What’s inside our cells?

A cell is a basic unit of all living things. Our bodies are made up of trillions of cells. We can think of a cell like a city, with all the different parts playing a role to keep things running smoothly

1. **Cell membrane**: this is the city wall, with gateways to allow things to enter and exit the cell.

2. **Nucleus**: this is the control centre. DNA is stored inside, containing all the information a cell needs to work properly.

3. **Mitochondria**: this is the power station, using oxygen and sugar to make energy for the cell.

4. **Endoplasmic reticulum**: this is the protein factory. This is where proteins, the workers of the cell, are made.

5. **Golgi apparatus**: this is the sorting office. The protein workers go here to be sorted and sent to work.

6. **Vesicles**: these are vehicles. Vesicles carry the protein workers around the cell.

Our science

Sometimes things go wrong in our cells and this can lead to cancer. Years of painstaking lab research now mean that scientists understand a lot about the differences between healthy cells and cancer cells. Cancer Research UK funds research to understand more about how our cells work so we can develop new ways to beat cancer.

You can read more information on our website: cancerresearchuk.org/about-cancer/what-is-cancer

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Did you know?

The cells in our body are constantly dividing and making new cells. When cells divide and grow they do this very precisely so that the new cells are exactly the same as the old ones.

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Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cell</td>
<td>A basic unit of all living things. Our bodies are made up of trillions of cells.</td>
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<tr>
<td>DNA</td>
<td>A long molecule that contains our genetic code.</td>
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<tr>
<td>Proteins</td>
<td>Complex molecules that do a variety of different tasks in the body.</td>
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<tr>
<td>Cancer</td>
<td>A disease caused when abnormal cells grow in an uncontrolled way.</td>
</tr>
</tbody>
</table>

Nucleus

The nucleus stores the cell’s genetic material, DNA.
Make a cell

Make a cell – out of anything – and find out what’s inside our cells and the different jobs they do to keep us healthy!

Understanding how cells work is an extremely important part of our research.

You’ll need:

A number of different materials to create the parts of the cell. The cell can be made out of anything. We’ve suggested some items below, but you can use plasticine, craft supplies, natural materials from the garden, recycling or even food!

- **Cell membrane** – we’ve cut a large shape from a piece of paper. If the weather is nice, you might like to draw this on the ground outside with a piece of chalk.
- **Nucleus** – we’ve used a bottle lid and a piece of string. You could also use a cup and a shoe lace.
- **Mitochondria** – we’ve chosen blue foam shapes, but stones would work just as well.
- **Endoplasmic reticulum** – we’ve used lollipop sticks. A selection of pencils or sticks from outside would also be a good choice.
- **Golgi apparatus** – we’ve picked some balloons. You could also use a collection of leaves or shells.
- **Vesicles** – we’ve gone for some bright pink buttons. You might like to use Lego bricks or one and two pence pieces.

Once you have created your cell, post a photo of your cell (or #cellfie!) on Instagram or Twitter and tag us @CR_UK

Did you know?

There are more than 200 different types of cells in the body and our bodies are made up of trillions of cells!