

# "Epigenetics in Breast & Ovarian Cancer"

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@jimiflanUK



ovarian  
cancer **action**  
research centre

# Cancer Statistics for the UK

## Cases



New cases of cancer,  
2014, UK

## Deaths



Deaths from cancer,  
2014, UK

## Survival



Survive cancer for 10  
or more years,  
2010-11, England and  
Wales

## Prevention



Preventable cases of  
cancer, UK

### LIFESTYLE

## Be smoke free

Keep a healthy weight

Eat fruit & veg

Drink less alcohol

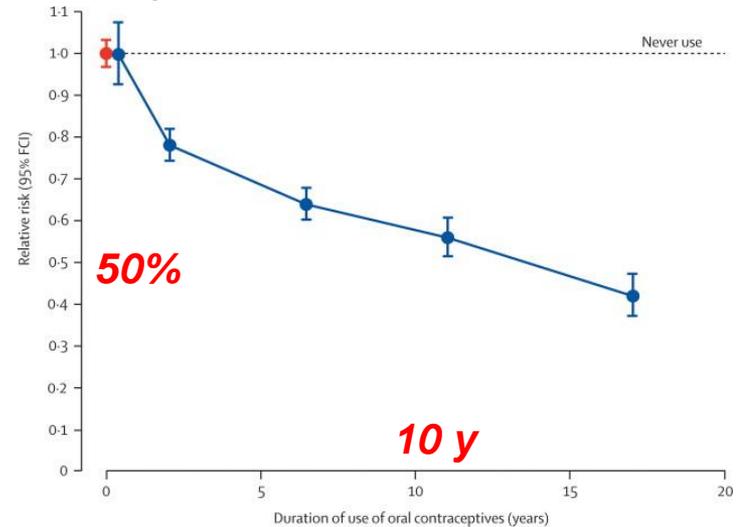
Be SunSmart

Eat less processed and red meat

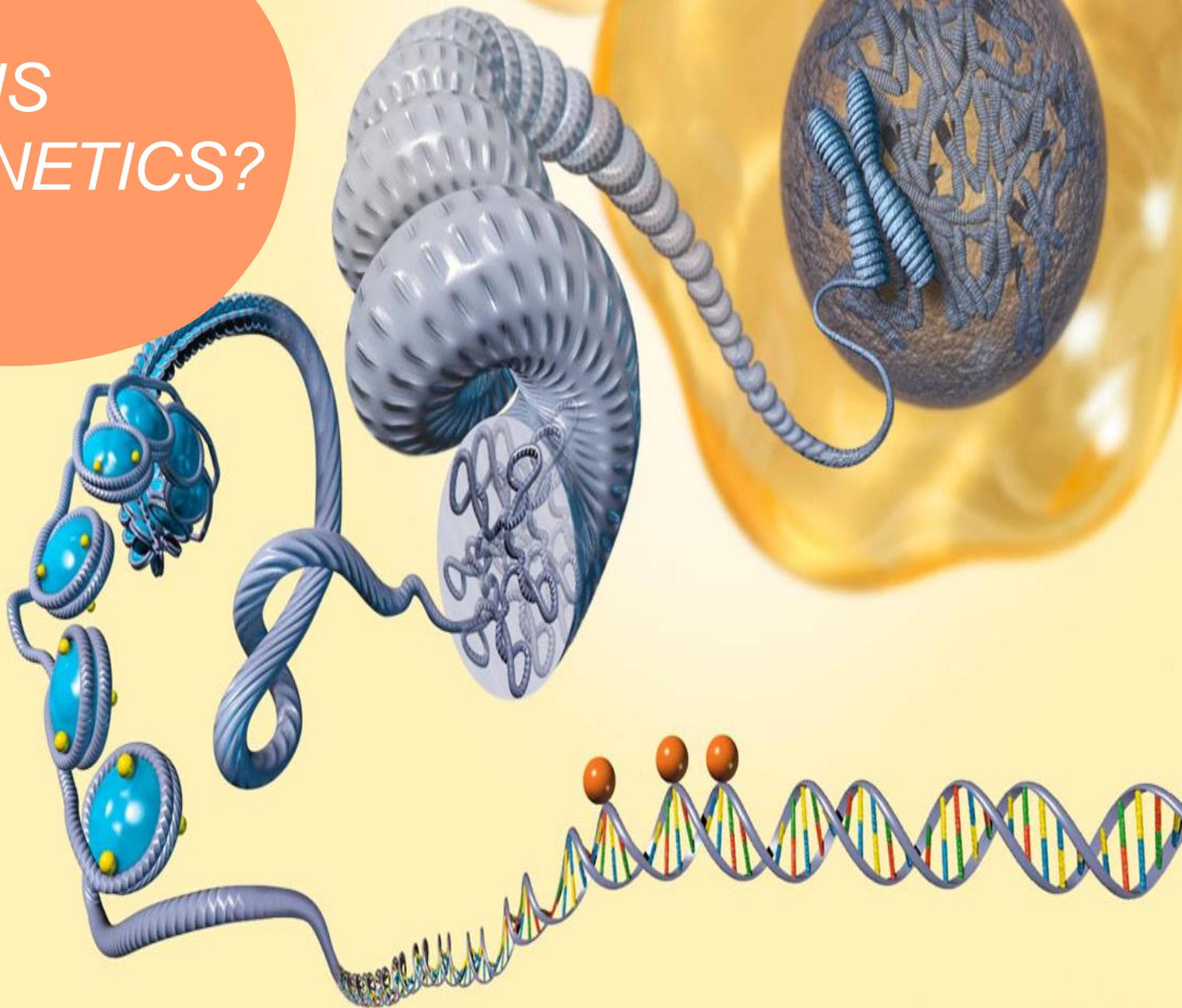
Eat a high fibre diet Be active Eat less salt



## Oral Contraceptive use and prevention of Ovarian Cancer



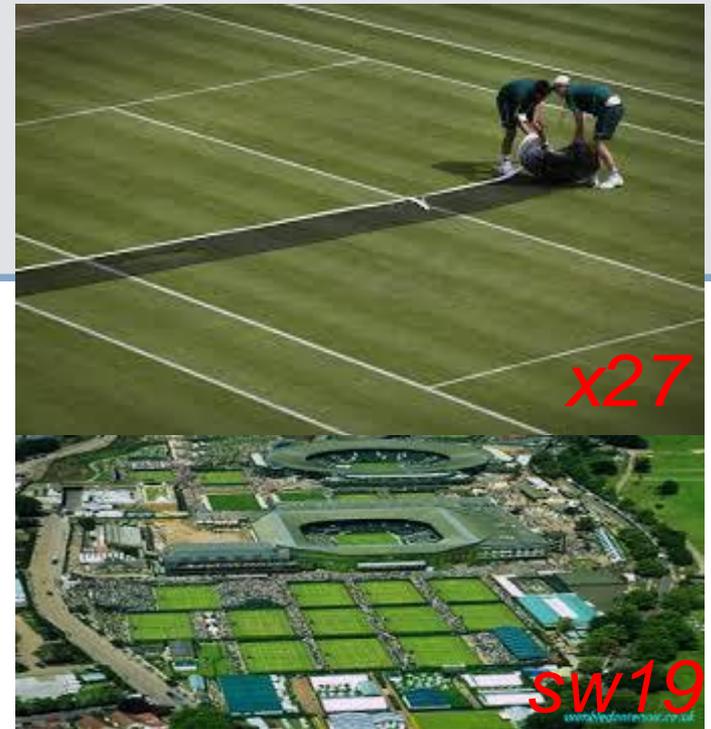
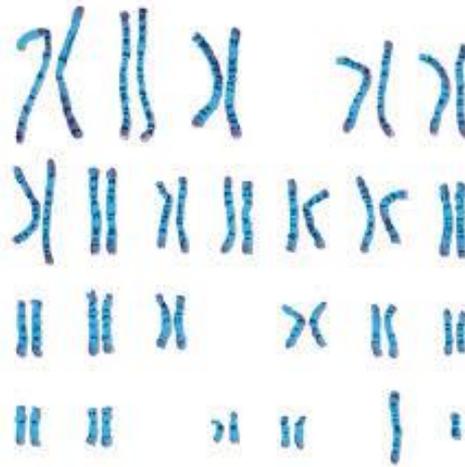
*WHAT IS  
EPIGENETICS?*



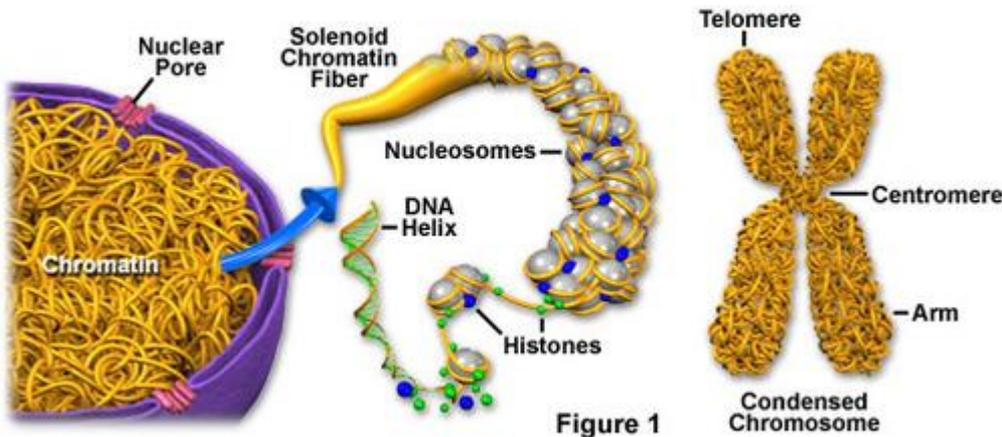
# Epigenetics = Gene Packaging

2 metres of DNA  
in 46 chromosomes  
in 1 cell

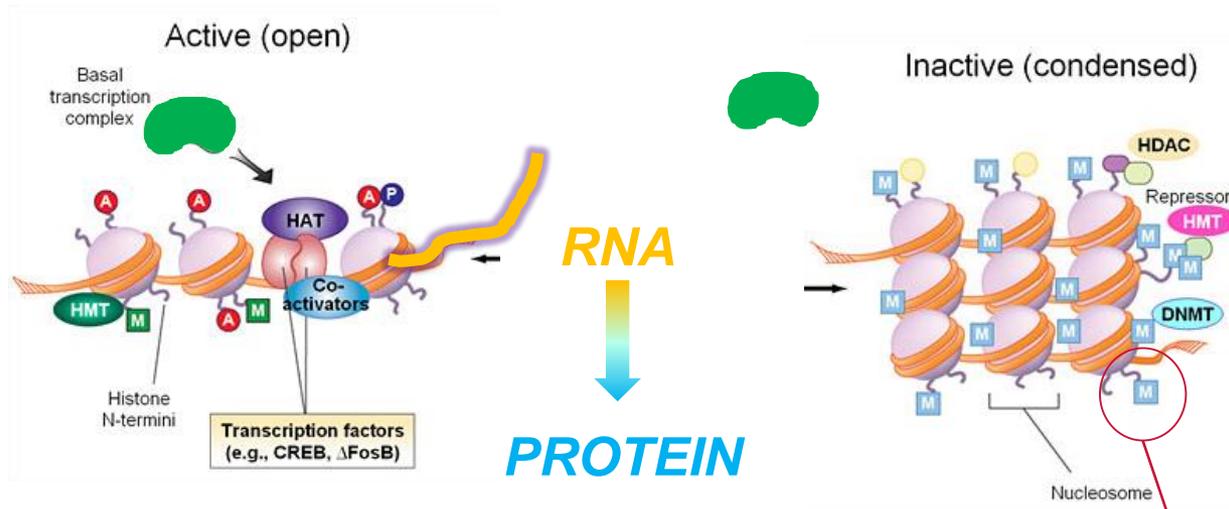
10µm nucleus



Chromatin and Condensed Chromosome Structure



# Epigenetics = Gene control



*DNA methylation*

# Things that can change your Epigenetic Patterns



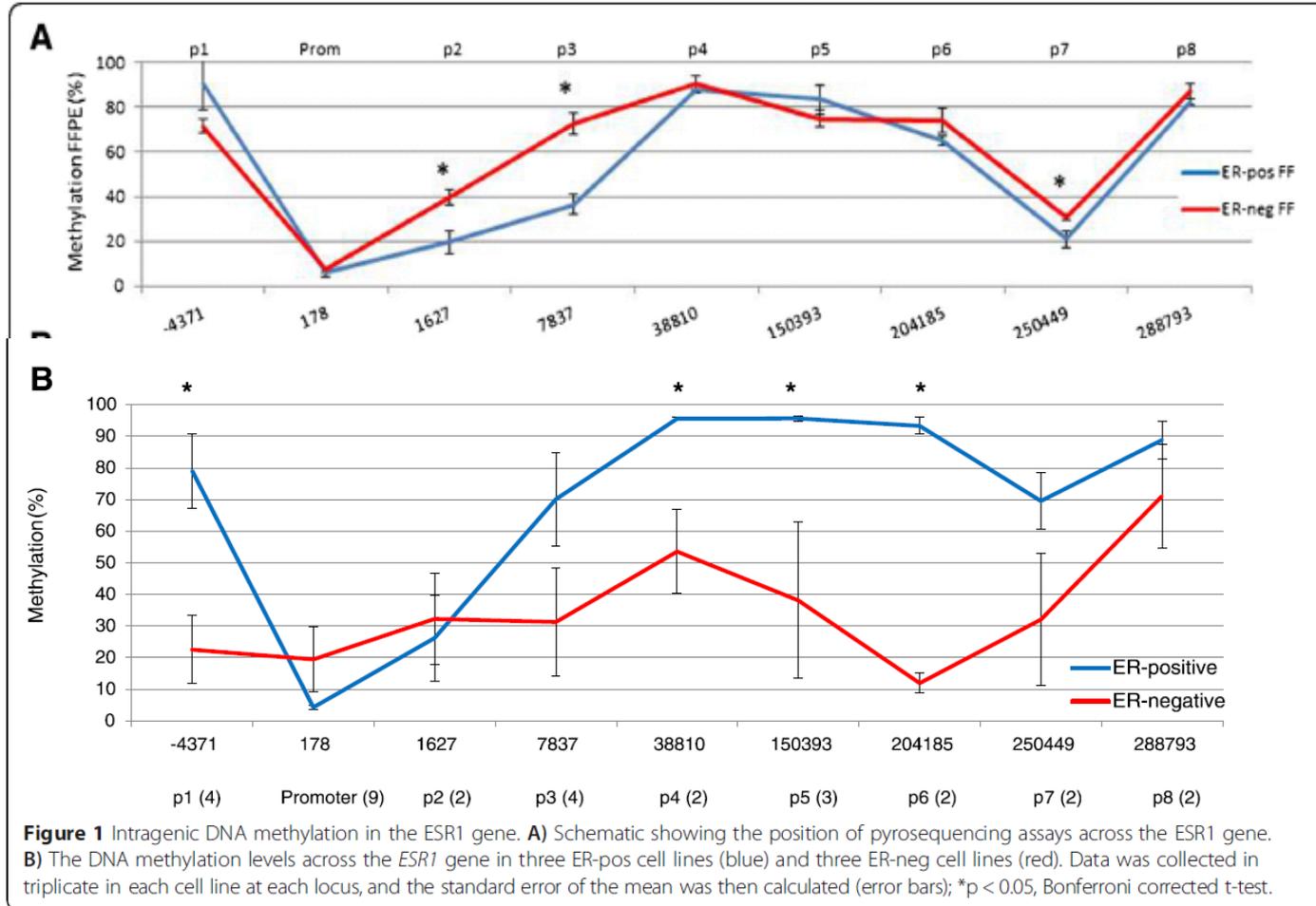
*Q. How does this increase cancer risk?*

*Q. How might we reduce cancer risk?*

*Q. How does this change in response to treatment?*

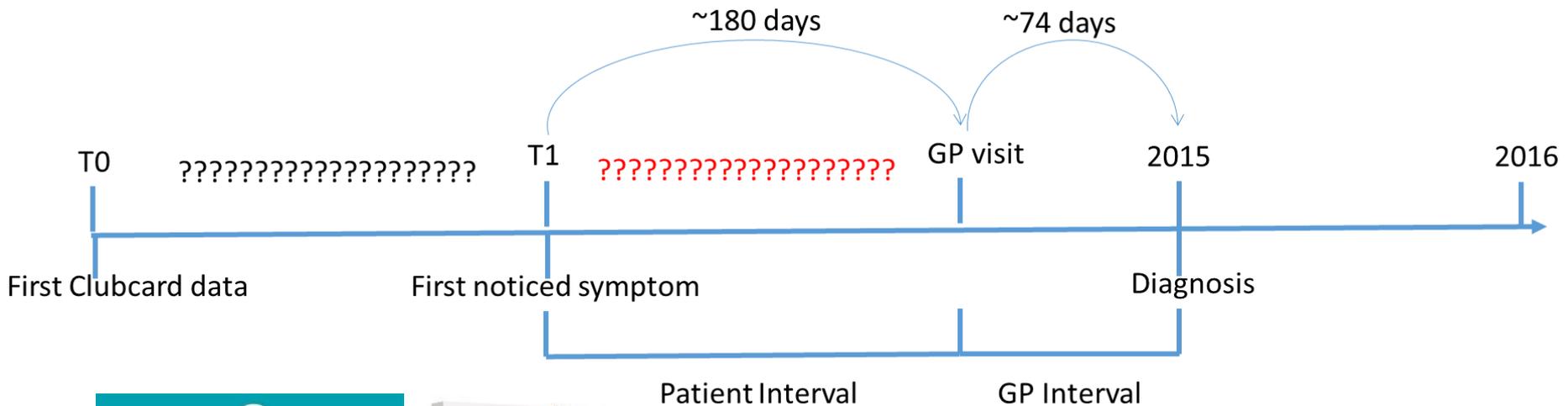
*Q. How does this change what type of cancer you get?*

# Using breast cancer tissue from BCNow Tissue Bank



# A novel method for early detection of Ovarian Cancer –Guardian Angels Pilot Study

Can we use Loyalty Card Data (purchasing behaviour) to identify “Alert Symptoms” and prompt an earlier GP visit?



Imperial College  
London



Manchester  
Metropolitan  
University



CANCER  
RESEARCH  
UK

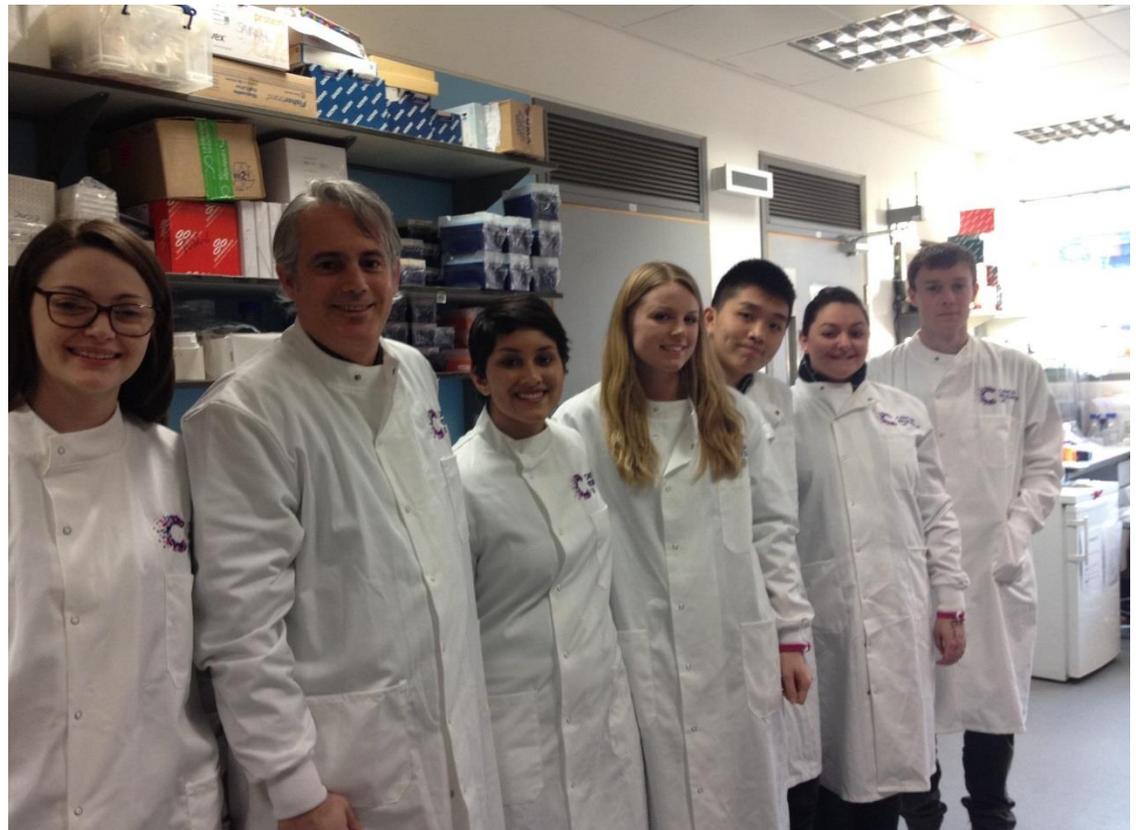


University of  
Kent

<https://www.surveymonkey.co.uk/r/FTQ9Z57>

Thank You & Questions

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*Flanagan Lab (Feb 2016)*

ovarian  
cancer **action**  
**breast cancer**  
**now**