

Re-Mission™ Works

Research on HopeLab's cancer-fighting game shows positive potential of games in healthcare

Deep inside the human body, a battle rages. A microscopic robot – a “nanobot” named Roxxi – battles rogue cancer cells, blasting them with chemotherapy to save a teenage cancer patient. No, this isn't a lost scene from the classic sci-fi film "Fantastic Voyage" – it's a video game, developed by the non-profit group HopeLab, designed to help adolescents and young adults fight cancer. And now data published in the August edition of the medical journal *Pediatrics* shows that Re-Mission really works, improving treatment adherence and giving young people with cancer a sense of power and control over their disease.

Re-Mission taps into the powerful appeal of video game technology to support young cancer patients in their treatment. In the game, players pilot Roxxi the nanobot as she travels through the bodies of fictional cancer patients destroying cancer cells, battling bacterial infections, and managing side effects associated with cancer and cancer treatment. Developed specifically for teens and young adults with cancer, the game is based on the vision of HopeLab founder and board chair Pamela Omidyar. HopeLab researchers worked with video game developers and animators, cancer experts, cell biologists, psychologists, and – most importantly – young people with cancer themselves to engineer entertaining game play that addresses specific clinical challenges young cancer patients face.

Research on the impact of Re-Mission was key to Omidyar's vision for the game. Prior to the release of Re-Mission in April 2006, HopeLab completed a randomized, controlled trial to test the effect of Re-Mission on treatment adherence, cancer-related knowledge and self-efficacy among adolescents and young adults with cancer. The Re-Mission Outcomes Study enrolled 375 male and female cancer patients aged 13-29 at 34 medical centers in the United States, Canada and Australia. Participants were randomly assigned to receive PCs pre-loaded with a popular video game only or that same control video game plus Re-Mission. Study results published in *Pediatrics* indicate that playing Re-Mission produced increases in self-efficacy and cancer-related knowledge for adolescents and young adults with cancer.

Most significantly, however, young people who played Re-Mission maintained higher blood levels of chemotherapy and showed higher rates of antibiotic utilization than those in the control group, indicating that Re-Mission helps patients adhere to cancer therapy regimens.¹ These results demonstrate how game play can translate into positive, healthy real-world behavior.

By combining exciting game play with science, Re-Mission works – and the research behind it provides important evidence that technology can be thoughtfully engineered to be both fun and an effective tool to improve the health of young people. To date, HopeLab has distributed more than 125,000 copies of the game in 81 countries worldwide, demonstrating the universal appeal of video games and the potential for a whole new field of technology development to improve the health and healthcare of patients.

HopeLab is now conducting studies to understand how Re-Mission delivers positive changes in health behavior. This ongoing work may provide a “recipe” for future development of games and technology-based interventions that address other health issues. HopeLab itself is already at work, leveraging lessons from Re-Mission, to develop new products that will increase physical activity in kids as a way to combat obesity and sedentary behavior in kids.

To read the article in *Pediatrics*, visit

<http://pediatrics.aappublications.org/cgi/content/full/122/2/e305>.

To experience Re-Mission yourself, visit www.re-mission.net to download or order the game. HopeLab distributes Re-Mission free of charge to young cancer patients, their families and caregivers; a voluntary \$20 donation is suggested to others. For more on HopeLab, please visit www.hopelab.org.

¹ Kato, P.M., Cole, S.W., Bradlyn, A.S., Pollock, B.H. 2008. A Video Game Improves Behavioral Outcomes in Adolescents and Young Adults With Cancer: A Randomized Trial. *Pediatrics* 122: e305-e317.

SIDEBAR

Re-Mission Media Roundup

Pediatrics: A Video Game Improves Behavioral Outcomes in Adolescents and Young Adults With Cancer: A Randomized Trial

<http://pediatrics.aappublications.org/cgi/content/full/122/2/e305>

Toronto Star: Videogame Helps Kids Blast at Their Cancer

<http://www.hopelab.org/2008/08/04/toronto-star-videogame-helps-kids-blast-at-their-cancer/>

Reuters: Video Game Helps Young Cancer Patients Take Meds

<http://www.hopelab.org/2008/08/05/reuters-video-game-helps-young-cancer-patients-take-meds/>

San Francisco Chronicle: Startup Uses Video Games to Heal Young People

<http://www.hopelab.org/2008/08/04/san-francisco-chronicle-startup-uses-video-games-to-heal-young-people/>

CTV Toronto: A Video Game Helping Kids With Cancer

<http://watch.ctv.ca/news/health/lifetime-with-monica-matys/#clip71812>