



MedExercise: The First Hardware Sensing Leg Activity

Enabling interaction between the human body and digital world

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Problem: digital content is controlled only by hands

The users enter data mostly through finger-operated interfaces



Touchscreens, keyboards, mice and controllers provide physical interface between the human and digital worlds.

Most modern electronic devices are screen-based and used in sitting position, leaving user's body physically inactive and not interacting with the digital content.

Profound application of digital technology at workplace and home evolved modern lifestyle into unhealthy sedentary behaviour.



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Value proposition: the MedExercise hardware platform

Enabling data input from the leg and body muscles



Most foot controllers operate as switchers (toggles), which require no foot motion and contribution of the user's body.



In contrast, MedExercise hardware enables a full range of foot motion as in walking, so that naturally engaging large muscle groups of the body that makes the user physically active.

Wireless sensors in the pedals translate characteristics of the user's leg and body activity into digital algorithms to interact with software and apps.



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Market opportunity: multiple industries

Enabling the user's body to improve productivity and health



The MedExercise technology allows design of products targeting several sectors of the global market as innovation solutions for:

- Digital and video games
- Digital and e-sports
- Virtual reality
- Workplace fitness
- Healthcare and rehabilitation

Application of derived products is feasible in several industries:

- Medicine
- Training
- Education
- Manufacturing
- Robotics etc.



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Business model: the global opportunity

We look for investment and strategic partnerships



Having developed and validated a novel type of hardware with diverse applications and targeted markets, we seek investment and strategic partnerships to launch a range of products in 1-2 years.

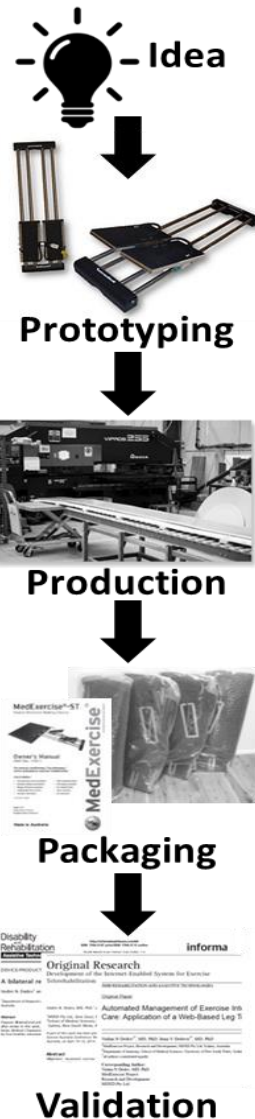


The current MVP at the Guangzhou International Innovation Festival, 2017.



Team: proven capability to deliver results

From the idea to commercialization



The MDXD team combines research and engineering expertise, enabling application of scientific methods to the process of research and development. The resultant MVP has been designed, manufactured and tested in several validation studies.

Drs Vadim Dedov and Irina Dedova are founders of MDXD. They both have medical and PhD degrees, research experience at the leading Australian Universities and co-authored over 50 scientific papers. Vadim conceived MDXD technology and manages operations, while Irina designs and supervises relevant validation studies.

Since 2017, we partner with Activ Sitting, Inc. (Los Angeles, www.activsitting.com). Mr Roger Leib and his team complement our business capacity and skills.



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Patents and publications

Evidence of comprehensive know-how

Patents:

- Multi-functional leg-operated input device, AU 2018903776.
- Multi-functional foot-operated input device, AU 2017904055.
- A foot-operated controller and the use thereof, AU 2016902871.
- A self-adjusting resistance mechanism for exercise machines, AU 2016900829.
- A self-adjusting friction resistance mechanism for exercise devices, AU 2015900824.
- Multi-functional exercise apparatus sensing foot motion and force, AU 2014100002.
- Determination, prescription and administration of personalised dose of exercise, AU 2013101165.
- Exercise apparatus, US patent: 20120077653 A1, PCT/AU patent: 10/00685, WO patent: 2010139015, AU patent: 2010256352.

Publications:

- Application of Web-enabled leg training system for the objective monitoring and quantitative analysis of exercise-induced fatigue. www.ncbi.nlm.nih.gov/pubmed/27549345
- Automated management of exercise intervention at the point of care: application of a web-based leg training system. www.ncbi.nlm.nih.gov/pubmed/28582243
- Development of the internet-enabled system for exercise tele-rehabilitation and cardiovascular training. www.ncbi.nlm.nih.gov/pubmed/25734449
- A bilateral rehabilitation system for the lower limbs. www.ncbi.nlm.nih.gov/pubmed/24044650
- Gamified seated stepping as a novel approach to exergaming: a technical feasibility study in healthy adults (submitted). www.mdxd.com.au/digital-games
- Contribution of gamified, screen-time and under-desk seated stepping towards the recommended 10,000 steps a day (submitted). www.mdxd.com.au/activity-tracking
- Expressing personalized exercise doses in the daily energy expenditure equivalents. Journal of Science and Medicine in Sport 18, Supplement 1:e34, 2014.
- Towards the improvement of patient mobilization after stroke using a novel system for on-site assessment and training. International Journal of Stroke 9(6), Supplement 1:e39, 2014.