

# CHILD study shows rise in obesity, blood pressure at NW primary schools

A unique study tracking the health status of children as they progress through primary school is sounding alarm bells.

Obesity, high blood pressure and sedentary living are some of the health risk factors being found in children as young as seven in the North West Province. What's more, there is a definite increase in the number of children who become obese as they move through school.



More girls than boys are overweight or obese, but the increase in obesity among boys is rising faster than among girls. (Image: Wikimedia Commons)

"The prevalence of obesity, which has a direct link with high blood pressure, is on the increase. In 2010, when the children were in Grade 1 and we did the first round of measurements, we found that 12,51% were overweight or obese. The prevalence has since risen to 16,71%," says Prof Anita Pienaar, principal investigator in the North West CHILD study, a flagship research project of the Physical Activity, Sport and Recreation focus area on the Potchefstroom Campus.

"When you consider that a 4,2% increase translates into 53 children who were not overweight or obese in Grade 1 but are now in Grade 4, it becomes clear that this is cause for concern," Prof Pienaar says.

The seven-year study, now in its fourth year, is also revealing striking differences in obesity rates among children from different socio-economic backgrounds.

A total of 571 children from 20 schools in all four districts of the province are currently participating in the CHILD study, which looks at physical development, motor development and health status. The children represent all five socio-economic quintiles, from the most deprived (quintile 1) to the least deprived (quintile 5).

## Obesity higher among the affluent - but growing among the deprived

"Among children from the most affluent groups, as many as 27% were overweight or obese when we tested them in Grade 4 in 2013," says Prof Pienaar. This compares to an obesity rate of only 13% among the most deprived children.

However, even in the most deprived quintiles, more and more children are becoming overweight or obese. "The rate doubled from 2010 to 2013 - and these children became obese rather than overweight," she says.

"Although more girls than boys are overweight or obese, the increase in obesity among boys is rising faster than among girls. It will be interesting to see what the figures look like when we do the next tests in 2016 when the children are in Grade 7."

## Vast number of variables tested

According to Prof Pienaar, the CHILD study is unique in that it is the first study in South Africa that follows the same group of children throughout their primary schooling, and incorporates a vast number of health variables.

These variables are intended to give the full picture of each child's physical and motor development, as well as health status. "We measure everything from their height, weight, speed and balance to heart-lung capacity, body mass index and blood pressure."

In tandem with the obesity trend, the project team has picked up an increase in elevated blood pressure. Prof Pienaar says. "There is a clear link between being overweight and having high blood pressure, which becomes hypertension and is a risk factor for early death. A third risk factor, sedentary lifestyle, is also common among children who are overweight."

Another worrying finding is that the motor proficiency (movement involving a motor or muscle component) of almost half of the children is below average. "In Grade 1, the motor proficiency of one in two children was not up to standard," she says.

"We also found that the development level of basic sports skills was low. The group's chronological age in Grade 1 was 6,78 years and their development level was 5,49 years. That is one year and three months behind their chronological age."



A bad diet doesn't help. (Image: Wikimedia Commons)

## Motor skills affect school performance

The motor skills data for 2013, when the children were in Grade 4, is still being analysed. However, Prof Pienaar says the impact of poorly developed motor skills should not be underestimated.

"In our earlier research, we found a strong relationship between these skills and early school success in mathematics, writing and reading. There is no doubt that motor skills play a role in school performance."

Prof Pienaar attributes the increase in obesity and decline in motor proficiency mainly to low levels of physical activity among children, both at school and at home.

"Physical education as a subject was removed from the curriculum in 1996. Although it has been reintroduced, many schools lack the expertise and equipment to teach physical education effectively."

## Positive patterns amid the gloom

She adds that the CHILD study findings have revealed two positive trends amid the gloom of rising obesity, blood pressure and sedentary living. "Wasting and stunting, which is an indication of how healthy kids are, has come down compared with previous studies. Feeding schemes at schools have played a big role in this."

The other positive observation is that while many children have below-average motor and basic sport skills, some are highly talented. "There are kids with excellent motor proficiency, across all socio-economic quintiles. Their potential just needs to be developed."

## CHILD study at a glance

- The three-point CHILD study started in 2010 when 816 Grade 1 children at 20 schools in the North West Province were tested for their physical and motor development, as well as health status.
- The second round of tests was conducted in 2013 when the children were in Grade 4. Of the 816 children who started, 571 were still at the participating schools, representing a fall-out rate of 29%. This is not exceptionally high considering the extent of mobility among school-going children in the province.
- The third and last round of testing will be conducted in 2016 when the children are in Grade 7.
- The project team, led by Prof Anita Pienaar, consists of eight researchers and 12 postgraduate students. The team members themselves conduct all the tests and capture the data.