



FDA “Breakthrough” Device That Can Reverse Alzheimer’s Cognitive Decline May Well Increase Human Life Span

PHOENIX, Ariz., Aug. 12, 2024 -- Although a fountain of youth may presently be wishful thinking, a fountain of increased longevity may become a reality within years – not decades. It’s not a pill, injection, or genetic manipulation, but rather a bioengineered head device called the MemorEM. The device has already been given “breakthrough” designation by the FDA and has been reported in small studies to both stop and [reverse cognitive decline in Alzheimer’s patients](#).

In a paper that was [published in the International Journal of Molecular Sciences](#), Dr. Gary Arendash of RF Longevity and NeuroEM Therapeutics, Inc. presents evidence that Transcranial Radiofrequency Wave Treatment (TRFT) has the potential to reduce risk/severity of many age-related diseases in addition to Alzheimer’s Disease, which would then result in an increase in healthy longevity. Moreover, TRFT targets several damaging processes in the brain and body that arise during normal aging itself.

According to clinicians involved in the studies, aged Alzheimer’s subjects receiving treatment for up to 2½ years did not develop any new age-related diseases over that period. Important for long-term TRFT administration in the future, these same clinicians also did not report any safety issues or undesirable side effects of TRFT over the 2½ year period.

Clinical visits are not required for TRFT because it involves a self-contained head device that provides in-home 1-hour treatments of patented radio frequency waves to the entire human brain. Also, it is completely painless, and allows for near complete motion to perform daily tasks.

“Unlike most potential interventions against age-related diseases that only target a single disease or have a single action, we have identified multiple disease-modifying actions by TRFT,” said Dr. Arendash. *“Most diseases of aging are attacked by at least one, if not several of these beneficial actions, which include removal of toxic proteins from the brain, increased energy production by brain cells, and a rejuvenation of the immune system in both body and brain.”*

It is the surprising rejuvenation of the immune system by TRFT that Dr. Arendash believes may be the most important mechanism for enhancing longevity because most diseases of

aging involve a chronic level of inflammation. This “inflamm-aging” is due to an imbalance of the immune system’s pro-inflammatory component over its anti-inflammatory component that develops upon entering older age in the early to mid-60s. During young adulthood and middle age, these two components are balanced and inflammation is low.

TRFT appears to be the only current gerotherapeutic that can “rejuvenate” (re-balance) the human immune system. In Alzheimer’s patients, TRFT re-balancing of the immune system was associated with much-reduced inflammation in both their brain and blood. In these same patients, a reversal of cognitive impairment was observed at 2-months into treatment, while a 2½ year period of TRFT stopped Alzheimer’s cognitive decline. In the later study, Alzheimer’s subjects were given 18 months of TRFT over the 2½ year period. Both clinical trials involved only a small number of Alzheimer’s subjects, but their cognitive benefits, as well as the beneficial effects on Alzheimer’s Disease markers and to the immune system, were striking.

Remarkably, many centenarians (living 100 years or longer) have maintained a balanced immune system and thus have a low level of inflammation. Their “immunologic” age is around 40 years younger than their chronologic age - this maintenance of a youthful immunologic age is thought to be a main reason for why centenarians live so long and in relatively good health. Similarly, mice who maintain a balanced immune system into older age live 36% longer than mice without such immune balance.

Although TRFT is administered only to the head, it influences the whole body because it affects the 20% of blood going through the brain every minute. TRFT appears to change the dynamics in red blood cell membranes to rejuvenate the immune system in human blood plasma.

Dr. Arendash and colleagues developed TRFT technology and the resulting MemorEM device over a 14-year period, primarily while he was at the company he founded to develop the technology, NeuroEM Therapeutics, Inc. Now, through his non-profit social enterprise “RF Longevity” (RFLongevity.com), Dr. Arendash wants to make both scientists and the general public aware of the remarkable potential for TRFT to extend human life span, perhaps by several decades or longer.

“In addition to public awareness of TRFT, my goal is to identify funding for two clinical trials with TRFT in normal individuals at least 65 years of age. This is when age-related diseases usually begin manifesting themselves,” stated Dr. Arendash. *“Measuring TRFT’s impact on indices of biologic age, inflammation, cognitive function, physiologic markers, and disease occurrence over 5-months and 5-years in these two trials will let us know if TRFT is truly a fountain of healthy longevity - and we won’t have to wait a decade or two to find out.”*

The U.S. government’s National Institutes of Health (NIH) does not fund clinical trials to enhance human longevity. As such, a major source of such funding has been coming from the ultra-rich and venture capitalists. A number of these individuals have been funding basic research (involving cells and animals) at various biotech companies and research institutes. TRFT technology is more advanced in that several small “clinical” studies have already been

completed showing its safety and efficacy against a major age-related disease (Alzheimer's), as well as against several major features of normal aging itself.

After many decades of ever-increasing life expectancy in the U.S., life expectancy plateaued beginning around 2010 and has actually declined since 2020. Decreasing life expectancy is also occurring in countries throughout the world, including England, Italy, Russia, and Saudi Arabia. Poor lifestyle habits and lack of exercise appear to be important factors for this alarming trend. Aside from increasing longevity, TRFT may be a means to first stop the troubling decline in life expectancy in these countries.

Dr. Arendash indicated that a "bioengineered device" to treat diseases of aging and to increase human life span is not mainstream. As such, some researchers in longevity don't wish to acknowledge or learn more about TRFT because it is not a drug or it is outside of their research expertise/interests.

Still, by most measures, TRFT seems to be among the furthest along of all "gerotherapeutics" for increasing healthy human longevity. Milestones include its "Breakthrough" designation by FDA, its apparent long-term safety/efficacy in humans, and the identification of its multiple "disease-modifying" mechanisms of action. Plus, TRFT is currently poised for immediate clinical trials with the primary goal of enhancing human longevity and not being focused on any one disease of aging or safety.

"The enigma of extending human longevity is best addressed by a single advanced technology that can target many diseases of aging and aging itself"- Dr. Gary Arendash

The MemorEM device is currently only for use in clinical trials and not yet available commercially. It is made exclusively in the U.S. by NeuroEM Therapeutics, Inc., which owns the TRFT-associated IP created by Dr. Arendash.

One question often asked is if daily treatments are necessary for TRFT's benefits? After a couple of months of daily 1-hour TRFT, researchers have found its beneficial effects on cognition in Alzheimer's subjects are maintained for weeks or months. So daily treatments seem not to be necessary for at least some of TRFT's beneficial effects against aging.

"TRFT could be an inherently safe, non-invasive way to extend healthy human life span and to maintain the brain's immense abilities into old age," said Dr. Arendash. Moreover, people will not have to wait decades for TRFT if it is indeed shown to increase human longevity in the next few years."

For more information, please visit: <https://rflongevity.com/>