

TEDTalks, David Blaine

How I held my breath for 17 minutes

00:12	As a magician, I try to create images that make people stop and think. I also try to challenge myself to do things that doctors say are not possible. I was buried alive in New York City in a coffin, buried alive in a coffin in April, 1999, for a week. I lived there with nothing but water. And it ended up being so much fun that I decided I could pursue doing more of these things. The next one is I froze myself in a block of ice for three days and three nights in New York City. That one was way more difficult than I had expected. The one after that, I stood on top of a hundred-foot pillar for 36 hours. I began to hallucinate so hard that the buildings that were behind me started to look like big animal heads.
01:08	So, next I went to London. In London I lived in a glass box for 44 days with nothing but water. It was, for me, one of the most difficult things I'd ever done, but it was also the most beautiful. There was so many skeptics, especially the press in London, that they started flying cheeseburgers on helicopters around my box to tempt me.
01:31	(Laughter)
01:32	So, I felt very validated when the New England Journal of Medicine actually used the research for science.
01:42	My next pursuit was I wanted to see how long I could go without breathing, like how long I could survive with nothing, not even air. I didn't realize that it would become the most amazing journey of my life.
01:56	As a young magician, I was obsessed with Houdini and his underwater challenges. So, I began, early on, competing against the other kids, seeing how long I could stay underwater while they went up and down to breathe, you know, five times, while I stayed under on one breath. By the time I was a teenager, I was able to hold my breath for three minutes and 30 seconds. I would later find out that was Houdini's personal record.
02:23	In 1987 I heard of a story about a boy that fell through ice and was trapped under a river. He was underneath, not breathing for 45 minutes. When the rescue workers came, they resuscitated him and there was no brain damage. His core temperature had dropped to 77 degrees. As a magician, I think everything is possible. And I think if something is done by one person, it can be done by others. I started to think, if the boy could survive without breathing for that long, there must be a way that I could do it.
03:03	So, I met with a top neurosurgeon. And I asked him, how long is it possible to go without breathing, like how long could I go without air? And he said to me that anything over six minutes you have a serious risk of hypoxic brain damage. So, I took that as a challenge, basically.
03:22	(Laughter)
03:23	My first try, I figured that I could do something similar, and I created a water tank, and I filled it with ice and freezing cold water. And I stayed inside of that water tank hoping my core temperature would start to drop. And I was shivering. In my first attempt to hold my breath, I couldn't even last a minute. So, I realized that was completely not going to work.
03:50	I went to talk to a doctor friend – and I asked him, "How could I do that?" "I want to hold my breath for a really long time. How could it be done?" And he said, "David, you're a magician, create the illusion of not breathing, it will be much easier."
04:08	(Laughter)
04:12	So, he came up with this idea of creating a rebreather, with a CO2 scrubber, which was basically a tube from Home Depot, with a balloon duct-taped to it, that he thought we could put inside of me, and somehow be able to circulate the air and rebreathe with this thing in me. This is a little hard to watch. But this is that attempt. So, that clearly wasn't going to work.
04:50	(Laughter)
04:54	Then I actually started thinking about liquid breathing. There is a chemical that's called perflubron. And it's so high in oxygen levels that in theory you could breathe it. So, I got my hands on that chemical, filled the sink up with it, and stuck my face in the sink and tried to breathe that in, which was really impossible. It's basically like trying to breathe, as a doctor said, while having an elephant standing on your chest. So, that idea disappeared.
05:23	Then I started thinking, would it be possible to hook up a heart/lung bypass machine and have a surgery where it was a tube going into my artery, and then appear to not breathe while they were oxygenating my blood? Which was another insane idea, obviously.
05:41	Then I thought about the craziest idea of all the ideas: to actually do it.
05:47	(Laughter)

05:48	To actually try to hold my breath past the point that doctors would consider you brain dead. So, I started researching into pearl divers. You know, because they go down for four minutes on one breath. And when I was researching pearl divers, I found the world of free-diving. It was the most amazing thing that I ever discovered, pretty much. There is many different aspects to free-diving. There is depth records, where people go as deep as they can. And then there is static apnea. That's holding your breath as long as you can in one place without moving. That was the one that I studied.
06:28	The first thing that I learned is when you're holding your breath, you should never move at all; that wastes energy. And that depletes oxygen, and it builds up CO ₂ in your blood. So, I learned never to move. And I learned how to slow my heart rate down. I had to remain perfectly still and just relax and think that I wasn't in my body, and just control that. And then I learned how to purge. Purging is basically hyperventilating. You blow in and out –
06:55	(Breathing loudly)
06:59	You do that, you get lightheaded, you get tingling. And you're really ridding your body of CO ₂ . So, when you hold your breath, it's infinitely easier. Then I learned that you have to take a huge breath, and just hold and relax and never let any air out, and just hold and relax through all the pain.
07:19	Every morning, this is for months, I would wake up and the first thing that I would do is I would hold my breath for, out of 52 minutes, I would hold my breath for 44 minutes. So, basically what that means is I would purge, I'd breathe really hard for a minute. And I would hold, immediately after, for five and a half minutes. Then I would breathe again for a minute, purging as hard as I can, then immediately after that I would hold again for five and a half minutes. I would repeat this process eight times in a row. Out of 52 minutes, you're only breathing for eight minutes. At the end of that you're completely fried, your brain. You feel like you're walking around in a daze. And you have these awful headaches. Basically, I'm not the best person to talk to when I'm doing that stuff.
08:04	I started learning about the world-record holder. His name is Tom Sietas. And this guy is perfectly built for holding his breath. He's six foot four. He's 160 pounds. And his total lung capacity is twice the size of an average person. I'm six foot one, and fat. We'll say big-boned.
08:26	(Laughter)
08:28	I had to drop 50 pounds in three months. So, everything that I put into my body, I considered as medicine. Every bit of food was exactly what it was for its nutritional value. I ate really small controlled portions throughout the day. And I started to really adapt my body.
08:50	[Individual results may vary]
08:52	(Laughter)
08:54	The thinner I was, the longer I was able to hold my breath. And by eating so well and training so hard, my resting heart-rate dropped to 38 beats per minute. Which is lower than most Olympic athletes. In four months of training, I was able to hold my breath for over seven minutes. I wanted to try holding my breath everywhere. I wanted to try it in the most extreme situations to see if I could slow my heart rate down under duress.
09:23	(Laughter)
09:26	I decided that I was going to break the world record live on prime-time television. The world record was eight minutes and 58 seconds, held by Tom Sietas, that guy with the whale lungs I told you about. I assumed that I could put a water tank at Lincoln Center and if I stayed there a week not eating, I would get comfortable in that situation and I would slow my metabolism, which I was sure would help me hold my breath longer than I had been able to do it. I was completely wrong.
09:59	I entered the sphere a week before the scheduled air date. And I thought everything seemed to be on track. Two days before my big breath-hold attempt, for the record, the producers of my television special thought that just watching somebody holding their breath, and almost drowning, is too boring for television.
10:20	(Laughter)
10:22	So, I had to add handcuffs, while holding my breath, to escape from. This was a critical mistake. Because of the movement, I was wasting oxygen. And by seven minutes I had gone into these awful convulsions. By 7:08, I started to black out. And by seven minutes and 30 seconds, they had to pull my body out and bring me back. I had failed on every level.
10:58	(Laughter)
11:00	So, naturally, the only way out of the slump that I could think of was, I decided to call Oprah.
11:09	(Laughter)

11:12	I told her that I wanted to up the ante and hold my breath longer than any human being ever had. This was a different record. This was a pure O2 static apnea record that Guinness had set the world record at 13 minutes. So, basically you breathe pure O2 first, oxygenating your body, flushing out CO2, and you are able to hold much longer. I realized that my real competition was the beaver.
11:41	(Laughter)
11:47	(Laughter ends)
11:48	In January of '08, Oprah gave me four months to prepare and train. So, I would sleep in a hypoxic tent every night. A hypoxic tent is a tent that simulates altitude at 15,000 feet. So, it's like base camp, Everest. What that does is, you start building up the red bloodcell count in your body, which helps you carry oxygen better. Every morning, again, after getting out of that tent, your brain is completely wiped out. My first attempt on pure O2, I was able to go up to 15 minutes. So, it was a pretty big success.
12:26	The neurosurgeon pulled me out of the water because in his mind, at 15 minutes your brain is done, you're brain dead. So, he pulled me up, and I was fine. There was one person there that was definitely not impressed. It was my ex-girlfriend. While I was breaking the record underwater for the first time, she was sifting through my Blackberry, checking all my messages.
12:49	(Laughter)
12:52	My brother had a picture of it. It is really –
12:55	(Laughter)
12:59	(Laughter ends)
13:00	I then announced that I was going to go for Sietas' record, publicly. And what he did in response, is he went on Regis and Kelly, and broke his old record. Then his main competitor went out and broke his record. So, he suddenly pushed the record up to 16 minutes and 32 seconds. Which was three minutes longer than I had prepared. It was longer than the record.
13:26	I wanted to get the Science Times to document this. I wanted to get them to do a piece on it. So, I did what any person seriously pursuing scientific advancement would do. I walked into the New York Times offices and did card tricks to everybody.
13:44	(Laughter)
13:48	So, I don't know if it was the magic or the lure of the Cayman Islands, but John Tierney flew down and did a piece on the seriousness of breath-holding.
13:56	While he was there, I tried to impress him, of course. And I did a dive down to 160 feet, which is basically the height of a 16 story building, and as I was coming up, I blacked out underwater, which is really dangerous; that's how you drown. Luckily, Kirk had seen me and he swam over and pulled me up.
14:15	So, I started full focus. I completely trained to get my breath-hold time up for what I needed to do. But there was no way to prepare for the live television aspect of it, being on Oprah. But in practice, I would do it face down, floating on the pool. But for TV they wanted me to be upright so they could see my face, basically. The other problem was the suit was so buoyant that they had to strap my feet in to keep me from floating up. So, I had to use my legs to hold my feet into the straps that were loose, which was a real problem for me. That made me extremely nervous, raising the heart rate.
14:56	Then, what they also did was, which we never did before, is there was a heart-rate monitor. And it was right next to the sphere. So, every time my heart would beat, I'd hear the beep-beep-beep-beep, you know, the ticking, really loud. Which was making me more nervous. And there was no way to slow my heart rate down. Normally, I would start at 38 beats per minute, and while holding my breath, it would drop to 12 beats per minute, which is pretty unusual.
15:25	(Laughter)
15:32	This time it started at 120 beats, and it never went down. I spent the first five minutes underwater desperately trying to slow my heart rate down. I was just sitting there thinking, "I've got to slow this down. I'm going to fail." And I was getting more nervous. And the heart rate just kept going up and up, all the way up to 150 beats. Basically it's the same thing that created my downfall at Lincoln Center. It was a waste of O2. When I made it to the halfway mark, at eight minutes, I was 100 percent certain that I was not going to be able to make this. There was no way for me to do it.
16:12	I figured, Oprah had dedicated an hour to doing this breath-hold thing, if I had cracked early, it would be a whole show about how depressed I am.
16:21	(Laughter)
16:23	So, I figured I'm better off just fighting and staying there until I black out, at least then they can pull me out and take care of me and all that.
16:31	(Laughter)

16:34	I kept pushing to 10 minutes. At 10 minutes you start getting all these really strong tingling sensations in your fingers and toes. And I knew that that was blood shunting, when the blood rushes away from your extremities to provide oxygen to your vital organs. At 11 minutes I started feeling throbbing sensations in my legs, and my lips started to feel really strange.
16:59	At minute 12 I started to have ringing in my ears, and I started to feel my arm going numb. And I'm a hypochondriac, and I remember arm numb means heart attack. So, I started to really get really paranoid. Then at 13 minutes, maybe because of the hypochondria, I started feeling pains all over my chest. It was awful.
17:21	(Laughter)
17:22	At 14 minutes, I had these awful contractions, like this urge to breathe.
17:28	(Laughter)
17:34	(Laughter ends)
17:36	At 15 minutes I was suffering major O2 deprivation to the heart. And I started having ischemia to the heart. My heartbeat would go from 120 to 50, to 150, to 40, to 20, to 150 again. It would skip a beat. It would start. It would stop. And I felt all this. And I was sure that I was going to have a heart attack.
17:59	So, at 16 minutes what I did is I slid my feet out because I knew that if I did go out, if I did have a heart attack, they'd have to jump into the binding and take my feet out before pulling me up. I was really nervous. I let my feet out, and I started floating to the top. And I didn't take my head out. But I was just floating there waiting for my heart to stop, just waiting.
18:21	They had doctors with the "Pst," you know, sitting there waiting. And then suddenly I hear screaming. And I think that there is some weird thing – that I had died or something had happened. And then I realized that I had made it to 16:32. So, with the energy of everybody that was there, I decided to keep pushing. And I went to 17 minutes and four seconds.
18:43	(Applause)
18:51	(Applause ends)
18:52	As though that wasn't enough, what I did immediately after is I went to Quest Labs and had them take every blood sample that they could to test for everything and to see where my levels were, so the doctors could use it, once again. I also didn't want anybody to question it. I had the world record and I wanted to make sure it was legitimate.
19:09	So, I get to New York City the next day, I'm walking out of the Apple store, and this kid walks up to me he's like, "Yo, D!" I'm like "Yeah?" He said, "If you really held your breath that long, why'd you come out of the water dry?" I was like "What?"
19:26	(Laughter)
19:28	And that's my life. So –
19:30	(Laughter)
19:35	As a magician, I try to show things to people that seem impossible. And I think magic, whether I'm holding my breath or shuffling a deck of cards, is pretty simple. It's practice, it's training, and it's – (Sobs) It's practice, it's training and experimenting,
19:54	(Sobs)
19:55	while pushing through the pain to be the best that I can be. And that's what magic is to me, so, thank you.
20:01	(Applause)