The European eel species 'digests' the bones in the body to sustain life

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" *This finding helps scientists observe and learn how to prevent or reverse the symptoms of osteoporosis in humans* ," the researchers said.

European eels migrate thousands of miles from the European freshwater to the Sargasso Sea, growing from larvae to adulthood.Photo source: Anders Asp

To spawn, the European eel (the Anguilla anguilla family) had to migrate 5,000 km (3,000 miles) from the European freshwater through the Atlantic Ocean to the Sargasso Sea, between the Azores and the sea. Caribbean. During this migration, previous studies found that they not only developed **the reproductive system** , but also did not eat any food.

" *During this month-long migration, consuming this energy, European eels consume a significant amount of bone* ," other studies have found. " *For example, their bones become very thin, the weight of the skull is reduced*

by 50% and the vertebral bone is also reduced by 65% ??of the original bone mass ," said a senior author **Björn Busse** . Biomedical and biomedical engineer at the University of Hamburg Medical Center in Germany said.

A large amount of bone remains uncertain is related to specific mechanisms, the amount of bone lost in this European eel species. To better understand how thin bones can " *give a new direction in understanding osteoporosis symptoms in humans* ," **Busse** said.

To elucidate the bones of the eels shrinking as they mature, scientists analyzed 30 bone samples at different stages in the eel life cycle. Because eels migrate to deep waters and satellite tags are too big for small animals like **eels** (adults are about 70cm or 2.3 feet long). Currently, researchers have no way to collect bone samples from actual migratory eels. Instead, they conducted experiments on artificially grown eels in the laboratory, maturing through growth **hormone** injections.

The researchers identified the bones of the European eel, including bone cells called " *osteocytes* " - broken bone cells like the skull, " *providing essential nutrients and minerals. during the migration process* , "Busse said. In contrast, eel bones - bone cells " *lost* " - like **mineral deposits** on the live wire (notochord) are a flexible rod that forms the backbone of European eels - protected from breaking. "To *maintain the stability of the spine, has important functions with the reproductive areas* ".

" *People often say people are the only animals that* " *lose bone* "- **osteoporosis** - in life," Busse said. However, in fact, it is possible that most of the animals used in bone research are mice that only " *exist for a short time* ," he said.

" *We found that European eels - thought to be long-lived animals, can live up to 80 years, also suffer from osteoporosis as part of the animal's natural biology. loss in different animals can give us new insights into the traits that need to be understood about human osteoporosis. prevention and treatment of osteoporosis in humans* , "Busse said.

Busse **notes** that: " *European eels are endangered animals. Therefore, biological insights have the potential to help preserve this important fish* ."

Scientists detailed their findings in the journal Proceedings of the Royal Society B on October 19.