Hypnosis and physiotherapy

Hypnose et kinésithérapie

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SUMMARY
Hypnotherapy is now a validated evidence-based science, demonstrated on brain imaging, especially thanks to modern techniques of medical imaging. Imaging studies further enabled the hypnotic state to be described as a specific state of consciousness, differentiating it from other states of consciousness. This state of consciousness is primarily characterized by a state of mental permeability or suggestibility, showing an increased ability to produce desirable changes in motivation, habits, lifestyle, health, perception and behavior as well as modifying physical sensation. Its usefulness is interesting for physiotherapists since hypnosis has higher levels of evidence than many other conventional tools used in physiotherapy. The basic techniques of hypnosis are: the interview which seeks to put the patient at ease, eliminating all preconceived misconceptions about hypnosis and creating treatment expectations that are as positive as possible; suggestion which is the most powerful technique in hypnosis: direct suggestion, indirect suggestion, post-hypnotic suggestion, and self-suggestion; induction which is the process of transition from the usual waking state to the hypnotic state; visualization which consists in a virtual experience of a specific event proposed by the therapist. It is often used by physiotherapists in traumatologic, rheumatologic and neurologic rehabilitation, where efficacy is improved by hypnosis. Hypnosis affects the subconscious, which is the center of emotions, habits and automatisms. The subconscious transmits commands to the unconscious mind, which in return translates these emotions into somatic feelings and reactions. In parallel, the neurophysiology of hypnotic suggestion is currently well-defined, as is the brain permeability associated with increased regional cerebral blood flow in the attentional system of the brain. Furthermore, positive expectation and labeling of “hypnosis” seem to have remarkable effects on the efficacy of the procedure. Clinical randomized controlled studies have shown efficacy on pain in general, tension headache and migraine, temporomandibular pain, chronic low back pain, osteoarthritis and bone and joint pain, fibromyalgia, regional pain syndrome, phantom limb pain, sports rehabilitation, irritable bowel syndrome, stress and anxiety, and many other pathologies. Hypnosis is a powerful and very useful tool in everyday physiotherapy.

Level of evidence. – NA.

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l'habitude, du mode de vie, de la santé, la perception, et le comportement, ainsi qu'une modification des sensations physiques. L'hypnose intéresse le kinésithérapeute dans la mesure qu'elle comporte un niveau de preuve plus important que bien d'autres des outils conventionnels utilisés dans la kinésithérapie. Les techniques de base de l'hypnose sont les suivantes : l'entretien vise à sécuriser le patient, en éliminant toutes les idées fausses préconçues à propos de l'hypnose et créer une attente la plus positive possible ; la suggestion : c'est la technique la plus puissante de l'hypnose ; suggestion directe, suggestion indirecte, suggestion post-hypnotique, autosuggestion ; l'induction : c'est le processus de passage d'état d'éveil habituel vers l'état hypnotique ; la visualisation consiste à vivre virtuellement un événement précisé proposé par le thérapeute. Elle est récemment et fréquemment utilisée par les kinésithérapeutes dans la rééducation en traumatologie, rhumatologie et neurologie, où efficacité est améliorée par l'usage de l'hypnose. L'hypnose agit au niveau du subconscient, le siège des émotions, des habitudes et des automatismes. Le subconscient transmet la commande à l'inconscient qui à son tour traduira ces émotions en réactions somatiques. En parallèle, la neurophysiologie des suggestions hypnotiques est actuellement bien définie, ainsi que celle de la perméabilité cérébrale qui est associée à l'augmentation du débit sanguin cérébral régional au niveau du système attentionnel du cerveau. D'autre part, l'attente positive et l'appellation de « l'hypnose » semblent avoir des effets remarquables sur l'efficacité de la procédure. Les études cliniques ont démontré une efficacité sur les douleurs en général, les céphalées de tension et la migraine, les douleurs temporomandibulaires, la lombalgie chronique, l'arthrose et les douleurs ostéo-articulaires, le syndrome douloureux régional, la fibromyalgie, les douleurs du membre fantôme, la rééducation sportive, la colopathie fonctionnelle, le stress et l' anxété, et bien d'autres pathologies. L'hypnose est un outil puissant et utile pour la pratique quotidienne des kinésithérapeutes.

Niveau de preuve. – NA.
hypnotherapy. We have only chosen the most pertinent ones in order to have a right understanding of this mixed state:

- the French Association of Medical Hypnosis Study (AFEHM) defines hypnosis as "a relational process accompanied by a succession of physiological phenomena, such as a modification of muscle tone, a reduction of sensory perception (dissociation), a focus of attention, in order to connect an individual with the totality of his existence and to get physiological changes, behavior and thinking changes";
- the British Medical Association Committee has defined hypnosis in 1955 as "a temporary state of attention modified among a subject, a state that may be produced by a person where different phenomena may appear, whether spontaneously or as a response to verbal or other stimulus. These phenomena include a change of conscious and memory, an increased susceptibility of the subject to the suggestion and appearance via responses and ideas familiar to him in his usual spirit state. In addition, phenomena such as anesthesia, paralysis, muscle rigidity and flushing changes may in the hypnotic state be produced or eliminated".

Despite these definitions, understanding the mechanisms of hypnosis state remains vague. Only the neurological tests of this state provide a better understanding of these mechanisms. This difficulty in defining hypnosis refers to many factors:

- the state of hypnosis itself is highly influenced by the socio-cultural dimension and individual perception;
- the reliable tools of measurement are used in a relatively recent way in order to understand the neurophysiology of this state;
- the definition and the absolute understanding of hypnosis are closely connected to the understanding of various states of conscious, which in turn are subject to debate [10].

All this leads us to believe that future definitions of hypnosis will further appear in order to better understand neurological phenomena that define the hypnosis state.

The spontaneous states of hypnosis, appearing almost on a daily basis, are no doubt the most controversial points of debate [9], but are also part of the daily clinical discourse of hypnotherapists.

And here are the two most frequent examples:

- the spontaneous hypnosis resulting in an abolition of the auditory message. When you speak to a person largely focusing on a mission, to such extent that he does not hear you and startle after calling him many times: he was on a spontaneous state of hypnosis;
- the negative hallucination that may take place when the eyes do not emit to the brain the presence of an object within your visual field.

We shall discuss successively the following points:

- the basic principles and concepts;
- the principles of hypnosis;
- the field of application.

**BASIC PRINCIPLES**

**The interview**

In hypnosis, the interview is considered as the most important part of a session, since it conditions its success. It seeks to put the patient at ease, eliminating all preconceived misconceptions about hypnosis [11]. In fact, wrong ideas concerning hypnosis are highly frequent and very often not related to reality.

Here are some examples of wrong ideas found in clinical practice: "I am afraid that you are going to make me sleep and I won't know what happened; I don't want to lose control; I am afraid that hypnosis is dangerous; it won't work with me because I have a strong character and hypnosis only works with weak persons" (Fig. 1).

Thus, the main goal of interview is to create treatment expectations that are as positive as possible. A linear relation exists between optimistic expectation and the result of the treatment [12].

During hypnosis courses, a special attention is often paid to the part that includes the techniques of communication and advanced listening, based on body language, neuro-linguistic programming and the latest neuropsychological knowledge of communication.

Some schools of hypnosis recommend the use of suggestibility tests during the interview while others stand against it; an eventual classification of the level of suggestibility may then be practiced during this phase. But regardless of the school, the use of suggestion already starts during the interview (Fig. 2).

**The suggestion**

It is without doubt the ultimate and most powerful technique of hypnosis, whose definition in itself is merged with this latter. We may even talk about an "art of suggestion".

In fact, several physiotherapists use this technique with much talent without even realizing it.

There are many types of suggestions related to various schools of hypnosis (Fig. 3):

- the direct suggestion is a simple expression that includes a proposal/invitation to the patient, with a defined goal, and waits for a near-instant reply. It should be clear, positive and realistic. It is very often used for pain and relaxation;
the indirect suggestion characterizes the Eriksonian hypnosis school. It uses the metaphor to carry the proposal/invitation indirectly, having recourse to the imagination of the patient; the post-hypnotic suggestion is the most used one for long-term results and creates new automations for the patient. It consists of proposing a conditioning: "response by an action X when a situation Y occurs" [13]. Examples: when an unstable situation occurs, the action X may be some sort of muscle contraction; a specific advice to be followed during a risky condition; a posture to be adopted during a sporting gesture or a daily gesture; or an exercise to be done at a definite moment of the day... The conditioning principle is frequently used in physiotherapy but hypnosis makes this procedure clearly faster [13]. Moreover, it allows the therapist to have a valuable positive impact on the patient compliance to follow various advices. In fact, the "Orange flags" or the psycho-socio-cultural and behavioral circumstances condition the results of the majority of consultation motives in physiotherapy. The therapist has little therapeutic tools directing these metrics. The post-hypnotic suggestion proved to be a factual tool of useful changes in the circumstances that deeply condition the success of every treatment.

the conviction or realization suggestion may be either direct or post-hypnotic. It doesn’t have a therapeutic goal. It only leads the patient to realize the powerful effect of hypnosis, reinforcing his optimism regarding the procedure, and thus improving the therapeutic result. Such as the eyelids or a member catalepsy.

the deepening suggestion aims at leading the patient to deepest hypnosis levels. A realization suggestion is also considered as a deepening suggestion.

the self-suggestion aims at teaching the patient to repeat direct suggestions or post-hypnotic ones, in order to strengthen the suggestions stated during hypnosis.

**Induction**

It is the term used in hypnosis to indicate the process of transition from the usual waking state to the hypnotic state (Fig. 4). It includes a series of direct and deepening suggestions that propose most often a deepest relaxation state. It is frequently followed by one or several realization suggestions.

**Visualization**

It consists in a virtual experience of a specific event proposed by the therapist. It is often used by physiotherapists in traumatologic, rheumatologic and neurologic rehabilitation, where efficacy is improved by hypnosis [14]. These techniques do not summarize all the basic techniques of hypnosis, however they are the ones that suit the most the nature of our profession, whose efficiency is supported by a high level of evidence.
PRINCIPLES AND CONCEPTS

The brain flaps
The brain is complicated by its conception but mainly by its phenomenal capacity. Here is a brief summary of the three flaps we use of our brain: the conscious, the unconscious and the subconscious.

The conscious
It is no doubt the part of spirit we are most familiar with since it is “the tip of the iceberg”. The conscious is the sense of awakening, self-awareness and the perception of the environment. It covers all what is rational, logical, analytic, abstract and verbal. It is responsible of everyday missions. It allows us to take decisions, to think, to choose our activities or our actions, to make comparisons or assumptions, to reason, to analyze and to summarize. The information comes through conscious that treats and filters them. The conscious is involved every time we need reasoning and represents the willingness in the human spirit. Olivier Lockhart summarizes this concept as follows: “The conscious is the state of being and of perception where we ordinarily live” [15].

The unconscious
The unconscious is the guardian of our existing and automates our actions. It is on a continuous alert; it is the cradle of the mechanisms of defense and solutions we think of to resolve a problem. We use the unconscious without even realizing. It guarantees the control of all automatic biological functions, such as respiration or heartbeats and immune system. It manages as well all automatic actions or reactions we do without thinking of, like driving a car while thinking about another thing for example.

The subconscious
The subconscious is represented as being the “hard disc” of our brain that memorizes all the data and redistributes them to our conscious when needed. The subconscious records all what we see, hear and live, while being neutral and not reasoning. Our entire environment, all the feelings we experience are recorded by our subconscious that stores as well all the perceptions of our five senses. Childhood is of a particular sensitivity and importance for the development of subconscious. Thus, negative or false beliefs, sometimes destructive or disabling – voluntarily or involuntarily transmitted to a child – are stored and gradually become as restraints and inhibitors for the development of the adult. It has been found that subconscious controls, through a vegetative nervous system and its correlation with the cerebrospinal system, the whole physiology and automatism of the human body [16]. Finally, subconscious is the base of instinct, survival and emotion [17]. The subconscious is the center of the brain, it acts on our decisions and our choices that we think are stemming from the conscious part of the brain.

Likewise, the subconscious transmits the order to the unconscious that in turn translates these emotions via somatic reactions (Fig. 5). Hypnosis works at this level of the brain.

Depth levels
There are different levels of depth in hypnosis depending on the subject. Susceptibility to hypnosis is usually classified as “high”, “middle” and “low”. One of the key factors of development of researches about hypnosis has been the set-up of scales for reliable measures of susceptibility to hypnosis. The scales aim at defining the depth level of hypnosis. Many scales were developed with various properties. There are qualitative and quantitative scales.
Among the qualitative scales, the best-known ones are those of Braid (1843), Liebault (1866) and Biernhein (1891). These scales remained vague at both the administration conditions level and evaluation criteria. Among the quantitative scales, those of White (1930), Davis and Husband (1931) and Friedlander and Sarbin (1938), however, the non-standardization of induction and the ambiguity of evaluation criteria made the scales unsatisfying. The most reliable scale of suggestibility to hypnosis is the one of Waterloo-Stanford Group Scale of hypnotic suggestibility (WSGS). The test consists of a list of standardized suggestions, followed by questions, allowing measuring the subject hypnotisability and the responsiveness to various stimulations. The analysis of EEG recurrence quantifiers and the analysis of brain activity by EEG both allowed demonstrating high reproducibility, validity, loyalty and sensitivity [18–20].

Suggestion and permeability
It is of high interest to demonstrate the influence of suggestion used during hypnosis since the changes of brain activity depend on the semantic content of suggestions.

Auditory suggestion
In 1998, Szechtman and colleagues used imagery by PET scan to study the brain effect of positive auditory hallucinations in hypnosis, in other words the perceptions of sound in the absence of auditory stimulation. The authors note an activation of areas 41 and 42 of Brodmann in subjects actually stimulated and hallucinated in relation to the control group [21].

Visual suggestion
Concerning visual stimuli, Kosslyn shows, during a suggestion of a color stimulus under hypnosis, the bilateral activation of occipito-temporal gyrus or area 37 of Brodmann. The changes, stemmed from hypnosis in the vision or perception of colors, were accordingly correlated to a change in the visual cortex. Furthermore, imagination activates only the right occipito-temporal gyrus and not the left one, which reinforces the idea that hypnosis is not just a mental imagery activity [22].

Analgesia suggestion
Crawford highlighted that the effort needed under hypnosis in order to control ischemic pain causes an increased regional cortical blood stream. The regions in question seem to be the anterior cingulate cortex and the anterior temporal cortex. Under hypno-analgesia, the pain control suggestion reduces the evoked potentials within these regions of the suggestible subject [23]. Rainville and colleagues wanted to highlight the characteristics of the anterior cingulate cortex. Hypnosis has been used as a cognitive tool to modify the unpleasant sensation of pain. The sensory and affective dissociation of pain were obtained by hypnotic suggestions, in order to increase or decrease the pain without however changing the perception of the painful sensations intensity. Researches about the increase of regional cerebral blood flow were focused on the right side of the areas S1, S2, ACC and IC, in order to confirm that only these limbic regions are modified during the control of the painful emotional component. The analgesia and hyperalgesia suggestions under hypnosis modify the perception of the pain emotional component as well as the cerebral blood flow in the regions involved. The work required under hypnosis to control this component causes an increase of the cingulate cortex blood flow [24].

Motor suggestion
The suggestions influencing the movement lead to believe that the motor nervous system is impacted by hypnosis. In fact, the power of an executed mission may be increased following a hypnotic suggestion. The motor suggestions increase the corticospinal excitability [25]. The hypnotic suggestion of motor imagery ranges from the motor imagery alone; in fact the hypnotic suggestion involves as well a modulation of the function of the thalamic control exclusive to the hypnotic state [26].

Suggestion and automation
The hypnotic suggestion enjoys a powerful impact over automation and de-automation [27]. It facilitates the action of expressing a response X when the situation Y occurs [13].

Brain permeability
The increase of mental absorption during hypnosis is associated to the increase of regional cerebral blood flow within a definite system, distributed at the level of cortical and subcortical structures called the "brain attentional system" [3].

Expectation
During the first session, the subject doesn’t know what to expect, he is filled with concerns that may be questionable, wrong or right. As the therapy progresses, the patient's outlook regarding the therapy and the therapist changes. This change of perspective leads to the progress and improvement of treatment under hypnosis [12]. The other aspect of expectation is the one of the patient in order to be involved in his therapeutic journey. Hypnosis and self-hypnosis may help in this respect [28].

Appellation
Another interesting approach concerning a modification of the suggestibility has been looked for related to "hypnosis" label. Ghandi and Oakley introduced a series of eight standard tests of suggestions before and after the administration of hypnotic induction. They told half of the participants that induction was hypnotic, while the term "hypnosis" wasn’t mentioned to the other half but replaced with the term "relaxation". These two authors noted that induction of the "relaxation" group resulted in a modest increase of suggestibility, but that the suggestibility increase would have been very significant if labeled "hypnosis". These facts suggest that the perceptions of an individual and his expectations vis-a-vis a hypnotic procedure may have remarkable impacts on the efficiency of the procedure [29]. Another study has shown that the use of the term "hypnosis" to describe a recording of relaxation has given better results compared to the same recording called "relaxation". This "hypnosis" recording has increased the feeling of being hypnized and decreased the pain more. To conclude, hypnosis does not facilitate in itself the reduction of pain while the label "hypnosis" reduces actually the pain [30].
Cooperation principle
For Milton Erickson, “without the full cooperation of the patient, the therapeutic results may be delayed, distorted, limited or even hindered”.
Every person could be hypnotized. However, hypnosis doesn’t function without the willingness, the cooperation and the high spirits of the patient: willingness to subject and willingness to reach his goal [31].
The duration of the hypnosis session depends on the cooperation of the patient and his acceptance of suggestions [32].

Fields of application
The efficiency of hypnotherapy is actually recognized by a large number of pathologies. It is starting to be part of recommendations for the treatment and improvement of many diseases in medical and paramedical fields.

Pain
Several randomized controlled clinical trials have shown that hypnosis had a real efficiency over pain.
In 1977, Stem’s team compared the efficiency of hypnosis, acupuncture, morphine, Diazepam, aspirin and placebo in dealing with pain. Hypnosis proved to be the most efficient way to alleviate pain [33]. The results of this study show that, concerning the chronic and acute pains, analgesia under hypnosis results in a more important reduction of pain against the absence of treatment or the standard treatment.
The hypnosis is often more efficient than non-hypnotic interventions (e.g.: education, supportive therapy) in alleviating the pain [34].
A meta-analysis has evaluated the efficiency of hypnosis in dealing with chronic pain. The hypnosis has shown a greater effect than other psychological interventions and standard treatments to lessen a chronic pain [35].

Chronic low back pain
In a comparative study on 17 individuals, Mc Cauley has demonstrated that hypnosis and relaxation had a significant alleviation of pain measured by McGill Pain Questionnaire and the visual analog assessments of pain, and that self-hypnosis was more efficient over low back pain than the simple education information of the back, even if associated with a biofeedback [36].
Fifteen participants in an experimental study noted, after 3 hypnosis sessions, an alleviation of their chronic pains. According to the authors, hypnosis should be introduced at early stages as a complement to medical treatment, at the very start of the pain before it becomes chronic [23].

Arthrosis and joint pains
Within the framework of randomized controlled clinical trials, and following hypnosis sessions, 19 patients suffering from arthritis noticed a clinical and statistically significant reduction of pain, anxiety and depression, as well as an increase of immunoreactive materials, similar to the beta-endorphin [23].
The randomized controlled trial of Gay and colleagues have distributed 36 patients suffering from knee osteoarthritis and/or arthrosis of the hip within 3 groups (a “hypnosis” group, a “relaxation of Jacobson” group and a “control” group). A 56% (EVA from 4.16 to 1.97) reduction of pain was observed after 4 weeks in the group “hypnosis”, 31% in the group “relaxation” (EVA from 3.68 to 2.37) after eight weeks. A reduction of painkilling consumption was also noted within these two groups [37].

Temporomandibular pains
The results of Simon and Lewis study suggest a significant reduction of the frequency and duration of pain and a daily functional improvement. Analyses show that these gains were maintained for 6 months after the treatment. Moreover, after the hypnosis treatment, patients reported a significant reduction in the use of medicines [38].
Hypnosis was more efficient than the education/advice to alleviate the tenderness to palpation. Only the patients of the group “hypnosis” reported a significantly high reduction of the pain intensity: a 57% reduction of the current pain intensity and a 51% reduction of the worse pain intensity, compared to the patients of the education/advice group [39].

Fractures
Hypnosis had the power to encourage the fracture healing, at both anatomic and functional level [40].

Sport
Hypnosis is a procedure during which a health professional suggests a change in sensations, perceptions, thoughts or behavior.
The visualization under hypnosis allowed the professional gymnasts to carry for the first time-complicated maneuvers they worked on for more than one year. The gymnasts were able to eliminate techniques errors, increase their flexibility and likely concentrate the strength [41].
Another study sought to describe the use of hypnosis to improve sportive performance: the group “hypnosis" was more efficient and achieved better results than the control group. Another study shows that hypnosis may be used to improve and maintain the self-efficacy and performance of volleyball players [42]. There are researches implying that hypnosis significantly improves visualization and performance of athletes [14].

Complex regional pain syndrome
There is an article that explores some promising results of hypnosis on three persons suffering from complex regional pain syndrome. The author discusses the role of hypnosis and its relation to medical treatment [43].

Tension headaches and migraines
Hypnosis is more efficient in treating chronic migraines than treatments based solely on pharmacologic approaches. Among 23 patients treated with hypnosis, 10 noted a significant reduction in the severity and number of attacks, while within the control group, consisting of 24 patients treated with medicines, only 3 felt better. After one year, the number of patients in the group “hypnosis” experiencing no headache for more than three months was significantly elevated [14].
In 1992, Gutfeld and Rao divided into two groups ("hypnosis" and "control") persons suffering from migraines and less responsive to conventional treatments. Hypnosis helped
reducing the occurrence and duration of headaches as well as the intensity [44,45].

The improvement of migraine patients has also been confirmed by subjective assessments collected through questionnaire, with a high reduction of anxiety [46]. In Netherland, patients suffering from tension headaches participated in a clinical trial assessing the efficiency of hypnosis and self-hypnosis; the results have shown alleviation among all participating patients and a greater spacing between migraine attacks.

Through a focused hypnosis, we came to reduce the impact of encouraging factors or triggers (stress and emotions being the most frequent triggers of an attack) on those rebel migraine patients, where two thirds (62%) were relieved [54]. Likewise, specialists of National Institute of Health (NIH) have demonstrated that hypnosis may be efficient for the treatment of some chronic pains, namely tension headaches and migraines; the study concluded that hypnosis allows the patient to totally avoid side effects, adverse effects and the long term expenses related to the consumption of medicines [48].

**Fibromyalgia**

Haanet and colleagues compared the efficiency of hypnosis to that of physiotherapy on 24 patients. The "hypnosis" group showed a subjective improvement of pain, and the only authorized consumption of paracetamol during the experiment was reduced by 80% within the "hypnosis" group compared to only 35% within the "physiotherapy" group. Hypnosis proved to be better than physiotherapy on both morning fatigue and sleeping disorder, as well as muscle pain and overall impression of the patient [49]. The study of Grondahl and colleagues demonstrates that the hypnosis treatment may have a positive effect on pain and quality of life of patients suffering from chronic muscle pains; the effect of the treatment seems to persist for at least one year [50].

In the study of Castel and colleagues, patients suffering from fibromyalgia were randomized within three groups (hypnosis with analgesic suggestions, hypnosis with relaxation suggestion and only relaxation). The three techniques reduced the intensity of pain (EVA), and the sensitive and emotional components of pain analyzed with pain evaluation questionnaire of McGill, however only hypnosis with analgesic suggestions has shown a remarkable effect on the intensity of sensitive component [51].

**Phantom limb pain**

The hypnosis seems to be a useful complement to strategies developed to treat phantom limb pains [52].

**Irritable bowel syndrome**

According to the "Clinical Psychology Division of American Psychological Association", hypnosis is the technique with the highest level of acceptance, for being both efficient and specific for irritable bowel [53]. In addition to the alleviation of the symptoms of irritable bowel syndrome [54–57], hypnotherapy highly improves the life quality of patients and reduces periods of work absenteeism [58]. According to another study, the effects of hypnosis last for at least five years [59].

**Stress and anxiety**

Hypnosis may be used to better control anxiety-related symptoms through relaxation. It allows the patient to anticipate the events that trigger anxiety. These different uses of hypnotherapy may be either exclusive or complementary [34]. According to Dr. Stanley Krippner, "hypnosis focused on stress reduces its effects by 63% within 3 weeks of practice". Stress hormones, such as adrenaline, halved after a 15-minute session of hypnosis [60].

**Burns**

Paterson and colleagues have studied three groups of burns: hypnosis, psychotherapy and analgesic alone. The group "hypnosis" shows the greatest reduction of pain; this difference is significant [61].

Wakeman and Kaplan weighed hypnosis versus analgesic medicines: regardless of the extent of injuries, hypnosis proved to be efficient on pain by encouraging less analgesic intake [62]. Another study has shown that pain in the group "hypnosis" was significantly lower than in the control group, and has reported a significant reduction of basic pain [63–66]. There was a significant reduction of a big number of trauma revivification within the "hypnosis" group but not the control group. Other works support the efficiency of hypnosis in managing the pain and revivification of trauma and burns [64].

**CONCLUSION**

Hypnotherapy has become an approach scientifically based on increasingly solid evidences. It also benefits from a definition by brain imagery well specified and different from any other state of conscious. A great part of the population may benefit from "neural benefits" of suggestions and mental permeability. Nowadays, bibliographic researches don't disclose scientific studies in all fields of rehabilitation. Unfortunately, a big part of available therapeutic tools in physiotherapy offers very weak evidences, while hypnotherapy is represented to us, physiotherapists. It offers an interesting efficiency in a number of application fields.

Many among us have already used (from their personal experience) suggestion, which is the main tool of hypnotherapy (the hypnosis training highly focused on the art of formulating and using suggestions). So why not deepening some and integrate it in our practice?

**Disclosure of interest**

The authors declare that they have no conflicts of interest concerning this article.

**REFERENCES**


Banyan CD, Kein GE. Hypnosis and hypnotherapy. BHCTS; 2001, p. 57.


Murphy J. La puissance de votre subconscient. Les éditeurs de jour; 1966, 141 p.


Murphy J. La puissance de votre subconscient. Les éditeurs de jour; 1966, 141 p.


Murphy J. La puissance de votre subconscient. Les éditeurs de jour; 2013.


