

Leaders in Alzheimer's research herald the dawn of a new era in drug development based on biology of aging

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A combination of drugs will be needed to effectively treat or prevent

Alzheimer's disease and leading experts say we have entered a new era of drug development that will deliver them. In an editorial published in the *Journal of Prevention of Alzheimer's Disease*, the authors say the two most important factors driving us toward success are the wide range of new drug targets in development and the rapid development of Alzheimer's biomarkers.

"Alzheimer's is a complex disease caused by a combination of factors related to the biology of aging, so it stands to reason we will need to treat a combination of factors to have a real impact on the disease," says co-author Dr. Howard Fillit, Co-Founder and Chief Science Officer of the Alzheimer's Drug Discovery Foundation (ADDF).

There are currently 143 drugs in development to fight Alzheimer's, including 119 designed to slow or stop the disease. While amyloid-busting drugs dominated research not long ago, today there are more Alzheimer's [drug trials](#) targeting inflammation than these proteins. Ongoing trials are also addressing a host of other age-related changes implicated in Alzheimer's, including in metabolism, vascular function, epigenetics (changes in [gene regulation](#) without alterations in the DNA sequence) and nerve cell formation.

Equally important are significant advancements in [biomarkers](#), which are necessary for [early diagnosis](#) and selective recruitment of the right patients for the right [clinical trials](#). The development of biomarkers—in the form of blood tests, eye scans and even digital, technology-based tests—can help with early detection and diagnosis. Just 10 years ago, the only way to diagnose Alzheimer's was through post-mortem autopsy. Today, brain PET scans, spinal fluid tests and even a simple blood test can provide insights into the condition of the Alzheimer's brain.

"Biomarkers ensure the right patients are enrolled in each clinical trial and give researchers the means to evaluate their response to treatment,"

says co-author Yuko Hara, Ph.D., Director of Aging and Alzheimer's Prevention at the ADDF. "Biomarkers make clinical trials more efficient and more rigorous, especially early-stage trials where it is vital to determine quickly whether a treatment shows promise so that clinical trial dollars are spent on treatments that are most likely to work."

"As a neuroscientist and geriatrician, I am more optimistic than ever about our ability to prevent, diagnose and treat Alzheimer's disease," says Dr. Fillit. "With an increasing ability to diagnose individual causes of Alzheimer's in each patient, and well over 100 different drugs in the research pipeline, we are closer than ever to offering patients a personalized combination approach to their disease, just as we do for cancer and cardiovascular disease."

More information: Y. Hara et al, The Dawn of a New Era of Alzheimer's Research and Drug Development, *The Journal of Prevention of Alzheimer's Disease* (2022). [DOI: 10.14283/jpad.2022.64](https://doi.org/10.14283/jpad.2022.64)

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