

**What is fermentation?** It is when your muscles don't get enough oxygen fast enough to meet their demands for energy. Without oxygen it starts another chemical reactions.

**What is Latic Acid?** It is a chemical that makes your muscles stiff.

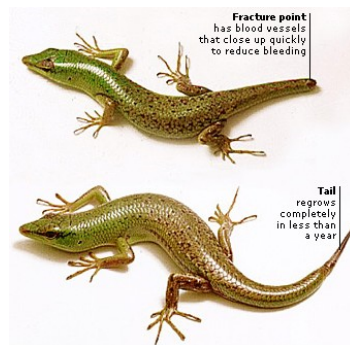
## How Cells Reproduce

-All organisms begin as a single cell and divides itself over and over again to make new cells. During cell division one cell divides into two. Then these two cells further divide and so on.

Ex. Fertilized egg to a baby with trillions of cells

Humans grow

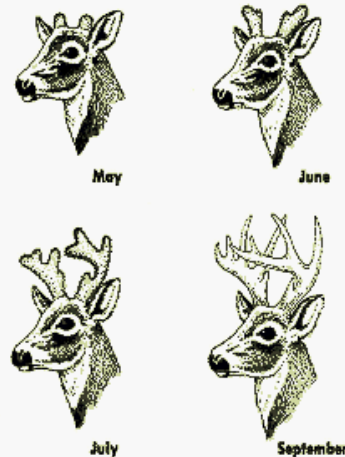
Regeneration - in living things, it is the ability to repair damaged cells or grow new body parts



### HOW A DEER'S ANTLERS GROW

Deer lose their antlers each winter and grow new ones during spring and summer. The new antlers are soft and tender. This skin with short, fine hairs called velvet covers the growing antlers. Full-grown antlers are hard and strong, and have no velvet.

WORLD BOOK Illustration by Tom Dolan



Humans cannot grow new arms but we do show some kind of regeneration.

Ex) Damaged skin cells can be replaced by new ones



Individual cells have life cycles where they grow, and divide and eventually die. Different cells grow at different rates.

ex) Skin cells wear out quickly (last only days then flake off)

ex) Nerve cells last a life time

Under a microscope you can see cells dividing (in roots for example)

**Mitosis** - is the process in which one cell's genetic material is duplicated and then divided into two identical sets of chromosomes to produce two new cells.

**Daughter Cells** - the two new cells formed by mitosis. Identical to the parent cell

10 min

