

The Human Body: The Nervous System: The signals sent to and from your brain

Here are some very useful videos:

1. What is the nervous system?

<https://www.youtube.com/watch?v=KZVeFTDszTs>

I have no idea what the little red animated creature with a moustache is supposed to be but the information in this is really good and it covers everything we need.

2. Get to know our nervous system

<https://www.youtube.com/watch?v=6O-OCVAgaEM>

The narrator seems to forget the words 'a' and 'the' an awful lot – but the explanation and animation is marvellously clear.

3. From BBC TV's 'Operation Ouch'

<https://www.youtube.com/watch?v=DkS2T4szbuE>

Some simple explanations and clever tricks – very entertaining. About quarter of an hour long.

But do watch out – around 12 minutes in there is a short bit of film of someone having brain surgery. This might be a bit scary for some. Only watch it if you are feeling comfortable doing so.

For anyone who wants to know more – if you are feeling really interested!

EXTRA: A nine-minute guide to the Nervous System

<https://www.youtube.com/watch?v=44B0ms3XPKU>

This goes much further than we need to – but it is really clear and steady in explaining.

On the next page is a set of instructions on how to do a short experiment at home, if you get the chance to do so. If you get clear results (measurements), write them in a small chart/table into your exercise book.

An experiment: 2-Point Discrimination

Do not try this using a little brother or sister who might get cross when you prod them (gently) with the end of a paperclip!!! Be kind, polite and grateful to whoever agrees to have this done to them.

Your skin contains **nerve receptors** which send signals to the brain when we touch or hold something. Which areas of our bodies are most sensitive to being touched? To find out, try this **2-point discrimination test** on a friend.

Bend a paper clip into the shape of a U with the tips about 2 cm apart. Make sure the tips of the U are even with each other.

Before you begin, **have a ruler handy**, to measure the distance between the ends of the paperclip for each test.

1. Ask your friend to close their eyes. **Gently** touch the two ends of the paper clip (at the same time) to the back of the hand of your friend. Do not press hard!
2. **Ask your subject if he or she felt one or two pressure points.**
3. If your subject reports that they felt one point, spread the tips of the clip a bit further apart, then touch the back of the subject's hand again.
4. If your subject reports feeling two points, push the tips a bit closer together, and test again.
5. Keep doing this until you can find the shortest distance at which your friend says they could definitely feel two points.
6. To make this a better test, occasionally just touch with one point so that your test subject has to be honest that they just felt one point even if on the other tests they had felt two.

Other good places on the body to test this are on the back of a shin (calf muscle area) or on the back of an upper arm. These are not particularly sensitive parts of your body. As you would guess, however, your fingers are really sensitive, so that is also a good place to test. You should get very different results.

The most sensitive area of your body is your tongue. It is probably best not to test this one – we don't want anyone to get hurt or to accidentally swallow a paperclip!

This test teaches us that the nerve receptors in our skin are **NOT** distributed evenly around our bodies. Some places, such as our fingers and lips, have more touch receptors than other parts of our body, such as our backs. That's one reason why we are more sensitive to touch on our fingers and face than on our backs.