



# Predictors of Digit Survival following Replantation: Quantitative Review and Meta-Analysis

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## INTRODUCTION

- Digital amputation affects 45,000 people/yr.
- Replant survival rate varies between 48-97%.
- Predictors of survival are not well defined.
- Objective: To review the current literature and evaluate predictors for replant success.

## METHODS

PUBMED search: “finger, digit, thumb, hand, replantation, amputation, survival”  
(n=644)

- Excluded Articles: (n=531)
- Reviews/ Meta-analysis
  - Case report/ Case series
  - Incomplete amputations
  - Incomplete or unclear data

Articles evaluating predictors of survival  
(n=81)

Articles included in statistical meta-analysis (n=32)

## RESULTS

Fig 1: Arterial Anastomoses Affects Survival

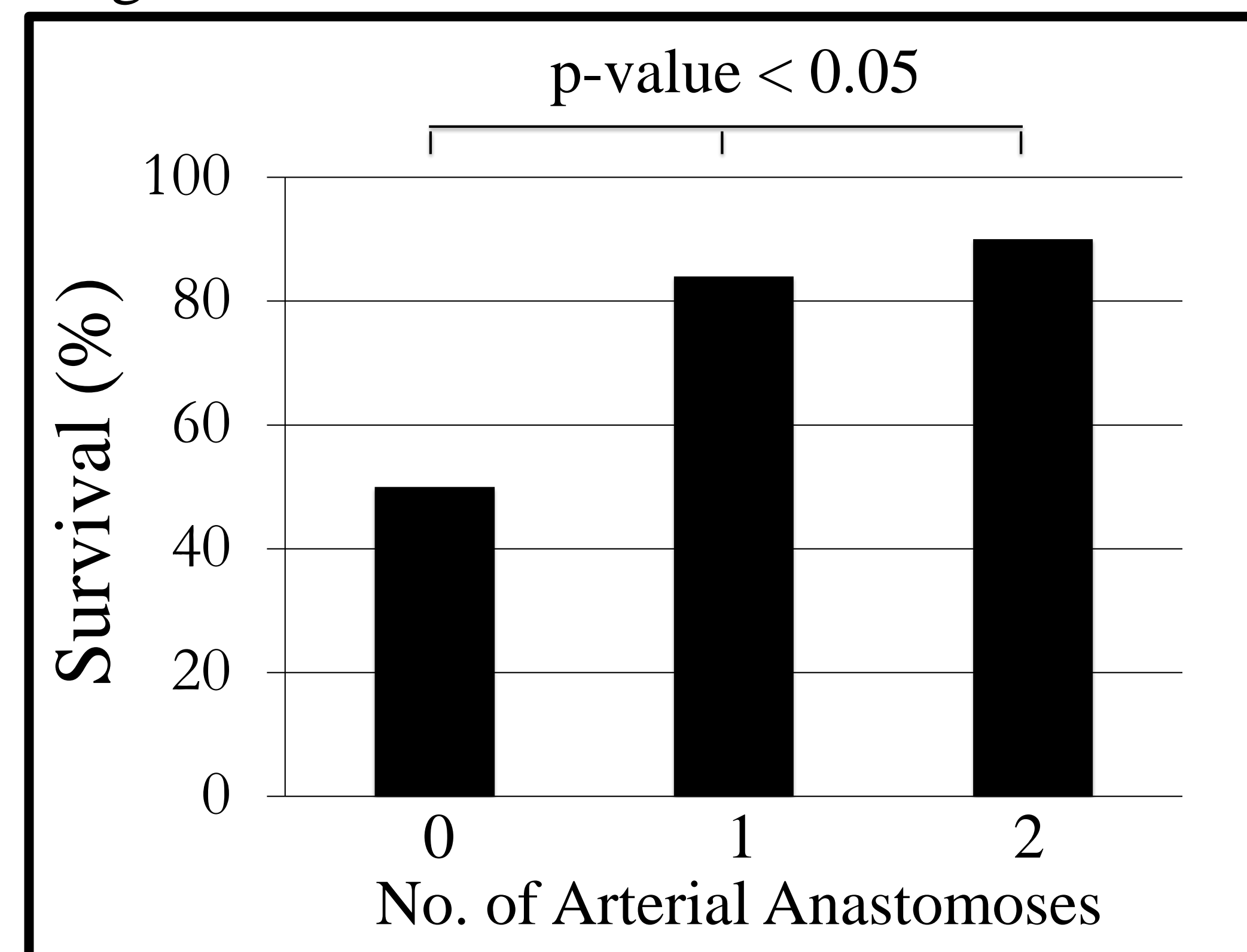


Fig 2: Venous Anastomoses Affects Survival

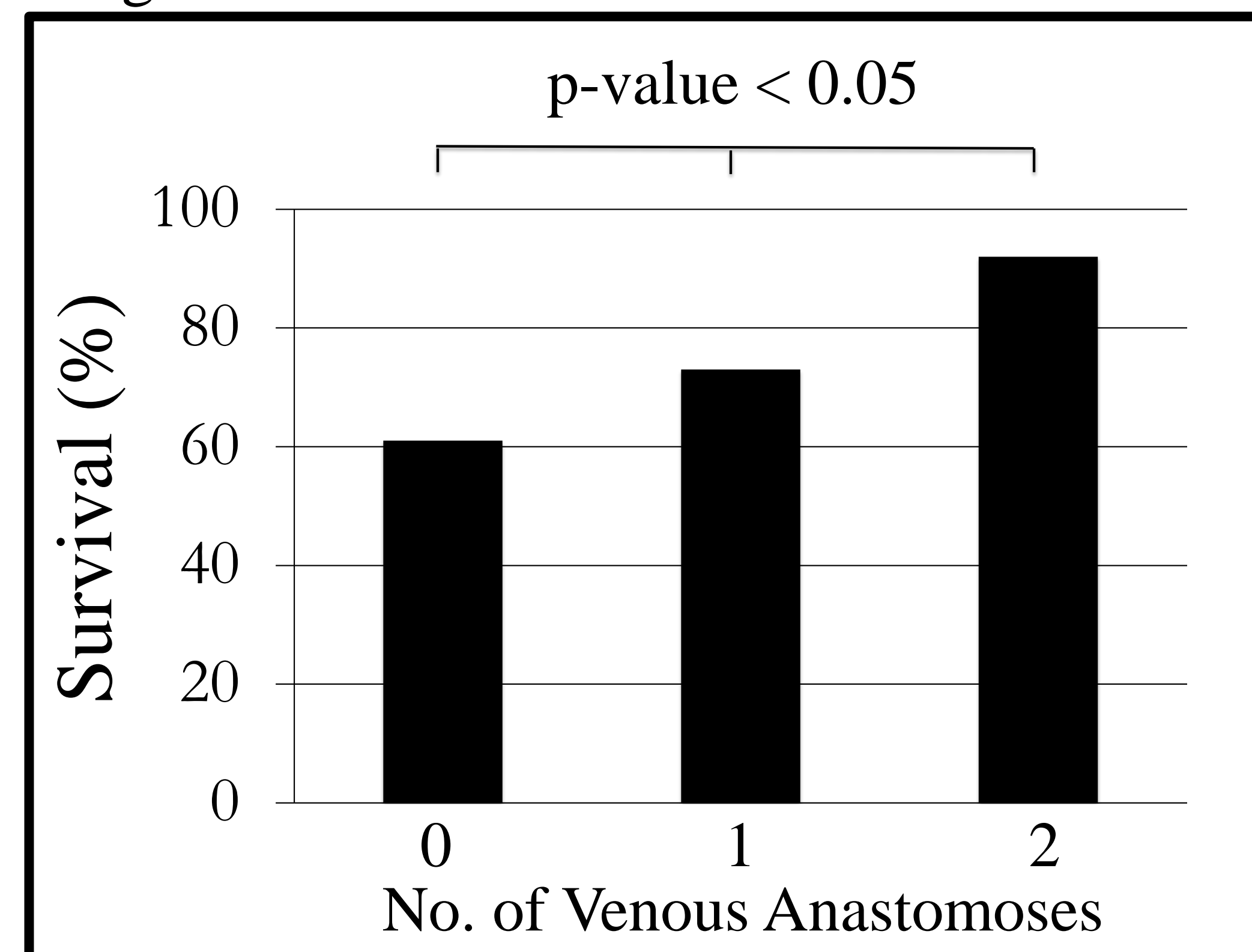


Fig 3: Mechanism of Injury Affects Survival

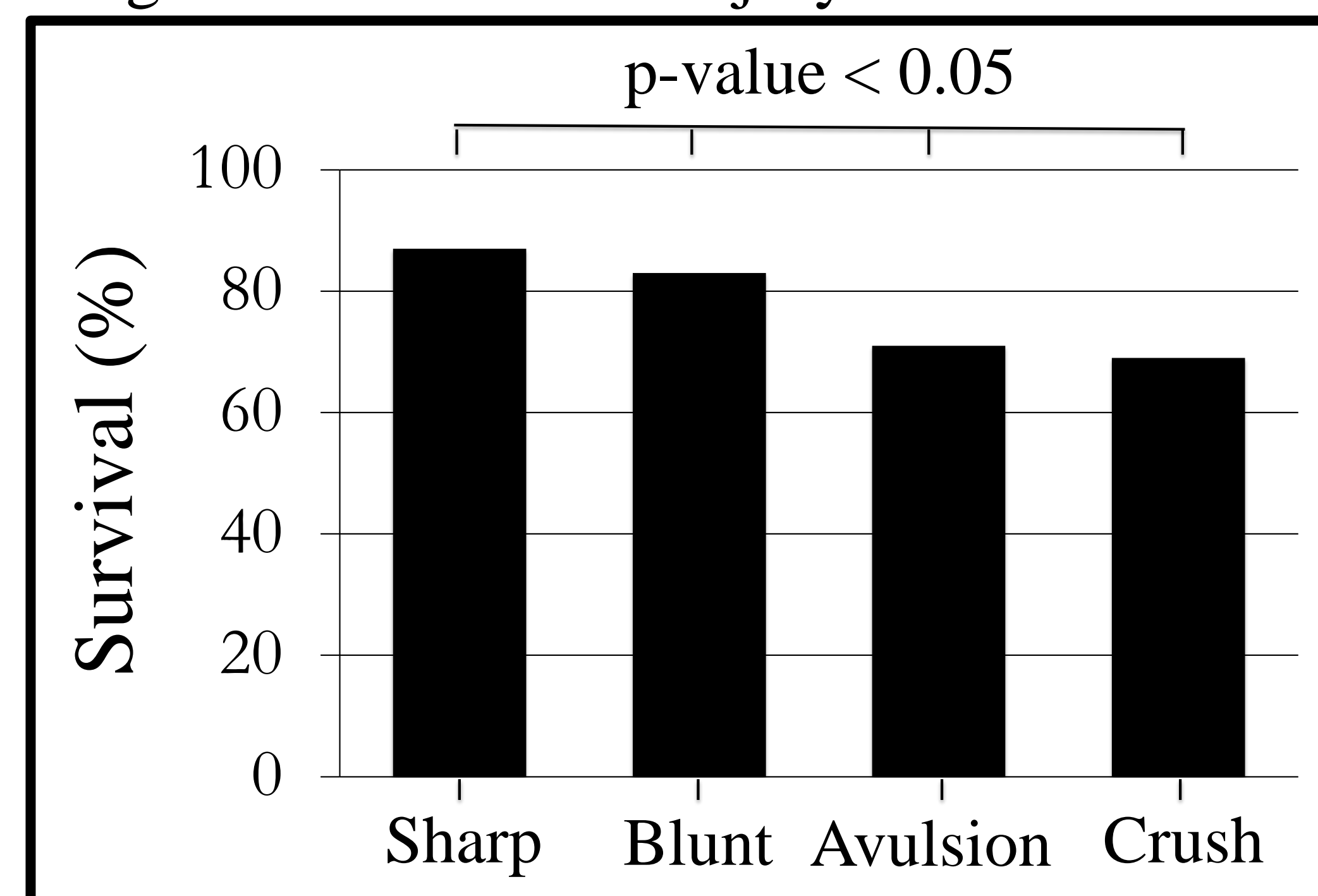


Table 1: Predictors of Replant Survival

Variable (# Studies)	Comparison	OR	P-value
Arterial anastomosis (14)	0	Ref	<0.05
	1	1.67	
	2	1.79	
Venous anastomosis (14)	0	Ref	<0.05
	1	1.19	
	2	1.51	
Mechanism of injury (19)	Sharp Cut	Ref	<0.05
	Blunt Cut	0.95	
	Avulsion	0.82	
	Crush	0.80	
Age (14)	Child vs. Adult		NS
Gender (19)	M vs. F		NS
Digit Number (15)	Thumb		NS
	Index		
	Middle		
	Ring		
	Small		
Zone of injury (11)	Tamai zones		NS
Tobacco use (5)	Yes vs. No		NS
Ischemia time (hrs) (2)	<6, 6-10, >10		NS
Preservation temp (2)	Cold vs. other		NS
Vein graft (6)	Yes vs. No		NS

\*NS: Not Significant

## CONCLUSIONS

- Replant survival is influenced by patient and surgery-related factors.
- Variables are related to the physiological mechanisms of digit survival.
- Data can risk stratify patients and guide surgical practice to improve outcomes.