

# Whale Meat May Help Slow Parkinson's Disease, Research Indicates

病気の治療というと、新しい薬や医療技術に注目が集まりがちです。しかし最近では、身近な食品や自然由来の成分が健康にどのような影響を与えるのかを調べる研究も進んでいます。今回注目されているのは、クジラ肉に豊富に含まれる「バレニン」という成分です。将来の医療につながる可能性も期待される一方で、まだ研究段階の部分もあります。こうした研究は、私たちの食や健康に対する考え方をどのように変えていくと思いますか。



## 1. Article

Read the following article aloud.

A compound found in abundance in baleen whale meat may help prevent Parkinson's [disease](#), an incurable brain disorder, according to research by Iwate University and other institutions.

The compound, known as balenine, eased symptoms in mice engineered to model Parkinson's disease. If the same effects can be confirmed in humans, the findings could open the door to a new treatment.

The study was reported in a European academic journal on April 17.

Balenine is found in large amounts in baleen whales, including fin, minke, and sei whales. Previous studies have linked the compound to brain-related benefits, including improved cognitive [function](#).

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# 1. Article

Researchers therefore saw [potential](#) for it to ease Parkinson's disease, which disrupts signals from the brain to the body and causes symptoms such as tremors, impaired movement, falls, and [cognitive](#) decline.

Parkinson's disease develops as nerve cells that produce dopamine, a neurotransmitter in the brain, gradually decline. One suspected driver of the disease is mitochondrial damage—the tiny structures inside cells that generate energy—which can lead to cell death.

To test balenine's effects, the team used mice in which Parkinson's disease had been reproduced by impairing mitochondrial function in dopamine-producing nerve cells.

The mice showed abnormal behavior, moving restlessly around their cages. But after receiving daily doses of balenine for 13 weeks, the distance they traveled during these episodes fell by 20% to 30% between the third and eighth weeks.

The researchers also found that, inside dopamine-producing nerve cells, a repair mechanism had been activated: damaged mitochondria were being broken down and rebuilt.

"We have identified part of the mechanism by which balenine acts on nerve cells," said Taku Ozaki, an associate professor of cellular biochemistry at Iwate University who specializes in neurological disease research. "The effect was striking."

The findings, however, do not show that eating whale meat will necessarily [prevent](#) Parkinson's disease. The team now plans to examine whether balenine is effective in humans and how the compound can be delivered safely to the brain.

The balenine used in the experiment was extracted from sei whales. Per 100 grams, sei whale meat contains about 27 times more balenine than pork, 250 times more than chicken, and 640 times more than beef. The compound is also heat-resistant and remains stable inside the body, according to the researchers.

Parkinson's disease is thought to affect roughly one in 100 people aged 65 or older. There is still no cure, and treatment currently centers on therapies that supplement dopamine.

## 2. Key phrases and vocabulary

First repeat after your tutor and then read aloud by yourself.

**1. disease** 病気

Doctors are working hard to control the spread of the disease.

**2. function** 機能

The company has added two new functions to its newest smartphone.

**3. potential** 可能性

The young artist showed great potential at the national competition.

**4. cognitive** 認知の

Children can improve their cognitive skills if they read regularly.

**5. prevent** 防ぐ

Listening carefully to someone can prevent misunderstandings.

## 3. Questions

Read the questions aloud and answer them.

1. What symptoms can Parkinson's disease cause?
2. What happened after the mice received balenine for 13 weeks?
3. Does the study show that eating whale meat can prevent Parkinson's?
4. Do you think endangered animals, such as the sei whale, should be used in medical studies? Why or why not?
5. What are the advantages and risks of using animals in medical research?

## 4. クジラ肉に豊富な「バレニン」、パーキンソン病の進行抑制か 神経細胞内の修復機能を促進

ヒゲクジラの仲間の肉に豊富な「バレニン」という成分が、脳の難病パーキンソン病の予防に役立つ可能性が、岩手大などの研究で浮上した。パーキンソン病を再現したマウスに投与すると、症状が軽減された。人でも効果を確認できれば、新たな治療法につながりそうだ。4月17日付の欧学術誌で報告された。

バレニンは、ナガスクジラ、ミンククジラ、イワシクジラなどヒゲクジラ類に豊富な物質で、認知機能障害の改善など脳機能に関わる効果が報告されている。そのため、脳から体への指令がうまく伝わらず、手足の震えや運動機能低下、転倒、認知機能の衰えが起きるパーキンソン病の症状改善も期待された。

この病気は、脳内の神経伝達物質であるドーパミンを作る神経細胞の減少で発症する。この細胞内で、エネルギー生産を担う小器官ミトコンドリアが損傷し細胞死を招くことが進行の一因とみられる。そこで研究チームは、ドーパミン神経細胞のミトコンドリアの機能を阻害しパーキンソン病を再現したマウスで、バレニンの効果を調べた。

このマウスでは、飼育箱内を落ち着きなく動き回る異常な行動がみられた。だが、13週間にわたりバレニンを毎日投与すると、異常行動で動き回る距離が3~8週後に2~3割抑えられた。ドーパミン神経細胞では、傷ついたミトコンドリアが分解され、作り直される仕組みが働いていた。

脳神経の病気の研究が専門の尾崎拓・岩手大准教授（細胞生化学）は「バレニンが神経細胞に作用する機構の一部が判明した。突出した効果だった」と話す。ただ、クジラ肉を食べればパーキンソン病を確実に防げると示されたわけではないため、今後は人での有効性や成分を安全に脳へ届ける方法を調べるとしている。

実験で使ったバレニンは、イワシクジラから抽出された。イワシクジラの肉100グラム当たりのバレニン含有量は、豚肉の約27倍、鶏肉の約250倍、牛肉の約640倍。熱に強く、体内でも安定しているという。

パーキンソン病は、65歳以上の100人に約1人が発症するとされる。根治療法は未確立で、ドーパミンの補給療法が中心となっている。

出典：クジラ肉に豊富な「バレニン」、パーキンソン病の進行抑制か 神経細胞内の修復機能を促進

[Japan Forward](#)