



## REVIEW ARTICLE

# PHYTOBALNEOTHERAPY: WHEN TRADITIONAL HERBAL MEDICINE MEETS SPA THERAPY

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### ABSTRACT

Phytobalneotherapy (or hay baths) is a balneological treatment which combines the effects of thermal baths and the properties of fermenting herbs. Alpine hay, made of many different herbs harvested in mountain fields, is traditionally used for this treatment. Some studies have investigated the effects of hay baths on health, underscoring their potential benefits for rheumatic conditions. In conclusion, phytobalneotherapy seems an interesting way to harness therapeutic properties of medicinal herbs in a way which appears to be tolerable and sustainable. Further investigation is needed.

**Keywords:** Phytobalneotherapy, Herbal medicine, Balneotherapy, Hay bath, Medicinal herbs, Traditional medicine

### INTRODUCTION

Phytobalneotherapy, also called “hay baths”, usually refers to a particular balneological treatment which combines the effects of thermal baths and the properties of fermenting herbs [1]. Therefore, phytobalneotherapy has actually three components, namely fermenting plants (phytotherapy), thermal bathing (balneotherapy), and climate effects on health due to high altitude (climatotherapy).

In Italy, this traditional therapy has long been practiced in Trentino-Alto Adige, a mountainous region in the Northern part of the country, and still plays an important role in Alpine wellness [2]. We can therefore consider phytobalneotherapy as a sort of “Alpine ethnomedicine” with its own historical, geographical and botanical roots.

#### What does it consist of?

Alpine hay used for this therapy is traditionally harvested once every year in mountain fields over 1200 meters above mean sea level [1]. Many herbs are collected for this therapy, including *Arnica montana*, *Achillea millefolium*, *Alchemilla vulgaris*, *Plantago media*, *Thymus serpyllum*, *Taraxacum alpinum*, *Vaccinium myrtillus*, and *Gentiana lutea* [3].

After fermenting for 1-2 d, hay is ready to use for phytobalneotherapy. A complete treatment usually comprises up to 10 sessions, with 20-minute baths each followed by a 30-to-45-minute resting period [1]. Phytobalneotherapy can be administered alone or in combination with other treatments, such as massage or

exercises, as a part of a spa therapy program.

In the past phytobalneotherapy was available only in summertime, but nowadays it is possible to take hay baths even in other seasons [4]. Strict hygienic rules are followed to prevent microorganism proliferation in stored hay.

#### What evidence is there?

Although few researchers have investigated the effects of phytobalneotherapy, in a review of scientific articles published in PubMed and Scopus between 1870 and 2012, four relevant studies were retrieved and it was concluded that hay baths may be useful for patients with rheumatic conditions like chronic osteoarthritis, a degenerative disease characterized by joint pain and loss of function due to cartilage loss, and fibromyalgia, a disorder in which widespread pain and other symptoms are often reported [1]. Among retrieved trials, three of them involved patients with osteoarthritis [5-7], while the remaining one involved patients with fibromyalgia [8]. Phytobalneotherapy was mainly reported to be beneficial for pain relief and functional improvement [1]. Hay baths were also described as well tolerated, even by elderly individuals or patients with co-morbidities, although some side effects are documented and it is therefore important to be medically checked before undergoing phytobalneotherapy [9, 10].

Because of limited available studies, it is not fully understood how hay baths actually work. It is possible to speculate that many factors combined together can play a role in determining the overall effect. Among them, we

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should mention high temperature of baths, their mechanical and physical effects on the body, and biochemical properties of fermenting herbs.

A study investigating the effects of phytobalneotherapy in patients with knee osteoarthritis concluded that hay baths can determine “a controlled repeated heat shock which increases extra-cellular and probably intra-cellular HSP70 [Author’s Note: Heat Shock Protein 70 kDa] at a joint level increasing cellular defenses and modulating local and general immunity responses” [11].

In the past, it was supposed that some therapeutic properties were due to transdermal absorption of coumarin originating from fermenting hay, but a small perspective study involving 12 participants reported no measurable concentration of this substance both immediately after the bath and after the following rest period [12]. Therefore, mechanisms of action of phytobalneotherapy still remain to be understood. However, it can be speculated that interactions with skin microbiome may be a possible hypothesis.

## CONCLUSION

In conclusion, phytobalneotherapy seems an interesting way to harness therapeutic properties of medicinal herbs in a way which appears to be tolerable and sustainable. Considering the importance of herbal medicine today [13], hay baths may also help to bring people closer to nature and literally enjoy “its contact”, thus contributing to raise consciousness about the importance of our precious traditions and environmental resources. Further investigation is needed to better define biochemical mechanisms of this traditional therapy and to determine the effects of different plant combinations on human health.

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