



This welcome pack belongs to a HeroRAT adopter

PROTIS ENVIRONNEMENT

WE TRAIN RATS TO SAVE LIVES





THANK YOU

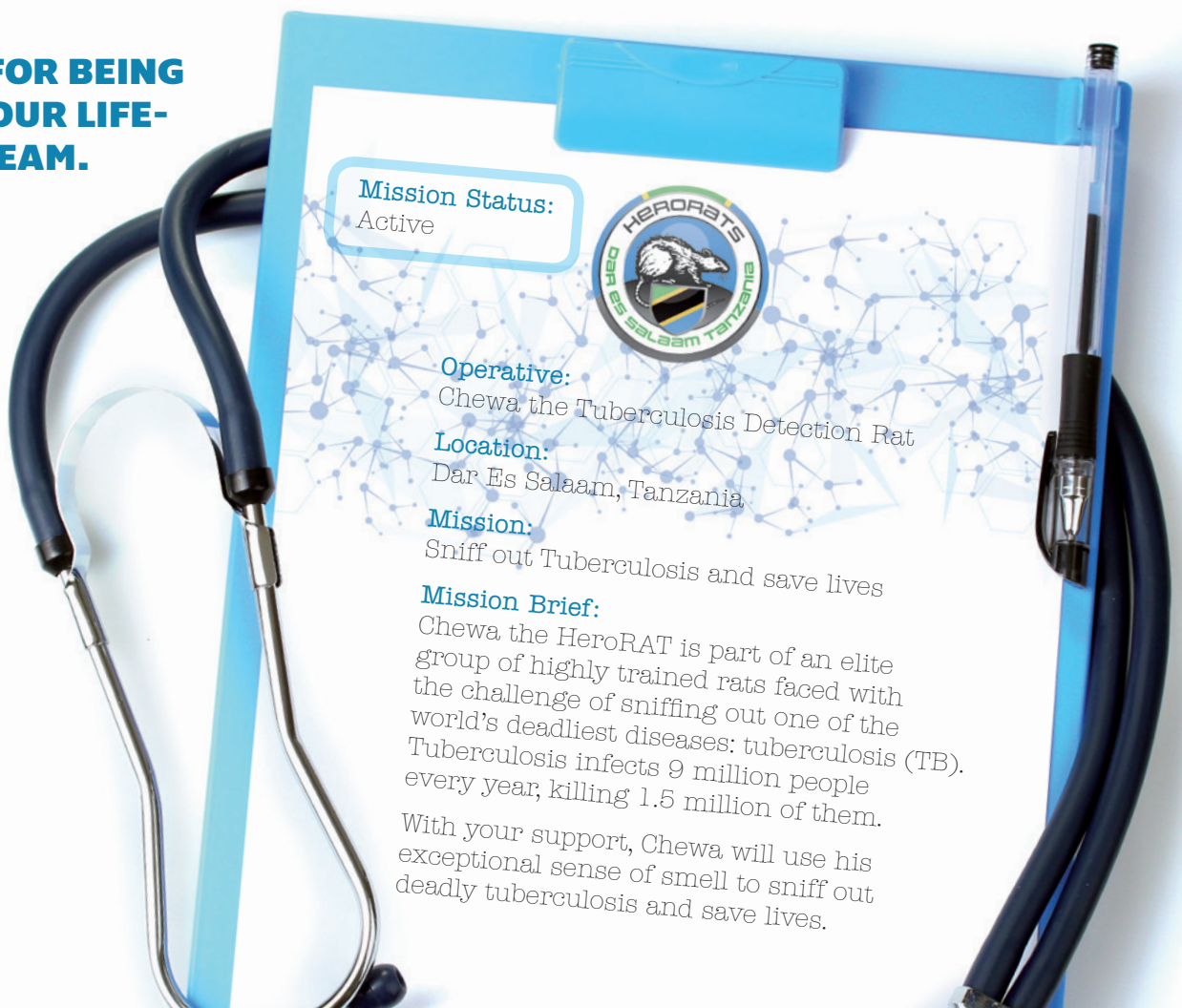
FOR SUPPORTING APOPO TO DETECT TB AND SAVE LIVES BY ADOPTING CHEWA.

Chewa is a highly trained Tuberculosis Detection Rat or HeroRAT for short. HeroRATs like Chewa use their remarkable sense of smell to safely sniff out tuberculosis faster and more accurately than existing methods. As a HeroRAT adopter you are a part of a remarkable community of people who are supporting APOPO and the HeroRATs to save lives. This information pack will introduce you to Chewa's world and show you how to follow his life-saving adventure.

THANKS FOR BEING PART OF OUR LIFE- SAVING TEAM.



HeroRATs
APOPO





Name
Chewa (pronounced CHEH-WAH)

Names of Adopted Rat's Parents
Tedy (Mother) and Terry (Father)

Scientific Name
Cricetomys Ansorgei

Date of Birth
16-Sep-2012

Birthplace
Morogoro, Tanzania

Job Title
Tuberculosis Detection Rat

Location
Dar Es Salaam, Tanzania

Number of Years' Experience 3

Lead Trainer's Name
Karim

Favourite Food
Banana

Favourite Toy
Climbing trees

Measurements
78,25 cm (including tail)

Weight
1,36 kg

Distinguishing Features
Line of dark fur between the eyes

Personality
Hard worker and very active




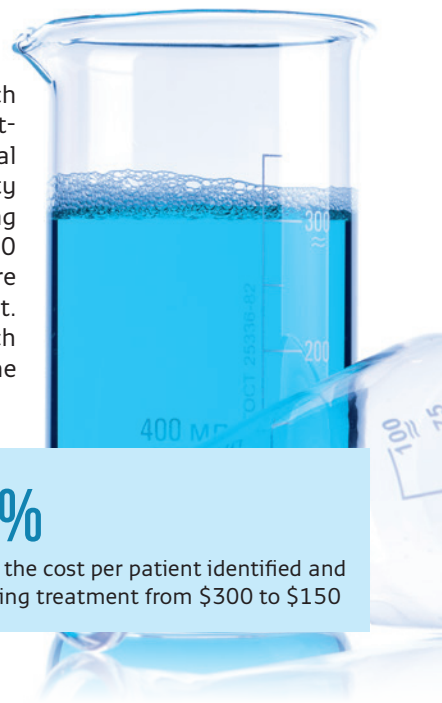
Chewa's Nickname:
Chapa
Meaning hardworking and busy

FACTS ABOUT TUBERCULOSIS

1. Tuberculosis is a bacterial disease that predominantly affects the lungs.
2. TB is usually transmitted through the air by coughing. Someone who remains untreated can infect up to 15 other people per year.
3. The conventional method to detect TB in public clinics in developing countries is microscopy, which is slow and diagnoses only 20-60% of the patients. HeroRATs are fast and detect 60-80% of the patients.
4. According to the WHO, 9.6 million people were diagnosed with TB in 2014, of whom 1.5 million died. Most TB-related deaths occur in developing countries.
5. TB is present all over the world. In 2014, 58% of cases were reported in South-East Asia and Western Pacific Regions.
6. People living with HIV are particularly susceptible to TB. In 2014, roughly one-third of HIV-positive individuals were also diagnosed with the lung disease.
7. Due to the connection with HIV, people with tuberculosis are often stigmatised.
8. TB is curable and preventable. TB can be treated with a six-month antibiotics plan.
9. TB mortality rates have fallen drastically in the last thirty years: 47% since 1990. This is due to improved diagnostics and treatment, but there is still much work to be done.
10. Diagnoses and treatments have saved 43 million lives between 2000 and 2014.

HERORATS IN DAR ES SALAAM

 Summer 2016 saw APOPO launch a new HeroRAT Tuberculosis testing facility in Dar Es Salaam, the capital of Tanzania. The state of the art facility will provide overnight screening helping to reduce the diagnostic delay from 5-10 days to just 1 day, resulting in more people getting on immediate treatment. The new premises will expand the reach of APOPO's HeroRATs by increasing the city coverage from 50% to 85%.



IMPACT OF NEW FACILITY

10,000+

Increase patients screened per year from 21,000 to at least 31,000

55%

Increase patients initiating treatment from 840 to at least 2,000

50%

Lower the cost per patient identified and initiating treatment from \$300 to \$150

TB Detection Rat Fact 1

Chewa can screen **a hundred samples in 20 minutes**, this can take a lab technician up to four days.

TB Detection Rat Fact 2

For every additional patient placed on TB treatment APOPO and the HeroRATs potentially **halts the spread of TB** to up to 10 other people per year.

TB Detection Rat Fact 3

Chewa can screen **a hundred samples in 20 minutes**, this can take a lab technician up to four days.

TB Detection Rat Fact 4

Due to their 6-8 year working life, **the cost of APOPO's TB detection rats** work on an economy-of-scale basis. With a minimal start-up cost followed by low running costs, testing becomes highly cost efficient as more samples are tested.

TB Detection Rat Fact 5

APOPO HeroRATs are **more sensitive** in identifying TB positive patients than standard methods such as microscopy. This means more lives are saved every day.



"Thank you APOPO and the HeroRATs for saving my life"

Claudi Norbert



"HeroRATs saved my life. Now I volunteer to raise awareness of TB"

Lulu



"The clinic called to say I had been tested TB positive by rats. Rats! I could hardly believe it!" William Magaga



READ THEIR FULL STORIES AT WWW.APOPO.ORG/EN/WHAT-WE-DO/DETECTING-TUBERCULOSIS/SUCCESS-STORIES



HeroRATs,
APOPO

ABOUT APOPO

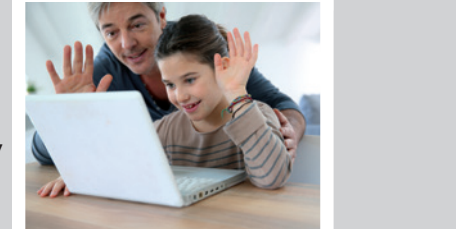
APOPO is a Belgian NGO that has developed an innovative system deploying African giant pouched rats, 'HeroRATs', to detect landmines or tuberculosis using their sensitive sense of smell.

APOPO and the HeroRATs have cleared thousands of landmines thereby helping hundreds of thousands of people back on their land, and they have saved thousands of lives by detecting Tuberculosis.

OUR GLOBAL IMPACT MINE ACTION & HEALTH TREATMENT

Find out how many other people the HeroRATs have helped. Check out www.apopo.org/en/what-we-do/detecting-tuberculosis/our-impact

“
**THE
HERORATS
SAVED MY LIFE
AND CLEARED
OUR LAND.**”



“
**WITHOUT
THE HERORATS
DETECTING
MY TB
I MIGHT HAVE
BEEN DEAD
BY NOW.**”

Shirifa Shomale, Dar Es Salaam

WHY RATS?

1. Exceptional sense of smell

Rats are among the most sensitive animals when it comes to smell. They can sense where a landmine is buried or if a human sputum sample contains TB. Moreover, their sensitivity for a specific scent increases with training.

2. Intelligent and trainable

The African Giant Pouched Rat (*Cricetomys gambianus*) is an intelligent animal, relatively calm and trainable. They have a long lifespan of up to eight years.

3. Too light to set off mines

On average APOPO rats weigh just over a kilogram, which is not enough to set off a landmine. To indicate the location of a landmine they are trained to pause and scratch on the ground surface.

4. Locally sourced and widely available

The “*Cricetomys Gambianus*” or “African Giant Pouched Rat” is native to most of Sub-Saharan Africa, adapted to the local environment and widely available.

5. Easily transferable between trainers

Though social animals, rats do not bond closely to their trainers. This means that the rats are unfazed when being transferred between trainers or sent abroad for operations.

6. Low maintenance cost

Rats are cost-effective to source, feed, breed and maintain. Their small size makes them cheap and easy to transport both locally and internationally.

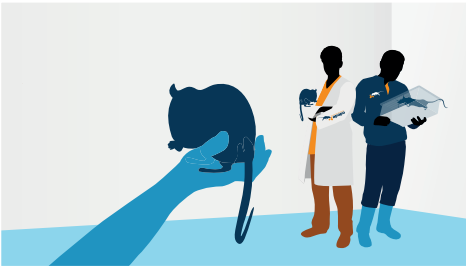
7. Resistant species

Endemic to Sub-Saharan Africa, the African Pouched rats are well adapted to the environment. APOPO's rats are in excellent condition and live long healthy lives.



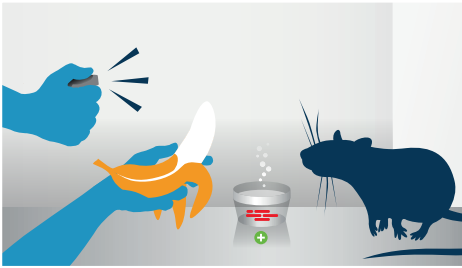
TB DETECTION TRAINING

1 SOCIALIZATION



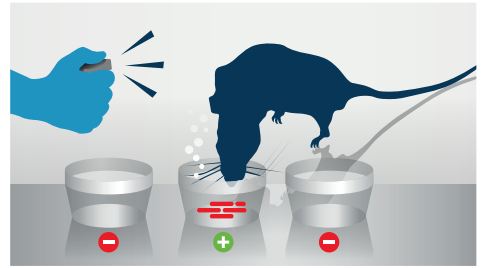
At four-weeks old the rats become at ease in their surroundings and with people. They are regularly handled by trained staff and introduced to everyday sounds and smells.

2 CLICK TRAINING AND SCENT CONDITIONING



The rats are trained to associate the sound of a click with a reward. When they near a sputum sample they hear a click and receive some banana.

3 SCENT DISCRIMINATION



They now learn to distinguish between TB positive and TB negative samples. The rats will only hear a click and receive a reward if they interact with the TB Positive sample.

4 MULTIPLE SAMPLE EVALUATION



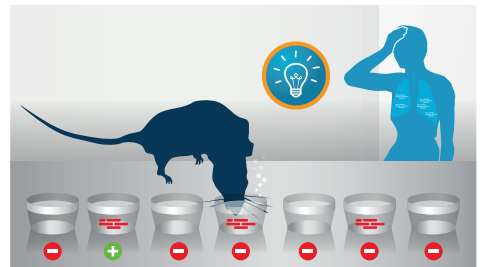
In a larger testing chamber, rows of 10 samples are placed beneath sniffing holes. The rat learns to evaluate large numbers of samples. It is trained to hold its nose over TB positive samples for 2-3 seconds.

5 TB RAT GRADUATION



APOPO's TB rats are now evaluated through a strict testing process. To pass, the rat must find every TB positive patient in the tests.

6 DETECTING TB



The HeroRAT is now operational and tests the daily samples that arrive from the clinics. APOPO has raised detection rates of partner clinics by over 40%.

TB DETECTION PROCESS

1 PATIENT TESTED AT LOCAL TB CLINIC



Patients with suspected tuberculosis leave sputum samples at their local clinic to be checked by microscopy. In some developing countries this method identifies less than half of the actual TB-positive patients.

2 SPUTUM SAMPLE COLLECTION



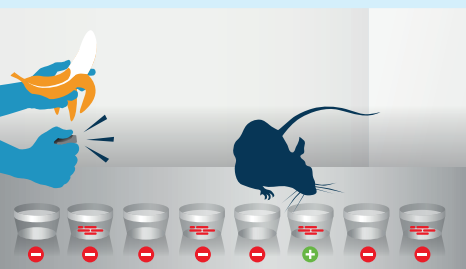
After clinic testing, APOPO couriers arrive to collect both TB-positive and TB-negative samples.

3 APOPO'S CITY CENTRE LABORATORY



The samples are transported from clinics throughout the city to APOPO's central lab for 12-hour testing. On arrival, the samples are made-safe using heat treatment. This ensures that any TB-Positive sputum is not contagious for trainers and HeroRATs alike.

4 TB DETECTION BY HERORATS



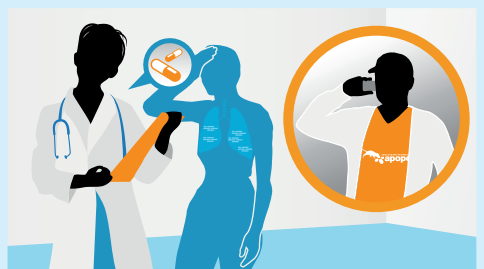
HeroRATs hover over suspect-TB samples for 3 seconds. If it is a TB-positive 'control' sample, the rat receives a reward. This keeps them accurate and eager to find tuberculosis in all the samples.

5 HERORATS FIND TB-POSITIVE SAMPLES MISSED BY CLINICS



The HeroRATs also detect tuberculosis in samples marked negative by the clinics. One rat can check a hundred samples in less than 20 minutes, a task that would take a lab technician up to 4 days.

6 PATIENTS INFORMED AND TREATED



APOPO reports the results back to the clinic within 24 hours so that patients can be informed and start immediate treatment.



ANIMAL WELFARE

Animal Welfare is a top priority for everyone at APOPO. We work in partnership with these wonderful animals and do everything we can to ensure that they are treated like the heroes they are. All of our animals receive a nutritious diet,

a specially designed living space with a friend that they can call their own, bi-weekly health checks by a vet, a stimulating environment, and mandatory petting and cuddles every day from APOPO staff.

Read more about how we take care of the HeroRATs. www.apopo.org/en/herorats/animal-welfare



LEARN MORE STAY CONNECTED



Facebook

<https://www.facebook.com/heroRAT>



Twitter

<https://twitter.com/HeroRATs>



Instagram

<https://instagram.com/herorats>



Youtube

<https://www.youtube.com/c/APOPOHeroRATs>

HAVE A QUESTION? SEND US AN EMAIL
adoption@apopo.org