

Most nurses don't use recommended intramuscular injection site despite potential risks

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Seven out of ten hospital nurses who took part in a Canadian study used the dorsogluteal (DG) buttock site to administer intramuscular injections - despite the potential risks of sciatic nerve injury - with only 14% using the ventrogluteal (VG) hip site recommended by the nursing literature.

The research, published in the May issue of the *Journal of Advanced Nursing*, found that younger, newer [nurses](#) were significantly more likely to follow the latest VG site advice than their older, experienced colleagues. It also discovered that more than one in four nurses using the DG site were unaware of the potential risk of [nerve damage](#).

Just over 40% of the staff nurses surveyed responded to the postal questionnaire. Most of the 264 respondents were aged between 30 and 49 years and had been working in nursing for more than ten years.

"Recent nursing literature suggests that the VG site is preferable because it is located away from major nerves and muscles, can provide better access to [muscle tissue](#) and offers faster medication uptake" says lead author Lorna Walsh, a nurse educator at the Centre for Nursing Studies, St John's, Canada.

"It's estimated that more than twelve billion intramuscular injections are administered every year throughout the world and unsafe injection practices have a significant impact on patient ill health and death.

Complications can include skin and tissue trauma, muscle fibrosis and contracture, nerve palsies and paralysis, [abscesses](#) and gangrene.

"Although three-quarters of the nurses in our study said they were aware of potential nerve damage when using the DG site, this site was used significantly more often than other sites."

Key findings of the study include:

- 71% of the nurses preferred using the DG site (buttock), 14% the VG site (hip), 7% the [deltoid](#) site (upper arm) and 7% the vastus lateralis site (thigh).
- 44% of the nurses gave intramuscular injections very frequently (four to five a week), 21% frequently (one to four a week), 18% occasionally (less than one to four a week) and 17% seldom or never (less than one a month).
- Only 15% of nurses based their site selection on the recommendations in the nursing literature. 85% used the site they felt most comfortable with, 80% said ease of locating the injection site influenced their choice, 60% followed the recommendation of their nursing education programme and 56% followed traditional usage.
- Patient discomfort was the most frequent complication - 78% for the DG site, 88% for the VG site, 90% for the vastus lateralis site and 100% for the deltoid site.
- The potential for [nerve injury](#) was the second most mentioned complication - by 74% using the DG site, 30% using the VG site, 32% using the vastus lateralis site and 53% using the deltoid site.

- The relationship between site selection and awareness of potential nerve injury was significant. 74% of nurses who routinely used the DG site recognised the potential for nerve injury, but 26% did not. 70% of nurses who used the VG site stated correctly that nerve damage was not a recognised complication, but 30% thought it was.
- Site selection varied significantly with age. 67% of nurses aged 20-24 used the VG site. The figures then declined rapidly by age group to 28% (25 to 29 years), 10% (30 to 39), 5% (40 to 49) and 8% (50 plus).
- The reverse was true for the DG site, ranging from 89% of nurses in the oldest age group down to 33% of nurses in the youngest age group.
- Site selection also varied by education, with 30% of baccalaureate prepared nurses using the VG site, compared with 5% of diploma prepared nurses.
- The nurses who had been in nursing the longest were most likely to use the DG site (81% for 20 plus years versus 41% for one to four years) and newer nurses were most likely to use the VG site (44% for one to four years versus 5% for 20 plus years).

"Our research clearly shows that the majority of nurses are not using the VG site, as recommended in the recent nursing literature, and further research is needed to find out why" says co-author and fellow nurse educator Kathleen Brophy.

"Advocates of the VG site also need to base their rationale for using this site on reasons other than potential sciatic nerve damage when using the

DG site, as the majority of nurses are aware of this, but still use the site.

"We also feel that additional research is needed to explore the safety of properly-mapped DG injections."

More information: Staff nurses' sites of choice for administering intramuscular injections to adult patients in the acute care setting. Walsh L and Brophy K. Journal of Advanced Nursing. 67.5, pp1034-1040. (May 2011) [DOI: 10.1111/j.1365-2648.2010.05527.x](https://doi.org/10.1111/j.1365-2648.2010.05527.x)

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