



# Little Lungs Leaders

## Look after little lungs



By Dr Tony Westwood





## Did you know?

Birds were used to test the quality of air in mines because birds are very sensitive to air pollution. If the bird died in the mine, it meant that the air was dangerous and people had to get out of the mine as quickly as possible. Now we have machines to test air pollution so we don't need to use birds anymore. You will see a bird on all the pages of this book reminding you that birds are a symbol of clean air. Clean air means healthy lungs and healthy lungs mean healthy children and healthy adults.



**Techno Spot:** A techno spot is a place where you will find extra technical information.

## Acknowledgements

**Author:** Dr Tony Westwood is a children's doctor. He works in the Western Cape Province.

**Illustrator:** Janet Anderson has a Bachelor of Fine Arts from Rhodes University. She is an artist, curriculum designer and illustrator.

**Designer:** Sifiso Yalo is a cartoonist at the Sowetan, freelance illustrator and graphic designer.

**Publisher:** National Council Against Smoking.

The National Council Against Smoking promotes education, legislation, treatment, and research to achieve a reduction in smoking. It is registered as a Section 21 Non Profit Organisation, NPO number 023-970-NPO.



**National Council  
Against Smoking**<sub>NPC</sub>





# Foreword

Dear Leader,

This book and you -  
that is a powerful  
combination!

I wrote this book so  
that children can have  
the power to keep themselves  
healthy and bring about change for  
themselves and for other children - even  
for children who are not yet born.

I work in a children's ward in a hospital  
in Cape Town and I have to treat so many  
children who come to the hospital with lung  
problems like chest infections, asthma and  
tuberculosis (also known as TB). Lung diseases are  
some of the most common sicknesses among children  
in South Africa, and yet they can be prevented!

I hope and trust that this book will help you to learn  
how to 'look after little lungs' - your lungs and other  
people's lungs - and keep children and babies  
healthy - for life.

Thank you for being a leader. I know that you will be  
making the difference.

With appreciation for who you are, and what you will  
be doing.

Best wishes,

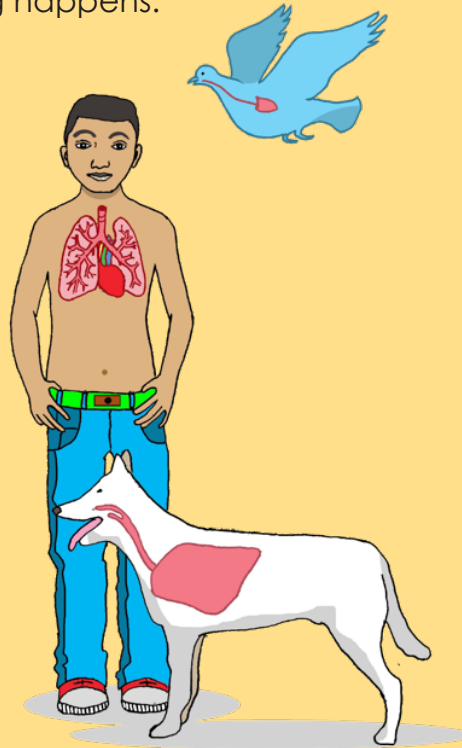
Dr Tony Westwood





# What are lungs?

All animals have lungs.  
LUNGS are the part of the body where  
breathing happens.



No lungs = no breath

Damaged lungs = breathing problems



**Techno Spot:** 'Respiration' is the  
technical term for breathing.





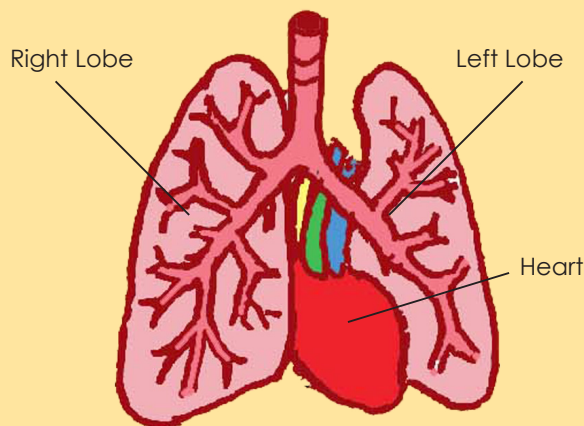
# Where are our lungs?

Lungs are in the chest.

We have two lungs. One is in the right half of the chest (right lung); one is in the left half of the chest (left lung).

Lungs are divided into parts called lobes. They share the inside of the chest with the heart.

People sometimes say 'my chest' when they are talking about their lungs.



**'Bad chest' = Bad lungs**



**Techno spot:** The technical term for the chest is the 'thorax'.





Oxygen

# What do our lungs do?



Carbon Dioxide

## Our lungs do 3 main things:

**1:** The most important thing that our lungs do is to take oxygen from the air we breathe into our bodies.

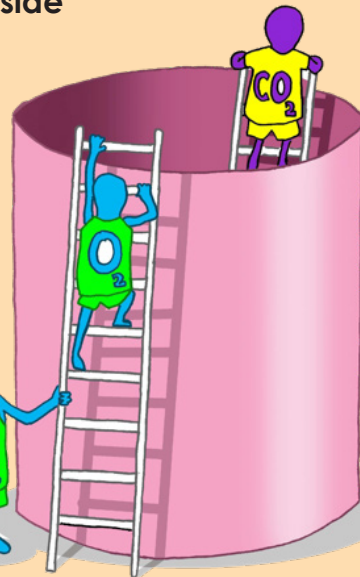
**Without oxygen, no part of the body can work.**

**2:** The lungs help us remove a gas called carbon dioxide from our bodies.

**A build up of carbon dioxide inside our bodies is very dangerous.**

So lungs take oxygen ( $O_2$ ) in and send carbon dioxide ( $CO_2$ ) out.

**3:** Lungs keep us healthy. There are germs and dirt in the air that we breathe. Lungs help us to keep them out of our bodies.



**Techno spot:** The chemical symbol for oxygen in the air is  $O_2$ . For carbon dioxide, the symbol is  $CO_2$ .

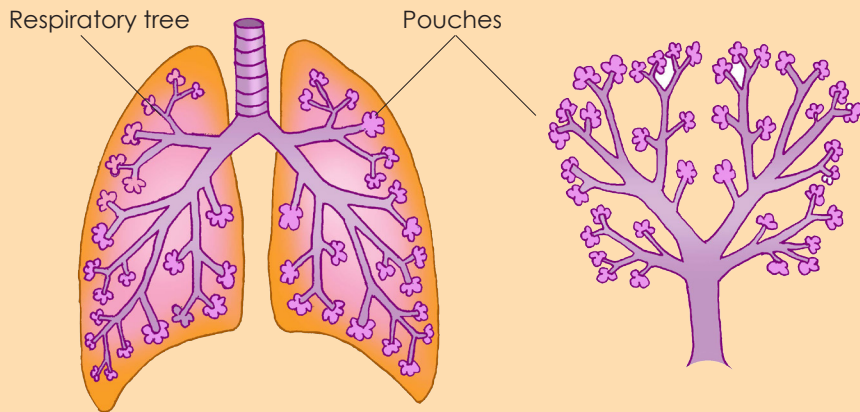




# What do our lungs look like inside?

Think of a hollow tree, but this tree is upside down. The tree trunk and the branches that go to the tiny twigs are what the air we breathe travels through.

At the end of the smallest twigs, instead of leaves, there are bunches of tiny pouches. The pouches are filled with air that we have breathed in.



This upside-down hollow tree is called the 'respiratory tree' – Really! It is!

So from top to bottom, our lungs are full of air.  
A lung with air in it looks like a purple sponge.



**Techno spot:** The name for a branch is a 'Bronchus' (say Bronk-us). The name for a pouch is an 'Alveolus' (say Al-vee-o-lus).





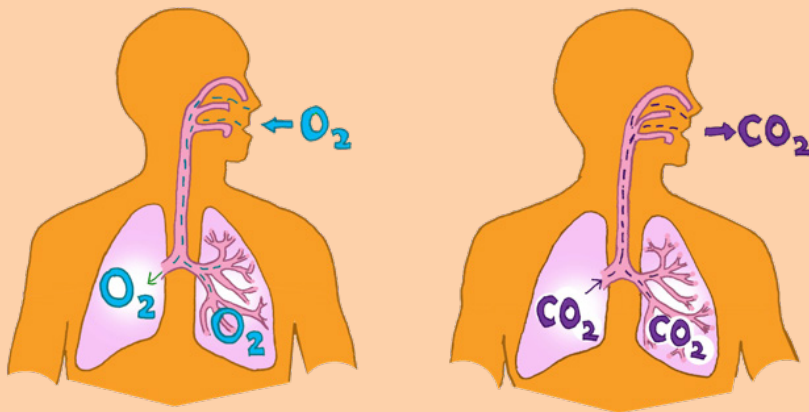


# How do our lungs work?

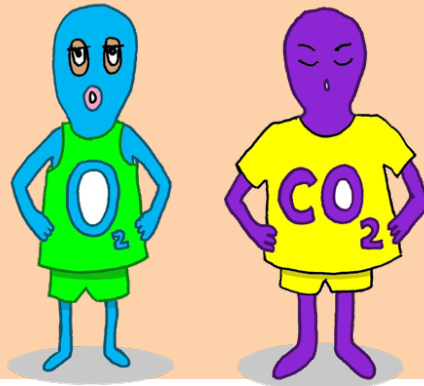
Our lungs work by taking in oxygen from the air that we breathe in and breathing carbon dioxide out.

**Remember, oxygen in and carbon dioxide out.**

**This is how it works:**



The tiny pouches at the end of each branch take the oxygen from the air coming down the lung tree into the body. Oxygen then goes through the thin lining of the pouches and dissolves into the blood. The pouches also let carbon dioxide into the lung branches from the blood, so that it can be breathed out of the body.



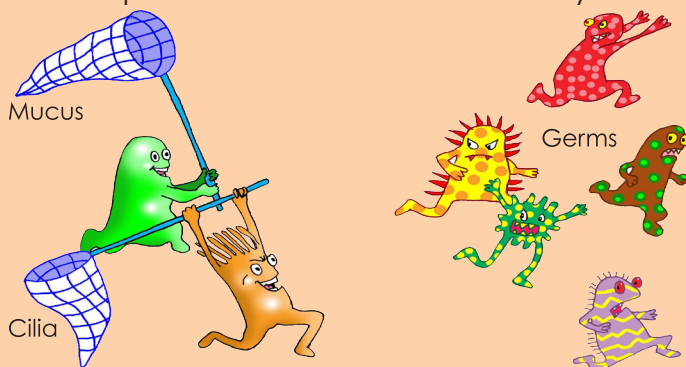




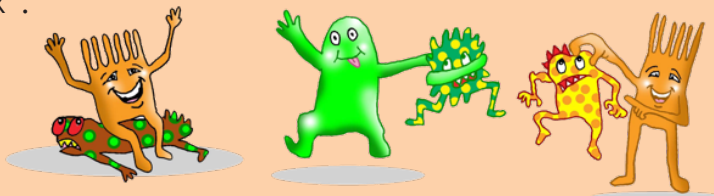
# How do our lungs work?

## Dealing With Germs and Dirt

The bigger branches in our lungs catch dirt and germs before they get breathed too far down into our lungs. The hollow lung branches are lined with little moving hairs and a thin layer of sticky liquid. The germs and dirt get stuck in the liquid. The hairs then work together to push them up and out into the throat. Very clever, hey?



When dirt and germs start to go down into the lungs, a message is sent to the brain that says, "cough!". The muscles of the chest then produce a cough. Out pop the dirt and germs. This process is called the "cough reflex".



**Techno spot:** The little hairs are called Cilia (say 'sillier'). The sticky liquid is called Mucus (say 'mew-kus').





# What happens if our lungs don't work well?

You can probably work this out for yourself now.  
Which are the **wrong answers** to the questions below?

**What happens if:**

**1) There is not enough oxygen?**

- A: Muscles cannot work properly
- B: Your eyes pop out
- C: The heart cannot work properly
- D: You feel faint

**2) There is too much carbon dioxide?**

- A: CO<sub>2</sub> in the blood damages body organs
- B: The heart cannot work properly
- C: Your toes start to fall off
- D: You can become dizzy and unconscious

**3) Dirt gets into the lungs?**

- A: You get a bad cough
- B: Bugs find it easier to infect the lungs
- C: Everything carries on just fine
- D: The respiratory tree gets blocked up

**4) Germs get into the lungs and start to multiply?**

- A: Everything carries on just fine
- B: You are more likely to get an illness such as pneumonia
- C: Infection damages the respiratory tree
- D: The germs can go through into the blood when they multiply and cause serious sickness



Answers: 1 B, 2C, 3C, 4A





# So how can we keep our lungs healthy?

The most important thing we can do to keep our lungs healthy is to breathe in clean and fresh air.

## **CLEAN AND FRESH AIR - INSIDE**

Make sure that air can move through rooms by having windows and doors open as much as possible. 'Ventilation' is the word used to describe this movement of air. We must have good ventilation in our homes, schools and buildings. Avoid cooking that produces smoke such as burning wood or coal inside the house.





# Keeping our lungs healthy

## **CLEAN AND FRESH AIR - OUTSIDE**

Spending as much time as possible outside is the best way to give your lungs clean and fresh air. The more time you spend outside playing, the better it is for your lungs. But even if we are outside, there can still be dirt in the air.

Dirt in the air can come from smoke, cars, buses and taxis, and from factories. This dirt in the air is called 'pollution'. Another type of pollution is from smoking. We need to make sure no one smokes near children or other people. In fact, no one should smoke at all.





# Keeping our lungs healthy

## KEEPING GERMS OUT

Breathing clean and fresh air is a very important way to keep germs out. Pollution makes it easier for germs to stay in our lungs.

People should always cover their mouths when they cough and they should cover their noses when they sneeze. But never use your hands to cover your mouth or nose. Always cough or sneeze into your elbow and always keep your hands clean. Germs love being on hands and moving from person to person as they touch.



## HEALTHY BEHAVIOUR

Eating healthy foods and taking plenty of exercise helps us to keep germs out. This is also very good for our lungs.

## VACCINATIONS

All babies must get vaccinations at the clinic to prevent lung infections. When we 'vaccinate' babies and children, we give them a weak version of the germ. The body can then fight the real germ if it comes along later in the child's life. This means that it is more difficult for the child to get sick!





# How does tobacco affect babies before they are born?

When a pregnant woman breathes in tobacco smoke, even if it is someone else's tobacco smoke, the tobacco chemicals go through the mother's blood to the baby. The tobacco chemicals in smoke can affect the baby inside the mother in two ways:

**1)** They reduce the blood supply to the baby so the little boy or girl can't grow properly.

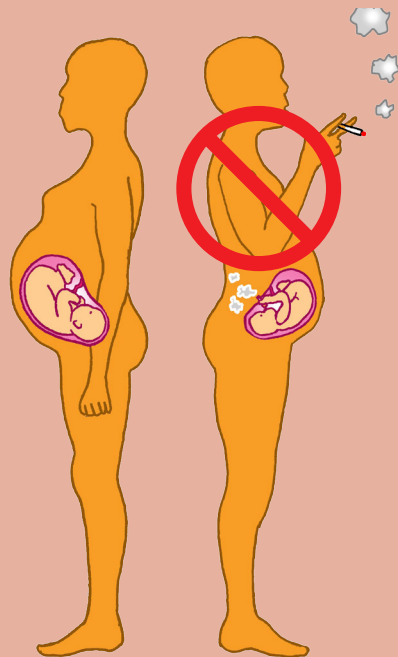
This will affect them for the rest of their lives.

It can even make them die before they are born.

**THIS IS REALLY SERIOUS!**

**2)** They affect the baby's lungs even before the baby is born. This makes the chances that they will suffer from lung problems when they grow up much higher.

**THIS IS REALLY SERIOUS, TOO.**





# Healthy lungs for babies

We need to make sure that when a baby is born, he or she has got healthy lungs.

Women who are going to have a baby should NEVER smoke cigarettes, pipes or e-cigarettes.



Everyone should make sure that nobody EVER smokes anywhere near someone who is going to have a baby. And nobody should smoke near babies or children.



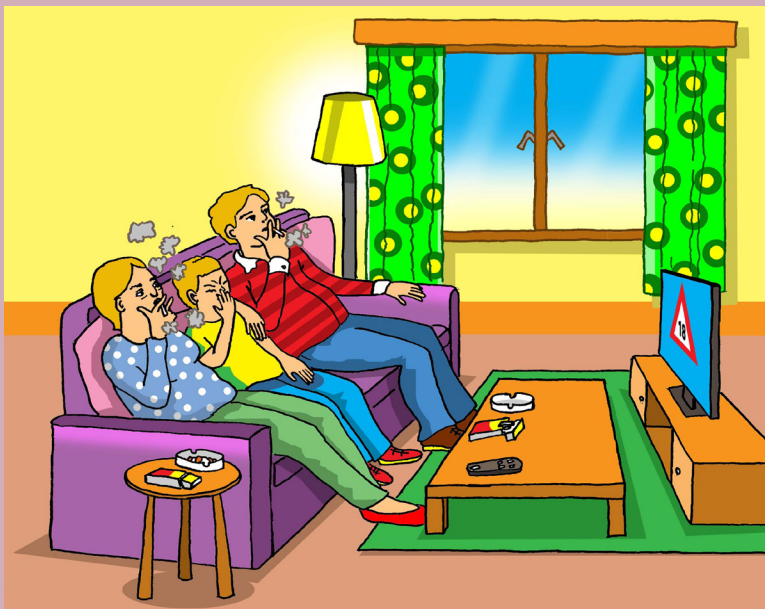




# How does tobacco smoke affect our lungs?

## **SMOKE POLLUTES AIR INSIDE**

Nobody should EVER smoke tobacco products such as cigarettes, pipes and e-cigarettes inside the house, in a car or in an enclosed space. Children who are around smokers are more likely to have lung problems and lung infections.



## **SMOKE POLLUTES AIR OUTSIDE**

Smoke from cigarettes, pipes and e-cigarettes can also pollute air outside the area around the place where someone is smoking. It also pollutes the places where the wind blows that smoke.





## How does tobacco smoke affect our lungs?

Tobacco smoke is bad for our lungs because it contains dangerous chemicals and dirt. The chemicals from smoke damage our lungs when they are breathed in. When a person smokes, these chemicals stay on their breath and on their clothes. So being near someone who has been smoking is also dangerous for our lungs.

Smoke is also full of little bits of dirt – so much dirt that our lungs battle to remove it. And we know what happens if dirt starts to block up our lungs – remember the respiratory tree? When it is breathed in, tobacco smoke stops our cilia working. So germs and dirt stay in the lungs.

**Tobacco smoke = trouble for lungs, and trouble for babies, children and grown up people.**



### **Techno Spot:**

Breathing in someone else's tobacco smoke is called **PASSIVE SMOKING**.





# Why do people find it hard to stop smoking?

Even if people know that smoking is damaging their lungs and the lungs of the people around them, even the people they love, why don't they stop smoking?

Blame Nasty Nic. Nasty Nic is a drug dealer, because nicotine is a drug. Nasty Nic's proper name is nicotine. Nicotine is a chemical in tobacco and in e-cigarettes. When Nasty Nic gets into someone he affects that person's brain. Tobacco is bad for brains as well as being bad for lungs, noses, ears and heart.

When Nasty Nic gets hold of a person's brain, he makes the person feel 'I want some more nicotine. Give me some more nicotine! I am desperate for more nicotine! I feel awful if I don't have more Nasty Nic!!'.

So, they light another cigarette, pipe or e-cigarette. Then they feel better – but only for a short time. Then the feeling starts again.

It is very hard to overcome this feeling. But it is not impossible. You can help this person to stop smoking.

**KICK NIC!**





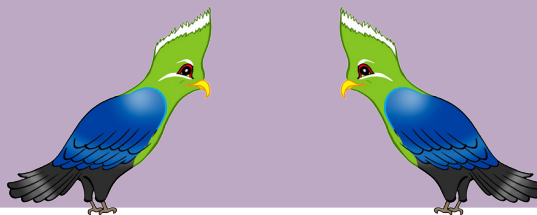
## Why is it difficult to give up smoking?

Most people want to give up smoking even if they say that they don't want to. If they say they don't want to, they probably do want to smoke less than they do now.

People who don't smoke are healthier and can be more active. We can help them to be healthier. But stopping smoking can be difficult because smoking often becomes a habit.

Habits are things we always do, without thinking about them. Like sitting down and watching TV after eating in the evening. People often smoke in the same way every day – for example, after a meal, when they get up in the morning, or if they are with certain people. Help the person think through this. And help them think about changing these habits.

If someone always has a cigarette with morning coffee, they should try to change what they drink at that time – maybe drink tea instead of coffee. This will help them break the automatic habit of smoking when they drink coffee. If they smoke after watching TV, suggest going for a walk instead, or read a book, to do some knitting or kick or throw a ball. They must try and keep their hands busy. The connection between watching TV and automatically smoking will then be broken.





# How can we help a person to stop smoking?

**There are 3 steps to stopping smoking:**

## **Step one: Set a date to stop**

Help the person set a date when they will quit smoking. It could be their next birthday, or by the end of the year, or some other time. They should choose a date.

When the day to stop smoking arrives, help make sure there are no more cigarettes in the house, in the car or at work. Throw them all away.



## **Step two: Call in help**

Stopping smoking can be very hard. The person needs the help of friends and family. Call in members of the family; call in neighbours; call in friends; call in other children. Everyone can support the person to make changes for healthy lungs.

## **Step three: Get help from outside**

Some people may need to see a doctor or a nurse to help them stop smoking.

There are medicines and treatments that can help people give up smoking. Ask your doctor or clinic for help.





People who want to stop smoking can call the stop smoking telephone counselling line, called the Quit Line, at the National Council Against Smoking (NCAS) for support and advice. Here are the details:



## VERY IMPORTANT

If a person does not manage to stop on their first try, they should not give up.

Encourage them to try again.

Many people don't succeed the first time that they try to stop smoking, but that is not a reason to stop trying.

**TRY, TRY AND  
TRY AGAIN!**





# What Are E-Cigarettes?

E-cigarettes are electronic cigarettes. Many people believe that they are a safe alternative to smoking. But they are not! E-cigarettes are just another way that Nasty Nic makes people addicted to nicotine.

E-cigarettes are battery-powered smoking devices that contain a liquid that includes Nasty Nic, flavourings and other chemicals. The e-cigarette uses a heating device to turn the liquid into a gas which the person breathes into their lungs. This is known as "vaping". Vaping is BAD for lungs and leads to addiction.

Anyone using an e-cigarette still gets nicotine and unhealthy chemicals in their bodies. Passive smoking occurs with e-cigarettes, so they are also not safe for the people near a person who is vaping.

Some people say that vaping helps people not to smoke cigarettes. Unfortunately this is not true. Look after little lungs – don't use e-cigarettes, and don't be near anyone who is vaping.

## **An important message to Little Lungs Leaders and for all children:**

*"Never try smoking a cigarette or an e-cigarette. Research has shown that even trying just one cigarette can lead to addiction to Nasty Nic - FOR YOUR WHOLE LIFE. Always KICK NIC."*

Dr Tony Westwood







# Know your rights

## A guide to South Africa's anti-smoking laws

1. According to the South African Constitution, Section 24, "Everyone has the right to an environment that is not harmful to their health or wellbeing"- that includes children! This includes a right to a smoke-free environment.
2. Because of the right to a smoke-free environment and the need to get people to stop smoking, the government has passed a law, the Tobacco Products Control Act, which controls the sale and use of tobacco products.
3. The law gives us rights and powers that we as citizens, including children, can use to ensure that we have smoke-free air.
4. Parents and adults have extra duties to ensure that the children they have to look after can be in a smoke-free environment.

### Let's look at our rights!

#### Public Places: Smoke-Free Zones

1. No smoking is allowed in public places except for "designated smoking areas".
2. No person may smoke any tobacco product in any indoor area or area that is covered like a stoep, or under an umbrella awning or in a lapa, except in a designated smoking area.
3. No smoking is allowed on public transport.
4. A "designated smoking area" may be allowed in some public spaces like restaurants or bars. It must be separate and sealed off from the rest of the building so the smoke can't come back into the smoke free area.
5. No one under 18 allowed is allowed in a smoking area even if you are with your parents and your parents take you into the smoking area or allow you in.
6. Individual smokers who break the anti-smoking laws may be fined up to R500 and the owner of a public place like a restaurant may be fined up to R50 000. You can report anyone breaking the law to the police.

#### Private homes

7. Smokers may smoke inside private homes.

#### Children and Teenagers & Smoking

8. No one may smoke or use any tobacco product (including a hubbly bubbly or hookah) in a private house or place if that space is used for schooling, tutoring or professional childcare.
9. Smoking is not permitted on school premises, crèches or any place where someone under 18 receives training.
10. No one may smoke in a motor vehicle when children under the age of 12 are in the vehicle. Even if it's somebody's own car with their own child, the law is "No smoking allowed."
11. No one under the age of 18 may buy, sell or be given tobacco products.
12. No one under the age of 18 is allowed in a designated smoking area.
13. No one under 18 may use a tobacco vending machine.
14. Sweets and toys that look like tobacco products are also banned. Items like chocolate cigarettes are not allowed.





*"This is a book for children about their lungs and their health. We have written this book so that you can learn about lungs and keep yourself healthy.*

*Never think that, because you are young, you have no power to change things. Young people (you and your friends) can really change grown-ups' smoking behaviour. Do them a favour. Ask them to quit for the sake of little lungs. Then help them to quit.*

**YOU HAVE THE POWER."**

Dr Tony Westwood and the National Council Against Smoking



Did you know that one in every five children in South Africa has asthma?

Did you know that chest infections are the most common reason for children to have to stay in hospital in South Africa, and are the most common reason for small children to die?



Website: [www.againstsmoking.co.za](http://www.againstsmoking.co.za)



Twitter: @SAQuitline



Facebook: National Council Against Smoking



National Council  
Against Smoking<sup>NPC</sup>



Quit Line: 0117203145

[www.againstsmoking.org](http://www.againstsmoking.org)

