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# Analysis of Almond-Violet Oil by Gas Chromatography (A Traditional Formula)

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## Abstract

**Background:** *Viola odorata* L. belongs to Violaceae family and is native to Iran. It is used in the form of Almond-Violet oil in traditional Persian medicine (TPM) since ancient times. Almond-Violet oil was used for the treatment of insomnia, headache, cough, and fever based on TPM textbooks. There are two methods for the preparation of Almond-Violet oil. The first is macerating voila flowers in sweet almond oil for several days under the sunlight. The second method is cold pressing of violet flowers and sweet almond.

**Methods:** In this study, after mixing the violet flowers with sweet almonds in 1:2 proportions, Almond-Violet oil was obtained under pressure. Fatty acid ingredients of Almond-Violet oil were analyzed by gas chromatography (GC) technique.

**Results:** Analysis of Almond-Violet oil by GC method showed some major components such as oleic acid (70.54%), linoleic acid (Omega-6 fatty acids) (18.22%), palmitic acid (8.51%), stearic acid (1.58%), and palmitoleic acid (0.69%). Monounsaturated fat consumption has been considered to decrease low-density lipoprotein (LDL) cholesterol. Linoleic acid lipid radicals can also be used to act as an antioxidant agent in natural phenols. On the other hand, oleic acid may be responsible for the hypotensive (blood pressure reducing) effects. Palmitoleic acid is a beneficial fatty acid not only to increase insulin sensitivity by suppressing inflammation, but also to inhibit the destruction of insulin-secreting pancreatic beta cells.

**Conclusion:** In some aspects, the result of the present study does not fully match with the standards of the Europe Pharmacopoeia. This could be due to differences associated with the environment and cultivation of the plants. Such differences should be considered whilst studying native plants.

**Keywords** • Medicine • Traditional • Almond oil • Gas chromatography-mass spectrometry

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# Comparison of the Effect of Aloe Vera Gel and Nitrofurazone 2% on Epithelialization and Granulation Tissue Formation Regarding Superficial Second-Degree Burns

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## Abstract

**Background:** Therapeutic effects of various treatment options in burn wound healing have been one of the most controversial issues in wound care. Aloe Vera is an herbal medicine, which has wound healing effects on chronic wound. The present study was carried out to examine and compare the effect of Aloe Vera gel and nitrofurazone 2% on epithelialization and granulation tissue formation with respect to superficial second-degree burns.

**Methods:** This is a randomized clinical trial and the sampling method was used based on pre-defined inclusion criteria. The sample size was 30 patients that were admitted to Kerman burn center, including patients that had superficial burn in the symmetry limb, who were chosen based on depth burn and the qualifications needed for the study. One part of the burned area was dressed using ointment nitrofurazone 2% (according to routine care in the hospital) and the symmetry part was dressed using Aloe Vera gel. The tools for data collection included a demographic questionnaire, tools of bats-joints for checking epithelialization and granulation tissue. The burn wound epithelialization and granulation at the beginning of patient's admission and the first, second and third weeks after dressing were assessed and recorded.

**Results:** In patients treated with Aloe Vera gel, epithelialization and granulation tissue of burn wounds were remarkably earlier than those patients treated with nitrofurazone 2% ( $P < 0.05$ ).

**Conclusion:** In conclusion, Aloe Vera gel enhanced epithelialization and granulation tissue of burn wounds in superficial second-degree burn patients better than nitrofurazone 2%. The mechanism of the remarkable efficacy of Aloe Vera gel in the epithelialization and granulation tissue of burn injuries may be explained by its hydrocolloid and moisturizing and anti-inflammatory effects.

**Keywords** • Nitrofurazone • Granulation tissue • Burns • Herbal medicine

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# Efficacy of *Nepeta Menthoides* Boiss and Buhse Freeze-Dried Aqueous Extract on Anxiety of Patients with Depression: A Double-Blind Randomized Controlled Clinical Trial

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## Abstract

**Background:** The efficacy and safety of *Nepeta menthoides* freeze-dried aqueous extract were assessed on the anxiety of patients suffering from depression.

**Methods:** Patients received either *N. menthoides* formulation (400 mg/BID) or Sertraline (50 mg/BID) for 4 weeks. The Beck Anxiety Inventory (BAI) scales were used to assess the anxiety in two-week intervals (2<sup>nd</sup>, 4<sup>th</sup>, and 6<sup>th</sup> weeks). Folin-Ciocalteu and Dowd methods were used to determine the formulation of total phenol and flavonoid contents.

**Results:** Compared with Sertraline, *N. menthoides* showed a higher reduction in BAI scores in the 2<sup>nd</sup> (16.52±8.07 vs. 21.38±10.98, P<0.05) and 4<sup>th</sup> week (11.55±6.74 vs. 20.47±11.53, P<0.05) along with a reduction in the recurrence rate and side effects. Total phenolic and flavonoid contents revealed in the presence of 127.09±0.43 mg GAE/g and 16.93±0.09 mg Q/g of extract.

**Conclusion:** *N. menthoides* could be effective in the control and introducing a delay in recurrence of anxiety in patients with depression.

**Keywords** • Anxiety • Depression • Herbal medicine • Medicine • Traditional

# Efficacy of Tribulus Terrestris Extract on the Serum Glucose and Lipids of Women with Diabetes Mellitus

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## Abstract

**Background:** Considering folkloric use of Tribulus terrestris (T. terrestris) in diabetes and proven anti-hyperglycemic and anti-hyperlipidemic effects of T. terrestris in animal studies, we aimed to evaluate the efficacy of the hydro alcoholic extract of T. terrestris on the serum glucose and lipid profile of women with diabetes mellitus.

**Methods:** Ninety-eight diabetic women were randomly allocated to receive the T. terrestris (1000 mg/day) or placebo for three months. The patients were evaluated in terms of the fasting blood glucose, 2-hour postprandial glucose, glycosylated hemoglobin and lipid profile.

**Results:** T. terrestris showed a significant blood glucose lowering effect in diabetic women compared to placebo ( $P < 0.05$ ). Also, the total cholesterol and low-density lipoprotein of the T. terrestris group was significantly reduced compared with placebo, while no significant effect was observed in the triglyceride and high-density lipoprotein levels.

**Conclusion:** This study showed preliminary promising hypoglycemic effect of T. terrestris in diabetic women.

**Keywords** • Medicine • Traditional • Diabetes mellitus • Herbal medicine

# Fingerprints, Pharmaceutical and Radical Scavenging Activity Evaluation of an Alzheimer-Targeted Herbal Preparation

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## Abstract

**Background:** As the most common form of dementia, Alzheimer disease is characterized by progressive loss of memory and deterioration of cognitive functions. It is predicted that about 75.63 million people would suffer from dementia by 2030. Apart from conventional remedies, the application of herbal medicines is on the rise. There are numerous natural medicaments reported in the traditional manuscript of Persian medicine. Accordingly, in the present study, the intended remedy was selected and an appropriate pharmacognostical and pharmaceutical evaluations were performed.

**Methods:** By searching through the traditional pharmaceutical manuscripts such as Qarabadeen-e-Salehi, Qarabadeen-e-Azam, Qarabadeen-e-Ghaderi and Canon of Medicine, a simple but proven compound remedy (frankincense and black pepper) was selected. A floating tablet was designed and formulated from those herbal components. Related pharmaceutical assessments such as weight variation, hardness, friability, and disintegration tests as well as pharmacognostical evaluations such as microscopic characterization, TLC, GC/MS, FT/IR fingerprints, and radical scavenging activity assessment (DPPH) were performed.

**Results:** The resulting formulation, as a floating tablet, included 60% of frankincense gum and 15% of black pepper along with appropriate pharmaceutical ingredients (weight variation:  $0.219 \pm 0.004$  g, hardness:  $6.50 \pm 0.67$ , friability: 0.45%, disintegration time  $>30$  min). Microscopic characterization demonstrated stone cells, calcium oxalate crystals, sclereids of endocarp and pitted cells of mesocarp of pepper fruits as well as oil drops of frankincense gum. TLC fingerprinting showed classes of secondary metabolites related to both components. GC/MS analysis revealed Acetyl acetate and trans-Caryophyllene as the main constituent. Moderate radical scavenging activity ( $IC_{50} >100$   $\mu\text{g/ml}$ ) was calculated for the methanol extract of tablets.

**Conclusion:** Carrying out and validating a GC method for standardization of the formulated tablet, and having the structure for the effectiveness of these medicinal herbs in Alzheimer may be the horizon for a new Alzheimer-targeted medicine.

**Keywords** • Alzheimer disease • Frankincense • Piper nigrum • Medicine • Traditional

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# Persian Medicine in the World of Research; Review of Articles on Iranian Traditional Medicine

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## Abstract

**Background:** Due to negligence, Persian (Iranian) traditional medicine has had a weak presence in the world of research for a long time. However, in recent years, a variety of activities by research and faculty centers have created awareness and a platform to introduce and promote Persian medicine to the world. The aim of this study is to present and analyze scientific achievements of Persian medicine in the world of research.

**Methods:** Articles were collected from PubMed database using keywords such as “Persian medicine”, “Persian traditional medicine”, “Iranian medicine”, and “Iranian traditional medicine”. All data were classified based on the type of research (review, intervention, case reports, etc.), the field of study (neurology, cardiovascular, metabolic, historical studies, etc.), publication year, and journal type.

**Results:** A total of 501 articles were identified until the end of 2015, comprising of 222 reviews and 219 interventional (108 animal, 57 clinical and 54 cellular). Most studies were on neurology (20.1%), gastroenterology (14.5%), and cardiovascular diseases (10.4%). The publications in 2015 and 2014 had the highest hit rate with 139 and 132 articles, respectively, with 1:2 publication ratio between foreign and Iranian journals.

The most published articles, both foreign and Iranian, were in “Evidence-Based Complementary and Alternative Medicine” and “Iranian Red Crescent Medicine” journals. The contribution of foreign authors was 5%. The primary focus of the articles was on “Basic concepts of Persian medicine”, “Healthy lifestyle according to Persian medicine”, and “Historical aspects”, by 3.1%, 2.9%, and 6.7%, respectively.

**Conclusion:** During the last 2 years, the number of articles published in Persian (Iranian) medicine, particularly clinical studies had significant growth in comparison with the years before. The tendency of foreign researchers to use the keywords “Iranian” or “Persian” medicine is notable. This research was only based on the designated keyword and other keywords were omitted. It is recommended that additional keywords be used in a broader investigation.

**Keywords** • Review literature as topic • Traditional • Medicine

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# Qairooti (Cerate or Cera Beeswax Salve) in Traditional Iranian Pharmacy

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## Abstract

**Background:** Qairooti (Cerate), a medicinal salve or ointment, compounded of wax and oil, is a formulation used alone or as a basis for medicinal dosage forms. It is widely used from the ancient times to the present. Based on its structure, beeswax has unique characteristics. It builds stable emulsions and increases water absorbance of creams and ointments. The aim of this study was to gather all pharmaceutical information about preparing Qairooti products from traditional pharmacopoeas, such as the various types of Qairooti and their preparation methods.

**Methods:** In this article, various types of Qairooti, their producing method and related indications have been discussed based on the main medical Persian manuscripts including Al-Canon fil tibb (Canon of Avicenna), Gharabadin-e-Kabir, Gharabadin-e-Salehi, Exir-e-Azam, Alhavi, Kamel-al-sanaat, Zakhireh-ye Khwarazm shahi, al-Shamel-fi-sanawat-al-tebie, Ekhtiarate badiie, Kholasat-al-tजारob, Tib-e-Akbari, Mofareh al-gholoob, Makhzan-ul-Adwiah, Hedayat-al-motealemin-fi-al-tibb, Altasrif-le-man-ajeza-an-talif, etc.

**Results:** About 500 different formulations from the above-mentioned manuscripts were found and their preparation method and other required information were collected. The amounts of oil and wax in Qairooti are not fixed and depend on different factors; providing the best consistency and appearance of the formulation, such as seasonal temperature. In order to prepare cerate, wax has to be melted by indirect heat and then mixed with the isothermal oil. Mixing process should be performed precisely to provide a homogenized product. If the multi-ingredient cerate is needed, other constituents have to be added to the warm mixture of oil and wax.

**Conclusion:** There are many kinds of Qairooti in traditional Iranian pharmacopoeias recommended for different indications. Cerate was a common medication for injuries and wounds. Although it is still used in conventional medicine, some clinical applications in traditional Iranian medicine have been forgotten nowadays. It is recommended that we have a smarter approach to the traditional pharmacopoeias in order to use past experience and transcend existing knowledge of modern pharmacy.

**Keywords** • Medicine • Traditional • Manuscripts • Pharmacopoeias

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# “Resale Shammieh” First Source of Allergic Rhinitis Description by Rhazes

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## Abstract

**Background:** Abū Bakr Muhammad ibn Zakariyyā al-Rāzī, known as Rhazes in the Western world (854-925 CE), was an Iranian polymath, physician and one of the most prominent sages in the medieval period. He wrote several medical books and treaties such as “Continents”, a comprehensive medical encyclopedia, treaties in smallpox and measles, “Al-Mansuri” and many other important manuscripts in the medical field. “Resale Shammieh” is one of his pioneering well-known works in medicine; replying to Shahid-Ibn-Hussein Balkhi, dedicated to his master Abuzeid Ahmad-Ibn-sahl Balkhi, who was getting cold in spring at the time of rose blossoming. We are about to review “Resale Shammieh” because of the importance of this treaty as a pioneering work in allergy and its clinical manifestation.

**Methods:** This study is a traditionary review of “Resale Shammieh” and similar copies as well as works cited by Abureihan Birooni, Ibn Abi-Ossaiba’ei, Ibn-e-nadim.

**Results:** It seems that this treatise has been prepared before treatise of Qest-ibn-Looqa, written for Abbasid Caliph Mutawakkil, about hay fever. Rhazes, in “Resale Shammieh” elucidated almost all clinical manifestations of allergic rhinitis and hay fever is mentioned in the conventional medical resources, including nasal stuffiness, itchy nose, sneezing repeatedly, runny nose, red face, and light elevated temperature of the body. He also cited complications of hay fever such as hoarseness, dyspnea and fever; and mentioned primary preventive measures including covering the head in cold weather, abstaining from drinking cold water as well as smelling musk, Costus and myrrh Maki. His proposed remedies for hay fever comprising of dipping a fabric in the nose, fumigation, shaving the head and rubbing mustard and allium on it, as well as ear or forehead bloodletting.

**Conclusion:** “Resale Shammieh”, a valuable work of Rhazes, the Muslim Persian physician, in hay fever is most probably the first known treaty about allergy in the season of rose blossoming, the spring.

**Keywords** • Rhinitis • Allergic • Seasonal • Traditional • medicine

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# Rhus Coriaria L. (Sumac) in Patients with Hyperlipidemia; A Double Blind Randomized Clinical Trial

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## Abstract

**Background:** Lipid lowering effect of sumac is investigated in multiple animal studies with promising results. However, its clinical efficacy is not investigated adequately. This study is aimed to evaluate the lipid lowering effect of sumac in patients with Hyperlipidemia in a double blind randomized controlled trial.

**Methods:** Eighty patients with Hyperlipidemia according to NCEP-ATP III criteria were randomly allocated to receive the Rhus Coriaria L. (1000 mg/day) or placebo for two months. The patients were evaluated in terms of the serum triglyceride, total LDL, and HDL cholesterol. Systolic and diastolic blood pressures along with serum biochemistry profile including fasting blood sugar, liver and kidney function tests and complete blood count were evaluated before the enrolment of patients and after the intervention.

**Results:** No significant difference was observed between the sumac and placebo groups in term of mean reductions in total and LDL cholesterol and triglyceride levels. A significant increase in mean serum HDL cholesterol level was observed in the sumac group ( $41.18 \pm 8.2$  vs.  $44.65 \pm 8.4$ ,  $P=0.001$ ) after 2 months of intervention.

**Conclusion:** The study showed significant HDL cholesterol increasing effect of sumac supplementation in patients with Hyperlipidemia.

**Keywords** • Medicine • Traditional • Hyperlipidemias • Clinical trial

# Studying the Effectiveness of One Type of Iranian Traditional Massage on Lumbar Radiculopathy

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## Abstract

**Background:** Low-back pain is one of the most common human morbidities worldwide, which is damaging individually, socially and economically. Recent studies have shown that its prevalence is rising. Most of the low-back pains are non-specific though specific ones need more complicated and more expensive treatments. Sciatica or lumbar radiculopathy is one of these specific low-back pains and is explained in Iranian traditional medicine textbooks in detail. Massage is one of the therapeutic modalities, advised for sciatica. Due to different aspects of sciatica in modern medicine, massage is not indicated as treatment, but it is advised in Iranian traditional medicine. In Iran, many patients resort to traditional massage for sciatica and are satisfied. Thus, the effectiveness of one type of Iranian traditional massage “Kermanshahi family” and conventional treatment were compared based on three outcomes of pain, disability, and quality of life score.

**Methods:** A total of 50 patients were observed in two groups (25 per group) of case (massage) and control (classic treatment) in a non-randomized controlled clinical trial. Patients suffering from lumbar radicular pain for 8 weeks or longer, before referring to each center (neurosurgery or traditional massage clinic), were enrolled continuously. In the case group, patients underwent traditional massage sessions whereas in the control group they were prescribed as routine. Three outcomes were observed during three periods of before intervention, 1-month, and 3-month after intervention.

**Results:** The mean difference of pain severity decrease in both groups was meaningful ( $P=0/007$ ). The mean difference of disability decrease in both groups was meaningful ( $P=0/003$ ). However, the mean difference of quality of life increase in both groups was not meaningful.

**Conclusion:** Iranian traditional massage may be useful for the treatment of non-acute sciatica, but more studies are required to confirm and clarify the protocols.

**Keywords** • Medicine • Traditional • Musculoskeletal manipulations • Massage

# The Effect of Flax Seed (*Linum Usitatissimum*) Hydroalcoholic Extract on Brain, Weight and Plasma Sexual Hormone Levels in Aged and Young Mice

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## Abstract

**Background:** Flax is a food and fiber crop that is grown in some regions of the world. Its value will account for its great popularity as a food, medical and cosmetic applications. Flax fibers are taken from the stem of the plant and are two to three times as strong as cotton. In this study, we compared brain weight and plasma sex hormone levels in young and aged mice after the administration of *Linum usitatissimum* (flax seed) hydro alcoholic extract.

**Methods:** In this study, 32 aged and 32 young mice were divided into 4 groups. Controls remained untreated and experimental groups were fed with flax seed hydroalcoholic extract by oral gavages during 3 weeks. After 3 weeks, the brain was removed and blood samples were collected to measure sex hormone levels by ELISA. Data analysis was done by statistical ANOVA test using SPSS version 18 ( $P < 0.05$ ).

**Results:** The results of this study shows that the brain weight of mice did not change significantly, but the sex hormone levels in the experimental groups in comparison with the control groups increased significantly ( $P < 0.05$ ).

**Conclusion:** The hydroalcoholic extract of flax seed had no effect on the brain weight, but this extract improved the sexual hormone levels.

**Keywords** • Disorders of sex development • Herbal medicine  
• Flax

# The Effect of Inhalation of Essential Oils of *Polianthes Tuberosa* on Test Anxiety in Students: A Clinical Trial

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## Abstract

**Background:** Based on Iranian traditional medicine, the root cause of anxiety is due to the heart and brain diseases. The use of aromatic substances is one of the basic treatments for the heart and brain diseases in Iranian traditional medicine. Concerning the prevalence of test anxiety among students, this study was conducted to determine the effect of inhalation of essential oils of *Polianthes tuberosa* on test anxiety among students of Farzanegan high school in Sabzevar during 2015.

**Methods:** This was a randomized clinical trial, in which 54 students with eligibility criteria were randomly divided into the intervention and control groups. In the pre-test stage, demographic data and Sarason anxiety questionnaires were filled by all students (7th grade). Then, in the intervention stage, students of the intervention group inhaled Tuberose oil using handkerchiefs smeared with Tuberose oil for 15-20 minutes during the exam. The control group received placebo with the same method. At the end of the exam, test anxiety questionnaire was filled by the two groups again. The collected data were analyzed by the statistical tests (i.e.  $\chi^2$ , paired t-test and independent sample t-test) using SPSS 18.

**Results:** Independent t-test showed a significant difference in the mean scores of test anxiety after intervention between the two groups of study and control ( $P < 0.05$ ), but this difference was not significant before the intervention ( $P = 0.58$ ). Additionally, in the study group, there was a significant difference in the mean scores of test anxiety before and after intervention ( $P < 0.05$ ), but this difference was not significant in the control group ( $P = 0.073$ ).

**Conclusion:** The result showed that aromatherapy with essential oil of *Polianthes tuberosa* was effective in reducing test anxiety among students. It is recommended to conduct educational programs concerning this method in schools to decrease the test anxiety of students.

**Keywords** • Medicine • Traditional • Aromatherapy • Anxiety

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# The Relationship between Body Mass Index and Temperament, Based on the Knowledge of Traditional Persian Medicine

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## Abstract

**Background:** Temperament is one of the key concepts in traditional Persian medicine (TPM), which is the quality that will be obtained by the reaction between the four elements of water, earth, fire and air, and its property is different from the component property. According to TPM, temperament is influenced by many factors and the bulk of the body is one of these factors. In this study, we aimed at determining the relationship between person's temperament based on the knowledge of TPM and the body mass index (BMI).

**Methods:** This study is a cross-sectional study that examines the relationship between person's temperament and their BMI. For this purpose, 86 employees (20-40 years) of Shiraz Medical School were selected and their temperaments assessed using Dr. Mojahedi's temperament questionnaire and visitation by a TPM specialist. SPSS 18 was used for statistical analysis.

**Results:** In this study, 86 employees were evaluated including 18 (20.9%) male and 68 (79.1%) female. The mean age of the participants was 32.45±4.93 years old and the mean BMI was 23.75±2.94. Minimum and maximum BMI were related to people with temperament of cold and dry and cool temperament and more with the mean of 20.55±1.90 and 28.13±0.35, where the difference was statistically significant (P=0.0003). BMI in people with a temperament of hot and dry was significantly less than those with cool and wet temperament (P=0.01).

**Conclusion:** Based on TPM, people with wet temperament are usually more obese and people with dry temperament are thinner. The results of this study confirm that obese people are cold and wet or have phlegmatic temperament whereas in comparison thin people are drier. This is in-line with the principles of TPM.

**Keywords** • Medicine • Traditional • Body mass index • Temperament

# The Role of Syndrome Differentiation in the Clinical Efficacy of Punica Granatum on Patients with Ulcerative Colitis

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## Abstract

**Background:** The present study investigated the difference between therapeutic responses of hot and cold temperament patients (based on traditional Persian medicine) with ulcerative colitis to pomegranate peel extract.

**Methods:** Seventy-eight patients with moderate ulcerative colitis based on Lichtiger Colitis Activity Index (LCAI) criteria were randomized to receive an aqueous extract of the Punica granatum peel (6 gram per day) or placebo for four weeks. They were assessed before and after the intervention in terms of symptoms by LCAI scoring system. The results were compared in two therapeutic groups based on the patients' temperament (cold and hot) which were diagnosed based on a previously validated questionnaire.

**Results:** Therapeutic response was significantly higher in patients with hot temperament compared to patients with cold temperament in the P. granatum group ( $1.91 \pm 0.492$  vs.  $-0.500 \pm 0.500$ ,  $P=0.029$ ).

**Conclusion:** This study showed the importance of considering syndrome differentiation and temperament in interpreting the effect of P. granatum peel extract on ulcerative colitis.

**Keywords** • Medicine • Traditional • Punicaceae • Colitis • Ulcerative

# A Comparative Study of *Allium Hirtifolium* in Traditional and Modern Medicine

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## Abstract

**Background:** Shallots (wild garlic/Osghordion) with the scientific name of *Allium hirtifolium*, is one of the most famous plants from the Alliaceae family. For a long time, shallots have been used as a source of food and medicine in Iran. The active ingredients of the plant could be referred to agapentagenin, allixin, omega-3, omega-6, and minerals such as potassium, sodium, magnesium, iron, copper, zinc, and manganese. This study was conducted to compare shallots in the traditional and modern medicine in order to make a better use of this precious plant.

**Methods:** To collect appropriate data, resources and articles in trustworthy databases (e.g. Cochrane library, PubMed, Google Scholar) and traditional literature (e.g. Makhzan-ul-Adwiah, Canon, Zakhireh-ye Khwarazmshahi) were studied. Subsequently, the findings were reviewed, classified, and reported in a tabular format.

**Results:** Shallots are rich in fatty acids and minerals with many pharmacological effects such as its effect on the respiratory and nervous system and blood dilution, as reflected in the modern medicine. However, certain effects as mentioned in traditional medicine (e.g. anti-warts, anti-lipoma, anti-kidney stone, and its diuretic effects) are not covered in research studies of the modern medicine.

**Conclusion:** Depending on its natural habitats, shallots have different pharmacological effects for which many usages are mentioned in traditional medicine. Some of these effects have been investigated in modern medicine; however, further evaluation of its safety and dosages for clinical use is necessary. Furthermore, some cases have not been studied in modern medicine, which could be the basis for future research.

**Keywords** • Allium • Shallots • Medicine • Traditional

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# A Review of Herbal Medicine in Iranian Traditional Manuscripts for Treatment of Participatory Gastric Headache

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## Abstract

**Background:** Participatory gastric headache is a type of headache described in Iranian traditional medicine. It is defined as a headache not originated from the head and neck disorders; rather the pain in the head is caused by gastric dysfunction and its disorders. Treatment of this type of headache is completely reliant on the treatment of the gastric complaint. Reviewing Iranian traditional medicine (ITM) literature, a broad spectrum of herbal medicines that could be useful in the treatment of this type of headache is described. Accordingly, this review was performed to gather and discuss the therapeutic management of this disorder in ITM and evaluating related characteristics of each medicinal herb.

**Methods:** In this study, medicinal plants prescribed for gastric headache from different ancient Iranian literature is documented. The botanical name, family name, part used, temperaments, rout of administration and dosage forms are provided in this article.

**Results:** About 40 plants, mainly used orally, were prescribed for the treatment of participatory gastric headache. Most of them have the astringent effect, which is related to their dryness temperament. Therefore, they could strengthen the stomach and prevent ascending vapors into the brain that in turn helps to get relief from headache. In addition, they possess reinforcement effect on the brain.

**Conclusion:** In general, herbal medicines with tonic characteristics could be effective in participatory gastric headache.

**Keywords** • Headache • Herbal medicine • Medicine • Traditional

# A Review of Possible Herbal Treatment in Multiple Sclerosis in Traditional Persian Medicine

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## Abstract

**Background:** Multiple sclerosis (MS) is a chronic inflammatory disease of central nervous system (CNS) and is the most common cause of neurologic disability in young adults (20-40 years old). About 2.5 million patients all over the world are suffering from MS. Common symptoms of the disease include sensory disorders, optic neuritis, and limb weakness. Following disease progression, other symptoms like fatigue, bladder disorders, and cognitive impairment also occur. Traditional Persian medicine (TPM) is an ancient medical system from 6000 years ago in Persia, where Iran was its most important state. TPM is a known humoral medical system.

**Methods:** In this review article, the traditional approach to MS and treatment methods in TPM literature are presented. TPM literature was written in the Persian and Arabic languages, the common scientific language of that era. Keywords defining MS were extracted from the well-known TPM books, such as Canon, Tebb-e-akbari, and Exire azam. The search covered known books from the 5<sup>th</sup> century to the 19<sup>th</sup> century. At the beginning, keywords such as Khaddar, Esterkha and Falej were considered. The search for herbal remedies was carried out according to the defined keywords in the main TPM manuscripts and especially in remedies (Mufradat) and treatment (Moalejat) TPM books, including Makhzan-ul-Adwiah, Al-abnieh Al-aghayegh Al-advie, Tuhfat-ul-Momineen, Gharabadin-e-Kabir, Gharabadine Shafae, Tib-e-Akbari, and Exir-e-Azam.

**Results:** As the result of this review study, we managed to introduce categorized lists of herbal remedies and combinations used orally and in topical forms. Finally, comparative tables, including scientific names of plants, active components, and mechanisms showed the results of recent studies and phytotherapy research on TPM ancient remedies.

**Conclusion:** Although we did not find MS in our search; however, there are some ailments with similar signs and symptoms in TPM literature. A list of various herbal medicaments has been introduced for these ailments, which should be evaluated critically during precise experimental and clinical studies.

**Keywords** • Multiple sclerosis • Medicine • Traditional • Phytotherapy

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# Acne Etiology and Treatments in Traditional Persian Medicine

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## Abstract

**Background:** Traditional Persian medicine (TPM) is based on humors theory. Temperament or mizaj is the result of a combination of four fundamental humors called blood, phlegm, yellow bile, and black bile. Like any other diseases, acne is the result of humoral imbalance. Acne is a highly prevalent dermatological problem, which has both physical and psychological effects on patients. The aim of this study was to determine the etiology of acne formation and natural remedies from the perspective of Persian scientists.

**Methods:** The etiology and treatment of acne were collected and analyzed from selected TPM medical textbooks. Some selected plants in these books were assessed in tabular format and their anti-acne activities were compared with modern medicine's databases.

**Results:** In the acne treatment, considering six essential schemes for health, diet and herbal remedies as well as manipulation are recommended. Although the mentioned herbs in acne treatment have antibacterial, anti-inflammatory, and antioxidant effects; however, some have special proven effects on the acne formation process. There is also a strong relationship between the digestive system and skin. This paper was rendered to show ancient Persian scholar's viewpoints on acne and its treatment.

**Conclusion:** Some reported remedies might be beneficial towards further studies on acne treatment.

**Keywords** • Acne • Medicine • Traditional • Herbal medicine  
• Digestive system

# Alshamel fi Sana'at Tebbi'at: A Comprehensive Book on the Materia Medica

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## Abstract

**Background:** Ala-al-din abu Al-Hassan Ali ibn Abi-Hazm al-Qarshi al-Dimashqi, known as Ibn al-Nafis (1210-1288 AD), was a Muslim Syrian physician primarily famous for being the first to describe the pulmonary circulation of the blood. The most voluminous of his books is Alshamel fi Sana'at tebbi'at, which is a comprehensive medical encyclopedia. It comprised 300 volumes of notes, from which only 80 volumes are published. His writings are cataloged in many libraries around the world. The aim of this review article, as a tribute to Ibn al-Nafis, was to introduce his valuable but neglected encyclopedia of Materia Medica.

**Methods:** Ibn al-Nafis' traditional approach in his "Alshamel fi Sana'at tebbi'at" book is studied in the present article.

**Results:** Alshamel fi Sana'at tebbi'at covers three branches of knowledge. The first category is devoted to theoretical traditional medicine. The second is in four sections where much of it is not available yet. The third category is on Materia Medica covering the aspect of Unani medicine, from which only 28 volumes of the comprehensive book on the traditional medicine have been found so far. The latter, introduces mono-ingredient medications in alphabetical order. Each chapter, in several parts, is dedicated to the botanical characteristics and nature of each mono-ingredient medication. In addition, this book explains traditional pharmacokinetic of every single medication for each human body organs.

**Conclusion:** Based on pharmaco-mechanistic perspective on Alshamel fi Sana'at tebbi'at, it could be considered as the main reference book on traditional medicine and pharmacy, worthy of revival.

**Keywords** • Materia medica • Medicine • Traditional • Pharmaceutical preparations • Pharmacy

# Anesthesia and Pain Relief in the History of Islamic Medicine

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## Abstract

**Background:** Since diseases and surgeries could be very painful, the annihilation of pain has been the most important goal of physicians. The history of Iranian-Islamic medicine includes distinguished physicians that attempted to find different methods of anesthesia. This research aims at reviewing approaches for anesthesia throughout the history of the Iranian-Islamic medicine, in order to identify a variety of drugs used during that period.

**Methods:** In this research, the information was mainly collected from medical history, traditional literature and various search engines (e.g. Google Scholar, PubMed, Medline, Scopus, SIDS and NoorMags). The search keywords were Anesthetic, Tbnj (sedation), Tnvym (sedative), and Hypnotic. Finally, a detailed analytical study was performed on all notes and the results were presented.

**Results:** Mohammad Ibn-Zakaria Al-Razi (known to the Western world as Razes) in the 10th century was the first physician who used general inhalation for anesthesia in surgeries. Drugs used to relieve pain and anesthesia can be divided into two categories: (i) single drug and (ii) compound drugs. Usually, these are consumed by eating, drinking, inhalation, or as topical. Drugs such as Hemlock, Mandrake, Henbane, Hyocyamus, Mandragora, Loiseuria, Opium Poppy, and Black Nightshade were used. Beyond these herbs, Aghili (18<sup>th</sup> century) in his book “Makhzan al-adviah” also explained the topical application of ice for pain management. The choice for the type of medication and its form of consumption is commensurate to pain and the speed by which the drug has an effect. Anesthesia was usually done in two ways: (i) using a substance called “Mokhader” which was consumed via the mouth or nose, and (ii) “Tnvym” which means putting a patient to sleep to block the sensation of pain. Typically, anesthesia methods and drug recipes were kept as secret to prevent misuse and abuse by unauthorized people.

**Conclusion:** Based on our study, Islamic physicians proposed inspiring methods in using drugs for anesthesia, which in turn greatly contributed to the Iranian-Islamic civilization.

**Keywords** • Anesthesia • Pain • History of medicine • Medicine • Traditional

# Anti-Freckles Herbal Treatment in Iranian Traditional Medicine

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## Abstract

**Background:** Freckles are numerous pigmented spots of the skin, mainly confined to the face, even arms and back. Although freckles are light-brown macules, most frequently observed in individuals with red or blond hair, they are common to Asian people too. Freckles increase in number, size, and depth of pigmentation during the summer months. Histologically, freckles show increased production of melanin pigment by a normal number of melanocytes. Freckles commonly stop spreading before adolescence and last for life, but could sometimes be subtle in adulthood. Treatments are often requested for cosmetic purposes. Before the advent of lasers, treatment modalities for pigmentary disorders included surgical excision, dermabrasion, chemical bleaching, and peeling. These treatments may lead to unwanted side effects of potential scarring or undesired pigmentation changes. In Iranian traditional medicine (ITM), freckles have been known as well. “Namash” was the term used by ITM scholars to indicate freckles. There is a wide range of plants, which were prescribed by Iranian physicians for the treatment of freckles. The purpose of this study is to find the most frequent useful herbs for freckles as mentioned in ITM references.

**Methods:** Seven ITM references were studied for anti-freckles medicines. The references were Canon of Medicine (Avicenna), Alhavi (Razes) Tuhfat ul-Momineen (Momen tonekaboni), Makhzan-ul-Adwiah (Aghili), Ikhtiyarat Badi'i (Ansari), Al-abnia An-Haghyegh el-advia (Heravi), and al-jāmi li-mufradāt al-adwiyawa al-aghdhiya (Ibn al-Baitar). Moreover, plants were ordered according to their repetition in the references. Afterwards, traditional names of the selected plants were matched with the scientific names using botanical text references.

**Results:** This study demonstrated that *Myristica fragrans* Houtt, *Cicer arietema* L., *Eruca sativa* Lam., *Lilium candidum* L., *Amygdalus communis* L., *Arum italicum* L. were the most frequent herbs mentioned in ITM references for the treatment of freckles.

**Conclusion:** Herbs mentioned in this article could be appropriate candidates for future studies in the field of freckles treatment.

**Keywords** • Pigmentation • Medicine • Traditional • Herbal Medicine

# Avicenna's View on Optimal Daily Water Intake

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## Abstract

**Background:** Fluid intake is an essential factor in having a normal homeostasis. However, proper amount of daily water intake in a healthy individual is controversial. There is a prevalent thought that we all have to drink eight glasses of water daily, however, it lacks enough supportive evidence at least for healthy individuals. Here, we try to clarify this topic from the perspective of Avicenna and traditional Persian medicine (TPM).

**Methods:** The most important traditional Persian medical encyclopedia, *Al-Qanun fil-Tibb* (Canon of Medicine), was reviewed. Furthermore, Medline, EMBASE, Scopus, IranMedex, and Science Iranian Database (SID) focusing on the keywords “traditional medicine”, “water intake”, “fluid”, and “complementary and alternative medicine” were reviewed to find relevant information.

**Results:** Avicenna believed that the demand for daily water is not the same in different individuals. The determinant variables mentioned in his book, *The Canon of Medicine*, comprises mizaj (temperament), health status, age, sex, season, place, habits, occupation, etc. He believed that water in extra amount quenches the *hararat-e-ghariezi*, which is the basal internal heat to convey normal homeostasis and metabolism in the body.

**Conclusion:** Several factors determine the actual need of any person to drink water. Consequently, recommending a specific amount of daily water intake for all is illogical. Moreover, important recommendations of TPM sages on an appropriate amount of water intake should be considered to prevent associated disorders.

**Keywords** • Medicine • Traditional • Drinking • Water-electrolyte balance

# Caring for Newborn's Umbilical Cord from Iranian Traditional Medicine Point of View

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## Abstract

**Background:** It is evident that infant's umbilical cord is essential for its survival and growth. In the past, it was not considered as a necessary tissue. However, nowadays, it has attracted lots of attention and its relation to different diseases has been demonstrated. In Iranian traditional medicine, caring for newborn's umbilical cord has been frequently recommended and it has been associated with different diseases.

**Methods:** Herein, Iranian traditional medicine resources such as "Qanun-fil-Tibb", "Exir-e-Azam", and "Tib-e-Akbari" were studied. In addition, recent developments in classical medicine were reviewed using search engines including Google Scholar, PubMed, SID, and IranMedex.

**Results:** It has been revealed that there is a direct relation between early cord clamping and oxidative stress, anemia, and low cardiac output. In Iranian traditional medicine, it is believed that the umbilical cord length, which should be cut off, is important. A short cord may lead to bladder contraction and frequent urination. Furthermore, if the umbilical cord is not squeezed efficiently, its content may enter the bladder, testis, and stomach leading to various diseases.

**Conclusion:** It seems that the remarks by the Iranian traditional medicine on caring for newborn's umbilical cord can be useful for the prevention of different diseases.

**Keywords** • Medicine • Traditional • Umbilical cord • Infant  
• Newborn



# Categorization of Cathartic (Purgative) Medicines Mentioned in TPM Resources According to Their Specific Function

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## Abstract

**Background:** According to traditional Persian medicine (TPM) resources, the human digestive system includes four steps. In the first step, gastric digestion, the ingested food pours into the stomach and changes into the leachate called chylous due to the heat produced in the stomach. In the second step, hepatic digestion, the chylous enters in the liver through mesenteric vessels and transforms into the quadruple humors, sanguine, phlegm, bile and black bile due to the liver heat. In the case of humor predominance, using moshel or cathartic medicines is considered as a strategic medical plan. In this study, we introduce cathartic (purgative) medicines mentioned in TPM resources according to their specific function.

**Methods:** Literature review of TPM resources, including Canon of Medicine and Aghili's Makhzan-ul-Adwiah was performed in order to find cathartics cited in the aforementioned books, prescribed specifically for different humor's predominance in the body.

**Results:** The survey found that the cathartics are categorized into eight groups:

1. Cathartic of "balgham" such as "Citrullus colocynthis and Colchicum autumnale"
2. Cathartic of bile such as "Prunus domestica and Alhagi Camelorum A. maurorum"
3. Cathartic of "sovda" such as "lajward stone and Armenian stone"
4. Cathartic of "Ma'a-e-asfar" such as "Marrubium vulgarre and Rivand extract"
5. Cathartic of melancholy and phlegm such as "Cuscuta epithimum and Adiantum capillus veneris"
6. Cathartic of bile and phlegm such as "Nepeta menthoides and Fumaria parviflora"
7. Cathartic of "Ma'a-e-asfar and phlegm such as Urtica dioica and Qsa'alhmar"
8. Cathartic of all mucus such as "Cassia acutifolia" and "kharbaghe Aswad"

**Conclusion:** Medical students of traditional Persian medicine should be familiar with cathartics and purgatives specific for each humor. In this study, cathartics has classified into main cathartics of phlegm, bile, black bile, Ma'a-e-asfar, black bile and phlegm, Ma'a-e-asfar and phlegm, as well as cathartic of all triple humors for a better memorization and feasibility of prescribing in practice.

**Keywords** • Cathartics • Mucus • Medicine • Traditional

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# Chemical Compounds and Extraction Methods of “Maollahm”

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## Abstract

**Background:** Maollahm or meat juice, a by-product of meat, is a traditional remedy in Persian medicine. This product was used as a nourishment or treatment substance for sick people. According to the ancient Persian medicine, animal meat has more affinity with the human body and the body easily absorbs its nutrition. Therefore, one could resort to maollahm for patients requiring urgent nourishment to boost and strengthen their body.

**Methods:** In this work, different ways of preparing maollahm from poultry, goat, cow, and sheep meat are studied. Most of these methods are based on distillation or barbecue before distillation, as prescribed by traditional medicine books. The reactions, chemical processes, and volatile compounds related to different types of cooked meat are also compared with the outcome of recent research studies.

**Results:** The difference between various types of meat is related to their compounds. Different cooking processes such as barbecuing, roasting, cooking, and boiling have an effect on the taste, smell and the chemical constituents of maollahm. Additionally, the type of meat, animal feed, as well as using or removing the fat during the cooking process, have an effect on the produced volatile compounds.

**Conclusion:** Cooking process and the type of meat have a direct effect on the compounds of maollahm. Possible reactions in the preparation process of maollahm are investigated and presented according to the new research studies.

**Keywords** • Medicine • Traditional • Meat • Cooking

# Complementary and Alternative Medicine for Osteoporosis

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## Abstract

**Background:** A systemic skeletal disease is characterized by low bone mass and micro-architectural deterioration with a consequent increase in bone fragility and susceptibility to fracture. Asia has the highest increment in the elderly population; therefore, osteoporotic fracture should be a noticeable health issue. The incidence rate of hip fractures in Asia could rise to 45% by the year 2050. Complementary and alternative medicine (CAM) is a group of various medical and health care systems, practices, and products that are not presently considered as part of formal medicine. CAMs have been described as “diagnosis, treatment, and/or prevention which complements mainstream medicine as a holistic, subjective and various natural approaches to medical problems by contributing to a common whole, satisfying claims not met by orthodoxy, or diversifying the conceptual frameworks of medicine”.

**Methods:** Peer-reviewed publications were identified through a search in Scopus, Science Direct, Cochrane, PubMed, and Google scholar using keywords “osteopenia”, “osteoporosis”, “menopause”, “CAM”, “phytoestrogens”, “phytotherapy” and “herbal medicine”. The search was completed in July 2015 and was limited to articles published in English. Relevant articles were identified based on the expertise and clinical experience of the authors.

**Results:** We categorized our results in different classifications including: lifestyle modifications (cigarette, alcohol, exercise and food regimen), supportive cares (intake supplements including vitamin D, C and K), treatments synthetic (routine and newer options for hormone replacement and none hormonal therapies) and natural options (different types of CAM including herbal medicines, yoga and chiropractic).

**Conclusion:** Established osteoporosis is difficult to treat because bone density has fallen below the fracture threshold and trabecular elements may have been lost. Antiresorptive agents can be used to prevent further bone loss and stimulation of new bone formation by the use of anabolic steroids or fluoride may increase the overall amount of bone.

**Keywords** • Osteoporosis • Menopause • Phytotherapy • Complementary therapies • Phytoestrogens

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# Diabetes and Depression: from Iranian Traditional Medicine to Modern Literature

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## Abstract

**Background:** Diabetes is a common chronic disease that is characterized by impaired insulin secretion and insulin resistance. It is considered an urgent public-health issue because of its epidemic perspective. Depression is a highly prevalent disease with a lifetime prevalence of 17%. Individuals with depression experience reduced functioning and decreased quality of life. Psychiatric disorders frequently occur in type 2 DM patients and about 15% of the diabetic patients are susceptible to depression. In Iranian traditional medicine (ITM), the relationship between diabetes and depression is mentioned and special attention to their psychiatric problems is considered in the treatment of diabetes.

**Methods:** This study is a descriptive review according to available Iranian traditional medicine literature such as Canon compared with modern medicine by using PubMed and Scopus databases.

**Results:** In ITM, diabetes is divided into warm and cold categories where the warm type is more common. Emotions such as anger and grief can play an important role in creating the warm or cold diabetes, respectively.

In modern medicine, several studies found that the odds of depression in the diabetic group were more than the non-diabetic comparison group. On the other hand, depressed mood was associated with an increase of developing type 2 diabetes. Depression may have a role in the pathogenesis of DM with stimulation of the hypothalamic–pituitary–adrenal axis, which results in increased cortisol level and blood glucose, eventually progressing to diabetes.

**Conclusion:** Evidence in modern medicine suggests that diabetes and depression can be a risk or exacerbating factor to each other. In ITM, the theory of association between depression and diabetes is more highlighted than modern medicine, which is mentioned since more than 1000 years ago. It seems that emphasis on the treatment of depression in diabetic patients may have significant effects in the course of their disease.

**Keywords** • Diabetes mellitus • Depression • Medicine • Traditional

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# Effective Factors on Shortage of Breastfeeding According to Iranian Traditional Medicine

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## Abstract

**Background:** Support for breastfeeding is a public health priority. One of the major factors that can negatively affect breastfeeding is the lack of breast milk. There are many instructions on the subject of breast milk in Iranian traditional medicine resources. This article attempts to investigate causes and reasons for the lack of breast milk from the perspective of the great scholars in this field.

**Methods:** This study reviews the literature based on the Iranian traditional medicine. The literature review included traditional medicine resources and a survey of reputable databases using keywords such as “morzae”, “sady”, “pestan”, “sheer”, “sheerkhar”, and “hifzossehhe”. The content analysis was used after collecting data.

**Results:** According to the viewpoint stated in traditional medicine literature, the primary substance for milk production is blood that transforms to milk after crossing the breast glandular tissue. The main causes of milk shortage can be classified into four categories, namely food-related factors, factors related to blood impaired, factors related to breast tissue and psychological and physical factors. One of the main reasons for milk shortage is the impaired quality and quantity of food. Appropriate mizaj of breast tissue is required for adequate milk production as it develops sufficient ability to absorb and transform the substance into milk. On the other hand, the ability of breast tissue is greatly influenced by the main organs of the body, particularly the heart; being the core of understanding psychological factors. Thus, psychological factors can have a significant effect on the process of milk production.

**Conclusion:** Due to the importance of breastfeeding, reflection on other viewpoints, such as those mentioned in Iranian traditional medicine, could pave the way towards new research areas. It could also steer policies towards an extra focus on breastfeeding by mothers.

**Keywords** • Breast feeding • Lactation • Medicine • Traditional

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# Effectiveness of Aloe Vera Gel in Chronic Ulcers in Comparison with Conventional Treatments

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## Abstract

**Background:** Aloe Vera is one of the endemic plants in southern Iran, which has been mentioned in the textbooks of Persian medicine since 2500 years ago. The aim of this study was to compare the effectiveness and cost of Aloe Vera gel with conventional treatments in patients with chronic ulcers.

**Methods:** This comparative study was conducted on 60 patients with chronic ulcers (more than 3 weeks) in Al-Zahra hospital (Isfahan, Iran) in 2015. The participants were divided into two groups of 30 patients per group. In one group, we used conventional treatment plus Aloe Vera gel and in the other group, only the conventional treatment was used. In the Aloe Vera group, we used Aloe Vera gel twice a day. The patients were followed-up a week after the treatment and then monthly for 3 months.

**Results:** The male:female ratio was 1:1 in each group. The mean age of the Aloe Vera and control groups were 62.3±11.2 and 63.1±9.6, respectively. After three months follow-up, wound healing occurred in 28 (93.3%) patients in the Aloe Vera group and 14 (46.7%) patients in the control group (P<0.05). The overall mean time of wound healing was 31.25±11.2 and 63.2±20.4 in the Aloe Vera and control groups, respectively (P<0.05). The mean hospitalization time was 35.2±6.4 and 67.4±8.9 in the Aloe Vera and control groups, respectively (P<0.05). The average cost of Aloe Vera gel and conventional treatment per patient was \$2 and \$10 daily, respectively (P<0.05).

**Conclusion:** Aloe Vera gel is a beneficial treatment and cost effective for patients with chronic ulcers. The use of Aloe Vera gel in chronic ulcer is recommended in developing countries to lessen the financial burden.

**Keywords** • Ulcer • Chronic disease • Therapeutics

# Evaluation of Toothpaste Containing Aqueous Saffron Stigma Extract on Gingival Indices in Patients with Marginal Generalized Plaque-Induced Gingivitis

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## Abstract

**Background:** Gingivitis is an inflammatory disease involving the gums. Saffron contains various forms of flavonoids, glycosides, and anthocyanin compounds that are proven to have anti-inflammatory and antioxidant effects. This study evaluates the anti-inflammatory effects of Saffron stigma on gingival indices in patients with marginal generalized plaque-induced gingivitis.

**Methods:** For this study, we used toothpaste containing aqueous extract of Saffron stigma. Twenty-two patients with generalized marginal gingivitis were selected. Patients were randomly divided into two equal groups of test and placebo. In each group the pocket depth index (PD), gingival index (GI), plaque index (PI) and bleeding of probing index (BOP) were measured before and one month after use. Independent t-test, Mann–Whitney test and Wilcoxon test were used for statistical analysis ( $P < 0.05$ ).

**Results:** The comparison between gingival indices before and one month after toothpaste usage showed a significant decrease in some measured indices at the end of the study. Saffron stigma treated group had a significant difference in reducing GI and BOP indices in comparison with the placebo group ( $P < 0.05$ ). However, the difference for PD and PI indices was not statistically significant ( $P > 0.05$ ).

**Conclusion:** In this study, it was found that using aqueous extract of Saffron stigma flower containing toothpaste might have a positive effect on some gingival indices in patients with gingivitis.

**Keywords** • Gingivitis • Saffron • Gingival indices • Toothpaste

# Explaining the Relation between Nutrition and Room Temperature Based on Iranian Medicine

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## Abstract

**Background:** Nutrition is one of the most effective components of human's health and nutritional practices have an important role in a healthy nutrition. Iranian traditional medicine, which is one of the holistic medical schools, has special approaches related to effective environmental factors in healthy nutrition. Identifying these special approaches is helpful to the medical community. The aim of this study was to examine the relation between nutrition and room temperature during different seasons based on Iranian traditional medicine. To that end, its precise scientific aspects and the approach of the traditional medicine practitioners was analyzed to provide a new pattern in nutrition with respect to the weather

**Methods:** Traditional medicine literature including Ibn-e Sina's Qanoon, Zakhirey-e Kharazm shahi, Kāmil al-Sinaā al Tibbiya al-Maliki, mofarreh al-gholoob, Hefz o sehe Naseri, were studied. Differences and similarities were reviewed and summarized. In order to analyze the data, scientific resources of modern medicine such as Krause's food and nutrition principles were applied.

**Results:** According to traditional medicine's approaches and the new scientific findings, there are significant differences between the type of regime, quality, and quantity of meals during different seasons of a year and in different room temperatures. Considering the above-mentioned differences, it plays an important role in a healthy nutrition.

**Conclusion:** Adhering to a good regime and vigilance on a healthy nutrition would provide a new pattern regime and ultimately lead to healthy people. Therefore, it is important to focus on this topic to promote a healthy society.

**Keywords** • Nutritional status • Temperature • Seasons • Medicine • Traditional

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# Functional Food in Traditional Persian Medicine

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## Abstract

**Background:** During the last decades, there have been great advancements in the field of preventive medicine. Research has demonstrated that nutrition plays a crucial role in the prevention of chronic diseases. The concept of functional food was first introduced in Japan during the 1980s. It proposes to consider food not only vital to survive, but also a mean for mental and physical well-being, contributing to the prevention and reduction of risk factors for diseases. However, there is evidence that the concept was believed by ancient physicians as well. One of the traditional systems of medicines is traditional Persian medicine (TPM). Rhazes said; “as long as a disease could be treated with food, medicine should be avoided”

**Methods:** We carried out a review of Avicenna’s Canon of medicine and Rhazes books for the definition of food and drug and similar concepts of functional food. We listed the identified concepts along with their examples.

**Results:** The classification of food and their therapeutic use were explained in Canon of medicine. Rhazes has a book called ‘Manafe al-Aghziyeh’, in which he writes about the medicinal benefits of different nutrition. Five concepts (food, drug, medicinal food, nutritional medicine and antidote or poison) were noted in these books.

**Conclusion:** There are many recommendations on food for the prevention and treatment of diseases in TPM books, which can be the basis for novel research studies.

**Keywords** • Functional food • Medicine • Traditional • Preventive medicine

# “Gharikon”/“Agharikon” a Valuable Medicinal Mushroom in Iranian Traditional Medicine

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## Abstract

**Background:** Gharikon is a well-known medicinal mushroom in Iranian traditional medicine and mentioned several times in different kinds of authentic literature. Considering both traditional and modern literature, the aim of this study is to present a review of its biological activities.

**Methods:** Using online databases (e.g. PubMed, Scopus, and Google Scholar) as well as reviewing traditional medicinal literature (e.g. Makhzan-ul-Adwiah, Al-Qanun fi al-Tibb); we reviewed the published literature on the pharmacological effects of *Laricifomes officinalis* (the most common species considered as “Gharikon”).

**Results:** *Laricifomes officinalis* (*Polyporus officinalis*) is a wood-rotting fungus that grows on different hosts such as conifers. The mushroom is native to Europe, Asia, and North America. According to the judgment of traditional medicine, its temperament is warm and dry. It has been used since the ancient times to treat sciatica, weakness of muscles, bronchitis, constipation, stomach and uterus pain, jaundice, fever and insect bites. It also has diuretic and emmenagogue effects. In recent decades, several research studies have been performed on *L. officinalis*. The results showed that the biological effects of *L. officinalis* are anti-viral (especially against smallpox, H5N1 influenza, and hepatitis C virus), anti-tuberculosis, boosting the immune system, treating dysmenorrhea, hemorrhoids, cough, rheumatoid arthritis and anticoagulant activity. A survey revealed that *L. officinalis* is a well-known medicinal mushroom with some formulations as dietary supplements on the market.

**Conclusion:** Considering traditional literature and recent findings on biological activities that in most cases corroborate each other, it seems that *Laricifomes officinalis* needs more attention in new investigations, including more pharmacologic assays and clinical trials, which may lead to the development of new natural products.

**Keywords** • Plants • Medicinal • Mushroom • Medicine • Traditional

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# Gingivitis from the Viewpoint of Traditional Persian Medicine

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## Abstract

**Background:** Gingivitis is among the top general health problems in the world, especially in developing countries. Meanwhile, it may be associated with pulmonary and cardiovascular diseases. In a qualitative study, we tried to identify the corresponding terminology to gingivitis in traditional Persian medicine (TPM) and to explain its potential mechanisms, treatments, and prevention characteristics.

**Methods:** In a literature review, 4 modern textbooks and 18 related articles, 2 traditional medical dictionaries and 12 traditional medical and 4 traditional pharmaceutical texts were assessed by a specific method. Initially, traditional scripts were searched for signs and symptoms of gingivitis as well as related keywords such as bleeding, swollen and loosen gum, oral or gingival ulcers, teeth, or gingival pain. Then the disease/s or disorder/s, which matched gingivitis in TPM, was appraised in details. Finally, potential mechanisms, prevention and therapeutic protocols presented by TPM were collated and summarized.

**Results:** “Lasse-e-Dâmiyeh” (bleeding gum) or “Khoon-Reezi az Goosht-e Bon-e Dandân” (bleeding from under teeth flesh) was the main disease comparable to gingivitis. Based on TPM, the leading etiologies are insufficient gum feeding mechanism, pouring and gathering of excessive fluid in the gum and accumulation of excessive blood in it or in the whole body. Although there were remarkable similarities in the subjects of different TPM texts over the centuries, particularly in oral and teeth hygiene and overall approach to gingivitis, we faced notable differences in recipes (herbal drugs) that each text proposed.

**Conclusion:** While there are overlapping terminologies to gingivitis in TPM, “Lasse-e-Dâmiyeh” is the closest disease that relates to it. Meanwhile, adjusting diet and lifestyle, having appropriate oral hygiene, obtaining a vast variety of herbal medications, cupping, phlebotomy, leech therapy, etc. are the different TPM modalities for the prevention and treatment of gingivitis that can be considered as therapeutic and/or research issues.

**Keywords** • Gingivitis • Medicine • Traditional • Therapeutics

# Herbal Medicines for Leucorrhea According to Iranian Traditional Medicine

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## Abstract

**Background:** Leucorrhea or vaginal discharge is a conventional complaint. It is generally whitish, yellowish, or greenish vaginal discharge in females that might be normal or a symptom of infection. It is almost mucus discharge, which exhibit exfoliation of vaginal epithelial cells due to estrogen influence on the vaginal mucosa. It is important to identify the differences between physiologic and pathologic discharges. Leucorrhea is a well-known disease in Iranian traditional medicine (ITM). In their manuscripts, the word “Sayalan-e rahem” was used by Avicenna and some other Iranian traditional practitioners to describe this condition. Ancient practitioners believed that excessive residue (kesrate fozool) and weakness of digestion (Za’afe hazm) were the main causes of leucorrhea, for which herbal therapy was the main proposed treatment. In the present study, medicinal plants used in ITM for leucorrhea are introduced.

**Methods:** In this research, six Iranian traditional textbooks including Canon of Medicine (Avicenna 980-1037 AD), A-Hawi (Razes 865-925 AD), Tuhfat ul-Momineen (Mo’men tonekaboni, 17th century), Makhzan-ul-Adwiah (Aghili 18th century), Ikhtiarat Badi’i (Ansari 1329-1404 AD), and al-jāmi li-mufradāt al-adwiyawa al-aghddhiy (Ibn al-Baitar 1197 AD) were studied and searched for anti-leucorrhea medicines. Then the herbal medicines were selected and scored depending on their frequency in the above-mentioned textbooks. Additional attention was paid to provide the most suitable scientific name for each plant.

**Results:** This study introduced many Materia Medica with anti-leucorrhea activity and among them seven herbs including *Rubus fruticosus* L., *Rhus coriaria* L., *Phoenix dactylifera* L., *Pimpinella anisum* L., *Rumex acetosa* L., *Olea europaea* L. and *Quercus lusitanica* Lam. showed the most repetition in ITM prescriptions.

**Conclusion:** These herbs can be introduced as new anti-leucorrhea herbal medicines for clinical research.

**Keywords** • Vaginal discharge • Medicine • Traditional • Herbal medicine

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# Hijama (Wet Cupping or Dry Cupping) for Diabetes Treatment

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## Abstract

**Background:** Diabetes is known as one of the most common diseases in the world and its treatment is one of the most important healthcare issues. Consequently, different treatment methods of complementary medicine and recent medicine have been used by scientific communities to control and predict the disease. This article considered the effects of dry cupping and wet cupping, based on traditional medicine and recent studies.

**Methods:** At first, the benefits of dry cupping and wet cupping were taken from some original books of Iranian traditional medicine, such as Canon of Medicine, Kholasat-al-hekma, Tib-e-Akbari and Exir-e-Azam. Then, the information about scientific articles was obtained by studying some of the Iranian traditional medicine journals and searching through PubMed, SID and Google Scholar.

**Results:** In traditional medicine, Hijama is divided into two kinds, namely wet cupping (with sharat, with incision, and blood giving) and dry cupping (without sharat, without incision). Dry cupping causes organ blood absorption, organ warming, and loss of organ humidity. The texts of Iranian traditional medicine refer to the Ziabites disease that its symptoms are like diabetes. This disease is divided into two types including warm and cold ziabites. The treatments that are recommended for both types are dry cupping for cold ziabites and wet cupping for warm ziabites. In addition, according to scientific studies, dry cupping and wet cupping have been recommended for diabetes treatment.

**Conclusion:** Dry cupping and wet cupping can be introduced as the complementary treatment methods beside other treatment methods.

**Keywords** • Diabetes mellitus • Medicine • Traditional • Complementary therapies

# Hyperhidrosis in Iranian Traditional Medicine

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## Abstract

**Background:** Excessive sweating is a medical condition in which a person sweats much more than needed. The medical name of this disorder is hyperhidrosis known as a common dermal problem that affects people of all ages and leads to negative impact on the quality of life. During the last decades, several studies have shown that in many cases of hyperhidrosis there is no evidence of systemic disease. Therefore, most treatments are temporary and symptomatic therapy. According to Iranian traditional medicine (ITM), different approaches are mentioned for hyperhidrosis.

**Methods:** This study has reviewed ITM textbooks, such as “Canon of Medicine and Exir-e-azam” as well as scientific references and databases of modern medicine (ISI, PubMed, etc.) with specific keywords. Contents and related concepts were classified and results prepared.

**Results:** In modern medicine, hyperhidrosis has been defined as an abnormal excessive sweating, which is either primary (idiopathic) or secondary to other systemic diseases such as hyperthyroidism, neurological condition or heart disease. Current modalities for treatment are topical anti-perspiration, iontophoresis, Botox injection (Botulinum toxin type A) and eventually thoracic sympathectomy as the last therapeutic modalities.

From the viewpoint of the Iranian traditional medicine as a holistic doctrine, hyperhidrosis etiologies include overfilled and repletion of body due to the accumulation of humors, excessive intake of food, excessive dilated skin pores, vigorous exercise, or physical activity. Therefore, therapeutic plan for hyperhidrosis was based on its cause, which includes reduction in the amount of food, increasing physical activity, purging the body from the excess humors and adjustment in temperament.

**Conclusion:** Hyperhidrosis is not an important or dangerous disorder; however, due to the negative impact on quality of life and failure to achieve perfect answer in modern medicine treatments it seems that the recommendations of Iranian traditional medicine will be helpful to control this disorder.

**Keywords** • Hyperhidrosis • Medicine • Traditional • Sweating  
• Perspiration

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# Lifestyle Determinants on Prevention and Improvement of Dry Eye Disease from the Perspective of Iranian Traditional Medicine

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## Abstract

**Background:** Dry eye disease is one of the most common public health problems in the field of ophthalmology that causes decreased physical, psychological, social and occupational functioning, and interferes with daily activities like reading, driving, computer work and watching TV. The effect of this disease on quality of life is similar to severe migraine and angina. In addition, the severity of the disease is closely related to depression. Outbreaks are increasing with the use of contact lenses and refractive surgery such as LASIK. The purpose of this paper is to assess the causes of dry eye and its prevention by the principles of hygiene.

**Methods:** In this review study, traditional medicine resources like Al canon fil tibb, Sharh-al-Al Asbab and Exir-e-azam have been studied with engine motors such as Google Scholar and PubMed.

**Results:** From the perspective of Iranian traditional medicine, the principles of maintaining health include air, food and drink, exercise and rest, sleep and wakefulness, mental state, retention of essential materials and depletion of wastes from the body. Proper performance of each principle is useful for the prevention of disease in different organs, including the eyes. Recommendations for the prevention or treatment of dry eye disease include the prevention of dryness in the eye or the entire body. In addition, the stomach and brain are important to eye health. Accordingly, one of the most effective managements of dry eye disease is avoiding foods that affect the eye in this way; for example garlic and onion.

**Conclusion:** Maintaining eye health is related to aspects of physical and mental health of the whole body. Therefore, codification of an integrated plan that contains eating and sleeping patterns, exercise, general clearing, eye clearing, and mental health is essential for treating dry eye disease.

**Keywords** • Eye diseases • Hygiene • Medicine • Traditional • Prevention and control

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# Mapping the Iranian Research Literature in the Field of Traditional Medicine in Scopus Database 2010-2014

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## Abstract

**Background:** The aim of this study was to provide research and collaboration overview of Iranian research efforts in the field of traditional medicine during 2010-2014.

**Methods:** This is a bibliometric study using the Scopus database as data source, using search affiliation address relevant to traditional medicine and Iran as the search strategy. Subject and geographical overlay maps were also applied to visualize the network activities of the Iranian authors. Highly cited articles (citations >10) were further explored to highlight the impact of research domains more specifically.

**Results:** About 3,683 articles were published by Iranian authors in Scopus database. The compound annual growth rate of Iranian publications was 0.14% during 2010-2014. Tehran University of Medical Sciences (932 articles), Shiraz University of Medical Sciences (404 articles) and Tabriz Islamic Medical University (391 articles), were the leading institutions in the field of traditional medicine. Medicinal plants (72%), digestive system's disease (21%), basics of traditional medicine (13%), mental disorders (8%) were the major research topics. United States (7%), Netherlands (3%), and Canada (2.6%) were the most important collaborators of Iranian authors.

**Conclusion:** Iranian research efforts in the field of traditional medicine have been increased slightly over the last years. Yet, joint multi-disciplinary collaborations are needed to cover inadequately described areas of traditional medicine in the country.

**Keywords** • Medicine • Traditional • Iran • Science • Policy



# Medical Mucilage Used in Traditional Persian Medicine Practice

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## Abstract

**Background:** Mucilage compounds are pharmaceutically important polysaccharides that have an extensive range of applications, including binding agents, thickeners, water retention agents, emulsion stabilizers, suspending agents, disintegrates, film formers, and gelling agents. A historical approach to medical science written by Iranian scholars could help in identifying excellent ideas and provide valuable information in this field for proper application. The aim of the current study was to introduce some mucilage uses derived from traditional Persian medicine (TPM).

**Methods:** In this literature review, we assessed a few main traditional manuscripts of Iranian medicine, including the books Al Havi, Canon of Medicine, Qarabidine-kabir, Zakhireh-ye Khwarazm shahi, Tuhfat ul-Momineen and Makhzan-ul-Adwiah. The word “loab” in the aforementioned books were searched and all data about mucilage compounds were collected.

**Results:** The use of medicinal plants containing mucilage in Iran dates back to ancient times. In traditional Persian manuscripts, mucilage is one of the most cited applications of medicinal plants for therapeutic objectives. There are various mucilage-producing plants in TPM such as *Malva silvestris*, *Linum usitissimum*, *Althaea officinalis*, *Plantago psyllium*, *Descureania sophia* and *Ziziphus vulgaris*. They have been used traditionally via oral or topical routes for respiratory, gastrointestinal, urinary, musculoskeletal, and genital systems as well as skin disorders. Certain applications are unique and promising for today’s chronic ailments.

**Conclusion:** A scientific assessment of these valuable manuscripts would provide a better insight into the thoughts of the past sages and applicable for clinical use of the mucilage compounds. This may lead to research opportunities in the future.

**Keywords** • Plants • Plant mucilage • Medicine • Traditional • Polysaccharides

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# Medicinal Herbs Affecting Gray Hair in Iranian Traditional Medicine

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## Abstract

**Background:** The presence of hair plays an important role in people's overall physical appearance and self-perception. As a result of increased life expectancy, the desire to look youthful plays a bigger role than ever. The use of medicinal plants is as old as mankind and the market will face many new products containing natural oils and herbs in coming years. In traditional Iranian medicine, many plants and herbal formulations are reported for hair growth as well as the improvement in hair quality. The aim of this article is to introduce effective medicinal plants in traditional Iranian medicine to prevent gray hair and advocate them as the new products.

**Methods:** The present investigation is an overview study and has been codified by library search in the main sources of traditional Iranian medicine.

**Results:** In traditional Iranian medicine, three types of formulations are proposed to prevent gray hair, namely (i) treatment compounds, (ii) preventive compounds, and (iii) hair dyes to color gray hairs. Our search showed that the main parts of a plant that is used in the treatment and preventive compounds are seeds and fruits. These are primarily in the form of topical oil or oral compound (electuary). The majority of plant parts used in hair dyes is from the fruit and/or leaves.

**Conclusion:** Natural products are highly popular and the use of plant extracts in formulations is on the rise. This is because synthetic based product may cause health hazards with several side effects. Considering the increased popularity of herbal drugs in hair care, it is worthwhile to conduct systemic investigation on the production and efficacy of these drugs. We trust that our investigation would encourage the use of traditional Iranian medicine in future hair care products.

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**Keywords** • Medicine • Traditional • Graying of hair • Plants  
• Medicinal

# Medicinal Herbs in Iranian Traditional Medicine for Learning and Memory

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## Abstract

**Background:** A few factors such as age, stress, and emotions may lead to impaired learning, memory loss, amnesia, and dementia or threats like schizophrenia and Alzheimer's disease (AD). Iranian traditional medicine (ITM) recommends some herbs and herbal preparations for the treatment or prevention of CNS problems.

**Methods:** In this study, scientific evidence related to the effectiveness of ITM herbal medicine on memory, learning and AD is reviewed. The scientific evidence of plant efficacy was searched in electronic databases including PubMed, Scopus, SID, Science Direct, and Google Scholar by keywords such as memory, Alzheimer, amnesia, learning and scientific plant names from 1969 to 2014.

**Results:** The findings of this study confirmed the effectiveness of certain ITM medicinal plants on enhancing memory and learning or in the treatment/prevention of amnesia and AD. Some ITM plants like *Melissa officinalis*, *Crocus sativus* and *Nigella sativa* showed improving effects on memory and the treatment of AD in clinical trials. In some cases, active principles responsible for the efficacy of these plants on memory were also determined.

**Discussion:** Most of the studies on ITM plants were designed in animal models and a few herbs were evaluated in clinical trials on AD. Furthermore, there are insufficient or no investigations on certain herbal medicines used in ITM to confirm their effectiveness on memory and learning. Therefore, further experimental and clinical studies are necessary to evaluate the effectiveness of these plants on memory and AD as well as determining their active components.

**Keywords** • Memory • Medicine • Traditional • Plants • Medicinal, Learning

# Nasal Polyp in Iranian Traditional Medicine & Conventional Medicine

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## Abstract

**Background:** The prevalence of nasal polyp in the population has been estimated to be 0.5-4%. It is noticed that nasal polyp could have a negative impact on the patient's quality of life and indubitably exert a substantial cost on the society. It is observed that, in some cases, complete cure may not be achieved and relapse can occur. In Iranian traditional medicine (ITM), nasal polyp is called "bawaseer e anff" and ITM offers several treatments for it.

**Methods:** In this review article the definition, signs, symptoms, and treatments of nasal polyp in conventional and traditional medicine are investigated and compared. The Canon of Medicine of Avicenna, liber Medicinalis Almansor of Rhazes, Tohfe Khani, and Makhazen Alta'lim were studied for ITM. Additionally, Google Scholar and PubMed were searched for conventional medicine.

**Results:** The current common treatment for nasal polyp is by applying corticosteroids (locally or orally) and surgery. Definition, signs, symptoms, and prognosis (considering color, shape, consistency) of nasal polyp are described in ITM and its treatments (depending on the kind of polyp and the time from its incidence) are oral or local administration of drugs and using physical manipulations such as phlebotomy, leech therapy, and surgery.

**Conclusion:** According to the same definition of nasal polyp and "bawaseer e anff" in the texts, a combination of traditional and conventional treatments could be helpful in order to reduce relapse, surgery indications, and usage of corticosteroids.

**Keywords** • Nasal polyps • Medicine • Traditional • Prognosis • Leeching • Phlebotomy

# Non-Drug Therapy and Prevention of Diabetes Mellitus by Dalk (Massage)

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## Abstract

**Background:** According to WHO estimation, the number of diabetic patients would reach about 591.9 million people in 2035. The tendency towards other kinds of treatment is increasing because of the high therapeutic expenditures and current medical complications. Positive results of massage in recent articles and the prominent role of dalk in Iranian traditional medicine led us to the present study review.

**Methods:** Studying Iranian traditional medicine textbooks, such as Canon of Ibn Sina, Kholasat Al Hekma of Aghili, Zakhireh-ye Khwarazm shahi of Jorjani, Alhavi of Razes and Kamel-al-sanaat of Ibn Abas were done on the topic of dalk discussion. Additionally, a search on “massage and diabetes mellitus” articles was done in motor search engines of PubMed, Google Scholars and the site of “Farhangestane Oloume Pezeshki”. The data were eventually compared and evaluated.

**Results:** In Iranian traditional medicine, dalk means kneading or massage of the body. Depending on the quality and quantity of the performance, it was divided into different kinds. The mechanism of dalk is to increase the blood supply in organs and subsequently increasing organ’s warmness and metabolism that lead to increased residues expulsion. Therefore, it could be advised to healthcare system as a means of treatment. On the other hand, for different diseases such as asthma, arthritis, insomnia, paralysis, DM, and constipation the effect of massage was evaluated and its positive results were confirmed. For example, in DM, its effects in decreasing FBS and HBA<sub>1</sub>C are shown.

**Conclusion:** According to Iranian traditional medicine and latest articles, dalk as a non-drug therapy and prevention manner is recommended.

**Keywords** • Medicine • Traditional • Massage • Diabetes mellitus

# Non-Pharmacological Treatments of Allergic Rhinitis (Neglected Treatments)

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## Abstract

**Background:** Allergic rhinitis is the most common diseases affecting people in industrialized society. However, this is not a new disease and it was clinically described and treated for the first time by Rhazes (865-925 CE). The disease was also mentioned in “The Canon of Medicine” by Avicenna (980–1037).

**Methods:** We searched in Scopus, Web of Science, and PubMed for “allergic rhinitis”, “interactions”, “non-prescription”, “prescription”, and in electronic copies of ITM sources the “canon” and “Al-Havi”.

**Results:** Both Persian pioneers of Medicine recommended non-pharmacologic management as an important phase of the therapy. Their recommendations consisted of avoiding overeating and polydipsia, massage of the lower extremities, adjusting the duration and time of sleep, sleeping in the supine position, avoiding exposure of the head to cold air and taking a shower early in the morning.

**Conclusion:** Although some aspects of their recommendations, such as massage of the lower extremities, avoiding of overeating and adjusting of sleep pattern were approved, but further cross-sectional and prospective studies are needed to confirm other non-pharmacological treatments.

**Keywords** • Rhinitis • Allergic • Medicine • Traditional • Therapeutics

# Porosity and Health: Perspective of Traditional Persian Medicine

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## Abstract

**Background:** The authors of this manuscript aimed to show the importance of porosity and condensation in health according to traditional Persian medicine (TPM) with consideration of new evidence in conventional medicine.

**Methods:** Cardinal traditional medical and pharmacological texts were searched for the traditional terms of takhalkhol (porosity) and takassof (condensity) focused on preventive methods. The findings were classified and compared with new medical findings.

**Results:** According to traditional Persian medicine, porosity and condensity are the two crucial items that contribute to human health. Somatotype is a taxonomy based on embryonic development, which may be considered in parallel with porosity and condensation. However, these terms are not completely the same. There are many causes for acquired porosity comprising hot weather, too much intercourse, rage, starvation, and heavy exercises. In general, porosity increases the risk of diseases as it makes the body organs vulnerable to external hot and cold weather. On the other hand, the porose organs are more susceptible to accumulation of morbid matters because the cellular wastes cannot be evacuated in the normal way. There are some common points between traditional and conventional medicine in the context of porosity and condensity. The relation between diet and somatotype is an example.

**Conclusion:** Condensity and porosity are the two basic items cited in the TPM resources and contribute to health maintenance and disease prevention of body organs. Creating a balance between these two states in different body organs, strongly contributes to disease prevention, treatment and diminishing chronic diseases period. Choosing proper modality including diet, drug therapy, and manual therapy depends on the amount porosity and stiffness of the considered organ and the preferred porosity of the affected organ keeping in a normal healthy state.

**Keywords** • Porosity • Medicine • Traditional • Health

# Prevention of Disease in Travel from the Perspective of Iranian Traditional Medicine

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## Abstract

**Background:** Due to the high volume of travel and the spread of various diseases as well as disorders during a trip, one of the major concerns for travelers is the issues related to disease spread, control, and prevention. The approach of philosophers and traditional physicians along with hygiene measures were noted as trip recommendations in their textbooks. Considering negligence in disease prevention and the lack of dedicated and systematic discussion on this topic, this article aims at collecting their experiences as a practical reference point.

**Methods:** This qualitative study, review articles in the field of traditional medicine and search in authentic books on traditional medicine. The gathered data were initially analyzed and then categorized.

**Results:** Results were described in several sub-categories, including general recommendation, food and drinking recommendations during travel, prevention of dehydration in warm and cold conditions, poisoned and polluted air recommendations, management of sea passengers, fatigue due to travel, and the prevention of skin diseases.

**Conclusion:** These measures are efficient interventions and cost-effective, which provide guidelines for traveler's health during a trip.

**Keywords** • Medicine • Traditional • Travel • Prevention • Control



# Principles of Nutrition in Patients with Polycystic Ovary Syndrome in Iranian Traditional Medicine and Comparison with Modern Medicine

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## Abstract

**Background:** Polycystic ovary syndrome (PCOS) is the most common endocrine disorder in women of reproductive age with metabolic and gynecological complications. Despite the high prevalence of this disease, many challenges remain regarding its diagnosis and treatment. According to many studies, lifestyle modification especially diet is the first line of the treatment in PCOS patients. The aim of this article was to study the principles of nutrition for PCOS patients in Iranian traditional medicine (ITM) in comparison with modern medicine.

**Methods:** This is a descriptive study done using ITM references such as Canon of Medicine, Exir-e-Azam, Tib-e-Akbari, and the keywords feed, nutrition, lifestyle, and PCOS were searched in modern medicine databases.

**Results:** In ITM resources, the symptoms of PCOS were discussed under the topic of several diseases, including “Ehtebase tams”, “infertility and uterine inflammation” and “urame rahem”. In “Ehtebase tams”, like other diseases, the first line of the treatment is diet based on disease etiology. The most common cause of “Ehtebase tams” is dystemperament of the uterus and ovaries especially cold and wet dystemperament.

**Conclusion:** According to ITM, patients with “Ehtebase tams” should limit cold and wet foods in their diet and more hot, dry, and soft foods are most suitable for them. In modern medicine, reducing of carbohydrates and fats is considered. In other studies, there was no preference for different food groups. These differences may be due to the temperament of foods in the food groups. It seems that by combining ITM guidelines with the findings of modern medicine, a proper diet in these patients can be achieved.

**Keywords** • Nutrition assessment • Polycystic ovary syndrome • Medicine • Traditional • Diet

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# Properties Related to Bile as Viewed in Makhzan ol-Adviya

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## Abstract

**Background:** The human body has simple and compound organs that obtain their nourishment through four humors. One of them is bile (yellow bile). According to Iranian traditional medicine (ITM), there are various kinds of natural medicines with their specific mechanisms of action affecting on bile in the human body. Hakim Aghili Shirazi (18th century), one of the great scholars in ITM field, introduced all types of natural medicines influencing bile in his valuable book written in Persian, “Makhzan-ul-Adwiah”, about single herbal medicines (mofradat). The aim of this review article was to introduce all types of natural medicines influencing bile in the human body.

**Methods:** The classification of natural medicines influencing bile was studied in this article as viewed by Hakim Aghili Shirazi in Makhzan-ul-Adwiah.

**Results:** Reviewing Makhzan-ul-Adwiah, this natural influencing bile is defined in ten categories. These are Haabes-e Safra (obstructive of bile), Daafe-e Safra (expellant of bile), Raafe-e Safra (resolver of bile), Ghaate-e Safra (stopper of bile), Ghaame-e Safra (suppressant of bile), Kaasere-e Safra (fractionating of bile), Mohregh-e Safra (burner of bile), Moder-e Safra (bile diuretic), Mosaken-e Safra (bile reliever), and Mos’hel-e Safra (bile laxative).

**Conclusion:** Each group has a specific function and mechanism on bile. Recognition of the precise mechanisms of these natural medicines is necessary to prescribe a suitable remedy for bilious diseases by traditional medicine specialists.

**Keywords** • Bile • Medicine • Traditional • Herbal medicine

# Protective Effects of Flax Seed (*Linum Usitatissimum*) Hydroalcoholic Extract on Fetus Brain in Aged and Young Mice

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## Abstract

**Background:** One of the major problems of the aged women or older than 35 is getting pregnant in the late fertility life. Fertility rates begin to decline gradually at the age of 30, more so at 35, and markedly at 40. Even with fertility treatments such as in vitro fertilization, women have more difficulty in getting pregnant or may deliver abnormal fetus. The purpose of this study was to assess the effects of flax seed hydroalcoholic extract on the fetal brain of aged mice and its comparison with young mice.

**Methods:** In this experimental study, 32 aged and 32 young mice were divided into 4 groups. Controls received no special treatment. The experimental mice groups, 3 weeks before mating, were fed with flax seed hydroalcoholic extract by oral gavages. After giving birth, the brains of the fetus were removed. Data analysis was performed by statistical test ANOVA using SPSS version 18 ( $P < 0.05$ ).

**Results:** The mean fetus brain weight of aged mother groups compared to the control group was increased significantly ( $P < 0.05$ ).

**Conclusion:** This study showed that flax seed hydroalcoholic extract could improve fetal brain weights in the aged groups.

**Keywords** • Fetus • Brain • Mice

# Proteomics Approaches Shed New Light on Traditional Iranian Medicine

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## Abstract

**Background:** Until now, Iranian traditional medicine (ITM) had been extensively based on Iranian philosophy in theoretical approach in diagnosis and treatment, with doubts on academic medicine. Nevertheless, the diagnosis of temperaments, herbal standardization, and quality control had been with the obscurity of functional molecules and their action mechanisms. Proteomics is a potent board to the mechanistic investigation of ITM and has been comprehensively applied profile drug-regulated proteins. In this review, we assessed the application of this modern molecular biological method in the identification of temperaments and drug targets of ITM.

**Methods:** All available studies related to proteomics in traditional medicine, alternative and complementary medicine, including books, journals, and other references were studied and assessed.

**Results:** The present review showed the phenotypes of the various temperaments in healthy individuals, that is to say, same proteins with different dynamic properties. Therefore, the usefulness of proteomics seems authoritative to understand the means by which the molecular pathways protected in ITM. This might be also the key clinical viewpoint on this new approach for enabling the integration of Iranian traditional medicine and modern biological science and technology, as well for upholding the internationalization of ITM.

**Conclusion:** Proteomics, as a powerful tool for systems biology, is an essential research methodology for understanding the mechanisms of traditional medicine. Further investigation on the applications of advanced proteomics in temperaments, herbal standardization, and quality control in ITM is recommended.

**Keywords** • Proteomics • Medicine • Traditional • Temperament  
• Complementary therapies

# Pruritus Treatment in Viewpoints of Traditional Persian Medicine

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## Abstract

**Background:** Pruritus is an unpleasant feeling that can cause the desire of scratching in a person and can be the symptoms of systemic, infectious, and neurological diseases. Pruritus is the most common clinical manifestation of skin diseases. Pruritus prevalence is 8-38% in the general population. Causes and treatments of pruritus have been described by traditional Persian medicine scientists. The aim of this study was to derive general principles of the proposed treatment to reduce or relieve pruritus.

**Methods:** This descriptive study, review traditional medicine books including Al canon fil tibt, Al-Hawi, Makhzan ul-adviyyah, Al-Abniyah an-Haghyegh el-adviyah, Tuhfat ul-Momineen and Exir-e-Azam. The above-mentioned documents were derived and classified by keywords such as pruritus, hakka, jarab and sherry.

**Results:** In traditional Persian medicine, there are different causes for pruritus such as accumulation of vapors or acute humors in subcutaneous tissue or weakness of expulsive (Dafi'a) faculty and its treatment is based on removing the causes. Proper nutrition, bathing, and removing pathogenic humors are involved in the treatment. According to this study, some plants such as Cassia fistula, Purslane, Violets, Fumaria, Barley, Coriander, Rose and Terminalia chebula are anti-itching.

**Conclusion:** Proper nutrition is the most important point in health and treatment of humors production with appropriate quality and quantity. Pruritus can be treated by lifestyle modification and using medicinal plants. It could be concluded that traditional Persian medicine therapies can be effective in the treatment of pruritus with mild side effects. By further investigation and research, we can reach more effective treatment methods in the field of traditional Persian medicine along with other new medical therapies.

**Keywords** • Plants • Medicinal • Pruritus • Medicine • Traditional • Therapeutics

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# Psoriasis and Topical Iranian Traditional Medicine

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## Abstract

**Background:** Psoriasis is a common chronic inflammatory skin, nails, and joints disease related to the immune system by periods of exacerbations and remissions. It is characterized by thick end, erythematous, and scaling lesions, which affects about 2 to 4 percent of the general population. The disease occurs equally in both sexes and the most common form of the disease is psoriasis vulgaris. The etiology is unknown but genetic and environmental factors, immune system disorders, and gastrointestinal dysfunction appear to be responsible. The aim of this study is to compare psoriasis and Ghooba clinical manifestations and introduce medical treatment of this disease based on authentic books of traditional medicine.

**Methods:** This study is a qualitative literature review based on reliable sources of traditional medicine, such as Canon of Medicine, Makhzan-ul-Adwiah, Qrabadyne kabir, Zakhireh-ye Khwarazm shahi, Tib-e-Akbari and Exir-e-Azam.

**Results:** Probably, in traditional medicine, the most similar disease to psoriasis is Ghooba. That is scaly lesion concomitant with itching and articular pain in most cases. The causes of disease are poor performance of the liver and spleen and stomach, as well as excessive consumption of foods such as beef and veal, eggplant and fish. Several local treatments such as wheat germ oil, flaxseed oil, black seed oil, and violet oil were recommended.

**Conclusion:** Psoriasis is a chronic, debilitating physical, mental, and sexual disease for which genetic, environmental and immunological factors are recommended for its etiology. This problem could be treated by the oral and topical medications symptomatically; however, major side effects are associated with recent treatments. Change in lifestyle, prevention issues, as well as herbal therapy are recommended for the treatment of psoriasis in traditional medicine.

**Keywords** • Psoriasis • Medicine • Traditional • Wheat germ oil

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# Range of Motion Improvement in Ankylosing Spondylitis Patient with Persian Traditional Medicine; Case Report

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## Abstract

**Background:** Ankylosing spondylitis (AS) is a chronic inflammatory disease of the skeletal system without definitive treatment. Nowadays, the aim of therapeutic interventions is preventing disease progression, but eventually many patients have different degrees of decreased range of motion, especially in the spine accompanied by pain and fatigue.

**Methods:** A 44-year-old man with AS from 22 years ago was treated with NSAIDs and sulfasalazine. He visited for developed pain and stiffness in spine from 7 years ago. He did not confer with the rheumatologist from 2012 due to the lack of treatment satisfaction and maintained his treatment with 75 mg indomethacin daily. The patient was assessed in the Iranian traditional medicine clinic and other problems were chronic fatigue, interrupted sleep, and extreme dry skin. Diagnosis was general dryness and treatment started with oral and tropical moisture and nutritional advice.

**Results:** In the third month of treatment, joint pain, morning stiffness and sleep disturbance improved. After 8 months, in addition to complete improvement of skin dryness, sleep disturbance and joint pain, range of motion in cervical and lumbar spine were increased. In cervical rotation, distance from the chin to acromion decreased from 24 to 15 cm in right rotation and 20 to 13 cm in left rotation. Additionally, in cervical flexion distance from the chin to sternal notch decreased from 16 to 8 cm after treatment. In the lumbar spine, an increased Schober's index was seen.

**Conclusion:** The use of Persian traditional medicine's viewpoints and treatment strategies can be effective in improving Ankylosing spondylitis prognosis and proposed for future clinical research.

**Keywords** • Spondylitis • Ankylosing • Medicine • Traditional • Herbal medicine

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# Role of Iranian Traditional Medicine in the Prevention of Respiratory Infectious Diseases

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## Abstract

**Background:** In order to define appropriate plans for respiratory infectious diseases, in accordance with Iranian traditional medicine, one should cover the topic of “havae vabai”. “Havae vabai” is related to the epidemics of respiratory infectious diseases.

**Methods:** This study is a review of the role of Iranian traditional medicine in the prevention of respiratory infectious diseases. Resources of traditional medicine with the keyword “havae vabai” were reviewed in Noor digital library.

**Results:** The perspective of traditional medicine for the prevention of disease in “havae vabai” is based on self-recuperation and air modification. Items that are mentioned are; refine the surrounding air, move to a proper space, live in a house with no source of water like fountains and limited flow of air, air-drying, use air freshener, smell fruit sticks, use in-house plants, and place a cloth soaked with vinegar in front of the nose. For self-recuperation, reducing body moisture with proper foods and drugs or with vomiting, diarrhea, phlebotomy, wet-cupping, reduction in food and drink intake, avoiding sexual intercourse, bathing, heavy exercise, inactivity, overeating, hunger, thirst, milk, sweets, fish, fatty foods, fruits especially juicy fruits are recommended. The food that tends to have a sour taste, eating meat cooked with sour taste like vinegar is suggested.

**Conclusion:** The use of the solutions offered in traditional medicine to control air is helpful as it can reduce epidemics, such as influenza; that yearly kills many patients with a heavy financial burden.

**Keywords** • Prevention and control • Medicine • Traditional • Respiratory disorders



# Role of Nutrition in Children Growth in View of Traditional Medicine

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## Abstract

**Background:** Growth and development are the basic science in pediatric medicine. Growth disorder in children is one of the important health problems in the world, especially in developing countries. Regardless of the underlying disease, as the main cause of growth disorders, assessment and correction of nutritional status of these children are very important. Given the fundamental importance of this issue and ascending tendency to use complementary medicine in the world, this article discusses the traditional Iranian philosopher's views on the role of nutrition in child development.

**Methods:** This study reviews textbooks of traditional medicine, particularly in the field of pediatric medicine with a focus on Canon of Medicine of Avicenna.

**Results:** Temperament is the physiological concept of the human body in traditional medicine and has an important role in health, diagnosis, and treatment of disease. Generally, children are born with warm and wet temperament that provides the best condition for growth. However, the personal temperament of each child determines growth, the need for a variety of food groups, and even physical activity. Different appetite and food preferences in children show temperamental variation. Therefore, children need special management regarding special temperament. In Iranian traditional medicine, special lifestyle orders are discussed in detail according to these differentiations and nutritional management is the most important factor considered.

**Conclusion:** In spite of advances in classical medicine in the prevention and treatment of many diseases, there are still a lot of therapeutic challenges in many health problems. Temperamental approach to the human body in traditional medicine provides a different perspective on the medicine. Reflecting on temperamental view in child development may lead to a better understanding of the diagnosis and treatment of diseases. On the other hand, further research studies based on the reform of nutrition with respect to temperament should be considered as a new strategy in the management of developmental disorders.

**Keywords** • Growth and development • Medicine • Traditional • Nutrition therapy

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# Salt and its Role in Health and Disease Prevention from the Perspectives of Iranian Medicine and Modern Medicine

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## Abstract

**Background:** Salt in Iranian medical sources is mentioned as Malh and has a special place in people's nutrition. The purpose of this study was to investigate the effect of correct use of salt on health and disease prevention in the context of Iranian medicine and its comparison with modern medicine.

**Methods:** This article reviews Iranian medicine references on the usage of salt and its benefits. Additionally, modern medicine references were searched to identify the dos and don'ts of salt consumption. Then the results from both approaches were compared and analyzed.

**Results:** The main application salt in Iranian medical resources includes usage in latif supplier, solvent, dryer, laxative of phlegm and melancholy, slimy moisture body repellent, opening obstruction of liver and spleen, aid in digestion, beneficial for seeds and corruption of foods, appetizing, cold foods reformer and improving the flavor of foods. On the other hand, the major benefits of salt according to modern medicine resources are; aiding the balance of electrolytes and fluids, carry nutrients into cells, regulation of acid-base balance, support transfer of nerve impulses, regulate blood pressure, and secretion of gastric acid.

**Conclusion:** According to the Iranian medicine, the amount and type of salt to maintain health and prevent diseases is determined based on factors such as temperament, age, health and disease, season, and location. While a unique approach is not prescribed for every individual, in modern medicine resources, a fixed set of guidelines is recommended for all healthy individuals. Consequently, the modern medicine pays less attention to physiological, structural, and genetic issues. Considering the importance of salt and its undeniable impact on human health, it is apparent that additional research is required to determine factors affecting the actual amount of salt per person.

**Keywords** • Sodium chloride • Medicine • Traditional • Health

## Stroke in Canon of Medicine

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### Abstract

**Background:** Stroke has a huge negative impact on the society and more adversely affect women. There is scarce evidence about any neuroprotective effects of commonly used drug in acute stroke. Bushnell et al. provided a guideline focusing on the risk factors of stroke unique to women, including reproductive factors, metabolic syndrome, obesity, atrial fibrillation, and migraine with aura. The ten variables cited by Avicenna in Canon of Medicine would compensate for the gaps mentioned in this guideline. The prescribed drugs should be selected qualitatively opposite to Mizaj (warm-cold and wet-dry qualities induced by disease state) of the disease and according to ten variables, including the nature of the affected organ, intensity of disease, sex, age, habit, season, place of living, occupation, stamina and physical status.

**Methods:** Information related to stroke was searched in Canon of Medicine, which is an outstanding book in traditional Persian medicine written by Avicenna.

**Results:** A hemorrhagic stroke is the result of increasing sanguine humor in the body. Sanguine has warm-wet quality, and should be treated with food and drugs that quench the abundance of blood in the body. An acute episode of ischemic stroke is due to the abundance of phlegm that causes a blockage in the cerebral vessels. Phlegm has cold-wet quality and treatment should be started with compound medicines that either solve the phlegm or eject it from the body.

**Conclusion:** Avicenna has cited in Canon of Medicine that women have cold and wet temperament compared to men. For this reason, they are more prone to accumulation of phlegm in their body organs including the liver, joints and vessels, and consequently in the risk of fatty liver, degenerative joint disease, atherosclerosis, and stroke especially the ischemic one. This is in accordance with epidemiological studies that showed higher rate of ischemic stroke in women rather than hemorrhagic one.

**Keywords** • Stroke • Medicine • Traditional • Temperament

# The Challenges of Clinical Researches in Iranian Traditional Medicine (ITM)

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Jale Aliasl<sup>3</sup>

## Abstract

**Background:** Traditional medicine is one of the medical schools, which has been considered in recent years. Achieving reliable and valid research in ITM is very important to introduce this line of medicine into the healthcare organizations. The aim of this study was to investigate clinical research issues in ITM.

**Methods:** This study is a qualitative research. We formed an expert panel and, after identifying the content, the study findings were divided into two main categories.

**Results:** Challenges of clinical research studies are divided into two major categories in ITM, the problems of clinical trial processes and the difficulties in publishing research results. Lack of standard data collection instruments and questionnaires, limited sample size, lack of study models designed for distemperament treatment, unawareness, and non-compliance of ethics committees in facilities approved by WHO for clinical research of TM, and even rigidity beyond conventional medicine studies are some of the previously mentioned issues. Some difficulties in the publication of research results include lack of specialized journals especially at high academic levels, lack of familiarity with editorial board and difficulty in publishing the results of studies that are designed with combined products. A few proposals for these problems include:

- Conducting codification questionnaire workshops (approved by a thesis assistant with a subject of research tools)
- Introducing appropriate methods of multi-intervention research in ITM
- Creating the database of similarly performed research available for researchers
- Designing multicenter research
- Collaborations between academic centers
- Linking two or more thesis assistants or research projects in the form of a joint proposal with larger sample sizes
- Establishing joint meeting between researchers, the heads of TM research centers and ethics committees
- Dedicated TM journal

**Conclusion:** Considering a history of several thousand years, the Iranian traditional medicine is a great venue for students. To establish and distribute the information from this research field, collaboration between researchers and policy makers are essential to minimize challenges.

**Keywords** • Medicine • Traditional • Research • Clinical trial • Publications

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# The Comparison of Genetic Factors Influences on Physical Activity and Health between Classical Medicine and Iranian Traditional Medicine

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## Abstract

**Background:** Different factors, especially genetic, effect individual attitude to regular physical activity in Iranian traditional medicine. It was believed that individual physical activity attitude is affected by Mizaj too. Our aim was to conduct a comparative revision and evaluation of the effect of genetic factors on physical activity in classic medicine and Iranian traditional medicine.

**Methods:** In this study, we reviewed Persian resources in the research center of traditional medicine at Shiraz University of Medical Sciences. We also evaluated the texts on physical activity and genetics in PubMed and Google Scholar.

**Results:** The results of classical medicine revision showed the effect of especial genes on obesity and sedentary behavior. It is also derived from Iranian traditional medicine resources that physical activity and sedentary behavior is affected by individual Mizaj.

**Conclusion:** The results showed that those with hot and cold Mizaj have different genetic potentials in sedentary behavior and physical activity. Such categorization would be helpful in identifying illnesses due to sedentary life in special groups of people. It would also allow designing dedicated treatment for each person.

**Keywords** • Genes • Health • Medicine • Traditional • Motor activity

# The Dosage Form of Aragh in Treatment, from the Iranian Traditional Medicine Perspective

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## Abstract

**Background:** The Iranian traditional medicine is one of the branches of complementary medicine and it is based on using the dosage forms of plants. One of the most common forms of pharmaceutical plants is Aragh. Due to ease-of-use, distillate is a more acceptable form among the public. In this article, it is attempted to study the usage forms and effects of Aragh according to the valid traditional medicine resources.

**Methods:** This article is a review of Iranian traditional medicine textbooks such as Makhzan-ul-dawiah, Gharabadin Kabir, Cannon of Medicine, and other recent texts on medical plants.

**Results:** According to the traditional medicine, the process of getting Aragh is a kind of distillation, which is performed by using Ghar and Alembic (the equipment that are used in distillation). Distillation is the process of extracting and refining the fluid of a plant. Aragh of the plants is much more effective on the body than the plant itself. Traditional medicine regards Aragh as a new kind of drug (medicine) that is rarely mentioned in older texts (except for golab). However, the modern medicine regards it as a dosage form of essence, which is dissolved in water. The more the essence, the better the distillate gets.

**Conclusion:** According to the traditional medicine sources, since the time of Hakim Aghil Khorasani, Aragh was used more and more every day. About 100 kinds of Araghs are mentioned in ancient texts, which are extracted from simple plants. Considering the distillation process and the way it performs, and by knowing that Aragh is a plant's softest and the most influential entity, it seems that it has a huge effect on Arvah and Ghova, the main parts like heart and brain and nervous parts.

**Keywords** • Medicine • Traditional • Distillation • Plants

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# The Effect of *Abelmoschus Esculentus* on Blood Levels of Glucose in Diabetes Mellitus

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## Abstract

**Background:** Diabetes mellitus is a metabolic disorder that results in hyperglycemia. According to the statistics of the International Diabetes Federation (IDF), this problem has a fast growing prevalence and, unfortunately, leaves permanent complications on different body systems. For this reasons, nowadays attentions has been paid to the traditional medicine such as Okra (*Abelmoschus esculentus*). The aim of this study was the evaluation of the effect of Okra (*Abelmoschus esculentus*) on blood levels of glucose in diabetes.

**Methods:** This is a review article, which was obtained by a search in databases such as PubMed, Google Scholar, and Magiran by using keywords such as diabetes, Okra, and hypoglycemic effect.

**Results:** Various studies on Okra (*Abelmoschus esculentus*) showed that *Abelmoschus esculentus* (AE)/Okra extract has a hypoglycemic effect that helps decrease blood glucose level. Its properties can be a useful remedy to manage diabetes mellitus. In addition, it leads to inhibition of cholesterol absorption and subsequently decreases the level of lipid and fat in the blood. The results of an investigation on diabetic mice by using this material has shown the same effect and confirmed this conclusion.

**Conclusion:** Based on the positive effects of Okra on reducing blood sugar level, the widespread use of this plant is recommended. Clearly, further research is required.

**Keywords** • Hyperglycemia • *Abelmoschus* • Diabetes mellitus

# The Effect of Massage Therapy on Children's Learning Process: A Review

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## Abstract

**Background:** Massage therapy is the scientific manipulation of the soft tissues of the body for normalizing those tissues and consists of manual techniques that include applying fixed or movable pressure, holding, and/or causing movement of or to the body. There are more than 1500 massage training centers or schools in the United States. Several studies evaluated the effect of massage on elevating child health and to treat various disorders.

**Methods:** In this review, keywords related to the subject were searched in ScienceDirect, Google, Google Scholar, PubMed, and Cochrane library. The data were classified, analyzed, and interpreted.

**Results:** Studies showed massage in pupils could increase blood circulation in the body, make breathing better, better growth, increased concentration and IQ, improved immune system, reduction in stress, pain, anger, and aggressiveness as well as allowing restful sleep. All these together would elevate their learning ability. In addition, massage therapy is studied on a variety of disorders such as blood pressure, rheumatoid arthritis, autism, cystic fibrosis, back pain, nervous pain, muscle and joints pain and headache.

**Conclusion:** To promote health in pupils, it is proposed to introduce the concept of "classmates massage during break" program. Such groups massage therapy, next to its health benefits, would contribute to their peace, tranquility, and teamwork. A similar program is running in Australia as well as few other countries under the codename "massage in schools program (MISP)". This program has had a tangible effect on children's capabilities.

**Keywords** • Massage • Child • Learning • Health • Therapeutics



# The Effect of Traditional Treatments on Heavy Metal Toxicity of Armenian Bole

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## Abstract

**Background:** Clay has been used for its nutrition, cosmetic, and antibacterial properties for thousands of years. Its small particle size, large surface area, and high concentration of ions have made it an interesting subject for pharmaceutical research. There have been studies on scavenging foreign substances and antibacterial properties of clay minerals. The main problem with the medical use of these agents, today, is their heavy metal toxicity. This includes arsenic, cadmium, lead, nickel, zinc, and iron. Iranian traditional medicine (ITM) introduces different clays as medicaments. In this system, there are specific processes for these agents, which might reduce the chance of heavy metal toxicity. Armenian bole is a type of clay that has been used to treat a wound. Before in vivo studies of this clay, its safety should be confirmed.

**Methods:** In this work, we investigated the effect of washing process as mentioned in ITM books regarding the presence of Pb, As, and Cd in 5 samples using atomic absorption spectrometry. We washed each sample (50 g) with 500 cc of distilled water. The samples were filtered and dried at room temperature for 24 hours.

**Results:** In all studied samples, the amount of Pb and Cd was reduced after the ITM washing process. The amount of As was reduced in 3 samples and increased in 2 other samples.

**Conclusion:** In ITM books, there are general considerations for the use of medicinal clay. These agents should not be used before special treatments such as the washing process. In this study, we observed the effect of washing process on reducing the amount of heavy metals in Armenian bole samples. In two samples, washing caused an increase in the amount of As. As these heavy metals sediment according to their density in different layers, the sample layer on which the spectrometry is performed could have an effect on the results.

**Keywords** • Heavy metal toxicity • Spectrophotometry • Atomic • Medicine • Traditional

# The Efficacy of Boswellia Serrata Gum Resin for Control of Lipid Profile and Blood Glucose in Diabetic Patients

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## Abstract

**Background:** Regarding preclinical evidence for antidiabetic effects of *Boswellia serrata*, we evaluated anti-hyperglycemic and lipid-lowering effects of *Boswellia serrata* gum resin in type 2 diabetic patients in a double-blind randomized placebo-control trial.

**Methods:** Fifty-six diabetic patients were randomly allocated to two groups to receive 250 mg of the *Boswellia serrata* gum resin or placebo twice daily for 8 weeks, in addition to their routine antidiabetic treatments. Fasting blood sugar (FBS), glycosylated hemoglobin (HbA1c), insulin level, total cholesterol, low-density lipoprotein (LDL), high-density lipoprotein (HDL) and triglyceride of serum were measured before and after the intervention.

**Results:** Although there was a considerable reduction after the intervention in FBS ( $P=0.04$ ), HbA1c ( $P=0.02$ ) and triglyceride ( $P=0.01$ ) in the *Boswellia serrata* gum resin group, no significant difference was observed in all outcome measures between the two groups at the end of the study (FBS  $P=0.09$ , HbA1c  $P=0.20$ , total cholesterol  $P=0.31$ , LDL  $P=0.49$ , HDL  $P=0.10$ , triglyceride  $P=0.78$  and insulin level  $P=0.86$ ).

**Conclusion:** The current study showed the 8 weeks complementary use of *Boswellia serrata* gum resin with a daily dose of 500 mg had no better glucose and lipid lowering effect than placebo in diabetic patients.

**Keywords** • *Boswellia* • Diabetes mellitus • Lipids • Complementary therapies • Herbal medicine

# Evaluating the Causes of Freckle and Nevus from the Viewpoint of Iranian Traditional Medicine

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## Abstract

**Background:** Freckles are due to an increase in the amount of dark pigments called melanin. These spots are more likely developed on the sun-exposed skin areas like the cheeks, nose, and forehead. Nevus is usually a benign melanocytic tumor and can be congenital or acquired. Due to the high influence of skin lesions on the person's appearance and quality of life, the aim of this study was to evaluate the causes of these lesions from the viewpoint of Iranian traditional medicine (ITM).

**Methods:** This study is a review base on Iranian traditional medicine manuscripts, including Canon of medicine, Tib-e-Akbari, Kamel-al-sanaat, Sharaholasbab and Exir-e-Aazam. After the review, subjects were analyzed and classified and all the relevant measures were deduced.

**Results:** According to humoral theory in ITM, abnormal black bile congestion in skin layers and its increased concentration causes dark color spots on the face, known as "Namash and Barash" being equivalent to freckle.

Nevus formation is caused by congestion of gradually hardened and dense black bile humor in the skin after leaking through the vessels. The main cause of these problems is dysfunction of the gastrointestinal tract, liver, spleen, and uterus. Human's intellectual body function called "nature" and is by default designed to eradicate this residue from the essential internal organs and the skin.

**Conclusion:** Based on ITM theory, since "nature" prefers excreting residue from the main organs through the skin, the necessary step for the treatment of the skin lesion is to purge and treat the internal organs before topical treatments. In addition to this, skin tonics should be used to enhance skin reinforcement in order to prevent the recurrence of the above-mentioned condition after peeling.

**Keywords** • Melanin • Nevus pigmented • Medicine • Traditional

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# The Introduction of Submitted Approaches in Iranian Traditional Medicine for Treatment of Diabetes

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## Abstract

**Background:** Diabetes mellitus is a complex disorder of carbohydrate metabolism. According to past studies, the word *ziabites* in Iranian traditional medicine (ITM) correlate with diabetes. The aim of this study was to identify the definition, therapeutics, and mechanism of diabetes from the resources of ITM in order to provide new recommendations for the treatment of diabetes.

**Methods:** We searched therapeutic ITM books such as *Exir-e-Aazam*, *Tibib-e-Akbari*, as well as material medical ITM books such as *Makhzan-ol-Advieh* and *Tohfah-ol-momenin* to find topics on *ziabites*. We also searched ScienceDirect and PubMed databases with keywords “herbal medicine” and “diabetes” to confirm the effectiveness of the reported methods.

**Results:** We identified 17 ITM books that referred to *ziabites*. We also determined that there were different mechanisms and dosage forms for the management of *ziabites*. The number of materials related to *ziabites* mechanisms in *Makhzan-ul-Adwiah* was 138. For instance, *Asperugo procumbens* amplifies liver and *Cucurbita maxima* diminish kidney temperature. Forms of administration recommended in *Eksir-e-Aazam* include oral, inhalation, rectal and topical; among which oral and inhalation have been verified by conventional medicine. We also found articles that substantiated the antidiabetic effect of some medicinal herbs mentioned in *Exir-e-Aazam*.

**Conclusion:** There are several forms of administration recommended in ITM for the treatment of diabetes, which have not been used in conventional medicine. Hence, reported solutions can be analyzed for the management of diabetes. Notably, there are many herbs mentioned in ITM that remain to be studied. Therefore, further studies are required to substantiate their effects scientifically in order to develop new effective drugs.

**Keywords** • Diabetes mellitus • Medicine • Traditional • Herbal medicine

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# The Most Frequent Herbs Proposed by Iranian Traditional Medicine for Alopecia Areata

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## Abstract

**Background:** Alopecia areata (AA) is a common immune-mediated hair loss disorder. AA has a reported incidence of 0.1-0.2% with a lifetime risk of 1.7%. Histologically, AA is characterized by the accumulation of mononuclear cells around the bulb of the affected hair follicles. Corticosteroids are the most popular drugs for the treatment of this disease. Despite its high prevalence, currently available treatments are mostly unsatisfactory and inefficient for the more chronic and severe types of the AA. Alopecia areata is a well-known disorder in Iranian traditional medicine (ITM). “Da oth-tha’lab” was the term used by ITM scholars to indicate AA. Traditional Iranian physicians believed that the presence of morbid matter in the scalps is the main cause of the disease, which blocks nutrients and causes hair roots to deteriorate. Herbal medicines in the form of topical preparations were applied by ITM scholars for the treatment of AA. This study was performed to determine the most frequent useful herbs for AA as mentioned in ITM.

**Methods:** Seven ITM references such as Canon of Medicine (Avicenna), Alhavi (Razes) Tuhfat ul-Momineen (Momen tonekaboni), Makhzan-ul-Adwiah (Aghili), Ikhtiyarat Badi'i (Ansari), Al-abnia An-Haghyegh el-advia (Heravi) and al-jāmi li-mufradāt al-adwiyawa al-aghhdhiya (Ibn al-Baitar) were studied for anti-AA medicines. Subsequent to our study, the herbal medicines were listed and scored based on the frequency of their prescriptibility. Moreover, we took the effort to provide the best scientific name for each plant.

**Results:** This study showed that *Allium cepa* L., *Artemisia abrotonon* L., *Allium sativum* L., and *Asphodelus ramosus* L. were the most frequent herbs mentioned in ITM references for the recovery of AA.

**Conclusion:** These herbs can be introduced as new herbal medicines for clinical research in the field of alopecia areata treatment.

**Keywords** • Alopecia areata • Medicine • Traditional • Plants • Medicinal

# The Prevalence of Complementary and Alternative Medicine Use among Dermatologic Outpatients in Shiraz, Iran

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## Abstract

**Background:** The use of complementary and alternative medicine (CAM) has been increasing among patients worldwide. The objective of this study was to assess CAM use and its related factors among Iranian dermatologic outpatients in Shiraz, Iran.

**Methods:** This cross-sectional study was conducted in Shiraz, Iran. Six hundred dermatologic outpatients were randomly selected. We used a self-structured questionnaire with 14 items to assess CAM use and its related factors among our participants. We used descriptive statistics reported as mean±SD and frequency by Mann-Whitney U test, chi square and binary logistic regression tests for statistical analysis.

**Results:** Among the 600 participants, 188 (31.3%) had used one of the CAM methods for resolving their dermatologic problems. The most frequent method used was herbal medicine (89.9%). The mean age and years of duration of the skin condition were significantly higher in patients using CAM compared to non-users ( $P=0.001$  and  $0.037$ , respectively). Patients with acne, alopecia, and hair loss significantly used CAM more than other diseases (OR: 2.48, CI 95%: 1.28-4.78) and (OR: 3.19, CI 95%: 1.62–6.27), respectively. There was a significant relationship between education and using CAM ( $P<0.001$ ).

**Conclusion:** Community member's behavior in CAM use without adequate knowledge may have a noticeable influence on each other. Since it is a prevalent matter, we should think of ways of educating the general population about CAM methods and its potential risks and benefits. We also should encourage our healthcare workers to communicate such materials with their patients.

**Keywords** • Complementary therapies • Dermatology • Outpatients • Iran • Medicine • Traditional

# The Prophylactic Effect of Hydroalcoholic Extract of *Zingiber Officinale* (Ginger) on Ethanol-Induced Reproductive Toxicity in Male Rats

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## Abstract

**Background:** Ginger is a natural dietary component with antioxidant and anti-carcinogenic properties. This study was conducted to evaluate the prophylactic effect of ginger extract on ethanol-induced reproductive toxicity in male rats by measuring the total homocysteine (tHcy), trace elements, antioxidant enzymes activity including glutathione peroxidase, superoxide dismutase (SOD) and catalase, and malondialdehyde (MDA).

**Methods:** Twenty-eight adult male Sprague–Dawley rats were randomly divided into four experimental groups and treated daily for 28 days as follows: control, control+ginger (1 g/kg of body weight (B.W)/day by gavage), test group (ethanol 4 g/kg of B.W/day by gavage), and treated group (ethanol+ginger). At the end of the experiment, all the rats were sacrificed and their testes were removed and used for the measurement of the above factors.

**Results:** The results in the test group indicated that ethanol decreased antioxidant enzymes activity and increased MDA and tHcy compared with the control groups ( $P<0.05$ ). In the treated group, ginger extract improved antioxidant enzymes activity and reduced tHcy and MDA level compared with the test group ( $P<0.05$ ).

**Conclusion:** It can be concluded that ethanol causes oxidative stress in testis and ginger extract improves the trace elements, antioxidant enzymes activity, and decreases tHcy and MDA.

**Keywords** • Oxidative stress • Ethanol • Testis • Ginger

# The Role of Nutrition and Edible Medicinal Plants in the Treatment of Chronic Wounds Based on the Principles of Iranian Traditional Medicine

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## Abstract

**Background:** Skin is the body's first defense against stressful factors. Skin wounds are caused by the loss of connection in the skin and recovery requires cellular and biochemical reactions. Chronic wounds arise from the lack of physiological processes and the disease due to complications (e.g. infection and amputation) has devastating consequences on societies. According to the principles of Iranian traditional medicine (ITM), these disorders can be treated in a step-by-step procedure.

**Methods:** This is a systematic review study that involved gathering data from three traditional medical textbooks, namely Canon of Medicine, Tib-e-Akbari and Exir-e-Azam with the keyword "chronic wound" or "ghorha". In the next step, few tables were developed for nutrition measures as well as edible and topical medicinal herbs. Electronic databases such as PubMed, Scopus, Web of Science, and Cochrane library were searched for relevant articles and those related to effective medicinal herbs in the treatment of wounds were obtained.

**Results:** Depending on appearance and secretions, wounds are divided into two categories, namely simple and compound wounds. The prognostic factors are based on the age, weight, accompanied disease, as well as the quality and quantity of the wound secretions. Wound treatments include medical nutrition therapy, edible medications, and manipulation therapies. Patient's diet is very important and oral medications have a major role in the whole body detoxification. Topical medications are used together with the above-mentioned treatments; noting that without detoxification, these medications are not effective entirely.

**Conclusion:** Wound healing requires physiological processes within the body. From the perspective of ITM, body detoxification is the first medical step, after which topical medications could lead to a better wound healing result.

**Keywords** • Medicine • Traditional • Therapeutics • Plants • Medicinal • Wound healing • Nutrition therapy

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# The Role of Nutrition in the Prevention and Treatment of Cancer in Traditional Persian Medicine

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## Abstract

**Background:** Cancer is the most important non-communicable disease and the chief cause of death in the world, which imposes a major burden on communities. It is expected that the number of new cancer cases will increase 70 percent worldwide in the next two decades. The exact cause of the disease is unclear in modern medicine. More than a third of all cancer cases are preventable and the other two third are treatable if detected early. Cancer is a type of swelling in traditional Persian medicine (TPM). The aim of this study was to investigate the role of nutrition in the prevention and treatment of cancer in TPM.

**Methods:** This study is a review-descriptive that was conducted based on traditional medicine books, including Al Canon fil tibt, Al-Hawi, Zakhireh-ye Khwarazm shahi and Exir-e-Aazam.

**Results:** From the viewpoint of TPM, swelling is any abnormal accumulation of material in organs that will make bulging and dysfunction. If the substance of the disease can be fully matured and eliminated in the early stages of swelling and the patients become stronger, the possibility of swelling creation with poor prognosis such as cancer will decrease. Cancer is a cold and melancholic (soda) swelling that can be created by burning of humors. Treatment of cancer is based on specific nutrition management and medicinal herbs. According to the study, eating moderate to moisture temperament foods that can decrease acuity of melancholy humor (soda), produce appropriate blood (e.g. lamb, goat, egg yolks) and avoiding foods producing melancholy humor are recommended.

**Conclusion:** Swelling is a compound disease and cancer is a melancholic swelling. According to TPM, treating swelling in the early stages is possible and by observing the principles of nutrition, eating and drinking rules, and proper and early treatment of hot swelling and turning hot swelling into cold, cancer can be prevented.

**Keywords** • Neoplasms • Prevention and control • Medicine • Traditional • Nutrition therapy herbal medicine • Edema

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# Toxicology from the Perspective of Iranian Traditional Medicine

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## Abstract

**Background:** The science of toxicology has a long history and been highly valued in Islamic countries. Numerous scientists were the expert in this field, particularly during the third and fourth centuries. Through reading such literature and gaining the experience of the scientists, one can use such valuable information to promote this science.

**Methods:** In this article, different sources of traditional medicine from the first to the fourteenth century were evaluated.

**Results:** The first toxicologist during the Islamic era was Ibn Uthal. Jāber ibn Hayyān offered interesting ideas about the pharmacokinetics of toxins. Ibn Wahshia, along with translating books, described his personal experiences in a book called *Al-Somum va al-Tary aghat*. The most important bites, poisons, and related treatments were specifically viewed by Rhazi. Then, Ibn Sīnā explained different aspects of poisons, including their identity and constituents, diagnoses of poison types, methods of detoxification, and treatment of poisoning. Jorjāni suggested some drugs for poisoning prevention. He recommended these drugs to be consumed before an individual enters a place that has poisoning potential. An important achievement of Imad al-Din is the innovation of new methods for detoxification of some poisons. Aghili described the symptoms of poisoning and special methods of detoxification by which toxicity is greatly reduced. Finally, Abdolhossein Zonouzi Tabrizi in *Marefat-al-Somum* mentioned the identification of natural and synthetic poisons. In fact, this book is a bridge between the traditional and modern toxicology.

**Conclusion:** It seems that the study of these manuscripts would provide valuable clinical experiences from medieval Islamic toxicologists on different types of poisoning. Therefore, it helps to gain new ideas for the prevention and treatment of poisoning.

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**Keywords** • Toxicology • Poisons • Medicine • Traditional • Antidotes

# The History of Melancholia Disease

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## Abstract

**Background:** Melancholia is a kind of depression with the most common symptoms of evident mental disorder, slimness, lack of enjoyment, feeling guilty and having no appetite. In modern medicine, the word “melancholia” only refers to mental and affective symptoms of depression. However, historically, it could have physical symptoms as well as mental symptoms and the atrabilious situations were categorized according to their common reasons rather than their specific characteristics. This study aimed to enlighten the history of this disease.

**Methods:** This is a review article concerned with cerebral diseases by collecting data from medical electronic databases including PUBMED and SID, historical psychiatry books and traditional medicine manuscripts.

**Results:** The first known physician to have scientifically looked at the mental diseases was Hippocrates (370-460 B.C), who should be accredited as the father of medicine. While physicians in the time of Hippocrates seriously believed in the metaphysics power in health and diseases, Hippocrates believed in natural laws. Plato (348-428 B.C) believed that human behavior is affected by his physical needs and instincts. In the course of Hippocrates’s theory about bodily humors, Aristotle considered a range of mental characteristics for each. Finally, Galen believed that cerebral disease causes mental diseases or disorders based on his own theories of anatomy. Persian physicians involved in this area were Rabban al-Tabari (838-870 A.D), Razes (865-925 A.D), Ali-Ibn Abbas Ahvazi (944-982 A.D), Al-ikhwan al bukhari the physician of the ninth century, Ibn Sina (980-1037 A.D), Gorgani (1040-1136 A.D) and Khaje Nasireddin Tousi (1201-1274 A.D). They considered cerebral diseases and health as a part of equality process; different organs accommodate a physical system and mutual dependence with the society and environment.

**Conclusion:** Mental health has been reviewed from various aspects in view of ancient physicians. Feeble mindedness and behavioral disorder complications had already been addressed in earlier times too.

**Keywords** • Mental disorders • History • Medicine • Traditional

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