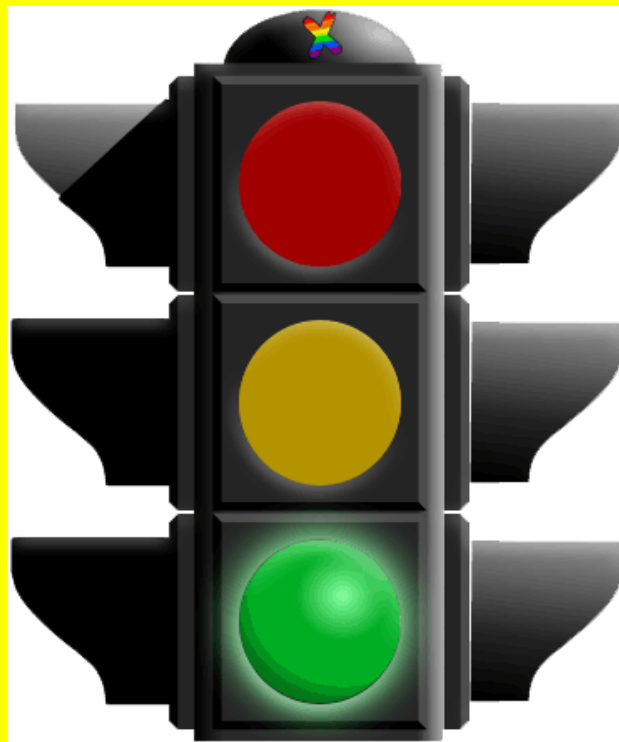


## **Hormones for Cell Growth and Division**

Knowing the factors that either promote or inhibit cell growth and cell division is important.



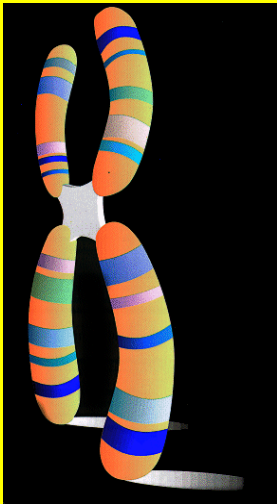
## How do cells communicate with each other?



{ Cells communicate with each other by chemical messengers called hormones.

↳ hormones are produced in one part of the body and can affect cells in another part of your body

**Why don't all cells relay the same message? Why are some people taller than others?**



The answer to this questions rest in our genes. Different genes code for the production certain hormones and certain amounts of hormones.



## What can affect hormone release?

Many factors can affect hormone release.

- The release of plant hormones can be stimulated by light or temperature.
- The release of human hormones for growth can be stimulated by cell damage.
- other factors include: Stress, high blood pressure, and sunlight, to name just a few.

## Plant Growth Hormones

Plants produce a variety of growth hormones. Two examples are:



1) Auxin- are plant hormones that cause plant cells to elongate (grow taller)

2) Cytokinins- are plant hormones that promote the growth of buds on the side of a branches on trees, causing the tree to grow wider.

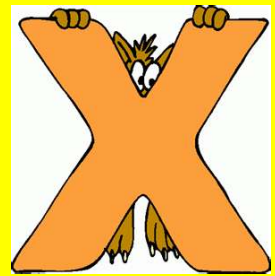


<http://www.botanical-online.com/animation8.htm>



## Animal/Human Growth Hormones

Growth hormones trigger cell division and increase the production of new proteins. New cells require proteins for a new cell membrane and the organelles found within the cytoplasm.



## **Too Much Growth Hormones?????**

**High secretions of the growth hormone during childhood can result in gigantism.**



One of the most famous giants was a man named Robert Wadlow Robert reached an adult weight of 490 pounds and 8 feet 11 inches in height, He died at age 22

Tallest man



World's shortest man



Today's world tallest man



Big meets small







<http://www.youtube.com/watch?v=igdPdtv8TI8>

<http://www.youtube.com/watch?v=JOiR8IIafJQ>

# Word Bank

## Mitosis

Prophase

Chromosomes

Metaphase

Interphase

Centromers

Anaphase

Telophase

Spindle Fibers

Chromatids

Centrioles

Daughters cells

Mother Cells

### Effects of GH hypersecretion Gigantism

- Gigantism is a very rare disease (annual incidence: 3/1.000.000)
- Gigantism results from increased GH secretion during childhood
- At puberty, the epiphyseal plates of the long bones close, so they become unresponsive to GH stimulation, However, this is not the case of the hands, feet, skull and lower jaw
- they continue to grow, resulting in the distinctive physical appearance of an acromegaly patients



## Some Characteristics of Gigantism

- Excessive growth makes the child extremely large for his or her age
- Delayed puberty
- Double vision or difficulty with side vision
- Frontal bossing & prominent jaw
- Headache
- Increased sweating
- Irregular periods (menstruation)
- Large hands & feet with thick fingers and toes
- Weakness



## Underproduction of Growth Hormones?????

Low productions of growth hormones during childhood can result in **Pituitary dwarfism**.

<http://tlc.howstuffworks.com/tv/little-people-big-world>



[http://www.youtube.com/watch?v=ArwJOpY\\_fZI&feature=fvsr](http://www.youtube.com/watch?v=ArwJOpY_fZI&feature=fvsr)



<http://www.youtube.com/watch?v=WFEFP5x2Gy0>



<http://www.youtube.com/watch?v=KSz0D-o6D6k&feature=related>



Kenadie Jourdin-Bromley,