


HOW DO THEY DO IT?

HOUDINI'S WATER ESCAPE

The "Chinese Water Torture Cell" was a trick made famous by the great Harry Houdini in the early 1900s. He was able to hold his breath for long enough to escape from a locked tank of water.



Name: HARRY HOUDINI
Date of Birth: 24 March 1874
Profession: Escapologist

Signature: *Harry Houdini*

Hungarian-born Ehrich Weisz moved to the United States in 1876 and later took the stage name of Harry Houdini. One of the world's greatest escapologists, he was famous for being able to escape from padlocks, chains, and even coffins!

THE STUNT

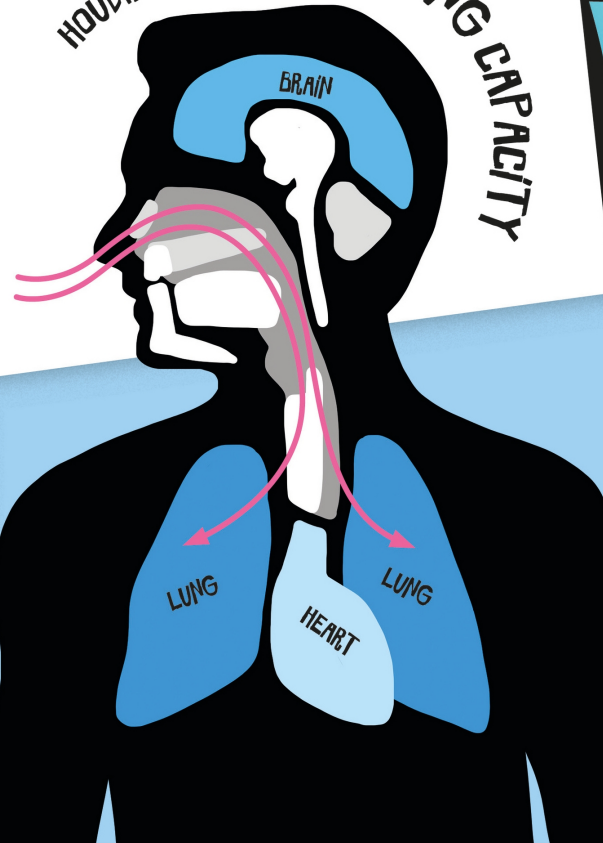
Houdini was lowered upside down into a specially built water tank with his feet shackled to the top. Audience members were allowed to check that the tank was sealed and the locks were secure. Then everything was hidden under a cover. Suspense built over the next 3 minutes before Houdini emerged to wild applause. Houdini was a master at picking locks, which might explain how he could release his feet. It may also be true that the shackles had a secret release mechanism. The big mystery is how he was able to survive underwater for so long.

HOLDING YOUR BREATH – WHAT HAPPENS?

The key to Houdini's impressive trick was his ability to hold his breath for a *really* long time. Breathing air into your lungs is how your body gets oxygen into your blood, where it's used to make energy. In the process, it's converted into carbon dioxide, which you breathe out. When you hold your breath (**which can be dangerous, so don't try this yourself!**), the carbon dioxide builds up in your body and increases the levels of acid in your blood. Here's how Houdini fought the body's basic need to breathe:

1. Through practice, he was able to slow his body down and use up oxygen more slowly. His heart rate would decrease and his body would only send blood to vital organs such as his brain.
2. Houdini increased his lung capacity by keeping fit and performing on an empty stomach. This meant he could breathe in more air.
3. He used meditation to reduce the urge to breathe.

HOUDINI HAD INCREDIBLE LUNG CAPACITY



INCREDIBLE DIVERS

Free divers swim deep down into the ocean without oxygen canisters. They are experts at holding their breath and can stay underwater for longer than most people. At 100 m (328 ft) below the surface, the pressure of the water on a diver's body is so high that their lungs are squished to the size of drink cans!

MAGNETIC FINGERS

In this trick you'll convince your friends you can move their fingers with just the power of your mind!



1 Ask your friend to clasp their hands, pushing them together with a light pressure on the palms. Now tell them you are going to make their fingers become magnetic.

2 Next, ask your friend to raise their two index fingers and hold them apart.



3 This is where your magical talking skills come in. Tell your friend you are controlling their fingers with your mind and that they won't be able to resist them coming together. As you talk, you will see that their fingers start to move towards each other. Tell them to fight against it, but they won't be able to – it actually makes it worse!

BENDING YOUR FINGERS ACTUALLY USES MUSCLES IN YOUR ARM, NOT YOUR HAND.

THE SCIENCE BIT...

Everything is linked...

Your friend feels as if their fingers are being pulled together because of the position of their hands. The muscles you use to extend a finger are linked to all the other fingers on that hand. With your other fingers bent, the muscles holding up your index fingers will get tired quickly. Trying to hold the two index fingers apart will make the muscles even more tired. The tired muscles can't support the outstretched index fingers, so they move closer and closer together.



NOW TRY THIS

Bend your middle finger and put your hand on a table, palm facing down. You will be able to lift your thumb, index, and little finger, but you will find it impossible to lift your ring finger.

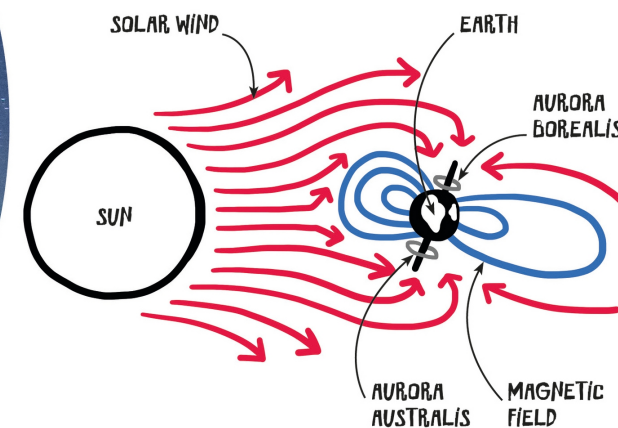


WHAT'S HAPPENING?

The tissue that connects a muscle to a bone is called a tendon. Fingers have separate tendons, except for the middle and ring fingers, which share one – when your middle finger is bent, your ring finger feels stuck.

COSMIC AURORAS

If you travel to countries near the North and South poles, you might see a sensational light show in the sky. Both the aurora borealis in the north and the aurora australis in the south look like huge, wavy curtains of colour, created by particles from the Sun entering Earth's atmosphere.



CREATED BY THE SUN

As well as light, the Sun sends out tiny particles called electrons, which are carried to Earth on a super-fast solar wind. As Earth is like a giant magnet, the electrons are pulled to the poles by the magnetic field. When they hit tiny oxygen particles in our atmosphere, the oxygen glows green in the sky.

THE NORTHERN LIGHTS

This spectacular picture of the aurora borealis was taken in the Lofoten Islands in north Norway. The chances of seeing an aurora here depend on the strength of the solar wind. When it's really strong, you might see other colours such as scarlet and orange.