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## What's at Stake: Is it a Vampire or a Virus?

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## What's at Stake: Is it a Vampire or a Virus?

### Abstract

Vampires have been discussed for millennia, appearing in folklore throughout various cultures. From the Egyptians and the Chinese to the Slavs, there have been numerous iterations of these bloodsucking fiends, but do their characteristics have any basis in fact, perhaps predicated upon misunderstandings of certain diseases? Using medical journals to discern plausible diseases for obscure and typical vampire traits, this paper functions on two levels. On one hand, it offers a repository of medical information for researchers who may want to delve further into the interdisciplinary field of pathology and folklore, especially where vampires of Western culture are concerned. On the other hand, it offers visual popular culture sources to serve as examples for each trait/disease, seeing as pop culture is where many people, myself included, get their ideas and renderings of vampires. Technology and medicine have advanced considerably since bloody, bloated corpses were mistaken as vampires, but some traits—eye color, charisma, allure, and fangs, among others—of certain, often diseased individuals could still be traced back to a vampiric condition. Faculty Sponsor: Dr. Gregory Brown

## What's at Stake: Is it a Vampire or a Virus?

### **Peer Review**

This work has undergone a double-blind review by a minimum of two faculty members from institutions of higher learning from around the world. The faculty reviewers have expertise in disciplines closely related to those represented by this work. If possible, the work was also reviewed by undergraduates in collaboration with the faculty reviewers.

### **Abstract**

Vampires have been discussed for millennia, appearing in folklore throughout various cultures. From the Egyptians and the Chinese to the Slavs, there have been numerous iterations of these bloodsucking fiends, but do their characteristics have any basis in fact, perhaps predicated upon misunderstandings of certain diseases?

Using medical journals to discern plausible diseases for obscure and typical vampire traits, this paper functions on two levels. On one hand, it offers a repository of medical information for researchers who may want to delve further into the interdisciplinary field of pathology and folklore, especially where vampires of Western culture are concerned. On the other hand, it offers visual popular culture sources to serve as examples for each trait/disease, seeing as pop culture is where many people, myself included, get their ideas and renderings of vampires. Technology and medicine have advanced considerably since bloody, bloated corpses were mistaken as vampires, but some traits—eye color, charisma, allure, and fangs, among others—of certain, often diseased individuals could still be traced back to a vampiric condition.

### **Keywords**

vampirism, pathology, folklore, pop culture, interdisciplinary research

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Vampires have infected the world's mass media for centuries. These stories stem from legendary tales of numerous cultural horrors and often arise from the failed understanding of disease and illness. For example, according to *National Geographic*, the bloodsuckers' origins are rooted in rural European beliefs and misunderstandings about corpse decomposition (Little). Through the process of decomposition, a body shrinks, and the organs begin to fall apart. These effects can make nails and teeth appear larger and more elongated (rather like claws and fangs, respectively) as well as make a dead body look as if it has been feeding through the leakage of fluids and a bloated, supposedly full, stomach (Little). Because these occurrences unnerved pre-germ theory communities, leading them to believe that the bodies were reanimating during the night and feasting on the living (a precursor for certain diseases like the plague), they took precautions such as placing bricks in the mouths of the buried, staking them to the inside of the coffin, or dismembering the bodies (Pringle).

Cultural and geographic differences in the practices outlined above tend to alter the definition of the vampire, so these legends differ everywhere. For example, the ancient Egyptians believed that vampires were born out of sorcery and dark magic; the Slavs believed they are akin to revenants (creatures who come back from the dead to harm those still living); and the Chinese believed in the *jiangshi*, yet another variation of the vampire that attacks people and drains their very life force and energy (Radford). For the sake of this paper, I will be focusing on a vampire similar to the Slavic legend, like the traits found in the novel *Dracula*, "arguably the most important work of vampire fiction" (Eldridge). By implementing both popular media and scientific research, this paper examines a series of diseases that could be

mistaken for one of the undead, especially those bloodsuckers that perpetually arise in Western lore and culture.<sup>1</sup>

### Definitions and Descriptions

While the image and social work of the vampire as cultural symbol has varied greatly across time and societies, there are a few conventions that persist. I will discuss one such definition and then move into a more specific explication of typical vampiric traits, one that will be used for the duration of this essay.

As mentioned in the introduction, the Western vampire is primarily based on Slavic notions akin to revenants. According to *Salem Press Encyclopedia*, a vampire is, ostensibly, a "folklore figure [from Eastern Europe] that survives by feeding on the blood of living creatures" (Coren). They are usually nocturnal beasts, undead with fangs and light sensitivities. European vampires are commonly presented with an interesting duality at play, one that is constantly fluid in various media versions. Sometimes they are cruel and vicious beings but otherwise seductively charismatic. Often, these traits are two sides of the same coin, playing against and with one another to create a terrifyingly fascinating monster (Coren). In

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<sup>1</sup> Popular culture helps to define a society. It is a "blend of ideas, images, attitudes, and perspectives that characterize a given culture and are adored by the mainstream" ("What is Pop Culture Today?") Because our entertainment media is so influential and it is where society garners its folkloric ideas on vampires, pop culture is the most apt source to analyze vampiric conditions—we can find helpful visuals in our TV and film examples to make medical terminology and cultural representations relatable and easier to comprehend, rather than relying on outdated myths and legends from varying cultural backgrounds.

the Western tradition, vampires are now caricatures of a scary monster with sharp fangs, a billowing cape, and old-fashioned perceptions of the world.

American film and television of the early 2000s was and is particularly saturated with spoofs and parodies of typical vampire lore. While by no means all-encompassing, the following synthesizes the basic archetype. Vampires possess peculiar red- or yellow-tinged eyes; facial ridges; seductive charismatic allure; aversions to sunlight, silver, and garlic; razor-sharp, fang-like teeth that cause garbled speech patterns; superhuman strength and often quick, lithe movement; aggressive, almost animal-like behavioral tendencies; pallid, ice-cold skin; and must consume blood to survive.

Other superhuman characteristics include hovering or flying, aging in reverse at an accelerated rate or not aging at all, shapeshifting into animals, and turning into dust because of sunlight. A real human cannot be affected by threshold magic, in that they cannot be held outside of a building by an invisible force, nor do they begin bleeding or burning when they cross a threshold uninvited; nor will a person become physically burned or stung by a crucifix. Despite these limitations of physics, the contemporary tropes affiliated with the western vampire have uncanny similarity to biologically defined phenomena.

### **Obscure Symptoms of a Vampire**

As this paper only focuses on characteristics of vampires that could potentially stem from real-world diseases and afflictions, I discard any mystical or impossible characteristics. Instead, I begin with the most obscure (those that only appear in one or relatively few pop culture and literary examples), such as facial deformities and eye color. From there, the discussion moves into commonplace vampiric conditions like fangs, strength,

pale skin, and the consumption of blood. By developing a uniform definition of what is meant by the term “vampire” in turn-of-the-century media, I am able to unpack the epidemiological anxieties vampires as cultural symbols evoke.

**Eye Color.** While most humanoid creatures have eye colors in the spectrum of brown, hazel, blue, green, and gray (Haddrill), vampires are depicted with red- or yellow-tinged eyes. Much of this is rendered by special effects (such as computer-generated imaging) or even practical effects (colored contacts) that uncannily replicate symptomatic correlations with allergies (red) or jaundice (yellow).

The first of these symptoms, red eyes, can be attributed to seasonal allergens such as pollen from trees and grasses, among other plants. Allergies of this nature are caused by heightened sensitivities, which come from a person’s interaction with a certain substance (in this case, pollen). If someone has an allergy to a substance, the antibodies that comprise elements of the eyes release histamines, which in turn cause blood vessels in the eyes to grow larger and make the eyes appear red, watery, and sometimes even itchy (“Eye Allergy”).

While Dracula and his successors may be suffering from seasonal allergies, this doesn’t explain vampires like those found in the hit television program *Buffy the Vampire Slayer* (1997–2003) who possess eyes with a yellow or amber hue. A common characteristic of jaundice, the disease can cause a yellowing of the skin and amber coloration of the sclera, giving the eyes an odd color (Gondal and Aronsohn 253). Jaundice, of which there are several types, is attributed to the liver’s failure to filter out waste material from the blood. More specifically, the liver does not remove bilirubin, an element of hemoglobin, so the body, due to the yellow nature of the

bilirubin, takes on its own amber hue, especially in the sclera (255). This liver dilemma is mostly due to blood and genetic problems, but it can also be caused by bile pathways becoming blocked, liver disease, or other infections.<sup>2</sup>

**Facial Ridges.** While some vampires possess oddly colored eyes, others have bumpy, rigid faces. In addition to yellow eyes, some vampires like those of the Buffyverse have a more pronounced eyebrow ridge, making one seem as if his or her eyes have sunken deeper into the skull, causing the forehead to appear more wrinkled (“The Harvest”). Neurofibromatosis type 1 (NF1) could be a possible cause of facial variation, primarily due to neurofibromas, harmless tumors that grow subcutaneously (beneath the skin). Other neurofibromas are not visible as they grow within the body, such as around the spine or on nerve cells (Herbe and Gutmann 835).

Caused by a mutation of genes on chromosome twenty-two, NF1 can be used to explain vampire visages through expanded nerve clusters beneath the skin, especially beneath the eyebrows of a person, right along the ridge of the skull above the eyes. These protrusions could explain why vampires like the Master, Angel, or Spike in

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<sup>2</sup> Jaundice can also be caused by hemolytic anemia, as well as the ingestion of oral steroids. This yellowing condition is why athletes, as well as others who have been prescribed medicinal steroids, will use injections as a way to avoid the onset of jaundice. This is an interesting connection among three of the afflictions mentioned in this paper, one that exemplifies an intricate weaving of diseases within afflicted humans who could be mistaken as vampires. Many thanks to Dr. Greg Brown, for providing this particular insight.

*Buffy* seem to have a bumpy, uneven facial structure, especially along the eyebrow and nasal regions. Surgeons can remove the tumorous growths, but most of them are fairly benign and tend to grow back.

**Charisma and Allure.** Some popular culture vampires are portrayed charismatically, deploying an alluring personality often complemented by an attractive appearance like Tom Hiddleston’s persona in the film *Only Lovers Left Alive* (2013). Although not actually a disease, charisma shows up in some characters to a greater extent than it does in others, and it does have roots in psychological upbringing. It is nearly impossible to quantify someone’s level of charisma, however, as it varies considerably (Bhide). Often seen as an extraordinary or superhuman ability, charisma is, at its most basic, the ability to influence those around you; in other words, being more impactful and persuasive—sometimes to the point of divine worship (Bhide). Sometimes these individuals are even called mesmerizing. What causes some people to be more charismatic than others? One study suggests that the trait is dependent on a person’s need or desire to relate to others around themselves, and it often arises due to crisis or trauma. Other theories, such as trying to resolve personal inadequacy or insecurity, have been given emphasis in elevating charismatic traits. Finally, it can come from spending time with other persuasive individuals and learning from them. There are dangers involved with charisma, including becoming self-centered and overly confident, but it could explain a vampire, both in physical and mental appeal (Bhide). They are often overly handsome or beautiful, and they have impressive mental abilities when it comes to controlling and subduing humans.

**Silver and Garlic Aversions.** Certain substances can deter or even ward off vampires: the first is a sensitivity to certain metals. In the case of vampires, that metal is silver. In a realistic depiction of silver sensitivity, a person is actually not allergic to the silver itself, but a metal included within the impure alloy (Usatine and Riojas 250). Most of the time, that metal is nickel, and these sensitivities are caused by contact dermatitis (CD). A particular form of dermatitis, CD is a type of skin reaction. These reactions can be caused by a host of factors including metals, cosmetics, food additives, beverages, and certain antibiotics like neomycin (250). When one is diagnosed with CD, the symptoms usually manifest as a rash-like area on the skin, commonly on the hands, face, and neck areas. Relative to metallic allergies, however, most occur due to jewelry or metal worn on the body, so the rash, or scaling in more serious cases, will occur in the areas touched by the nickel (251). In the case of a vampire, perhaps he or she has a more serious case of contact dermatitis. Rather than a simple allergy, the affliction can be categorized as an irritant form of CD, as burning is a side effect. In extreme cases like the tent scene in *Dracula Untold*, CD could be used to explain why Vlad suffers so heavily when surrounded by and forced to walk across the surface of silver coins (*Dracula Untold*).

The second weakness of vampires is garlic. Present in conventional forms of vampiric portrayal, garlic is a considerable deterrent of the undead. While more modern versions of the fanged terrors do not fear *allium sativum*, garlic allergies can actually afflict people in a variety of ways, such as through contact dermatitis, not unlike the metallic allergen. These allergies can also cause diarrhea, stuffy nose, and hives (Asero et al 427). Similar to a silver aversion, those who avidly avoid garlic and foods cooked

with garlic might be mistaken for one of the undead.

### **Commonplace Symptoms of a Vampire**

While the first traits are found in only a few instances of vampire representation, but the remaining characteristics can be seen in nearly any form of bloodsucking narrative that is at least loosely based on Slavic myth, including fangs, superhuman strength, aggression, pale skin, and the consumption of blood for survival.

**Razor-Sharp Fangs.** While the aforementioned characteristics are important to understanding the qualities of vampires and how someone could be mistaken for one, other possible explanations of vampires can be caused by other defects, such as sharp, almost fang-like teeth affiliated with a particular form of hyperhidrotic ectodermal dysplasia (HED). This disease can also, due to dental deformities, cause garbled speech patterns. Although Dracula has a Transylvanian accent, many other vampires, such as those in *Buffy* and the television series *Supernatural* (2005–), struggle to speak when their vampiric form is revealed, often sounding hoarse or unable to speak entirely: this is another effect of HED. When someone suffers from this condition, he or she reflects a few symptoms that are caused by a gene carried by a female parent, but it is one that often manifests, or becomes apparent, in the male; so, this disease is more common in males. It is caused by either a mutated or missing gene on varying chromosomes. In the case of a vampiric diagnosis, the most relative classification of HED is dental dysplasia, otherwise known as “oligodontia of the primary and permanent teeth” (Deshmukh and Prashanth 199). Regarding this particular form, patients have cone-shaped, sharp teeth, a symptom that could be used to explain vampire fangs (199). This disease can also

be used to explain skin issues; vampires are extremely sensitive to sunlight, with some even bursting into dust or flames from too much exposure. Within the HED population, skin problems also arise, as the phenotype commonly exhibits dry and thin skin that is more susceptible to sunburn (198). Since vampires tend to be seen at night, they could be people suffering from HED, ones who are extremely sensitive to UV light.

**Superhuman Strength.** Vampires are typically depicted as being more muscular than humans, exhibiting signs of an almost super strength. When their physique is shown on screen or described in text, they are more muscular than the average human, a trait which could be caused by the ingestion of anabolic-androgenic steroids. In fact, one of the primary reasons people use steroids is to “enhance performance or improve their physical appearance” (Piacentino et al 101). When a person uses steroids, they increase the quantity of protein produced, allowing the body to have faster, heightened muscle formation along with a decrease in body fat. When using steroids, studies show that intense strain does not affect musculature as much, as recovery times are much shorter (Piacentino et al). This gives a person more endurance, and it could also give the appearance of extra, superhuman strength as seen in vampire depictions. In the long run, steroids have adverse side effects, however, such as alteration of mood like depression or mania (Piacentino et al 101). This mania is a possible explanation of why vampires are often seen as hyperviolent creatures due to the chemical alterations in their bodies. There is another plausible disease that could cause aggression and animalistic tendencies in these creatures: rabies.

**Rage and Aggression.** Rabies is a disease that could be cultural anxiety made manifest

in representations of vampires, as its famous symptoms are severe hostility and aggression. This affliction is transmitted from animals (usually dogs or bats) to humans, and it can be fatal if not vaccinated. Passed through the saliva and bite of an animal to a human, rabies can prove to be especially hazardous and take on many symptomatic forms, including behavioral changes, such as an increase in irritability and aggression, a paralyzing of the throat, and developing eating/digestion issues, such as loss of appetite (Thiptara et al 138). Hyperactivity is also an effect of this virus (Thiptara et al 139). A person with this disease could be mistaken for a vampire due to a hostile or irritable nature, the throat’s paralysis making it difficult for he or she to talk and swallow (allowing blood left dripping down the sides of the face), and only drinking blood as a means to sustain his or her own life due to a lack of appetite.

**Pallid, Icy Skin and Blood Consumption.**

One of the most crucial identifiers of a possible vampire is pallid, icy skin, as explicated by Lestat in *Interview with a Vampire* (1994). Symptoms like these can be attributed to anemia, a condition involving poor circulation of oxygen in one’s bloodstream due to malformed erythrocytes, or red blood cells. These cells are said to be malformed because they have very low levels of hemoglobin, a protein that allows erythrocytes to carry oxygen (Cairo et al 1241). Due to this trait, anemic individuals have difficulty in transporting oxygen throughout their bodies, and they often appear paler and cooler than what would be deemed normal. Many factors can cause anemia, but one of the main ones is a diet lacking in iron, so when diagnosed, anemics are often told to consume more red meat (Cairo et al 1241). When this nutritional dilemma first arises, the symptoms of pale, cool skin are key



signifiers, but there are other effects such as irritability and changes in one's appetite, so this disease could partially explain why vampiric beings tend to have a negative temperament and consume blood to sustain "life." Perhaps a human decided to bypass the consumption of red meat entirely and drink blood in an attempt to replenish his or her body's dearth of iron, and could, therefore, be mistaken as one of the undead.

### Conclusion

The aforementioned qualities and applicable diseases are just a small sample of possible vampiric traits that made have been appropriated from actual biological conditions, illnesses, and disease. Although technology and medicine have improved over the years, there are still some diseases that have been "linked with vampirism because they gave out one or more symptoms that have also been associated with vampires" (Durocher). Although this paper is based on only one form of vampire—those inspired by the Slavic idea of a revenant—this paper provides a of inquiry into studying pathological and cultural differences in both folkloric and contemporary media representations of these cultural products.

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