On the ball

By Alison apRoberts -- Bee Staff Writer

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Michael Bhim, a physical therapy student at CSUS, is wired to monitor his muscle exertion using an exercise ball. Holding the wires is student Steve Lambert. Research into exercise efficiency of muscle groups with and without the ball by professors Rafael Escamilla, right, and Clare Lewis, background, will be finished in May. Sacramento Bee/Jay Mather

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Inside a laboratory at California State University, Sacramento, it looks as though a high-tech Dr. Frankenstein is about to bring a new and improved human being to life.

Michael Bhim is no bolts-in-the-neck monster, but a 23-year-old physical therapy student who smilingly subjects himself to wires and electrodes and grueling exercise for the sake of research.

"It's OK," he says, smiling with just a hint of a grimace as Rafael Escamilla, a professor of physical therapy, whisks a razor over eight precisely chosen spots on Bhim's abdomen, thighs, back and arms, rubs them hard with rubbing alcohol and affixes two electrodes to each spot. Wires hook the electrodes to an electromyography machine that measures the electrical activity of muscles.
Bhim is a good humored and perfectly muscled subject who clearly needs no reanimating. But he is bringing something important to life: data that will shed light on the interaction of exercise balls and muscles.

For several hours, Bhim patiently performs various abdominal crunches and leg lifts and pushups and other exercises - 36 all together - on a flat surface and on an exercise ball. The computer logs jagged graphs of the muscular output of each form of exercise, so that they can be compared. He is one of 20 students who are going through the same exacting routine.

The effort, including many hours of analysis, is worth it, according to Clare Lewis, a professor of physical therapy who is heading this project with Escamilla.

"It's important for us to have evidence for what we do," Lewis says. "For a lot of equipment, there's often not a lot of validity studies done."

Lewis says a preliminary look at the data indicates that exercises performed on the exercise ball use more muscles and use them more intensely than the same exercises performed without a ball.

The oversize balls were first used extensively in Switzerland during the '60s in physical therapy for children with cerebral palsy. They began to show up in physical therapy for all sorts of patients within the last 20 years, Lewis said.

Today, such balls - and their variations, including a half ball, called a BOSU ball - are on a big roll for everyday fitness.

You can buy them for $30 or less at Wal-Mart and other mass retailers. There's even a "Fat-to-Firm Fitness Ball Workout for Dummies" book, published in 2004.

The key to the balls' usefulness is their unstable surface. To keep from falling off the ball while exercising on it recruits lots of muscles, particularly those core muscles of the lower back and abdomen. They also are being used for an ever-widening range of exercises, standing in as a bench for strength workouts (such as pushups) and for stretching.

Now the balls are ready to take over the workplace and push aside the conventional desk chair. One even popped up (and was punctured) on an episode of the NBC comedy series "The Office."

"The ergonomic market for balls is still very young; of course, we'd like to see a ball in every cubicle," says Gloria Miller, marketing manager for Ball Dynamics International, which makes FitBall products and is one of the biggest ball distributors in this country. (Miller says she is seated on her work ball when she is interviewed by phone from her office in Longmont, Colo.)

Her company and others offer variations on the ball for work seating, from inflated domed cushions that can be placed on a chair to frames with backs that use a ball as a seat (and keep it from rolling around the office).

Jane Clapp and Sarah Robichaud are fitness trainers in Toronto who wrote a book about how to use a ball at work: "Working on the Ball: A Simple Guide to Office Fitness" (Andrews McMeel, $9.95, 193 pages).

Perching on a ball isn't aerobic, but it requires "active sitting," demanding all sorts of little movements to keep from rolling off. Burn a few calories, learn to sit up straight, avoid lower-back problems: What's not to like?

"It's popping up a lot more in white-collar locations, and it's more mainstream in Europe," Clapp said while being interviewed...
from her home - while sitting on a ball, of course.

Clapp says working on a ball can pump up productivity, as well as core muscles and posture.

"If you have to stay more active and alert, you're going to have a better functioning brain," Clapp said.

Rounding out the appeal of exercise balls - whether for a workout or the workday - is a simple sense of fun.

"It never ceases to amaze me: When you bring the balls out, people laugh," says Rose Zahnn, owner of Healthy Habits Fitness and Yoga Studio and Healthy Habits Pilates Fit studio in Sacramento. "It makes them more playful."

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