



Dandruff Disease: Causes and Appropriate Remedies

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Abstract

Every year more than ten billion dollars are spent to treat dandruff, which affects more than half of the world's population. According to this study's established laboratory testing, dandruff is a mixture of dust, different creature fungi or yeast, dead cells, and saturated fatty acids. The duration of this study is 2019-2025, and two groups of people were included: 50 in 2019 and 100 in 2025. The first group, fifteen youngsters (ages 22 to 25) were selected at random to look into some crucial dandruff-related facts. These youngsters also indicated that dandruff emerges in the winter and goes away in the summer, and they reported using numerous treatments last year without seeing positive outcomes. While the second group of 100 people was taken randomly, about 72 of them had dandruff. There is significantly between the two groups. Furthermore, the two groups experience embarrassment when they see that they have dandruff, occasionally they have rough or scratchy hair that hurts and causes strange behavior. The painful itch of the last group. This study found that *Candida* spp. eliminated *Malassezia* spp. And they cause dandruff nowadays also this study introduces appropriate treatment for this improbable illness.

Keywords: Dandruff, *Candida*, *Malassezia*, Human

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1. Introduction

All warm-blooded animals' epidermis is home to *Malassezia* species, which can lead to a wide range of issues, including ear infections in cats and human and equine allergies and infections. Although nonlethal skin illnesses aren't as deadly as infectious diseases like AIDS or avian flu, our research is nonetheless intriguing and widely applicable due to a number of factors [1]. Tiny fragments of dry skin fall from the head due to a common scalp condition called dandruff. If you wear dark colors or have dark hair, you may notice the flakes on your shoulders or in your hair. Additionally, your scalp may get itchy due to dandruff. Poor hygiene is not the cause of dandruff, despite what many people think. Researchers are still investigating the origins of dandruff, which seem to be complex, even if infrequent shampooing can make it more noticeable. Using dandruff shampoo and scalp treatments is the most efficient method of treating and managing dandruff [2-3]. It is believed that *Candida* yeast spp. has evolved over the years, covering up all its shortcomings to become a stronger organism that does not die easily. This is because it secretes several compounds that can break down proteins and fats, and it can also adhere to cells forming special structure called biofilms. When it encounters any danger, it forms special spores called 'chlamydospores' [4-13].

In short, a living organism that can break down proteins and fats, adhere strongly to the host, and does not die
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easily because of its own spores. Is this a natural organism? This creature was found in the heads of the second group that mean that they eliminated *Malassezia* species.

2. Experiment's Section

This part includes two sections in two different times at 2019-2020 and at 2024-2025. Each time has its different properties:

At 2019-2020, there were three points:

1. To determine whether dandruff is caused by oils! Samples of dandruff were subjected to the following copper acetate test: Each dandruff sample should be placed in 5 milliliters of ether. Five drops of 10% copper acetate should then be added, and the color of the result should be noted [14].
 2. The Salkowski test was used to determine if the molecules in dandruff resembled fatty acids or cholesterol. Add five milliliters of strong sulfuric acid to each sample of dandruff after it has been placed in five milliliters of ether. Shake until two layers appear. The lower layer should be green, and the upper layer should be red; these colors correspond to substances like cholesterol molecules [14].
 3. To identify the specie present in dandruff samples, samples were sent to the biology department [15].
- Fifty randomly selected teenagers (aged 22 to 25) were

asked if they had ever experienced dandruff disease. Moreover, there are other inquiries. Whereas, at 2024-2025 this section includes following points:

1. Randomly selected 100 samples (ages 10-40 years), about 71 of them have dandruff =71%. This represents a very high and worrying percentage and requires the intervention of the authorities concerned.
2. Six samples from above samples were studied by taking the dandruff and culturing them in appropriate media at special laboratory [15].

3. Results and discussion

3.1. Results

Saturated fatty acid, dust, and remains of dead cells make up the type of oil seen in dandruff samples. According to biology experts at 2019, the dandruff samples include either *Malassezia globosa* or *Malassezia restricta*, two types of *Malassezia* fungi. They state that because they lack the required database, it is challenging to identify which type of *Malassezia* it is. They do demonstrate that there are around eight species of fungi mentioned above. The following image illustrates what they discovered in the dandruff sample. About 49 of the 50 teenagers from their group had dandruff, either recently or before. They guarantee that this condition is more prevalent in the winter than in other seasons. They have also tried numerous therapies, but none have been able to completely eradicate the disease; it continues to recur every winter. Additionally, these teenagers find it embarrassing to have white dandruff on their clothing. At 2025, 71 from 100 samples have dandruff and this is high ratio, furthermore, biologists [15] indicated that the dandruff samples at 2025 is not *Malassezia* spp., it is *Candida* spp. And this creature at older people over

35 years old differs than younger people less than 20 years old.

3.2. Discussion

Each human hair follicle has unique glands that secrete a particular oil called sebum, which is composed of triglycerides and fatty acids (57%), wax esters (26%), squalene (12%), and cholesterol (4.5%), according to anatomy [14]. Following figure 1 from GPT chat represents another than above ratios: The results of the experiment demonstrate that samples of dandruff do not contain any molecules similar to cholesterol. However, cholesterol is not as likely as triglycerides or wax ester to induce dandruff, or it may have a tiny amount of action. Free fatty acids, glycerol, and wax molecules are produced when lipase enzymes in *Malassezia* fungi breaks ester bond of triglycerides or wax ester. These lipids have unique qualities that give them the appearance of magnetic mass, drawing in other molecules like dust or remains of dead cells to form dandruff, a white substance. Since free fatty acids condense in cold weather, they actually show up in cold weather but do not in hot weather due to their low melting points. The explanation for dandruff is very obvious, however there is no chance of eradicating this improbable white species because hunting fungi is pointless. This is well known because all fungi produce fungal spores when they are in difficult situations. These spores are also common flora found in most creatures [13]. Therefore, eliminating *Malassezia* fungi is futile because they are easy to spread over air molecules to another person, causing dandruff again, and so on.

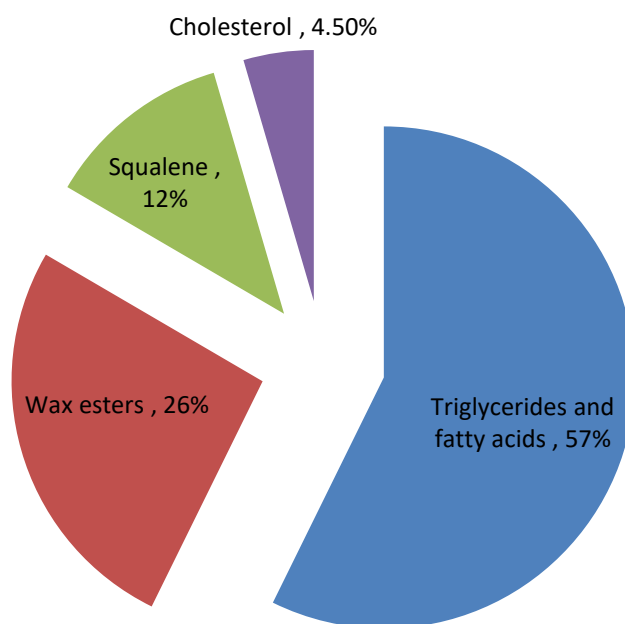


Figure 1: Different molecules that secreting from human's head.

Dandruff disease is unlikely to be caused by certain fungi or for other reasons, therefore this study found that using a right comb once for at least two days should eliminate dandruff; right combs are normal and healthy, not strong. All of the hair on the scalp should exhibit this activity in order to get rid of various fungi, cell remnants, etc. Furthermore, fungi species want a dark, net, and quiet environment [3]. Therefore, repeating comb every two days will eliminate aforementioned conditions, which will eliminate this bothersome fungus. Therefore, a great way to treat dandruff is to thoroughly brush your entire scalp every two days. According to the majority of teenagers in this study, they only comb their hair when it appears and add special lipids to achieve a pleasant style. Dandruff is undoubtedly caused by these factors. Majority of adolescent habits result in dandruff, thus thorough scalp combing once every two days should effectively eliminate dandruff. Combing is not helpful in 2025 in case of Candida, and we believe that most medications or shampoos are ineffective against these organisms. Therefore, cleaning materials such as shampoos are useless unless they contain ingredients that kill these organisms. As mentioned in introduction, these creatures do not die easily and there is no suitable treatment for them. What is even stranger than this is that these creatures secrete something that breaks down proteins and fats, meaning that these creatures can dismantle layers of head. If skull were not made of bone, these creatures would have entered brain.

According to the physiology of the brain, it is likely that they will penetrate the brain and cause several diseases. One of the well-known things about fungi in general and yeasts in particular [15] is that they prefer cold weather. That's why dandruff used to disappear in the summer. However, today, in 2025, the weather is cold at home or at work due to cooling devices. That's why we find that dandruff is present in the summer, but at a lower rate. Because, Candida spp. can burrow deeper into the head than *Melissa* spp., the itching is intense and painful. This is due to release of proteins and lipids, which

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Conflict of Interest

There may be a conflict of interest about this research.

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are components of brain cells and their membranes. Therefore, it is difficult to combat these organisms unless the person is armed with something that kills them. In fact, scalp and human hair are considered a very large battlefield, and perhaps for centuries microscopic organisms have been fighting in this arena. Therefore, we notice that all shampoos do not have an effect because they do not know cause of problem. Both organisms secrete what dissolves fats, and thus dandruff appears. However, *Candida* is not a natural organism, so it must be fought, and we will provide what we fight with. From a previous study, it found that medicinal plants, pomegranate peel, coriander, and cinnamon, are all stronger than conventional medications against *Candida* spp. Therefore, washing hair and scalp with one of these herbs will eliminate *Candida* spp. and treat dandruff.

4. Conclusions

Lipids like cholesterol and triglycerides are often expelled by human scalp to wet the hair; each hair has a gland that contains these lipids. These lipids can be hydrolyzed by the lipase enzyme found in certain fungal species or yeast species known as *Malassezia* spp. or *Candida* spp. It is a known fact that there is no effective treatment for fungal or yeast species since if they are removed, their spores will either reappear or need to be transferred by someone else, making dandruff treatment impossible. According to teenagers, dandruff crests appear after taking a shower because water molecules cause hydrophobic lipids to aggregate. Therefore, thorough combing every two days to get rid of everything mentioned above is the best way to treat dandruff. This is useful before but now at 2025 as it is mentioned before medicinal herbs; pomegranate peel, coriander, and cinnamon. are good treatment for dandruff.

Ethical Clearance

There is no ethical clearance in this research.

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