

# Drug combinations key in treating neurodegenerative diseases

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Combining the benefits of multiple drugs in a single pill may hold the key to treating neurodegenerative diseases, Medical College of Georgia researchers say.

Drugs that protect neurons, for example, can be used with those targeting memory to make real progress in treating diseases such as Alzheimer's, says Dr. Jerry Buccafusco, founding director of the MCG Alzheimer's Research Center.

"We realize that with neurodegenerative diseases there will not be one magic bullet," Dr. Buccafusco says. "Developing new therapeutics will require an attack on many different levels. But, right now, there are no FDA-approved compounds out there that are significantly disease-modifying. We're at the point where we're just getting to that."

His review of trends in pharmacological research of neurodegenerative diseases is the featured article in the January issue of *NeuroTherapeutics*, the journal of the American Society for Experimental NeuroTherapeutics.

Alzheimer's treatment, for instance, should combine molecules that protect neurons from plaque buildup with approved therapies like cholinesterase inhibitors, which treat cognition and memory loss, Dr. Buccafusco says.

Dr. Buccafusco also cited several novel drug candidates developed at the

MCG Alzheimer's Research Center, including two molecules prevent cell death in the brain and improve cognition, reaction time and attention.

"What we have to do now is look at drugs that have already been developed to address very specific disease targets and come up with new ways to combine constituent groups of active molecules into a single therapeutic agent," Dr. Buccafusco says. "Drugs should target more than one particular molecular structure and molecular receptor in the central nervous system. The technology is available to design molecules that have multiple properties all in one package. This approach could represent a new frontier for pharmacology."

Advantages to multi-functional drug compounds, he says, include fewer side effects.

Source: Medical College of Georgia

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