

**Paroxysmal Atrial Fibrillation in a Life-Long Endurance Athlete: A Descriptive Case Study**

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**ABSTRACT**

The diagnosis of atrial fibrillation (AF) in lifelong endurance athletes occurs at a greater incidence over a lifetime vs the undertrained, general population. In fact, the more intense an aerobic-oriented person trains or races and over a greater amount of time, the higher the diagnosis of general cardiac arrhythmias.

**PURPOSE:** Therefore, the primary aim was to observe the cumulative effects of life-long endurance training (since the age of 10-yrs old) and the yearly occurrences of paroxysmal AF (PAF) in an otherwise healthy, 53-yr-old male. **METHODS:** The complete health history of a 53-yr-old male (ht: 1.83 m, wt: 72.7 kg, VO<sub>2</sub>max: 56 ml/kg/min, HRmax: 185 bpm, no alcohol consumption the past 2 yrs, 7-day resting heart rate average/HRavg = 50 bpm) with diagnosed PAF (on January 21, 2016) was gathered and summarized over a 5.7 yr time span (2018-2023). Garmin Connect data were amassed and analyzed for physiological training metrics, including: number of activities/yr, total distance/yr (mi), max distance each yr (mi), total activity time per yr (hrs), average time per workout (hrs), total caloric expenditure (estimated kcals), total ascent per year (ft), average ascent per workout (ft), HRavg per workout (bpm), and HRmax attained/yr (bpm). A simple Pearson correlation coefficient was performed between PAF episodes and each physiological metric.

**RESULTS:** Training metrics over 5.7 yrs included: 13 PAF episodes; 3,127 recorded activities (e.g., running, mountain biking, weight lifting); a total of 18,789 human powered mi accumulated; a maximum distance of 90 mi in one session; 3,016.6 hrs of total exercise time; 58 min per training session; 1,541,541 calories expended; 1,681,573 ft of ascent; an average of 590 ft of ascent/activity; HRavg of 129 bpm per workout; and a HRmax of 188 bpm. No correlation (< .30) was found between number of PAF episodes over 5.7 yrs and any physiological measure. **CONCLUSION:** PAF in this athlete does not seem to be influenced by any of the physiological variables reported. No medication use was reported. After consulting with his medical provider, an electrophysiologist at Mayo Clinic (Rochester, MN; October 2018), this older athlete was cleared to continue his usual exercise routine until the PAF became (subjectively) a hindrance to his lifestyle. Then cardiac ablation would become a recommendation.