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Haematology Department

**Sickle Cell Disease – Chronic Complications**

**Chronic Lung Disease**

Information for parents and carers

**Introduction**

This leaflet is designed to explain about the long term (chronic) complications of sickle cell disease. The information does not cover everything. If you are ever worried about your child then please contact your Sickle Cell Team or take your child to Accident and Emergency Department.

**What do the lungs do?**

The main function of your lungs is to absorb the [oxygen](http://www.sciencekids.co.nz/sciencefacts/chemistry/oxygen.html) from the air you breathe in. Once oxygen is inside the lungs it travels down narrowing tubes called Bronchioles which reach down to the base of the lungs into small pockets called alveoli. The oxygen binds with the haemoglobin in red blood cells and is transported around the body. At the same time the red blood cells are releasing carbon dioxide. This is a waste gas which travels back up the bronchioles and is released into the air when you breathe out.

**What problems can happen with the lungs?**

Lung tissue can be damaged or die due to lack of oxygen, this is known as Chronic Lung Disease (CLD). Repeated sickle cell crisis can cause this to happen in people with sickle cell disease. Other causes of CLD can be smoking or babies that are born prematurely.

**How will I know if my child’s lungs are working properly?**

When your child comes to clinic their lung function will be monitored by doing their oxygen saturations. Oxygen saturations are measured by placing a probe on your child's finger. This will not hurt your child.

You may notice your child having problems with their lungs which can mean that they are not working properly. These symptoms include:

* ****Difficulty breathing.
* Episodes of chest pain.
* Exercise intolerance (unable to do exercise at a level that you would expect or exercise leaves them feeling very tired or in pain).
* Snoring.

**What happens if the results show my child’s lungs aren’t working properly?**

If your child's oxygen saturations are low, they have asthma or there are other signs that their lungs are being damaged they will be referred to one of the respiratory (lung) doctors who will see them in clinic.

**What are the treatment options if my child’s lungs aren’t working properly?**

If your child's lungs aren't working properly then they may be given medications. If their oxygen levels are very low overnight it may be recommended that your child has oxygen overnight whilst they are asleep. This can be done at home.

**Can I prevent my child getting lung problems?**

Reducing the amount of damage from sickled cells can help reduce the chance of your child getting lung problems. Taking a medication called Hydroxycarbamide can do this.

Smoking can also damage the lungs, it has also been shown to increase the risk of acute chest syndrome and is one of the leading causes for triggering a sickle cell crisis. It is advised that you don't smoke or that your child isn't exposed to second hand smoke. This is the smoke you breathe that comes from other people, whether they exhale it or you get it from the tobacco burning near you, like the end of a cigarette. Encourage your child not to smoke when they are older. (Sadreameli et al, 2016)

**Further information**

If you have any questions or want any further information please contact your Sickle Cell Team on 0151 252 5070.

**References**

Sadreameli S, Eakin M,, Robinson K, Alade R, Strouse J. 2016 Secondhand smoke is associated with more frequent hospitalizations in children with sickle cell disease. [American Journal of Hematology.](https://www.ncbi.nlm.nih.gov/pubmed/26690323)Vol;91(3)

**Useful websites**

[www.alderhey.co.uk](http://www.alderhey.co.uk)

[www.sicklecellsociety.co.uk](http://www.sicklecellsociety.co.uk)

Alder Hey Children's NHS Foundation Trust is neither liable for the contents of any external internet site listed, nor does it endorse any commercial product or service mentioned or advised on any of the sites.

This leaflet only gives general information. You must always discuss the individual treatment of your child with the appropriate member of staff. Do not rely on this leaflet alone for information about your child’s treatment.

****This information can be made available in other languages and formats if requested.

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