| Study                      | HO prevalence (%) | Mean age | Male (%) | Single-level CTDR (%) | C5C6 (%) | C6C7 (%) | Mean operation time (minute) | Mean hospitalization (day) |
|----------------------------|-------------------|----------|----------|------------------------|-----------|----------|-------------------------------|---------------------------|
| Coric et al., 2018¹        | 62.4              | 43.7     | 37.5     | 100                    | 61.0      | 27.2     | 80.2                          | 2.1                       |
| Gao et al., 2018²          | 16.7              | 45.4     | 62.5     | 0                      | 50.0      | 15.4     | /                            | /                         |
| Pointillart et al., 2018³  | 54.5              | 46.2     | 55.6     | 77.8                   | 50.0      | 40.9     | /                            | /                         |
| Zhou et al., 2018⁴         | 50.0              | 43.0     | 49.2     | 77.0                   | 67.1      | 12.9     | /                            | /                         |
| Zeng et al., 2018⁵         | 46.7              | 43.8     | 42.2     | 100                    | 51.1      | 40.0     | /                            | /                         |
| Miao et al., 2018⁶         | 65.6              | 41.3     | 48.1     | 70.9                   | 47.1      | 16.7     | /                            | /                         |
| Zarkadis et al., 2017⁷     | 0                 | 40.0     | 83.3     | 0                      | 50.0      | 41.7     | /                            | /                         |
| Mehren et al., 2017⁸       | 90.0              | 44.8     | 51.1     | 57.4                   | 40.0      | 41.4     | /                            | /                         |
| Wu a et al., 2017⁹         | 4.0               | 44.8     | 48.0     | 0                      | 36.0      | 12.0     | 106.4                         | /                         |
| Ozbek et al., 2017¹⁰       | 21.8              | 43.6     | 40.0     | 77.0                   | 36.1      | 34.7     | /                            | /                         |
| Chang et al., 2017¹¹       | 87.5              | 45.6     | 42.0     | 100                    | 72.0      | 4.0      | /                            | /                         |
| Wu b et al., 2017¹²        | 7.4               | 48.1     | 59.3     | 0                      | /         | /        | 132.2                         | /                         |
| Study                          | Indicator 1 | Indicator 2 | Indicator 3 | Indicator 4 | Indicator 5 | Indicator 6 | Indicator 7 |
|-------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Heo et al., 2017              | 29.2        | 50.7        | 37.5        | 100         | 68.8        | 16.7        | /           |
| Lanman et al., 2017           | /           | 47.1        | 44.0        | 0           | /           | /           | /           |
| Tian et al., 2017             | 2.7         | 45.0        | 67.9        | 71.4        | 59.5        | 13.5        | /           |
| Hisey et al., 2016            | /           | 43.2        | 47.6        | 100         | /           | /           | 90.0        | 2.1         |
| Meisel et al., 2016           | /           | 43.0        | 41.0        | 100         | 54.0        | 38.0        | 78.0        | /           |
| Sirikci et al., 2016          | 4.6         | 39.5        | 52.5        | 64.4        | 48.8        | 26.7        | /           | /           |
| Kim et al., 2016              | 69.6        | 45.0        | 87.0        | 100         | 65.2        | 8.7         | /           | /           |
| Sundseth et al., 2016         | 100         | 44.2        | 45.9        | 100         | 59.5        | 40.5        | /           | /           |
| Wagner et al., 2016           | 13.8        | 41.7        | 76.1        | 62.8        | /           | /           | /           | /           |
| Lei et al., 2016              | 51.4        | 42.6        | 48.4        | 87.1        | 32.3        | 35.5        | /           | /           |
| Gornet et al., 2016           | 15.7        | 44.5        | 46.1        | 100         | 52.5        | 38.6        | 89.4        | 1.0         |
| Chang et al., 2016            | 62.5        | 45.6        | 53.4        | 100         | 69.3        | 4.5         | /           | /           |
| Shichang et al., 2016         | 28.2        | 46.3        | 43.5        | 100         | 44.7        | 7.1         | 58.1        | 8.4         |
| Hou et al., 2016              | 0           | 46.3        | 58.8        | 100         | 54.9        | 27.5        | 95.0        | 9.3         |
| Author et al., (Year) | Variable 1 | Variable 2 | Variable 3 | Variable 4 | Variable 5 |
|----------------------|------------|------------|------------|------------|------------|
| Zhao et al., 2016    | 69.0       | 44.8       | 57.6       | 75.8       | 61.9       |
| Qizhi et al., 2016   | 0          | 46.8       | 64.3       | 0          | 28.6       |
| Thomas et al., 2016  | 2.5        | 45.5       | 18.2       | 66.7       | /          |
| Fransen et al., 2016 | 53.2       | /          | /          | 60.6       | 43.1       |
| Shi et al., 2016     | 13.3       | 46.5       | 40.0       | 100        | 41.7       |
| Radeliff et al., 2016| 41.7       | 45.3       | 50.2       | 0          | /          |
| Kim et al., 2015     | 18.9       | 45.4       | 64.9       | 100        | 64.9       |
| Lee et al., 2015     | 78.6       | 47.1       | 85.7       | 100        | 35.7       |
| Zhang et al., 2015   | 34.0       | 42.7       | 50.9       | 100        | /          |
| Skeppholm et al., 2015| /          | 46.6       | 42.9       | 64.3       | 35.7       |
| Janssen et al., 2015 | /          | 42.1       | 46.6       | 100        | /          |
| Hur et al., 2015     | 16.7       | /          | /          | 0          | /          |
| Phillips et al., 2015| /          | 45.3       | 51.8       | 100        | 50.0       |
| Zhang_a et al., 2014 | 18.8       | /          | /          | 89.7       | 51.6       |
| Authors                | Year | Value1 | Value2 | Value3 | Value4 | Value5 | Value6 | Value7 | Value8 |
|------------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|
| Fay et al., 2014      |      | 41.9   | 50.6   | 60.8   | 62.4   | 54.1   | 12.2   | 213.2  |        |
| Suchomel et al., 2014 |      | /      | 42.9   | 40.0   | 100    | 53.7   | 37.1   | /      | /      |
| Zhang et al., 2014    |      | 32.7   | 44.8   | 45.5   | 100    | 29.1   | 21.8   | 84.5   | /      |
| Ding et al., 2014     |      | 7.7    | 50.6   | 61.5   | 0      | /      | /      | 153.1  | 10.3   |
| Qi et al., 2014       |      | 27.9   | 43.1   | 54.4   | 76.8   | 33.6   | 7.2    | /      | /      |
| Malham et al., 2014   |      | 36.4   | 40.3   | 54.2   | 79.2   | 48.3   | 41.4   | /      | /      |
| Zhao et al., 2013     |      | 65.4   | 44.0   | 61.5   | 100    | 61.5   | 11.5   | /      | /      |
| Li et al., 2013       |      | 18.2   | 46.4   | 49.1   | 100    | 61.8   | 10.9   | /      | /      |
| Zhang et al., 2013    |      | 26.1   | 46.5   | 65.0   | 85.0   | 52.2   | 0      | 134.5  | /      |
| Park et al., 2013     |      | 94.1   | 45.0   | 49.3   | 78.7   | 44.7   | 36.5   | /      | /      |
| Chen et al., 2013     |      | 16.1   | 45.0   | 58.1   | 100    | 90.3   | 0      | /      | /      |
| Pimenta et al., 2013  |      | 7.7    | 46.2   | 32.3   | 44.9   | 69.6   | 50.6   | /      | /      |
| Jin et al., 2013      |      | 64.2   | 46.0   | 72.8   | 74.7   | 50.5   | 24.2   | /      | /      |
| Cho et al., 2013      |      | /      | 41.7   | 78.1   | 84.4   | 64.7   | 17.6   | /      | /      |
| Choi et al., 2012     |      | 38.8   | 48.8   | 54.7   | 50.9   | 46.3   | 32.5   | /      | /      |
| Tu et al., 2012       |      | 56.1   | 46.7   | 68.0   | 57.3   | 56.1   | 11.2   | /      | /      |
| Authors et al., 2012 | Accuracy | Precision | Recall | F1 | Specificity | Sensitivity | Precision | Recall | F1 | Specificity | Sensitivity |
|---------------------|----------|-----------|--------|----|-------------|-------------|-----------|--------|----|-------------|-------------|
| Sun et al., 2012 | 42.3 | 44.0 | 53.8 | 100 | 76.9 | 3.8 | / | / |
| Chung et al., 2012 | 68.4 | 50.1 | 63.2 | 100 | 47.4 | 47.4 | / | / |
| GUeRIN et al., 2012 | 27.7 | 41.2 | 45.1 | 77.5 | / | / | 75.0 | / |
| Wu et al., 2012 | 37.5 | 45.5 | 60.0 | 100 | 67.5 | 5.0 | / | / |
| Lee et al., 2012 | 64.3 | 44.4 | 75.0 | 67.9 | 50.0 | 10.7 | / | / |
| Zhang et al., 2012 | 12.5 | 44.8 | 58.3 | 100 | 43.3 | 13.3 | 92.4 | 3.3 |
| Barrey et al., 2012 | 18.8 | 42.3 | 43.8 | 100 | 75.0 | 21.9 | 65.6 | 5.1 |
| Cho et al., 2012 | 46.5 | 46.3 | 55.0 | 86.0 | 51.2 | 25.6 | / | / |
| US FDA IDE trial (P100003) 2012 | 74.2 | 42.7 | 53.3 | 100 | 51.3 | 39.2 | 91.7 | 1.1 |
| Wang et al., 2011 | 0 | 46.5 | 65.0 | 85.0 | 52.2 | 0 | 134.5 | / |
| Peng et al., 2011 | / | 43.9 | 47.5 | 62.5 | 55.9 | 15.3 | / | / |
| Huppert et al., 2011 | 62.0 | 44.9 | 39.8 | 75.8 | 44.7 | 39.9 | 97.9 | 3.5 |
| Ren et al., 2011 | / | 46.0 | 57.8 | 86.7 | 53.3 | 11.1 | / | / |
| Tu et al., 2011 | 48.1 | 46.6 | 58.3 | 55.6 | 61.5 | 9.6 | / | / |
| Author et al., Year | Value 1 | Value 2 | Value 3 | Value 4 | Value 5 | Value 6 | Value 7 |
|--------------------|---------|---------|---------|---------|---------|---------|---------|
| Du et al., 2011    | 0       | 47.9    | 56.0    | 96.0    | /       | /       | 132.6   |
| Cardoso et al., 2011| 0       | 50.0    | 58.1    | 0       | 60.0    | 6.7     | /       |
| Kowalczyk et al., 2011| 3.3     | 44.4    | 50.0    | 100     | 55.0    | 33.3    | /       |
| Zhao et al., 2010  | 33.3    | 43.8    | 50.0    | 90.9    | 75.0    | 4.2     | /       |
| Walraevens et al., 2010| 38.5    | 42.8    | 42.7    | 100     | /       | /       | /       |
| Lee et al., 2010   | 27.1    | 44.0    | 56.3    | 100     | 56.3    | 29.2    | /       |
| Reyes-Sanchez et al., 2010| 0       | 44.5    | 8.0     | 48.0    | 47.4    | 23.7    | /       |
| Suchomel et al., 2010| 88.3    | 45.3    | 50.0    | 81.5    | 58.5    | 29.2    | 82.0    |
| Ryu et al., 2010   | 52.8    | 46.6    | 58.3    | 100     | 47.2    | 30.6    | /       |
| Cardoso et al., 2010| 0       | 45.0    | 100     | 0       | 36.4    | 31.8    | /       |
| Barbagallo et al., 2010| 42.2    | 40.9    | 60.0    | 63.3    | 51.1    | 28.9    | /       |
| Cheng et al., 2009 | 0       | 45.0    | 51.6    | 0       | /       | /       | /       |
| Yang et al., 2009  | 0       | 45.4    | 66.7    | 100     | 37.5    | 12.5    | 140.0   |
| Bhadra et al., 2009| 13.3    | 34.0    | 60.0    | 100     | 60.0    | 33.3    | 105.0   |
|                     |         |         |         |         |         |         | 2.0     |
| Study                          | HO (%) | CTDR (%) | CTDR (%) | HO (%) | CTDR (%) | CTDR (%) | CTDR (%) | CTDR (%) |
|-------------------------------|--------|----------|----------|--------|----------|----------|----------|----------|
| US FDA IDE trial (P060023) 2009 | /      | 44.4     | 45.5     | 100    | 57.9     | 36.0     | 132.0    | 1.1      |
| Heidecke et al., 2008<sup>84</sup> | 28.8   | 46.7     | 40.7     | 90.7   | 55.9     | 13.6     | /        | /        |
| Kim et al., 2008<sup>85</sup> | 0      | /        | 63.8     | 83.0   | 47.3     | 36.4     | /        | /        |
| Park et al., 2008<sup>86</sup> | 0      | 45.0     | 52.4     | 100    | 61.9     | 28.6     | 167.0    | 5.6      |
| Amit et al., 2007<sup>87</sup> | 0      | 51.0     | 59.1     | 100    | /        | /        | 120.0    | /        |
| Pimenta et al., 2007<sup>88</sup> | 0.4    | 46.0     | 40.0     | 50.7   | 44.2     | 28.6     | 113.5    | 1.1      |
| Mehren et al., 2006<sup>89</sup> | 66.2   | /        | /        | 63.0   | 46.8     | 37.7     | /        | /        |
| Pickett et al., 2006<sup>90</sup> | 2.7    | /        | 16.2     | /      | 43.8     | 32.3     | /        | /        |
| Leung et al., 2006<sup>91</sup> | 17.8   | 45.0     | 43.3     | /      | /        | /        | /        | /        |
| Pimenta et al., 2004<sup>92</sup> | /      | 45.0     | 39.6     | 52.8   | 33.7     | 21.8     | /        | /        |

HO, heterotopic ossification; CTDR, cervical total disc replacement.
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