

GoWear™ Fit Armband



Positioning Statement

The GoWear Fit Armband is the measurable difference in weight loss. This accurate, easy-to-use tool promotes effective weight management by changing daily behavior. The armband enables individuals to accurately monitor and track calories out (calories burned) and compare that to calories in (calories consumed), giving them the ability to track energy balance at any time during the day.

Concept

One of the biggest problems with weight loss is the guessing game. While the equation for losing weight is very simple (calories in < calories out = weight loss), tracking calories coming in and going out can be an overwhelming, if not an impossible task. The GoWear Fit tool gives users the ability to easily track both calories in and calories out. The GoWear Fit Armband is comfortable and worn on the back of the right upper arm to continuously and accurately measure calories out throughout the day. The GoWear Fit software features an extensive food database that makes it a breeze to keep track of calories in.

The true power of the GoWear Fit tool lies in its simplicity and flexibility. Individuals can eat and do what they like—in the proper proportions. It's all about understanding simple lifestyle changes that are needed in order to sustain a calorie deficit necessary for weight loss. For some, one change may be exercising 30 minutes a day. For others, it may be a matter of simply reducing their daily caloric intake by 200 calories. In as little as a week individuals can see how their lifestyle—what they eat and how they exercise—is helping or hindering their success.

Primary Benefits

- Accurately monitors total calories out
- Extensive food log easily tracks calories in

- Comfortable, ergonomic design
- Encourages daily monitoring of weight loss efforts

What Makes This Product Unique?

- Part of a new weight loss plan developed by Pharmanex: the My Victory Weight Control Plan—one of the most complete approaches to weight loss on the market.
- Enables individuals to easily track both calories in and calories out.
- Simple, easy-to-use software helps in tracking weight loss efforts.
- The ergonomically designed armband can comfortably be worn the entire day to track energy balance.

Who Should Use This Product?

- Adults desiring additional support in their weight loss efforts
- Adults following the My Victory Weight Control Plan

Did You Know?

- 66% of the population in the United States is overweight.
- It takes only a few minutes to upload your armband data and log the food you've eaten into the GoWear Fit software.
- The GoWear Fit Armband measures calorie burn using five different sensors: skin temperature, galvanic skin response, heat flux, near body ambient temperature, and 2-axis accelerometer.

How Does This Product Work?

The GoWear Fit Armband utilizes sensor fusion—a patented process for analyzing caloric burn. Other devices on the market use a single measurement to predict calories expended, but GoWear Fit collects multiple physiological data points to provide a more accurate prediction of total energy expenditure.

Accelerometer. An accelerometer measures acceleration—the rate of change in velocity (speed and direction). GoWear Fit utilizes a

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dual axis MEMS (micro-electro-mechanical sensor) to quantify motion, mapping it to the forces exerted on the body. Accounting for gravity (body position) and motion, the accelerometer contributes vital information to decipher the true level of physical exertion. For years accelerometers have been used extensively for quantifying physical activity (Montoye, 1983; Sallis, 1990; Bouten, 1997; Richardson, 1995).

Heat Flux. Weight management is about calorie balance—consuming fewer calories than are burned is the only way to lose weight. A kilocalorie, commonly referred to as a calorie, is a measurement of energy, or more specifically the amount of energy needed to increase the temperature of one kilogram of water one degree Celsius. As food, calories are converted to physical energy. Heat is a natural byproduct during physical exertion. As physical activity increases, so do the energy needs of the body. The GoWear Fit Armband has a proprietary heat flux sensor that measures the amount of heat dissipating from the body and is indicative of the amount of calories burned through physical activity.

Galvanic Skin Response. Galvanic Skin Response (GSR) is a measurement of skin resistance or conductivity of the skin. Stimulation of the sympathetic system influences the resistance of the skin (Darrow, 1970). Because of its sensitivity to human emotions—anger, fear, psychological stress, etc. (Wagar, 2006; Lee, 2005)—GSR is utilized as a portion of polygraph testing. These emotional stimuli also influence the total energy expenditure. This sensor is another contributor to the accuracy of GoWear Fit.

Skin Temperature. Using a thermistor sensor, the armband provides continuous monitoring of skin temperature. This provides information on the body's core temperature, which is influenced by physical exertion, the lack of physical activity, and other factors.

Near Body Ambient Temperature. Monitoring near body ambient temperature provides pertinent information about the surrounding environment and temperature changes that may be taking place. Skin temperature can change drastically due to environmental conditions, even though physical activity has not increased significantly. An example of this: when you leave an air conditioned building to walk outside in hot weather. GoWear Fit needs the contextual information from the environment to correctly identify physical activity and energy expenditure. Discerning between environmental changes and increased energy needs in the body provides the context for accurate energy expenditure.

Frequently Asked Questions

What is GoWear Fit?

As part of My Victory, a multifaceted weight management system, GoWear Fit provides information on energy expenditure. To achieve

the right balance, people need a way to track calories in versus calories out. Using a dual-axis accelerometer, a heat flux sensor, galvanic skin response sensor, skin temperature sensor, and near-body ambient temperature, GoWear Fit provides an assessment of total calories out that can be compared with total calories in through an easy-to-use interface.

Have any studies been published on GoWear Fit?

Yes, several studies have been published on the use of GoWear Fit as a measurement device for energy expenditure. GoWear Fit and four other measurement devices were compared to indirect calorimetry during treadmill exercise. GoWear Fit was the most accurate at detecting energy expenditure across various speeds. GoWear Fit has also been correlated to Intelligent Device for Energy Expenditure and Physical Activity (IDEEA), which is a device that utilizes a series of electrodes and a neural network to identify motion and postures relating to physical activity. The armband was shown to accurately estimate physical activity. Several studies have also been conducted comparing GoWear Fit to indirect calorimetry during bouts of sitting and standing, during light, moderate, and vigorous activities, and during yoga exercise, showing good accuracy. Recently, GoWear Fit was shown to enhance weight loss in a 12-week behavioral weight loss study.

How long does a battery typically last?

Most individuals need to switch their AAA battery every two weeks. Battery life can be extended by decreasing the number of times the button is pushed.

I have been wearing the GoWear Fit for several weeks and I think I am developing a rash or irritation. What would be causing this?

As with anything that is in constant contact with your skin, the GoWear Fit Armband needs to be cleaned periodically. How often depends upon individual differences and activity. Wipe down the back of the device daily before you put on the armband, and cleanse the device with isopropyl alcohol at least every other week.

Why haven't I lost as much weight as my deficit indicates I should?

The GoWear Fit Armband relies on you to provide accurate information on your caloric intake. Most people underestimate their caloric intake by 20 to 40 percent. Update your weight entry once a week in the Body Measurements portion of your dashboard. Then select the Last Measurement Period (the time between your last two weigh-ins) from the menu. Select Measurement Changes from the menu under Calories Consumed. Click the Nutrition button on the bottom half of the page to compare the calories consumed to what you estimated you consumed. By comparing these, you identify the difference and can then adjust your food logging. Many times individuals forget to log the little bites between meals, and snacks will add up.

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Individuals will occasionally have a week or maybe two where the scale and deficit are not consistent. These short term discrepancies might be affected by water weight, personal habits, or hormonal changes. Muscle gain might also be offsetting the fat lost. If an individual loses a pound of body fat, but then adds a half pound of muscle the scale will only indicate that a half pound has been lost. When this happens, other measurements will more accurately show evidence of fat loss, including:

- Body measurements—waist, hips, thighs, etc.
- Clothing fit and/or size.
- Visual appearance.
- Loss of body fat percentage.

Can't I just use a heart rate monitor to identify my caloric expenditure?

No. Since most users do not have access or understand how to calculate the necessary information, heart rate monitors are not as individualized as is needed to accurately manage weight on an individual basis.

Where should GoWear Fit be worn? Can I wear it anywhere else?

The GoWear Fit Armband should be worn on the upper right arm over the triceps muscle. This allows the heat flux sensors to accurately measure the amount of heat dissipating from the body, so the armband must be worn as directed.

Recommended Use

The GoWear Fit Armband is designed to be worn on the back of the upper right arm (the triceps), touching the skin. For the most accurate information, the GoWear Fit Armband should be worn up to 23 hours every day, minus showering and water activities. If needed, the armband can be removed while a person is sleeping. Most individuals find that uploading data from the armband on a daily basis provides the most motivating feedback.

Warnings

- Do not immerse the armband in water.
- Do not get the armband close to other devices that can cause electromagnetic interference of any nature.
- The GoWear Fit wireless communicator should not be used in airplanes, hospitals, or any location where cellular telephones or electronic devices are prohibited.
- Be careful not to over tighten the armband while it is on your arm.

System Requirements

- PC with USB port
- Windows 98/ME/2000 SP3/XP
- 128MB RAM or higher
- Web connection (DSL or cable recommended) for accessing the GoWear Fit website

Technical Specifications

Weight with adjustable strap: 82.2g (2.9 oz)
Size: 88.4mm x 56.4mm x 21.4mm (3.45" x 2.2" x 0.85")
Power: One AAA battery, commercially available
Armband Monitor Materials: ABS, urethane, FDA approved co-polyester hypoallergenic grade stainless steel
Adjustable Strap Materials: nylon, polyester, poly-isoprene (latex free)
Temperature / Humidity of Operation: 0° C - 45° C / 100% RH
Internal Memory Size: 12 days (at one minute sampling frequency)

Key Scientific Studies

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