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## ***ПЕРШИЙ КРОК У НАУКУ***

Матеріали  
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## **THE 3D PRINTED CAST**

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Amazing technologies are constantly developing in our modern life: smart glasses, smart hairbrush, smart watch, driverless cars, bioabsorbable stents and so on. And it is not going to stop in the next year.

Every day a lot of people break or twist their limbs and need a cast. Doctors fit plaster to their hurting body part. Sometimes inflammation or muscles atrophy happen.

Turkish student Deniz Karakhasin made a breakthrough in the field of traumatology. He printed a cast on the 3D printer, called “Osteoid Medical Cast”. Thanks to this innovation the bones coalesce 40% faster. In future, the doctor will scan your arm, print out a water-proof, lightweight cast using a software. To scan a limb and design a customized cast are very simple today.

The treatment uses ultrasonic vibrations. Similar properties of ultrasound have been known for a long time, but the whole difficulty was that they were manifested only with very close contact with the body. Since the skin above the fracture is usually damaged, it was simply painful to use medical devices. The printed plastic cast leaves the injured skin areas open. Ultrasound generators are built right into its frame, which makes wearing simple and comfortable – you do not need to constantly correct anything. Such methods will be cheaper, faster, and more convenient for both patient and doctor.

But there is one disadvantage: before applying the 3D cast the patient still has to use a plaster for fixation. This procedure allows doctors to put the broken bones into place with high accuracy. However, after a week in the plaster, the bones begin to grow together at the fracture site. From this moment, it is possible to remove the plaster and replace it with a more convenient, hygienic and light plastic option.

While this gadget exists in the form of a prototype, but in view of its unique properties, it is possible that in a couple of years there will be a 3D printer printing such casts in each hospital. We hope that next year will be the year of technological revolution in medicine. New, modern, comfortable devices will be invented to treat people and relieve their pain.

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