

## Doctors **knock out** sheep to discover anesthesia's dark side

Beneath green surgical sheets and a **tangle** of tubes, a healthy young **ewe** is undergoing a heart-lung bypass procedure to help answer one of several urgent questions about a **pillar** of modern medicine: **anesthesia**.

knock out 击倒; 击晕

tangle 纠纷; 缠结

ewe 母羊

pillar 柱子; 核心

anesthesia 麻醉

anesthetic 麻醉剂; 麻醉的

Almost two centuries after **anesthetics** revolutionized surgery, a growing body of research is pointing to disturbing side effects that range from delirium to cancer-**proliferating** immune suppression. Of the 200 million adults worldwide who undergo non-**cardiac** surgery annually, more than 1 million will die within 30 days. "You don't die on the table, but quite a lot of you don't get home," said Andrew Davidson from the Murdoch Children's Research Institute in Melbourne.

proliferate 增殖; 扩散

cardiac 心脏的

A paper published last month showed that volatile-gas anesthesia was associated with higher activity in a key nerve that corresponded with a potentially damaging reduction in blood flow to the kidneys of sheep during **abdominal** surgery. **Intravenous** anesthesia had less impact.

abdominal 腹部的

intravenous 静脉内的

It's possible that the nerve activation associated with anesthesia, especially the inhaled gas form, is also impairing the immune system, according to Clive May, head of the Florey Institute's **preclinical** critical care unit.

preclinical 临床前

"For 140 years, we were just concerned about safety," Lis Evered, a neuroscientist at St. Vincent's Hospital Melbourne, said. "In the last 30 years, we've actually become a bit more concerned about other sorts of impacts. Now, we want people to survive the procedure and have a good quality of life for the next 10 to 20 years."