

Performance Tracking

What is it?

Performance tracking involves the aggregation of one's physiological metrics in various settings during exercise, activities-of-daily living, and sleep. UC Fit's Digital Health Network (DHN) web



portal, combined with a wearable physiological status monitor (PSM) chest strap and smart phone technology, allows the collection of these metrics in real-world environments while actually performing the activities of interest.

Why is it important?

Performance tracking provides a look “inside” the body during rest and physical activity. The chest strap measurements are low-hassle, non-invasive, and include heart rate, EKG, breathing rate, and tri-axial accelerometry – all without probes and wires connecting you to sophisticated lab equipment. Real-time feedback via a rich visual user interface (smart phone) with further integration on the web (DHN portal) allow for (i) intuitive monitoring/tracking of progress over time, (ii) actionable feedback, (iii) motivation to ensure compliance, and (iv) guidance and mitigation strategies addressing the obstacles that prevent you from maintaining a healthy lifestyle.

How is it assessed?

While donning the wearable PSM, real-time sensor data tracking will graphically display the level of exertion and physiological data on the DHN smartphone app. Subsequently, after uploading the data to the DHN web portal, customizable activity reports are generated that provide meaningful summaries of exercise, activities-of-daily living, and sleep. The physiological metrics include:

1. **Activity:** Type of the activity performed during the session
2. **Start:** Time when a specific activity session was initiated
3. **Duration:** The number of minutes the activity lasted
4. **THRZ:** The number of minutes during the activity spent within a prescribed target heart rate zone
5. **THRZ%:** Percentage of time spent in the THRZ with respect to the total time spent in an activity
6. **RPE:** Rating of Perceived Exertion on a Borg 6-20 scale as inputted by the user at the end of each activity session
7. **Average HR:** Mean heart rate during the activity
8. **ΣA:** Estimated activity intensity from the motion sensor
9. **CVSI-rest and CVSI-85:** Cumulative indices of cardiovascular strain (Cardiovascular Strain Index (CVSI)) based on heart rates above the resting value and above 85% of age-predicted maximal heart rate

What to expect during the assessment:

1. For the duration of this assessment, you will be loaned a UC Fit PSM, chest strap, and smart phone interface.
2. You will be instructed on how to set up, don and doff the wearable PSM, and utilize the DHN portal from your home.
3. An agreement will be arranged between both parties on the length of measurement period and meaningful results contained within your online performance tracking report.