

Exercise equipment: Going high tech by incorporating sophisticated devices
Deborah Munro, 2009

Treadmills with heart rate monitors, exercise bikes that store our power output, steppers that connect to your favorite video game and record total steps. Just about everyone into fitness these days has some kind of electronic device to improve workouts. At first glance, these may appear to be unnecessary gadgets, but with the busy lives people now lead, having a way to monitor the amount of exercise they get each day benefits doctors and patients alike.

The humble pedometer now counts up to 1 million steps, interfaces with your computer, has a clock, and incorporates a nine-day memory to record daily and weekly totals. You no longer need to clip it to your belt. It works just as well in your pocket or bag. It even resets at night automatically and records distance and calories burned.

Equipment manufacturers have recently introduced sophisticated activity monitors, worn as water-resistant wrist watches that include capacitive accelerometer that converts whole body electrical pulse data into energy consumption based on workload intensity and active steps. It also features an altimeter, barometer, full function watch, cumulative calories, and consumption rate per hour for the whole body. In other words, this watch is smart and “knows” if you’re going uphill or if you’re walking or running. Heart rate monitors are now basically wrist computers, too, and include all of the above, along with important accessories like GPS sensors and wattage sensors for the crank of your bicycle. And you can download all the data wirelessly to a computer for long-term storage and analysis.

Exercise equipment is an important new trend in medical devices. According to the World Health Organization, less than a third of us are achieving enough physical activity each day. So having a means to monitor activity is the first step in knowing where we can make daily changes to improve our health.

In '08, we should begin to see exercise monitors and equipment increasingly being used by non-athletes at their doctors' request. With these devices, doctors and therapists will be able to see what the patient is achieving and prescribe an appropriate level of activity. This opens a whole new market for these devices. They can be owned by physicians and therapists and rented out to patients for short-term use, making it even easier for them to monitor the amount of exertion patients put out on a weekly or monthly basis.