

# Medical treatments need genetic diversity

*The solution comes from a Dutch startup working on an engineered microchip*

The startup, BI/OND, will present its revolutionary approach to the Startup Grind Conference on 11-13 February in Redwood City, Silicon Valley.

In the past 10 years, international institutions and research centres raised their voices to address the lack of diversity in genetic data. These data are crucial to test and finally produce drugs for severe diseases such as cancer, diabetes and viruses.

Researchers at Duke University reported that 96 per cent of the genomic data we had gathered came from people of European ancestry. This was not the result of small numbers: they calculated the percentage using the more than 1.7 million individual genome samples analyzed at the time.

If DNA is an important element to find effective medical treatment, then women, people from different ethnicities, ages and body abilities are limited to use drugs based on a completely different genetic set.

**What if we could have the perfect drug for each person? What if drugs could be tailored to your organs?**

This would change the approach pharmaceutical companies use to test and provide drugs, indeed this new perspective opens up new possibilities in the field of rare and genetic diseases. Perhaps, innovation in medical treatments needs a hint from engineering.

**A few years ago, a group of engineers at TU Delft (NL) developed a new system to reproduce small parts of a patient's tissue on a computer chip.**

The chip acts like a real body part - it has veins and beats like a heart - and provides the perfect environment to the tissue. Thanks to this technology, it is now possible to test any drug in real-life conditions and avoid rejections or painful treatments.

The group has become a startup and has been invited to present its revolutionary approach to the Startup Grind conference (11-13 February) in Silicon Valley.

**Today BI/OND aims at improving medical treatment of millions of patients by providing innovative hardware solutions for enabling medical research which reflects our natural diversity.**

Three of the most relevant hospitals in Europe are already working with this technology for breast and brain chemotherapy studies, and more institutes are adopting BI/OND' tools to test drugs on several organs.

Thanks to this paradigm shift in medical treatment, it will soon be possible to unlock effective treatments for people with any DNA and test drugs without risks for patients.