

# Little appetite for study on an empty stomach.

Malnutrition and worm infections negatively affect the performance of schoolchildren in South Africa. The efficacy of simple countermeasures is now the subject of research.

Text: David Herrmann



**Uwe Pühse** is Professor of Sport Science at the Faculty of Medicine at the University of Basel. He also researches how dimensions of teaching quality are recorded in physical education.

“Please don’t do that!” Uwe Pühse vividly describes how the principal of a primary school in Port Elizabeth, South Africa, saved him from making a serious mistake. And all Pühse and his research team wanted to do was ask the pupils to bring their sports kit to the sport test the next day. “Most children do not possess such a thing. Due to a sense of shame, they would not have come to school at all and the test could not have taken place.” Pühse is Professor of Sport Science at the Department of Sport, Movement and Health (DSBG) at the University of Basel. Together with Professor Jürg Utzinger from the Swiss Tropical and Public Health Institute (Swiss TPH) he leads the DASH project (Disease, Activity and Schoolchildren’s Health) which is funded by the Swiss National Science Foundation (SNSF).

In Port Elizabeth, a research team from the DSBG and Swiss TPH is, along with a team from the Nelson Mandela Metropolitan University, studying the effect of parasitic worm infections and of malnutrition on the physical fitness, cognitive performance and psycho-social health of around 1,000 children at 8 schools. All the schools are located in extremely poor areas with high rates of unemployment. These are just the basic facts. The significance of the project only really becomes tangible, however, when Uwe Pühse recounts his experiences there. “When the children come to school on Monday, for many their last meal was a school meal on Friday.”

## Trust enables deep insights into health

And yet: Looking at the pictures of children at the schools, they seem to be thriving. Professor Rosa Du Randt, however, sweeps this impression aside. “It is difficult to see when the children are wearing their school uniforms, but most of them lag behind in their development compared with children of the same ages at better schools. Half of them are HIV-positive and many suffer from parasitic worm infections or other chronic diseases.” Du Randt is director of the School of Lifestyle Sciences at the Nelson Mandela Metropolitan University in Port Elizabeth and together with her colleague Professor Cheryl Walter she jointly leads the project. She and her team are building the bridges between the cultures. This is taken for granted in Switzerland but cannot be simply assumed in South Africa. Conversely, certain conditions prevail in South Africa that are unimaginable for the Swiss. There is constant fighting between heavily armed drug gangs, even very near to schools. Whoever wishes to work and conduct research successfully here needs people they can trust who are familiar with the local situation.

Bruce P. Damons was recently voted Principal of the Year in South Africa. He is head of the Sapphire Road Primary School and is part of the research team. His insights into the everyday life of the local people as well as his suggestions led to a complete overhaul of the research design that Pühse, Utzinger, and their team had developed back in Basel.



**Rosa Du Randt** is a Professor at the Nelson Mandela Metropolitan University in Port Elizabeth, South Africa. Her research focuses on biokinetics and talent identification.

Together with Damons, the team has now put together a plan designed to allow them to achieve their research goals while respecting the personal pride and the living conditions of the participants. For Uwe Pühse the situation is clear: “Without Bruce we would never have come so far. He is our man on the frontline who does the explaining, the one who can explain to the children’s parents in their own local language what we are trying to achieve and why the examinations, which are sometimes very personal, are so important.”

**Long-term examinations for sustainable changes**

In two stages lasting until 2016, a range of data regarding the health of the children will be collected. First, a cross-sectional study will analyze the extent to which the children are suffering from infectious diseases and parasites, the effect these have on their physical fitness and cognitive performance, and the effect nutrition has on their health. The children will be clinically examined and anthropometrically measured; they will be asked to provide stool and urine samples to be checked for certain pathogens and parasites.

Second, the research team will conduct a longitudinal study on how targeted school-related intervention measures affect the health and wellbeing of the children. Over the course of 18 months, the medical status, physical fitness, cognitive performance, and psycho-social health of the children will be monitored regularly. In parallel, targeted measures will be implemented in half of the schools: The teaching staff will be trained in giving sport lessons and in promoting exercise, the children will be de-wormed and given further medical care, the school meals menu will be overhauled, children and staff will be trained in personal hygiene, and the school grounds made more exercise-friendly. The project, however, also includes the aim of making sure that the schools in the control group will, after the project is completed, also see measures implemented. For Du Randt it is clear: “The success of the project requires that all participants benefit equally.” (Please also see the interview.)



This QR code links to a film about the research project described here, conducted jointly by the University of Basel and the Nelson Mandela Metropolitan University.

**Within the framework of the DASH project, Professor Rosa Du Randt visited her colleagues at the Department of Sport, Movement and Health at the University of Basel. Uni Nova met up with her.**

**UNI NOVA:** Professor Du Randt, how many other research projects with similar international involvement are in progress in your department at the moment?

**ROSA DU RANDT:** Currently just one – but in terms of size or significance it cannot really be compared to the DASH project. The exchange with the University of Basel is extremely valuable to us; not only scientifically but also for our colleagues and students. The opportunity to come here and work on this project is a huge benefit for all.

**UNI NOVA:** And how do the Swiss colleagues benefit in return?

**ROSA DU RANDT:** Their view of Africa changes. They see the extreme diversity of the continent – the good and the bad sides. And they realize that in spite of their extreme poverty the people have maintained their pride. It is therefore important to understand that we are doing things with them and not for them.

**UNI NOVA:** And this understanding that you are doing the project together is the secret of your success.

**ROSA DU RANDT:** Exactly. And, in addition, the colleagues from Basel would never have come so far alone. In order to approach the people in the townships, you have to keep to certain rules so as not to appear insulting. Some of our own colleagues and students grew up there themselves, so they know the local language and the conditions there. That helps us enormously.

**UNI NOVA:** The project design aims at improving the living conditions of the pupils there. Do you believe that this is another reason for the success of the project?

**ROSA DU RANDT:** Yes, absolutely. Whenever research is done within a community, then everyone must benefit. That is the key to participation in the project and so also to its success. ■