

Case Study: BioHarness™

Human Factors in the field

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Firefighters and Loggers: COHFE



Zephyr's BioHarness™ has been put through its paces in the rugged back-country regions on New Zealand. The device is being used by the Centre for Human Factors Research (COHFE) in their research into the demands of rural firefighting and logging. Their research is aiming to improve the health and safety of rural firefighters and loggers by determining, under New Zealand operational conditions, the physiological workload of firefighting and logging tasks. Data is being collected in both controlled and real situations.

Critically, the research projects are utilising a novel suite of data collection equipment, including the BioHarness™ worn by the firefighters and loggers to record visual, physiological and geographical information relevant to their occupations.

"We have used the BioHarness to monitor firefighters at real fires, loggers felling trees; ultimately these groups of people doing their general demanding jobs. We used to be plagued by electrical interference corrupting our data. With the BioHarness, this is no longer the case. With the BioHarness we get nice clean data sets with no electrical interference and the BioHarness has a huge memory so we can record for days before downloading making field studies easier".

Richard Parker, Manager, COHFE

Research in the New Zealand logging sector has already resulted in the development of initiatives aimed at improving health and safety of New Zealand logging workers. Typical examples of such initiatives include guidance on personal behaviour such as ensuring adequate hydration, nutrition and rest breaks.

The Centre for Human Factors and Ergonomics (COHFE) is New Zealand's leading and largest ergonomics group, providing high quality ergonomics research, consultancy and educational services. This internationally recognised team works to improve the safety, health and performance of New Zealand people and organizations. COHFE is a research group within SCION, a Crown Research Institute.

www.scionresearch.com

We chose the BioHarness™ because it was a hassle-free product that worked every time. Just switch it on, and it works for hours.

Richard Parker
Manager, COHFE

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Climbing, with a difference

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Brad Zdanivsky; Vertical Challenge



As a late teen, a car accident left rock climber Brad Zdanivsky a quadriplegic. For most people, this would put an end to their climbing aspirations. Not Brad. Instead he set his sights on climbing the mammoth Stawamus Chief, on Canada's West Coast.

Undaunted by the extraordinary challenges of this endeavor, Brad made a successful attempt on the summit of the Chief in July of 2005, climbing 650 m (over 1,900 ft.) in a single day (14 hours). Brad has inspired disabled athletes the world over with this accomplishment.

Since then, Vertical Challenge has been an evolving project, pushing the boundaries of what is possible, and has been at times been described as reckless and dangerous. But according to Brad, "Health Monitoring in real time is one way to mitigate the majority of safety concerns. Giving my Physicians the ability to see my vitals while I'm in remote environments has demonstrated the value of this kind of innovation".

I approached Zephyr as an athlete, and found the BioHarness™ to be far superior to the consumer grade HRM's I have used. The BioHarness™ was easy to use and integrate into our existing Java Framework for embedded devices. The data is being web cast and logged to my website www.VerticalChallenge.org as I wear the BioHarness™ as close to 24X7 as possible. I stream to my iMac, and log while at the gym.

"I chose the BioHarness™ because it outperformed, and measured much more than other devices I have tried and it allowed my team and I to monitor my condition in real-time, while I am working out and climbing."

Brad Zdanivsky
Vertical Challenge, Vancouver, Canada.

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MARATHON MAN

Order today at WWW.BIOPAC.COM



Ultra-runner and Endurance Coach: Tim Borland



Ultra-marathoner Tim Borland set out last year with a goal for 2007: call attention to ataxia-telangiectasia (A-T), a rare degenerative children's disease that combines the symptoms of cerebral palsy, muscular dystrophy, cystic fibrosis and cancer. His answer: run a marathon every day for more than two months.

Borland's quest started on Labor Day with a half-marathon in Anaheim, Calif. — he ran it twice — and ended with Sunday's New York City Marathon. That's 63 marathons in 63 days. He logged some 1,650 miles in 26 states, plus Washington, D.C., and Montreal.

Stacy Sims, an exercise physiologist at the Human Performance Lab at Stanford University who is also his coach, studied Borland's body throughout the Tour. "Tim wore a Zephyr BioHarness strap on his chest, which records the electrical responses of his heart, heart rate, breathing rate, skin temperature and movement-acceleration patterns of each marathon day". Tim uploaded the information daily, so that Dr Sims could evaluate the stressors and provide feedback on his pace, food and fluids intake, biomechanics and other components to help him maintain optimal performance and health.

"It was an incredible undertaking," said Sims. "I liken it to people who run across the Sahara Desert and take three months to do it."

"It was an incredible undertaking. I liken it to people who run across the Sahara Desert and take three months to do it. It was great to be able to record it with the BioHarness™"

Stacy Sims PhD
Exercise Physiologist, Stanford University