

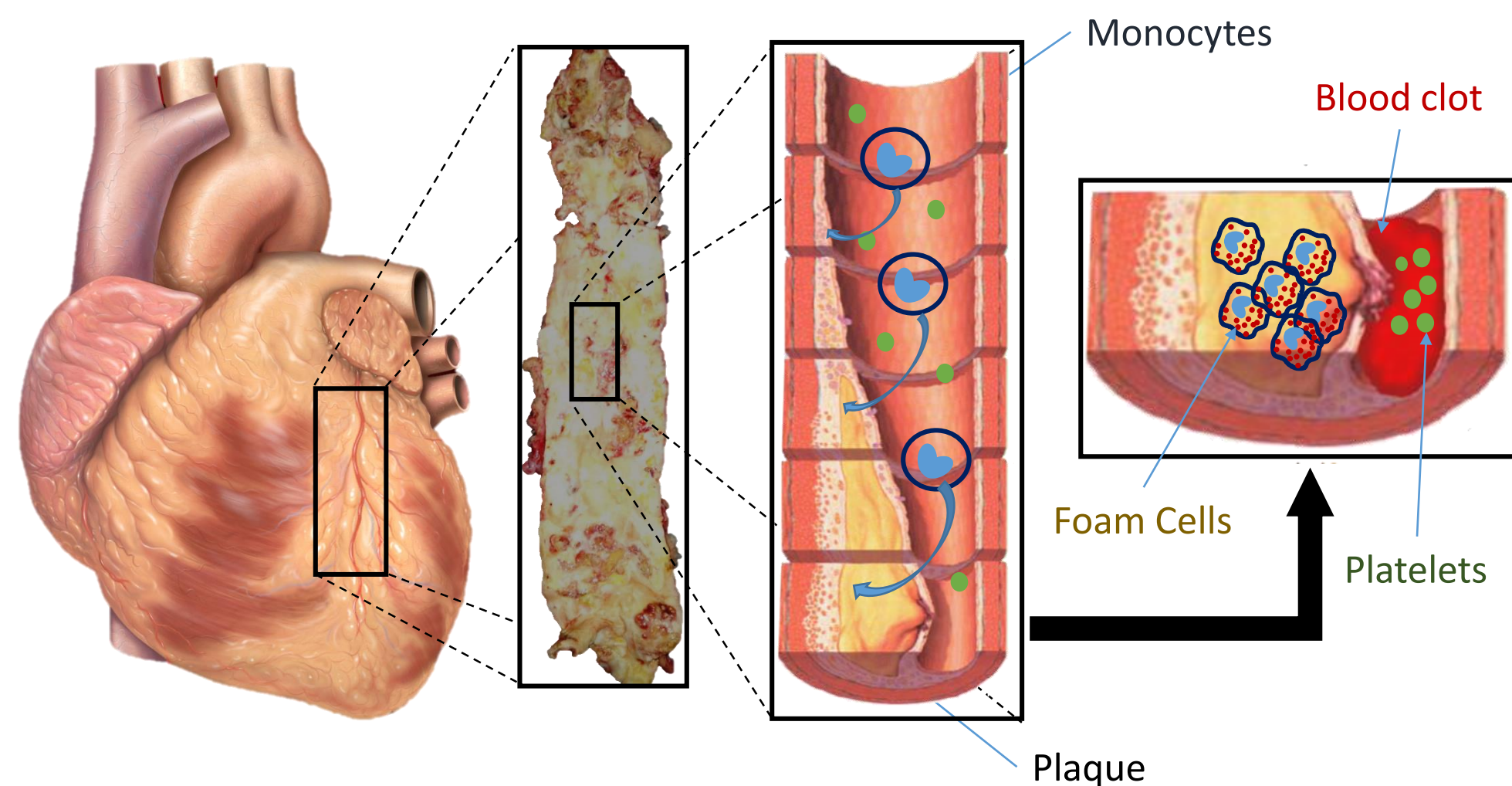
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WHY IS THIS IMPORTANT?

- Heart Disease continues to be a major killer and accounts for up to 1/3 of all deaths within the UK (British Heart Foundation Statistic 2012)
- It is caused by the build-up of fatty material (plaque) within the walls of the vessels that supply the heart and other organs
- As plaques grow, they narrow the vessel and reduce the blood supply to the heart
- Advanced plaques can break and lead to a blood clot which stops blood from flowing and causes muscle death (heart attack)
- Understanding the biology behind plaque formation is essential if we are to better treat and prevent heart attacks



WHAT IS KNOWN ALREADY?

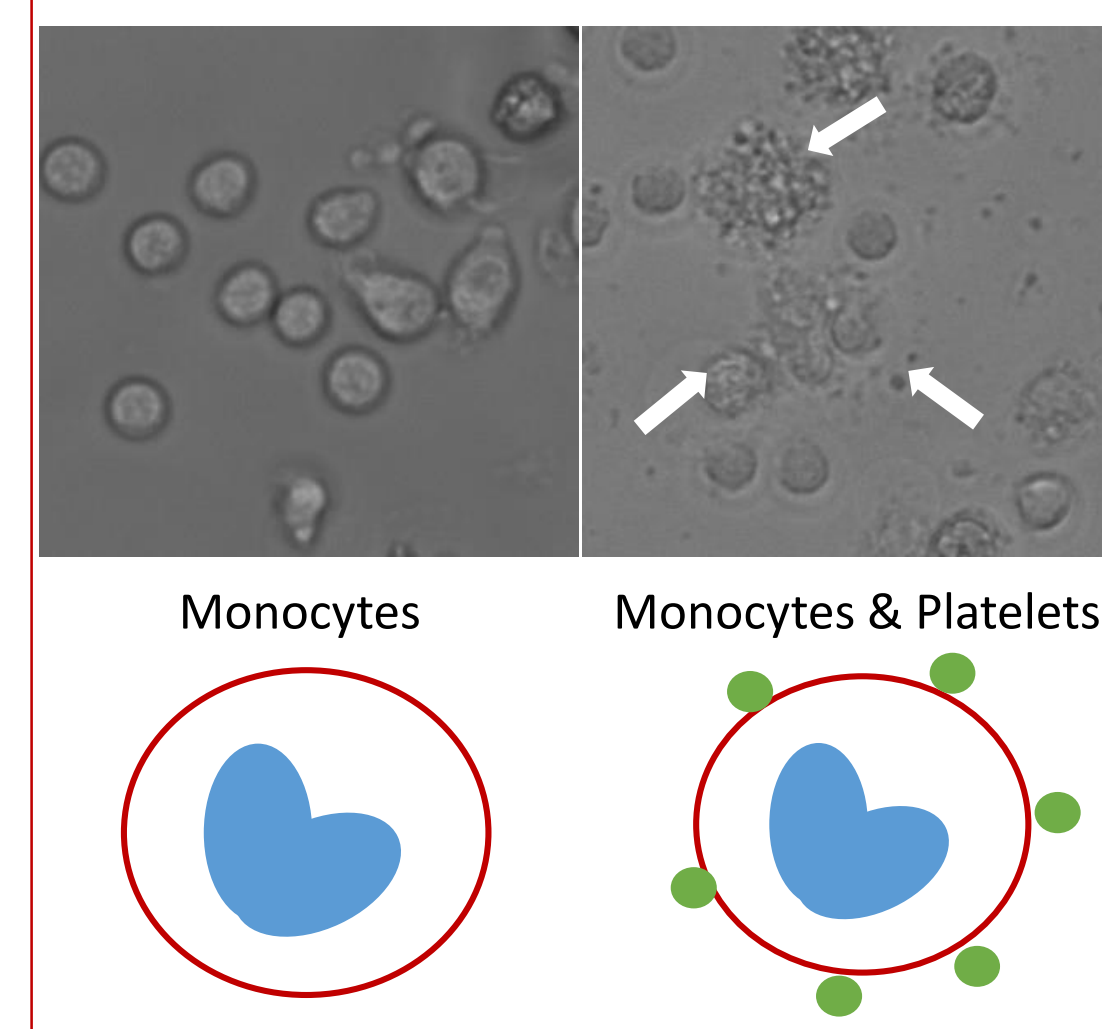
- Monocytes are a type of white blood cell important in plaque formation
- They move from the circulation into a growing plaque and start to eat up fats to become 'foam cells'
- These foam cells are crucial to the growth of plaques which leads to heart attacks
- Platelets are another type of blood cell that are important in forming blood clots
- There is increasing evidence to show that platelets can 'talk' to monocytes to effect their behaviour
- We are interested in how platelets 'persuade' monocytes to become foam cells

WHAT CAN WE CONCLUDE?

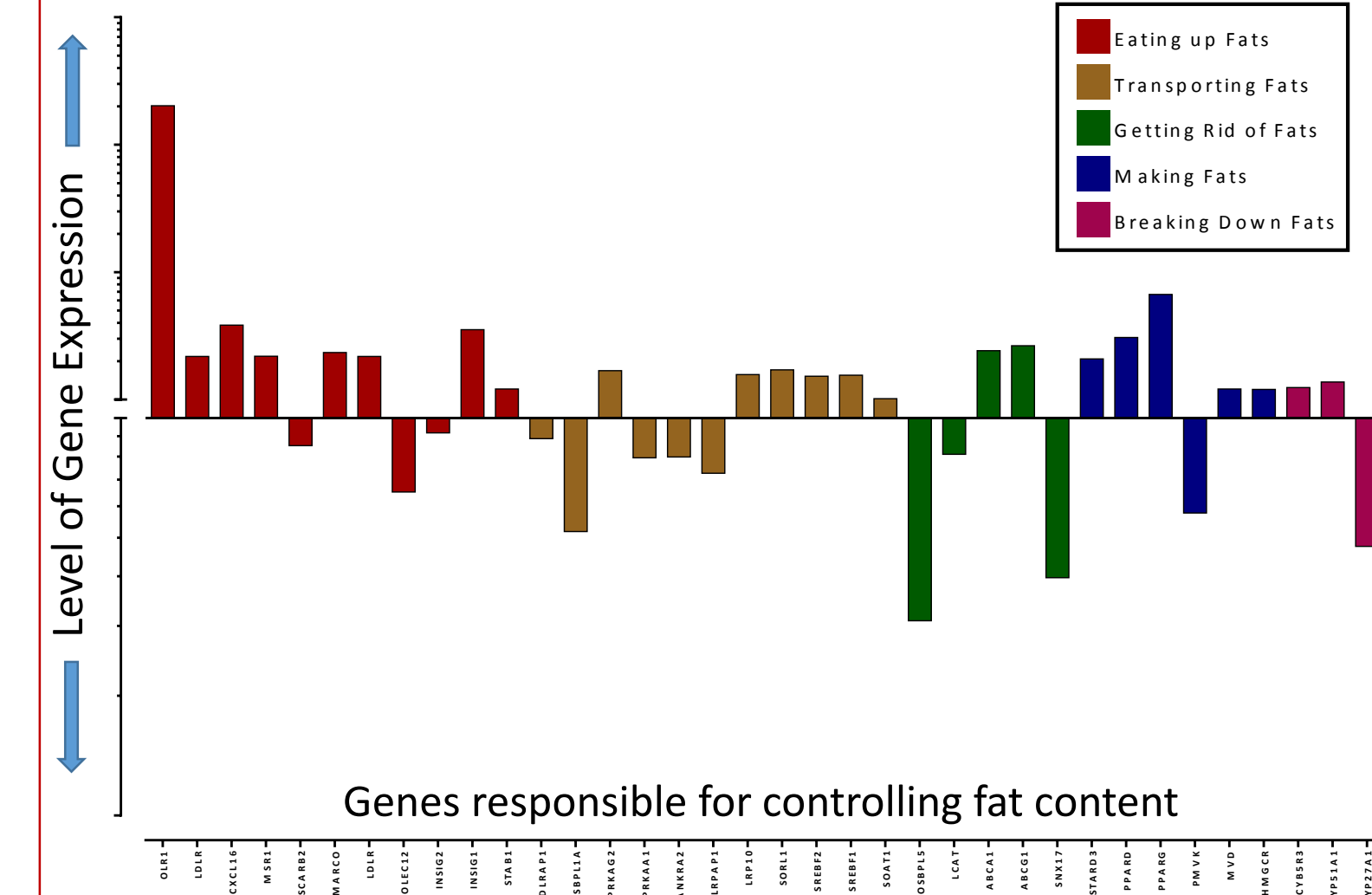
- Platelets attach themselves to monocytes and encourage them to turn into Foam Cells
- We have been able to slow this process down by interfering with the underlying mechanisms
- If this can be applied to patients with heart disease, then there are potentially life-saving implications

WHAT HAVE WE FOUND OUT?

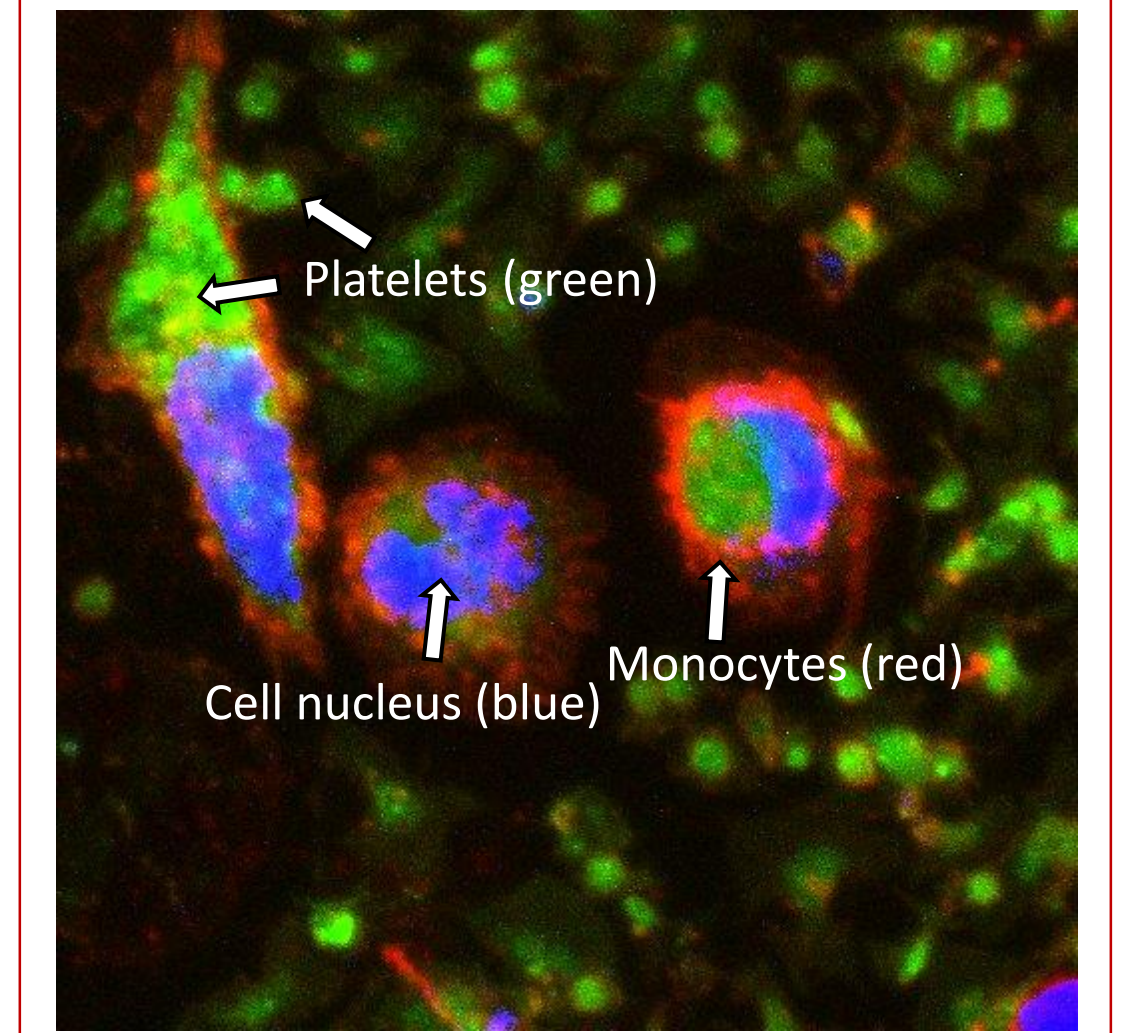
(1) PLATELETS STICK ONTO MONOCYTES



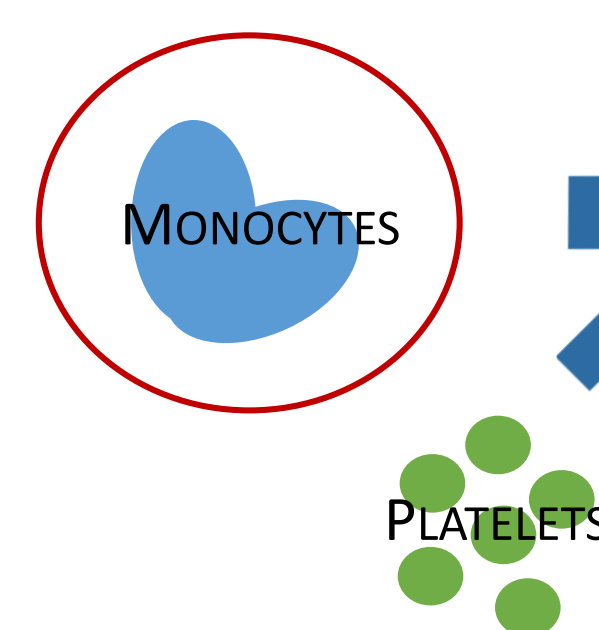
(2) PLATELETS SWITCH ON/OFF GENES IN MONOCYTES



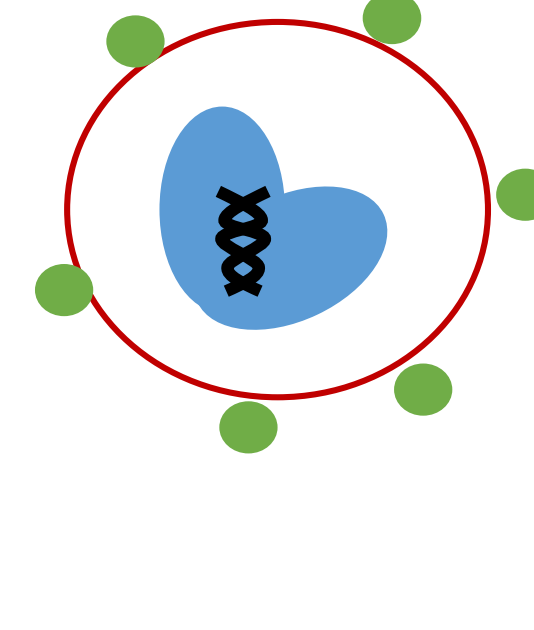
(3) PLATELETS ARE EATEN UP BY MONOCYTES



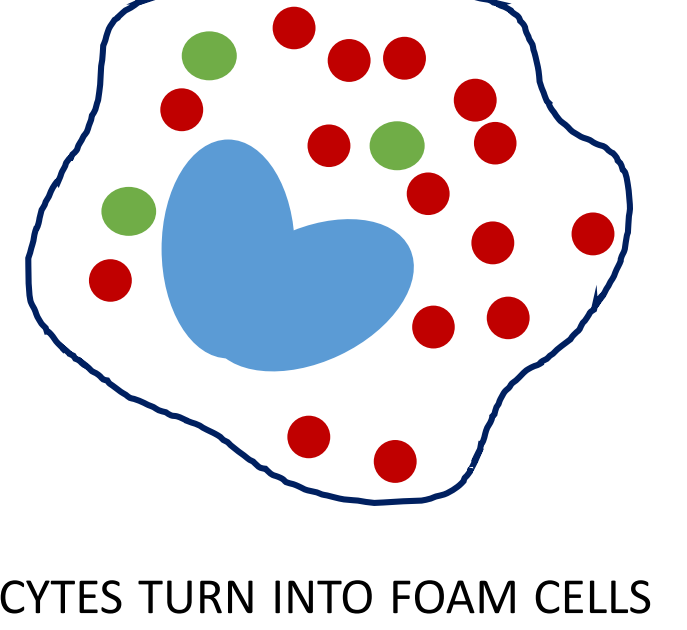
(1) PLATELETS BIND TO MONOCYTES



(2) MONOCYTES SWITCH ON GENES



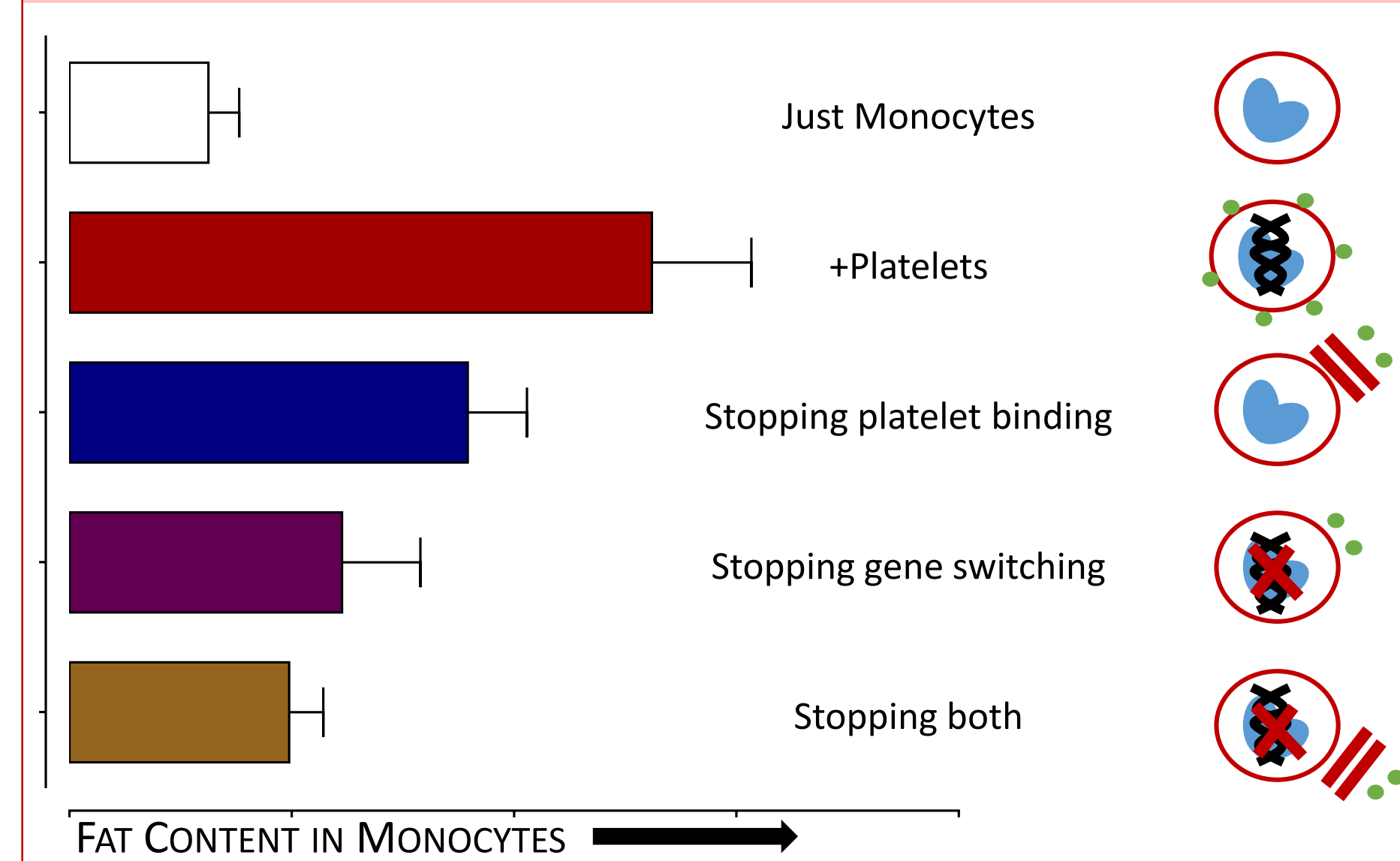
(4) MONOCYTES START TO GATHER FATS



(3) MONOCYTES START TO EAT PLATELETS

(5) MONOCYTES TURN INTO FOAM CELLS

(4) PLATELETS CAUSE INCREASED FAT BUILD-UP IN MONOCYTES WHICH CAN BE SLOWED BY STOPPING THEM BINDING AND/OR SWITCHING OFF GENES



(5) STOPPING PLATELETS BINDING SLOWS THE FORMATION OF FOAM CELLS

