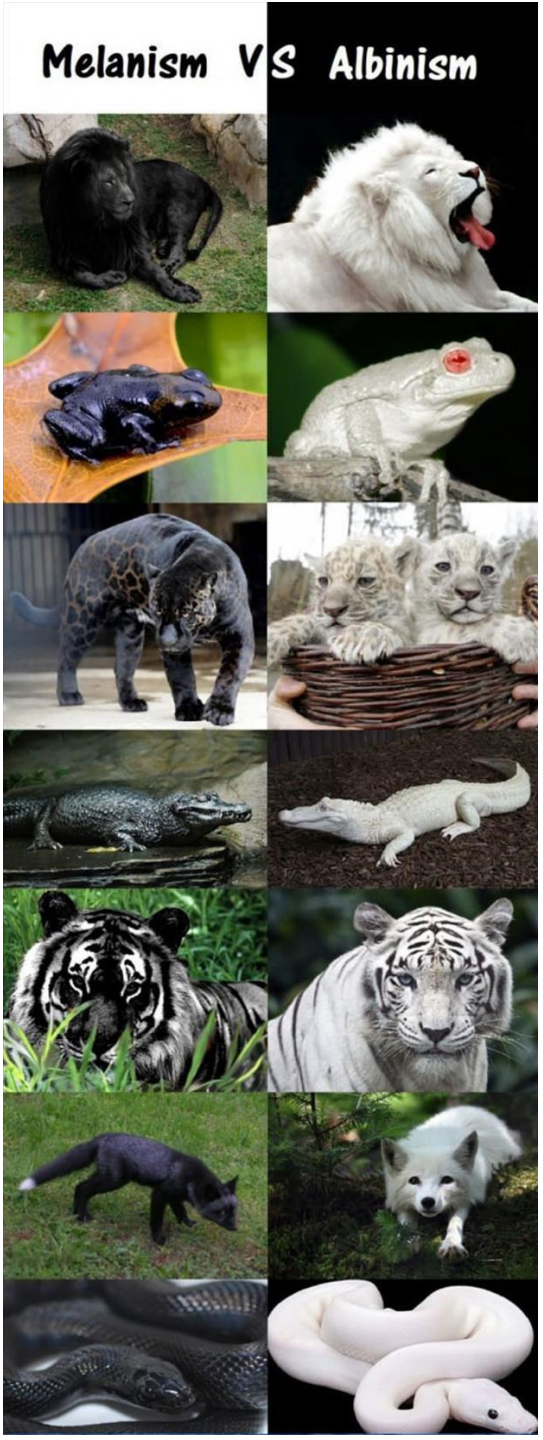

A world of no color
Albinism

What is Albinism?

- **"Albinism** in humans is a congenital disorder characterized by the complete or partial absence of pigment in the skin, hair and eyes. ... While an organism with complete absence of melanin is called an albino an organism with only a diminished amount of melanin is described as leucistic or albinoid." (Wikipedia)

What you will learn....

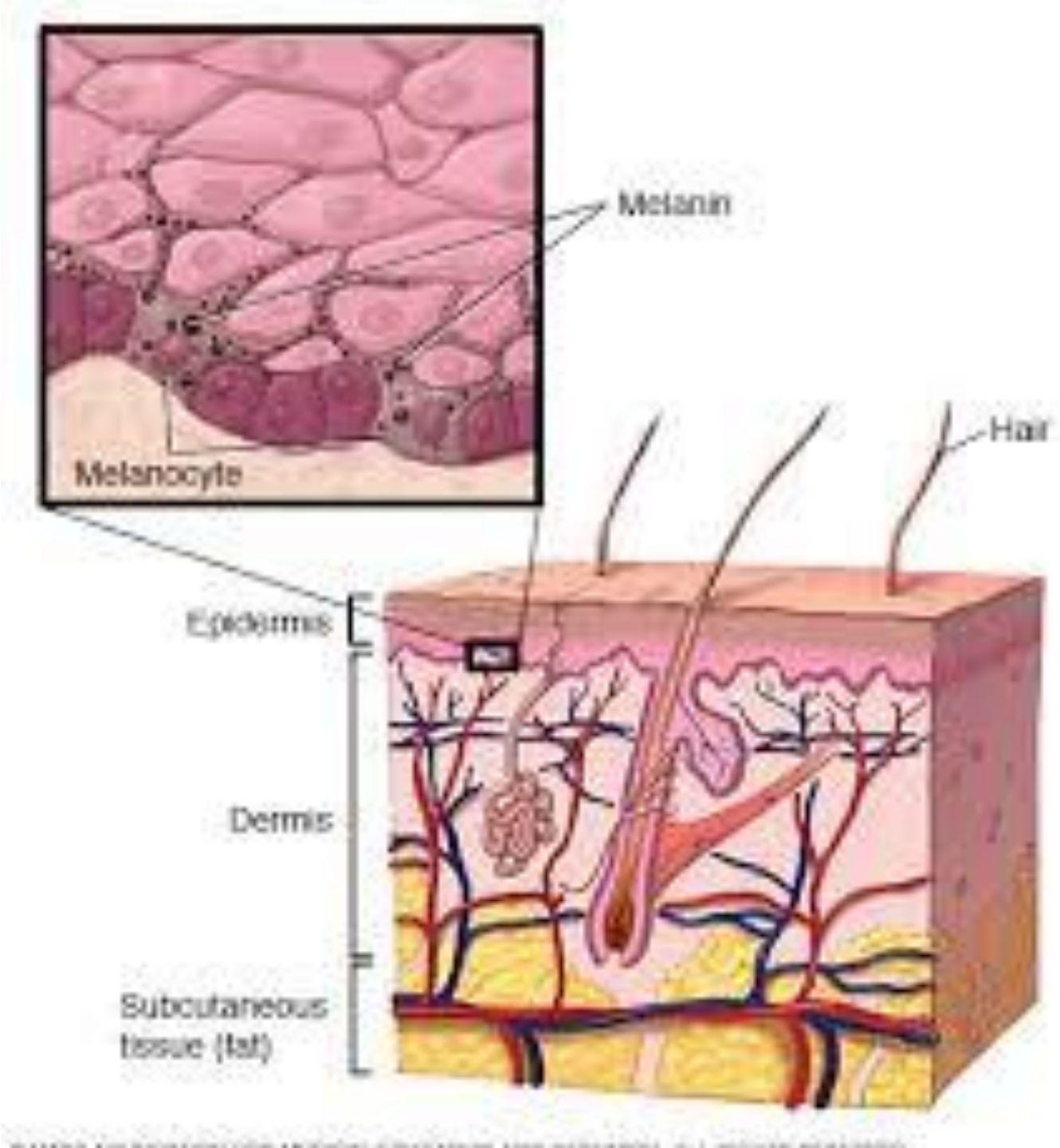
Albinos have been researched since the mid 1700s starting with Carolus Linnaeus. Though it is rare it affects all walks of life. Albinistic traits can vary from true albino, partial albino, or leucistic. Albinism can be inherited from a single gene that alters Melanin. There are two know traits of albinism that can be present in both humans and animals. In different culture it is seen consider a type of taboo. Though there is no cure and different medical issues tied to this mutation it does not effect development of the mind or body.



Things that are out of the ordinary or different seem to catch peoples attention. Albino animals and people are one of those things that are rare but people have seen them or at least heard from other people that they're around. Albinos are white instead of their normal color because their cells are unable to produce melanin.

Melanin

Melanin is a dark pigment that gives, hair, skin, scales and eyes a different color. Pigments are the coloring matter in cells or tissues. A lack of melanin causes living things to be white or have bleached white appearance. It is all in the genes. (Kaneko-Binkley)



Genes

Albinism occurs when an animal or person inherits either a single trait or set of traits that stop the making of the pigment melanin. Only a small percentage carries the recessive gene, 70 people at least 300 species, which makes an albino or person rare. (Montoliu) Albinism can occur in any thing that can produce melanin: mammals, birds, reptiles, amphibians, fish, mollusks, insects and plants. Normal or random breeding usually decrease the chance for albino offspring. Inbreeding among small isolated areas can increase the chance of albinism. Even with humans, albinism can vary with location.

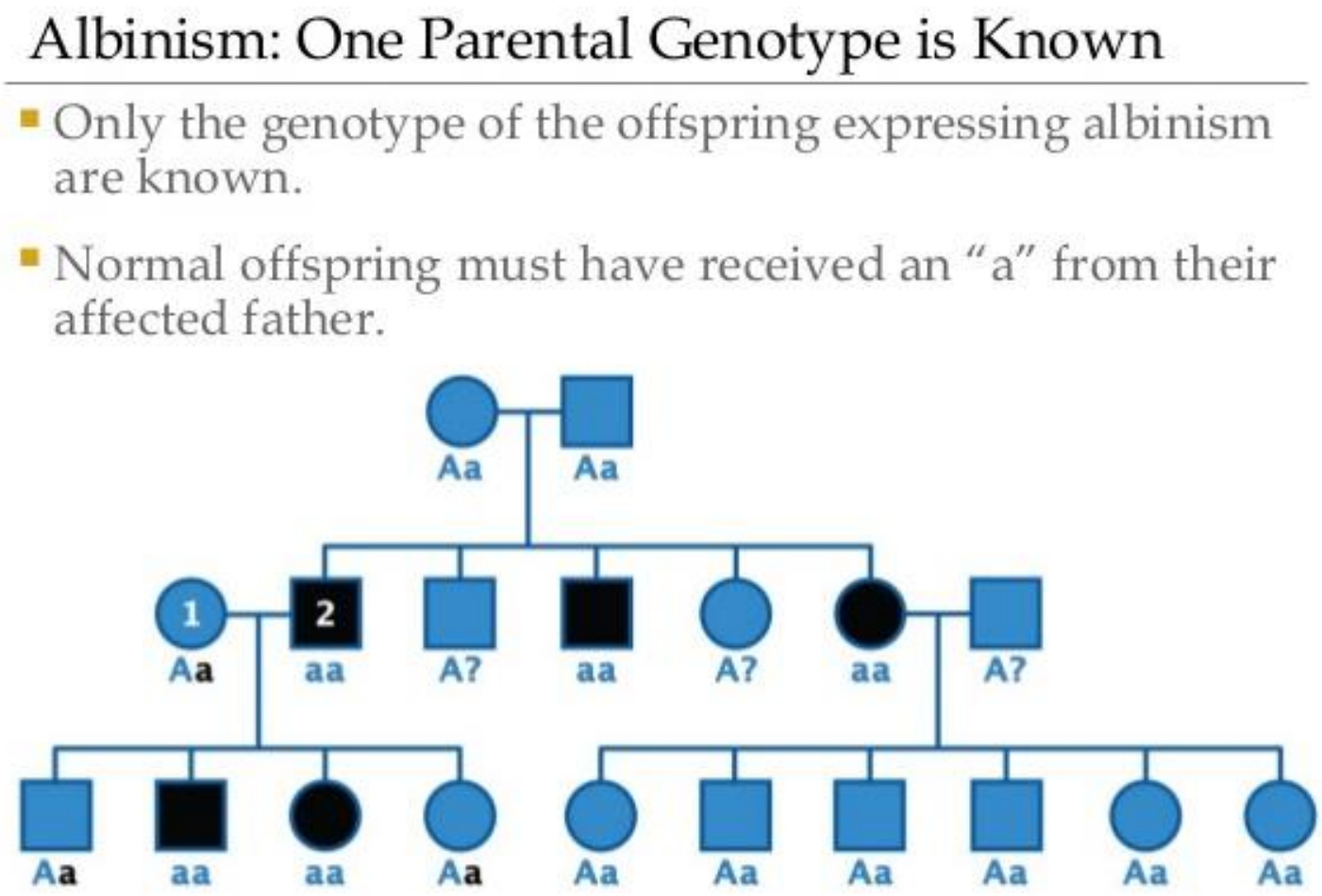
(Montoliu)

Oculocutaneous Albinism Genetics		
Type	Gene	Location*
Type 1	TYR	11q14-q21
Type 2	OCA2	15q11.2-q12
Type 3	TYRP1	9p23
Type 4	SLC45A2	5p13.3
Type 2 Modifier	MC1R	16q24.3
* indicates chromosome number and gene location		

Genes 2

- Albinism is caused by several mutations in a few genes. In most types of albinism, a person must inherit two copies of a mutated gene one from each parent in order to have albinism. If a person only has one copy, then he or she wont be albino. Making This a very rare disorder.

(Montoliu)



Humans

There are two main types of albinism in humans; oculocutaneous albinism (pigment is lacking in the eyes, skin, and hair), and ocular albinism (pigment lacking only in the eyes). Symptoms and conditions associated with albinism are usually eye conditions. In people and animals the iris does not have enough pigment to block out sunlight. The result of the sensitivity to the retinas make it uncomfortable in bright light. The lack of pigment also makes the skin unusual; sensitive to the sun and more likely to receive sunburns. Albinism cannot be cured but some things can be done to improve some mild or even severe conditions.

(Gittler)

Humans 2

Pure albinos have pink, light blue, or green eyes due to color reflecting through the iris. These colors appear because without darker color the blood vessels show through. Just being white does not make one albino, you can tell usually by the color of the eyes. Leucistics are mostly white but have dark pigments in their eyes and nails. Leucistics animals are not as rare as real albinos but are protected and displayed the same at zoos. (Gittler)

Humans 3

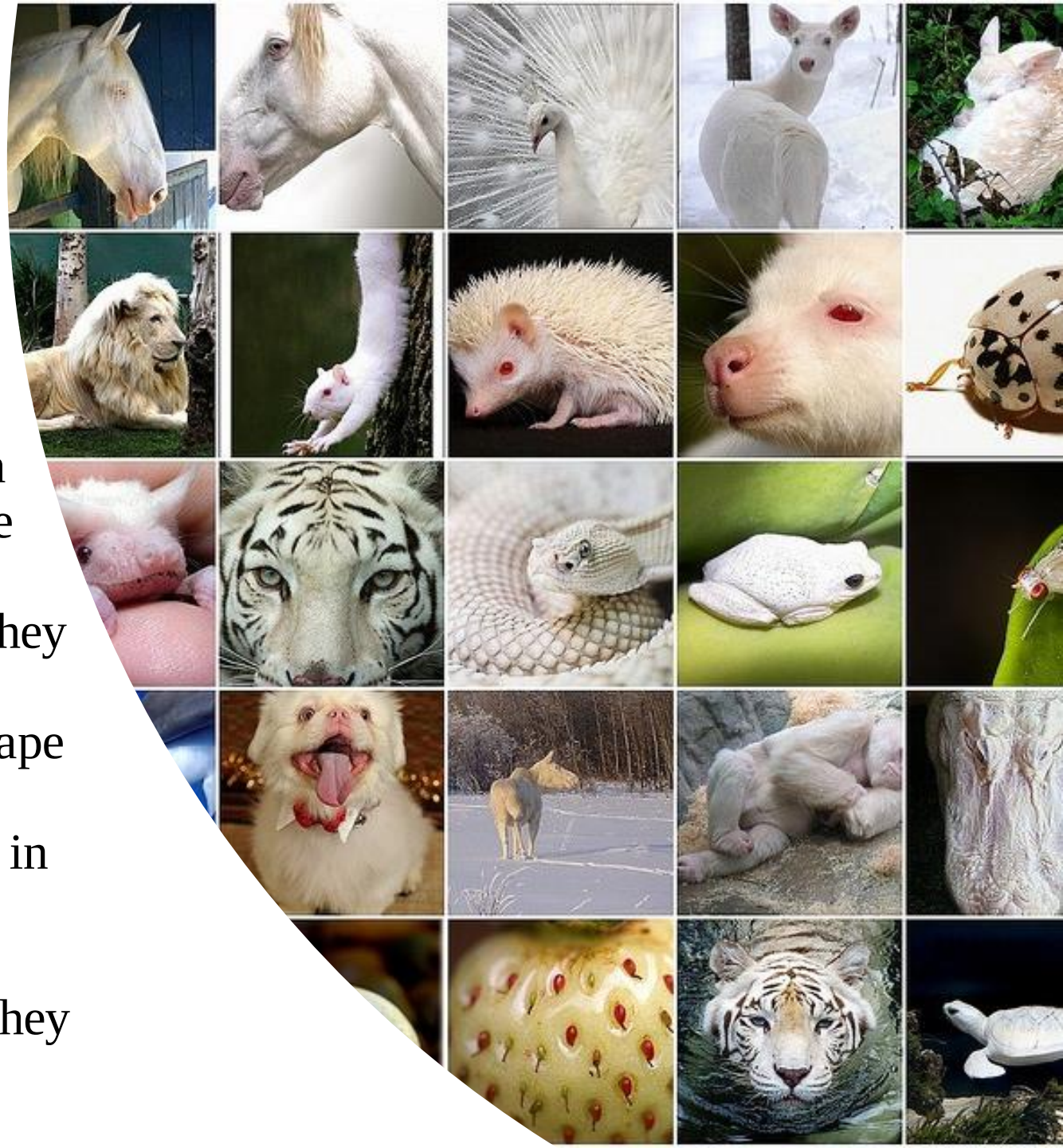
Albinism can affect all people of any age; it doesn't discriminate against race. Parent of most children who are albino have normal eye color for their ethnic background. Both males and females can be affected but in Ocular Albinism (OA) the males are affected while females are carriers.

(Gittler)

Animals

(Mammals)

Some animals use their colors to blend in with their surroundings but albino animals are more likely to be seen by both their prey and their predators . Though they have disadvantages, they also have some advantages with their prey as well. A predator can see this creature by its shape and movement but can be thrown off by its unusual appearance and not want to eat it. Yet in birds it seems only negative as they must find mates because their lack of feather color and pattern which most mates use to choose who they will reproduce with. (Milner Halls)



Albino animals are known for a few things, African Americans believe that a white bison brought power and good luck, and to hunt them would only bring bad luck. For the ones breed kept and sold can make the price value rise while several zoos proudly keep them to teach others about. Although some can be hunted in certain seasons people believe hunting albino animals should be off limits. Thirteen states have made it illegal to hunt albinos, leuctics, and white animals in general. (Milner Halls)

Animals 3

Albinos are generally as healthy as the rest of their species give or take some minor or major disorders. With growth and development occurring as normal; albinism alone does not cause mortality (though the lack of pigment is an elevated risk for skin cancer and other problems.) Many animals with albinism lack their protective camouflage and are unable to conceal themselves from their predators or prey. The survival rate of animals with albinism in the wild is usually quite low. However, the albino animals are occasionally led to their protection groups, zoos, and adapting to other surroundings. (Milner Halls)

Reptiles / Insects / Fish / Amphibians

Reptiles

Many reptiles are actually amelanistic (Pigment abnormalities), not albino. Reptiles often have two pigments. Xanthin (yellow) and etherin (red) the most common pigments. An amelanistic reptile have yellow, orange, or red pigmentation. For snakes they can have colored patterns. They can be light blue, peach or yellowish; this is a genetic mutation in the melanin and pigment delivery. The appearance comes from the inability for full colors to be present, such as black, red, brown and others. (Wikipedia)

Fish/Insects

Several types of aquarium fish are called albino. There are several reports of total albinism in both freshwater and marine fish. Fish lack melanin in the inner ear, meaning that hearing in fishes is less likely to be affected by albinism than in mammals. Albinism in fish and insects is highly affected by the eggs exposure to heavy metal. (Milner Halls)

Amphibians are also amelanistic. They have six types of chromatophore in their skin; melanophores, xantophores, erythrophores, leucophores, cyanophores and iridophores. Amelanistic amphibians can still have various pigmentation.

(Wikipedia)

Amphibians

Plants

Albinism also occurs in plants when they are deficient in or missing the pigment called chlorophyll. Chlorophyll is the most important photosynthetic pigment in plants and also the one that gives leaves their green color. Total albinism in plants is deadly to plants- an albino seedling will die within days of sprouting because after it has used the stored energy from seedcase it can no longer absorb more to live. Plants of normal green color can produce albino shoots and these may survive longer because they receive chlorophyll reflection from the rest of the plant. They can not survive sunlight though because they have no protection and will shrivel. (MiIner Halls)

Albinism Syndrome

What is Albinism Syndrome?

Albinism Syndrome is when an organism is missing pigments from the skin, hair, and eyes. An example of that would be a organism with pale skin, snowy white hair, and with pinkish colored eyes.

What are The Symptoms?

Absence of color in the hair, skin, or iris of the eye : Lighter-than-normal skin and hair : Patchy, missing skin color : Crossed eyes : Light sensitivity : Rapid eye movements : Vision problems or functional

What are The Treatments?

The treatment for Albinism Syndrome is easy, but it is based on how bad it is. Also if you have Albinism Syndrome you will probably be asked to avoid sunlight because of the lost of your pigments. An example of that would be so you don't get a sunburn.

What are Different Types of Albinism Syndrome Characteristics?

In the world of the Albinism Syndrome not only humans can have it animals and plants can get it also.

What are The Different types of Albinism Syndrome?

Oculocutaneous Albinism, Ocular Albinism and, Hermansky-Pudlak Syndrome.

Albinism in different cultures

- In Tanzania witchdoctors spread rumors that "expensive concoctions" (Hussein) made from albinos limbs, genitals, hair and skin would bring good luck. This has led to many of them being murdered.
- In other places like Zimbabwe, it is believed that having sex with an albino if your infected with HIV Aids will cure him. This superstition has increased the number of rape cases and infection rate of HIV in albinos.
- living in Africa is a life of hell, not only are their organs hacked off and sold to witchdoctors but newborns are often killed at birth.
- African albinos are so noticeable they get discriminated against and it’s almost impossible to avoid due to lack of knowledge.

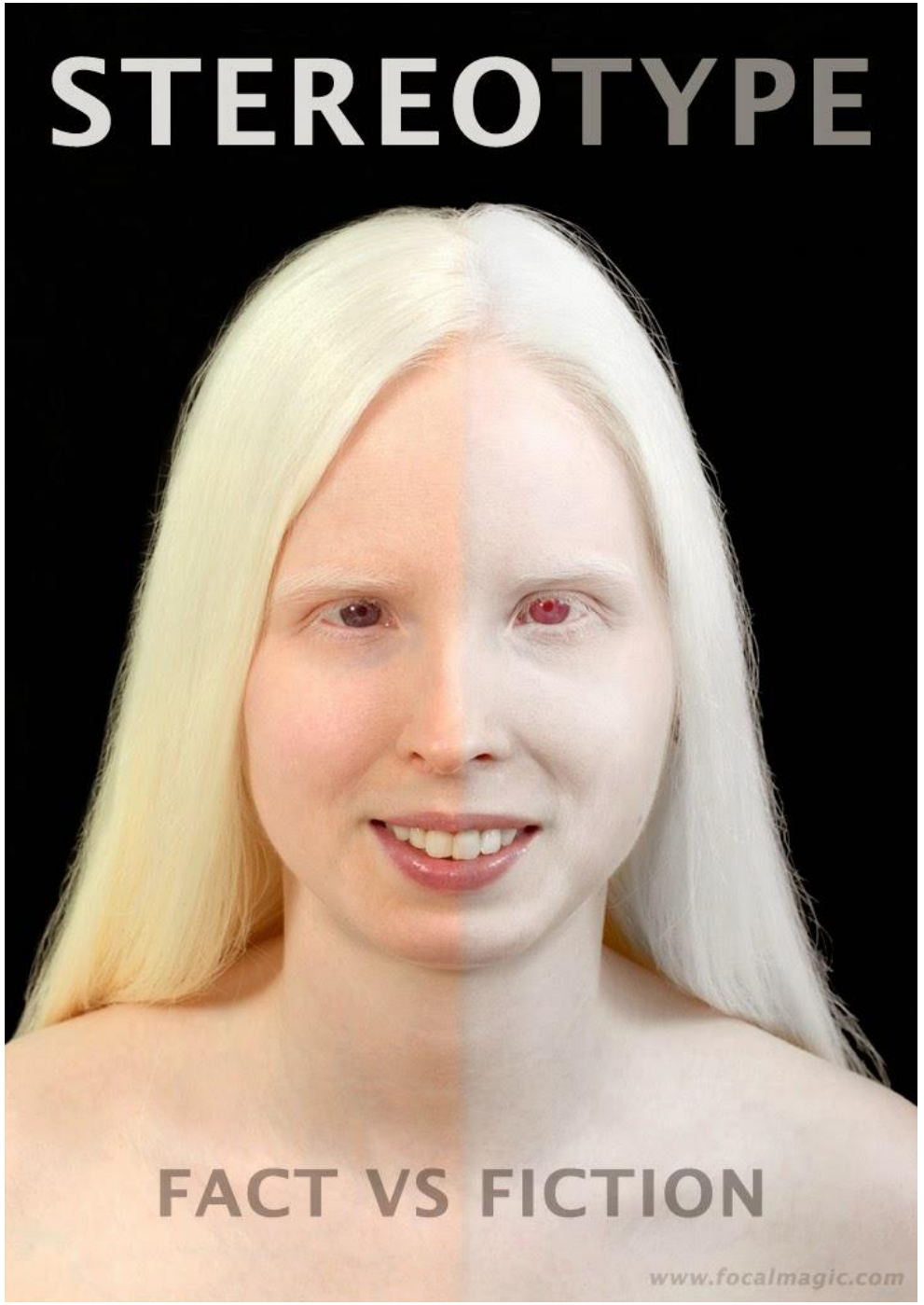
(Hussein)

Although there is no cure for albinism, people with this disorder can take steps to improve vision and avoid too much sun exposure.

Animals with albinism do not particularly have a shorter lifespan than other animals but they do have a greater chance at losing their eyesight.

Albinism doesn’t limit growth or intellectual development, though people with albinism feel socially isolated and may experience discrimination.

(Tandon)



Work Cited

Gittler, Julia Klein and Robert Marion. "More Than Skin Deep: Genetics, Clinical Manifestations, and Diagnosis of Albinism." *Einstein Journal of Biology & Medicine*, vol. 30, no. 1/2, 2014/2015, pp. 41-47.

Kaneko Binkley, Susan. Color On, Color Off. Minnesota Conservation Volunteer, 2001.

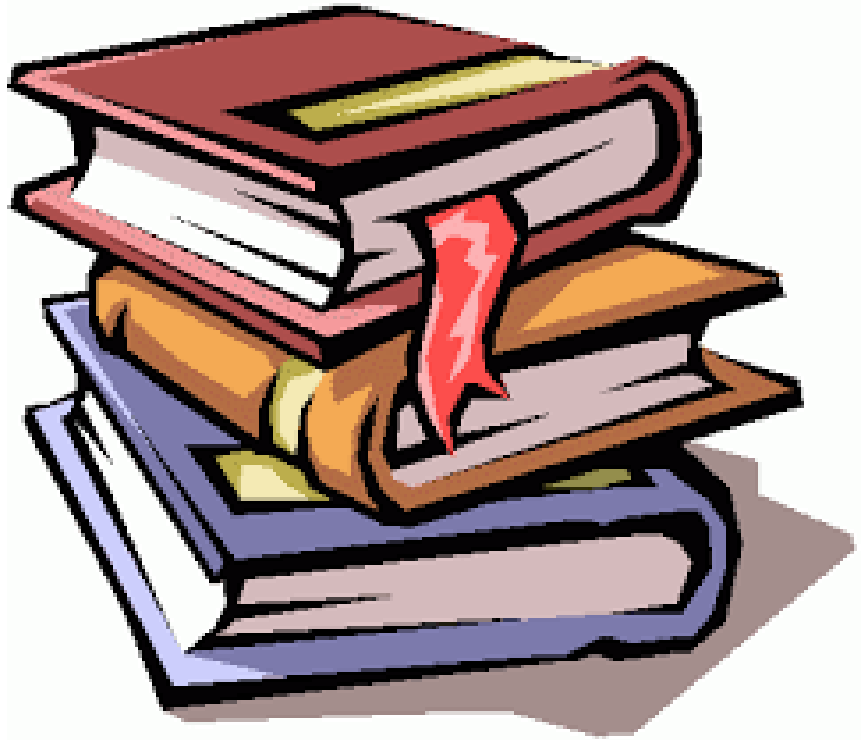
Milner Halls, Kelly. Albino Animals. Darby Creek Publishings, 2004.

Montoliu, Lluís, et al. "Increasing the Complexity: New Genes and New Types of Albinism." *Pigment Cell & Melanoma Research*, vol. 27, no. 1, Jan. 2014, pp. 11-18.

Tandon, Sadhana. "Know More about ALBINISM." *International Journal of Multidisciplinary Approach & Studies*, vol. 3, no. 1, 2016, pp. 60-64.

Wikipedia. *"Albinism in biology"* wikipedia.org/wiki/Albinism_in_biology.

Hussein, Abdikarim. *"CHALLENGES FACING PEOPLE WITH ALBINISM."* 2013. krazyinsidekenya.wordpress.com/2013/02/07/challenges-facing-people-with-albinism.




CAULIFLOWER IS JUST
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