

## Climbing the Rungs of Reconstruction — Evolution of Reconstructive Surgery Frameworks

J. Dowling<sup>1</sup>, F. Browne<sup>2</sup>, CS Quinlan<sup>2</sup>

- 1. UCD School of Medicine, University College Dublin, Belfield, Dublin 4, Ireland.
- 2. Department of Plastic & Reconstructive Surgery, Mater Misericordiae University Hospital, Eccles St., Phibsborough, Dublin 7.

Dear Editor,

The "reconstructive ladder" has been a lauded metaphorical principle, deep-rooted in the collective psyche of Plastic and Reconstructive Surgeons for decades. In recent times, however, a shift from the traditional "reconstructive ladder" to a more flexible "reconstructive elevator" model has been described, which captures the advancements and adaptability currently available in modern reconstructive surgery. As a medical student, I have been taught about the traditional ladder model where each "rung" represents a set of reconstructive techniques arranged from least to most complex, emphasising a progressive, upwards, and sequential approach. While such an approach is certainly methodical, it can be thwarted by the demands imposed by complex clinical scenarios that require bespoke solutions. From my experience, as part of my core surgical rotation in Plastic Surgery and an additional elective, I note that the "reconstructive ladder" has become increasingly outdated. However, it remains a focal point of teaching for medical students and trainees to facilitate the understanding of complex reconstruction. A weakness of this model is that it implies that once complexity increases, descending the ladder may not be feasible. Therefore, transitioning to an "elevator" model illustrates potential to go up and down and skip levels in either direction, which is not directly implied as part of the traditional "ladder" model.

With an increasingly patient-centred focus strived for by surgeons today, the described elevator model fosters a dynamism rather than following a rigidly linear progression. Integration of this approach in medical teaching can cultivate the key skill of adaptability which is an integral aspect of the skillset of a plastic surgeon. The new paradigm reflects the expanding spectrum of reconstructive options, including newer techniques like supermicrosurgery, and advanced wound healing methods. This flexibility is crucial as it encourages innovative, individualised, and patient-centred care, making it possible to leverage simpler techniques when appropriate, even in complex situations.

The concept of an elevator model is not a new insight, with publication dating back to 1994<sup>(1)</sup>. Despite this, the ladder remains a mainstay and favoured concept of teaching, as experienced



by every medical student. Other adjuncts to this paradigm pose a didactic model such as that of a reconstructive compass<sup>(2)</sup>. This takes into account procedural complexity and makes use of the "ladder" alongside anatomical problems, personal factors, and risk. This architecture of thought embodies a modern approach, aiming not to replace existing frameworks but to enhance them with a broader, more comprehensive perspective. However, the difficulty with existing models is that over-reliance can limit the innovative thinking and problem solving required in complex situations. This points toward the fact that there isn't always a single, perfect model that suits every situation<sup>(3)</sup>.

Ultimately, the innovation of pedagogic practice in Plastic and Reconstructive Surgery should not rely on rigid frameworks that fail to satisfy the demands posed by recent advancements and complexities seen in the field. Instead, the focus should be on employing the correct reconstructive option for the correct patient at the correct time. In a field where innovation and adaptability are essential every day, we hope that this letter encourages the reader to think "outside the ladder" when approaching reconstructive challenges.

## **Declarations of Conflicts of Interest:**

None declared.

## **Corresponding author:**

Jason Dowling, UCD School of Medicine, University College Dublin, Dublin 4, Ireland. **E-Mail:** jason.dowling@ucdconnect.ie

## **References:**

- 1. Gottlieb LJ, Krieger LM. From the reconstructive ladder to the reconstructive elevator. Plast Reconstr Surg. 1994;93(7):1503-4.
- 2. Sandberg LJ. The Plastic Surgery Compass: Navigating the Reconstructive Ladder in the Personalized Health Care Era. Plast Reconstr Surg Glob Open. 2016;4(9):e1035.
- 3. Jeyaratnam S, Sebastin SJ, Das De S. Revisiting the reconstructive ladder for soft tissue reconstruction in the lower extremity. Annals of Translational Medicine. 2023;12(1):7.