

# Reading the Body To Ease Aches And Prevent Injury

By BONNIE TSUI

UNTIL Jerilynn Jenderseck underwent a new fitness assessment called Body Map she wasn't able to pinpoint her body's weak spots. But after her exam showed that she arched her lower back and often shifted her weight to her right leg to compensate for her weaker left one, her personal trainer added targeted drills to her workouts.

Mrs. Jenderseck, 51, now practices balancing on one leg at a time to strengthen her abdomen, gluteus maximus and back muscles along

Imaging software finds stress points and then prescribes exercise routines for relief.

the spine, which in time may keep her from favoring her stronger leg. To relieve stress in her hip flexors she has also started using a foam roller to stretch her calves, hips and outer thighs. Mrs. Jenderseck credits the new exercises, which she does two or three times a week, with quelling chronic pain in her lower back and hips.

Since the National Academy of Sports Medicine, a nonprofit association of sports trainers and therapists, began Body Map last year, hundreds of professional athletes have used it to help identify muscular weaknesses in an effort to ease their aches and pains and to prevent season-ending injuries.

A half-dozen teams in the National Basketball Association, including the Phoenix Suns and Indiana Pacers, have put their players through the 45-minute assessments, as have a couple of professional baseball and football teams.

Now hundreds of personal trainers

at health clubs have begun using Body Map, which the academy licenses to gyms for \$300 a month, to fine-tune the exercises they recommend to nonathletes. While some trainers and physical therapists consider it unnecessary or needlessly complicated, the promoters of Body Map say it can help people with unexplained aches and pain; committed exercisers who want strengthening and stretching exercises tailored to their weaknesses; and even gym newcomers who haven't been working out at all.

Body Map evaluations are now available in roughly 120 gyms nationwide, but the academy hopes to boost that number to 250 by the end of 2006. Some gyms offer them free. Others charge up to \$100. Body mapping involves making digital camera images of a person performing an overhead squat test — a position in which arms are straight up and the knees are bent 90 degrees — in front of a grid.

Shot from front, back and side views, the pictures are then loaded onto a Web-based computer program developed with Biotonix, a Canadian technology company.

The image-mapping software is designed to look for kinetic changes, like knees that buckle inward instead of staying parallel. Trainers are also prompted to look for the changes with a checklist, so in theory the test can be administered by someone with a minimal knowledge of biomechanics.

Then the Body Map program issues a detailed printout illustrating the imbalances shown during the exam, along with exercises that the test subject can do to remedy them.

Tom Bohanan, a certified personal trainer who has worked with Mrs. Jenderseck for two years at Fusion Fitness in Santa Rosa, Calif., says a Body Map evaluation helps motivate clients to do stretching and strengthening drills regularly because it shows them, he said, "the science behind these exercises."

Mrs. Jenderseck said: "I found it useful to actually get a visual of what I was doing and have someone draw my attention to movements I make

that are out of alignment. It's hard to tell when you're doing it by yourself."

Body Map also raises awareness among exercisers of the perils of muscle imbalance. Most people don't realize that muscle imbalance can lead to injuries, said Dr. Jessica Greaux, the director of Innersport Chiropractic, a performance therapy clinic in Berkeley, Calif., for teams at the University of California.

When certain muscles are overworked to make up for weaker ones, Dr. Greaux explained, "your body will always find a way to compensate, to its detriment and the increased likelihood of injury."

Tyler Wallace, the director of clinical services at the sports medicine academy, said: "The problem is not necessarily where you think it is. For instance, if a baseball player has shoulder pain in his pitching arm, the cause of the pain often has to do with range of motion in his ankles and feet, where the throwing movement actually originates."

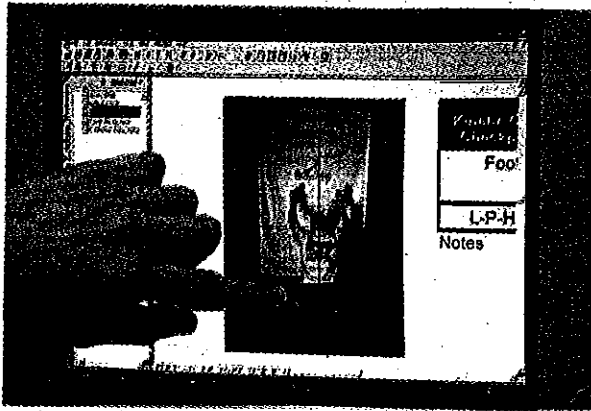
Not all trainers see a need for body mapping. Some longtime trainers well versed in exercise physiology say they can assess the weak points of clients by carefully watching how well they handle exercises that test strength and balance.

If clients understand how to do a drill but cannot keep good form throughout the exercise, they have weakness or tightness or lack the necessary range of motion.

"In the time it takes a trainer to set up the camera and load photos into the Body Map I can go through a personal physical assessment with an individual in front of a mirror," said Juan Carlos Santana, the director of the Institute of Human Performance, a gym that specializes in personal training in Boca Raton, Fla. He is also a board member of the National Strength and Conditioning Association, a nonprofit group. "I find it to be a better use of my time and the client's. And mirrors are free."

Dr. Greaux prefers to assess mus-

**BODY MAPPING** Computer screen analysis of Dillon Landi, 18, a high school wrestler, doing overhead squats for a camera at Parisi gym in Fair Lawn, N.J., left. The program looks for muscle imbalances.



Photographs by Norman Y. Lono for The New York Times

cle imbalance with dynamic tests unfamiliar to her clients — for instance, videotaping them as they try to do push-ups on a stability ball — because she has found that an unexpected situation "can reveal a lot more" than an overhead squat, which she notes many exercisers already know how to do.

Mr. Santana, discounting the usefulness of body mapping, said that most people's problems stem from simple inactivity. "Ninety percent of the so-called muscular imbalances we see in fitness," he said, "are really weaknesses throughout the entire body that come from lack of movement. Period."

Still, some regular exercisers have found Body Map an invaluable educational tool. Steven Linn, 38, a consultant who lives in Fair Lawn, N.J., said he is "completely dependent" on the exercises the program prescribed for him.

After he learned that his susceptibility to lower back injuries was due

## WORKING IT OUT

Mike Hill, the director of personal training at Parisi, helping Mr. Landi to increase flexibility with foam rollers.

in large part to weak core muscles he made his hip and lower back drill a daily habit. To make sure he's doing them correctly, his personal trainer, Mike Hill, monitors him once a week.

The exercises that Body Map prescribes, said Mr. Hill, the director of personal training at Parisi Sport Clubs in Fair Lawn, "might be a little too time-consuming for people." But he added, "It's really important, probably the most important thing in your exercise regimen in order to prevent injury."