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# MPFL RECONSTRUCTION IN THE PEDIATRIC POPULATION: DOES SKELETAL MATURITY AFFECT OUTCOMES AND SURGICAL SUCCESS?

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# DISCLOSURES

- Noah Quinlan, Kelly Tomasevich, Alexander Mortensen, Taylor Hobson, and Temitope Adeyemi have no commercial associations (eg consultancies, stock ownership, equity interest, patent/licensing arrangements, etc) that might pose a conflict of interest in connection with the presented research
- Stephen Aoki is a paid consultant for Stryker Corporation outside of the submitted work

# BACKGROUND

- Patellar instability is a common pediatric knee condition
- Medial patellofemoral ligament (MPFL) is the primary restraint to lateral translation
- Recurrent instability may be treated with MPFL reconstruction

# BACKGROUND

- Schottle's point in close proximity to femoral physis
- Various techniques to minimize physeal damage
- Altered graft mechanics, residual instability, and effect on growth is unclear



# HYPOTHESIS

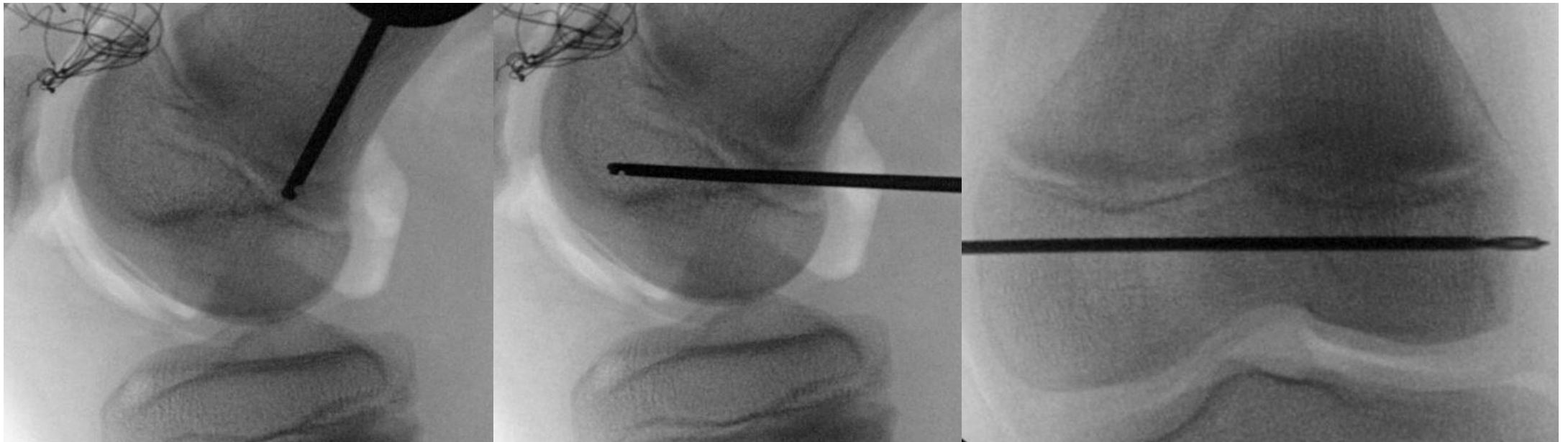
In pediatric patients undergoing MPFL reconstruction, those that are skeletally immature experience worse outcomes and a higher rate of recurrent instability

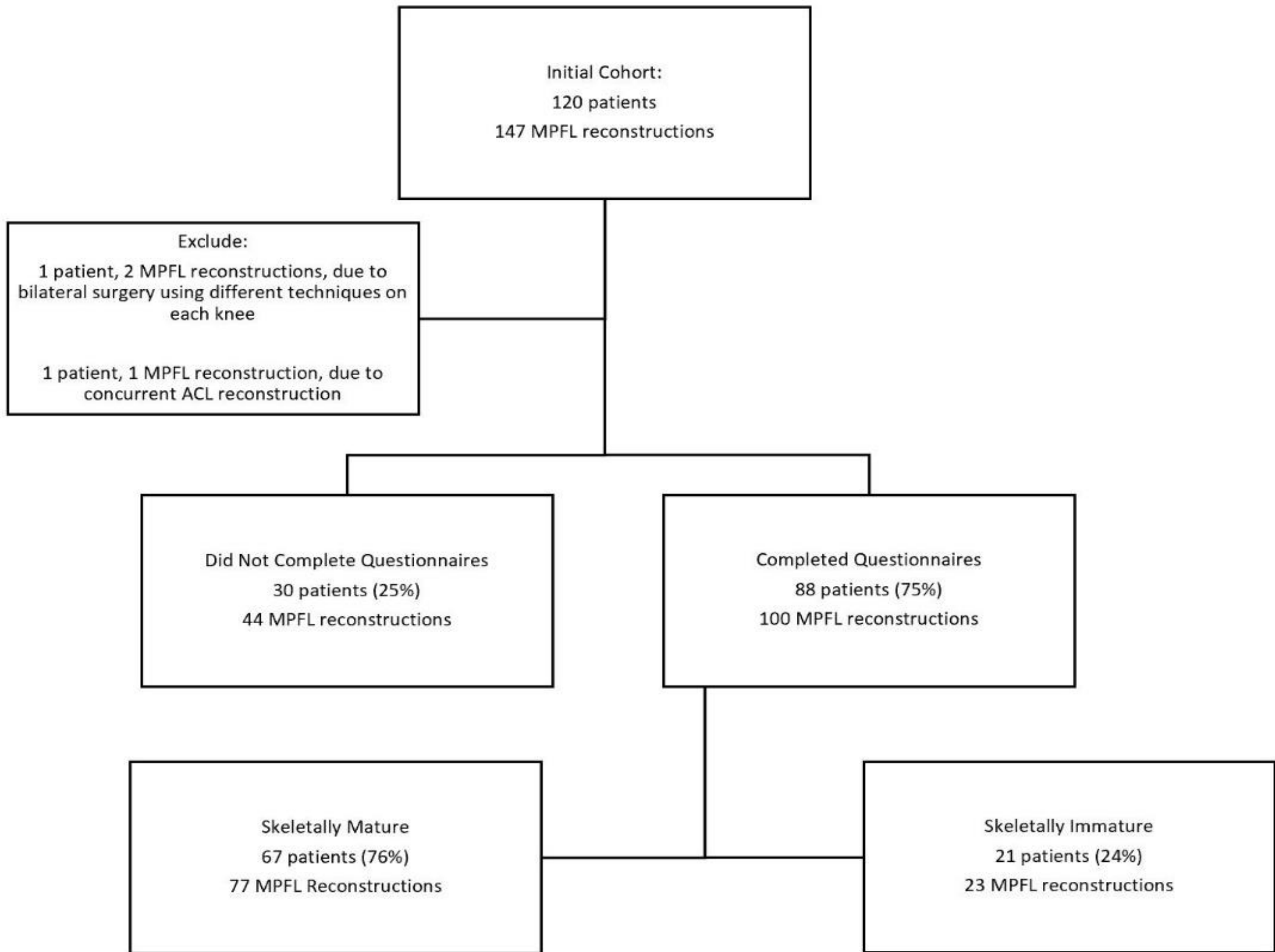
# METHODS

- Retrospective chart review
- Inclusion criteria:
  - Primary MPFL Reconstruction
  - Under age 18
  - Minimum one year follow-up
- Email/phone survey
  - IKDC, satisfaction, subsequent injury

# METHODS

- Cohorts
  - Skeletally mature vs immature technique







# RESULTS

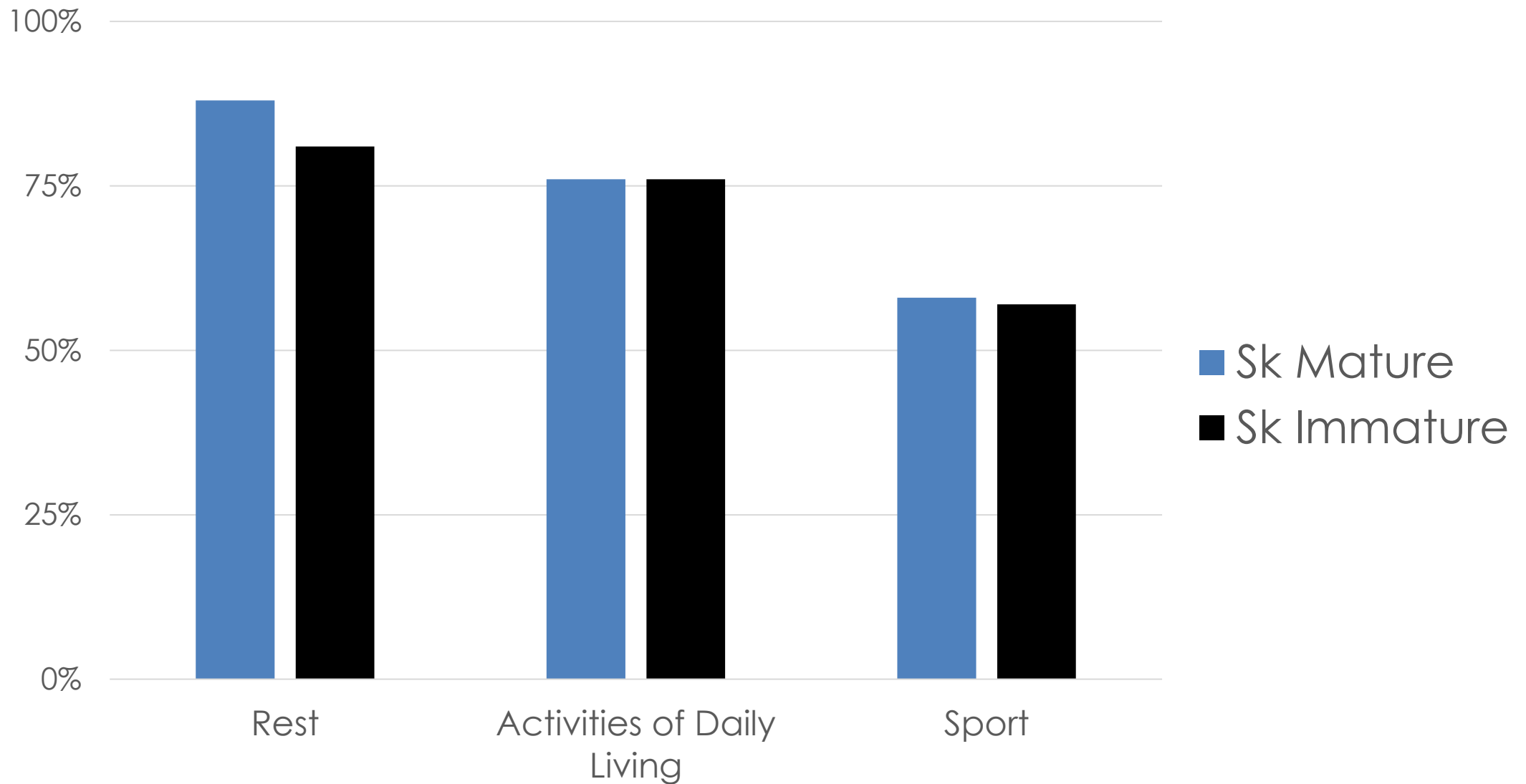
	Sk Mature (n=67)	Sk Immature (n=21)	P value
<b>Age (Years)</b>	15 (R: 11-17)	13 (R: 8-15)	<0.001*
<b>Sex (Male)</b>	33%	57%	0.046*
<b>BMI (kg/m<sup>2</sup>)</b>	25 (R:16-41)	19 (R: 15-24)	<0.001*
<b>Trochlear Dysplasia</b>	61%	78%	0.106
<b>Mersilene Tape Augmentation</b>	53 (68%)	3 (13%)	<0.001*

# RESULTS

	Sk Mature (n=67)	Sk Immature (n=21)	P value
<b>Follow-up (Years)</b>	4.2 (R: 1-7)	3.5 (R: 1-7)	0.071
<b>IKDC</b>	79 (R: 21-100)	79 (R: 21-100)	0.770
<b>Percent Normal</b>	85% (R: 17-100)	84% (R: 10-100)	0.832
<b>Sport Participation</b>	22 (32%)	9 (43%)	0.402
<b>Sport Avoidance Due to Knee</b>	18 (27%)	5 (24%)	0.781
<b>Stiffness Limiting Activity</b>	14 (21%)	3 (14%)	0.693

# RESULTS

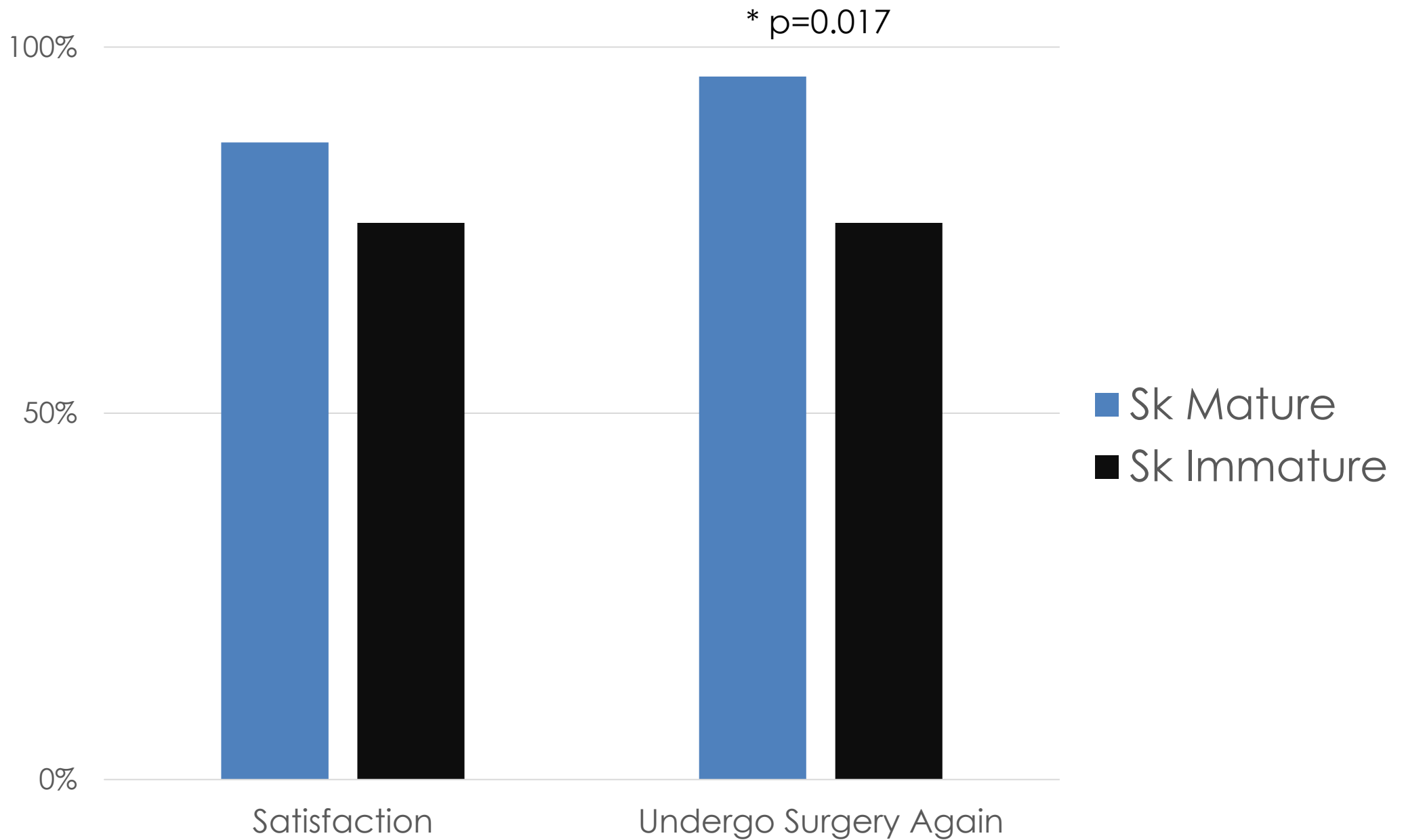
## VAS Pain Score Under 3



# RESULTS

	Sk Mature	Sk Immature	P value
<b>Ipsilateral Knee Injury</b>	12 (16%)	8 (34%)	0.043*
<b>Ipsilateral Patella Dislocation</b>	2 (3%)	2 (9%)	0.226
<b>Revision Instability Procedure</b>	8 (10%)	4 (17%)	0.466
<b>Contralateral Injury</b>	10 (13%)	6 (32%)	0.194

# RESULTS



# CONCLUSION

- Skeletally mature and immature pediatric patients have good and comparable outcomes following MPFL reconstruction
- Skeletally immature:
  - Higher rate of subsequent knee injury
  - Less likely to undergo same care
  - Contributing factors:
    - Younger age
    - Lack of mersilene tape augmentation



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