Decision analysis can help women make choices about breast reconstruction

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Decision analysis techniques can help surgeons and patients evaluate alternatives for breast reconstruction—leading to a "good decision" that reflects the woman's preferences and values, according to an article in the October issue of *Plastic and Reconstructive Surgery*, the official medical journal of the American Society of Plastic Surgeons (ASPS).

The special topic article by Mia K. Markey, PhD, and colleagues of The University of Texas at Austin and The University of Texas MD Anderson Cancer Center, Houston, introduces plastic surgeons to the use of decision analysis to help women navigate decisions about breast reconstruction after mastectomy for breast cancer. "Decision analysis provides structure for methodic, thoughtful decision-making through the use of reason, logic, and mathematics," the authors write.

Decision Analysis Helps Sort Through Breast Reconstruction Options

Decision analysis is defined as " an exhaustive, iterative process that involves identifying alternatives, obtaining information about the uncertainty of outcomes, and clarifying preferences and values." Routinely used in business, decision analysis is increasingly applied to complex medical decisions as well.

Women facing breast reconstruction may need to sort through a bewildering array of options—such as immediate versus delayed

reconstruction, using implants or their own tissues—while dealing with the emotions of their breast cancer diagnosis and the uncertainty characteristic of difficult decisions. "When making decisions about breast reconstruction, it is the patient who must live with the consequences," Dr Markey and coauthors write.

They outline a process that plastic surgeons can follow in guiding patients through decision analysis. The surgeon provides information about the available alternatives for breast reconstruction; and the probability of different outcomes—for example, the need for repeated surgeries, possible complications, and aesthetic results. Based on the patient's preferences, her values are assigned to possible outcomes.

This information is used to create a "decision tree," incorporating the options, the likelihood of various outcomes, and the values assigned to each outcome. Dr Markey and coauthors walk readers through the decision analysis process for a hypothetical patient considering breast reconstruction. Their article includes a link to an educational spreadsheet that shows surgeons an example of how the decision analysis process works.

'Good Decisions,' Reflecting Women's Preferences and Values

A step called sensitivity analysis weighs the impact of changing different variables that might affect the decision—for example, different assumptions regarding the risk of complications or out-of-pocket costs. "If the decision remains the same, it is *robust* and likely good," the authors write.

Dr Markey and colleagues emphasize that decision analysis doesn't guarantee a good outcome of breast reconstruction. However, it can help the patient reach a "good decision"—defined as "one that takes into

account her preferences and the uncertainties inherent in reconstructive surgery." The authors add, "By making good decisions, patient outcomes may be improved."

Although it can be "computationally intensive," Dr Markey and coauthors believe decision analysis has important benefits for women facing decisions about breast reconstruction. They write, "Ideally, its application will attenuate worry, safeguard against regret, transmute uncertainty into certainty, and grant some measure of peace in what may ultimately be a very difficult decision."

More information: journals.lww.com/plasreconsurg … _about_Breast.6.aspx

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