Why Are Most Greenland Sharks Blind?

By James Murray / November 22, 2025

Table Of Contents

Why Are Most Greenland Sharks Blind?

Most *Greenland Sharks* Suffer From Visual Impairment, Primarily Due To A *Parasitic Copepod* That Attaches To Their Corneas, Leading To *Blindness* In A Significant Portion Of The Population. This Seemingly Detrimental Condition Raises Intriguing Questions About Their Adaptation And Survival In The Deep, Dark Arctic Waters.

You May Also Want To Know: What Colours Are Fish Most Attracted To? · What Is The Most Invasive Plant In Australia?

The Enigmatic Greenland Shark: A Deep Dive

The Greenland Shark (*Somniosus Microcephalus*) Is A Fascinating Creature, A True Relic Of The Arctic And North Atlantic Oceans. These *Massive Sharks*, Known For Their Incredibly Slow Growth Rate And Exceptional Longevity, Can Live For Centuries, Making Them Among The *Longest-Lived Vertebrates* On Earth. They Inhabit The Frigid Depths, Often Below 600 Meters, Where Sunlight Barely Penetrates. Their Diet Is Diverse, Ranging From Fish And Seals To Even Polar Bear Remains, Painting A Picture Of An Opportunistic Apex Predator. But One Of The Most Striking And Often Discussed Features Of These Sharks Is Their High Prevalence Of Visual Impairment.

People Also Ask

- **What Is The GREY African Clawed Frog?** +
- **Is Distilled Water Good For Goldfish?** +
- **Can You Put Your Finger In A Trout's Mouth?** +
- **Is Methylene Blue Anti Bacterial?** +

The Culprit: *Ommatokoita Elongata*

The Primary Reason Why Are Most Greenland Sharks Blind? Boils Down To A Tiny But Persistent Parasite: The Copepod *Ommatokoita Elongata*. These *Crustaceans* Specifically Target The Shark’s Eyes, Attaching Themselves To The Cornea. The Copepods Are

Bioluminescent, Meaning They Produce Their Own Light, Which Might Attract Prey To The Near-Blind Shark.

- The Copepod Attaches To The Cornea.
- The Copepod Causes Damage And Irritation.
- This Leads To Corneal Opacity And Visual Impairment.
- In Many Cases, The Shark Becomes Functionally Blind.

Bioluminescence: A Double-Edged Sword?

The *Bioluminescence* Of *Ommatokoita Elongata* Has Led To Speculation About A Possible Symbiotic Relationship Between The Parasite And The Shark. The Light Produced By The Copepod Might Attract Prey To The Shark, Compensating For Its Impaired Vision. However, This Hypothesis Is Debated, And It's Unclear If The Potential Benefit Outweighs The Detrimental Effects Of The Parasite. It's More Likely That The Bioluminescence Simply Serves The Copepod's Own Needs, Such As Attracting Mates.

Adaptation And Survival In Darkness

Despite The High Prevalence Of Blindness, Greenland Sharks Thrive In Their Deep-Sea Environment. This Suggests That Vision Might Not Be As Crucial For Their Survival As Other Senses. Here Are Some Factors That Contribute To Their Adaptation:

- ***Chemoreception:*** They Possess A Highly Developed Sense Of Smell, Allowing Them To Detect Prey From Considerable Distances In The Dark.
- ***Electroreception:*** Greenland Sharks Can Sense The Electrical Fields Generated By Other Animals, Aiding In Prey Detection.
- ***Lateral Line:*** This Sensory System Allows Them To Detect Vibrations And Changes In Water Pressure, Providing Information About Their Surroundings.
- ***Opportunistic Feeding:*** They Are Not Picky Eaters And Consume A Wide Variety Of Prey, Increasing Their Chances Of Finding Food.

Why Are Most Greenland Sharks Blind?: Evolutionary Considerations

The Question Of Why Are Most Greenland Sharks Blind? Also Touches Upon Evolutionary Considerations. Given The Ubiquity Of *Ommatokoita Elongata*, Why Haven't Greenland

Sharks Evolved A Resistance To This Parasite? Several Factors Might Contribute To This:

- ***Slow Reproduction:*** Greenland Sharks Are Extremely Slow To Reproduce, Limiting The Rate At Which Beneficial Adaptations Can Spread Through The Population.
- ***Limited Natural Selection Pressure:*** In The Deep, Dark Ocean, Vision Might Be Less Crucial For Survival Compared To Other Senses. Therefore, The Selection Pressure Against Blindness Might Be Weaker.
- ***Cost Of Resistance:*** Developing Resistance To The Parasite Might Require Significant Energy Expenditure, Which Could Outweigh The Benefits In Their Energy-Scarce Environment.

Here's A Table Summarizing The Pros And Cons Of The Bioluminescent Parasite:

Feature	Possible Benefit For Shark	Detriment For Shark
_____-	_____-	_____
Bioluminescence	Attracts Prey, Aiding In Food Acquisition	None Direct
Parasitism	None Direct	Corneal Damage, Visual Impairment, Blindness

The Impact Of Climate Change

Climate Change Could Potentially Affect The Prevalence Of *Ommatokoita Elongata* And Its Impact On Greenland Shark Populations. Changes In Water Temperature And Ocean Currents Could Alter The Distribution And Abundance Of Both The Parasite And The Shark, Leading To Unpredictable Consequences. Further Research Is Needed To Understand The Long-Term Effects Of Climate Change On This Fascinating Species.

Frequently Asked Questions (FAQs)

What Exactly Is *Ommatokoita Elongata*?

Ommatokoita Elongata Is A *Parasitic Copepod*, A Type Of Crustacean, That Specifically Targets The Eyes Of Greenland Sharks. It Attaches To The Cornea And Feeds On The Shark's Tissue, Leading To Corneal Damage And Visual Impairment. They Are Also Bioluminescent, Producing Their Own Light.

How Does The Copepod Affect The Shark's Vision?

The Attachment Of *Ommatokoita Elongata* To The Cornea Causes *Inflammation, Scarring, And Opacity*. This Clouding Of The Cornea Reduces The Amount Of Light That Can Enter The Eye, Leading To Blurred Vision And, In Severe Cases, Complete Blindness.

Do All Greenland Sharks Have This Parasite?

While The Prevalence Is High, *Not All Greenland Sharks Are Infected* With *Ommatokoita Elongata*. Studies Estimate That A Significant Portion Of The Population, Likely The Majority, Experiences Some Degree Of Visual Impairment Due To The Parasite.

Is There Any Way To Treat Greenland Sharks For This Parasite?

In The *Wild, There Is No Practical Way* To Treat Greenland Sharks For *Ommatokoita Elongata*. The Deep-Sea Habitat And The Sheer Size And Longevity Of These Sharks Make Intervention Extremely Challenging.

Do Greenland Sharks Suffer Because Of Their Blindness?

While Visual Impairment Undoubtedly Affects Their Behavior, Greenland Sharks Seem To *Adapt Remarkably Well*. They Rely Heavily On Other Senses, Such As Smell And Electroreception, To Navigate And Find Food.

Are Greenland Sharks The Only Animals Affected By Parasitic Copepods?

No, *Parasitic Copepods Are Common* And Affect A Wide Variety Of Marine Animals. However, *Ommatokoita Elongata* Is Relatively Specific To Greenland Sharks.

How Long Do These Parasites Live On The Shark's Eyes?

The Exact Lifespan Of *Ommatokoita Elongata* On A Greenland Shark's Eye Is *Not Fully Known*. It Is Believed That They Can Remain Attached For Extended Periods, Potentially For

Years, Continuously Causing Damage.

Is The Greenland Shark Population Declining?

Greenland Sharks Are Listed As *Near Threatened* By The IUCN. While Their Population Size Is Difficult To Estimate Due To Their Elusive Nature, They Face Threats From Fishing, Climate Change, And Habitat Degradation.

Why Haven't Greenland Sharks Evolved Resistance To This Parasite?

As Mentioned Earlier, The *Slow Reproductive Rate* Of Greenland Sharks And Potentially *Low Selection Pressure* For Vision In Their Deep-Sea Environment Contribute To The Lack Of Evolved Resistance. The Cost Of Resistance Could Also Be A Factor.

Do Greenland Sharks Hunt Differently Because Of Their Impaired Vision?

It's Likely That Impaired Vision Influences Their Hunting Strategies. They Probably Rely *More On Ambush Tactics And Scavenging* Rather Than Actively Pursuing Prey Over Long Distances. *Their Strong Sense Of Smell* And Ability To Detect Electrical Fields Become Even More Crucial.

Are There Other Factors That Contribute To Blindness In Greenland Sharks Besides The Copepod?

While *Ommatokoita Elongata* Is The Primary Cause, Other Factors Such As *Age-Related Degeneration* Or Other *Undetected Infections* Could Potentially Contribute To Visual Impairment In Some Greenland Sharks.

Could The Bioluminescence Of The Copepod Actually Help The Shark?

The Hypothesis That The Copepod's *Bioluminescence Attracts Prey* Is Intriguing But Remains *Unproven*. While Possible, It Is More Likely That The Bioluminescence Serves The Copepod's Own Purposes, Such As Attracting Mates. Further Research Is Needed To Determine The True Nature Of This Complex Relationship.

← PREVIOUS
Can you moisten dog kibble?

NEXT →
What sushi has no fish?

Leave A Comment

Your Email Address Will Not Be Published. Required Fields Are Marked *

Type Here..

Name*

Email*

Website

Save My Name, Email, And Website In This Browser For The Next Time I Comment.

Post Comment