

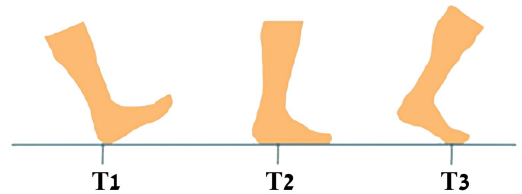


Running Dynamics Library

Ground Contact Time

What is Ground Contact Time (GCT)?

GCT is the time spent while foot is in contact with the ground (footstrike, stance to toe-off) for each stride while running.



$$GCT = T3 - T1$$

What is optimal GCT?

200-300ms is an optimal GCT that most amateur marathoners can target for better running performance and economy

Why is GCT important?

GCT is the key factor that influences running economy (RE). RE indicates how efficient we are at expending energy when running. Lesser GCT, better RE.

How GCT is traditionally measured

The traditional way is by wearing a shoe pod, or chest strap.



With Nohayo's new algorithm a GCT measurement can now be done using only a watch, ring, or earbuds that has 3D accelerometer. No shoe pod or chest strap is needed!

Nohayo GCT algorithm performance

The algorithm is implemented in embedded C and can run on wearables like a smartwatch, ring, and earbuds that has a 3D accelerometer and a DSP unit.

The algorithm performance was compared to Garmin shoe pod, and shows accuracy of > 95%. The algorithm was tested on 350 running sessions, both outdoor and on a treadmill.

