

## **Appendix**

### **Literature Review**

#### *Intervertebral Disc Pathology*

A systematic review of the literature identified 14 articles related to the application of placental tissues for disc pathology. Two articles included the utilization of amniotic or chorionic tissues, a level IV case series<sup>49</sup>, and a Level I prospective clinical trial.<sup>58</sup> Additionally, 12 articles were identified for including umbilical cord tissue or blood, of which 5 articles were excluded (3 non-English publications and 2 studies unrelated to spine surgery) leaving 7 studies for study inclusion. The identified studies were all animal-based models, including a range of in vitro and in vivo models..

#### *Epidural Fibrosis*

A systematic review of the literature identified 4 articles investigating the application of amniotic or chorionic tissue to address epidural fibrosis. Of these 4 articles, one was excluded as a non-English publication, leaving 3 articles for study inclusion. Selected studies consisted of 2 animal studies and one level 4 case series.<sup>47</sup>

#### *Spinal Cord Injury*

A systematic review of the literature identified 60 articles investigating the use of amniotic or chorionic tissue and 549 studies investigating the use of umbilical cord blood or tissue for spinal cord injuries. Of the identified amniotic articles, 49 were excluded, leaving 11 in vitro and in vivo animal models to study inclusion.

Of the 549 umbilical cord blood or tissue articles identified, 495 articles excluded (442 studies unrelated to spinal cord injuries, 48 were in languages other than English, 5 review articles), leaving 54 articles for study inclusion. Six articles consisted of level IV clinical case series' and the remaining 48 were a combination of in vitro and in vivo animal studies

#### *Spinal Dysraphism*

A systematic review of the literature identified 3 articles investigating the application of umbilical cord tissue for closure spinal dysraphism. Of the identified articles, 2 involved animal models and only 1 clinical study, Level 4 case series.<sup>64</sup>