# Thermal varicose treatment under hypnosis

## Thermische Varizenbehandlung unter Hypnose

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**Key words**
hypnosis, varicose vein, thermal ablation

**Schlüsselwörter**
Hypnose, variköse Venen, thermische Ablation

**Bibliography**
**DOI** https://doi.org/10.1055/a-1170-9282
Published online: July 14, 2020
Phlebologie 2020; 49: 217–221

ISSN 0939-978X

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### ZUSAMMENFASSUNG

Die Hypnose hat im Verlauf der Menschheitsgeschichte eine bemerkenswerte Entwicklung genommen. Die medizinische Hypnose ist eine sehr viel jüngere Fachdisziplin, die nur langsam auch als solche anerkannt wurde. Heute hat sie einen klar definierten Platz und es gibt keinen Zweifel mehr an ihrer Wirksamkeit, die durch die Aufnahme in unseren Leistungskatalog und die Anzahl der entsprechenden Publikationen belegt ist. Die Behandlung von varikösen Venen der unteren Extremität mittels thermischer Ablation ist eine sehr gute Indikation für die Hypnose, die dann als Hypnoanalgesie bezeichnet wird. In Hypnose gut ausgebildete und erfahrene Ärzte können sie bei diesen Eingriffen anwenden und damit unbestreitbar zur Patientenzufriedenheit beitragen. Wir stellen hier ein Protokoll vor, das an die Durchführung des Ablationsverfahrens angepasst wurde, dabei aber akribisch den Prinzipien der Hypnosetherapie nach Erickson folgt.

### ABSTRACT

Hypnosis has undergone great developments throughout the history of mankind. Medical hypnosis is a much more recent medical discipline that has been slow to be recognized as such. Today it has a well-defined place and there is no longer any doubt as to its effectiveness, as evidenced by its establishment in our services and the number of publications about it. The management of varicose veins of the lower limbs by thermal ablation is a very good indication for hypnosis, then called hypnoanalgesia. Practitioners who are well trained and experienced in hypnosis can use it during these procedures and bring undeniable comfort to their patients. A protocol is presented here adapted to the practice of this ablation procedure while meticulously following the principles of Ericksonian hypnosis.

## Hypnosis and Human History

Schematically we can divide the history of hypnosis into 2 parts: the period before the appearance of medical hypnosis and the period after. The continuum is not that obvious but it already allows the layman to better understand what could be assimilated to hypnosis and make it a corollary with modern times. At the time of the druids, sorcerers, and other priests the hypnotic state was already widely used to induce trance in particular to perform rituals and ceremonies, hypnosis was also used to predict the future and already to heal. This is well documented for example 3000 years ago in Egypt under Ramses 2 but also in ancient Greece. Of course in no case will we find the appellation hypnotic state and even less medical hypnosis in these ancient times.

Going back to the Middle Ages, one quickly understands why, under the dominant influence of the Church, one passes from so-called ritual practices, commonplace, to practices considered as occult. At the time, hypnosis was close to witchcraft.

It was not until 1778 with a famous German doctor in Paris, Franz-Anton Mesmer [1], that the theory of animal magnetism appeared: according to him, all beings are traversed by magnetic fluids generating interactions among themselves and with celestial bodies. According to Mesmer, a bad distribution of these fluids would be at the origin of many diseases. Personalities such as Mozart or Marie-Antoinette will benefit from his care where the patient is placed standing in a tub of "magnetized" water, holding on to iron rods. It was not until a few years later that a medical commission created under the impetus of Louis XVI and composed of people like Lavoisier and Franklin, among others, discre-

dited the care provided by Mesmer without, and this is certainly the most striking fact, rejecting the possible therapeutic effects due, according to them, to the «imagination». Despite this, Mesmerism will continue to be disseminated in some universities.

## From the Marquis de Puységur to Jean-Marie Charcot

The story will include periods of infatuation and abandonment and key characters such as the Marquis de Puységur or James Braid who will be inspired by Mesmer in evolving the very concept of hypnosis. The Marquis de Puységur will, among other things, define a therapy based on speech in order to empower the patient. James Braid, a Scottish surgeon, also gradually detached himself from mesmerism and defined hypnosis in 1843 as "*A nervous sleep in which it is easy to plunge a person into using induction by fixation on a shiny object*" [2], he was even one of the precursors of hypnoanalgesia by putting it into practice in his own operating room.

It was not until the end of the 19th century with Jean-Marie Charcot, a famous neurologist at the Salpêtrière hospital in Paris, that the medical world began to revive the use of hypnosis, and this did not stop afterwards. Yet at the time Charcot associated hypnosis with a hysterical state and was opposed to another current of the Nancy school represented by Hippolyte Bernheim which was based on the work of Braid. It is indeed Bernheim who had advanced hypnosis in great strides, he described the powers of hypnosis as the ability to inhibit pain, to produce a pleasant emotion, to inhibit anxieties ... and above all a natural ability to be treated [3]. This is in direct opposition to Charcot who describes the hypnotic state as a hysterical state, although wrongly this may have reintroduced hypnosis into large institutions.

Freud also benefited from Charcot's courses by doing an internship there in 1929, and Freud also attended classes at the Ecole de Nancy. Freud then rejected hypnosis as random and developed psychoanalysis, however he wrote in 1923 "... *psychoanalysis manages the legacy it has received from hypnosis.*" This is best understood by knowing Freud's student background [4].

Hypnosis will then go through a phase of decline, even if Bernheim's theory is speaking to us today, at the time its lack of explanation "by physiology" discredited it, even if it took precedence over Charcot's theory.

## From Authoritarian to Permissive Hypnosis

Hypnosis will then evolve from an authoritarian to a more permissive mode. To better understand this it is necessary to apprehend the techniques of Charcot, Braid, Freud... as hypnosis techniques with a directive and authoritative practitioner, made of repetitions of directive orders.

It was in the United States that Milton H. Erickson (1901–1981) quickly understood why a significant proportion of the population claimed to be "resistant" to hypnosis. For him it was logical that some people would want to oppose these orders. Erickson detached himself from this dominant aspect of the therapist while remaining deeply rooted in the relationship with the patient. Erickson brought the notion of proposals rather than orders, he let the patient decide, gave him the power. Erickson is the "how" to solve a problem rather than the "why" the problem is present. He redefined the unconscious as a resource center, a data center, which everyone has at their disposal and which allows them to solve their problems. Erickson proposed to the patient to reach his resources through hypnosis, resources that he does not have spontaneous access to [5]. In the United States, hypnosis will undergo a tremendous expansion during this period, especially used to treat post-traumatic neurosis during the two world wars. Research and its introduction into university teaching then gradually gave it an unavoidable place. The development of scientific research allowed the medical community to adhere to this powerful tool that is hypnosis. Among others, we must mention Professor E. Hilgard who started his work at the end of the 1950 s.

We must mention those who brought the much later revival to Europe, Chertok, Michaux Nardone... Chertok defined hypnosis as a "modified state of consciousness, in which the operator can cause distortions in memory and sensory perceptions, in this case in the processing of algogenic information". Chertok allowed the entry of hypnosis as a therapeutic practice in the early 1970 s in the hospital setting [6]. Other currents appeared later, variations of the previous techniques. We can cite humanistic hypnosis dating from the early 2000 s, not discussed in this article.

## Hypnosis in Scientific Literature

More than 300 randomized controlled trials and over 80 systematic reviews or meta-analyses are indexed in the Medline database under the keyword "hypnosis".

Rainville [7] had profoundly modified the pathophysiological approach to hypnosis, in particular by using MRI in 1999 and then in other works using PET (positron emission tomography), which this time allowed a more precise observation of the active brain through local variations in blood flow. This made it possible to demonstrate that during the hypnotic state, areas such as the anterior cingulate cortex and the neuronal network involved in pain (prefrontal cortex, striatum, insula...) are attenuated during painful stimuli. It is also worth mentioning the work of Faymonville [8] and his team of anaesthetists at the University Hopital of Liège who published a lot in the early 2000 s with the use of PET and showed that hypnosis is a particular state of consciousness where a subject, in a semblance of drowsiness, experiences a perennial and multimodal mental imagery, imagery that invades his consciousness. This difference with the state of sleep was more easily demonstrated by Faymonville who even associated polysomnography with PET to ensure the absence of true sleep. Indeed this difference had been shown a few years earlier by the electroencephalogram of a hypnotized subject but was still controversial.

Hundreds of studies have been carried out, both in the clinical and cognitive science fields, and through these publications hypnosis regularly showed a beneficial effect on pain and anxiety [9]. It would be difficult today to make a synthesis of all these works, as the scope is so vast. What we know today in the light of these

▶ **Table 1** The different uses of medical hypnosis.

| | |
|---|---|
| hypnoanaglesia | for acute and chronic pain, It can be used alone or in combination with a local anaesthetic, painkillers, anxiolytics, nitrous oxide. hypnosis used in Vascular Medicine |
| hypnosedation | hypnosis associated with conscious intravenous sedation (remifentanil, midazolam) and local anesthesia (lidocaine). e.g: tooth extraction, uterine curettage, thyroidectomy, knee arthroscopy... |
| hypnotherapy | used in psychotherapy and psychiatry to range from minor disorders such as neuroses to more severe disorders, as well as addictology |

studies and modern imagery is that hypnosis is not limited to a state but has an undeniable reality on the cerebral level.

To conclude this point about this short review of the literature, an article published in 2017 allows us to better understand the use of hypnosis in University Hospitals in France [10]. The autors contacted every French University Hospital to find out if hypnosis was practiced for the care of pain (hypnoanalgesia), for surgical procedures (hypnosedation) and in adult psychiatry care units (hypnotherapy). Hypnoanalgesia is practiced by all and two-thirds offer hypnosedation. Hypnotherapy is practiced by 40 % of the University Hospitals. Therefore, hypnosis seems to have found its place in the care of pain and as an anesthetic to replace standard procedures. However, the use of hypnotherapy in psychiatry is less frequent. This shows us the place of hypnosis within the training structures of today's doctors.

## Place of Hypnosis in Vascular Medicine

It is easier in the light of history to understand what hypnosis is. There is an official definition from the *American Psychological Association* (APA) as *"a state of consciousness involving focused attention and decreased sensitivity to the environment, characterized by an increased ability to respond to suggestion"*. Medical hypnosis is represented by 3 entities, defined in the previous paragraph: *hypnoanalgesia* refers to the use of hypnosis as an analgesic method, *hypnosedation* couples hypnosis to anesthetic products and *hypnotherapy* is psychotherapeutic (e. g. for the control of stress, anxiety, phobias..). Any medical training in hypnosis will specify that the therapist's use of hypnosis will be strictly limited to his or her usual scope of practice. In Vascular Medicine, hypnosis will therefore be limited to hypnoanalgesia especially during thermal endovenous procedures and to the care of lower limb ulcers especially during detersion phases (▶ **Table 1**).

## Thermal Varicose Treatment and Hypnoanalgesia

Thermal varicose treatment for the treatment of varicose veins of the lower limbs are safe and effective minimally invasive procedures, which are the subject of numerous high-grade recommendations and used in daily practice. They are performed under local anaesthesia. The steps of catheter insertion and tumescent anesthesia are often described [10] by the patient as discomfort, anxiety and pain.

According to the International Association for the study of pain, pain is defined as "*an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms suggestive of such damage*" [12]. Several theories try to explain what hypnoanalgesia is, neuro-physiological or neuro physiopsychological approaches are well documented with authors such as Hilgard, Barber, Peyro, Rainville. What seems to emerge from all this is that during hypnosis it is described a reduction in the inhibition of mental and neurological representations in competition with the implementation of a mechanism that will prevent the painful information from reaching the cortical area that is usually dedicated to it and the implementation of a mechanism to control somato-sensory information. There is no secretion of endogenous opioids during hypnosis.

## Hypnosis during a Thermal Varicose Vein Treatment About the Experience of a French Center

### Preoperative Consultation

The patient for whom an operative indication has been made for thermal varicose vein treatment of one or more varicose venous trunks of the lower limbs will be offered this consultation in the same way as an anaesthetic consultation, which of course was not necessary before (all patients have only tumescent anaesthesia, which can be supplemented according to the patient's state of anxiety by the use of nitrous oxide).

This pre-operative consultation is fundamental. The hypnosis we use is Ericksonian hypnosis, what is its essence is the relationship between the practitioner performing the hypnosis (who can be the surgeon (trained in hypnosis) or another person not practicing the treatment of varicose veins) and his patient. The purpose of this consultation will be to obtain an alliance. It will increase the subject's adherence and participation, decrease resistance and facilitate letting go. A patient who opposes hypnosis according to his own beliefs is not a patient for whom hypnosis is indicated. Similarly, a patient who does not adhere to hypnosis but asks for this technique on the advice of his entourage is not a good indication.

We're gonna have to explain to the patient what hypnosis is and its purpose. It is important that the practitioner who performs hypnosis, especially if he or she is not performing the procedure, knows what is going to happen. This will be important during the pre-operative consultation but also during the procedure in order to detect any undesirable or even harmful effects during the procedure.

The ideal is not to use the term hypnosis repeatedly, because the use that the film industry or show business makes of it, deeply devalues medical hypnosis. It is necessary to speak from experience, to give a concrete example of it, for example the phenomenon of dissociation, the one that allows access to the data center, this is naturally shared by each one of us daily in a controlled environment

▶ **Table 2** The 3 major times of an hypnosis session.

| | |
|---|---|
| induction | restricting the field of consciousness, capturing the patient's attention, mental and intellectual activity and directing towards internalized mental activity |
| trance | a high level of consciousness oriented towards the inner self, associated with an attenuation of external vigilance |
| release from hypnotic state | return to a state of consciousness usual for the subject |

where automatism can take control: for example driving, has it ever happened to you while driving that you get lost in your thoughts? This is natural, however you often don't remember certain sections of the road you have taken while you were in your thoughts, this is called a dissociated state, from which you naturally emerge when you need to. It is the same when you are absorbed by a book or a good movie. It's a spontaneous trance. This dissociation is what the patient will experience during hypnosis, the idea being to give him access to his data center to look for resources that will allow him to control his pain and anxiety. Erickson started from the principle that we are all, from birth, equipped with all the resources we need to face all the situations we will encounter.

In this consultation you will need to take the time to explain the process that will be used, especially the 3 major times of the hypnosis session: induction, trance, exit from the hypnotic state (▶ **Table 2**).

What will also be important in this consultation will be to gather a lot of information about the patient, including what makes him or her happy, the environments in which he or she feels safe. In all these cases there must always be a positive interaction with other individuals, this will help to identify so-called *safe places*, but beware a place where a patient feels good isolated from the rest of the world is said to be a place of avoidance and will not be usable in hypnosis. Ask him/her for details, especially sensory details, the colors of his/her memories, smells, noises...it is important to remember that these are the details that will allow the patient to access his/her data center.

Surgically, the patient will have to be re-explained all the steps of the surgery, and no attempt should be made to reassure the patient about the sensations and pain they may experience. Too many doctors try to minimize, but it is necessary to legitimize the symptoms, to install the patient in reality and not to transform it. This is the price you pay to gain his trust.

## Induction Phase

It's surgery day. This phase will begin as soon as the patient is installed in the operating room and will immediately allow the patient to gain confidence. It is important to keep the conception and the relationship to hypnosis simple. The goal of all hypnosis is to allow the patient to access his resources. It is therefore necessary to connect the patient with himself while stress forces him to control everything. There is no single technique the important thing is to understand the concept, each patient is different.

One technique is to go from the outside to the inside, the patient must become aware of his body. Be aware of the position you are in by reading this article, it is the same thing for a patient. Some examples:

*"You are comfortably settled, you can feel good, You may feel a touch of air, you can see light in this room, you can also close your eyes if you wish."*

*"You hear sounds around you but they do not bother you, let my voice guide you. You can talk if you wish."* Note here the permissive aspect, you have to leave the choice, otherwise resistance will be generated.

*"You feel the contact of your head with the table, you feel the whole of your body, the air that enters your mouth, that flows down your throat and fills your lungs, you feel the air that flows out and leaves room for a new burst...".*

Several techniques exist, of course it is difficult to describe everything here, the important thing is to understand the concept. The objective is to restrict the field of consciousness. Each caregiver during a painful act naturally does this, diverting the patient's attention, directing him towards happy moments in his own life, this is called conversational hypnosis: *"how many children do you have?"*, *"what are you going to do this weekend or during your holidays?"*..

Don't forget that the brain doesn't hear negation. If I say *"Don't think about a red car"* it doesn't work, no need to explain it. By the way, observe it, it is the same with pain, "it's not going to hurt" is not a good approach. It will also often be necessary to reframe the patient and go from "I am anxious" to "I feel anxious". Your goal here is to get the patient's attention. The people working with you need to know this beforehand of course, you need to limit noise and background interactions.

## Hypnotic Trance

The step following induction is the hypnotic trance. It is a state of high consciousness, an inward orientation of the patient with an attenuation of external vigilance. Signs such as a fixed gaze, the tendency that the patient will develop to do what you ask him/her to do, a very high sensitivity to suggestions, paleness... are all signs that indicate that the trance state is installed. The patient may describe sensations of heaviness, lightness, paresthesias, changes in body schema, sensation of being here and elsewhere.

Beforehand, we can agree with the patient on gestures, small movements that will allow us to make sure of his well being in this phase. This is when the patient will be able to access his inner resources. You should not ask the patient to respond to you with words.

To maintain this phase there again many techniques exist. It will be necessary to communicate according to what you have decided with your patient. It is important to keep in mind that for the practitioner there is no need to talk continuously, you must keep a slow pace. You can use the sensitive details given to you by the patient during the initial consultation or use other procedures such as suggestions, questions, confusion, sensory alteration... This phase should start just before the first painful gestures such as catheter insertion but must stop before the thermal ablation. The power of hypnosis should not be underestimated; to de-

prive oneself of the patient's feedback on the phase of application of caloric energy within the vein, which must be painless, would be a mistake and potentially a source of injury. It is also important to keep in mind that the patient is conscious. He must be reassured about what is happening, the practitioner must not let any signs of anxiety appear in his voice, and he must remain congruent (like telling an angry child to calm down by shouting it out, this is often counterproductive). Similarly, the patient may or may not perceive sensations. You will have to accompany them, bring the patient a "neo-reality", for example when you disinfect the operating area, say that he will feel a cold liquid running down his leg, put it in the context of his holidays, with hot weather for example, the patient will then associate this with a pleasant memory.

### Release from Hypnotic State

This step must be systematic, we have to let the patient return to his usual state of consciousness, make him regain awareness of his surroundings, of the operating room, of the people who are there.. It can be suggested that the patient forget the unpleasant moments of the surgery, explain that he will feel tension in the treated area but that this is positive and corresponds to the healing phase. Project him on his future state, on the follow-up consultation. The return is the moment that will allow the patient to regain his ordinary consciousness. It is also a crucial moment because the experience lived in trance will be integrated for the first time in the patient and in his life. Also, at the end of the treatment, the therapist and the patient discuss the effects of the trance on the patient and the therapist interprets them in a way that helps the subject to understand what he or she felt.

Patients will almost always describe hypnosis as a relaxing experience, a moment of well-being. For some the pain for the entire surgery is nil, for others the pain have been transformed by a simple discomfort. However do not forget that some patients refuse and that the failure of the technique outside of your own skills as a hypnotherapist also comes from a bad selection or preparation of your patients. Finally, we can also draw attention to the fact that many publications demonstrate the positive impact of hypnosis on healing and more generally on the improvement of the postoperative phase. These publications can also be found in the obstetrical field. Hypnosis occupies a non-negligible place in pediatrics, but also in palliative care. Emergency departments are increasingly training their nursing staff to manage acute pain.

Side effects are rare. Some mild effects have been described in the literature: Asthenia, dizziness, anxiety, headache, feeling unwell.

## Hypnosis and Training

Each country has its own training courses. In France we have university degrees in medical hypnosis but also private training courses carried out by hospital and private doctors (for example Institut Milton H.Erickson). What is important and fundamental is to ensure the legitimacy of the trainings. In France no obligation is made to the practitioner. Hypnosis is not a refundable act and technically everyone can practice it. In our field, it seems obvious that the training must be framed and recognized. This is undoubtedly more difficult to verify in other fields of hypnosis. It is a powerful tool, it is necessary to know the counter indications, they are generally in the field of psychiatric pathologies but also the language barriers or the refusal of the patient, so it's very important to know who you're offering hypnosis to. You should never improvise yourself to these techniques without training and that this training be validated by your medical authorities. This article gives you a short overview of hypnosis, get closer to your training centers in connection with universities in order to train yourself if you are interested.

## Conclusion

Hypnosis is now widely recognized and used in medical practice. Its history goes back as far as mankind has existed and has undergone many evolutions. Its indications are multiple. During the treatment of varicose veins by thermal varicose treatment, its implementation by a trained team remains simple and allows for a clear improvement in the patient's experience. These varicose treatments are more and more practiced, so it is necessary to have tools to reduce pain and stress. Everything must be put in place to improve the level of pain and anxiety of our patients during these mini-invasive procedure, for which the only essential anaesthesia remains tumescent anaesthesia.

### Conflict of Interest

The authors declare that they have no conflict of interest.

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