Bioelectronics could lead to a new class of medicine

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Imagine having tiny electronics implanted somewhere in your body that can regulate nerve signals and make symptoms of various disorders go away. That's the vision of the field of bioelectronic medicine—the emerging discipline that has made enough promising advances to draw a big investment by a pharmaceutical giant, according to an article in *Chemical & Engineering News (C&EN)*, the weekly news magazine of the American Chemical Society.

Ann M. Thayer, a senior correspondent at C&EN, explains that much of the progress made in bioelectronic medicine has been driven by university research so far. But more than a year ago, the British drug company GlaxoSmithKline dove into the field and is now funding about 25 investigations exploring disease biology and neural signaling. They are betting that the budding discipline will lead to a whole new class of medicines for metabolic, immune-inflammatory, respiratory, cardiovascular and other disorders.

Others are also heavily invested in the future of bioelectronic science. A few start-ups are working toward clinical applications. The National Institutes of Health is also advancing neuroscience with its Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative. But scientists still have to work out some major puzzles before they can benefit patients. For one, they have to completely map out which nerves affect which organs and functions. Once that base is built, the field could be well poised to take off.

More information: Shock Therapy, cen.acs.org/articles/92/i26/Shock-Therapy.html