



## **STEP INSIDE**

### **Explore our biology labs**

#### **BIOLOGY**

##### Presenter

In the biology department they use a technique called 'in vitro' modelling. That means the study of human cells that are alive, but outside the human body. Rather than in-vivo – which means testing on something that's alive, like an animal.

In vitro allows the team to model the effect of smoke on the development of diseases like cancer and heart disease.

##### Katherine Hewitt, Bioassessment Scientist

This machine replicates the blood flows in the human body, to allow the cells to feel at home. Then we add cigarette smoke and the cells become stressed.

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It's the same technology that's used to determine the biological impact of cosmetics and pharmaceuticals, which means no testing on animals. It's also more accurate, as animal models don't always reflect human biology.

##### Presenter

This is the exposure chamber, essentially a plastic lung that looks nothing like a real lung, but we're able to grow the cells on these little buckets.

##### Anisha Banerjee, Biomarker Scientist

It lets us expose the cells in a physiological manner, meaning rather than exposing the cells in liquid in a petri dish, we can mimic the human body accurately.

##### Presenter

Like you'll remember from school experiments, we need to have a control to compare the experiment against. So here we have cells that are unexposed. We then have cells that will be exposed and depending on the volume of smoke or level of exposure we will see the effect.

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#### **CONCLUSION**

##### Presenter

So I hope this has given you a taste of BAT's commitment to developing less risky products. And, they're not doing it behind closed doors.

They welcome regulators and other scientists to visit and they will answer your questions, the only thing hidden away in R&D are world class scientists working on cutting edge technologies.

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