

# Supplementary Material

Table S1. Measurement results (mean±SD in mm, area section in mm<sup>2</sup>) for motion segment L4/5 according to sex (*N* = 89). MaxX - Maximal Horizontal Dimension, MaxY - Maximal Vertical Dimension, MinX - Minimal Horizontal Dimension;

| L4/5          |         | Men        |            |    | Female     |            |    |
|---------------|---------|------------|------------|----|------------|------------|----|
|               | section | Right      | Left       | p  | Right      | Left       | p  |
| MaxX          | I       | 10.1±2.2   | 10.4±2.4   | NS | 10.4±2.4   | 10.6±2.7   | NS |
|               | II      | 10±1.8     | 9.7±1.7    | NS | 10.9±2.2   | 10.9±2.2   | NS |
|               | III     | 11.7±2.9   | 10.7±2.4   | NS | 11.7±2.7   | 11.6±2.6   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| MaxY          | I       | 18.8±3.4   | 19.2±3.9   | NS | 18.8±3.8   | 19.3±4.1   | NS |
|               | II      | 17.4±2.7   | 18.3±2.9   | NS | 17.8±3.8   | 17.1±3.8   | NS |
|               | III     | 17.3±3.7   | 17.5±3.2   | NS | 17.7±3.8   | 17±3.1     | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| MinX          | I       | 5.2±2.8    | 5.4±2.5    | NS | 6.1±3      | 5.9±2      | NS |
|               | II      | 4.9±2      | 4.7±2.2    | NS | 6±2.6      | 5.6±2.2    | NS |
|               | III     | 5.2±2.4    | 5.2±2.3    | NS | 6±2.3      | 6.4±2.2    | NS |
|               | p       | NS         | NS         |    | NS         |            |    |
| Circumference | I       | 52.7±7.9   | 54.2±8.2   | NS | 54.3±9.9   | 55.4±10.2  | NS |
|               | II      | 50±6.8     | 51.5±5.8   | NS | 52±9.3     | 50.7±9.8   | NS |
|               | III     | 52.3±8.9   | 52.3±7.1   | NS | 52.6±8.8   | 51.4±8.4   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| Area          | I       | 162.1±47.5 | 166.9±44.6 | NS | 186.9±54.8 | 181.2±50.5 | NS |
|               | II      | 147.1±40.4 | 149.8±44.1 | NS | 170.7±50   | 163.2±53.2 | NS |
|               | III     | 160.8±59.8 | 157.5±53.9 | NS | 174.3±45.3 | 176.4±57   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |

Table s2. Measurement results (mean±SD in mm. area section in mm<sup>2</sup>) for motion segment L5/S1 according to sex (*N* = 89). MaxX - Maximal Horizontal Dimension. MaxY - Maximal Vertical Dimension. MinX - Minimal Horizontal Dimension

| L5/S1         |         | Men        |            |    | Female     |            |    |
|---------------|---------|------------|------------|----|------------|------------|----|
|               | section | Right      | Left       | p  | Right      | Left       | p  |
| MaxX          | I       | 11.1±3.9   | 10.2±2.2   | NS | 10.2±3     | 10±2.1     | NS |
|               | II      | 11.5±2.8   | 10.3±2.8   | NS | 10.9±1.9   | 10.5±2.1   | NS |
|               | III     | 12.5±3     | 11.1±3.4   | NS | 11.8±1.9   | 10.6±3.3   | NS |
|               | p       | NS         | NS         |    |            |            |    |
| MaxY          | I       | 16.9±3.8   | 17.1±4.4   | NS | 17.5±4.8   | 17.1±4.6   | NS |
|               | II      | 15.2±2.6   | 16.1±4.3   | NS | 16.2±4.7   | 16±3.7     | NS |
|               | III     | 14.6±2.3   | 14.6±3     | NS | 15.5±4.2   | 15.5±5.4   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| MinX          | I       | 6.3±3.7    | 5.5±2.8    | NS | 6.1±2.9    | 5.2±2.1    | NS |
|               | II      | 7.7±10.3   | 5.2±2.3    | NS | 5.7±2.3    | 5.7±2.3    | NS |
|               | III     | 5.6±2.6    | 6±3.1      | NS | 6.7±2.5    | 6.5±2      | NS |
|               | p       | NS         | NS         |    |            |            |    |
| Circumference | I       | 50.9±12.8  | 49.4±9.2   | NS | 51.2±10.4  | 49.2±9.4   | NS |
|               | II      | 49.7±12.2  | 48.1±9.7   | NS | 48.5±11.6  | 46.6±10.2  | NS |
|               | III     | 49±7.8     | 47.5±9.4   | NS | 48.8±9.6   | 47.6±11    | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| Area          | I       | 148.3±42.2 | 142.7±39.7 | NS | 156.3±55.1 | 142.4±49   | NS |
|               | II      | 162.2±86.8 | 136.5±41.8 | NS | 151.5±56.4 | 144.2±46.8 | NS |
|               | III     | 154.8±53.1 | 151.5±63.3 | NS | 163.1±54.9 | 153.7±68.5 | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |

Table s3. Measurement results (mean±SD in mm) for motion segment L4/5 according to age groups (N = 89). MaxX - Maximal Horizontal Dimension, MaxY - Maximal Vertical Dimension, MinX - Minimal Horizontal Dimension

| L4/5          |         | <50        |            |    | >50        |            |    |
|---------------|---------|------------|------------|----|------------|------------|----|
|               | section | R          | L          | p  | R          | L          | p  |
| MaxX          | I       | 10±2.3     | 10.7±2.5   | NS | 10.4±2.2   | 10.3±2.6   | NS |
|               | II      | 10.7±2.3   | 10.3±2.2   | NS | 10.2±1.9   | 10.3±1.9   | NS |
|               | III     | 12.1±3.2   | 11.2±2.4   | NS | 11.3±2.4   | 11±2.6     | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| MaxY          | I       | 20.2±3.2   | 20.5±3.9   | NS | 17.6±3.6   | 18.1±3.7   | NS |
|               | II      | 19.2±2.8   | 19.1±3.1   | NS | 16.2±3     | 16.6±3.3   | NS |
|               | III     | 19.3±3.2   | 18.5±2.5   | NS | 15.9±3.4   | 16.1±3.2   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| MinX          | I       | 4.8±2.8    | 5.1±2.4    | NS | 6.4±2.9    | 6.2±2      | NS |
|               | II      | 4.8±2.3    | 4.8±2.3    | NS | 6±2.3      | 5.5±2.1    | NS |
|               | III     | 4.8±2.3    | 5.3±2.2    | NS | 6.2±2.3    | 6.2±2.4    | NS |
|               | p       | NS         | NS         |    | NS         |            |    |
| Circumference | I       | 55.7±7.5   | 57±9.1     | NS | 51.6±9.7   | 52.8±9     | NS |
|               | II      | 54.5±7.5   | 54±6.8     | NS | 47.9±7.4   | 48.6±8.2   | NS |
|               | III     | 56.6±8.2   | 54.8±5.8   | NS | 48.8±7.7   | 49.3±8.4   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| Area          | I       | 176.6±54.3 | 184.5±50.7 | NS | 172.2±51.2 | 164.5±43.5 | NS |
|               | II      | 173.6±49.6 | 163.3±51.1 | NS | 145.5±39.9 | 150.3±46.6 | NS |
|               | III     | 185.8±60.2 | 178.1±53.2 | NS | 151.2±40.5 | 156.7±56.9 | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |

Table s4. Measurement results (mean±SD in mm) for motion segment L5/S1 according to age (*N* = 89). MaxX - Maximal Horizontal Dimension. MaxY - Maximal Vertical Dimension. MinX - Minimal Horizontal Dimension

| L5/S1         |         | <50        |            |    | >50        |            |    |
|---------------|---------|------------|------------|----|------------|------------|----|
|               | section | R          | L          | p  | R          | L          | p  |
| MaxX          | I       | 10.2±2.6   | 10.3±1.8   | NS | 11.1±4.1   | 9.9±2.4    | NS |
|               | II      | 11.6±2.2   | 11.2±2.5   | NS | 10.8±2.5   | 9.7±2.3    | NS |
|               | III     | 13.5±2.5   | 11.1±3.7   | NS | 11.1±2     | 10.6±2.9   | NS |
|               | p       | NS         | NS         |    |            |            |    |
| MaxY          | I       | 18.5±4     | 18.5±3.8   | NS | 16±4.3     | 15.8±4.6   | NS |
|               | II      | 17.2±3.6   | 17.1±2.8   | NS | 14.4±3.5   | 15.1±4.7   | NS |
|               | III     | 16.4±3     | 16.2±5     | NS | 13.9±3.3   | 14±3.4     | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| MinX          | I       | 5.4±2.8    | 4.9±2.7    | NS | 6.9±3.5    | 5.7±2.2    | NS |
|               | II      | 7.2±10.7   | 5.1±2.7    | NS | 6.4±2.7    | 5.7±1.9    | NS |
|               | III     | 5.9±3.1    | 6±3.1      | NS | 6.4±2.1    | 6.5±2.1    | NS |
|               | p       | NS         | NS         |    |            |            |    |
| Circumference | I       | 52.2±8.4   | 52±8       | NS | 50±13.8    | 47±9.8     | NS |
|               | II      | 53.5±12.8  | 50.8±7.5   | NS | 45.2±9.4   | 44.3±10.9  | NS |
|               | III     | 53.4±7.5   | 51.1±11.9  | NS | 44.9±7.7   | 44.4±7.1   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |
| Area          | I       | 153.2±50.8 | 158.5±42.9 | NS | 151.3±47.5 | 128.5±40.8 | NS |
|               | II      | 182.4±89.2 | 157.6±48.1 | NS | 134.5±45.9 | 125±34.1   | NS |
|               | III     | 187.5±53.4 | 171.2±78.7 | NS | 133.5±39.8 | 136.1±46   | NS |
|               | p       | NS         | NS         |    | NS         | NS         |    |

Table s5. Spearman correlation coefficients for measurement results (in mm) by motion segment L4/5 and L5/S1 for section I

[illegible]

Table s6. Spearman correlation coefficients for measurement results (in mm) by motion segment L4/5 and L5/S1 for section II

[illegible]









Table s13. Spearman correlation coefficients for measurement results (in mm) by motion segment L4/5 and L5/S1 for male and section II

[illegible]

Table s14. Spearman correlation coefficients for measurement results (in mm) by motion segment L4/5 and L5/S1 age group <50 and section I

[illegible]





Table s19. Spearman correlation coefficients for measurement results (in mm) by motion segment L4/5 and L5/S1 age group >50 and section II

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