In A Nutshell
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Just Another Fish Tale?

You know the line given by fishermen with arms reaching out far—"I caught a fish and it was THIS BIG!!!"
Here is a story about a tiny fish that might shed light on developing neurons in the spinal cord.
The zebrafish (*Danio rerio*) is emerging as a new important species for studying mechanisms of brain function and dysfunction. There are multiple advantages of using this species in biomedicine including high physiological and genetic homology to mammals. Together with mammals and popular invertebrate model species, both larval and adult zebrafish are extensively used in central nervous system (CNS) research and targeting various brain disorders. Sensory inputs to the spinal cord are critically important for coordinated locomotion.

The zebrafish is also an important and widely used vertebrate model organism. in scientific research, for example in drug development, in particular pre-clinical development. **It is also notable for its regenerative abilities.**

Zebrafish are sometimes identified as an *alternative model* (relative to classic rodent models), but the term *complementary model* might be more appropriate.

Fish are easily bred in great numbers and develop rapidly, reducing the cost of experimentation and significantly increasing research throughput—potentially, more experiments can be run in less time to answer any number of questions.

The extent to which basic behavioral and brain processes in mammals and fish are analogous remains an open question—there are clear similarities and differences—and, as with all animal models, the validity of a fish model hinges on the particular question being asked.

A well-known remyelination agent thyroxine (T4) was tested to confirm whether EB-induced motility and myelin damage could be rescued. Two RORγt lead inhibitors GSK805 and SR1001 were assessed for their therapeutic effects on remyelination, axon regeneration, motor neuron promotion and anti-inflammation. T4 significantly improved EB-induced motility dysfunction and myelin damage and promoted myelin basic protein (MBP) regeneration in the demyelinated zebrafish.

https://www.sciencedirect.com/science/article/pii/S1056871918307950

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4039217/

https://www.sciencedirect.com/science/article/pii/S2468867319300082

Just for Fun

Check out this video of the development of sensory neurons in zebrafish. Could this be our spinal cords being repaired in the future?

https://www.facebook.com/NeuroNewsResearch/videos/348132869339701/