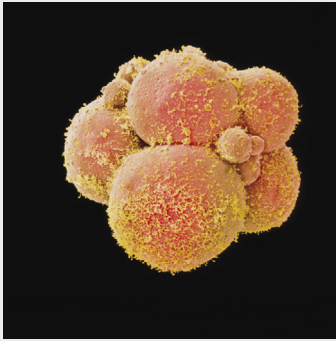


## NEWS

## Germline alteration of human embryos marks dawn of new era



Yorgos Nikas/Science Photo Library

With an August 2018 report by scientists working in China that viable human embryos have been edited to correct the genetic alteration that causes Marfan syndrome, the CRISPR era of genome editing has begun in earnest. While the embryos were not implanted, the proof-of-principle report, published in *Molecular Therapy*, opens up the possibility of correcting

heritable defects in embryos prior to implantation. However, ethical considerations about human embryo experimentation loom large. Such concerns have limited these kinds of studies in the United States, although scientists at Oregon Health and Science University reported in 2017 that they had used CRISPR genome editing to correct a genetic defect in nonimplanted embryos. Regulatory barriers include the still-standing ban on National Institutes of Health funding for experiments that use genome editing to alter human embryos. There is little incentive to proceed along these lines due to a US Congress prohibition of human clinical trials using genome-edited embryos. Moreover, such experiments would still be years away. While the technology employed by the Chinese scientists working at Third Affiliated Hospital of Guangzhou Medical University, Guangzhou, is purported to produce fewer off-target changes to DNA, the scientists did state that “some unwanted base conversion events were detected, which shows that to further narrow down the editing window would be a focus of future technical improvement.” —Karyn Hede, News Editor

## DNA evidence in shark tooth helps calm fears in New York waters



Radha Krueger, Florida Museum of Natural History

With images of great white sharks dancing in their heads, New Yorkers became alarmed after two children were bitten on the same July 2018 day in waters off Fire Island National Seashore. Some feared the bites came from a potentially deadly shark. But a small tooth fragment

left behind in a 13-year-old boy's leg provided just enough DNA to enable Florida scientists to identify the species involved: a relatively harmless sand shark. The forensic feat was the first time that a shark associated with a bite had been successfully identified using DNA. Researchers compared the DNA sequence obtained from the tooth pulp to a dataset of 900 species of cartilaginous fish to positively identify the species and rule out other more dangerous possibilities. Gavin Naylor, director of the Florida Program for Shark Research at the Florida Museum of Natural History, said both bites were caused by juvenile sand tiger sharks following schools of baitfish swimming close to shore. About 70% of shark bites are caused by unidentified species, Naylor said. Great whites, tiger sharks, and bull sharks are often blamed for attacks because of their large size and the fact that they are responsible for the majority of identifiable bites, he explained. Naylor reported the finding in *Nature* on September 5. According to Reuters, the adolescent victims received emergency medical treatment for puncture wounds and were expected to recover fully. Meanwhile, Naylor said his lab is well equipped for this kind of DNA analysis and that the team would gladly analyze other DNA samples from bites. —Karyn Hede, News Editor