phase: Knees must remain extended during flight; excessive knee flexion invalidates the trial.
- Landing: Forefoot contact first, landing in the same position as take-off.

# COUNTERMOVEMENT JUMP (CMJ)



## Analysis

- Identify:
  - Frame of take-off (toes leaving the ground)
  - Frame of initial landing contact

## CMJ - Performance Standards

COUNTERMOVEMENT JUMP (CMJ)	Men	Women
Excellent	>60 cm	>45 cm
Very good	50–60 cm	40–45 cm
Good	45–50 cm	35–39 cm
Acceptable	40–45 cm	30–34 cm

## 10-METER SPRINT (ACCELERATION)

### Objective

- To evaluate explosive acceleration and lower-body power. Unlike longer sprints, the focus is on overcoming inertia rather than reaching maximal velocity.

### Warm-Up

- 10–15 minutes of dynamic warm-up including hip and ankle mobility, followed by 2–3 progressive accelerations.

### Protocol

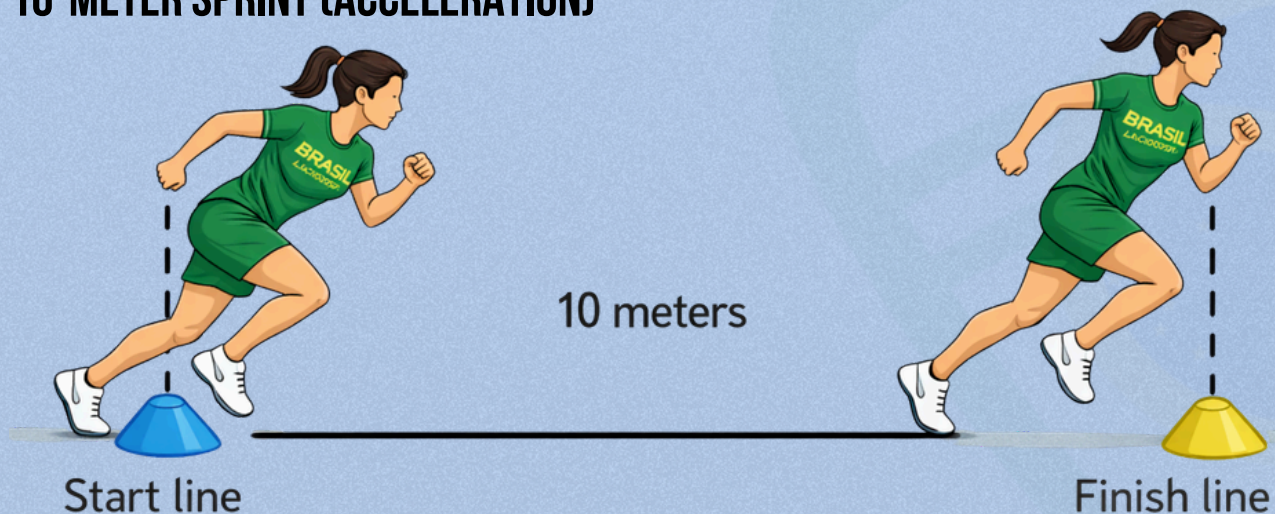
- 3–5 maximal attempts
- Full recovery between trials (minimum 2–3 minutes)
- Best time recorded

### Execution

- Athlete positioned behind the starting line.
- Start Position: Standing start with dominant foot forward, trunk inclined approximately 45°, knees flexed.
- Timing triggered by photocell (preferred) or by auditory signal.
- Athletes must sprint beyond 10 meters (recommended 12–15 m) to avoid premature deceleration.

**Important Note:** *If using manual timing, add approximately 0.20 seconds to compensate for evaluator reaction time.*

## 10-METER SPRINT (ACCELERATION)



## SPRINT 10m - Performance Standards

SPRINT 10m (Acceleration)	Men	Women
Excellent	<1.65 s	<1.80 s
Very good	1.65–1.72 s	1.80–1.88 s
Good	1.73–1.80 s	1.89–1.95 s
Acceptable	1.81–1.90 s	1.96–2.05 s

## PRO-AGILITY SHUTTLE (5–10–5)

### Objective

- To measure change-of-direction speed (COD), lateral agility, and body control under rapid directional demands.

### Setup

- Total distance: 10 yards (9.14 m)
- Center line (Point A)
- Two side lines at 5 yards (4.57 m) each (Points B and C)

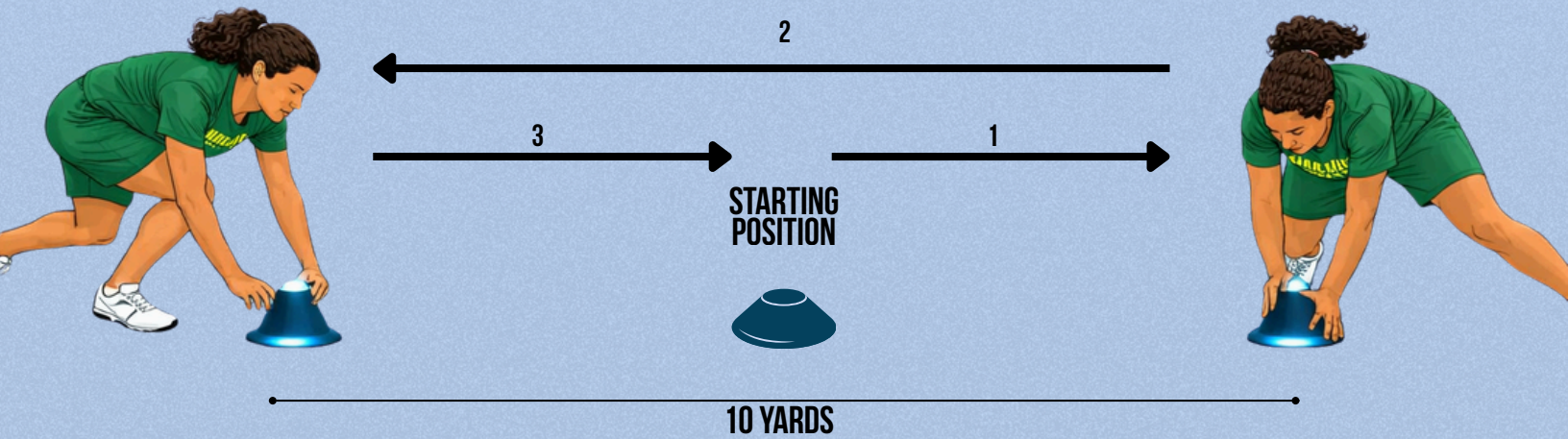
### Attempts

- 2–3 trials per direction
- Athletes must start to both left and right
- Minimum 2 minutes rest between efforts

### Execution

- Start in a three-point stance at center line
- Sprint 5 yards to one side and touch line
- Pivot 180° and sprint 10 yards to opposite line
- Pivot again and sprint 5 yards through center
- **Movement must be controlled, technically efficient, and under full effort.**

## PRO-AGILITY SHUTTLE (5–10–5)



### PRO-AGILITY SHUTTLE - Performance Standards

PRO-AGILITY (5-10-5)	Men	Women
<b>Excellent</b>	<4.30 s	<4.70 s
<b>Very good</b>	4.30–4.50 s	4.70–4.90 s
<b>Good</b>	4.51–4.70 s	4.91–5.10 s
<b>Acceptable</b>	4.71–5.00 s	5.11–5.40 s

## YO-YO INTERMITTENT RECOVERY TEST LEVEL 1 (YO-YO IR1)

### Objective

- To evaluate the athlete's ability to perform repeated high-intensity intermittent efforts and recover efficiently during brief active pauses.

## Protocol

- 20-meter shuttle runs (40 m per cycle)
- 10 seconds active recovery (5 m cone jog/walk)
- Initial speed: 10 km/h
- Speed increases progressively according to standardized audio cues
- Example: [https://www.youtube.com/watch?v=uz\\_csfzIBtY](https://www.youtube.com/watch?v=uz_csfzIBtY)

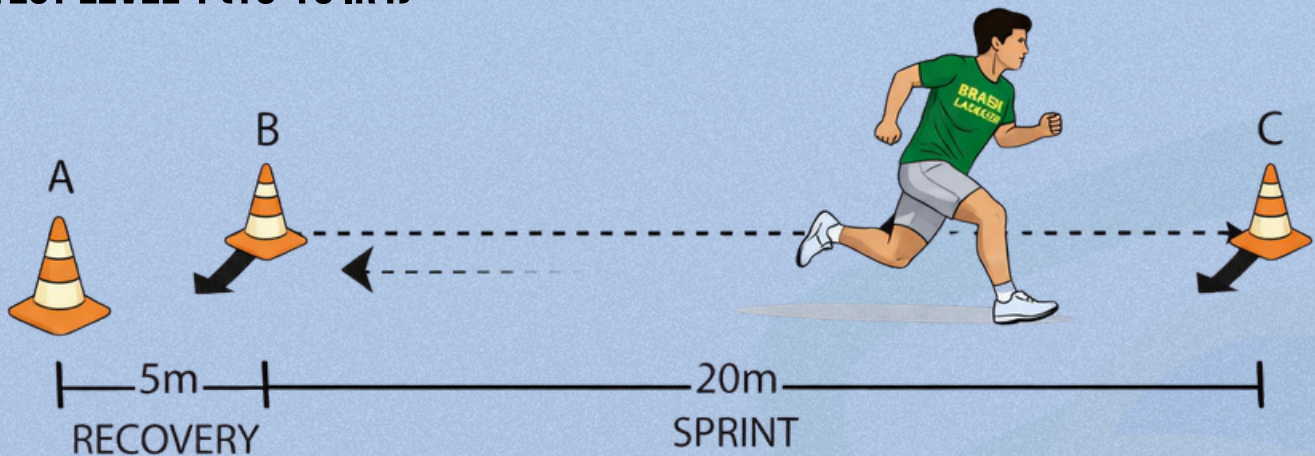
## Termination

- Test ends when the athlete fails to reach the 20 m line before the beep on two consecutive occasions.
- The main result is the total distance covered in meters, which reflects the athlete's intermittent endurance capacity.

## Estimated VO<sub>2</sub>max

- Formula validated by Jens Bangsbo allows the maximum oxygen consumption (VO<sub>2</sub>max) to be estimated based on distance:
  - Estimated VO<sub>2</sub>max Formula (Validated by Bangsbo):
- VO<sub>2</sub>max (ml·kg<sup>-1</sup>·min<sup>-1</sup>) = distance (m) × 0.0084 + 36.4

## YO-YO INTERMITTENT RECOVERY TEST LEVEL 1 (YO-YO IR1)



## YO-YO INTERMITTENT RECOVERY - Performance Standards

YO-YO IR	Men	Women
Excellent	>2.200 m	>1.600 m
Very good	2000–2200 m	1400–1600 m
Good	1800–1990 m	1200–1390 m
Acceptable	1500–1790 m	900–1190 m

# ISOMETRIC MID-THIGH PULL

## Objective

- To assess maximal isometric force production of the lower limbs in a standardized pulling position. The IMTP is widely used to monitor maximal strength capacity in athletes.

## Equipment

- Portable isometric dynamometer
- Straight bar attachment
- Chain fixed to a weight plate anchored to the floor
- Non-slip surface
- Measuring tape or goniometer for position standardization

## Protocol

- Athlete stands with feet approximately hip-width apart
- Bar positioned at mid-thigh level
- Body position standardized across sessions
- Knee and hip angles should be kept consistent, commonly around 125 to 145°
- Perform 1 to 2 familiarization trials
- Then perform 3 maximal trials of 3 to 5 seconds
- Rest 2 to 3 minutes between trials
- Athlete is instructed to pull “as hard and as fast as possible”

## Termination

- Test ends after the planned pull duration
- Repeat the trial if body position changes substantially or the setup moves

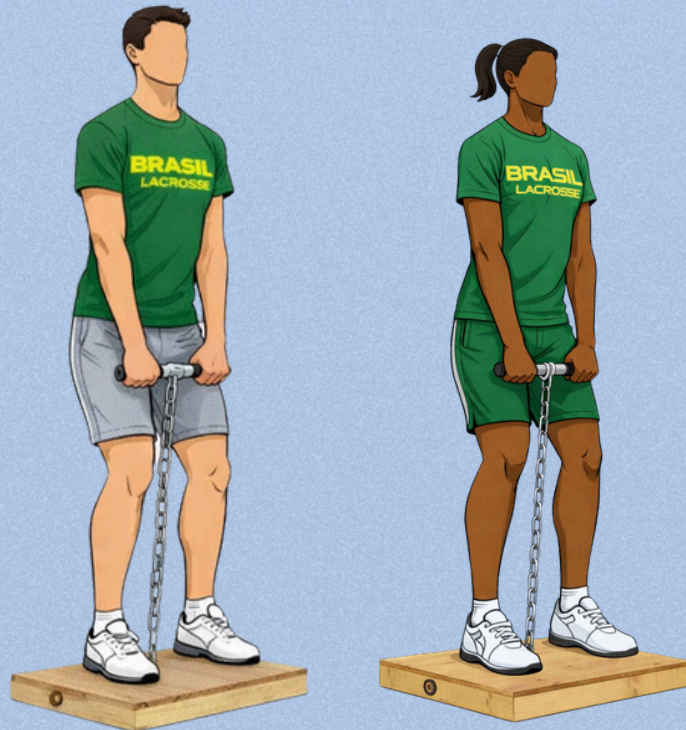
## Main Outcome

- Peak Force (N)
- Relative Peak Force (N/kg)
- **Peak force is the most reliable and practical variable for routine monitoring.**

## Interpretation

- Higher values indicate greater maximal isometric force capacity. Results should be compared mainly within the same athlete over time, since universal normative standards are limited and influenced by sport, sex, body mass, and testing setup.

## ISOMETRIC MID-THIGH PULL



## QUESTIONNAIRES

### Objective

- To collect important baseline information during pre-season or physical assessment using a single Google Forms questionnaire. The form will combine the Athlete Psychological Strain Questionnaire (APSQ) and the OSTRC-H Questionnaire on Health Problems to screen relevant psychological strain and recent health complaints that may affect athlete readiness, monitoring, and follow-up. The APSQ is used as an initial sport-specific mental health screening tool within the IOC Sport Mental Health Assessment framework, while the OSTRC-H is designed to capture injuries and illnesses beyond simple time-loss definitions.

### Protocol

- Administered as one integrated Google Forms questionnaire
- Completed during pre-season, physical testing, or other baseline evaluation sessions
- Intended to gather relevant background information before training and competition exposure
- Results should support clinical interpretation and athlete monitoring, not be used as a stand-alone diagnosis.

## Main Use

- APSQ: identifies signs of athlete-specific psychological strain and helps flag athletes who may require further follow-up.
- OSTRC-H: identifies current or recent health problems, including injuries and illnesses, even when the athlete has not missed training or competition.

## Interpretation

- Higher concern on the APSQ or greater reported burden on the OSTRC-H should prompt closer review by the performance and medical staff. These questionnaires are best used as screening and monitoring tools within a broader athlete health system.

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