Summary on Balance, Flow, and Core Strength

Take-Home Points

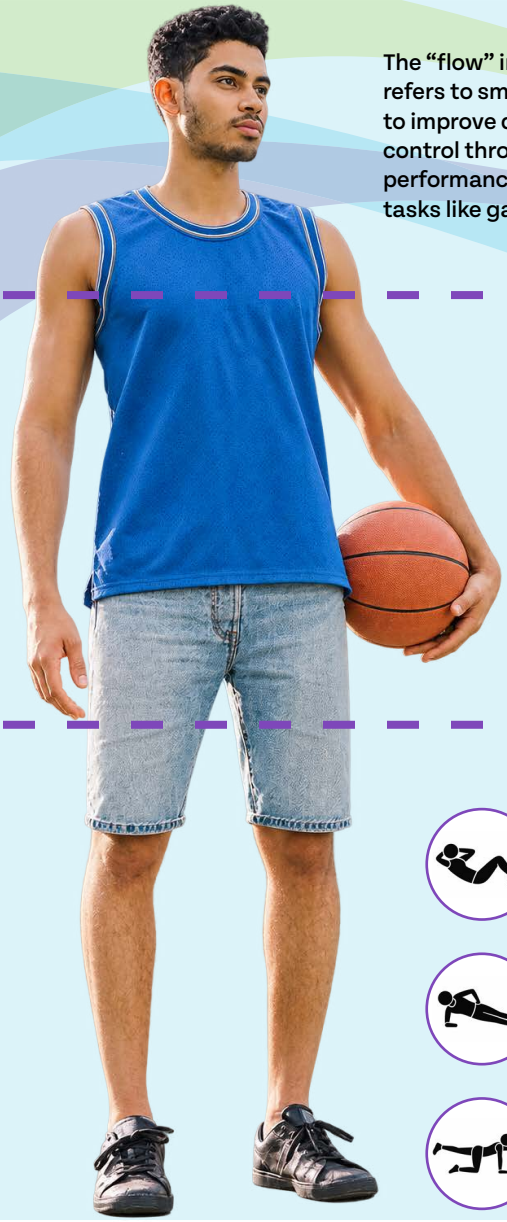
- *Core training improves balance and functional movement, especially when programs last at least 4–6 weeks and include repeated, progressive trunk-focused work.*
- *When sport performance improvement is the desired outcome, the core training program should be performed with additional functional exercise involving plyometrics, upper and/or lower extremity exercises.*

Athletic population

- **Core training improved balance** (a large pooled effect size) and athletic performance, including jumping, throwing, and hitting.
- **Core training types:** core training combined with plyometrics, lower extremity, and/or upper extremity exercises (CCT) is better for balance, throwing/hitting; Isolated core training (ICT) is better for jumping, but with a minimal practical difference in performance from CCT.
- **Frequency and duration:** generally, 2 times or more a week for 6 weeks or more at 30+ minutes per session appears to be better for balance, throwing/hitting outcome improvement

Older, non-athletic individuals

- **In older individuals,** core training improved balance tasks including reaching and walking
- **Core training types:** more core muscle-specific training improved gait outcomes
- **Training frequency and duration:** sessions 45 minutes or longer lead to better outcomes and meaningful improvements in functional tasks



What is "flow"?

The "flow" in the context of core stabilization and balance refers to smooth, coordinated movement and has been shown to improve dynamic balance and mobility. Enhanced movement control through core stabilization is tied to improvements in sport performance variables among athletes and in functional movement tasks like gait and time up-and-go among older populations.



What is the "core"?

The "core" is the lumbopelvic complex, which includes the diaphragm, abdominal muscles (including the obliques), paraspinal and gluteal muscles, the pelvic floor, and the pelvic girdle. Active engagement of these muscular structures provides a "corset-like stabilization effect".

Which Exercises?

Curl-up

Side bridge

Bird-dog



Plank
(forward and side; elbows on a wall for adaptive variety)



Single-leg stance
(with and without trunk twist)



Dead bug

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