COLLEGE OF EDUCATION
THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

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Research Horizons Day

Validating the Commercially Available Garmin Fenix 5 Wrist-Worn Optical Sensor for Aerobic Capacity

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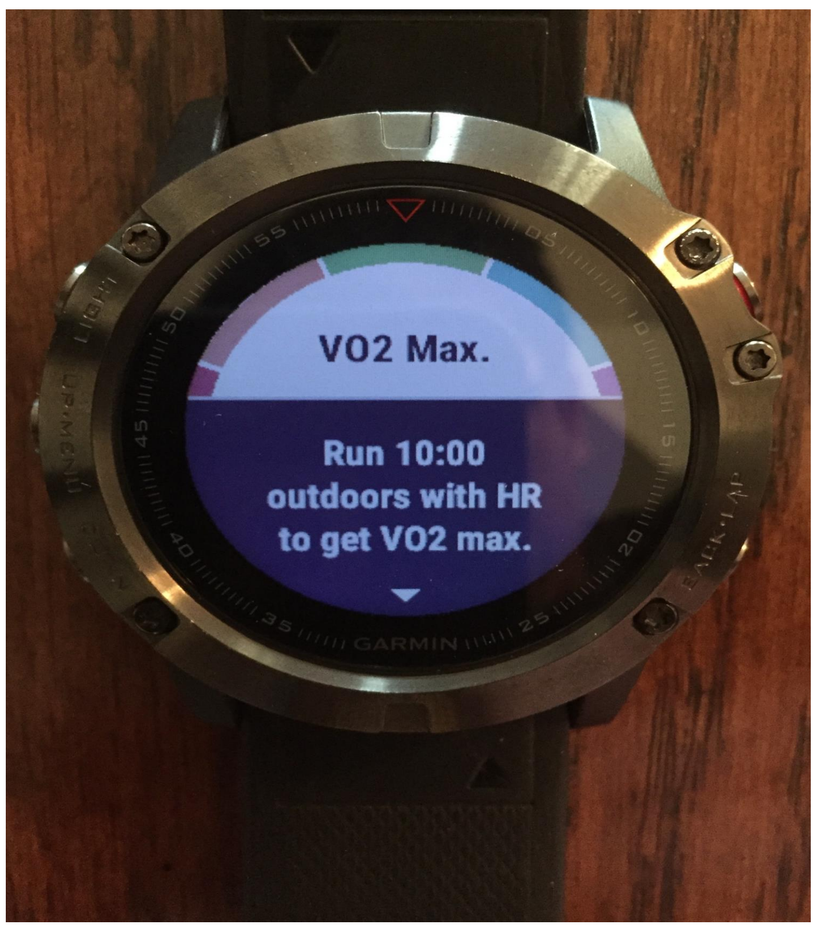
Background

- With an increased interest in personal fitness, wrist-worn activity trackers are becoming more popular. These devices are more affordable and easier to access than traditional methods of tracking components of fitness.

Purpose

- To determine the validity of the Garmin Fenix 5 (GF5) maximal aerobic capacity measurement capabilities against the ParvoMedics TrueOne 2400 metabolic measurement system in adult recreational runners.

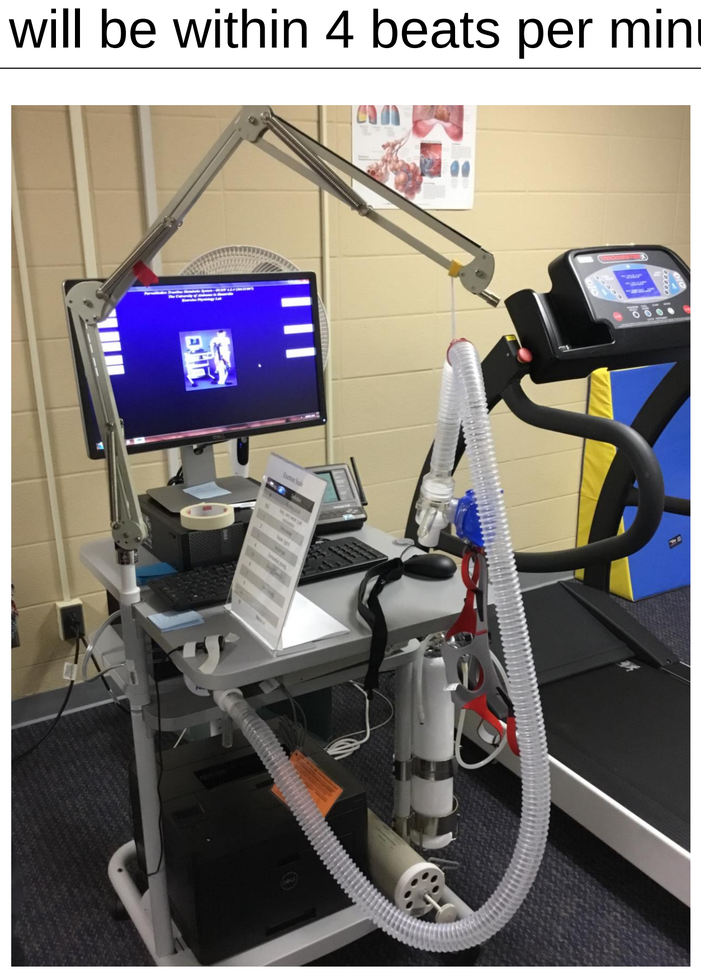


Methods

- Twenty recreational runners
- Recreational Runner = min. 2 hours per week for 12 months
- 18-55 Years of age
- The participants will conduct two separate tests:
  1. Bruce Protocol utilizing the ParvoMedics TrueOne 2400 System
  2. A 10 minute outdoor running protocol while wearing the Garmin Fenix 5.
- The two testing sessions will be separated by 3-7 days.

Anticipated Results

- We anticipate that the GF5 will be within 2.0 mL/kg/min when compared to the PMT system.
- We anticipate that the optical heart rate sensor will be within 4 beats per minute.



Conclusion

- If the GF5 is within the range, this would suggest a cheaper, more easily accessible means of obtaining accurate VO_{2max} measurements.