

South African Inventors, Bright Minds and Other Science Heroes

THINK
DIGITAL ACADEMY



Johnny Mahlangu

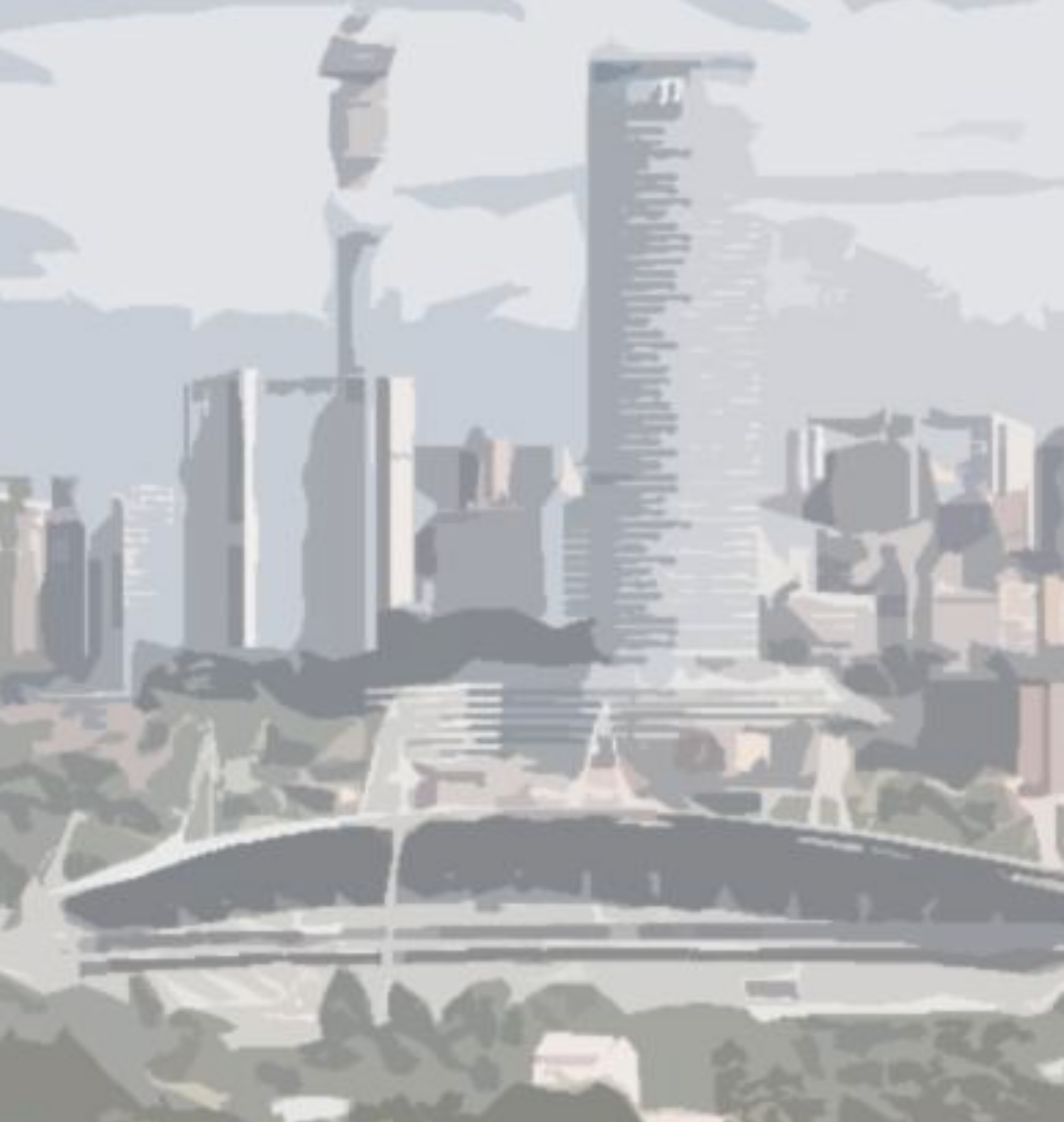


The Man Who Isn't Squeamish About Blood

By Engela Duvenage



Through a window, Professor Johnny Mahlangu catches a brief glimpse of the beauty of Johannesburg's bushy landscape. He is heading from his office to a ward on the ninth floor of the Charlotte Maxeke Johannesburg Academic Hospital. The hospital is where Johnny, as head of the University of the Witwatersrand's School of Pathology, helps train aspiring undergraduate doctors and specialists.

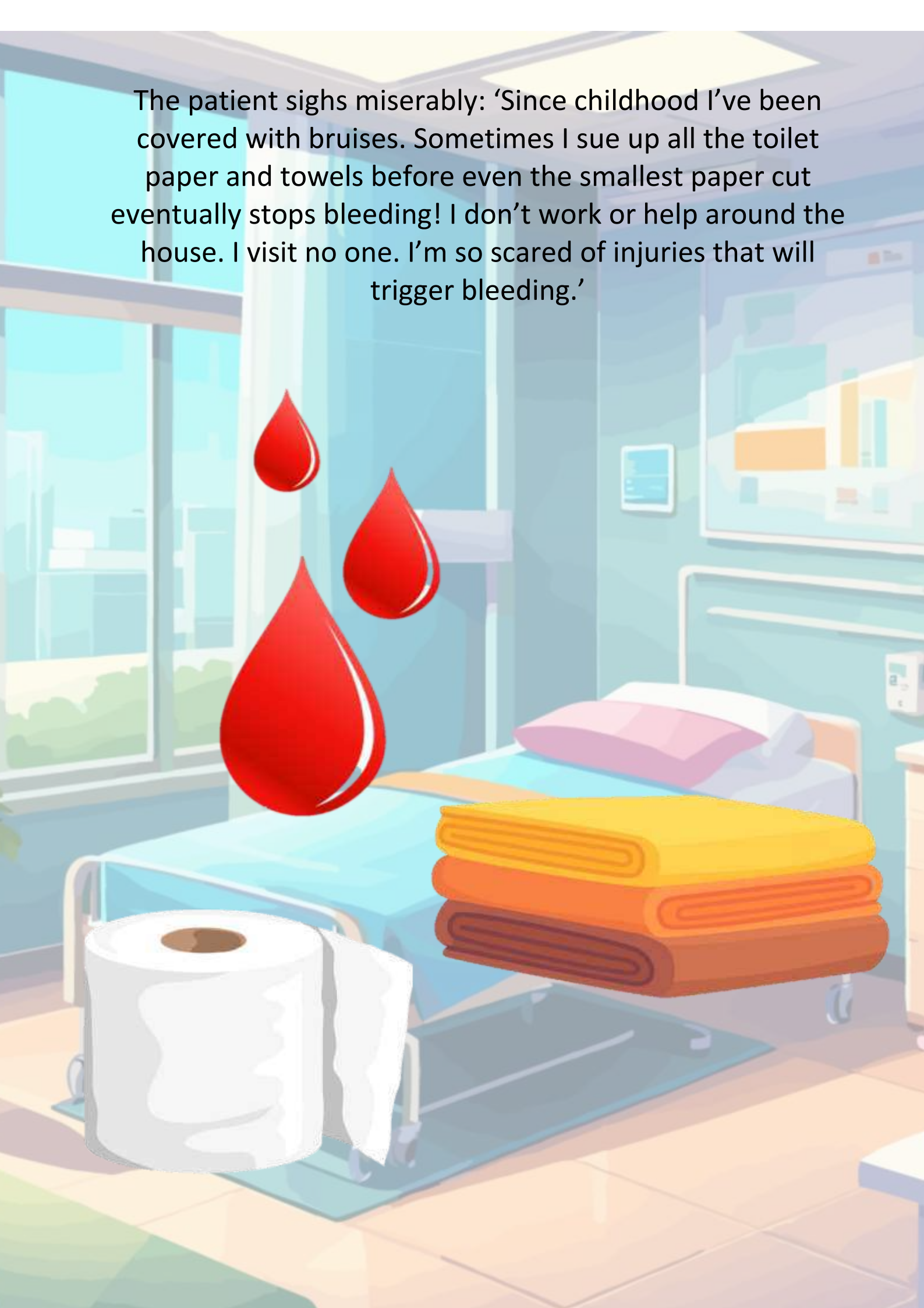


As usual, a medical student or two are by his side. Johnny stops at one of the 24 beds in Ward 595. A man in his mid-thirties, wearing light-blue pyjamas, sits up. His arms are covered with blue and yellow bruises.

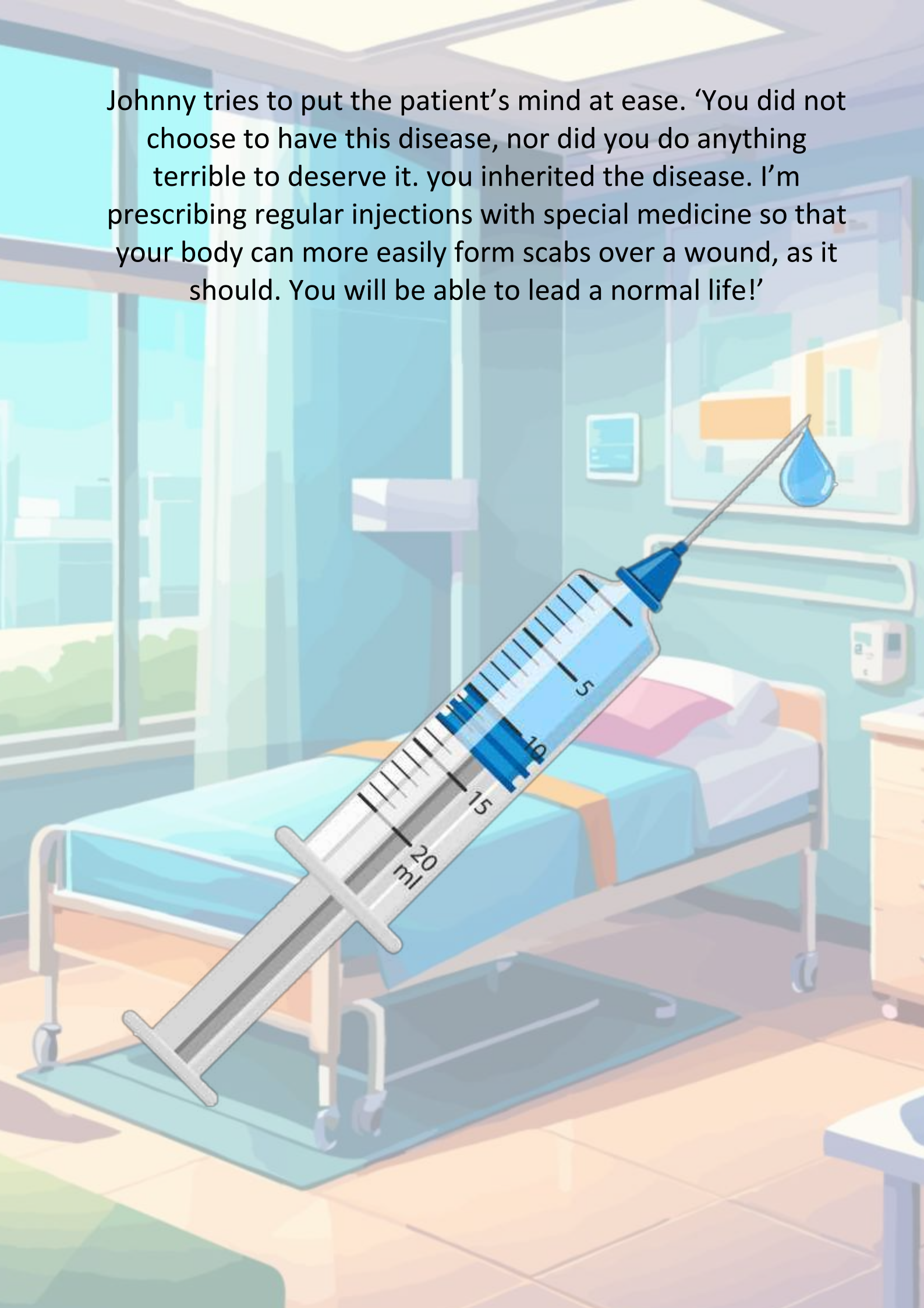
After cheerfully exchanging pleasantries, Johnny asks: "Tell me what has been bothering you."



The patient sighs miserably: 'Since childhood I've been covered with bruises. Sometimes I use up all the toilet paper and towels before even the smallest paper cut eventually stops bleeding! I don't work or help around the house. I visit no one. I'm so scared of injuries that will trigger bleeding.'



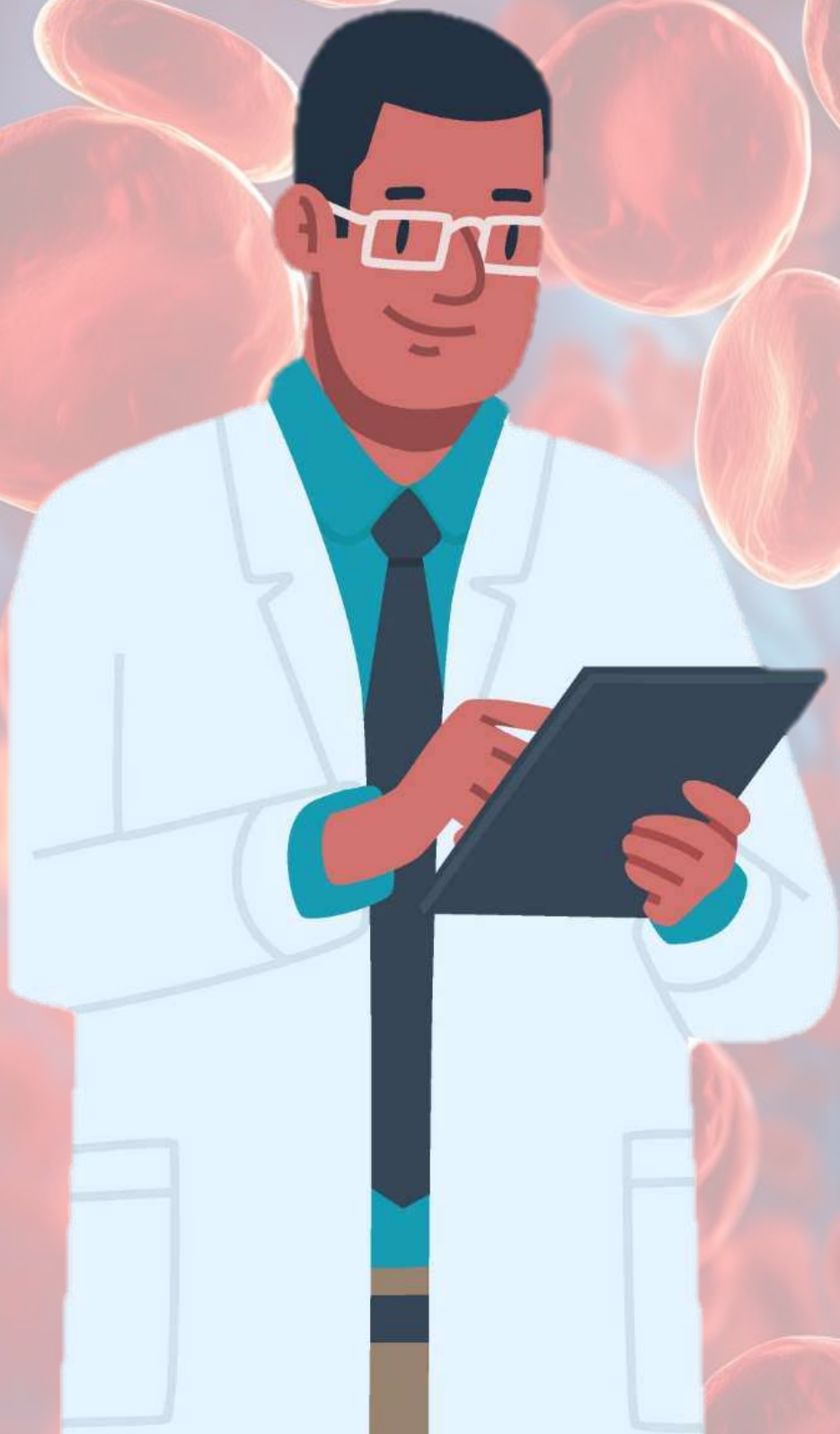
Johnny tries to put the patient's mind at ease. 'You did not choose to have this disease, nor did you do anything terrible to deserve it. you inherited the disease. I'm prescribing regular injections with special medicine so that your body can more easily form scabs over a wound, as it should. You will be able to lead a normal life!'



Johnny scans a clipboard holding notes about the patient's medical history, before turning to the students following him around: 'This man suffers from a blood disease called haemophilia. It's a pity he's had to wait so long to be diagnosed properly with something he was born with. He'll now get the treatment he deserves!'




As an expert on haemophilia, Johnny knows that treatment of the disease has improved in leaps and bounds over the past seven decades. That's quite rare for a disease that is not very common.



In the mid-2010s, Johnny led a team of researchers from around the world to test whether a new type of haemophilia medicine could help blood to congeal better. The medications contained a molecule developed in Japan. It was tested on 152 patients in 45 countries. Like most other haemophilia treatments, it was injected.





In 2018, Johnny wrote an important report spelling out the research team's findings. It said:

This works very well. As a bonus, patients are not injected so much. The treatment we currently use is injected three times a week directly and painfully into a vein somewhere on a patient's body.

That adds up to 156 injections per year. This new treatment is only injected lightly under the skin twice a month. At only 24 needle pricks a year, that's a huge difference!

This was just one of many studies on blood of which Johnny has been a part. He's been fascinated by blood since his days as a science student at the University of Limpopo and the University of the Witwatersrand. By 1991, he had realised that this was clearly his life's calling.



One weekend he went home to his parents in Daveyton in Benoni and told his mother 'Mom, I want to become a doctor. Then I want to study even more to become a haematologist.'

His mother was preparing dinner at the kitchen table. She stopped to ask: 'A what?'



‘A haematologist. A doctor who specialises in blood and knows more about blood disease and blood tests than the average doctor,’ he explained.

Johnny told her about diseases such as glandular fever, leukaemia and anaemia. ‘Some people call leukaemia, blood cancer. Someone with anaemia is extremely tired because their iron levels are too low.’



His mini lesson was interrupted when Johnny's father walked into the kitchen.

'Why so serious?' it's the weekend!' his father joked.

Johnny began defending his career dreams: 'I was explaining how I really like blood and want to find out more about it. Yes, yes, I know it's not the most typical career choice!'



His father gave him one look that said it all: 'My son, we are very proud of you, no matter what you do. You are the first in our family to make it to university. We trust you to make the right choices.'



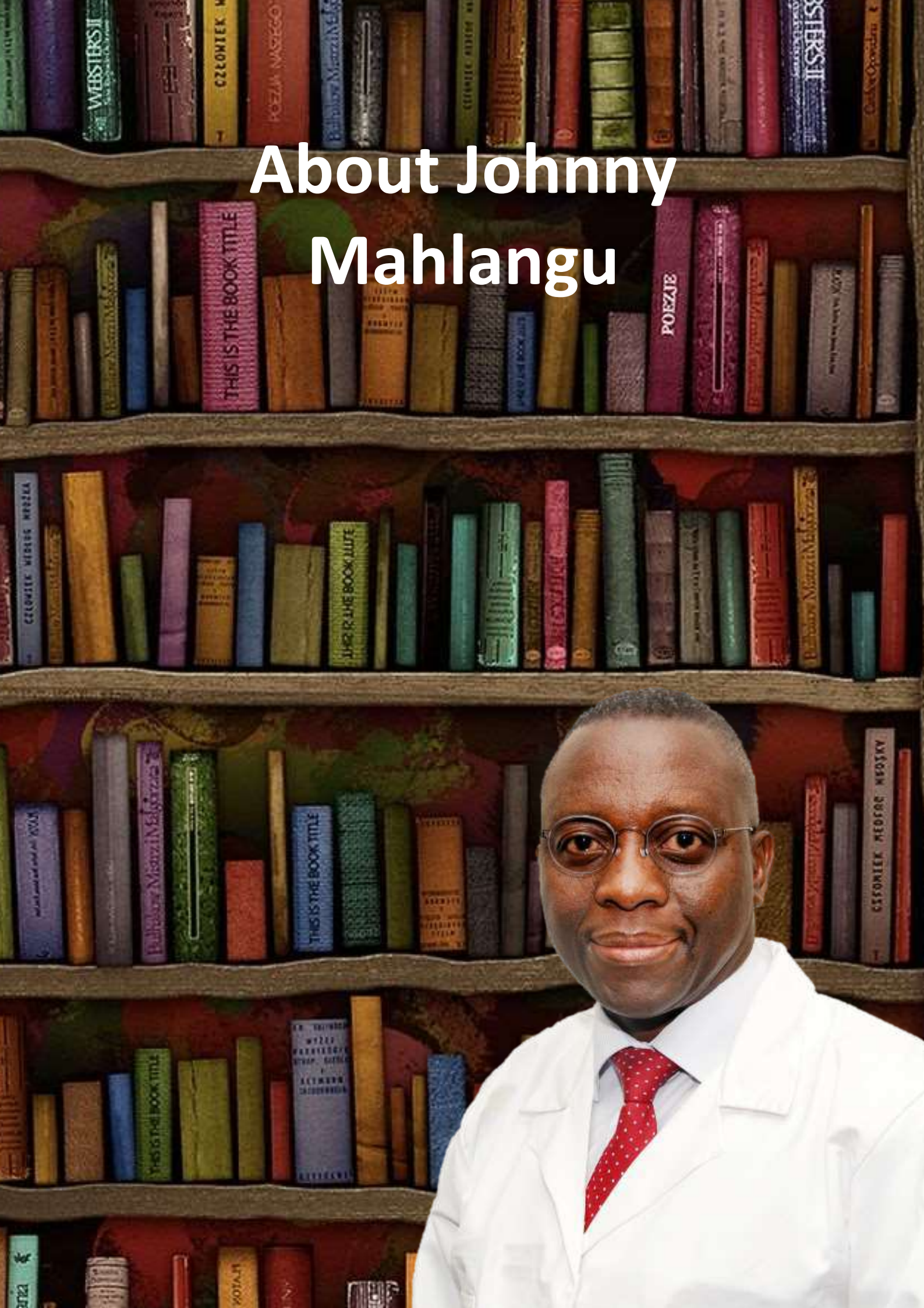
Johnny did become a doctor and completed a special postgraduate degree called an MMed in haematology in 2008. Later, he became head of a special centre at the Charlotte Maxeke Johannesburg Academic Hospital that cares for people suffering from blood-related diseases and teaches families and other doctors more about them. He helped set up 18 similar centres around South Africa and in other African countries. He served in various science leadership roles and became president of the South African Society of Haematology.



Johnny's work on blood-related illness was recognised in 2018 when he received the annual international community award of the Novo Nordisk Haemophilia Foundation, celebrating his passion for blood – a topic most others try to steer clear off!



About Johnny Mahlangu



Born: 23 June 1964, Benoni

Matriculated: Hulwazi Secondary School, Daveyton, 1984



What is haemophilia? Haemophilia is the inability of blood to clot easily, which makes any bleeding difficult to stop. Haemophiliacs bruise easily. Bleeds can occur inside their bodies and into their joints, too. Without the right treatment, patients start struggling to move because their joint are too painful for much of the time.



What is missing? The blood of haemophiliacs does not contain an essential blood-clotting protein called factor VIII.

Rare. Only one in 10 000 people suffers from haemophilia. It is usually hereditary, which means it can be passed on in a family from one generation to another.



Important litres. Most people believe that the brain or heart is the most important organ. For Johnny, it's the five to six litres of blood that constantly circulate through your body. Blood transports oxygen to your brain and nutrients digested from the food you have eaten to your whole body.



