Animal bone implants that resemble natural bone
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Bone grafts made easier with the use of animal bone.

Researchers from the Institute of Bioengineering and Nanotechnology (IBN) have developed a method to implant the bone safely into humans without the risk of viral infections.

Imelda Saad explains this scientific breakthrough.

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Voiced Report:

Take a bone from the leg of a pig and make it as natural as possible to the human bone for use in bone grafting procedures.

IBN researchers have managed to do that without the use of harsh toxic chemicals, usually needed to clean the bone of debris that can lead to immune rejection.

The key is in an ultrasound treatment used to rid the implanted animal bone of marrow and cells.

Lead-scientist Dr Mao Pei-Lin explains: “This is the tricky part… The bone marrow cells lie in a channel, at the centre of the bone.

“The cells are not easily removed, so people normally use really harsh chemicals. But I think ultrasonic treatment plays an important role in degrading the cells. With the right frequency and time, cells can be degraded and released from the bone.”

Once impurities and cells are released from the bone, all that's left is a scaffold which is then implanted into the patient.

The scaffold stimulates the growth of bone cells, forming a healthy new bone.

As the processed pig bone retains its original architecture and component, researches say it can be implanted safely without the risk of a viral infection or immunological response.

Current orthopedic patients receive bone grafts from several sources.

They include -- obtaining the bone from a different part of the patient's body or harvesting a bone from another person or animal.

These methods can result in further infection at the donor site or immune rejection.

The new method, which eliminates the use of toxic chemicals, and is said to be cheaper and more efficient.

Dr Mao and her team are planning animal tests on a sheep in 6 months.

If successful, clinical trials on patients can begin.