



## Virtual Medicine

Computer simulations offer genuine help for pain, trauma and phobias.

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### Fear Strikes Out

Psychologists have long used visualization to help people overcome disabling fears. Now VR can extend that technique significantly. When a patient is able to sit on a plane or let a tarantula crawl up his arm--all the while knowing that what he's experiencing isn't real--he's in a perfect position to deal with his phobia.

Because the technology is still in its early stages, the programs are closer to animation than to *Matrix*-style reality. "When we got the first simulations I was disappointed, because they seemed very cartoonish--they didn't look all that real," says Brenda Wiederhold, Ph.D., director of the Center for Advanced Multimedia Psychotherapy at San Francisco's California School of Professional Psychology. "But that didn't seem to matter. When I put people with anxiety disorders in a simulation, their heart rate would go up and physical signs of anxiety would increase, just as if they were in the actual situation."

The unreal look was actually a plus, she adds, because patients could accept it better than being in the presence of the actual thing they feared.

"I knew there was no way I could go through the traditional treatment for fear of spiders, which involves real spiders," says one Oregon patient, who instead took a two-day VR program. Encountering virtual arachnids was "stressful, but I could handle it." And, two years later, what about real creepy crawlers? "I still don't like them, but I can deal with them."

Phobia therapy generally involves becoming more and more immersed in the feared situation, all the while undergoing counseling and relaxation exercises to calm the body's fear response. A VR program for aviaphobes involves the full sensory experience of being on an airplane, complete with sights and sounds and a chair that vibrates and moves, while an acrophobia program utilizes digital video of riding a scaffolding elevator up the highest tower in Seoul, Korea.

"We use an actual railing, since some people get dizzy," Wiederhold says.

In one study, published in the *American Journal of Psychiatry*, all 10 subjects reported a substantial reduction in their fear of heights. And a recent study of fear-of-flying treatments showed VR to be as effective as traditional methods, but cheaper and easier to administer. "Only about 15 percent of phobics ever seek treatment," notes Hoffman. "We think that VR therapy will eventually reach a much higher proportion of patients."

That's not the only potential for the technology, Wiederhold says. In the future, similar programs may be used to help overcome complicated psychological problems such as attention-deficit disorder, social phobias and even depression. "We've found that people can do things in the virtual world that they would find overwhelming in the real world, and afterward they're much more likely to be willing to try it in real life."