Heart Rate Response and Calories Burned in a Spinning® Workout

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I first experienced indoor cycling over 30 years ago when I started racing bicycles. I lived in Buffalo, New York, so we were not able to train on the road in winter. We took our bicycles inside and would ride on rollers or a track stand. It was boring and fatiguing and I never knew anyone who liked it.

Thus, I was surprised in the summer of 1995 to hear that many of my clients were becoming addicted to a new program called Spinning. These were hard-core endurance athletes who had moved to California to train outdoors, yet they were driving 50-60 miles in Los Angeles traffic to attend a 40-minute Spinning workout. There was an instructor, music, a group setting and a program. People who participated would tell you how they felt exhilarated for hours after taking a Spinning program workout.

I became interested from a scientific point of view, and we conducted a research study. We were interested in measuring the heart rate response and calories burned during a routine Spinning workout. We measured oxygen consumption and calories burned at each heart rate prior to the Spinning workout.

Abstract

The purpose of this study was to monitor and measure caloric expenditure for six subjects during a 40-minute Phase 1 Spinning workout. Prior to the workout, an incremental cycle test for determination of oxygen consumption and heart rate was performed. During the Spinning workout, the subjects wore heart rate monitors. Comparison of the heart rate response during the 40-minute workout revealed that the subjects performed at relatively high heart rates and levels of caloric expenditure. Subjects routinely performed at maximum heart rates higher than those measured in the laboratory test (173.3 vs. 167.8 beats per minute). Caloric expenditure varied from 7.2 to 13.6 kcal per minute and averaged 475 kcal per 40-minute class. These results indicate that Spinning workouts provide a high heart rate response and high caloric expenditure.

Subjects and Methods

Subjects in this study were recruited from a regular Spinning® program class at a sports club. Each subject was a recreational, non-competitive cyclist and had attended Spinning work outs for less than 6 weeks. None of the subjects had a history of cardiovascular disease, high blood pressure or thyroid disease. Subjects were fully informed of the nature of the study prior to giving written consent in accordance with the guidelines established by the American College of Sports Medicine. The subjects' characteristics and results are summa rized in the following Table.

Subject	Age	Sex	Height *(inches)*	Weight *(lbs)*	VO_2 max *(ml/kg/min)*	Lab HR max *(bpm)*	Workout HR max *(bpm)*	Calories Burned *(Kcal)*	Kcal/min
1	41	M	72	204	40.1	164	171	617	13.64
2	46	M	77	230	27.8	143	153	496	11.52
3	25	F	65	118	36.6	154	161	360	7.90
4	27	F	64	117	37.4	192	182	369	7.22
5	28	F	66	128	50.7	176	186	543	11.55
6	27	F	68	135	42.6	177	186	467	10.37
				Mean		**16.78**	**173.2**	**475.3**	**10.37**
				Standard Deviation		**15.7**	**13.9**	**99.8**	**2.42**

Lab HR Max = max heart rate during lab test
Workout HR Max = max heart rate during Spinning workout

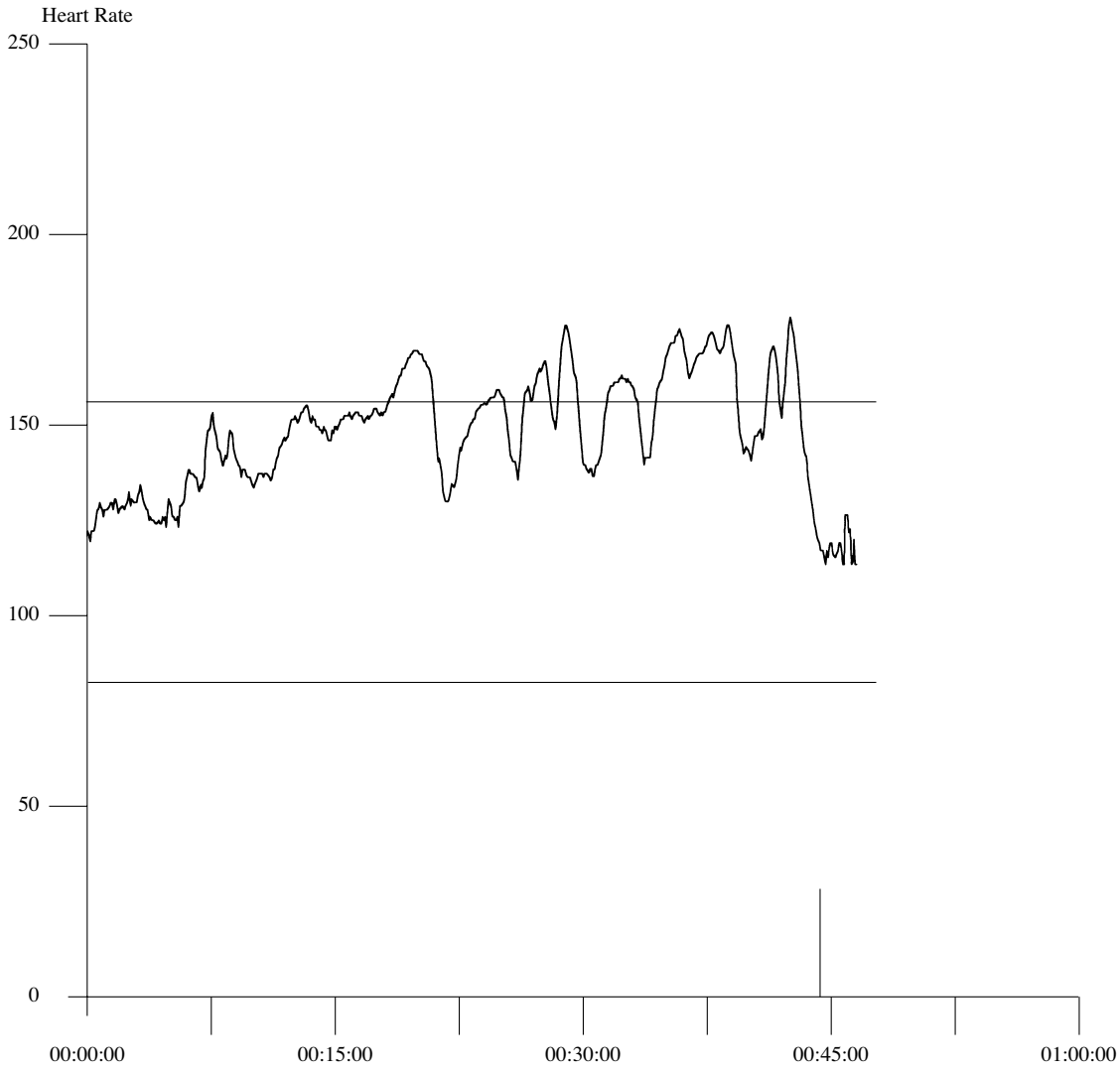

Figure 1. Time History of Heart Rate During A Spinning® Ride

About the Author

Herman Falsetti, M.D.

- Board-certified cardiologist
- President of Health Corp in Irvine, California, specializing in sports medicine, fitness and wellness
- Former Professor of Cardiology at the University of Iowa
- Physician to members of the 1984, 1988, 1992 and 1996 Olympic bicycling teams and top professional athletes
- Author of over 180 scientific articles including 10 books and chapters
- First American to finish Paris-Brest-Paris ultramarathon cycling race twice (1975 and 1979 in France)
- Dr. Falsetti's wife is a triathlete who has completed the Hawaii Ironman Triathlon and is an avid Spinning® program participant.

Spinning® Instructor Manual, Appendix B1

For more information, visit www.spinning.com.