Additional file 1

Construction of the modified Pfirrmann classification

Original Pfirrmann classification(Pfirrmann et al., 2001)

Grade	Structure	Distinction of Nucleus and Annulus and	Signal Intensity	Height of Intervertebral Disc
1	Homogeneous, bright white	Clear	Hyperintense, isointense to cerebrospinal fluid	Normal
2	Inhomogeneous with or without horizontal bands	Clear	Hyperintense, isointense to cerebrospinal fluid	Normal
3	Inhomogeneous, gray	Unclear	Intermediate	Normal to slightly decreased
4	Inhomogeneous, gray to black	Lost	Intermediate to hypointense	Normal to moderately decreased
5	Inhomogeneous, black	Lost	Hypointense	Collapsed disc space

The MRI findings from the Backs on Funen cohort (Kjaer et al., 2005) that were used to construct the modified Pfirrmann classification for this study.

Signal Intensity (Eyre, 1989)
0: Homogeneously hyperintense

1: Hyperintense with visible intranuclear cleft

2: Intermediate signal intensity

3: Hypointense

Disc height (Raininko et al., 1995)
0: Disc higher than the disc above

1: Disc as high as the disc above (if normal)

2: Disc narrower than the disc above (if normal)

3: Endplates almost in contact

Nucleus shape (Raininko et al., 1995)
0: Round or kidney shaped, A 60% of the sagittal or coronal diameter of the disc

1: Slightly lobulated or irregular

2: Severely irregular shape and small, <25% of the area of the disc

3: Not seen in a disc of low signal intensity

Modified Pfirrmann classification for this study

Cohorte Grades (Kjaer et al., 2005) (Nucleus Shape, Disc Height and Signal Intensity)	Modified Pfirrmann Grades
Shape = 0, Height = 0, Signal = 0	1
Shape = 1, Height = 0, Signal = 1	2
Shape = 2, Height = 1, Signal = 2	3
Shape = 3, Height = 2, Signal = 2	4
Shape = 3, Height = 3, Signal = 3	5

Each lumbar level was scored 1-5. Cut point for presence of disc degeneration was ≥3 at one or more levels.

References

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