

At present, new drugs are tested in animals or in human cells (cell culture) in a laboratory, to see if they are safe and effective before they can be tested in people. However, neither animals nor currently used human cells offer a completely satisfactory way of testing drugs, especially for treatment of diseases such as autism, Parkinson's Disease, Alzheimer's, migraine and many others.

Animals, as far as we know, do not get these diseases and so make poor models for studying how new drugs might act in human patients. The currently used human cells are also often biologically different from the cells in patients who would actually be receiving the drug. This means that even if a drug works in experiments, it may fail as a treatment in patients.

A better way to test new drugs would be to use cells from patients who are affected by specific diseases. Being able to study these kinds of cells may also help to understand the disease better, improve diagnosis and develop other possible treatments.

It is difficult to collect sufficient amounts of cells from individuals affected by disease to be able to do these studies. However by transforming an individual's cells into an [iPSC](#) line that can multiply almost indefinitely, it creates a long-term supply of useful cells that can be used for different research studies without running out.