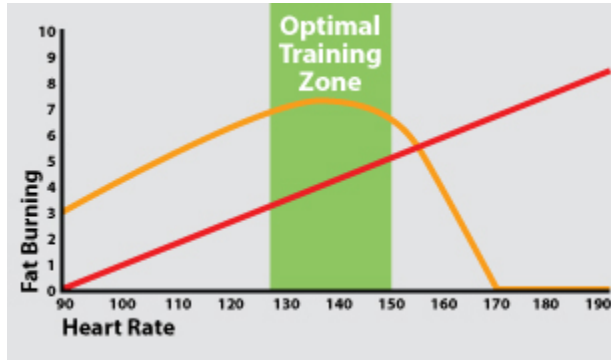


Metabolic testing

Healthy person's metabolism and training zone.

A chart of fat and carbohydrate calorie burning profile - calories per minute versus heart rate in beats per minute

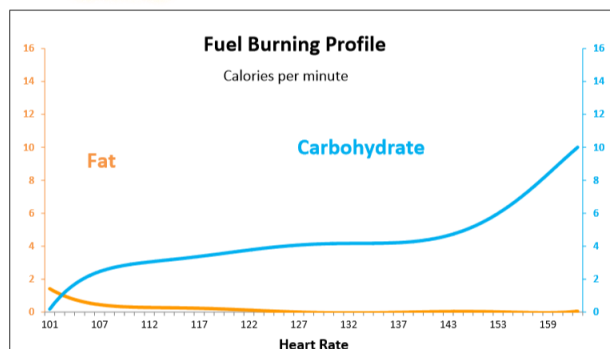


The red line is carbohydrate burning

The orange line is fat burning

For a person diagnosed as having CFS's the rules are the same but optimum training zone is at a much lower HR. The patient will typically struggle to keep their heart rate under the fat/carbohydrate crossover due to "metabolic" maladaptation associated with the disease. The length of time that they may safely exercise will also be tiny.

VO2max	24.0 ml/kg/min	1488 ml/min	Fair	Day one test -
Aerobic Baseline	Heart Rate: 105 bpm	% of VO2max: 33%	Very Low	results correlate to severe Physical disability
RQ = 1	Heart Rate: 106 bpm	% of VO2max: 36%		
LIPOXmax	Heart Rate: 101 to 106			Test Heart Rate Max: 170
				Peak Fat Index: 19.9
				Max O2Pulse: 9.2
Max Exercise Heart Rate	106 bpm	Do NOT let your heart rate go above this during exercise		
Aerobic Exercise Time	4 min	This is the maximum time for each exercise bout Too high 30 sec		
Recovery Period Time	5 min	Lay down for this time after each exercise bout		
Active Recovery	When recovery heart rate consistently reaches within <u>10%</u> of resting heart rate, start Active Recovery BUT ensure that heart rate stays within <u>20%</u> of resting heart rate.			



The optimal training zone for a person with CFS is abnormally low. This person was over the fat/carbohydrate cross over point, unless lying in bed or on the floor. The pay back for the person doing this test, to exhaustion, was extreme and hit with a vengeance, 10 hours after the test. If a test had been done the next day the test results would be much worse as the person was barely able to walk, by then.

In order to determine the “training zone” it is not necessary to do the test to exhaustion as the location of the fat/carbohydrate cross over is the key information.

In fact for a person suspected to have CFS it is unnecessary and probably not wise to exercise beyond the cross over point.

2 day CPET test

Some clinics such as the Workwell Foundation, Betsy Keller, Nancy Klimas are using a 2-day CPET test to exhaustion protocol. The first day determines the level of physical functional disability based which demonstrates the effect of exertion on the patient and quantifies post exertional malaise (PEM)/ post exertional neuro-immune exhaustion (PENE).

For more details see:

METABOLIC TESTING AND THE RESPIRATORY QUOTIENT (RQ)

<https://www.thenaturalnutritionist.com.au/metabolic-testing-and-the-respiratory-quotient-rq/>

<http://physiologic.com.au/services/>

<http://jupiterhealth.com.au/>

2 - day CPET test protocol

<http://www.workwellfoundation.org/testing-for-disability/>

Wonder about resting and exercise see:

The Workwell Foundation’s videos and resources

<http://www.workwellfoundation.org/research-and-latest-news/>

Centre for Disease Control information on CFS

<https://www.cdc.gov/me-cfs/index.html>