Why Annual Baseline Testing Matters

Healthy Roster recommends annual baseline testing as well as re-baselining after an injury or event.
There are two key reasons for this recommendation.

01. Athletes Change Over Time

Cognitive and balance performances change throughout life, following this pattern:

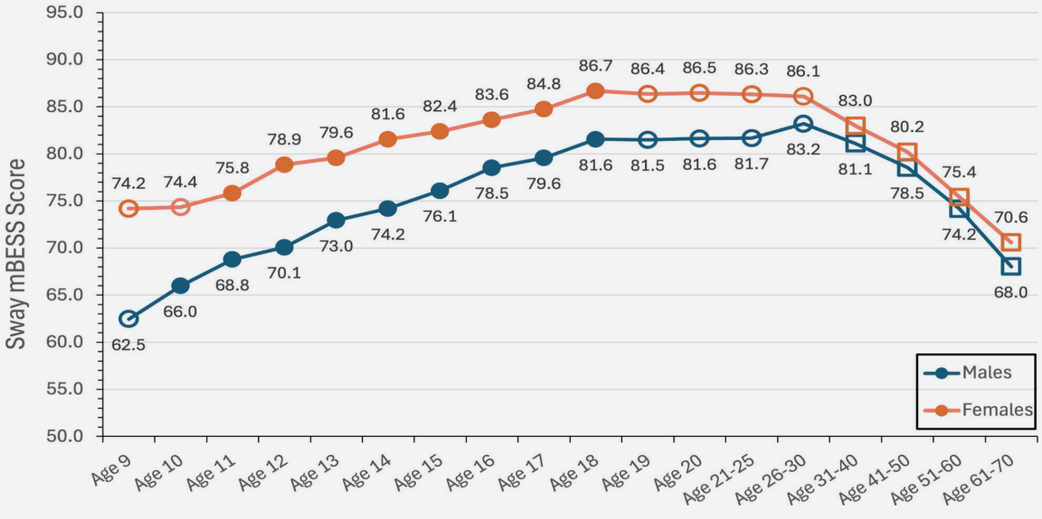
- Improvements during childhood and adolescence
- Stabilization in early adulthood
- Declines with aging

This pattern is seen in all five modules of the Sway Sports+ test battery. (Wilkins, 2020)

Because performance naturally evolves with age, an athlete's baseline from even a year ago may no longer accurately reflect their current ability. Annual baseline testing ensures that clinicians compare post-injury results against a current reference point.

Example Normative Data - Sway mBESS Module

The Sway mBESS module is a measure of postural stability, with scores ranging from 0 to 100, with higher scores indicating better balance. The graph below illustrates how normative scores vary by age and sex.



Symbol Legend

Closed Symbol: ● ■
Significant difference in scores from the previous year.

Open Symbol: ○ □
No significant difference in scores from the previous year

Circle: ● ○
Significant difference in scores between sexes at the same age

Square: ■ □
No significant difference in scores between sexes at the same age

02. Baseline Testing Detects More Injuries

Every athlete performs differently.

For athletes who perform above average at baseline, meaningful declines post-concussion may be missed if only post-injury scores are examined. Baseline testing allows clinicians to compare athletes to themselves, improving sensitivity to post-injury changes and enabling more personalized concussion care.
(Schatz & Chikar, in review)

Example High Performer Data - Sway Reaction Time Module



Baseline: 185 ms (~ 90th percentile)
Post-Injury: 234 ms (~50th percentile)
Decline: 49 ms

Change from baseline:
A 26 ms difference or greater is considered abnormal.

Post-injury score alone:
A score worse than 252 ms is considered abnormal.

In this example, the athlete shows a significant decline from baseline although the post-injury score alone does not appear abnormal. Specific thresholds vary by test, age, and sex.

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