

CLINICAL EXERCISE PHYSIOLOGY

Example Client VO₂ Analysis

A clinician-reviewed assessment of cardiorespiratory fitness, ventilatory thresholds and individual exercise intensity.

PREPARED FOR

Example Client

ASSESSMENT DATE

01/09/2026

REPORT NUMBER

HSLVO2-EXAMPLE

PREPARED BY

HSL

BEFORE YOU BEGIN

How to use this report

Your results are presented in three layers: what was measured, how it was interpreted, and how it can guide training.

01 · OUTPUT

The measured or calculated result produced from the test and VO_2 Analysis.

02 · INTERPRETATION

Clinical context applied after reviewing test quality, symptoms and the complete physiological response.

03 · APPLICATION

Individual recommendations based on accepted thresholds, goals and practical constraints.

IMPORTANT SAFEGUARD

Automated VT1 and VT2/RCP outputs are decision-support candidates. They are not released until a clinician reviews the physiological evidence and documents a decision.

This report supports exercise-physiology interpretation and does not provide a medical diagnosis. New, severe or unexplained symptoms require appropriate clinical assessment.

ASSESSMENT CONTEXT

Client & test profile

AGE

35

years

HEIGHT

183

cm

WEIGHT

90

kg

BMI

26.9

kg·m⁻²

EXERCISE MODE

Treadmill

PROTOCOL

HSLITP-01

TEST CONFIGURATION

Incremental phase	825s
Recovery captured	195s
Gas-analysis system	Example Analyser
HR measurement	Polar H10

CLINICAL CONTEXT

Relevant medication	None
Symptoms before test	None
Reason for testing	Example assessment
Protocol notes	None of concern

AT A GLANCE

Executive clinical summary

FINDING 01

Strong cardiorespiratory fitness

The example client achieved a $\text{VO}_{2\text{peak}}$ of 44.4 mL/kg/min or 4.00 L/min, demonstrating strong aerobic capacity.

FINDING 02

Strong evidence of maximal effort

Peak heart rate reached 179 bpm, approximately 97% of predicted maximum, alongside a peak RER of 1.40. Although a VO_2 plateau was not demonstrated, the combined evidence strongly supports a near-maximal or maximal effort.

FINDING 03

Well-defined ventilatory thresholds

This will allow for more definable exercise prescription

PRIMARY OPPORTUNITY

Improve the sustainable intensity around VT2 and increase $\text{VO}_{2\text{peak}}$ through targeted threshold and high-intensity aerobic training, while maintaining the aerobic base below VT1.

REPORTING STATUS

READY

SAFETY / LIMITATION

None of concern

INTEGRATED AEROBIC CAPACITY

Cardiorespiratory fitness

44.4

 $\text{mL} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ ABSOLUTE VO_2 PEAK**4.00** $\text{L} \cdot \text{min}^{-1}$

FRIEND CLASSIFICATION

**GOOD/ABOVE
AVERAGE**

AGE/SEX PERCENTILE

50th Percentile

WHAT IT REPRESENTS

$\text{VO}_{2\text{peak}}$ is the highest valid smoothed oxygen uptake achieved during the incremental phase. It reflects the combined ability to take in, transport and use oxygen.

ABSOLUTE VS RELATIVE

Absolute VO_2 describes total aerobic “engine size”. Relative VO_2 adjusts for body mass and supports comparison between people. They answer different questions and should be interpreted together.

REFERENCE CLASSIFICATION

HSL descriptive bands applied to age-, sex- and modality-specific directly measured FRIEND percentiles: Very low <10th · Low 10th–24th · Below average 25th–49th · Above average 50th–74th · High 75th–89th · Very high ≥ 90 th. Reference: Kaminsky et al., Mayo Clinic Proceedings, 2022.

INCREMENTAL TEST ENDPOINT

Peak physiological response

PEAK HEART RATE

179

bpm

PEAK RER

1.40

PEAK VENTILATION

128.8L·min⁻¹

PEAK WORK RATE / SPEED

9.90km·h⁻¹PEAK VO₂ TIME**13.45**

min:s

PEAK BREATHING RATE

41breaths·min⁻¹

PEAK TIDAL VOLUME

4.4

L

REASON FOR TERMINATION

Volitional fatigue

CLINICIAN-APPROVED LANDMARKS

Ventilatory thresholds

Measure	VT1	VT2 / RCP
Final decision	Accepted	Accepted
Time	421s	628s
VO ₂	2.28L·min ⁻¹	3.27L·min ⁻¹
Relative VO ₂	25.3mL·kg ⁻¹ ·min ⁻¹	36.3mL·kg ⁻¹ ·min ⁻¹
Heart rate	128bpm	158bpm
Work rate / speed	6.90km·h ⁻¹	8.96km·h ⁻¹
Methods agreeing	3	2
Confidence	High	MODERATE

VT1

The first sustained ventilatory change and upper boundary of the lower-intensity domain.

VT2 / RCP

A later compensatory response marking the transition toward the severe-intensity domain.

ANCHORED TO ACCEPTED THRESHOLDS

Intensity domains

Low
Below VT1
<128

Heavy
VT1 to VT2/RCP
128-158

Severe
Above VT2/RCP
>158

Domain	HR guidance	RPE & talk test	Primary use
Low	<128	Easy; conversation	Recovery, warm-up, aerobic volume
Heavy	128-158	Controlled; limited speech	Tempo and threshold development
Severe	>158	Hard; unsustainable	VO ₂ kinetics and high-intensity capacity

USING THE DOMAINS

Threshold-derived domains describe physiological boundaries more directly than generic percentages of age-predicted HRmax. Combine HR with workload or speed, RPE, breathing and symptoms.