

## Lifestyle | Feature



In this photograph a chiropterologist holds a greater mouse-eared bat in his hand in Noyal-Muzillac.

every time your cells replicate, it gets shorter and shorter. They get really short, the cell should self-destruct but sometimes it stays around and becomes old, potentially driving the ageing process. But in the longest-lived bats like Greater Mouse-eared bats, the telomeres do not shorten with age. They can protect their DNA. We sequenced genes from young, middle-aged and older bats and what we found was extraordinary—they increase their ability to repair their DNA with age and repair the damage that living causes. Ours decreases. As we age, we get arthritis, we suffer from inflammation, the bats don't seem to do this and the question is how?

So we found that they repair damage to their DNA and they are also able to modulate their immune response, keeping it balanced between antiviral and anti-inflammatory responses. When you look at COVID-19 for example, what kills somebody is this over-excited immune response. In Dublin, we did an experiment looking at antiviral and anti-inflammatory cytokines and found that if a

human with a bat's immune profile was hospitalized they wouldn't end up on a ventilator. If it is the other way around, so more like a mouse, they end up on a ventilator. We share the same genes as bats, with slight tweaks and modifications. Imagine if we find the little controlling gene that regulates these effects, we could then make a drug to mimic it in humans.

#### How long will it take?

I would have said 10 years, but look how fast everything is going now. People are really interested in looking at bats to find answers, there's been a huge speed up. We sequenced the genome, that was the first step, then we have this field data and we're working with labs all around the world who are developing the cellular tools required. We have to keep going and believe it's possible.



Chiropterologists install traps in an attempt to catch greater mouse-eared bat on the roof of a church in Noyal-Muzillac.



This file photo shows tourists and local residents gathering on the Congress Avenue Bridge in Austin, Texas to watch a colony of approximately 1.5 million Mexican free-tailed bats swoop into the skies in search of their evening meal from their home at the largest urban bat colony in North America.