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How does hypnosis work?

by Mark Tyrrell

The research & science
Behind hypnois and hypnotherapy



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How Does Hypnosis Work?

The Research & Science behind Hypnosis and Hypnotherapy

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Introduction

The word 'hypnosis' has always had a bit of mystique about it. Swinging watches, loss of control, catalepsy, hallucinations – all that kind of thing.

It's a shame that hypnosis has become more widely understood as 'entertainment' than as the powerful tool it is to change mood, overcome psychological problems and ease – and sometimes even cure – many physical problems. Hypnosis is also a wonderful way to maximize performance in any field.

There's more to it than hypnosis

Having said that, no hypnosis session – whether live or via download – is just about the hypnosis.

Improving human performance or addressing emotional and psychological difficulties always involves taking account of other psychological factors, such as how thoughts are framed and the habits people already have. At the hypnotherapy site I co-founded, our downloads always include important non-hypnotic elements that, combined with the hypnosis, make the overall effect more powerful. Anyone who uses hypnosis to help people needs to keep up to date in all areas of psychology.

Hypnosis has been used as a tool for positive change and healing for thousands of years¹. In modern times, the use of hypnosis as a therapeutic tool has become widespread and has also been subjected to intense scientific research. Hundreds of studies show just how powerful hypnosis can be. This short eBook will highlight some of the research into the power of hypnosis, to reveal the science and research supporting this little-understood therapeutic tool.

Scientific recognition of hypnosis

Clinical hypnosis has a good scientific pedigree and is an essential tool in helping overcome all kinds of emotional difficulties². It has proved difficult to define 'hypnosis' precisely, so much so that some have asserted that it is nothing more than 'role playing'. However, PET scans of hypnotized subjects have shown clearly observable changes in brain functions³. In this eBook I want to draw attention to some of the research findings that support why hypnosis is such a valuable tool.

1- The ancient Egyptians had 'temples of sleep' (see *'Egyptian contribution to the concept of mental health'*, Prof. A Okasha, *Eastern Mediterranean Health Journal*, Volume 7 No. 3, May 2001, 377-380) and the Greeks had shrines of healing, where patients were given curative suggestion while in an induced hypnotic trance (see *'Medicine in the Greek World 800-50BC'* in *The Western Medical Tradition: 800 BC to AD 1800*, Lawrence I. Conrad, Cambridge University Press, 1995). Hippocrates (430 BC) was aware of the importance of harmony between mind and body.

2- The American Medical Association approved hypnosis as a therapy in 1958 (*AMA Proceedings, JAMA, September 1958: 57*), and the American Psychiatric Association followed in 1961. Since then, numerous reviews have provided evidence about when this therapy is effective.

3- David Spiegel, Professor of Psychiatry and Behavioral Sciences at Stanford University in California, conducted a study (presented at the American Association for the Advancement of Science conference in 2002), in which Professor Spiegel's team used a scanning technique called positron emission tomography (PET) to examine the brains of eight people who had been hypnotized. The volunteers were shown a colored grid similar to a Mondrian painting and were asked to imagine the color draining from the picture to leave only black and white.

Hypnosis for healing, pain control and immune response

People often talk about the 'mind-body connection', knowing the mind can soothe the body (and trouble it too!). There is scientific evidence that backs this belief up, showing that hypnosis can powerfully use the mind to influence the body.

For example, a 2007 study found that women who were hypnotized before undergoing a breast biopsy or lumpectomy required less sedation during the procedure, and experienced less pain, nausea, and emotional distress afterward⁴.

Hypnosis has been found to be effective when treating acute pain after accidents⁵ and for chronic long term pain or disease,⁶⁻⁷ as well as for skin conditions⁸. There is also evidence that hypnotic imagery can enhance the workings of your immune system.

In a study at Washington State University, a group of volunteers were given hypnotic suggestions specifically to boost their immune systems. Another group received only relaxing suggestions, or no suggestions. Their levels of T- and B-cells (special defense cells) were measured. Those who had received hypnotic suggestions showed significant increases in their levels of protective cells⁹. This shows that hypnosis can have a profound beneficial effect on the workings of your body.

Hypnosis for anxiety, fears and phobias

Hypnosis has long been used to overcome fear and anxiety¹⁰ and also to quickly and comfortably cure phobias. Many hypnotherapists use disassociation, a powerful hypnotic technique, which has been shown to reduce fear by making troubling memories feel comfortable and much 'safer'. A good hypnotherapist can make overcoming fears and anxiety an entirely comfortable process.

Researchers at the Stanford University School of Medicine carried out a study on children who were (not surprisingly) anxious about painful medical examinations. Forty-four children participated. All had been through at least one distressing examination in which a catheter was inserted into the bladder.

The PET scans, which measure blood flow and activity in the brain, showed that the subjects started to see the image in black and white. Blood flow and activity were noticeably reduced in the parts of the brain that deal with the perception of color, while the areas that process grey-scale images were stimulated. When the experiment was reversed, with the hypnotized subjects asked to see a grey-scale grid in color, similar results were seen: the PET scans showed a clear stimulation in the color centers of the brain, even though the image was black and white. (See 'Hypnotic Visual Illusion Alters Color Processing in the Brain', Stephen M. Kosslyn, Ph.D., William L. Thompson, B.A., Maria F. Costantini-Ferrando, Ph.D., Nathaniel M. Alpert, Ph.D., and David Spiegel, M.D., Am J Psychiatry 157:1279-1284, August 2000)

4- See: Spiegel D. "[The Mind Prepared: Hypnosis in Surgery](#)," *Journal of the National Cancer Institute* (Sep. 5, 2007), Vol. 99, No. 17, pp. 1280-1

5- The famous Irish surgeon Dr Jack Gibson conducted over 4,000 operations during his long career in emergency rooms using hypnosis as the only anaesthetic. (See the [BMJ Obituary](#) piece published after Gibson's death in 2005).

6- See: Jan Robert Grøndahl and Elin Olaug Rosvold, '[Hypnosis as a treatment of chronic widespread pain in general practice: A randomized controlled pilot trial](#)', *BMC Musculoskeletal Disorders* 2008, 9:124

7- The Autumn 2009 issue of the journal *Pediatrics* published a study which found that [children can greatly reduce abdominal pain by using self hypnosis](#). See: Miranda van Tilburg, Ph.D., Denesh K. Chitkara, M.D., William E. Whitehead, Ph.D., Nanette Blois-Martin, and Martin Ulshen MD, '[Audio-Recorded Guided Imagery Treatment Reduces Functional Abdominal Pain in Children: A Pilot Study](#)', *PEDIATRICS* Vol. 124 No. 5 November 2009.

Chemical anesthesia isn't used with this procedure and children report great fear when they have to undergo it.

About half the children received self-hypnosis training while the other half received routine care, which included a preparation session with a recreational therapist who taught some breathing techniques. The group who were taught self-hypnosis reported much less anxiety and the examinations in their group even took less time¹¹.

This research shows how stress can be greatly diminished using hypnosis.

Hypnosis for motivation

Procrastination, fear of success and even plain laziness or lack of motivation for whatever reason, can all be helped immensely by hypnosis when it is used well. One highly successful technique is the principle of third person motivational visualization. Research has shown that people are more likely to actually do something they've hypnotically rehearsed¹². It is important that they don't just imagine doing it, but actually 'observe' themselves 'from the outside' performing the activity while under hypnosis.

Hypnosis can be used for all kinds of motivational issues, ranging from getting out of bed, starting a business, practicing a musical instrument and getting slimmer and fitter, all the way to feeling motivated to learn and change.

Hypnosis for sexual performance

Hypnosis can be used to improve an already good sex life into a great one or to overcome many of the common sexual problems such as impotence, lack of libido (in both men and women), premature ejaculation and sexual inhibition. Of course, there can be many influences for these problems, but at the heart of many sexual problems is anxiety, and, as we know, hypnosis is an excellent way to diminish stress and fear.

But it's also been found that hypnosis can help increase enjoyment¹³ and enable people to gain control of their bodies¹⁴.

8- Clinical trials have shown that hypnotherapy offers relief for dermatitis sufferers. Researchers at the Barnsley District General Hospital in the United Kingdom performed a study to show the affects of hypnotherapy on patients with atopic dermatitis. 18 adults with heavy AD, which had been resistant to standard medical treatments, and 20 children with severe AD were tested for the study. Almost immediately, all but one participant started showing improvements. The treatment lasted throughout an 18-month period of time and improvements remained constant throughout the next two clinical testing appointments following the initial session. Of the children, 10 experienced immediate relief from itching and scratching, 9 had an increase in calmer sleeping patterns, and 7 showed improvements in their general moods. See: A.C. Stewart and S.E. Thomas, '[Hypnotherapy as a treatment for atopic dermatitis in adults and children](#)', *British Journal of Dermatology*, Volume 132 Issue 5, Pages 778 – 783, May 1995

9- See: Ruzyla-Smith, P., Barabasz, A. F., Barabasz, M., & Warner, D. A. (1995). [Effects of hypnosis on the immune response: B-cells, T-cells, helper and suppresser cells](#). *American Journal of Clinical Hypnosis*, 38(2), 71-79.

10- One study conducted in Belgium in 1997 found that not only were hypnotized patients much less anxious and more optimistic before and after a medical procedure but they also required much less anesthetic. Hypnotized subjects suffered much less anxiety and fear even than patients who had received relaxation training. See Faymonville ME, Mambourg PH, Joris J, Vrijens B, Fissette J, Albert A, Lamy M. [Psychological approaches during conscious sedation. Hypnosis versus stress reducing strategies: a prospective randomized study](#). *Pain*. 1997 Dec;73(3):361-7

11- See Lisa D. Butler, PhD, Barbara K. Symons, BA, Shelly L. Henderson, MA, Linda D. Shortliffe, MD and David Spiegel, MD. [Hypnosis Reduces Distress and Duration of an Invasive Medical Procedure for Children](#). *PEDIATRICS* Vol. 115 No. 1 January 2005, pp. e77-e85

Hypnosis for sporting performance

While most research into hypnosis focuses on hypnotherapy, there's also proof that hypnosis can help you master or perfect a skill, giving you an extra edge.

Hypnosis has long been used to improve focus, reaction time, sporting confidence and even physical strength. Hypnotic practice of new skills can also increase skill as much, if not more, than actual practice. You've probably heard about the famous basketball study in which players taught to visualize a free throw radically improved their skills without physically touching a basketball¹⁵.

A study published in 2007 found that hypnotic visualization can increase muscle strength almost as much as actual exercise. Thirty male athletes, from different sports, were randomly assigned to perform mental training of their hip flexor muscles, to use weight machines to physically exercise their hip flexors, or to form a control group which did neither. The hip strength of each group was measured before and after training. Mental practice improved strength by 24%, as compared with 28% for physical practice¹⁶.

Of course, hypnotic sporting rehearsal should not replace actual practice, but as an added training tool it can massively improve your game or workout.

Hypnosis for self esteem and self confidence

Emotional problems stem not just from what people think but from how they use – or, more accurately, misuse – their imagination. People imagine all kinds of damaging things about themselves. Therapeutic hypnosis uses the imagination constructively to embed self confidence and encourage a healthy sense of who you are and what you can be. Research shows that socially anxious people, for example, focus less on other people and more on their own feelings¹⁷. So one of the approaches we use in our social confidence related sessions is to encourage outward focus during social situations. This increases confidence as a byproduct of focusing in the same way that naturally self confident people do.

12- An Ohio State University study found that people were much more likely to actually vote in the 2004 presidential election after visualizing themselves voting from the perspective of an outside observer. 146 Ohio State University undergraduates were told to imagine themselves voting from one of two perspectives. Some saw themselves as a third party would—as if they were watching a movie of themselves going to the polls. Others were told to use a first-person perspective—as if they were experiencing voting through their own eyes. The study found that 90 percent of those who had visualized themselves from an outsider's perspective reported voting, while only 72 percent of those who imagined voting from a first-person perspective did. Additionally, those who used the third-person perspective reported feeling more strongly about the importance of voting. The results were similar among George W. Bush and John Kerry supporters. See: Lisa K. Libby, Eric M. Shaeffer, Richard P. Eibach, and Jonathan A. Slemmer. *Picture Yourself at the Polls: Visual Perspective in Mental Imagery Affects Self-Perception and Behavior*. *Psychological Science* Volume 18 Issue 3, Pages 199 – 203.

13- Zilbergeld, Bernie; Kilmann, Peter R. *The scope and effectiveness of sex therapy*. *Psychotherapy*. Vol 21(3), Fal 1984, 319-326.

14- C. Simonelli PhD, D. Bonanno PhD, P.M. Michetti MD and R. Rossi PhD. *Premature ejaculation and dysregulation of emotions: Research and clinical implications*. *Sexologies*. Volume 17, Issue 1, January-March 2008, Pages 18-23

Hypnosis for addictions and bad habits

The National Council for Hypnotherapy recently circulated information about research into the effectiveness of hypnotherapy as a way of stopping smoking.

To investigate the most effective method of stopping smoking, a meta-analysis at the University of Iowa looked at more than 600 studies, covering a total of nearly 72,000 people. The results included 48 studies of hypnosis covering 6000 smokers. They clearly showed that hypnosis was three times more effective than nicotine replacement therapy¹⁸.

Overcoming addictions involves hope and optimism (moving beyond the old 'disease model') of addiction. A good hypnotherapist can successfully treat all sorts of addictions - not just smoking, but drink and drugs addictions, and more modern problems such as addiction to shopping and addiction to exercise.

Hypnosis for instilling new healthier habits

Bad habits can be replaced with good habits. For example, the bad habit of sitting down in front of the TV eating and boozing can be replaced with the good habit of eating well, doing more exercise and limiting alcohol.

Of course, some new habits (such as eating slightly more fruit every day) will be easier to instill than others (such as doing a daily three mile run). It's been said that it takes 21 days to instill a new habit. We know something is a 'habit' when we no longer have to really think much about it. It's now become automatic to practice your instrument or work those muscles¹⁹.

Hypnosis can amplify motivation and, in our experience, greatly speed up the adoption of a new healthy habit.

Hypnosis for childbirth

Hypnosis has long been used to ease anxiety and pain in labor and childbirth. Recent research showed that women who had used hypnosis for childbirth even seemed to have healthier babies²⁰!

15- See: Clark, L.V. *Effect of mental practice on the development of a certain motor skill. Research Quarterly*. 31: pp 560-69, 1960. We could not find the original article, or an abstract, online (please let us know if you come across it).

16- See: Erin M. Shackell and Lionel G. Standing. *Mind over Matter: Mental Training Increases Physical Strength. North American Journal of Psychology*, 2007, Vol. 9, No. 1 189-200

17- Many studies have found that people with low social confidence have less detailed recall about people they've been speaking with than those who are socially confident. See: Hope, Debra A; Sigler, Karen D; Penn, David L; Meier, Valerie, *Social Anxiety, Recall of Interpersonal Information, and Social Impact on Others. Journal of Cognitive Psychotherapy*, January 1998.

18- Viswesvaran, Chockalingam; Schmidt, Frank L. *A meta-analytic comparison of the effectiveness of smoking cessation methods. Journal of Applied Psychology*. Vol 77(4), Aug 1992, 554-561.

The findings of a systematic review and a randomized controlled trial demonstrated significantly improved outcomes among women who used hypnosis for childbirth²¹. These include enhanced pain relief, diminished need for labor interventions, and improved newborn outcomes. A meta-analysis carried out in 2004 found that significantly less pain medication was needed by women who used hypnosis. In other studies the hypnosis prepared group had significantly lower use of any analgesia or epidural anesthesia²². The researchers concluded that “outcomes are consistently in favor of hypnosis”. They suggested hypnosis could be considered an effective alternative to epidural anesthesia because it is less invasive, not associated with serious complications, and many women seem to find it a more satisfying way of giving birth, handing control back to the mother.

Hypnosis for fertility

Hypnosis can be used to encourage conception and increase fertility (in men and women). People who find that it is sometimes not as easy to conceive as they had expected experience a range of difficult feelings and high levels of stress. Such feelings further militate against conception. Hypnosis can help both partners to relax and thus enhance the body’s own ability to give conception the best possible chance. In 2004 an Israeli study involving 185 women showed that the success rate of IVF treatments doubled in a test group (from 14% to 28%) when the subjects underwent hypnosis during implantation²³.

Hypnosis for insomnia and sleep disorders

Insomnia and other sleep disorders can be caused and, in turn, worsened, by anxiety and stress. So a vicious cycle of stress, exhaustion and insomnia can build up, with one feeding off the other. People turn to hypnosis because it offers a natural approach to calmness and rest, without the side effects some pharmaceutical drugs have. As far back as August 1973, 37 college students with insomnia were assigned one of three treatments for a study:

- No treatment
- Progressive relaxation (with no other suggestions)
- Hypnotic relaxation (with suggestions to sleep better).

19- A study at University College London recruited 96 people who were interested in forming a new habit such as eating a piece of fruit with lunch or doing a 15 minute run each day. Participants were then asked daily how automatic their chosen behaviors felt. These questions included things like whether the behavior was ‘hard not to do’ and could be done ‘without thinking’. The study found that on average new habits became established within 66 days. This was a mean, however, so some new habits took much longer. See: Phillippa Lally, Cornelia H. M. van Jaarsveld, Henry W. W. Potts, Jane Wardle. How are habits formed: [Modelling habit formation in the real world](#). *European Journal of Social Psychology*, 16 July 2009.

20- Although less often reported, some beneficial effects of maternal hypnosis preparation on newborn well-being are documented in the literature. One RCT found significantly higher newborn Apgar scores among the women who had hypnosis preparation (See: Harmon TM, Hynan MT, Tyre TE. [Improved obstetric outcomes using hypnotic analgesia and skill mastery combined with childbirth education](#). *Journal of Consulting and Clinical Psychology*. 1990 Vol 58 No 5; 525-30). Another RCT reported fewer admissions to neonatal intensive care when the mothers were prepared in the use of hypnosis for labor and delivery. (See: Martin AA, Schauble PG, Rai SH, Curry RW Jr. [The effects of hypnosis on the labor processes and birth outcomes of pregnant adolescents](#). *J Fam Pract*. 2001 May;50(5):441-3). And see also: Cyna, A M, Andrew M I, Robinson J S, Crowther C A, Baghurst P, Turnbull D, Wicks G, Whittle C. [Hypnosis Antenatal Training for Childbirth \(HATCH\): a randomised controlled trial \[NCT00282204\]](#). *BMC Pregnancy Childbirth*. 2006; 6: 5.

21- Cyna, A. M., Andrew, M. I., & McAuliffe, G. L. (2005). [Antenatal hypnosis for labor anesthesia](#). *International Journal of Obstetric Anesthesia*, 14, 365-366; Mehl-Madrona, L. (2004). [Hypnosis to facilitate uncomplicated birth](#). *American Journal of Clinical Hypnosis*, 46,299-312.

After three therapy sessions, the progressive and hypnotic relaxation groups showed significantly greater improvement than the no-treatment controls. And hypnosis proved significantly more effective than just the relaxation training²⁴.

Hypnosis for feeling younger

Stress, worry and anxiety are all very aging; which is one reason why relaxation hypnosis and regular deep rest makes you look and feel younger. And, of course, other bad habits such as smoking, insufficient exercise and poor sleep patterns can all be improved using hypnosis, with the knock-on benefits of looking and feeling younger. But some amazing research also found that 'living in the past' can actually make us feel younger.

Harvard psychologist Ellen Langer conducted a study in 1979 with a group of elderly men to discover if they could feel young again. She had them live in an isolated New England Hotel, refitted to how it would have been twenty years before. The men, in their late 70s and early 80s, were told not to reminisce about the past, but to actually act as if they had traveled back in time. Would 'acting' being younger actually make them feel younger?

After just one week, the men in the experimental group (compared with controls) had more joint flexibility, increased dexterity and less arthritis in their hands. Their mental acuity had risen measurably, and they had improved gait and posture. Outsiders who were shown the men's photographs judged them to be significantly younger than the controls. In other words, the aging process had in some measure been reversed²⁵.

Hypnotherapists can use hypnosis to encourage people to feel younger than their calendar age, to help them regain a 'spring in their step'.

Hypnosis in the treatment of depression

It used to be thought that hypnosis was not suitable for people with depression. Now we know that hypnosis, used expertly, is a wonderful tool in helping treat depression. It helps to still the mind, which is just what depressed people who chronically ruminate need. It calms down the mind and body – extremely helpful, as depressed people always have higher than normal levels of the stress hormone cortisol²⁶.

Hypnosis helps people sleep better, recoup lost energy and rehearse new positive behaviors, as well as building motivation to meet their emotional needs in satisfying ways²⁷.

That's why hypnotherapy sessions focusing on topics such as better sleep, calming anxiety, boosting self esteem and self confidence can all help depressed clients.

22- Cyna, A. M., McAuliffe, G. L., & Andrew, M. I. (2004). *Hypnosis for pain relief in labour and childbirth: A systematic review*. *British Journal of Anaesthesia*, 93, 505-511. See also Guthrie, K., Taylor, D. J., & Defriend, D. (1984). *Maternal hypnosis induced by husbands*. *Journal of Obstetrics & Gynecology*, 5, 93-96

23- See E. Levitas, A. Parmet, E. Lunenfeld, Y. Bentov, E. Burstein, M. Friger, G. Potashnik. *Impact of hypnosis during embryo transfer on the outcome of in vitro fertilization—embryo transfer: a case-control study*. *Fertility and Sterility*, Volume 85, Issue 5, Pages 1404-1408.

Hypnosis and the treatment of anger issues

Anger can be very damaging, and not just to relationships or peace of mind. Chronic anger is the biggest predictor of early death through heart disease; bigger even than chronic smoking. Anger can be thought of as a type of 'negative trance state'. We all have an imagination, but misusing imagination can create problems for us (think: jealousy, hypochondria, pessimism... and anger). Anger can be generated – and aggravated – through misuse of the imagination.

In a study conducted at Stanford Medical School, heart patients were asked to recall times when they had been angry. Although the patients said that the anger they felt on recalling the events was only half as strong as it had been originally, their hearts started pumping, on average, 5% less efficiently. Cardiologists view a 7% drop in pumping efficiency as serious enough to cause a heart attack²⁸.

Imagination and recall are processed through the same parts of the brain. You can generate angry feelings by remembering past anger, or imagining that you are angry. And anger creates very real physical changes. It makes sense to use the imagination constructively via relaxed hypnosis to stop anger being triggered too easily or too often.

In conclusion

Hypnosis has a convincing weight of research study behind it, although it would be interesting to see more done, with the hypnosis being performed by trained hypnotherapists. The more the medical community, and the population at large, understands about the positive effects of hypnosis the more this natural and effective tool will be used.

Hypnosis is not just an 'alternative therapy'; in many instances it is an essential part of treatment.

'How Does Hypnosis Work? - the Research and Science Behind Hypnosis and Hypnotherapy' was written by Mark Tyrrell of [Uncommon Knowledge](#) and [Hypnosis Downloads](#), hypnotherapist, author and psychology trainer.

24- Borkovec, Thomas D.; Fowles, Don C. [Controlled investigation of the effects of progressive and hypnotic relaxation on insomnia](#). *Journal of Abnormal Psychology*. Vol 82(1), Aug 1973, 153-158.

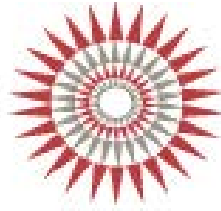
See also: H. Curt Toler. [The Treatment of Insomnia With Relaxation and Stimulus-Control Instructions Among Incarcerated Males](#). *Criminal Justice and Behavior*, Vol. 5, No. 2, 117-130 (1978).

25- See Ellen Langer's book [Counterclockwise – Mindful Health and the Power of Possibility](#) (2009, Ballantine Books) for a full discussion of this and related research.

26- Though depressed people often present as 'flat' and inactive, their levels of the stress hormone cortisol are much higher than normal. See: Nemeroff, C, B (1998) [The neurobiology of depression](#). *Scientific American*, 278,6, 28-35

27- See the marvelous [Treating Depression with Hypnosis](#) by Michael D. Yapko, PhD (Routledge, May 2001)

28- See: Ironson G, Taylor CB, Boltwood M, Bartzokis T, Dennis C, Chesney M, Spitzer S, Segall GM. [Effects of anger on left ventricular ejection fraction in coronary heart disease](#). *American Journal of Cardiology*. 1992 Aug 1;70(3):281-5. There is an informative article about the study on the New York Times website: [Study Documents How Anger Can Impair Heart Function](#). Daniel Goleman. September 2, 1992.



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