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**Improve laboratory evaluation on trail running**

**Who are the patients/targeted population?**

Sportive practicing trail and/or vertical kilometer race

**What is the problem?**

In trail and/or vertical kilometers races, competitors use poles as soon as the slope becomes steep. When testing these athletes in the laboratory, getting as close to reality as possible is customary. However, metal-tipped poles are unsuitable for treadmills, and rubber-tipped poles slip even on gentle inclines.

**What is the need?**

Find a system to use/simulate poles on the treadmill that allows force and direction to be measured.

**What is the benefit (if the problem is solved)?**

To test athletes in conditions close to outdoor conditions and give them precise indications for their training program.

**Wrap-up**

As competition preparation techniques become increasingly sophisticated, any additional parameter to help plan performance is welcome.