



# NUTOOL (IRRIGATION): AN EFFECTIVE MODE OF TREATMENT IN UNANI SYSTEM OF MEDICINE

Farheen Khanam<sup>1</sup> Nusrat Parveen<sup>2</sup> Bushra Aftab<sup>3</sup> Jamal Akhtar<sup>4</sup>

<sup>1</sup>PG Scholar D/O Ilaj Bit Tadbeer State Unani Medical College, Prayagraj, U.P., India

<sup>2</sup>Reader D/O Ilaj Bit Tadbeer State Unani Medical College, Prayagraj, U.P., India

<sup>3</sup>Reader D/O Ilaj Bit Tadbeer State Unani Medical College, Prayagraj, U.P., India

<sup>4</sup>Professor & HOD D/O Ilaj Bit Tadbeer State Unani Medical College, Prayagraj, U.P., India

## ABSTRACT

*Nutool* (irrigation) or pouring of medicine on different parts of the body is a classic and effective treatment in *Unani* medicine under *Ilaj bil Tadbeer*. This is a unique therapy in which water, medicinal oil or decoction is poured from a height continuously for a predetermined period of time over a specific area of the body for certain diseases. Depends on the nature the substance of the liquid used for the desired action in this therapy, it is divided into two types; *Nutool-e-haar* and *Nutool-e-baarid*. *Nutool* or irrigation is done for the purpose of speeding up the process of *Ikhrāj-e-mawad* (evacuation of morbid material) and *Ta'dil-i Mizaj-e-Aza* (normalization of morbid temperament) and improving *Quwat-e-Mudafiat* (the body's defense mechanism), which leads to desirable therapeutic effects of neurological and psychological in various diseases. It also enhances local drug absorption, helping to achieve the desired local drug effect. It is particularly useful as an adjunctive therapy in the management of CNS disorders such as headache, loss of sleep, migraine, memory loss, melancholy, dizziness, epilepsy, etc.; and also in some other diseases such as cystitis, mastitis, joint pain. To achieve this goal, specific drug formulations have been specified in the *Unani* text to be used for *nutool* therapy. It is time to further evaluate the effect of age-old therapy on the basis of modern parameters.

**Keyword:** *Nutool, Sukoob, Ta'dil-i Mizaj-e-Aza, Ikhrāj-e-mawad*

## INTRODUCTION

*Nutool* is an Arabic word means *Tarera* or *Dhaar* in Urdu and Irrigation in English. *Nutool* is defined as when luke warm water or decoction of drug irrigated at some distance to any organ is called *Nutool*.<sup>1,2,3</sup> According to the nature of the liquid to be used for the desired operation, *Nutool* is divided into two types *Nutool-e-haar* and *Nutool-e-baarid*, the liquids used plain/warm water, milk, *Khaisanda*, *Joshanda* and oil. The term *Sukoob* is used as a synonym for *Nutool* in some places<sup>4,5</sup>. The basic difference between *Nutool* and *Sukoob* is in the distance at which the drug is irrigated or dripped. If the liquid is poured from a close distance, the procedure is called *Sukoob*, and if the distance is increased, it is called *Nutool*.<sup>6,3</sup> Another difference is the continuous basis on which the drug is dripped. If dispensing is not continuous, the procedure is called *Sukoob*, and if continuous, the procedure is called *Nutool*. *Ibn Sina* says that this is one of the best treatments when *tahallul-e-warm* is needed, as well as in cases where the temperament of a body part needs to be changed while strengthening it.

## INSTRUCTIONS FOR PROCEDURES

- The affected area should be kept uncovered. *Nutool* should preferably be performed in the supine position.
- The medication or oil is then poured manually, or using newer existing equipment, at the recommended temperature.<sup>7,8,9</sup>
- Oil is poured continuously in a rhythmic flow for about 20 to 45 minutes from a height (about 65 cm or 0.5 feet).
- During the *Nutool* procedure on forehead, the head must be kept straight while doing *nutool*. Care should be taken to cover the eyes with sterile gauze to prevent spilling of oil into the eyes.<sup>10,11</sup>

•If any part of the body is weak due to *Sudda* (obstruction), or any problem in muscle or ligament such as injury or dislocation that weakens that organ, we should massage that organ with oil (*Roghan*) so that blood supply is restored and massage with *Roghan Banafsha* and go for *Haar Nutool*.<sup>12</sup>

The duration of treatment depends on the chronicity of the disease and is tapered as signs and symptoms improve, for example, 7 sessions for the first 14 days, alternating 4 sessions twice a week for two weeks, then one session once a week or adjust regimen according to patient improvement.<sup>13</sup>

## Mechanism of action and physiological effects of *Nutool*

During the *Nutool* process, the temperature of the affected part is increased, as a result of which blood circulation increases, the morbid material gets dissolved (*Tahleel*) and more nutrients reach the organ that changes the *Mizaj* (temperament) of the body.<sup>14</sup> *Barid Nutool* is used for vasoconstriction so that morbid material does not enter the main circulatory system. When there are no signs of congestion (*Imtilah*), *Haar nutool* done<sup>14</sup>. Through experimentation, research, and recent advances in medical science, the physiological changes induced by *nutool* therapy have been better understood. The *tanteel* process leads to a number of effects, including stimulation of various nerve plexuses, glands and brain cells;<sup>15</sup> it also induces relaxation similar to that in medication which is reflected by decreased heart rate, bradycardia, decreased sympathetic tone, slowing of alpha waves on EEG, decreased tidal volume, and CO<sub>2</sub> excretion<sup>16</sup> *Nutool* if applied to the forehead, has been shown to have neuropsychological effects and also work as anxiolytic. The biochemical changes include suppression of noradrenaline, decreased PMN/lymphocyte ratio, and alpha receptor, suggesting sympathetic inhibition rather than parasympathetic activation. The impulses from the forehead stimulate the trigeminal nerve as well as the autonomic reflexes of the body and alter the levels of various neurotransmitters, including serotonin, leading to sympathetic suppression and immunophysiological changes in the peripheral circulation and natural killer cell activity<sup>17</sup> Other studies performed to this effect have shown that skin over the forehead is transported by the ocular branch of the trigeminal nerve to the medullary reticular neurons. A small fraction of this causes an immediate motor response, and much of the remaining is stored to control motor activities. Therefore, repeated stimuli are required to consolidation of this information, which takes 5 to 10 minutes and about an hour for stronger consolidation. This is the logic and explanation for running *nutool* in about 45 minutes. In addition, to achieve the long-term effects of *nutool*, there must be a change in the response characteristics of different neural pathways, which can be achieved by regular treatment for fifteen days. Regular or constant input pressure produces a continuous impulse to the CNS, thereby continuously stimulating the CNS. Regular practice of this procedure for 15 days can lead to long-term stimulation of the central nervous system<sup>15</sup> During the patient's concentration of *Dhara Dravya* (medicated oil or any kind of liquid), it falls to the forehead, increasing the intensity of brain waves and reducing the levels of cortisone and adrenaline in the brain. This element also acts as the anti-stress effect of *Shirodhara*. *Nutool* therapy has been proven to induce a feeling of relaxation. The oils and decoction in *nutool* therapy absorbed through skin have therapeutic benefits and therapeutic effects achieved through the use of specific medications. Many studies have been done to find out the effectiveness of different oils used in *nutool* therapy. In a recent study, lavender oil was observed to have better and stronger anxiolytic effects when applied to the forehead than regular sesame oil. Another controlled study of *Nutool* therapy compared the effects of *Nutool* therapy with *rogan-e-banafsha* and *rogan-e-gul*. The results not only showed a reduction in the severity of insomnia in both groups, but also showed that the use of these two oils significantly increased the effectiveness of the therapy, as evidenced by the improvement in the condition such as daytime sleepiness, sleep latency, dysfunction, and mental stress and depression.<sup>18</sup> The effect of *nutool* therapy is to deeply relax and induce a state of peace through a combination of brain waves, alpha waves, and down regulation of sympathetic outflow, *Nutool* therapy calms the loss of balance in our minds and disturbances in our emotions, helps to heal the body from the root cause of illness and makes one feel like in a state of paradise.

## Management of various diseases by applying of *nutool* therapy

The management of diseases in Unani medicine takes into account the nature and pathology of the disease, the general condition and the nature of the patient; with special emphasis on temperament. All diseases are known to produce certain specific humoral and temperamental changes in the human body, which can be identified by the *ajnas-e-ashra* (ten signs) described in the text.<sup>19</sup> Therefore, drugs that are prescribed after taking into account the patient's temperamental abnormalities are called *ilaj bil zid*, i.e. the drugs to be prescribed are such that they produce a temperamental change opposite to that induced by the disease condition.<sup>20</sup> Below are some common diseases and recommended formulations of *nutool* as an adjuvant therapy.

### Headache (*Sudda*):

In *Suda'-e-haar* (headache caused due to increased heat/hot humors)-the following are recommended:

Make a decoction of *Jau* (*Hordeum vulgare*), peel of *kadu* (*Laginia siceraria*), *Tukhme kahu* (*Lactuca sativa* Linn seed), *isapghol* (*Plantago ovate* seeds), *Banafsha* (*Viola odorata*), *Khatmi* (*Althea officinalis* seed), *neelofer* (*Nelumbium speciosum*) in water and pour it over the scalp. Another prescribed treatment is a decoction of *Banafsha* (*Viola odorata*), *jau* (*Hordeum vulgare*), ground seeds of *kadu* (*Laginia siceraria*), *Khurfa* (*Portulaca oleracea*), *Katan* (*Linum usitatissimum*), peel of opium (*papaver somniferum*), root of *luffah* (*Atropa belladonna*), *Khatmi* (*Althea officinalis* seed), *Tukhme Kahu* (*Lactuca sativa* Linn seed), *barg-e-bed* (leaves of *Salix alba*), *rose* (*Rosa centifolia*). The decoction is then poured over the scalp of the patient, and then followed by *nutool* with *rogan-e-banafsha* mixed with milk. This is especially recommended for headache caused by hot humors and associated insomnia.<sup>21</sup> It is also advisable to make a decoction of *gul-e-neelofer* (*Nelumbium speciosum*), *khubbazi* (*Malva sylvestris*), peel of opium (*papaver somniferum*) and ground *Jau* (*Hordeum vulgare*) and use it for *nutool* on the head. In all types

of headache, *nutool* is done on the basis of *ilaj bil zid*, i.e, if headache is caused due to humors having a hot temperament, medications having cold temperament should be used for *nutool*.<sup>21</sup>

In *suda-e-barid* (headache caused due to a predominance of cold temperament or cold humors), the following medications are recommended for *nutool* on the head:

*Ustokhuddoos* (*Lavendula stoechas*), *barg-e-ghaar* (*Laurus nobilis*), *Qaisoom* (*Artemisia abrotanum*), *Hulba* (*Trigonella foenum seed*), *wheat husk*, *table salt*, *babuna* (*Matricaria chamomile*), *barg-e-turanj* (*Citrus modica leaves*), *Badranjboya* (*Melissa parviflora herb*), *Sazij* (*Cinnamomum obtusifolium leaf*), *qaranfal* (*Syzygium aromaticum*), *badyan* (*Foeniculum vulgare Mill*), *bekh-e-badyan* (root of *Foeniculum vulgare Mill*), *bekh-e-karafs* (root of *Carum roxburghianum*), *rose*, *puđina* (*Mentha arvensis*), *sudab* (*Ruta graveolence*) and *hasha* (*Thymus vulgaris*)-take all medicines in equal amount and boil them in water. Use this water for *nutool* on the forehead, it can also be used for steaming, fomentation after soaking a cloth in it, and the medicine left after boiling can be made into a paste and used for anointing on the head.<sup>21</sup>

Alcoholic headache *Sudah khumari*; *Rosa domestica* (*Gulab*), Vinegar derived from *Vitis vinefera* (*Sirka angoori*) are mixed together and *nutool* is done.<sup>22</sup>

### Migraine (*Shaqiqqa*):

In a patient of migraine with a hot temperament (*shaqiqqa haar*), the pathology must first be eliminated with the prescribed medication, if the disease persists then a decoction of *kashkhash* (*Papaver somniferum*), *banafsha* (*Viola odorata*) and wheat husk, use it as a *nutool* on head.<sup>21</sup>

### Insomnia (*Sahr*):

A decoction of *banafsha* (*Viola odorata*), *neelofer*, crushed *kahu* seeds, *kishneez sabz* (*Coriandrum sativum*), *kashkhash* and crushed *jau* seeds can be used for *nutool* on the head.<sup>21</sup> Since a dry temperament leads to insomnia and vice versa. any *nutool* prescribed for insomnia should always contain a moist temperament. In case of insomnia due to old age, daily *nutool* is prescribed with a decoction of *kashk-e-jau* (a special preparation from the seeds of *Hordeum vulgare*, boiled in water, then drained and boiled again in water. After that they are grinded into a paste), *babuna* (*Matricaria chamomile*) and *Uqhuwan* (*Pyrethrum parthenium*).<sup>23,24</sup>

For melancholy-related insomnia:

The decoction of *kashkhash* (*Papaver somniferum seeds*), *babuna* (*Matricaria chamomile*) and *Uqhuwan* (*Pyrethrum parthenium*) are beneficial for insomnia.<sup>21,23</sup>

### Melancholia (*Malankhuliya*):

For a melancholia patient, *nutool* on the head is also recommended to expel *sauda* from the brain and also to correct abnormal temperaments. For this purpose, drugs such as *shibt* (*Anethum sowa*), *sosan* (*Iris florentina*), *babuna* (*Matricaria chamomile*) and *nakhuna* (*Trigonella uncata*) are recommended.<sup>25</sup> If a melancholic patient shows signs of cold temperament, then *nutool* with oils having a hot temperament is used and the following drugs is recommended: *babuna* (*Matricaria Chamomile*) 25gms, *nakhuna* (*Trigonella uncata*) 25gms, *barg-e-badranjboya* (*Nepeta hindostana*), *barg-e-saru* (leaves of *Cupressus semepervirens*), *jauz al-saru* (*Cupressus semepervirens fruit*), *henna flower* (*Lawsonia alba*) - 25 gms each, *ushna* (*Permelia perlata*), *barg-e-khubazi* (leaves of *Malva sylvestris*), *barg-e-khatmi* (leaves of *Althea officinalis*) and wheat husks. Bring all the medicine to a boil and pour it over the head continuously while still hot.<sup>26</sup>

### Dementia (*Nisyan*) :

A decoction of *babuna* (*Matricaria chamomile*), *nakhuna* (*Trigonella uncata*), *qurtum kofta* (*Carthamus tictorious, crushed*), *khatmi* (*Althea officinalis*) or *barg-e-khatmi* (*Althea officinalis leaves*) can be used for *nutool*. While doing *nutool*, gently massage the scalp continuously with any soft object.<sup>26</sup>

### Paralysis (*Falij*):

Take 450 gms of vinegar and add 35 gms of rose oil. Then heat this mixture over low heat until the vinegar burns out. Strain the mixture and use it for *nutool* on the head.<sup>26</sup>

### Vertigo caused due to phlegmatic humors:

*Nutool* on head with decoction of *babuna* (*Matricaria chamomile*), *nakhuna* (*Trigonella uncata*), *marzanjosh* (*Origanum majorana*), *saatar* (*Thymus serpyllum*) and *nammam* (*Ocimum basilicum*) are prescribed.<sup>21</sup>

### Epilepsy (*Sar*):

To help in the release of vicious humors, decoction of *mulattif* (attenuant) drugs such as *babuna* (*Matricaria chamomile*), *nakhuna* (*Trigonella uncata*) and *marzanjosh* (*Origanum majorana*) may be used for *nutool* on the head. In addition, *shibt* (*Anethum sowa*) and *branjaisif* (*Artemisia abrotanum*) can also be added when preparing the decoction. However, if the disease is caused by bile, the drug used for *nutool* must be cold temperament.<sup>27</sup>



**Mania (Maniya):**

For the treatment of mania, *nutool* regularly, up to five times a day, is effective, especially if taken after removing the toxic substance with medication. The medicines used for *nutool* must be moist and cold in temperament.<sup>23</sup> For *nutool banafsha* (*Viola odorata*), *neelofer* (*Nelumbium speciosum*), *khatmi flower* (*Althea officinalis*), *sweet basil* (*Ocimum basilicum*), *kashk-e-jau* (*Hordeum vulgare*), *bed leaves* (*Salix alba*), *rose petals*, *kahu leaves* (*Lactuca sativa*), *fresh maurid leaves* (*Myrtus communis*), *mako leaves* (*Solanum nigrum*) - all are taken in equal quantity and decoction is prepared. This is used for *nutool* when the patient is in *hammam*.<sup>25</sup> To treat mania, the following *nutool* is also effective: dried *banafsha* 25gms, fresh *banafsha* 25gms, *sapistan* 25gms crushed *jau* 50gms, *wheat husk* 50gms, *rose* 50gms, *barg-e-kamni* (*Murraya Paniculata leaves*) - 2 handfuls (about 50gms), *barg-e-isapghol* or *barg-e-khubazi* -1 handful (about 25 gms) - boil all the medicine and pour into the soft palate so that the effect reaches brain.<sup>26</sup>

**Renal stones (Hasah al - kulya):**

Take 6gms each of *gul-e-tesu* (*Butea monosperma flower*), *gul-e-kasam* (*Carthamus tictorious flower*), *tukhm-e-kharpaza* (*Cucumis melo seed*), *tukhme khayarain* (*Cucumis sativus seed*) and *khar khasak* (*Tribulus terrestris*) and make a decoction; this is used for *nutool* on painful area.<sup>28</sup> For stones in bladder, *nutool* should be taken with decoction of *babuna* (*Matricaria chamomile*), *nakhuna* (*Trigonella uncata*), *khatmi* (*Althea officinalis*) and *wheat husk* is recommended over the pelvic region.<sup>25</sup>

**Cystitis (Warm al - Mathana):**

*Nutool* with *roghan-e-ward mukarrar* (a special concentrated rose oil) applied to the pelvic area helps to resolve inflammation, especially if it involves the neck of bladder.<sup>29</sup>

**Dysuria (Usr-al-bawl):**

If dysuria is caused due to any wound in the urinary tract, then *nutool* should be done to the pelvic area with a decoction of *babuna* (*Matricaria chamomile*), *nakhuna* (*Trigonella uncata*), *pudina* (*Mentha arvensis*), *qaisoom* (*Artemisia abrotanum*) and wheat husks is recommended to accelerate healing.<sup>25</sup>

**Arthritis (Waja al - Mafasil):**

The given drugs are effective in painful conditions of the joints when used as *nutool* *Cuscuta reflex* (2 parts), *Solanum nigrum* (1 part) - boil both drugs in water and used as *nutool* on the affected joints. This should be followed by massage of the area with *Roghan-e-gul*.<sup>30</sup>

**Mastitis (Warm al Thadi):**

In case of mastitis caused by milk accumulation in the breasts after weaning etc., use a decoction of 6gms each of *babuna* (*Matricaria chamomile*), *shibt* (*Anethum sowa*), *hulba* (*Trigonella foenum graecum*), *qaisoom* (*Artemisia absinthium*), *jund-bedstar* (*Castoreum*). Boil these medicines in two liters of water until only 1.5 liters remain. This can be used for *nutool* on the affected area.

**CONCLUSION:**

*Nutool* is a highly effective therapy in the Unani system of medicine for various diseases, as documented in the classical unani literature. This approach and regimen is economical, easy to administer, relaxing, safe, and has no side effects compared to oral medications. Scientific studies conducted to evaluate the effectiveness of this therapy have shown very promising results due to its calming, soothing and holistic nature. With the increasing occurrence of psychiatric and apprehensive disorders in recent years, the search for a holistic therapy that is capable of providing both physical and psychological benefits continues to be sought. Further research is needed on the therapeutic evaluation on clinical parameters. Also the detailed research on the effectiveness of the *Unani* compound formulation used in this therapy need to be carried out.

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