



Simulating how bile produced by the liver breaks down fat

Introduction: We know that the liver produces bile which is used to filter the blood to eliminate harmful bacteria and unwanted substances. Fat is something which is not useful for our body but it is part of most of the food. So, the body uses the bile produced by the liver to break down fat. How? Let's do an experiment and see.

- **Materials:** milk (at least 2% fat), food colouring, dish soap, cotton ball
- **Experiment:**

Step No.	Description	Image
Step 1	Pour milk into a dish. Put a drop of food colouring in different spots in the milk, far away from each other.	
Step 2	Squirt a little dish soap onto the cotton ball and then place it soapy side down in the dish. You will immediately notice the food colouring drops start to swirl around.	
Final result	Why does this happen? Soap contains a chemical similar to what is found in bile. It surrounds the fat in the milk and tries to break it into smaller pieces. This is what it does to dirt also, which is why we use it to wash our clothes and dishes. As the soap swirls around the fat in the milk, trying to break it down, the food colouring gets moved around as well. You can watch it continue to swirl as the soap tries to do its job. This is what happens in your small intestine as well. The bile surrounds fat particles to break them down.	