

# *Effective Home Remedies that Provide Quick Relief for Puffy Eyes*

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**Abstract—** Background: Periorbital edema is a major cosmetic concern for women across all the ages. Many lifestyle changes contribute to the worsening of puffy eyes in all age groups, while aging, chronic medical conditions are also a factor. The purpose of this study is to identify the various remedies women use to treat periorbital edema with a focus on studying homemade remedies, their mechanism of action and their effectivity. Study around this topic is important as there is a distinct lack of literature on a topic that is a cosmetic concern for women. Method: An online survey of 14 questions was conducted asking questions regarding periorbital edema and the quick effective homemade remedy used by them. Results: 50.8% (n=61) participants deal with puffy eyes while 49.2% (n=59) did not. From the 61 participants who dealt with eye puffiness, only 37.7% (n=23) took active measures to counteract it. From 23 respondents, it was found that most found using cold compression (n=17), getting enough sleep (n=11), and cucumbers (n=11) the most effective in dealing with eye puffiness, while vitamin E, K, caffeine treatments and witch hazel were less popular. Majority found these methods effective ‘sometimes’, and only one person didn’t find them effective. Conclusion: Women find cold compression, cucumber, and getting enough sleep most effective. Although more than half the participants of the survey dealt with eye puffiness, majority chose not to treat them.

**Keywords—***Puffy Eyes, Home remedies, Periorbital edema, Cosmetic Concern, Quick Relief*

## I. INTRODUCTION

Periorbital edema is a common clinical finding observed as swelling around eye tissue, in layman terms also referred to as eye puffiness and sometimes also as periorbital puffiness.

The primary cause of the occurrence of swelling around the orbits is due to inflammation resulting in fluid buildup and fluid collection around the eye. This condition, usually of not any serious clinical significance, can be attributed to various lifestyle causes such as lack of sleep, allergy, increased alcohol intake, increased consumption of salt, spending long hours using electronic devices, and various conditions like menstruation and pregnancy causing hormonal changes; and hence fluid retention in the tissue and the appearance of swelling. Other causes include infections, related to use of some medications and or postsurgical trauma [1] while some serious medical conditions causing periorbital edema include renal diseases, hypothyroidism/hyperthyroidism, anemia, hypertension, tumors etc.

Treatment for periorbital edema is wide ranging depending on the cause which includes medications such as anti-inflammatory medicines, corticosteroids, anti-histamines, antibiotics etc, while the home remedies include applying cucumber slices around the orbit region, using green tea (masks/eyemasks) [2], tea bags, facial massage, using eye rollers, witch hazel [3], rose water [4], hot and cold compression, aloe vera (gel/masks), all these natural ingredients containing anti-inflammatory and anti-oxidant properties which helps in easing the swelling around the eyes.

Periorbital edema can be a source of stress and insecurity in women due to various cosmetic reasons, and the focus of this study is to do a comprehensive analysis on the various methods and home remedies that women of various different ages incorporate in their daily lives to deal with periorbital edema, to review the chemical properties and mechanism of action of these natural home ingredients used accordingly, and review their efficiency in treating the same.

There is a distinct lack of study and literature surrounding the topic of periorbital edema and the various modes of treatment and hence with this study we aim to contribute to the literature surrounding the same.

### II. METHOD

120 females were a part of this study and the data collection was done using a questionnaire consisting of 14 questions, created on Google Forms, which was circulated on various social media platforms to reach the target audience. The questionnaire was designed to collect data on periorbital edema and the natural remedies women used to treat the same.

The questionnaire was anonymous and no personal data or participant emails were collected. In the questionnaire the participants were faced with multiple choice questions and open-ended descriptive questions. There was also no time limit given.

The first question in the questionnaire required the consent of the participant. Upon giving their consent to move forward with the survey, the following questions were asked:

1. Please specify your age:
2. Do you deal with puffy eyes?

If the participants answered “Yes”, the next questions were asked:

3. On a scale of 1 to 5 (with 1 being the least and 5 being the highest), rate how prone you are to eye puffiness.
4. Do you use any products for your eyes (eg. undereye cream etc)?
5. Is the product you're using effective for your puffy eyes?
6. How many hours of sleep do you get every night?
7. Do you usually wake up with puffy eyes?
8. Do you suffer from any of these chronic medical conditions:
9. Would you say your puffy eyes are because of genetic reasons?
10. Do you take active measures to reduce eye puffiness?

If the participant answered “Yes”, the following questions were asked:

11. What do you use to limit the prominence of puffy eyes?
12. Do you think these methods are efficient?
13. Which new method are you willing to try to reduce eye puffiness?

The options included in question 8 were: Renal Diseases, Anemia, Hypertension, and none.

The options included in question 11 & 13 were: Witch Hazel, Cucumber, Green Tea, Rose Water, Aloe Vera, Hot compression, Cold Compression, Caffeine Treatment, Eye drops, Reducing Salt and Potassium rich food, Getting plenty of sleep, Reducing alcohol consumption, Doctor’s advice, Facial massage technique (eg. Jade rollers). Participants were free to choose any number of options according to their personal usage.

Upon completing the questionnaire the participants clicked submit and the data was collected

### III. RESULTS

The online survey received a total of 120 responses which garnered 100% participation.

Those who took the survey were specifically female. This was controlled by sending it to Whatsapp group chats, Subreddits and

Facebook groups with only female members. This was the limit to which the authors could control the survey as to having only female participation.

The survey was popular with those between the ages of 17-20 with 38.3% (46 people) participation followed by 21 – 25 years category with 31.7% of the responses and those above 30 years of age with 23.3%. In comparison, involvement of those below the ages of 17 and those between 26- 30 years of age remained fairly low with 5 and 3 responses respectively.

Participants were then asked if they dealt with puffy eyes and 61 ‘Yes’ responses were received which amounts to about 50.8% participation as a total from here on till the end of the survey. Those 49 participants who countered with a ‘No’ were then directed to the end of the survey. This can be seen in Fig 1.

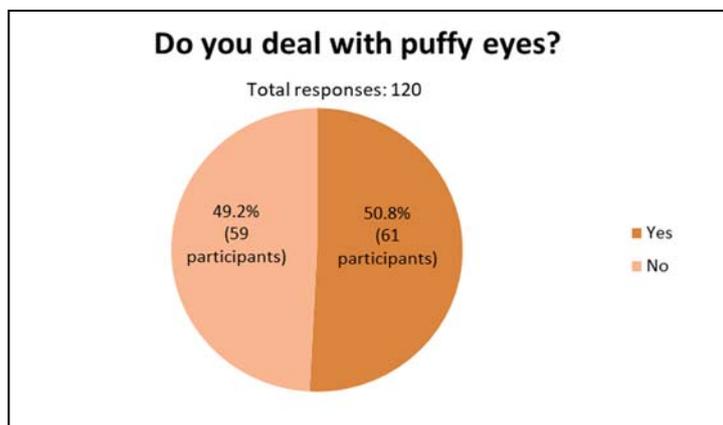


Fig 1.

Next, the remaining survey takers were asked on a scale of 1 to 5 (with 1 being the least and 5 being the highest), to rate how prone they were to eye puffiness. There was great feedback in the midpoint at ‘3’ with 27 responses. In contrast, the ‘5’ extreme got only 3 responses.

Members were asked if they used eye creams and the majority (47 participants) claimed that they didn’t leaving the remaining 14 people split equally between their effectiveness.

Participants were also more likely to sleep for 6-8 hrs (29 responses) with a mode of 7 hours and there seems to be varied effects of sleep on puffy eyes with 41 participants answering ‘Sometimes’, 15 with ‘Yes’ and 5 with ‘No’.

Chronic medical condition doesn’t seem to be a predisposition for 67.2% for the members. Only 20 people seemed to suffer, with 11 having low hemoglobin, 5 with hypertension and 4 with hypothyroidism. Moreover, only 14 partakers believed that their eye puffiness to be because of genetics.

In the next section, participants were asked whether they took active measures to reduce eye puffiness and the majority at 62.3% (38 people) selected ‘No’. This is seen in Fig 2. These participants were directed to the end of the survey.

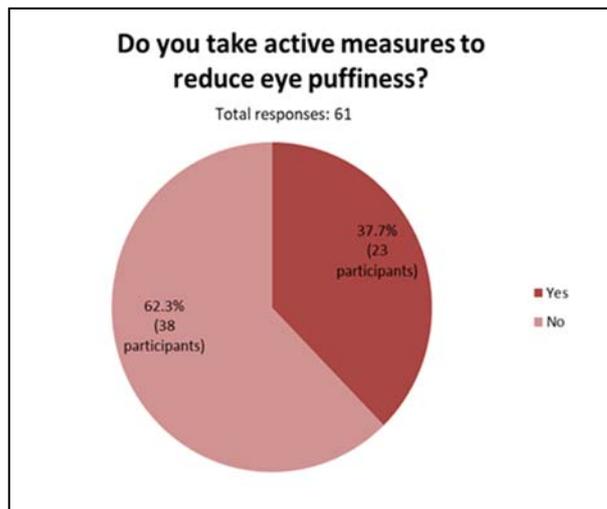


Fig 2.

Within the remaining 23 people, it appears that cold compression (17 responses), getting enough sleep (11 responses) and cucumbers (11 responses) seemed to be the most helpful as a quick remedy to the prominence of periorbital edema as shown in Fig 3. Participants also were given the option of adding their own techniques and it appears that 3 new remedies were received with those being ‘vitamin E and vitamin K treatments’, ‘eye serums and collagen masks’ and ‘drinking a lot of water’.

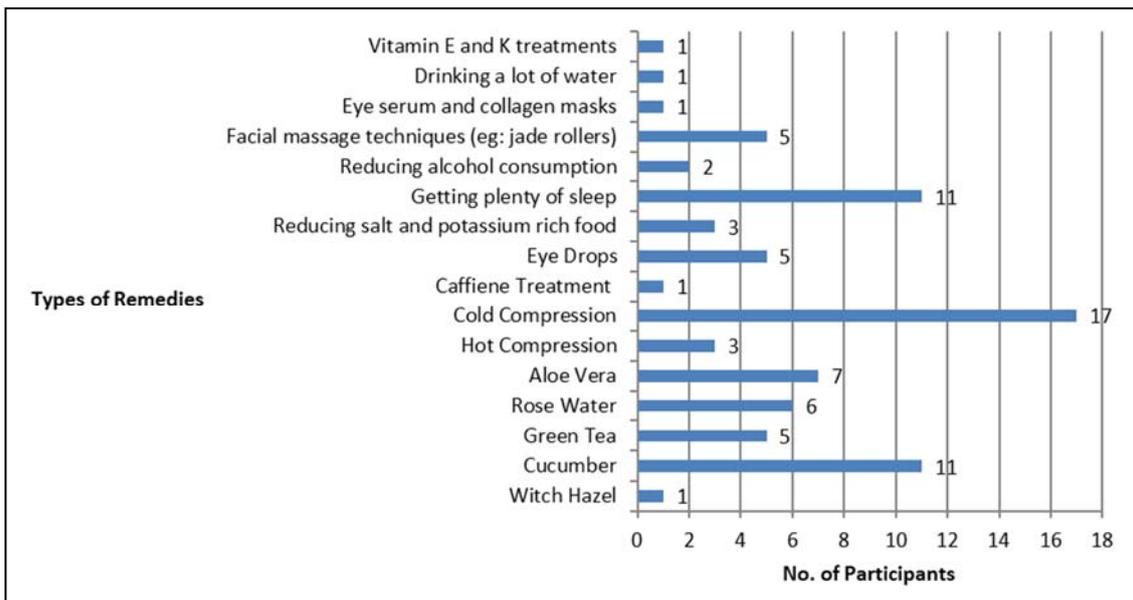


Fig 3.

Members also considered the methods to be effective with 9 participants agreeing to ‘Yes’ and 13 to ‘Sometimes’. This was challenged by only 1 participant who chose ‘No’ as can be seen in Fig 4.

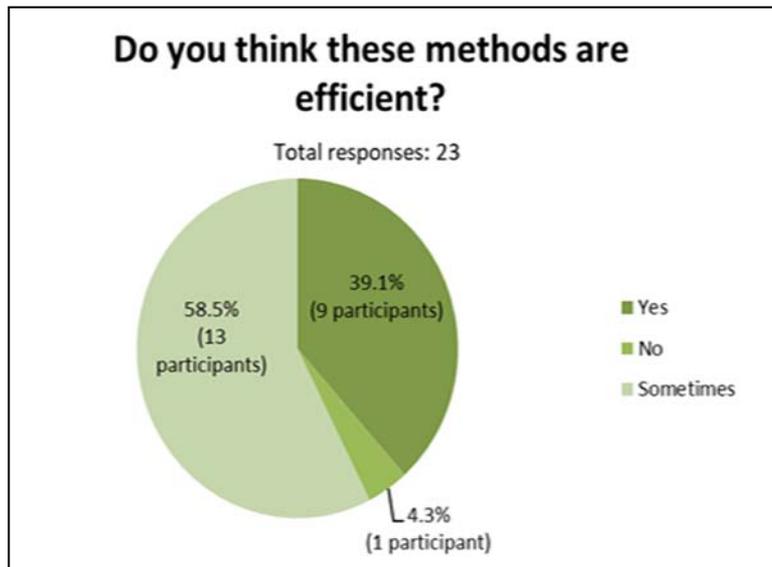


Fig 4.

The final question revealed that most participants were willing to try different methods to help with the appearance of puffy eyes. 40.9% (9 participants) wanted to try getting more sleep while the other most popular option were getting doctors' advice and trying out facial massage techniques, both with 36.4% (8 participants). Recognition to other methods by the survey takers was also observed. For example, reducing salt and potassium intake is deliberated as compared to the data in Fig 3 which shows that only 3 people were trying this technique while 7 participants seemed to consider this as an option. This is a similar case with caffeine treatments and witch hazel with only 1 person each with active use of it. 6 participants were willing to try out caffeine treatments and 3 participants were interested to add witch hazel into their routine.

#### IV. DISCUSSION

Periorbital edema is also more commonly known as puffy eyes, under eye bags, swollen eyelids etc. The area around the eyelids is very delicate with high vasculature and thin dermal layers. Hence, this is a region in the face that is prone to inflammation and there are a multitude of reasons for their causation. Age, life style choices for example diets rich in salts or potassium, sleeping habits, alcohol consumption, daily screen time, skin care routine as well as genetics and chronic illnesses contribute to the development of periorbital edema.

Research in this criterion is important because while there is an abundance of articles published on general skin care, there seems to be a certain lack of it concerning periorbital edema. Hence, our research aims to help find what home remedies are most efficient in reducing the appearing of puffy eyes.

Our online survey was targeted to a sample size of 120 out of which 61 participants claimed that they do deal with this predicament. From these respondents, we found out that the amount of sleep hours do have some sort of effect on eye bags, but that they might not be the primary reason as to why people wake up with them. This is also the same case that is seen in those participants who use eye creams and were split between their effectiveness. This suggests that while sleep and eye creams are effective in some cases, there might be some other underlying reason as to why they are only helpful to some of our participants and only some times. Unfortunately, there is not much research done on this topic. It is something to consider moving forward.

We also found that only 23 participants (37.7%) from 61 responses took active measures to counteract the appearance of periorbital edema. This shows that many women tend to disregard their eye bags rather than treat them highlighting the need for more awareness of periorbital edema.

When asked what our respondents use to reduce the appearance of swollen eyes, 23 participants gave us various results, but cold compression, cucumbers and getting ample amount of sleep was most effective in reducing their eye bags.

### Witch Hazel: 4.3% (1 participant)

One study tested three herbs including witch hazel for their antioxidant properties as they were reported to possess high polyphenolic content as well as anti-aging abilities via inhibition of collagenase and elastase. [5] These are enzymes that breakdown the structures of collagen and elastin respectively, gives the looks of sagging skin which can be seen in eye bags caused due to age.

Witch hazel leaves and bark contain up to 10% tannins (polyphenolic biomolecules), which contribute to its astringent properties. This study also revealed that for the witch hazel distillate, which was used for testing, the practical anti-inflammatory effects are still considerable and validate the purpose for which they are advertised. [5]

### Cucumber: 47.8% (11 participants)

According to one research paper, cucumber slices can subdue puffiness under the eyes because of its anti-inflammatory properties. [6] This is a very common and effective method that is also reflected in our study and echoed by another study which states that placing the two slice of cucumber on the eyes for ten minutes can reduce the puffiness noticeably. This same article claims that the regular intake of cucumber fruit is useful in skin problems, sunburn and also for curing swelling under the eye. In addition, it's juice is also used to soften the skin. [7]

### Green Tea: 21.7% (5 participants)

Green tea is made from un-oxidised leaves of *Camellia sinensis*. The minimal processing of this tea is the reason why its extract is rich in the highest amount of antioxidants and beneficial polyphenols with minimum amount of caffeine. Epigallocatechin-3-gallate, a bio active polyphenol is found in green tea and is recognized for its anti inflammatory and anti carcinogenic effects. It appears that even the used tea wastes are useful to cut back redness and inflammation on skin but these are also found to be helpful to reduce dark circles and puffy eyes. [8]

### Rose Water: 26.1% (6 participants)

In 2019, a study aimed to evaluate the antioxidant and inflammatory activity of aqueous petals extract of *Rosa damascene* cream for its radical scavenging and protein denaturation activity. The result of the research concluded that the rose water cream formulation F1 and F2 possess the high potential of antioxidant and anti-inflammatory properties. The observed antioxidant and anti-inflammatory effects can be attributed majorly to the presence of polyphenolic compounds such as flavonoids, tannins, triterpenoids, saponins in the rose water. [9]

### Cold Compression: 73.9% (17 participants)

The American Academy of Ophthalmology affirms that fluid can also pool in the periorbital area and lead to edema (swelling) which as gives the appearance of puffy eyes. It was advised to wet a clean washcloth with cool water and to place it around the swollen area for a while applying very gentle pressure. [10]

Cool temperatures are known to cause vasoconstriction of the tiny vasculature around the periorbital area. This successively results in reversal effects in fluid retention.

### Caffeine Treatment: 4.3% (1 participant)

Another article conducted a study that was aimed to distinguish physicochemical properties and to see the in-vivo effectiveness in decreasing under eye swelling of the prepared caffeine gels. As stated previously, the eyelids are the thinnest skin in the body, and this easily leads the blood vessels to show through the skin caused a swollen and dark appearance called puffy eyes. Placing cool, damp tea bags on the eyelids has been thought to reduce swollen eyes due to the vasoconstriction action of caffeine which is known for its mild stimulant properties to the central nervous system. However, in this study, the results declared that the cooling effect of the hydrophilic gels provided a greater response to the reduction of swollen eyelids than the vasoconstriction effects of caffeine. Only 23.5% of the volunteers responded to caffeine activity. Consequently, it shows that while the effect of caffeine is small compared to other methods, it is still very much an option for some people as everybody's skin is unique. [11]

Reducing Salt and Potassium rich food: 13% (3 participants)

Eyelid edema as a manifestation of fluid accumulation is often worse after a salty meal or in the morning. Due to the presence of the orbicularis oculi muscle in the lower eyelid, the fluids accumulated tends to take a purple hue.[12] Salt and potassium causes increased periocular blood flow and vascular permeability, both of which leads to signs of inflammation.

Getting plenty of sleep: 47.8% (11 participants)

The difference in facial indications of sleep deprivation in comparison to good rest was carried out in an experimental laboratory study in 2013. A lack of sleep in both genders was related to looking drastically more exhausted, having more hanging eyelids, redder eyes, more swollen eyes, darker circles under the eyes and more wrinkles/lines around the eyes. [13]

Reducing alcohol consumption: 8.7% (2 participants)

The aim of one large study was to determine the skin and volume related clinical manifestation associated with alcohol and tobacco use in women. Their results presented that heavy alcohol use ( $\geq 8$  drinks/week) was associated with increased under-eye puffiness. [14]

Alcohol abuse is known to affect the body in many adverse ways for example with damage to the tissues, impaired inflammatory responses, reduced ability of fibroblast in the skin to produce type I collagen and some vitamin deficiencies. [15] – [18]

Facial massage techniques (eg. Jade rollers): 21.7% (5 participants)

A clinical study and histology showed that gentle facial massage has an anti-inflammatory effect on the musculature (with an effect on nucleoporin 88). [19]

Eye serum and collagen masks: 4.3% (1 participant)

A study investigated the effects of a topical eye cream containing LMW-HS and a blend of naturally derived extracts to address global periorbital rejuvenation. Subjects reported a decrease in puffiness (73%) and dark circles (93%). The outcome established that an eye cream with LMW-HS and a blend of naturally extracted compounds achieved global skin rejuvenation by improving the manifestation of periorbital hyperpigmentation, puffiness, and fine and coarse wrinkles. [20]

Regrettably, there was not much literature based on ‘drinking a lot of water’ [4.3 (1 participant)], ‘eye drops’ [21.7% (5 participants)], hot compression [13% (3 participants)] and aloe vera [30.4% (7 participants)] and their mechanisms to prevent eye puffiness despite of being well known quick remedies.

Our limitations are adhered to the fact that the sample size of our study is of only 120 women and, to reiterate, the restricted amount of research based on periorbital edema. This is why it would be beneficial to have more evidence based off of on large scaled studies regarding the quick remedies to eye puffiness.

### V. CONCLUSION

This research aimed at identifying the quick and effective home remedies that women incorporate in daily lives to counteract eye puffiness, and reviewing their properties. Based on the analysis of the data collected from the online questionnaire, we conclude that women find cold compression, applying cucumber, and getting enough sleep most effective in dealing with eye puffiness, while vitamin E, K, caffeine treatments and witch hazel were less popular. With this research, we contributed to learning more about the natural and easy-to-use ingredients in treating periorbital edema. Although more than half the participants of the survey dealt with eye puffiness, majority chose not to treat them which highlights the importance of raising awareness amongst women and studying more about the quick and effective methods which are easily at their disposal to treat periorbital edema.

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