Personalized piglets could offer insights into disease progression in children

To better understand [incurable inherited disease neurofibromatosis type 1, Charles] Konsitzke learned, you need a species that's closer in both size and biology to a person, and yet is still relatively easy to raise and study. That is, you need pigs. "Pigs closely represent humans," says Neha Patel, who directs the UW neurofibromatosis clinic. "People with NF-1 have varied cognitive deficits, from severe learning issues to subtle problems. If you imagine studying those in a rat, you'd only get a crude picture of how that translates to humans. But pigs are intellectual animals."

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Konsitzke and [researcher Dhanu] Shanmuganayagam aren't just planning to develop pigs that can model the symptoms of NF-1. They want to use the revolutionary gene-editing technique known as CRISPR to create pigs that have the specific mutations of a particular individual. Each child with NF-1 would get their own personalized piglet, whose version of the NF1 gene matched their own. The piggy proxy could be monitored to see how the kid's condition might progress, especially since they mature faster than humans do.

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The team delivered their first edited animal in November 2016, which carried a set of NF-1 mutations that had been reported in an earlier published study. They have since engineered three more animals, each with a different cluster of mutations.

Read full, original post: Turning Piglet Into Personalized Avatars for Sick Kids