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It’s not about the Bike: Factors Correlated with Better Performance in a High Altitude Ultra-endurance Mountain Bike Race

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The Leadville 100 Mountain Bike Race is an ultra-endurance high altitude race in Colorado. The purpose of this study is to correlate the characteristics of the biker and his/her equipment with performance in the race. About half of the competitors (n=566; 46.3%) completed a pre-race survey. The information about racers’ age, gender, place of residence and race time is available to the public. Most participants (90.4%) were male with an average age of 42 years. The majority (72.6%) finished the race successfully under the 12 hour cut-off time and most reported to have full suspension bikes (61.9%) with 26” wheels (70.9%). Aluminum was the most popular frame composition (48%), followed by carbon fiber (35.3%) and titanium (11.2%).

In this high altitude event, the injury rate was low. Only seven cyclists required to transfer to the emergency room. Male gender (p <0.001), prior race completion (p <0.005), residing at higher altitude (p <0.0005), and number of days trained per week (p <0.01) correlated with finishing the race under 13 hours. Despite the speculation, bike characteristics were not correlated with successfully completing the race under the 13-hour cut-off time. Among those who completed the race under the 13-hour cut-off time, it seems male gender (p <0.005), prior race completion (p <0.0005), residing at higher altitude (p <0.0001), number of days trained per week (p <0.0001), and younger age (p <0.0001) were correlated with better finishing time. In addition, cyclists who had bikes with carbon fiber and titanium frames and also those with frontal suspension had a better finish time. No correlation was found between the wheel size and better race performance among those who finished the race.

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