

Harnessing the body's electrical system to help it heal

Scientists like Michael Levin of Tufts University have discovered that cellular charges control how and where a structure forms in a developing embryo. Even more surprising, he's found that it's possible to manipulate bodily forms just by changing the voltage patterns of its cells.

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[Levin] recently spoke with Knowable Magazine about the state of bioelectric research and his thoughts on its future prospects. This conversation has been edited for length and clarity.

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What applications could this have in the medical world?

I think about that a lot. The most obvious ones are things like fixing birth defects. If we can understand and manipulate bioelectric signaling, we could potentially repair things that go wrong as an embryo forms.

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Another one is fighting cancer. There's a fair amount of research being done now on bioelectric signals as both a cause and a potential suppressor of cancer cells. You can normalize certain tumors by exposing them to specific drugs that change their electrical potential.

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A third area is regenerative medicine. If we can use electrical signaling to convince tissues and organs to grow after injury, we could replace entire structures or organs for patients. Bioelectricity gives you a great new set of control knobs with which to regulate cell behavior.

Read full, original post: [Controlling electric signals in the body could help it heal](#)