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**Student juggles medical degree with professional ice hockey AND makes breast cancer breakthrough**

By [Daily Mail Reporter](http://www.dailymail.co.uk/home/search.html?s=&authornamef=Daily+Mail+Reporter)  
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A professional ice hockey player who is also studying to become a doctor has made a major breakthrough in the fight against breast cancer.

Luke Piggott, 25, splits his time between the laboratory and the ice rink where he is a Great Britain international.

Now his research in the lab has uncovered a way of killing breast cancer stem cells.

Experts say his breakthrough, published in the journal Breast Cancer research, has hit the disease's Achilles' heel.

Luke, a PhD student at Cardiff University, was using an anti-cancer agent called TRAIL which has not previously been tried in the treatment of breast cancer.

The 180lb goal scorer was peering through a microscope the morning after a match when he noticed something remarkable was happening.

He said: 'I didn't really expect to see what I did. I was expecting to see the stem cells move along the microscope.

'But then I looked again and they'd all died.

'I did it again to check, and then you check again and again and you start to believe it.'

Luke discovered the drug knocked out a protein called c-FLIP which gave stem cells their drug resistance.

Using this method he has achieved a 98 per cent reduction in secondary tumours in the laboratory.

But Luke has no plans of swapping his hockey jersey for a full-time laboratory white coat.

He will continue to play professionally for the Cardiff Devils on a two-way contract which allows him to continue his research and play the game he loves.

Luke was the team's top scorer last season and plays in the English National League.

He said: 'I am very lucky in that my supervisor is very flexible with me combining my sporting career with my research.

'He has always been up front with me and so long as my quality of academic work remains high, it's not a problem.

'I even use the long trips to away games as an opportunity to read and study.

'So far, neither of my careers seems to have hindered the other.'

His research supervisor, Dr Richard Clarkson, said: 'We've identified the Achilles' heel of cancer stem cells.

'Cancer stem cells make up about one per cent of the tumour itself and they seed tumour growth elsewhere in the body.

'If we target the rest of the tumour but don't hit this one per cent which is usually drug resistant you can get relapse and spread.

'Tumours in the breast don't kill but as soon as it spreads it becomes a life-threatening situation.

'It's only a matter of time before we find ways of hitting that target therapeutically with drugs in patients.'

Luke is in his second year of his PhD which is funded by the Cardiff-based cancer charity Tenovus.

Dr Lisa Wilde, director of research at Breast Cancer Campaign, said: 'More than 12,000 people die each year from breast cancer in the UK, mainly as a result of the disease spreading to other parts of the body.

'Luke's research is an important early step in understanding the role cancer stem cells play in this process.

'It could help us develop desperately needed new treatments to halt breast cancer spread in its tracks.'

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**Ice hockey star takes a big stick to cancer**  
  
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Luke, 25, finds way to stop spread of breast tumours

A UNIVERSITY student who doubles as a professional ice hockey player has made a major medical breakthrough in the fight against breast cancer.

Research carried out by Luke Piggott, 25, has revealed a way to kill the highly resistant cells that are responsible for making the tumours spread.

Experts say his "significent" discovery could lead to new treatments in combating the disease that kills more than 12,000 people in Britain each year.

Luke, who is studying for a PhD at Cardiff University, also dazzles fans of local ice hockey club Cardiff Devils and last season was the team's top scorer with 38 goals in 38 games.

He said he was "shocked" when he realised he had made a major medical discovery.

"I repeated the experiment and then repeated it again and when I realised the same thing was happening, I rushed into my supervisor's office, " he said.

His research had been concentrating on the stem cells in cancer tumours, which scientists believe are responsible for cancer growth, spread and relapse.

They are highly resistant to drugs, thought to be due to their ability to produce a protein called c-FLIP which makes them immune to an anti-cancer agent labelled TRAIL, which is being used in clinical trials On his own initiative, Luke experimented with a chemical that stopped the stem cells producing c-FLIP, thus over coming their resistance to TRAIL.

His research, published in the journal Breast Cancer Research, marks the first time a scientist has found a way to kill the stem cells in breast cancer tumours and leave normal cells unharmed.

Lecturer Dr Richard Clarkson, who is supervising Luke's research, said: "Luke did an experiment on the stem cells that I had not asked him to do.

He then came to me with the findings and we took it from there.

"This is a major breakthrough and certainly a significant step forward in potentially finding new treatments for breast cancer.

"It is early days though and important to point out that we don't know whether a tumour in a patient with breast cancer will respond in the same way.

"The agent used to make the cells lose their resistance to TRAIL has never been used in people, so we don't know yet whether that is a viable option.

"But this is the first time we have demonstrated a complete kill of the cells which we know kill people."

Luke, who has just signed a new contract with Cardiff Devils, said: "I love ice hockey and I love my work, so hopefully I will continue to do both.

"Richard is very supportive and allows me to fit in my training.

At the moment, finishing my PhD is my priority."

Dr Rachel Greig, of charity Breakthrough Breast Cancer, said: "This early research represents an interesting approach."