

# WEARABLE HEALTH DEVICES:

HOW TO CHOOSE THE RIGHT ADHESIVE





## WHY AN EXPERIENCED PARTNER MATTERS

One of the fastest-growing markets in healthcare (or any market) today: Wearable medical devices.

Diabetes monitors, heart monitors, pharma delivery devices, wound care, transdermal patches, and more. While many of these types of devices existed before the pandemic, wearable health devices have exploded in popularity since early 2020. Why? The pandemic kept most of us in our homes. Visits to doctors and clinics were reserved for emergencies. Surgeries were postponed. Hospital beds were filled with COVID patients.

Yet, people with other serious conditions still needed care. It caused a great pivot in the healthcare industry: a shift to telehealth. Patients were able to get the care they needed without visits to the clinic. A key component in this shift was, and remains, wearable health devices. They allowed doctors to do their best to keep their patients healthy and ease the pressure on overcrowded hospitals.

But the trend isn't stopping just because the pandemic is receding. Wearable health devices pave the way for everyone to have accurate healthcare — not just those close to the clinic or with reliable access to transportation. There are many people who don't visit the doctor as much as they should simply because it's too difficult to get there. Wearable health devices change that.

- There was a [63-fold increase](#) in the utilization of telehealth during 2020, jumping from **840,000 Medicare telehealth visits in 2019** to **52.7 million** the very next year.
- The wearable medical devices market is estimated to jump to [\\$95.4 billion](#) within five years.
- The wearable adhesive market is predicted to top [\\$617.43 million](#) by 2026.

More companies than ever before are developing these wearable medical devices, and it's a challenge to get it right. If they don't stay in place, their entire purpose is defeated.

In this eBook, we'll explore how the right adhesive is a make-or-break for wearable medical devices. We'll also look into the considerations when developing the tape, and what medical device manufacturers need to know when choosing the right tape for their products.

# VARIABLES TO CONSIDER IN STICK-TO-SKIN ADHESIVES

Adhesives for use on the skin are nothing new. As any kid with a skinned knee knows, elastic bandages are ubiquitous in our culture. The cosmetic industry has long used tapes (many of them designed by Walker Tape) in a variety of applications. But it's a specialty niche.

When manufacturers in industries other than healthcare are considering tapes, it's all about the surface or substrate that the tape will be sticking to, the environment and challenges the tape will have to stand up against, and many other factors.

Medical adhesives need to address these issues, but there are more considerations, specific to skin, that make designing and choosing the right adhesive for the job so challenging. Here are some of those variables to consider.

## WHY SKIN IS A DIFFERENT SURFACE

### SKIN TYPES

A baby's skin is vastly different than a senior citizen's, and there are many variations in between. Will the surface be wrinkled or smooth?

### SKIN FUNCTION

Sweating needs to be considered, as do skin oils.

### SKIN ELASTICITY

Unlike some other surfaces, skin shrinks and expands. The adhesive needs to hang on for the ride.

### WHERE ON THE BODY IT WILL BE PLACED

Some areas are more delicate than others.

### THE DEVICE ITSELF

How much does it weigh? How large is it?

### DURATION OF WEAR

How long will the device need to be firmly in place?

But it's not just skin we need to consider. The patient is also a big variable.

## HOW THE PATIENT'S CHOICES AND ACTIONS COME INTO PLAY

### COSMETICS

Will the patient be using lotion? How about body wash or makeup?

### MOISTURE

Is the patient able to take the device off to bathe? If not, can the device and its adhesive stand up to water?

### MOBILITY

Is the patient hospitalized? Is he or she at home? What is their mobility level? Will they be exercising? Do they move excessively in their sleep?

### LEVEL OF KNOWLEDGE

Patients need to be educated on how to apply and remove their devices (if applicable) correctly. This can be tricky if the device is on a patient's arm and they need to perform these functions with one hand.

### COMFORT

Patients won't put up with devices that employ tape that isn't comfortable to wear.



## REGULATORY CONCERNS

When considering a tape for a medical wearable, regulatory concerns come into play. Why? It's not like using tape for an industrial application in which a tape fastens a rivet to a piece of metal. These are living, breathing human beings we're talking about. Regulations ensure the tapes meet safety and performance requirements for human use.

Some common regulatory concerns include:

### BIOCOMPATIBILITY

Biocompatible adhesives do not cause irritation or other reactions when stuck to the skin. The last thing medical device manufacturers want is for their device to cause a rash or other irritation on a patient.

### STRENGTH AND DURABILITY

We've said it before and we'll say it again: Tapes are crucial to the performance of the wearable. If it doesn't stick, it doesn't work. And that can result in grave consequences. Whichever tape medical device manufacturers use, it must be able to stand up to the wear and tear of day-to-day life.

### SAFETY

The adhesives must be non-toxic and absolutely safe for human use.

### STABILITY

Adhesives used with medical wearables need to be stable. They must not degrade over time.

### RISK OF INFECTION

Going hand in hand with all of the above, tapes must not contain or be a good breeding ground for bacteria that can cause infection.



## THE RIGHT TAPES FOR WEARABLE MEDICAL DEVICES

Wearable medical devices save lives. But not if they don't stick. To ensure effectiveness, reliability, and durability, it's vital to choose the right type of tape for the job. We have many choices of different adhesives that stick to skin. These can include acrylics, silicones, and rubber-based adhesives. Some examples include:

### SINGLE- AND DOUBLE-SIDED TAPES

The difference between the two types is simple: one side sticks, or both sides stick. Choosing one over the other depends on the requirements of the job.

### FOAM TAPE

These tapes are commonly used in wearable medical devices because of the comfort factor. They provide cushioning.

### ADHESIVE TRANSFER TAPE

Adhesive transfer tapes are just as the name implies — they transfer the adhesive to a surface. They are a great choice when precise adhesive placement is required.

### WATERPROOF TAPE

When medical wearables need protection from moisture, waterproof tape is an ideal choice.

### SILICONE TAPE

Silicone tape is flexible and elastic, and stands up well to heat and moisture. This durable tape can stand up to a wide range of variables in a patient's life, be it heat, moisture, the need for flexibility, and more.

In some cases, you may need different materials for different layers. A foam layer paired with a waterproof layer can provide cushioning, comfort, and protection from moisture. That's where working with an experienced tape converter really matters. A partner who can provide a custom solution may be the key to the success of your product.



# FINDING THE RIGHT MEDICAL TAPE CONVERTER

That's a lot of information to digest. That's why experience matters when you're talking about products that save lives. You need a partner who knows the industry, knows tapes, and can create a product that fits your unique needs.

## YOUR CONVERTER PARTNER NEEDS TO HAVE:

- A vast knowledge in materials and processes, especially when it comes to regulations
- The ability to meet high demand
- The expertise to advise and guide you toward the right choices
- Strong, enduring relationships with tape manufacturers
- The ability to create products that do not exist today but will meet your unique needs

## THE WALKER DIFFERENCE

At Walker Tape, we are experts in stick-to-skin adhesives. It's what our company was founded on 30 years ago.

Over the years we have worked with it all: diabetes and heart monitors, sports applications, pharma delivery devices, wound care, and transdermal patches. That being said, we know that every project is different. There is no cookie-cutter solution for

your project, and we can work with you every step of the way to find the right solution for your needs.

We use our own custom-built machines to ensure you can get what you need, when you need it.

We have relationships with the top tape manufacturers in the world, which means we can mix and match tapes from **3M**, **Avery Dennison**, **Mactac**, **Berry Plastics**, **Scapa**, and more to give you the perfect adhesive solution.

**CONTACT US TODAY**  
to find out more about how we can work together to build a tape solution that is exactly right for your product.

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