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# Smelly Food for Healthy Guts

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© Current Medicine

**Gastrointestinal Biology and Health**

# The Gastrointestinal Tract

## Oesophagus / gullet

Reflux induced inflammation  
Barrett's oesophagus  
Cancer (adenocarcinoma)

## Stomach

Ulcers  
cancer

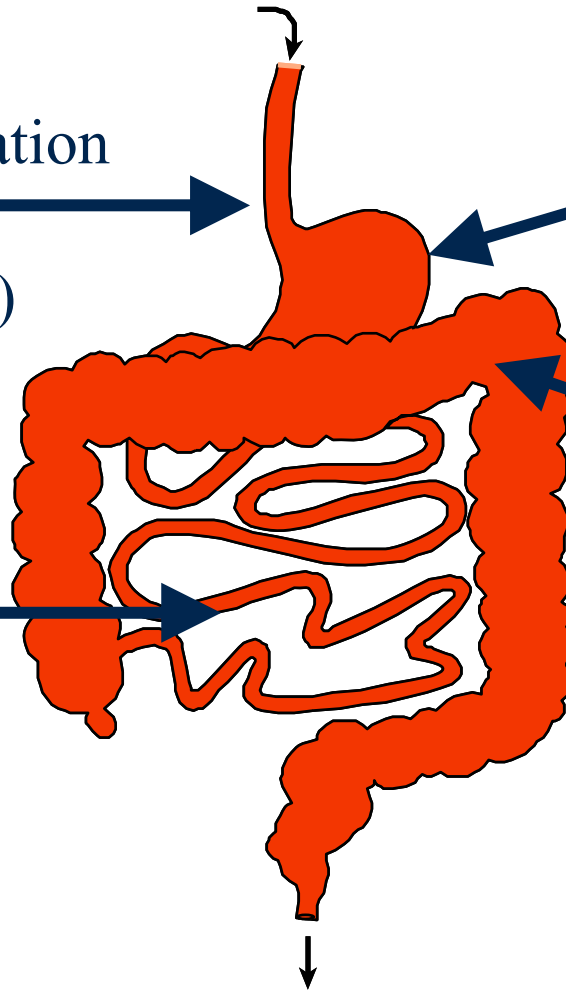
## Small Intestine

Ulceration  
Coeliac disease  
Bacterial infection  
Cancers (rare)

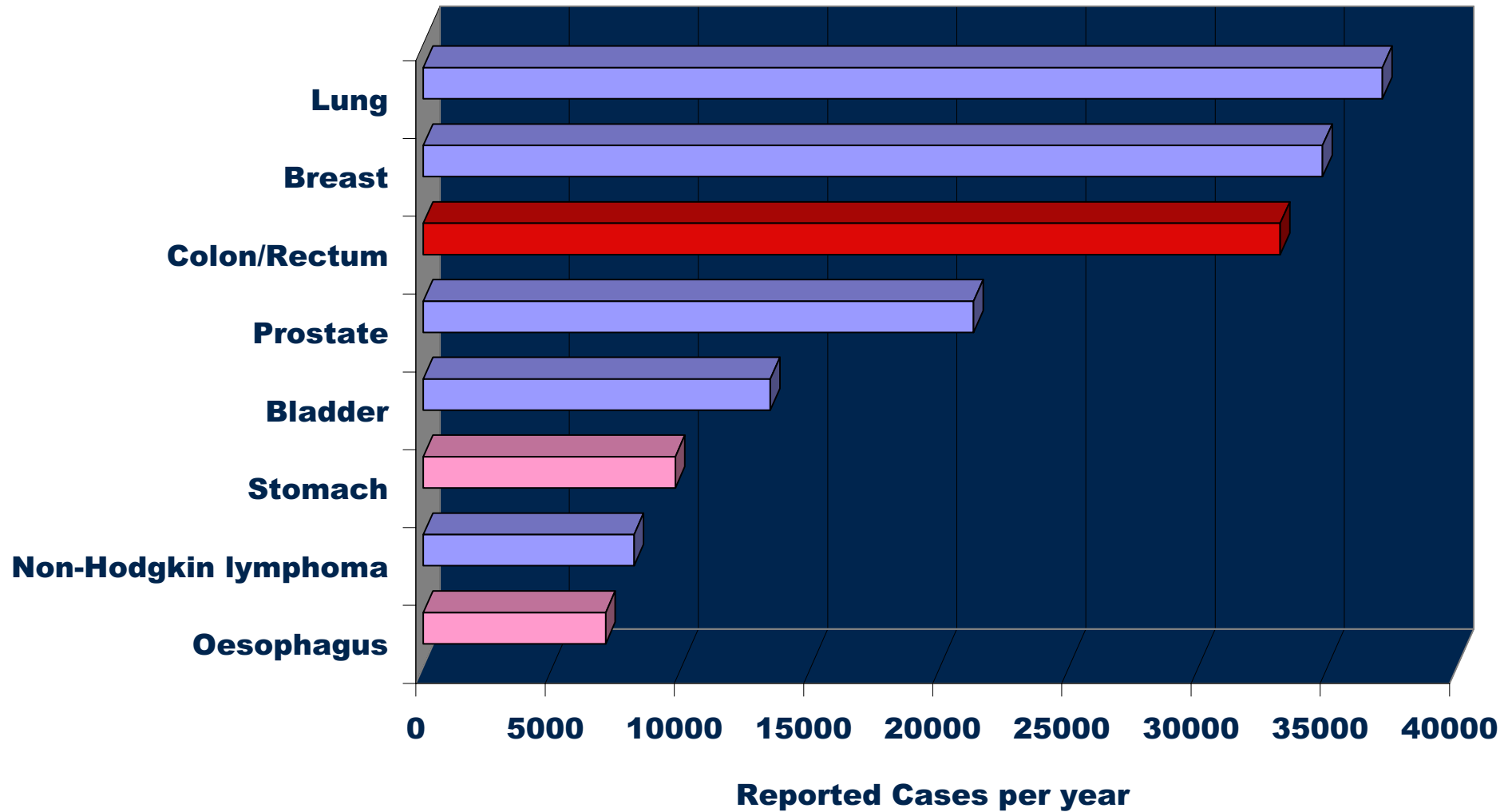
## Colon

### **Cancer**

Diverticulitis  
Inflammatory Bowel  
Irritable Bowel  
Infection – food poisoning  
Appendicitis

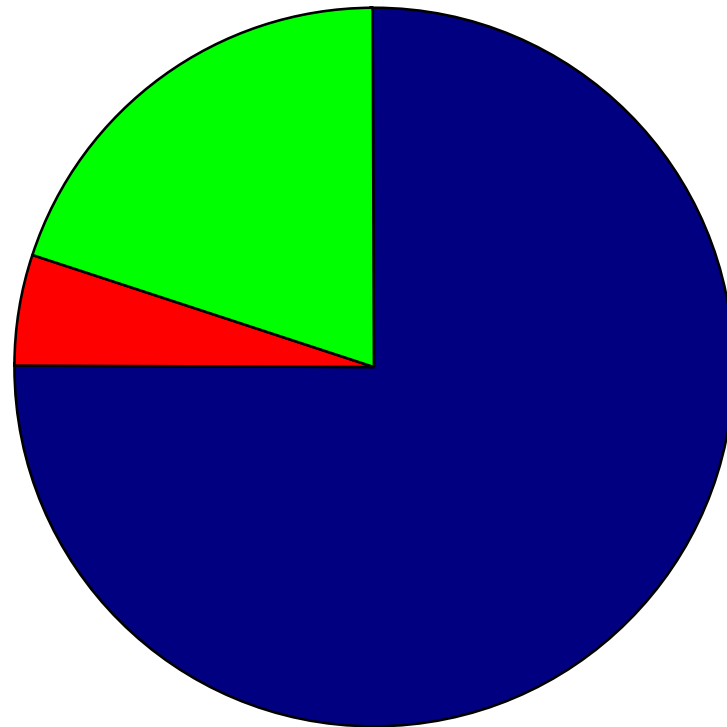


# INCIDENCE OF CANCER IN THE UK

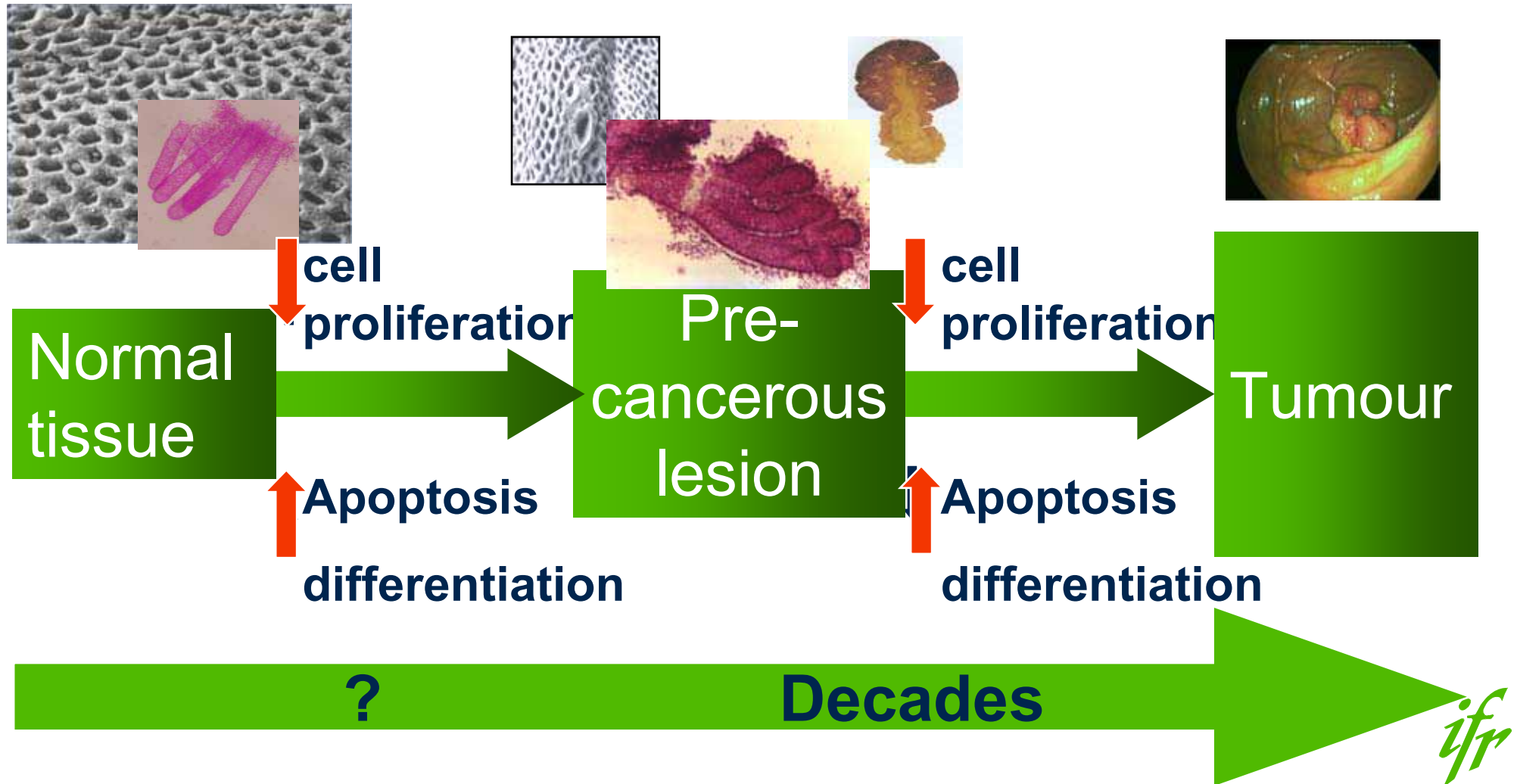


# Most cases are of dietary origin

- No family history
- Known genetic cause
- Environment-gene interactions?



# Colorectal Cancer Is a Disease of Aging



# How can we slow this process down with diet?

- Keep slim
- Some foods help to increase death of the cancer cells (apoptosis)
- Some foods make cancer cells behave more like normal cells (differentiation)
- Some foods slow down growth (reduced cell division)

**WHICH FOODS DO WHAT?**

# BEANS



- High in soluble fibre and resistant starch
- Bacteria ferment fibre to form short chain fatty acids and methane
- Some short chain fatty acids may

**INCREASE APOPTOSIS**

**INCREASE DIFFERENTIATION**

- Therefore fewer precancerous cells survive

# CURRY

- Many curry recipes contain turmeric
- Turmeric contains curcumin

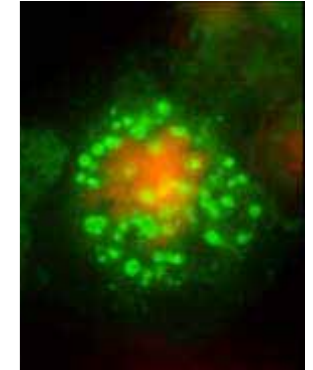
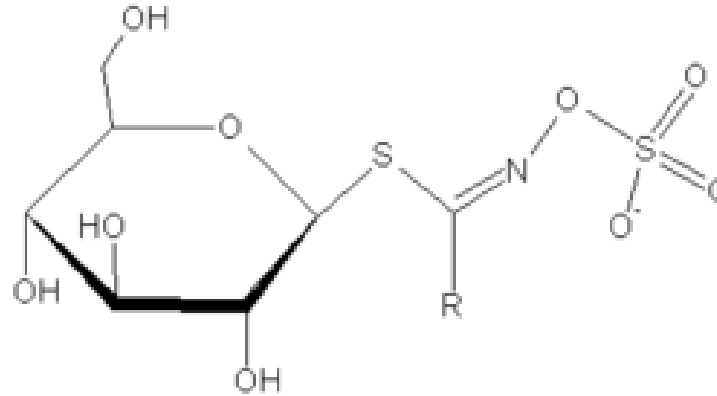
**INCREASES**

**APOPTOSIS**



# BRUSSEL SPROUTS

- Contain a compound known as sinigrin
- Also found in mustard, cabbage, horseradish
- Broken down during processing and by bacteria on the colon to the active ingredient AITC



**BLOCKS CELL DIVISION**

Contains

# FISH

- omega-3 fatty acids

INCREASE APOPTOSIS

- Selenium

NEEDED FOR DETOXIFYING  
ENZYMES

- Vitamin D (acts in conjunction  
with SSFA & calcium)

REDUCES CELL DIVISION  
INCREASES APOPTOSIS  
INCREASES DIFFERENTIATION



# Summary

