

# Adolescent idiopathic scoliosis classification

see [Lenke Classification](#) of AIS.

The current classifications of adolescent idiopathic scoliosis (AIS) aim to guide surgical decision making. However, variance exists within treatment recommendations and suboptimal outcomes have been observed while following these guidelines based on two-dimensional images. We used previously developed 3D classification for right thoracic AIS patients and aimed to determine the variation in surgical decision making and the risk of suboptimal outcomes in each subtype according to our classification.

**METHODS:** Seventy-six right thoracic AIS patients with 2-year follow-up were included retrospectively. Five 3D preoperative subgroups were determined based on a previous classification system. The upper and lower instrumented vertebrae (UIV and LIV) and the radiographic surgical outcomes at 2-year [frontal balance (FB), proximal junctional kyphosis (PJK), and adding on] were compared between the subtypes.

**RESULTS:** The fusion length and the rate of radiographic suboptimal outcomes were statistically different between the five groups. LIV at T12 in Type 1 and UIV at T2 in Type 2 were associated with improved FB and lower PJK, respectively. Type 3 had the highest rate of suboptimal FB and developing PJK. Type 4 had the longest fusion, and suboptimal FB was observed in 42% of the patients independent from the LIV level. Type 5 had the lowest rate of unsatisfactory radiographic outcomes at 2 years.

**CONCLUSION:** Following the preoperative 3D classification of the AIS patients, we showed that the UIV and LIV selection has a different impact on the surgical outcomes in each of the five subtypes. The proposed 3D classification has the potential for risk stratification following a posterior spinal surgery in right thoracic AIS <sup>1)</sup>.

<sup>1)</sup>

Pasha S, Baldwin K. Surgical outcome differences between the 3D subtypes of right thoracic adolescent idiopathic scoliosis. Eur Spine J. 2019 Sep 24. doi: 10.1007/s00586-019-06145-4. [Epub ahead of print] PubMed PMID: 31552536.

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