

Will DARPA Make a Travel Adapter for Human Body?

Analysis by [Tessa Lena](#)

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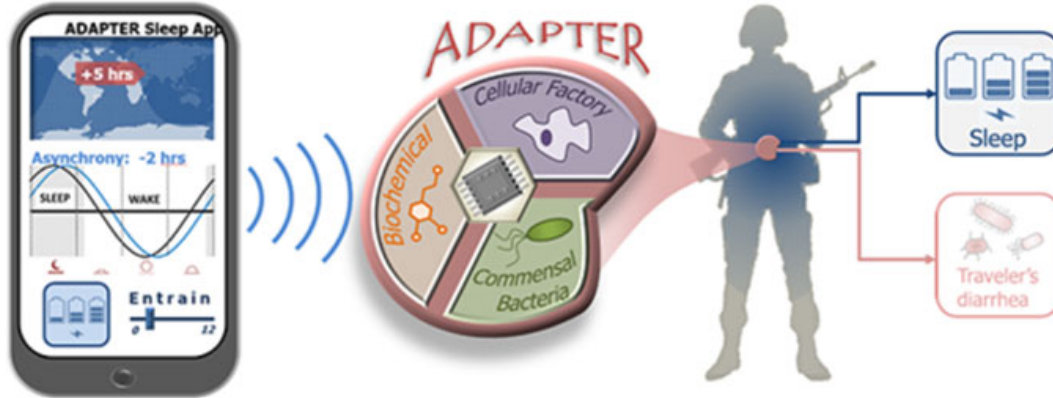
STORY AT-A-GLANCE

- › In 2020, DARPA announced a plan to develop a “travel adapter” for the human body in collaboration with researchers from different groups
- › Northwestern aims to engineer a wirelessly-controlled bioelectronic implant that reduces the time needed to adapt to new time zones by releasing peptide-based therapies to harmonize the central and peripheral circadian clocks
- › The Stanford team plans to develop an implantable device that produces and releases melatonin on demand
- › MIT’s focus is a swallowed device that deploys in the gut and then produces compounds that kill foodborne pathogens and neutralize toxins that may have been released by the pathogens

Another day, another bit of great news, folks. Everyone’s favorite agency, DARPA, is promising to develop a “travel adapter” for the human body. The travel adapter, intended for “warfighters,” is supposed to play a magical trick on biology and program the soldier’s sleep cycles at will, as well as disinfect food and water in the soldier’s belly in real time. The miracle is going to be a transient and non-genetic “implantable or ingestible bioelectronic carrier.”

Certainly, nothing can go wrong, and the proof is this very professionally done image on their website that shows us how one can “program” physiology by adjusting a slider in an app. This image alone is a masterpiece of seduction, selling the appealing-but-

totally-fictional concept of getting "something for nothing," as if pulling it out of a magician's hat.



Betraying the Soldiers

Before we get down to the nitty-gritty of DARPA's ADAPTER program – yes, the name of the program is acronym but they also call the device an "adapter," DARPA word weavers are crafty like that! – I want to express my indignation at the entire vampire-like model of sacrificing human beings to senseless wars.

These wars are fought primarily to make a small crew of shameless people obscenely rich, and the biggest "beneficiaries" of the cruelty don't fight in those wars themselves, just organize the dark business of shedding other people's blood.

Such betrayal! A lot of people on the ground join the military for noble reasons. Yes, some join out of desperation, to lift themselves out of poverty – but many join for very sacred reasons, out of courage, to protect their own.

And then those brave young people get dragged into treacherous carnage, maimed in body and spirit, and sometimes experimented on (here is one [pre-2020 example](#) of the U.S. military experimenting on its soldiers, here is [another](#), and we know what happened with COVID "vaccines").

Bioweapon Experimentation on Soldiers

Here is a phenomenally frank 2015 [paper](#) titled, "Science wars – How much risk should soldiers be exposed to in military experimentation?"

The paper argues that because the warfare is shifting toward the use of bioweapons, it is appropriate to experiment on soldiers as they have already agreed to risk their lives for the benefit of the state:

"With the threat of biological war becoming a more and more distinct possibility, there is a growing need for vaccines and cures for diseases. As warfare moves from the battlefield to the laboratory, the military must adapt its tactics in order to preserve national security.

At the moment, soldiers consent to the risk associated with combat, but with the changing nature of war, the need may arise for soldiers to put themselves at risk not only through combat, but also through scientific experimentation, in order to produce vaccines or cures and ultimately maintain national security.

By allowing soldiers to trade risk on the battlefield with risk in the laboratory, deeper research can be made into diseases and biological agents, and this would therefore lessen the threat of biological war or terrorism.

In an insightful paper, Mehlman and Li argue that the traditional civilian ethical principles that govern the research use and application of genomic technology are insufficient to regulate military uses.

*They argue that the values of military life are different to civilian life.¹ Citing Anthony Hartle's *Moral Issues in Military Decision Making*, they agree with Hartle that "freedom, equality, individualism, and democracy" are the "core American [civilian] values". But for the military they are "honor", "duty", and "country".²*

And here is how the paper goes about redefining "consent":

"Mehlman and Li do believe that consent should still be sought from soldiers. Indeed, it is a part of US Department of Defense policy to require consent.

However, they question whether consent can be voluntary for a variety of reasons."

I thought "consent" implied volition? So old normal of me ...

ADAPTER: The Program

Here is the description of the program from the [horse's mouth](#):

"Warfighters are travelers and thus suffer from travelers' ailments including disrupted sleep cycles and limited access to safe food and water. Warfighters who have not slept well have lower alertness, weaker athletic performance, and greater disorientation.

Current approaches to restoring wakefulness often lean on chemical methods that disrupt downstream sleep patterns and lead to exhaustion.

For sustenance, warfighters typically rely on military-supplied food, which is logistically burdensome and may lead to warfighters having to consume local food and water that could cause otherwise preventable diseases, notably diarrhea. Data from 2003 to 2004 demonstrate that 2/5ths of diarrhea cases among warfighters in Iraq and Afghanistan required medical attention.³

*Through advances in medical devices and synthetic biology, DARPA's new **ADvanced Acclimation and Protection Tool for Environmental Readiness (ADAPTER)** program aims to develop a travel adapter [see how clever?] for the human body, an implantable or ingestible bioelectronic carrier that can provide warfighters control over their own physiology.*

The integrated system will be designed to entrain the sleep cycle – either to a new time zone or back to a normal sleep pattern after night missions – and eliminate bacteria that cause traveler's diarrhea after ingestion of contaminated food and water. ADAPTER will provide a transient, non-genetic means of extending and enhancing warfighter readiness.

"The goal of the ADAPTER program is to produce the therapies within the body itself. ADAPTER will manage a warfighter's circadian rhythm, halving the time to reestablish normal sleep after a disruption such as jet lag or shift lag.

It will also provide safe food and water by eliminating in vivo the top five bacterial sources of traveler's diarrhea. Both will enhance the health and mobility of warfighters," described Paul Sheehan, Ph.D., program manager for the DARPA ADAPTER program.

Leveraging known strategies, solutions, and molecules, performers will choose one of two application tracks: (1) in vivo compound delivery to entrain circadian rhythm/restore sleep-cycles; or (2) in vivo decontamination of food and water from bacterial causes of traveler's diarrhea."

In another [announcement](#), DARPA said that the program would "integrate engineered cells and biochemicals into an internal, bioelectronics carrier that the warfighter can signal, as needed, to initiate the production and timed release of therapies that either eliminate the foodborne pathogens that cause traveler's diarrhea or regulate disrupted circadian rhythms caused by jetlag or shift-work schedules." DARPA has mentioned a collaboration with at least three research teams:

- *"Northwestern aims to engineer a wirelessly-controlled bioelectronic implant that reduces the time needed to adapt to new time zones or drastic changes in work schedules by releasing peptide-based therapies to harmonize the warfighter' central and peripheral circadian clocks. [more [here](#)]*
- *The Stanford team plans to develop an implantable device that produces and releases melatonin on demand for up to 30 days.*
- *Massachusetts Institute of Technology researchers will work on a swallowed device that deploys in the gut and then produces compounds that both kill foodborne pathogens and neutralize toxins that may have been released by the pathogens."*

According to [Bio-IT World](#), the safety study of the product at Northwestern is expected to begin as early as 2025.

DARPA's BRAIN: The Bigger Picture

For context, it's good to ponder the [Brain Initiative](#) (Brain Research Through Advancing Innovative Neurotechnologies® or BRAIN), enthusiastically announced by the White House [in 2013](#). "DARPA is supporting the BRAIN initiative through a number of programs, continuing a [legacy of DARPA investment in neurotechnology](#) that extends back to the 1970s." They list the following programs, among other:

[Electrical Prescriptions \(ElectRx\)](#)

[Hand Proprioception and Touch Interfaces \(HAPTIX\)](#)

[Neural Engineering System Design \(NESD\)](#)

[Neuro Function, Activity, Structure and Technology \(Neuro-FAST\)](#)

[Next-Generation Nonsurgical Neurotechnology \(N³\)](#)

[Reliable Neural-Interface Technology \(RE-NET\) \(Archived\)](#)

[Restoring Active Memory \(RAM\)](#)

[Restoring Active Memory – Replay \(RAM Replay\)](#)

[Revolutionizing Prosthetics](#)

[Systems-Based Neurotechnology for Emerging Therapies \(SUBNETS\)](#)

[Targeted Neuroplasticity Training \(TNT\)](#)

Theranos Effect?

To be honest, I think there is a prominent element of Theranos to all this. After all, I am still waiting for my long-awaited flying cars! Building flying cars seems like a much easier task than programming biological life – and yet here we are! How many decades has it been since they made that promise, and no cars in the air still?

To clarify, I think it is very possible to completely mess up those "warfighters" for life and make zombies out of them – and perhaps this is all that DARPA is aspiring to do. But it is not possible to do such things to a human being and then expect them to be healthy for the rest of their lives. Can't be done. EMFs alone are a major risk – and EMFs are only a part of the game. Oh, and what if the "enemy" hacks those implanted devices? Then what?

Here is tangentially related video that features "remote-controlled" bugs. (Q: Do the people profiting from modern wars care about the soldiers actually fighting them any more than the researchers in the video care about the zombified bugs? A: No.)

As far as the confident use of "high-tech" buzzwords, I think it's a sign of the times. Microrobots and sensors are all the rage. One is "supposed to" praise those things like one was "supposed to" praise Lenin in the USSR. Like I wrote [here](#):

"This reminds me of the Brezhnev era Soviet Union – pretense and decay all around – and a typical "communist party" meeting where mouths would open, lips would move, lofty words would be said out loud with conviction – and absolutely none of it would be "real." All performance.

Now, can they get billions of dollars for this in funding? Sure as hell they can. Printing money is easy!

But – the atrocity / absurdity of the notion aside – does it mean they'll deliver anything useful? They will probably deliver something, and the disposable cannot meat "warfighters" will be the lab rats, as usual. Hey, someone has to "absorb" the price of deceit!"

The Root Issue: Addiction to Power

Let me be blunt here and define the foundational malaise: the inability of the power addicts to bugger off.

They are reinventing living things like medicinal herbs, [bees](#), [trees](#), and various biological functions because their mad addition is compelling them to destroy the world they don't control, and (they hope) replace it with a mechanical one, to which they have the intellectual property and the "master key."

They know that in the real reality, there is no need for their crazy digital twins at all (I am using this term loosely and poetically here). They know that in order for them to stay in control, they need to continuously maintain very high poison levels in people's bodies and minds. This entire system – the entire system – is built on poisoning lies!

And they know that if they stop poisoning people, the old poison will eventually wear off – and they will be expelled by the awakened world.

And so in their madness of addicts, they are trying and trying to do anything in their power to extend and renew their lies. They lie to us that we need artificial trees, artificial herbs, and artificial bees. They try to convince us that believing in absurdities is progressive, scientific, and cool. They try to censor anyone whose mind is clear, and who sees through their masquerade.

But no lie can be maintained forever. It's the law. Sooner or later, their time will be up, and they'll bugger off.

About the Author

To find more of Tessa Lena's work, be sure to check out her bio, [Tessa Fights Robots](#).

Sources and References

- ¹ Maxwell J. Mehlman & Tracy Y. Li, Ethical, Legal, Social, and Policy Issues in the [...], *J. Law Biosci.* 1(3): 244–280 (2014), doi: 10.1093/jlb/lisu021
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- ³ Sanders JW, et al. (2005). Impact of illness and non-combat injury during Operations Iraqi Freedom and Enduring [...]. *Am J Trop Med Hyg*, 73:713–719