

Mosquito net safe to use in inguinal hernia repair

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Andreas Wladis, M.D., Ph.D., is Associate Professor at Karolinska Institutet in Sweden. Credit: Stefan Zimmerman

Sterilised mosquito nets can replace costly surgical meshes in the repair of inguinal (groin) hernias without further risk to the patients. This

makes mosquito nets a good alternative for close to 200 million people in low-income countries suffering from untreated groin hernias. These are the results of a Swedish-Ugandan study presented in the *New England Journal of Medicine (NEJM)*.

An inguinal hernia is a defect or a hole in the abdominal wall around the groin, through which fat, intestines and sometimes other abdominal organs can be pressed into a sack-like protrusion. It is a common complaint in both high and low-income countries, and the only [effective treatment](#) is surgery. Without surgery, inguinal hernias can cause considerable suffering and life-threatening complications that cause some 40,000 fatalities a year.

Hernia surgery is also one of the world's most common surgical procedures, accounting for around 20 million operations every year. However, almost 200 million sufferers do not receive surgery, most of who live in the poorer parts of the world; the operations that are performed use techniques that are clearly inferior to those used in high-income countries. One of the reasons that too few people in low-income countries are given the chance of effective treatment is that the scientifically tested meshes available on the market are very expensive.

"Commercial hernia meshes cost 100 dollars or more, which is too much for the health services and people living in poor countries," says Dr Jenny Löfgren, researcher at the Department of Surgical and Perioperative Sciences, Umeå University in Sweden. "So instead, doctors and surgeons in several countries have been using [mosquito nets](#), but whether they are effective and safe hasn't been given sufficient study until now."



Hernia surgery is shown at a Swedish hospital. Credit: Stefan Zimmerman

Working with colleagues from, amongst other institutions, Karolinska Institutet in Sweden and Uganda's Makerere University, Dr Löfgren has therefore conducted a large randomised clinical trial to compare mosquito net with the regular commercial mesh used in hernia operations. The study, which is published in *NEJM*, involved over 300 adult males from rural eastern Uganda who were randomly assigned to receive the one or the other type of reinforcement. The operations were performed by four experienced surgeons at the Kamuli Mission Hospital, and the participants were subsequently monitored for a year as regards patient satisfaction, post-operative complications or recurrence.

The results show that the post-operative complications that occurred were normally mild and that there was no significant differences between the groups. This was also true of self-rated satisfaction. Only one patient in the mosquito-net group had a recurrence. All in all, the study shows, according to the team, that sterilised mosquito net is fine for use in [hernia surgery](#) without compromising patient safety and treatment efficacy.

"These results are of great potential benefit to the many millions of people who lack access to good surgical care for their hernias," says study project leader and surgeon Dr Andreas Wladis, associate professor at Karolinska Institutet's Department of Clinical Science and Education at Stockholm South General (Söder) Hospital. "The next step will be to motivate greater resource allocation to treat hernia patients and plan for how mosquito nets could be used for hernia surgery on a larger scale."

More information: 'A randomized trial of low cost mesh in groin hernia repair', Jenny Löfgren, Pär Nordin, Charles Ibingira, Alphonsus Matovu, Edward Galiwango, Andreas Wladis, NEJM online 13 January 2016.

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