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**Suggestible You: The Curious
Science of Your Brain's Ability to
Deceive, Transform, and Heal**

Made by Blinkist



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Maybe these blinks will inspire you to dig deeper, or maybe they're enough to start you thinking and then on to something new. However you read blinks, we hope they help you become an even brighter you.

What's in it for me? Discover the power of your mind's suggestibility.

One of the amazing powers of the human brain is its ability to trick itself. Behind this power lies one simple thing: expectation. In fact, your brain pretty much runs on expectations.

What's more, it doesn't like to be disappointed. So when reality doesn't fit its expectations, your brain prefers to warp and twist reality instead of changing its beliefs.

The key to unlocking this power is suggestion. It's what taps into your expectations, shows you that they can come true, and leads your body to perform astounding feats to make them happen.

In these blinks you'll learn how expectation and suggestion influence the way you feel pain, recover from illness,

and form memories. You'll understand their positive – and harmful – effects. And you'll be equipped with the knowledge to use them to your advantage.

You'll also find out

- what makes placebos such effective pain-killers;
- how stories influence your stomach; and
- why a fake rose could be bad for your health.

Placebos work by tapping into the power of suggestion.

Think back to the last time you took a painkiller. Do you remember swallowing the pill and feeling its soothing effects spreading through your body almost immediately?

If so, you were experiencing the *placebo effect*. Most painkillers take at least 15 minutes to work. That immediate relief many of us feel when we take a pill comes down, not to an actual physical sensation in the body, but to what we *expect* to happen.

The key message here is: Placebos work by tapping into the power of suggestion.

A *placebo* usually refers to a substance that is neutral or inert – like a sugar pill – but still has a positive effect on a patient.

Take homeopathic remedies. The idea behind them is that it's the essence of the medicine that has the healing effect, so if you dilute it with water until nothing of the chemical itself remains, the water would convey the essence and cure the patient. Most doctors agree that it's a placebo. The pills have no active ingredients – or at least not in enough concentration – that could cause the claimed benefits. And yet, for some people, the effects are real.

For example, if you're so depressed you're unable to leave your home, you might be willing to try anything. One woman in this situation went through years of medications and therapy that hadn't done anything to help. Finally, she turned to homeopathy.

When she saw the homeopath, they talked for hours about her life and her condition. It turned out that the woman could relate her sadness all the way back

to one freezing night in her childhood, when she and her family were fleeing the Nazis in Germany. Based on that conversation, the homeopath came up with a solution: a regular dose of melted snow in a vial. Homeopaths believe that like cures like, so it was supposed to reflect the power of that terrifying cold night.

Amazingly, it worked. The woman got better and even started traveling to see her friends. All because of some sips of water in a vial.

What happened there?

The story linking her sadness to that cold night that the homeopath helped the woman create resonated with her deeply. Our stories, after all, are what creates our vision of ourselves and of the world. They shape how we see things. By helping the woman make sense of her feelings through a story that spoke to her, the homeopath helped her

let go of the fears that trapped her
indoors.

The snow in the vial was just a prop. But
it reveals the power of suggestion.

The body has its own chemical arsenal that can enhance the placebo effect.

No one likes pain, and quite sensibly, most of us try to avoid it. Yet, pain plays a crucial role in our survival. It's our body's way of telling us when something is wrong and action must be taken – whether it's a toothache or a snakebite. In short, pain tells you what to do and what to avoid.

But sometimes pain can hang around long after the thing that caused it has disappeared. It's called chronic pain, and it afflicts almost three in ten people in the US.

It's long been known that placebos work particularly well when it comes to chronic pain. It's both a blessing and a curse. Why? Well, it means that it can be easy to relieve pain with unproven treatments – but hard to prove that a

treatment that works is more than just a placebo.

But why is pain so susceptible to the placebo effect in the first place?

The key message in this blink is: The body has its own chemical arsenal that can enhance the placebo effect.

Put simply, your brain already makes the drugs necessary to stop pain, and placebos help the brain release them.

In the case of pain, those drugs are *opioids* – and the brain chemicals that produce them are called *endorphins*. Opioids are well-known for their pain-killing effects, as well as their addictiveness. One of the reasons they're so effective is because the brain produces them itself. And they play a role in many of its core functions, like regulating appetite and the feeling of pleasure. Placebos work by activating the part of the brain responsible for opioid

production and releasing those all-important endorphins. And just like that, the pain is gone.

But endorphins are not the end of the story. Our body has many other chemicals with potential for placebo-enhancing effects.

For example, there are *endocannabinoids* – the same type of chemicals found in marijuana. They help with suppressing pain. And there is the neurotransmitter *serotonin* – which is heavily involved in feelings of happiness. Finally, there is *dopamine*, which is responsible for reward-processing.

What they all have in common is the connection to conditions that are particularly responsive to placebos. These are things like pain, depression, anxiety, nausea and addiction. The good news is that our body already has the resources to overcome them.

Scientists are still trying to unlock the secrets of what makes placebos work for some people but not for others.

During a 2011 trial for a new therapy to treat Parkinson's disease – an incurable condition that robs sufferers of control of their body – there was one patient for whom the treatment seemed to be an outstanding success. Almost all his symptoms went away. He stopped slurring his words, his handwriting got better and he could even go back to work. Finally, after years of searching for relief, he felt like himself again.

Imagine the researchers' disappointment when the results came in. It turned out that the patient had received a placebo. His brain had made the improvements all by itself, without the drug.

The key message here is: Scientists are still trying to unlock the secrets of what

makes placebos work for some people but not for others.

From studies like this, scientists know that some people are much more likely to respond to placebos than others. But they're not quite sure why.

And as if research into the brain wasn't difficult enough, this question is a particularly tough one. That's because it's hard to replicate findings. The same person might respond to one placebo today but not tomorrow. And then a different one might work the day after that. There's just no telling.

There has been some progress though. For example, researchers have discovered certain genes that make a person more likely to respond to a placebo. These genes are involved in regulating the way the brain produces various hormones like dopamine. The search still continues, but the good news is that it's no longer a complete mystery.

In fact, this kind of gene research could make drug trials much easier. If you know in advance who will likely respond to a placebo, you can exclude those people from the trial. And it opens up a whole world of personalized therapies tailored to a person's genetic makeup.

So, the people for whom the drug works will get an effective therapy. And the placebo responders?

Well, they're the lucky ones. They'll actually get more out of any given medicine. That's because their brains are wired to respond to everything – both active ingredients and placebos. So a whole world of alternative therapies is also open to them.

The suggestibility that allows us to benefit from placebos also has a dark side in the nocebo.

In 1886 a woman suffering from severe hay fever and asthma walked into a doctor's office. The doctor, who knew the woman, was aware of her ailments, but he suspected her reactions might have more to do with her "nervous temperament" – which ran in her family – than her physiology. He decided to test her. So before her visit, he put a rose in his office. Predictably, as soon as she came through the door, she suffered a powerful allergic reaction followed by an asthma attack.

Here's the thing. The rose was fake.

So how do you explain the woman's reaction?

That's still unclear to researchers. But one thing is evident. The human mind

has the power not only to heal itself, but to cause harm.

The key message here is: The suggestibility that allows us to benefit from placebos also has a dark side in the *nocebo*.

It's time to meet the placebo's evil twin: the *nocebo*.

Instead of making conditions better, as the placebo does, the *nocebo* causes pain and illness. The woman with the rose is one of the earliest known examples of the effect, but it's as ubiquitous as the placebo.

And *nocebo* effects are much easier to induce. That's because they play into our fears – which are more powerful than our hopes.

Think about headlines in the news. Which ones grab the most attention? Good news is always nice to hear, of

course. But it's the bad news people react to.

For example, during the well-publicized Ebola epidemic in 2014, thousands of people in the US contacted their doctor thinking they had symptoms. But in fact, only four people in the entire country had it, all of whom had either been in the affected zones or had contact with someone who had.

But it doesn't stop with panic-inducing headlines. Nocebos can cause real harm.

One example is the so-called *wind turbine* syndrome. Those who believe in it define it as an illness caused by living near wind turbines. They claim it's responsible for all kinds of problems, from asthma to anemia. Supposedly, the low-pitched, inaudible ultrasonic sound the turbines emit causes them.

In a 2012 study of the syndrome, scientists found that people who heard

good news about ultrasonic noise – for example, that it gets rid of health problems – actually felt better when exposed to the sound, whether or not they heard anything. And those told bad news got symptoms, again, regardless of what they actually heard.

That's not to deny that the symptoms are real. It's just that their cause is not the wind turbines. It's people's own brains.

Hypnosis is a powerful example of human suggestibility.

If you've seen a lot of classic Hollywood movies, you can probably conjure up an image of an evil hypnotist with crazy eyes and swirly spirals, shining a pocket watch in front of some innocent victim's face, programming everyone he meets to do his bidding - rob banks, kill the president, or become his personal slave.

Well, the truth is, it's not exactly like in the movies. But hypnosis does have real effects.

The key message here is: Hypnosis is a powerful example of human suggestibility.

Hypnosis is still surrounded by a lot of myths and prejudices. But despite what Hollywood may have you believe, hypnotists don't have endless power and can't hypnotize you against your will. The

really impressive forms of hypnosis, where someone truly enters a trance-like state, only work on about 10 percent of the population. Another 10 percent are not susceptible at all. And the rest are somewhere in the middle.

What's more, even those who can be hypnotized all experience it differently. For some people, hypnosis is just a more intense form of awareness – like daydreaming or losing yourself in a good book – a state many of us can experience without going anywhere near a hypnotist.

For others, it's much more. So much so, that some consider it an altered state, one that has no equivalent in ordinary experience. Under hypnosis people can hallucinate, lose their power of speech or even have surgeons cut into them without feeling pain.

In fact, pain is an area where hypnosis can be particularly effective. David

Patterson, a researcher at the University of Washington, has used his skill as a hypnotist to help severe burns victims in the emergency room tolerate excruciating medical procedures. He even helped one man who had an ax stuck in his neck. Using hypnosis, Patterson brought him into a state where he went into a trance whenever a nurse touched him on the shoulder.

Such dramatic effects are rare, and hypnosis is difficult to study because it's as much an art as it is a science. Each and every hypnotist has his own unique ways of working the magic. Voice, tone, speech rhythm, and finding just the right imagery to induce the effects are all highly individual, and each step of the process needs to be adapted to how the patient reacts. So experiments are almost impossible to standardize.

Still, Patterson and his team have made some progress studying brain waves, and

found that the effectiveness of hypnosis has to do with the speed of electrical brain waves. In their studies, people who naturally had slower electrical activity in the brain got more pain relief from hypnosis. And since brain waves get faster when we're in pain, it might go some way towards explaining why hypnosis can be so effective for some people.

The phenomenon of false memories shows just how susceptible memory is to suggestion.

If you've ever seen an optical illusion – even something as common as a straight stick looking bent when it's in water – or noticed a blind spot in your vision, you'll know that your brain is not infallible when it comes to sight. But what about your memories?

The key message here is: The phenomenon of false memories shows just how susceptible memory is to suggestion.

You might think of memory as similar to storing data on a hard drive, but actually, it's a process that involves a lot of construction and imagination.

And it happens in three stages.

First, there's the *encoding* stage. That's what happens at the moment when an event is occurring and your brain is taking in everything around you – smells, sights, sounds. It stores them in your short-term memory for the time being any time you consciously notice something – from putting your laundry away to seeing a house on fire.

Then there's the *consolidation* stage. This process is a bit more mysterious, but it's a kind of filing system in your head. Your mind goes through everything that's happened that day and moves anything that seems important into long-term memory. So your laundry probably won't make it, but the house on fire likely will.

The last stage is *retrieval*. That's what happens when you actually remember something. This process is not as straightforward as you might think. It's nothing like pulling a file intact from a

filing cabinet. Instead, every time you retrieve a memory, your brain has to put it together anew. And every time it does, the memory gets a little more frayed and faded.

A false memory is basically an error in one of these stages.

And they're more common than you might imagine. A classic study shows how this works in practice. The morning after NASA's space shuttle Challenger exploded in 1986, researcher Ulric Neisser asked his students where they were when they first heard about it. Around three years later, he asked them again. Pretty much all their answers had changed. When retrieving their memories of that fateful morning, some people now remembered themselves in completely different circumstances and even refused to believe that their earlier accounts were correct. Not only that,

but many of the memories had become much more dramatic.

Suggestibility affects the way we make choices in everyday life.

When you're choosing a bottle of wine to go with dinner, what do you look at? If you're not a sommelier, you probably pick the one with the nicest label near the upper range of your price limit.

Because it'll taste better, right?

The key message here is: Suggestibility affects the way we make choices in everyday life.

Companies use the power of suggestion to make their products taste better to you. Yes, actually taste better, not just seeming to do so. That's what the packaging is for. It creates the expectation of a certain kind of experience – which your brain happily gives you, and makes your wine taste that much better.

And the power of expectation goes even further. In 2010, a researcher did an experiment with milkshakes. She told the participants that she was comparing the effects of a diet shake to a high-calorie one. And she packaged them accordingly. The low-calorie drink got a sober and sensible exterior, while the fatter one came with a suitably luxurious label.

Unknown to the participants, however, both drinks had the same amount of calories.

The researcher then measured the levels of a hormone called *ghrelin* in the participants. This is a hormone our stomachs produce when we're hungry. It's essentially our body's way of telling us to eat.

Amazingly, the people who thought they were getting the diet milkshake, produced more of the hormone than the ones who thought they got the fatter drink. Just thinking that you're not

getting enough calories is apparently enough to make you hungry. In other words, participants' brains were tricking their stomachs based on their expectations of what was happening.

And dieting is not the end of it. Another area where expectation plays a massive role is addiction.

In the US, one in ten people are addicted to something – in most cases, alcohol. It used to be commonly believed that addiction simply came down to a lack of willpower, but now scientists know that it has physiological causes.

And the way those processes work is very much influenced by expectation. People who are addicted get caught in a kind of nightmarish loop. The drug stimulates pleasurable sensations, the brain gets overwhelmed and reduces its production of the hormone dopamine to bring itself back to some kind of balance. And the less dopamine, the less pleasure

you feel. So you need more and more of the drug to get the pleasurable effect.

You can harness the power of expectation to improve your life.

It should be clear by now that expectation is built into who we are and that it can do some astonishing things. And for all of humanity's history, this power has been used in everything from shamanic rituals to faith healings.

Some of those claims may well be dubious, but there are ways you can integrate this power into your daily life.

The key message here is: You can harness the power of expectation to improve your life.

The first thing to understand is that it all depends on the power of storytelling. So if you'd like to experiment with how your own expectations can change your life, you need to know yourself.

Ask yourself, what kind of stories do you find interesting and engaging? What inspires you and in what circumstances? For example, some of us need solitude and meditation, while others thrive in groups. Some people trust ancient wisdom, whereas others believe nothing outside a scientific journal. If you know what captures your imagination, you can find the approaches that work for you. For example, a hypnotist will likely want to hear about your family history – not because it's necessary to cure you, but to find out what kind of stories might resonate with you.

You can also get to know your own suggestibility. For example, if a fizzy drink always makes you feel better, no matter what the problem is, then maybe you're more susceptible to placebos than you might think. You can also get to know the condition you want to heal better, and experiment with things like hypnosis to find out how suggestible you are.

But remember to follow some important ground rules on your journey.

The first one is: don't put yourself in danger. There are all kinds of substances out there that people claim can help you – some of which we know to be poisonous, like mercury. And remember, herbal supplements are generally unregulated, so you don't always know what you're getting – the bottle could contain something completely different to what's on the label. For example, a Canadian study found that as much as 60 percent of supplements contained ingredients not mentioned on the label.

And if you do have a medical condition, don't abandon traditional medicine. Alternative therapies may well offer relief, but without scientifically proven treatments, you could seriously harm yourself.

Your physical well-being taken care of, look after yourself financially too. Don't

bankrupt yourself chasing placebos.
Anyone who asks for hundreds of dollars for things like vitamin infusions or smoke therapies is most likely a charlatan. If you keep that in mind, you won't find yourself in the position of having spent thousands before finding out that conventional medicine is the way to go for your condition after all.

Final summary

The key message in these blinks:

Your brain is an expectation-machine that has an infinite power to respond to suggestion. It's the power that makes placebos and their harmful twin, the nocebo, work. It's also what determines how your body reacts to the world around it and the events that happen. And if you're careful, you can use this power to open up a whole world of alternative remedies.

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What to read next: *The Brain's Way of Healing*, by Norman Doidge

Now that you understand the power of suggestion, you're ready to delve deeper into the brain's healing powers. You've learned that conditions like chronic pain and Parkinson's disease respond to alternative treatments. And you might be wondering about how that works.

In *The Brain's Way of Healing*, Norman Doidge shows the human brain's amazing talent for rewiring its own structure in response to illness. This power can enable it to heal itself and cure a variety of painful and debilitating conditions that confound modern medicine. So if you'd like to know about alternative treatments, hear personal stories of recoveries and learn how you can use simple techniques to stimulate the healing process, head on over to our [links](#) to *The Brain's Way of Healing*.

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