

## Mouse Model of Post-Polio Syndrome for Growth Factor Therapy

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A “polio mouse” has been developed with hopes to find a therapeutic intervention for post-polio syndrome (PPS). The infected mice react to the polio attack much the way humans do. In SUNY’s study,

- 49% died,
- 9% had no paralysis,
- 42% survived with paralysis, and
- None had residual inflammation or viral infection with the continued motor neuron deterioration.

One year later, the equivalent of 30 to 40 human years, 50% of the surviving mice developed late weakness.

There has been some study of people with PPS taking growth factors. However, no useful information resulted for a couple of reasons.

- The dosages were too low and not repeated often enough.
- The growth factors were injected under the skin or into a muscle and did not reach the motor neurons.

The newer research intends to use two types of growth factors on the “polio mice:”

- GDNF: Glial cell lined-derived neurotropic factor. Its purpose is to maintain the health of the motor neuron cell body.
- IGF-1: Insulin-like growth factor. Its purpose is to strengthen and maintain the motor neuron sprouts.
- A combination of these two factors is intended to stop the late weakness of polio.

In order to deliver the growth factor precisely to the motor neuron cell body and sprouts, the researchers will use a benign virus vector which

does not damage the nerve cells.

The virus vector carrying genes of the two growth factors will attach inside the motor neuron and replicate. It is projected that the injection of additional virus vectors will only have to be done every six to nine months.

*If this procedure is successful with mice, the next step will be to try it with polio survivors. ▲*

