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Will Wearable Technology Intensify Our E-Waste Problem?

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Sure, wearable technology can push us off the grid, keep us limber, make head-turning statements, and offer new ways of interacting in a convenient, unobtrusive way, but circuits fry, batteries die, and all cool things, too, must come to an end. Unlike clothes that can be passed along or handed down, however, electronic textiles aren't so easily disposed of. In fact, smart clothing could account for 1 million tons of additional electronic waste per year, according to a study in the *Journal of Industrial Ecology*. We may have entered a new era of technology, but are we prepared for the deluge of devices almost certain to follow?



TECHNOLOGY'S DARK SIDE

The absence of legislation addressing the disposal of e-textiles isn't the only issue. Because the electronic components are small and strewn among reams of fabric, they're not only difficult to recover, but they can also contaminate traditional textile recycling.

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“Contemporary electronic products usually have rather short service lives,” write the article’s authors. “There is no reason to assume that e-textiles will break with that trend. On the contrary, their obsolescence may even be accelerated due to fleeting fashion trends in the apparel sector. One can expect that old e-textiles will cause large waste streams similar to today’s e-waste.”

Although guidelines for wearable technology are nearly nonexistent, designers should scrutinize their product’s life cycle with a gimlet eye, researchers say.” Technology developers and product designers should implement waste preventative measures at the early phases in the development process of the emerging technology,” they explain. Will the garment be used for a long time? Can the components be easily removed? What about conductive fibers and yarns that contain silver, copper, or nickel? These are the questions we need to start asking before smart textiles rival—or even surpass—our existing e-waste pickle.

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