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**BBC**

**Skin transformed for cancer fight**

Scientists have opened up the possibility of one day using cancer patients' own skin to fight their tumours.

Oxford University researchers transformed skin cells into immune cells, which could be used to trigger a hunt for cancer.

It was achieved only in the laboratory, not in people, meaning any therapy is a long way off.

However, the researchers believe it will be possible.

Harnessing the power of the immune system is a field being pursued by cancer researchers, such as in the search for cancer vaccines.

The conductor

This study, published in the journal Gene Therapy, was focused on dendritic cells, which organise part of the immune response.

By showing identifying markers - or antigens - they tell the immune system what to attack.

If they display cancer markers, cancerous cells will become the target.

Dr Paul Fairchild, from the Oxford Stem Cell Institute, said trials into dendritic cells, harvested from a patient's blood, had taken place before, but they fired up only part of the immune system.

His team used advances in stem cell technology to create new dendritic cells from a patient's skin.

These were primed to trigger an attack on melanomas using a marker, Melan A, which is unique to the cancer.

Experiments in the laboratory showed these dendritic cells were able to activate both immune cells which produce antibodies and those which kill other cells.

Dr Fairchild said: "The patient would in effect be treated with their own immune cells to prime an attack on their tumour."

He acknowledges that any therapy is a distant prospect.

The cost and a safe method of producing stem cells are two of the barriers.

Even then he pictures a treatment working alongside, rather than replacing, other therapies: "It is a long and arduous process compared with chemotherapy and radiotherapy. It's extremely labour intensive."

Dr Caetano Reis e Sousa, a Cancer Research UK immunology expert, said: "By showing that normal body cells can be reprogrammed to become a sub-type of dendritic cells with superior activity, this research builds on previous work by Cancer Research UK scientists using blood stem cells as starting material.

"The next challenge is to confirm that these laboratory-generated cells will be suitable for immunotherapy-based cancer-treatments used in the clinic."