



A Comprehensive Review on Recent developed Vicks Roll - On Inhaler 2 In 1 Relief for Headache and Blocked Nose

Dr. Menda Akkulu Naidu*

*Associate Professor, Faculty of Pharmacy, Mandsaur University, Rewas Dewda Road, SH - 31, Mandsaur, Madhya Pradesh- 458001, India, Email: manaidupharmacy@gmail.com

<p>CC License CC-BY-NC-SA 4.0</p>	<p style="text-align: center;">ABSTRACT:</p> <p>Conventional nasal inhalers produce a spray of liquid medicine when the pump mechanism is depressed. There is an associated risk of injury with this design; namely, the difficulty that this type of finger-actuated pump mechanism presents to individuals suffering from arthritis, hand, or finger pain. Additionally, current products may not coat the intended areas of the nasal cavity, causing a significant portion of the medicine to be wasted. The objective of this project is to briefly describe the recent developed vicks nasal inhaler that addresses these issues. In addition it also include roll on for headache, means these recent developed product have 2 in 1 properties which is used in both cases to relief for headache and blocked nose.</p> <p>Keywords : <i>Nasal inhaler, headache roller, recent developed vicks 2 in 1 product</i></p>
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INTRODUCTION^[1]:

The purpose of this project was to to briefly describe the recent developed vicks nasal inhaler that addresses these issues. In addition it also include roll on for headache, means these recent developed product have 2 in 1 properties which is used in both cases to relief for headache and blocked nose.

The development of this project is therefore motivated by the desire to improve the quality of life for patients that require the use of nasal inhalers, but who have difficulty in using the finger- actuated conventional pump design. Through the utilization of these recent developed vicks 2 in 1 product or device, the user will only need to position the nasal inhaler to receive the appropriate dosage of medicine and in case of headache, the user will only need to roll the roller on head. By incorporating a simpler and safer method of activation, this product will be extremely useful to patients that suffer from blocked nose and headache.

Conventional nasal inhalers produce a spray of liquid medicine when the pump mechanism is depressed. There is an associated risk of injury with this design; namely, the difficulty that this type of finger-actuated pump mechanism presents to individuals suffering from arthritis, hand, or finger pain. Additionally, current products may not coat the intended areas of the nasal cavity, causing a significant portion of the medicine to be wasted. In order to accomplish this task, test subjects that contain these 2 in 1 product have been obtained and studied in order to learn how and why they work.

The possibility to easily and effectively distribute medicine to the nasal cavity is a goal that has the potential to be useful for a wide variety of different applications. For example, the high rate of absorption of medicine through the nasal cavity could provide an alternative to dispensing medicine with needles. It's got an Inhaler, which unblocks the nose, on one side. And Roll- on, which gives relief from headache, on the other. Two products. One cool design.

OBJECTIVE^[2,3]:

The objective of this project was to briefly describe the recent developed vicks nasal inhaler that addresses these issues. In addition it also include roll on for headache, means these recent developed product have 2 in 1 properties which is used in both cases to relief for headache and blocked nose. The purpose of this report is to describe the knowledge that was gained throughout the duration of the project, as well as describe the final prototype for a nasal inhaler.

Conventional nasal spray inhalers method of activation with a finger-actuated pump incurs difficulty to individuals suffering from arthritis or other types of hand or finger pain. The motivation for this project is to explain that these recent developed vicks 2 in 1 product are effective, safe, and economically than the conventional nasal spray and balm.

NASAL CONGESTION/ BLOCKED NOSE

A stuffy or congested nose occurs when the tissues lining it become swollen. The swelling is due to inflamed blood vessels^[4] (Figure 1). The problem may also include nasal discharge or "runny nose." If excess mucus runs down the back of your throat (postnasal drip), it may cause a cough or sore throat.



Figure 1 : Nasal Congestion^[5]

Nasal congestion is a common symptom in rhinitis (both allergic and nonallergic), rhinosinusitis and nasal polyposis. Congestion can also be caused by physical obstruction of nasal passages and/or modulation of sensory perception (figure 2). Mucosal inflammation underlies many of the specific and interrelated factors that contribute to nasal congestion, as well as other symptoms of both allergic rhinitis and rhinosinusitis. A wide range of biologically active agents (eg, histamine, tumor necrosis factor- α , interleukins, cell adhesion molecules) and cell types contribute to inflammation, which can manifest as venous engorgement, increased nasal secretions and tissue swelling/edema, ultimately leading to impaired airflow and the sensation of nasal congestion. Inflammation-induced changes in the properties of sensory afferents (eg, expression of peptides and receptors) that innervate the nose can also contribute to altered sensory perception^[6].

A stuffy or runny nose may be caused by:

- Common cold
- Flu
- Sinus infection

The congestion typically goes away by itself within a week. Congestion also can be caused by:

- Hay fever or other allergies
- Use of some nasal sprays or drops bought without a prescription for more than 3 days (may make nasal stuffiness worse)

- Nasal polyps, sac-like growths of inflamed tissue lining the nose or sinuses
- Pregnancy
- Vasomotor rhinitis

A medical term for inflammation of the sinuses and nasal cavities is “rhinosinusitis” and many issues that cause congestion bear this name. They include Trusted Source^[7]:

- Infectious rhinosinusitis: Common cold viruses or upper respiratory infections cause infectious rhinosinusitis.
- Allergic rhinosinusitis: This inflammation is triggered by an allergen or environmental irritant.
- Seasonal allergic rhinosinusitis: A doctor diagnoses this, also called a seasonal allergy, when the inflammation is a response to pollen from trees, grasses, and weeds that are most abundant in the spring and fall.
- Perennial allergic rhinosinusitis: This involves allergens present all year, such as mold, animal dander, dust mites, and cockroach debris.
- Nonallergic rhinosinusitis: This inflammation stems from airborne irritants, such as smoke, chemicals, and pollution.

People with reduced immune function, possibly from HIV, diabetes, or receiving chemotherapy, may be especially susceptible to congestion that results from infection.

In other cases, nasal congestion is not a response to a pathogen, irritant, or allergen. The cause may instead involve^[8]:

- Body positioning: Lying down makes it harder for the body to clear mucus, so people with reduced mobility may be more prone to congestion.
- Structural issues within the sinuses: These might include polyps, septal deviation, narrowing of the passageways, tumors, or an extra pocket.
- Health conditions that reduce mucous transport: Some examples include cystic fibrosis and a gallbladder disorder called biliary dyskinesia.

People with septal deviation may experience especially bad congestion. The septum is the thin wall separating the left and right nasal airways. A deviation means that the wall is slanted to one side, which can make breathing through one nostril difficult, even without an allergy or a cold to cause congestion.

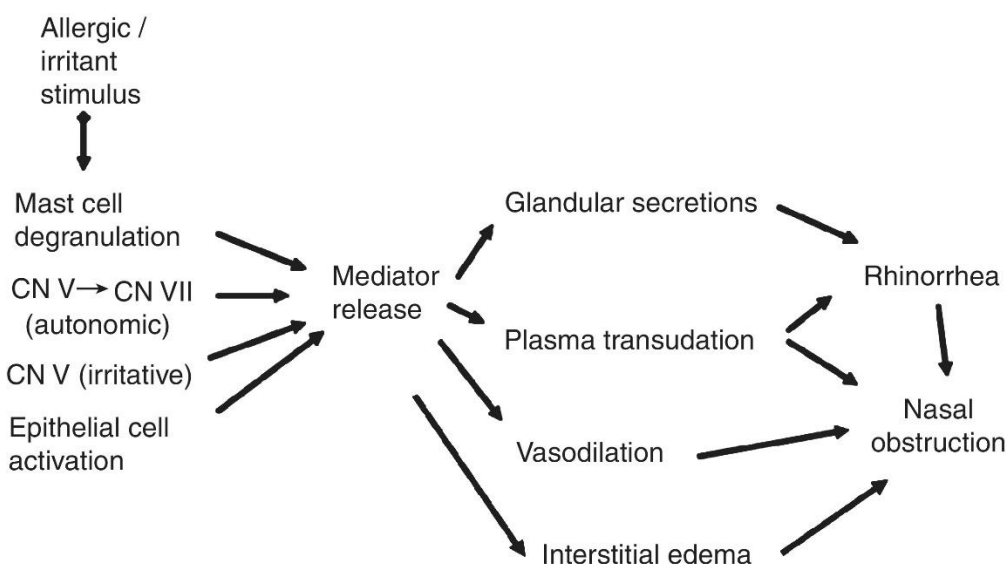


Figure 2 : Pathophysiology of Nasal Congestion^[9]

HEADACHE:

Headache is an extremely common symptom and collectively headache disorders are among the most common of the nervous system disorders, with a prevalence of 48.9% in the general population (figure 3). Headache affects people of all ages, races and socioeconomic status and is more common in women. Some headaches are extremely debilitating and have significant impact on an individual's quality of life, imposing huge costs to Available online at: <https://jazindia.com>

healthcare and indirectly to the economy in general. Only a small proportion of headache disorders require specialist input. The vast majority can be effectively treated by a primary care physician or generalist with correct clinical diagnosis that requires no special investigation. Primary headache disorders – migraine, tension headache and cluster headache – constitute nearly 98% of all headaches; however, secondary headaches are important to recognise as they are serious and may be life threatening. Headache, an almost universal human experience, is one of the most common complaints encountered in medicine and neurology. Described and categorized since antiquity, with the first classification by Aretaeus of Cappadocia, other classifications followed. The evaluation of this condition may be straightforward or challenging, and, though often benign, headache may prove to be an ominous symptom^[10].

Factors that lead to headaches may be^[11]:

- emotional, such as stress, depression, or anxiety
- medical, such as migraine or high blood pressure
- physical, such as an injury
- environmental, such as the weather

Frequent or severe headaches can affect a person's quality of life. Knowing how to recognize the type of headache and its cause can help a person take appropriate action.



Figure 3: Headache^[12]

Types of headache^[13]:

There are many types of headaches (figure 4). They fall into two main categories: primary and secondary headaches.

Primary headaches

Dysfunction or over-activity of pain-sensitive features in your head cause primary headaches. They're not a symptom of or caused by an underlying medical condition. Some people may have genes that make them more likely to develop primary headaches.

Types of primary headaches include:

- Tension-type headaches (most common type of headache).
- Migraine headaches.
- Cluster headaches.
- New daily persistent headaches (NDPH).

Some primary headaches can be triggered by lifestyle factors or situations, including:

- Alcohol, particularly red wine.
- Certain foods, such as processed meats that contain nitrates (food-triggered headaches).
- Consuming nicotine (nicotine headache).

- Changes in sleep or lack of sleep.
- Poor posture.
- Physical activity, such as exercise (exertion headaches).
- Skipped meals (hunger headache).
- Coughing, sneezing, blowing your nose, straining (such as when having a bowel movement), or laughing or crying vigorously (primary cough headaches).

Primary headaches typically aren't dangerous, but they can be very painful and disrupt your day-to-day life.

Secondary headaches

An underlying medical condition causes secondary headaches. They're considered a symptom or sign of a condition.

Types of secondary headaches that aren't necessarily dangerous and resolve once the underlying condition is treated include:

- Dehydration headache.
- Sinus headaches.
- Medication overuse headaches.

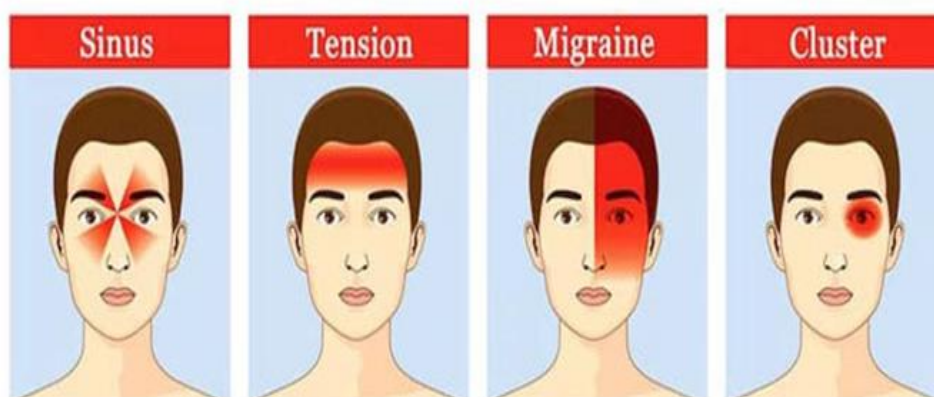


Figure 4 : Types of Headaches^[14]

Pathophysiology of Headache^{[15]:}

Therefore, pain originating in surrounding structures, such as blood vessels, meninges, muscle fibres, facial structures, and cranial or spinal nerves, is usually the cause of headaches (figure 5). A headache may be felt as a result of stretching, dilatation, constriction, or any other nociceptor stimulation inside these structures.

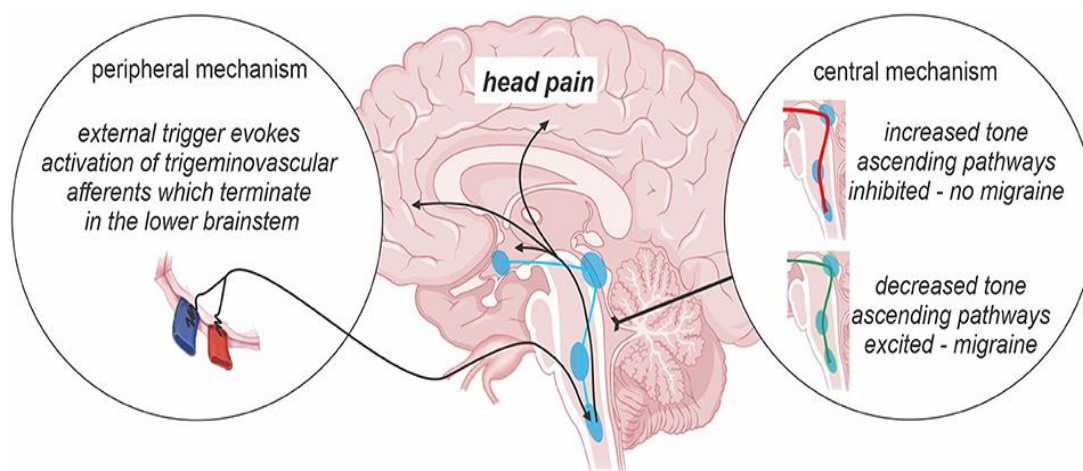


Figure 5 : Pathophysiology of Headaches^[15]

Vicks Roll - On Inhaler 2 In 1 Relief For Headache And Blocked Nose

Information^[16] :

This product or device unblocks the nose, on one side. And Roll-on, which gives relief from headache, on the other. Two products and one cool design (figure 6).



Figure 6 : Design of Vicks Roll - On Inhaler 2 In 1^[16]

These vicks 2 in 1 product offers a simple and inexpensive method of obtaining symptomatic relief from the nasal congestion that accompanies rhinitis as well as headache. It has the advantages of simplicity of use, compactness and efficiency of response.

Vicks VapoInhaler is a convenient non-medicated nasal inhaler formulated with a proprietary blend of ingredients including menthol & camphor so you can experience non-medicated soothing vapors. It's easy to use – just inhale the soothing & refreshing non-medicated vapors through each nostril and use as often as you need to. It's also easy to carry – take it with you in your purse or pocket so you can discretely enjoy the soothing non-medicated vapors you need to make it through the day. For Adults. Not recommended for use by children under 12.

Formulation/ Composition

- *Inhaler per 0.5 ml:*

Pudinah (Mentha arvensis, Lf.) 197 mg

Karpoor (Pinus longifolia, St.) 197 mg

Fragrances q.s.

- *Roll-On per 1ml:*

Pudinah (Mentha arvensis, Lf.) 394 mg

Karpoor (Pinus longifolia, St.) 190 mg

Fragrances and base q.s.

How to use

Insert the inhaler gently into one nostril breathe deeply using Inhaler from nostrils for blocked nose relief, hold the other nostril closed and inhale deeply. Repeat in the other nostril. You can use Vicks inhaler as often as needed.. Apply Roll-On on affected areas for headache relief. There are the direction of use:

- 1) Apply the Vicks roll-on inhaler directly to the skin around the nostrils or temple area.
- 2) Gently massage the product onto the skin for a few seconds.
- 3) Inhale deeply for relief from nasal congestion.
- 4) Repeat as necessary, up to four times a day.

Description of Product^[17]:

Vicks Roll On Inhaler 2 in 1 Relief is a product that performs dual action - it has an inhaler as well as a roll on. The inhaler is on one side of the product, and the roll on is on the other side. The inhaler is used to provide relief from blocked and congested noses, while the roll on is used to provide relief from headaches. Serving two needs in a uniquely designed product, the Vicks Roll On Inhaler 2 in 1 is a good product for people who have a cold and a headache caused due to the cold. If your nose is blocked, breathe deeply using the inhaler, and then use the roll on to get relief from the headache.

Other Product Information

Available online at: <https://jazindia.com>

- Brand : Vicks | Vicks Everyday Medicine
- Dose : 1.5 ml
- Country of origin : India
- Product Type: Roll-on Inhaler

Benefits^[18]:

- 1) Roll on provides relief from headache
- 2) Inhaler provides relief from a blocked nose
- 3) Two products in one cool design
- 4) The keychain makes it easy to carry anywhere and anytime

Side Effects:

There are no known side effects to using Vicks Roll On Inhaler 2 in 1

The majority of people using Vicks inhaler do not experience any side effects. Nasal discomfort has very rarely been reported with Vicks inhaler.

For more information about any other possible risks associated with this medicine, please read the information provided with the medicine or consult your doctor or pharmacist.

Precautions and warnings:

- 1) To be used by people over 6 years of age
- 2) For external use only
- 3) Pregnant and breastfeeding women should consult the doctor before use
- 4) Do not share inhalers
- 5) Avoid contact with eyes
- 6) Do not use on broken skin

Storage

- Keep out of reach of children
- Store it in a cool & dry place

Interaction with other medicines

It is safe to use Vick inhaler with other medicines. There are no known interactions with other medicines.

Effect in pregnancy or breastfeeding

There are no known harmful effects when this medicine is used by pregnant or breastfeeding mothers. The vapour acts locally in the nasal passages and only negligible amounts are absorbed into the bloodstream. It is safe to use Vicks inhaler in pregnant or if breastfeeding.

Mechanism of Action of Vicks inhaler^[19]:

They work to very quickly open up nasal passages by constricting blood vessels in the lining of the nose (figure 7). Vicks inhaler contains menthol, camphor and pine needle oil, which have traditionally been used for many years as inhalations for their decongestant effect. They give off vapours that have a cooling and decongestant effect in the lining of the nose when you breathe them in. This makes it easier to breathe through your nose.

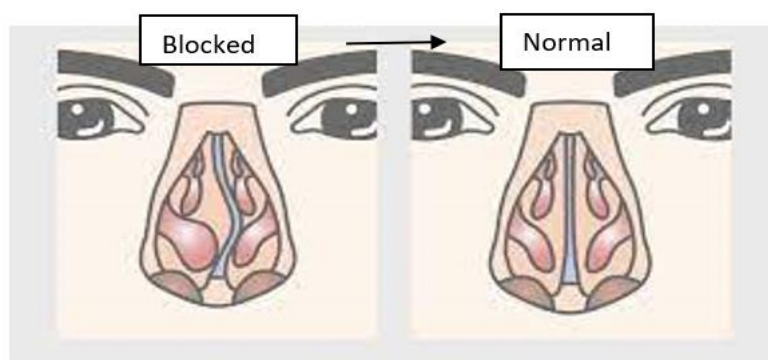


Figure 7 : Effect on Vicks inhaler^[19]

Mechanism of Action of Vicks roll – on ^[20]:

Vicks roll on contains menthol which is a white crystalline substance and a principal constituent of oil of peppermint and it dilates the blood vessels (figure 8). Because of the increased blood flow one gets a cool sensation in the applied area. Vicks roll on also contains Karpoor (Pinus longifolia, St.) a combination of these active ingredients is useful in case of headache.

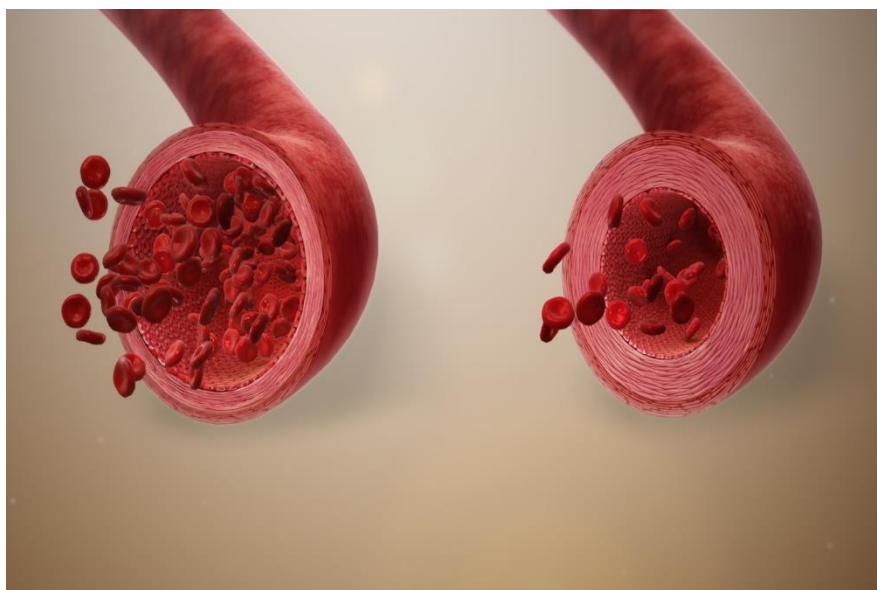


Figure 8 : Effect on Vicks roll – on on headache ^[20]

REFERENCES:

1. https://www.researchgate.net/publication/317701554_Design_and_Development_of_a_Nasal_Inhaler
2. Crowder, T.M. (2004). Vibration Technology for Active Dry-Powder Inhalers. Pharmaceutical Technology.
3. Illum, L. (2003). Nasal drug delivery - possibilities, problems, and solutions. *Journal of Controlled Release*, 87, 187-198.
4. <https://medlineplus.gov/ency/article/003049.htm>
5. <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.facebook.com%2FDrhammadENT%2Fposts%2Fnasal-congestion-also-known-as-a-stuffy-nose-is-commonly-a-symptom>
6. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2866558/#:~:text=Nasal%20congestion%20or%20obstruction%20is,nonallergic%20rhinitis%2C%20and%20nasal%20polyposis.>
7. <https://www.medicalnewstoday.com/articles/nasal-congestion#causes>
8. Corey JP, Houser SM, Ng BA. Nasal congestion: a review of its etiology, evaluation, and treatment. *Ear Nose Throat J.* 2000;79(9):690–698.
9. <https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.researchgate.net%2Ffigure%2FAlgorithm-for-nasal-obstruction-caused-by-different>
10. Stovner L, Hagen K, Jensen R, et al. The global burden of headache: a documentation of headache prevalence and disability worldwide. *Cephalalgia* 2007; 27: 193–210.
11. Sender J, Bradford S, Watson D, et al. Setting up a specialist headache clinic in primary care: general practitioners with a special interest in headache. *Headache Care* 2004; 1: 165–171.
12. <https://www.google.com/url?sa=i&url=https%3A%2F%2Fdynamichealthcarolinas.com%2Fblog%2Ftype-headache-based->
13. British Association for the Study of Headache. Guidelines for all healthcare professionals in the diagnosis and management of migraine, tension-type headache, cluster headache, medication-overuse headache. 3rd edn (1st revision). www.bash.org.uk (2010, accessed June 2012)
14. <https://www.google.com/url?sa=i&url=https%3A%2F%2Fpaincarespecialist.in%2Fcondition-treated%2Fheadache&psig=AOvVaw3kyjwcveWvIDewK6FVzJIB&ust=1705646957014000&source=images&cd=vfe&opi=89978449&ved=0CBMQjRxqFwoTCLitvYas5oMDFQAAAAAdAAAAABB3>
15. <https://www.bigbasket.com/pd/40243356/vicks-roll-on-inhaler-2-in-1-headache-blocked-nose-relief-17-g/>
16. <https://pharameasy.in/health-care/products/vicks-roll-on-inhaler-3495047>

17. <https://www.netdoctor.co.uk/medicines/ear-nose-throat/a8135/vicks-inhaler/#:~:text=How%20does%20Vicks%20inhaler%20work,when%20you%20breathe%20them%20in.>
18. <https://consumeraffairs.nic.in/sites/default/files/file-uploads/comparative-test-by-consumers-association-of-india/Pain-Balm-English.pdf>
19. https://www.google.com/url?sa=i&url=https%3A%2F%2Fen.wikipedia.org%2Fwiki%2FVasodilation&sig=AOvVaw1bpLKYNQ3BL99L7q_BdeHk&ust=1705659578513000&source=images&cd=vfe&opi=89978449&ved=0CBMQjRxqFwoTCIiks4rb5oMDFQAAAAAdAAAAABAY
20. <https://www.ncbi.nlm.nih.gov/books/NBK554510/#:~:text=Thus%2C%20headache%20is%20typically%20the,in%20the%20perception%20of%20headache.>