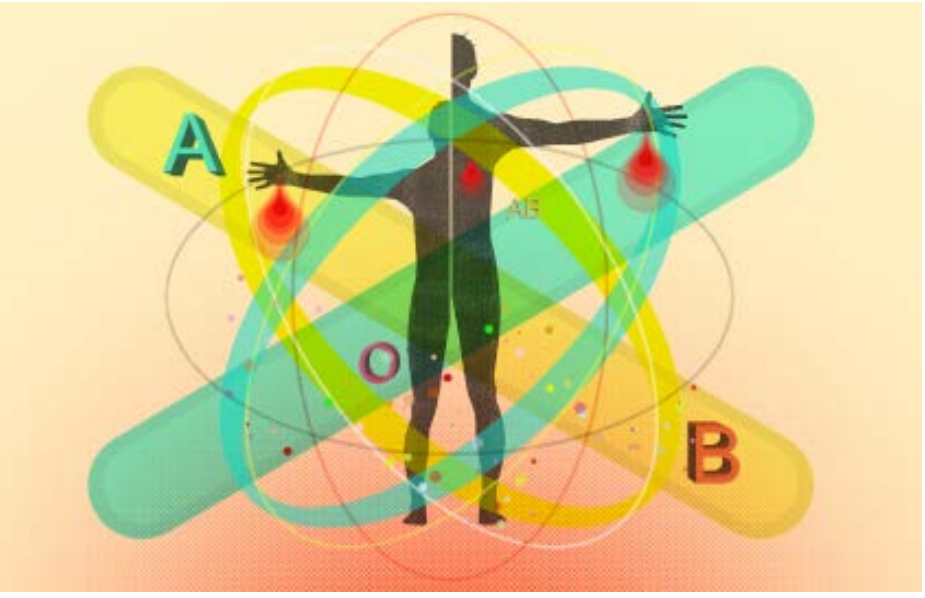
JUNK OR SCIENCE?

Age-Fighting Blood Transfusions

Being injected with young blood is a thing we're doing now. Is that bad weird or good weird? BY MICHAEL EASTER



IMAGINE AN old lab mouse—the bad hair, the wrong turns in the maze, the lazing around. Now imagine that mouse surgically conjoined to another, more youthful one . . . and then seeing it, within weeks, start getting younger. When scientists did this, "they found the old mouse showed fewer diseases of aging, like diabetes, heart disease, and Alzheimer's," says Jesse Karmazin, M.D.

For Dr. Karmazin, the old mouse is you. This 33-year-old Stanford-trained physician has no plans to sew you to a college freshman. But he's betting, based on recent research, that humans experience the same age-bending benefit from a dose of young blood.

In 2016, Dr. Karmazin founded Ambrosia, a company that will infuse you with one to two liters of a 16- to 25-year-old's plasma. For up to $12,000. So far, he says, many of his 150 patients report feeling and performing better on just one treatment a year. He admits it sounds totally creepy, even though transfusions, of course, aren't new science. "We're just using them for a different purpose."

Experiments on mouse "parabiosis," the anatomical joining of two individuals, date back to 1864; the young mouse/old mouse findings were reported in the 1950s. But inquiries stalled until 2002, when scientists at Stanford were in a routine meeting, bullshitting about becoming old and why components of your body age in unison instead of separately. Someone tossed out a hypothesis: Your circulation reaches everything in your body, so maybe your blood holds chemicals that make you old.

They were soon stitching together mice to find out. Their study, published in *Nature,* discovered that the old mice exhibited enhanced production of progenitor cells—organ repairers that wane as you age—as well as better brain, muscle, and liver function. They even looked younger. The theory: Young blood dilutes pro-inflammatories in old blood that may keep you from making progenitor cells.

The National Institutes of Health thinks the method shows some promise in decoding human aging. It funded more than four times as many parabiosis studies in 2017 as in 2010, but positive results have been seen only in mice—and some scientists think Dr. Karmazin is doling out blood prematurely, because what's in your veins may be only part of the story.

"Connected mice don't just share blood," says Michael Conboy, Ph.D., who coauthored the *Nature* study. "They share organ systems; the younger mouse can absorb and transfer more nutrients from food; and in our study, the young guy was even running the old one around, giving him more exercise." So maybe the magic is in the blood, maybe not.

Or maybe there's no magic at all. The annals of medicine are full of overhyped treatments that work in mice but not men. Indeed, the very first plasma-transfusion trial in humans, done at Stanford and funded by another young-blood start-up, Alkahest, didn't kill anyone (transfusions have a rare risk of lethal complications) but didn't find brain antiaging effects.

Which is why Dr. Karmazin performed a follow-up study. The data—from 81 patients who funded their own treatments—reveals improvement in markers for Alzheimer's, inflammation, and heart disease, Dr. Karmazin claims. But it won't be published until 2019 at the earliest.

So why not save your 12 large and wait until that and other studies come out? In the meantime, focus on a handful of much cheaper strategies (see below) to move the longevity dial.

LESS CREEPY WAYS TO TURN BACK THE CLOCK

Queue Up the Takeout
New diet research has found that the Indian spice turmeric may be one of the world's most potent anti-inflammatories. Order curry, or use the spice in everything: eggs, vegetables, rice.

Keep Up the Cardio
In one study, men who ran four sets of four-minute high-intensity intervals (thrice a week) improved inflammation markers more than guys who did 40- to 65-minute strength sessions.

Mix Mind and Body
Under stress, you produce an inflammation-increasing protein. But mind-body practices like meditation, tai chi, and yoga may prevent that, according to a study in *Frontiers of Immunology.*

ILLUSTRATION BY MARK ALLEN MILLER