

# When Critically Ill: Broaden Your Horizons for Acceptable Weight

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- Waitlist criteria can have a significant impact on the number of offers a patient receives
- We hypothesized that in high-risk groups, widening the weight criteria far beyond the normal range may improve waitlist outcomes

## Methods

- Heart transplant candidates <18-years old were identified in the United Network for Organ Sharing (UNOS) dataset (2001-2015).
- Waitlist mortality for patients with congenital heart disease, low eGFR (<60 mL/min), and mechanical ventilation were further analyzed based on their waitlist maximum weight criteria
  - Strict Weight Group (n=215) – Max weight of potential donor ≤ 200% of the candidate’s weight
  - Liberal Weight Group (n=247) – Max weight of potential donor >200% of the candidate’s weight

## Results

- Strict and Liberal Weight groups had similar baseline characteristics
- The Liberal Weight group received more offers per month resulting in more patients transplanted and fewer adverse events while on the waitlist
- Figure 1(a-b) competing outcomes analysis shows that most of the events took place in the first 2 months after listing for transplant with the Liberal Weight group having 42% of the patients transplanted while only 36% died waiting compared to 30% transplanted with 53% dying on the waitlist in the Strict Weight group.
- Figure 1(c) shows similar post-transplant survival regardless of maximum weight listing criteria.

Baseline Demographics before Transplant and Outcome Data

Variables, Median [IQR] or % (N)	Strict Weight Group (n=215)	Liberal Weight Group (n=247)	p- value
<b>Baseline</b>			
Age at listing (months)	0 [0-4]	0 [0-3]	0.146
Gender (female)	37% (80)	39% (95)	0.077
Weight (kg)	4.0 [3.2-6.0]	3.8 [3.2-5.5]	0.174
Listing Max Weight of Patient Weight(%)	188% [165%-199%]	259% [222%-300%]	<0.001
<b>Outcomes</b>			
Offers per Month	2.31 [0-4.4]	3.21 [1.5-6.7]	<0.001
Days on Waitlist	25 [10-61]	23 [9-51]	0.203
Adverse Events	53% (113)	39% (96)	0.003
Received Transplant	40% (85)	53% (131)	0.003
Donor Age (months)	4 [2-11]	5 [2-20]	0.579
Donor to Recipient Weight Ratio (%)	142% [117%-166%]	164% [125%-215%]	0.153

Table 1: ECMO, extracorporeal membranous oxygenation; eGFR, estimated glomerular filtration rate; IQR, interquartile range; PRA, panel reactive anti-body

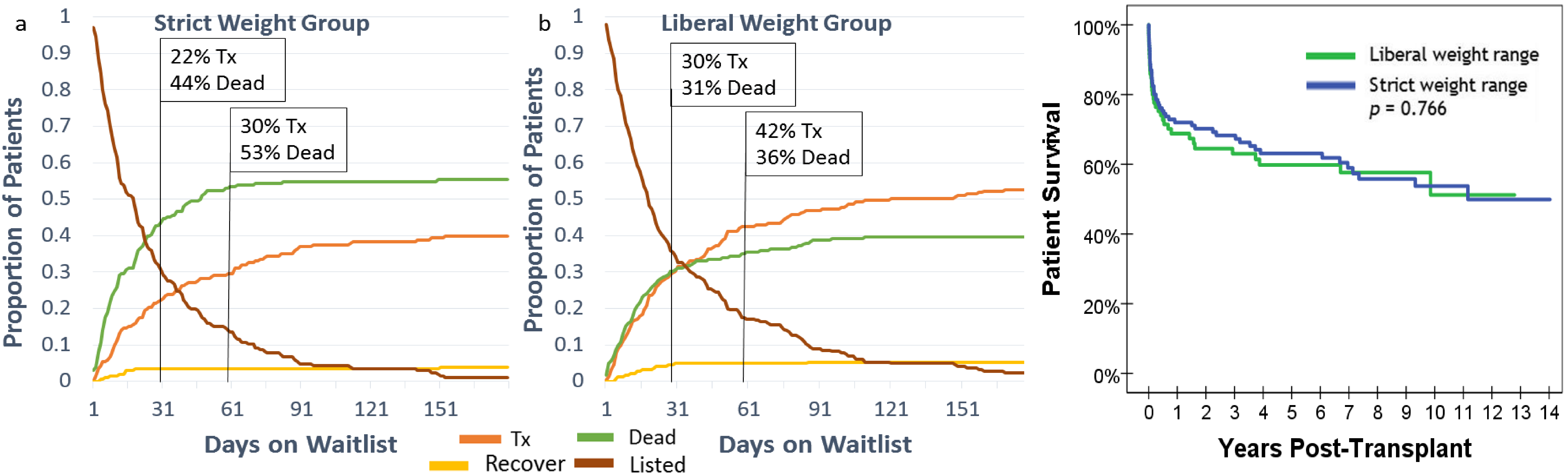


Figure 1: Competing outcomes analysis of waitlist survival for the strict weight group (a) and the liberal weight group (b). Kaplan-Meier curve showing similar post-transplant survival for liberal and strict weight groups (c).

## Conclusion

There is wide variability in the weight range criteria used for listing a patient for heart transplantation. In critically ill patients, a very liberal weight range (>200% recipient weight) was associated with fewer adverse events on the waitlist, more offers, higher rate of transplant, and comparable post-transplant survival. Therefore, it behooves the transplant team to use what many would consider an excessive weight range when listing critically ill patients.