

[DUALSAVE-FGS](#) is a partnership of nine African and European institutions aiming at developing a cost-effective joint screening method for Female Genital Schistosomiasis and cervical cancer.



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# Newsletter

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## 2024: A crucial year for DUALSAVE-FGS

By Professor Eyrun F. Kjetland

### Introduction

Women with Female Genital Schistosomiasis (FGS) suffer from genital discharge, infertility, increased risk of HIV, stigma and divorce. They are treated with medication for other diseases. In most cases, they are given erroneous information and are neither diagnosed nor treated.

In 2023, we laid the groundwork for tackling FGS. The preparations are almost finished and 2024 will be a year of action. In the middle of all our activities, it is important to remember why we are carrying out the various tasks. To help us with that, we will have set up this overview of what 2024 will look like:

### Patient-related tasks

#### 1. In Women with Urinary Schistosomiasis (Mozambique, South Africa, Eswatini)

DUALSAVE-FGS Aim: Find study participants for the trials.

Activity: The first patient-related task is to find women positive for urinary schistosomiasis and women who are negative for urinary schistosomiasis. The latter group should have three consecutive days' negative urines and should preferably not have had waterbody contact at all. The women, aged 18-49 years, should be recruited in pre-investigated sites. From these sites, the two groups, we will ask if they would be interested in participating in the Alpha or Beta trials.

## 2. Alpha trial (South Africa)

DUALSAVE-FGS Aim: Explore if FGS can be seen with a multispectral colposcope.

Activity: We will do multispectral gynaecological investigations until we find 50 FGS positive cases (from the urinary schistosomiasis positive group). In addition, there should be 50 controls (from the negative group), and 20 cases with cervical pre-cancer. The activities are to start in March or April 2024.

## 3. Beta trial (Mozambique, South Africa, and Eswatini)

DUALSAVE-FGS aims: Perform a clinical trial using the calibrated multispectral colposcope, comparing with a standard colposcope, the standard of care in the respective countries and the gold standard

Activity: In each country, we will do multispectral gynaecological investigations until there are 165 FGS positive cases (from the urinary schistosomiasis positive group) and 165 controls (from the negative group). The Beta trial is scheduled to start in August or September.

## PhD and Masters students from 9 countries

DUALSAVE-FGS aims: Find students with high stress-tolerability, excellent team working abilities, academic and practical merits. Provide hands-on research experience in a multi-disciplinary team, giving inter-sectoral, clinical research, and field experiences. Increase the pool of researchers and clinicians who know Female Genital Schistosomiasis and will be in continuous dialogue with the international community about their FGS patients. We hope



that the conglomerate of aspects that affect rural women in Africa will be efficiently managed as a result of our work; and that research is done to the advantage of the poor and affluent patients alike.

Activities: More than 20 PhD and Master degree students will do research on FGS in 2024. A few of them will submit conference abstracts for 2024 presentations in Africa (where FGS is endemic) e.g. at conferences for Public Health Association of South Africa ([PHASA](#)) and Southern African Society for Obstetrics and Gynaecology ([SASOG](#)).

## **Practicalities for students**

Tutoring: Each of the students will have informal, international DUALSAVE-FGS tutors, in addition to their own supervisors.

Training: In 2024 we will focus on students gaining experience in interdisciplinary fieldwork in communities and institutions.

Accommodation for scientists:

For the work in South Africa, we have rented a house North of Durban, midway between the study sites and the laboratories. Participating scientists will be staying here while they are doing work in the field.



## **Health professional-related tasks**

Informed and health professionals with skills and guidelines are key to a successful fight against Female Genital Schistosomiasis.

DUALSAVE-FGS aims: (1) Make and evaluate a scalable online and App-based training course for frontline primary health professionals and gynaecologists. (2) Write policy documents and treatment management protocols. (3) Organise stakeholder interaction.

Activities: Work closely with the cervical cancer screening programmes, the syndromic management committees in the respective countries, the WHO, the postgraduate training programmes, medical schools, researcher- and nurses' training decision makers, and implementers. We will deliver information that is useful and draft templates for training.

Parallel to the testing of the colposcope we will publish information about the project DUALSAVE-FGS activities and about FGS in traditional media such as TV, radio, newspapers, magazines, trade journals and social media. With the last activity in mind, we have hired Kabelo Rethabile Khetsi to work on social media (see the next story).

## **New social media manager started on 15. January**

Kabelo Khetsi will produce content for our social media accounts on Instagram, X, Facebook and other platforms as well as participating in the development of a media and communications strategy for reaching our target audience, namely Southern African health professionals.

She has also earned a BSc (Hons) degree in biological sciences from the University of Mauritius. This will help her understand the dynamics and technicalities of our project. She says that she loves science and biology, and also the human part of it. “I wanted to work with people, but still around the passion for human biology, working with the human body” she says and adds “At one point in my life I wanted to become a doctor.”

She also has solid experience in social media management and content creation. Kabelo worked for a Travel and Event Tours company, where she did bookings, administrative work, and scheduling trips and packages. She ran the social media pages, building brand awareness, as well as developing digital promotional content. Analysis and evaluation of past media campaigns was also part of her portfolio. Her American employer was LinkedIn, where she among other tasks, were responsible for computer graphics.

Kabelo currently lives in Johannesburg, but will move to KwaZulu-Natal in February. She speaks Zulu, Sotho and English.



*Kabelo Khetsi*

# DUALSAVE-FGS Project activities in 2023

South African National Department of Health (DoH):

## The fight against FGS can be won

DUALSAVE-FGS researchers' earlier findings were presented to the Department of Health, ranging from adult and childhood manifestations of genital schistosomiasis to prevalence in schools in KwaZulu-Natal.

In Ugu District, Professor Zilungile Mkhize-Kwitshana (University of KwaZulu-Natal and Schistosomiasis Task Force Pioneer) welcomed Ms Tsakani Furumele from the National Department of Health, who shared thoughts on the road ahead.



Prof. Mkhize-Kwitshana  
Photo: Collette Braille



Director Tsakani Furumele, National Department of Health, Communicable Disease Control, South Africa & Africa CDC  
Photo: Collette Braille

Tsakani Furumele is the Director of Communicable Disease Control at the National Department of Health (DoH). She expressed both optimism and pessimism. As an optimist she said, that the fight against schistosomiasis can be won. On the pessimistic side, she outlined the obstacles in reaching the goal of the lowering the prevalence of schistosomiasis.

In South Africa approximately 4 million people are affected and 21 million are at risk. Research shows that the prevalence of schistosomiasis in school children higher than 10 percent in 16 out of 52 districts. In some areas more than half the children are affected!

Most countries use Mass Drug Administration (MDA) with the medication “Praziquantel” for high-endemic areas. But South Africa is one of only two African countries that do not. However, Tsakani Furumele has not given up on MDA as a way of combating schistosomiasis, even though there is no money in the budget. She favours community-based MDA, rather than distributing the drug only to schools. “There is a need to change the operation model and culture to facilitate local ownership,” she said.

Ms Tsakani Furumele thanked the researchers for their contribution in combating the disease. Schistosomiasis is a neglected tropical disease, but she ended her presentation by stating that “it is possible to change the lives of the neglected.”

Costas Balas of QCELL our partner in Greece:

## Spectral vision has enormous potentials

Professor Costas Balas, with a background of bio photonics and electronics, have merged his two technologies and may revolutionize areas of pathology and diagnostics. Medical scopes now in use, utilize three bands of colour in the visible spectrum, thus limiting the diagnostic possibilities. Spectral vision technology breaks beyond the visible spectrum and enables multichannel visibility. “We can process information in several spectral bands, including the invisible portions of the spectrum, giving us plenty of opportunities to probe tissues’ biochemical and microstructural status, not available with conventional devices,” says prof. Balas.



*Professor Costas Balas*

Currently a full professor at the Electrical and Computer Engineering Department of the Technical University of Crete, he founded QCELL in 2016, a bio photonic imaging technology spin-off. “Crete is a vibrant community with several universities, university hospitals, research centres and technology parks, so there is a critical mass here to develop technologies,” he says.

QCELL has invented and employs spectral vision technology in various fields of clinical medicine. One example is the world’s first spectral mapping dermoscope. This enables dermatologists (skin doctors) to differentiate between melanoma and non-melanoma skin cancers as well as between benign, dysplastic, and melanoma lesions.

Health professionals should be able to distinguish between lesions caused by cervical cancer and Female Genital Schistosomiasis. Ideally, it should be possible to locate sub-surface schistosomiasis

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*In 2018, some of the DUALSAVE-FGS researchers saw the potential of the QCELL Spectral Vision Technology: “Schistosomiasis eggs are located in the submucosa - maybe this technology can help us see?...It promises not to be expensive so maybe the tool can be rolled out in primary health care?”*

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eggs in the genital wall. QCELL’s spectral vision colposcope promises the do just that. The technology can provide a clear and detailed picture, enabling examiners to precisely diagnose these severe pathologies in real-time and non-invasively.

DUALSAVE-FGS will test the QCELL’s small, handheld and affordable spectral vision colposcope and to verify whether this new technology works as expected. If so, screening and diagnosis for cervical abnormalities will never be the same.

Khumbulani Hlongwana:

## We are breaking new ground



*Ass. professor Khumbulani*

*Photo: Collette Braille*

Associate Professor Khumbulani Hlongwana (middle of picture) from the School of Nursing and Public Health at University of KwaZulu-Natal (UKZN) characterizes the cooperation between social sciences and medical research in DUALSAVE-FGS as a win-win. These scientists mostly work in separate fields, but in our project we are coming together in a way that will benefit the patient, he says.

Together with Professor Hanne Haaland and others at University of Agder in Norway, Khumbulani looks at FGS from the health professionals' or the patients' point of view. In rural African settings, people often consult

traditional healers on health issues. Because of the division between the biomedical field and traditional healers, it makes it very difficult for each party to understand the other. "But we as social scientists are coming in between and start hearing both sides and how we best can come up with the model that will work for the patient," Khumbulani says.

As an example he mentions how social science can help patients understand medical terms and jargon. But the cooperation also enables DUALSAVE-FGS to assess the effectiveness of its approach to introducing state-of-the art technology into rural Africa and successfully lower the stress level in women who are undergoing invasive testing procedures.

Mahala Livingston from Tulane University, New Orleans, USA:

## I would like to cooperate with DUASAVE-FGS in the future

American medical student Mahala Livingston met FGS researcher and medical doctor Eyrun Kjetland when she spent a semester at the University of Cape Town, as part of her Masters in Public Health and Tropical Medicine at Tulane University in New Orleans. She volunteered at BRIGHT Academy and later wrote an article on [mapping genital schistosomiasis in KwaZulu-Natal, South Africa](#) which was published in the American Journal of Tropical Medicine and Hygiene in 2021.

Under the leadership of Professor Myra Taylor and Eyrun Kjetland, clinical data and urine samples had been collected from school children. Mahala used the data and tied them to specific locations in Ugu, Ilembe, and King Cetshwayo Districts. “I did the mapping,” she says.

For some of the schools, the data showed that about half the school children had schistosomiasis eggs in their urine. Mahala says that many of the adult women with Female Genital Schistosomiasis were probably infected in childhood.

There is a drug that kills the worm. It is called Praziquantel. But it does not heal the women’s damaged tissue. In order to prevent disease, some African countries give these pills to school children once a year, but this is not the case in South Africa. In South Africa Praziquantel costs up to 10 US dollars per pill. Other African countries have accepted the generic version of the drug and can distribute it for 8 US cents a pill.



*Student Mahala Livingstone  
Photo: Collette Braille*

Mahala presented her findings both in Ugu District (South Africa) to the National and local Department of Health and also at the United States Annual Conference for the American Society of Tropical Medicine and Hygiene. She is now in medical school at Tulane university, New Orleans, USA and plans a clinical and research career. “I find the DUALSAVE-FGS programme interesting, and I would like to get involved with it in the future, if the opportunity is there,” she says as she attended the training for DUALSAVE-FGS Early Stage Researchers organised by University of KwaZulu-Natal, Durban University of Technology and BRIGHT Academy in South Africa.

## Traditional healers and FGS

Can traditional healers play a constructive role in the fight against FGS? Sinegugu Shangwe will try to find out in her PhD project at UKZN. She argued that 80 percent of the people in



*Sinegugu Shangwe, PhD Student  
Photo Kåre Melhus*

South Africa, suffering from one ailment or another, consult a traditional healer. They hold a world view which include the spiritual as well as the physical.

The healers know a lot about plants with healing properties, and they can assure patients that their ancestors are not angry with them, so that is not the reason why they seem not to get better.

In her research Sinegugu will interview healers to learn what they know about schistosomiasis



(Bilharzia, Isichenene). She is pretty sure that schistosomiasis is viewed as something affecting men and boys, as they have visible blood in the urine. Women with vaginal problems and unpleasant discharge may be hard to diagnose from a healer’s point of view. So nowadays they may encourage women to see medical personnel at the local clinic.

Sinegugu says that the “HIV period” (years of epidemic HIV transmission) resulted in closer cooperation between healers and medical professionals. This was the result of healers starting to encourage patients to go to the clinic for consultation and treatment.

It is this interface - between the biomedical world and traditional healers - Sinegugu wants to study. She emphasizes that she will go back to the healers after she has completed her work to tell them what she found. This way “they will have a feeling of having made a contribution,” as Sinegugu puts it.

## FGS in gynaecological textbook series for the first time

The Continuous Textbook of Women’s Medicine “Infections in Gynaecology” features [a chapter on Female Genital Schistosomiasis](#) co-authored by Professor Eyrun Kjetland

“This publication gives the neglected tropical disease, Female Gennital Schistosomiasis, worldwide gynaecological community visibility,” professor Kjetland says.

The series of books are regarded as authoritative texts and used in teaching worldwide. The book is published by FIGO (Federation of Gynaecology and Obstetrics) and the Alliance for Global Women’s Medicine. The latter is represent the educational platform for FIGO, making the book series authoritative for gynaecologists worldwide.

