

# *OUCH, THAT STILL HURTS!*

## **Discovering the Mystery of Unexplained Pain During Breast Cancer Surgery**

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Source: [O, The Oprah Magazine](#), Photograph by Adam Voorhes

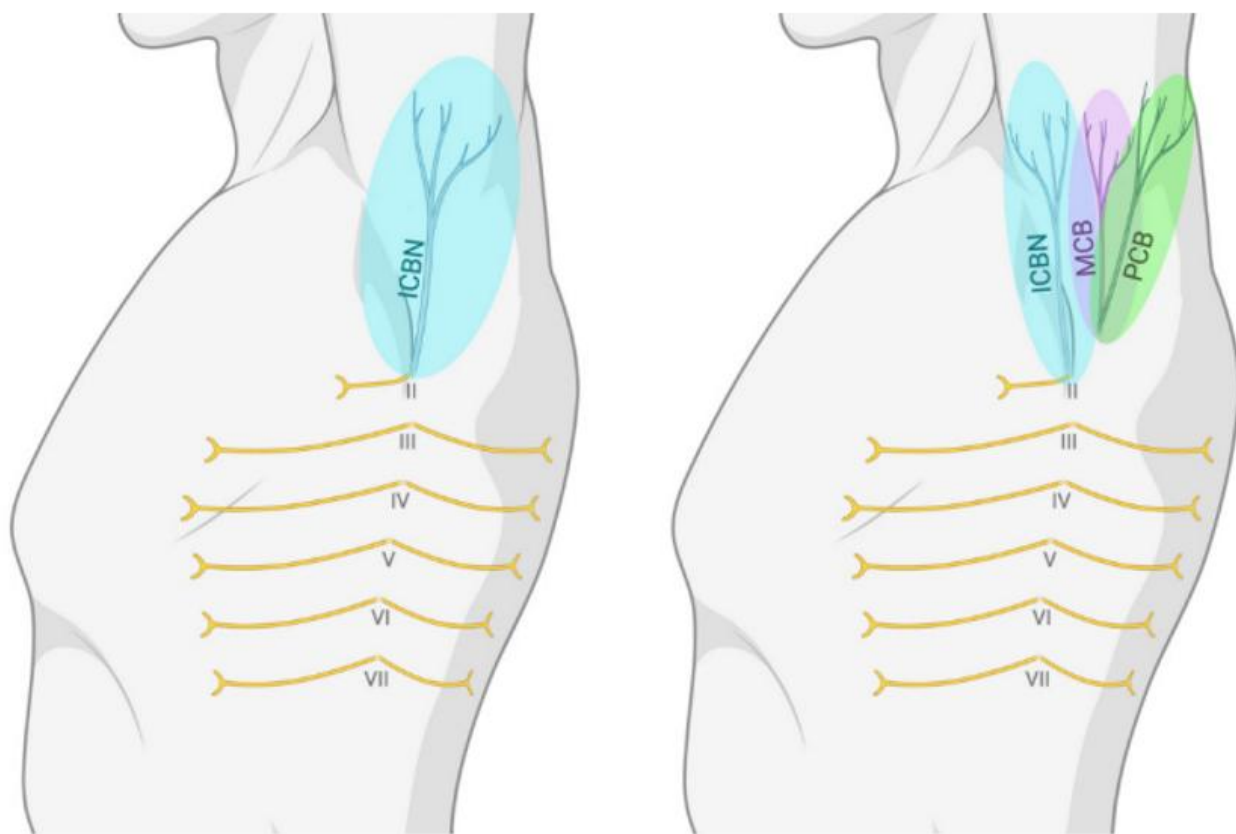
Can you imagine surgery being completely pain-free for everyone? [Research](#) done at Western University by Master's student Brittany Zurkan and Drs. Tim Wilson and Abhijit Biswas is trying to make this happen – by *finding nerves that had never been described in anatomy textbooks*. Breast cancer is one of the world's most common cancers, and it is likely that breast cancer has affected you or someone you know in more than one way, shape or form. Because it is so common, many patients will receive surgery to their breast area to address the cancer.

Unfortunately, both during and after surgery, some patients still experience pain. Doctors often use a nerve block to prevent pain during cancer treatment. This involves freezing the nerves that supply the skin with feeling and pain (sensation). Sometimes, the patient still feels pain in the armpit during treatment even after

receiving the nerve block for that area, which means there are nerves supplying sensation to the armpit that we do not know about. Therefore, these researchers sought to discover and map these nerves.

Zurkan did this with the help of individuals who donated their bodies to scientific research through Western's Body Bequeathal program. The researchers carefully dissected the armpits of the donors to reveal the nerves going to the skin. Each nerve found was traced back to its source, which was then used to *create an updated map of nerve supply to the armpit*.

Alongside the known nerves usually targeted for nerve blocks, the researchers *found two nerves that were previously unknown*. The newly described nerves come from the brachial plexus, which is a group of interweaving nerves in the armpit that supply the muscles and skin of the back, chest and arm. Even though the brachial plexus has been described in anatomy textbooks for hundreds of years, no one has previously noted these two small branches that supply the armpit with sensation.



**Figure 1:** A diagram representing the previous understanding of the nerve supplying the sensation to the armpit on the left, versus the updated map of armpit sensation on the right. The newly discovered nerves are the MCB and PCB nerves in purple and green on the right image (Zurkan et al. 2026).

Now that doctors know these nerves exist – and more importantly, where they go and what they do – they can work towards figuring out how to target them for nerve blocks. With this research, we can hope that eventually no patient will experience unexpected pain during or after their surgery. This discovery is an exciting step toward improving quality of life and reducing pain during and after breast cancer treatment, as now future researchers can work on targeting these newly found branches with nerve blocks.

**Original Article:** Zurkan B, Wilson TD, Biswas A. Mapping axillary sensory cutaneous nerves for enhanced analgesic approaches in axillary surgery: a cadaveric study. *Regional Anesthesia & Pain Medicine* 2026; 51:454-459. <https://doi.org/10.1136/rapm-2024-106061>