Powder for Pennies: 
Leveraging What We Already Know

Significant time and funding are required to prove the safety and efficacy of a new drug, but what about existing drugs that are approved for use but whose full capabilities are not yet known?

Instead of investing millions into the development of one drug, the Powder for Pennies (P4P) program aims to power through hundreds of existing therapies to identify those that show promise for treating Alzheimer’s disease.

A recent example being considered is bumetanide, an oral diuretic or “water pill” approved for treating congestive heart failure, which looks to have a potentially potent effect in Alzheimer’s disease and offers a path to early clinical trials.

P4P leverages the ADCS’s network of labs and collaborators and its deep expertise in conducting early phase clinical trials of candidate treatments. Once compounds of promise are identified and have been through their early stages of testing, they can be handed off to USC’s Alzheimer’s Therapeutic Research Institute for phase III trials or larger-scale investigation. The program involves collaborators at USC, Harvard University and other research centers across the country.

P4P takes advantage of our existing, powerful translational medicine infrastructure, including the diverse participant cohorts at the Shiley-Marcos Alzheimer’s Disease Research Center and the clinical trials engine of the Alzheimer’s Disease Cooperative Study. By employing adaptive trial designs, the ADCS is able to tailor interventions to an individual’s response and adjust the therapies to explore other promising options. 

“Repurposed medicines don’t have the same degree of intellectual property protection, and they can be made available at a much cheaper price to the public. We really need something like that for Alzheimer’s disease which has such a high prevalence in older people.”

– HOWARD FELDMAN
Dean, Alzheimer’s and Neurodegenerative Disease Research
Professor of Neurosciences
UC San Diego
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Adaptive trials enable us to more quickly cycle through successful and unsuccessful therapeutic candidates instead of focusing each trial on one treatment path. It eliminates the engrained mindset to “make it work” due to long investments in the drug itself, instead supporting our ability to accelerate decision making based on the efficacy of the potential treatments.

These innovative trials represent just one of the ways the ADCS can evaluate and refine new treatments. Thanks to funding through this new collaboration, we can also simultaneously analyze new therapeutic candidates through animal models, computational analysis, pharmaco-epidemiology assessments, human brain organoids and more, as depicted in the “propeller model” below. Together, these approaches create a richer and more accurate picture of potential candidates for Alzheimer’s treatments that may otherwise be overlooked.

PROPELLER MODEL FOR EVALUATING EXISTING THERAPIES