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Distal-First Release Data Table

| ID | Percent Release | 60° Pronation | | | Neutral | | | 60° Supination | | | Flexion | | |
|------------|-----------------|---------------|---|--------|--------------|---|--------|----------------|---|--------|---------------|---|---------|
| | | Average (mm) | ± | Stdev. | Average (mm) | ± | Stdev. | Average (mm) | ± | Stdev. | Average (N/N) | ± | Stdev. |
| Specimen 1 | Native | 9.6 | ± | 0.4 | 10.7 | ± | 0.2 | 9.0 | ± | 0.3 | 0.2 | ± | 5.9E-04 |
| | 25% | 9.0 | ± | 0.1 | 8.8 | ± | 0.2 | 7.3 | ± | 0.4 | 0.2 | ± | 8.6E-04 |
| | 50% | 9.1 | ± | 0.1 | 6.4 | ± | 0.2 | 1.6 | ± | 0.0 | 0.2 | ± | 5.1E-03 |
| | 75% | 4.9 | ± | 0.2 | 8.5 | ± | 0.4 | 3.8 | ± | 0.3 | 0.2 | ± | 3.3E-03 |
| Specimen 2 | Native | 10.3 | ± | 0.0 | 7.0 | ± | 0.0 | 5.4 | ± | 0.0 | 0.2 | ± | 6.8E-03 |
| | 25% | 9.4 | ± | 0.1 | 8.1 | ± | 0.1 | 5.7 | ± | 0.0 | 0.2 | ± | 2.8E-03 |
| | 50% | 8.3 | ± | 0.1 | 6.0 | ± | 0.1 | 5.7 | ± | 0.2 | 0.2 | ± | 2.5E-03 |
| | 75% | 7.3 | ± | 0.6 | 6.7 | ± | 0.1 | 3.0 | ± | 0.7 | 0.2 | ± | 8.6E-04 |
| Specimen 3 | Native | 11.0 | ± | 0.1 | 12.4 | ± | 0.1 | 5.2 | ± | 0.1 | 0.2 | ± | 2.0E-03 |
| | 25% | 9.2 | ± | 0.1 | 12.1 | ± | 0.1 | 4.4 | ± | 0.8 | 0.2 | ± | 1.6E-03 |
| | 50% | 8.3 | ± | 0.6 | 11.2 | ± | 0.6 | 5.4 | ± | 0.1 | 0.2 | ± | 2.2E-03 |
| | 75% | 8.2 | ± | 0.4 | 10.8 | ± | 0.1 | 3.8 | ± | 0.0 | 0.2 | ± | 7.6E-03 |
| Specimen 4 | Native | 10.2 | ± | 0.4 | 7.7 | ± | 0.3 | 5.3 | ± | 0.2 | 0.2 | ± | 2.9E-03 |
| | 25% | 8.3 | ± | 0.2 | 8.2 | ± | 0.2 | 4.8 | ± | 0.2 | 0.2 | ± | 2.7E-03 |
| | 50% | 9.0 | ± | 0.1 | 8.2 | ± | 0.2 | 4.2 | ± | 0.3 | 0.2 | ± | 1.4E-03 |
| | 75% | 6.9 | ± | 0.1 | 7.6 | ± | 0.0 | 4.4 | ± | 0.2 | 0.2 | ± | 1.1E-03 |
| Specimen 5 | Native | 9.6 | ± | 0.1 | 11.4 | ± | 0.2 | 7.7 | ± | 0.3 | 0.2 | ± | 3.0E-03 |
| | 25% | 8.7 | ± | 0.1 | 10.6 | ± | 0.2 | 6.4 | ± | 0.6 | 0.2 | ± | 9.6E-04 |
| | 50% | 8.2 | ± | 0.1 | 10.0 | ± | 0.2 | 7.8 | ± | 0.4 | 0.2 | ± | 2.6E-03 |
| | 75% | 9.3 | ± | 0.1 | 9.3 | ± | 0.1 | 6.8 | ± | 0.2 | 0.2 | ± | 1.6E-03 |
| Specimen 6 | Native | 10.0 | ± | 0.2 | 10.6 | ± | 0.4 | 5.5 | ± | 0.6 | 0.2 | ± | 1.7E-03 |
| | 25% | 7.3 | ± | 0.1 | 11.0 | ± | 0.2 | 6.5 | ± | 0.3 | 0.2 | ± | 2.0E-03 |
| | 50% | 7.1 | ± | 0.1 | 10.8 | ± | 0.2 | 4.2 | ± | 0.1 | 0.2 | ± | 3.3E-03 |
| | 75% | 6.7 | ± | 0.3 | 10.8 | ± | 0.6 | 4.3 | ± | 0.3 | 0.2 | ± | 2.1E-03 |
| Specimen 7 | Native | 12.6 | ± | 0.6 | 8.5 | ± | 0.2 | 3.7 | ± | 0.1 | 0.2 | ± | 4.3E-03 |
| | 25% | 14.0 | ± | 1.0 | 8.7 | ± | 0.3 | 3.0 | ± | 0.1 | 0.2 | ± | 2.5E-03 |
| | 50% | 13.8 | ± | 0.2 | 8.1 | ± | 0.0 | 3.8 | ± | 0.2 | 0.2 | ± | 3.1E-03 |
| | 75% | 11.1 | ± | 0.1 | 7.4 | ± | 0.0 | 2.6 | ± | 0.0 | 0.2 | ± | 9.5E-04 |
| Specimen 8 | Native | 12.3 | ± | 0.3 | 15.3 | ± | 0.0 | 6.1 | ± | 0.0 | 0.2 | ± | 2.6E-03 |
| | 25% | 10.8 | ± | 1.0 | 14.3 | ± | 0.0 | 5.8 | ± | 0.4 | 0.2 | ± | 1.8E-02 |
| | 50% | 10.8 | ± | 0.0 | 14.1 | ± | 0.1 | 6.2 | ± | 0.2 | 0.2 | ± | 4.6E-03 |
| | 75% | 10.1 | ± | 0.1 | 13.9 | ± | 0.2 | 4.9 | ± | 0.1 | 0.2 | ± | 5.5E-04 |
| Specimen 9 | Native | 7.4 | ± | 0.1 | 9.9 | ± | 0.1 | 8.7 | ± | 0.1 | 0.2 | ± | 5.5E-04 |
| | 25% | 6.6 | ± | 0.5 | 9.3 | ± | 0.2 | 8.9 | ± | 0.1 | 0.2 | ± | 5.0E-03 |
| | 50% | 7.2 | ± | 0.1 | 9.5 | ± | 0.1 | 7.2 | ± | 0.3 | 0.2 | ± | 5.6E-03 |
| | 75% | 6.0 | ± | 0.1 | 9.0 | ± | 0.1 | 6.2 | ± | 0.3 | 0.2 | ± | 2.6E-03 |

| Proximal-First Release Data Table | | | | | | | | | | | | | |
|-----------------------------------|-----------------|---------------|---|--------|--------------|---|--------|----------------|---|--------|---------------|---|---------|
| ID | Percent Release | 60° Pronation | | | Neutral | | | 60° Supination | | | Flexion | | |
| | | Average (mm) | ± | Stdev. | Average (mm) | ± | Stdev. | Average (mm) | ± | Stdev. | Average (N/N) | ± | Stdev. |
| Specimen 10 | Native | 8.2 | ± | 0.1 | 8.9 | ± | 0.5 | 1.9 | ± | 0.2 | 0.2 | ± | 8.7E-03 |
| | 25% | 9.0 | ± | 0.1 | 10.1 | ± | 0.2 | 5.0 | ± | 0.1 | 0.2 | ± | 3.0E-03 |
| | 50% | 10.0 | ± | 0.3 | 9.4 | ± | 0.4 | 2.4 | ± | 0.1 | 0.2 | ± | 6.1E-03 |
| | 75% | 10.9 | ± | 0.1 | 9.1 | ± | 0.1 | 2.7 | ± | 0.1 | 0.2 | ± | 2.4E-03 |
| Specimen 11 | Native | 12.8 | ± | 0.2 | 10.7 | ± | 0.4 | 4.9 | ± | 0.1 | 0.2 | ± | 3.4E-03 |
| | 25% | 14.0 | ± | 1.0 | 13.0 | ± | 0.5 | 3.6 | ± | 0.1 | 0.2 | ± | 6.3E-03 |
| | 50% | 10.8 | ± | 0.0 | 10.6 | ± | 0.3 | 2.0 | ± | 0.0 | 0.2 | ± | 3.2E-03 |
| | 75% | 13.8 | ± | 0.1 | 12.1 | ± | 0.3 | 2.1 | ± | 0.1 | 0.2 | ± | 3.0E-03 |
| Specimen 12 | Native | 7.9 | ± | 0.7 | 9.4 | ± | 0.1 | 3.5 | ± | 0.2 | 0.2 | ± | 8.3E-03 |
| | 25% | 9.0 | ± | 0.2 | 9.7 | ± | 0.1 | 2.9 | ± | 0.2 | 0.2 | ± | 2.5E-03 |
| | 50% | 9.5 | ± | 0.2 | 9.5 | ± | 0.3 | 2.2 | ± | 0.1 | 0.2 | ± | 7.1E-03 |
| | 75% | 8.0 | ± | 1.0 | 8.9 | ± | 0.0 | 2.0 | ± | 0.1 | 0.2 | ± | 8.4E-03 |
| Specimen 13 | Native | 9.5 | ± | 0.2 | 8.9 | ± | 0.6 | 6.9 | ± | 0.2 | 0.2 | ± | 4.3E-03 |
| | 25% | 8.2 | ± | 0.7 | 8.7 | ± | 0.1 | 7.2 | ± | 0.3 | 0.2 | ± | 7.8E-03 |
| | 50% | 7.2 | ± | 0.6 | 7.7 | ± | 0.5 | 6.2 | ± | 0.1 | 0.2 | ± | 1.8E-03 |
| | 75% | 6.2 | ± | 0.1 | 6.9 | ± | 1.2 | 6.5 | ± | 0.0 | 0.2 | ± | 4.7E-03 |
| Specimen 14 | Native | 10.0 | ± | 0.9 | 8.6 | ± | 0.3 | 3.7 | ± | 0.1 | 0.2 | ± | 2.9E-03 |
| | 25% | 9.4 | ± | 0.1 | 7.4 | ± | 0.0 | 5.4 | ± | 0.1 | 0.2 | ± | 7.1E-04 |
| | 50% | 6.3 | ± | 0.2 | 9.0 | ± | 0.2 | 3.0 | ± | 0.0 | 0.2 | ± | 6.1E-03 |
| | 75% | 10.8 | ± | 0.5 | 5.6 | ± | 1.2 | 2.4 | ± | 0.2 | 0.2 | ± | 1.9E-03 |
| Specimen 15 | Native | 7.8 | ± | 0.2 | 10.1 | ± | 0.5 | 6.0 | ± | 0.0 | 0.2 | ± | 1.4E-03 |
| | 25% | 5.2 | ± | 0.0 | 7.7 | ± | 0.1 | 3.4 | ± | 0.2 | 0.2 | ± | 4.4E-03 |
| | 50% | 7.3 | ± | 0.1 | 8.7 | ± | 0.2 | 2.4 | ± | 0.1 | 0.2 | ± | 2.4E-03 |
| | 75% | 7.9 | ± | 0.1 | 9.8 | ± | 0.1 | 4.6 | ± | 0.5 | 0.2 | ± | 2.2E-03 |
| Specimen 16 | Native | 7.6 | ± | 0.2 | 10.3 | ± | 0.1 | 6.3 | ± | 0.2 | 0.2 | ± | 5.2E-03 |
| | 25% | 7.8 | ± | 0.2 | 10.7 | ± | 0.0 | 5.9 | ± | 0.1 | 0.2 | ± | 4.9E-03 |
| | 50% | 6.9 | ± | 0.7 | 9.9 | ± | 0.3 | 2.3 | ± | 0.1 | 0.2 | ± | 2.3E-02 |
| | 75% | 7.7 | ± | 0.2 | 10.5 | ± | 0.0 | 2.6 | ± | 0.0 | 0.2 | ± | 8.3E-04 |
| Specimen 17 | Native | 11.8 | ± | 0.6 | 9.2 | ± | 0.1 | 8.4 | ± | 0.0 | 0.2 | ± | 2.6E-03 |
| | 25% | 9.8 | ± | 0.4 | 9.1 | ± | 0.6 | 7.3 | ± | 0.1 | 0.2 | ± | 1.1E-02 |
| | 50% | 7.6 | ± | 0.7 | 8.3 | ± | 0.6 | 6.4 | ± | 0.0 | 0.2 | ± | 8.7E-03 |
| | 75% | 9.4 | ± | 0.5 | 8.3 | ± | 0.3 | 3.4 | ± | 0.4 | 0.2 | ± | 2.2E-03 |

| P-values Comparing Native Moment Arms in Neutral Position with Previous Work | | | |
|---|--------------|--------------|--------------|
| | Reference 24 | Reference 25 | Reference 26 |
| Distal-First Data Set | 0.421 | 0.469 | 0.908 |
| Proximal-First Data Set | 0.999 | 0.887 | 0.131 |