

**Assessment of the reliability and reproducibility
of the Waldenström and Elizabethtown
classification system for Perthes disease: Does
the addition of sub-classes make the
Elizabethtown classification less reliable?**

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Introduction & Aim

- To assess the reliability, reproducibility, and the effect of surgeon's experience in using the Waldenström and Elizabethtown classification.

Materials & Methods

- 6 paediatric orthopaedic surgeons (3 with more than 8 years experience, 3 with less)
- 50 hip radiographs (AP & frog leg lateral)
- Review on 2 separate occasions
- Blinded to age and gender of patient

Results

- There was substantial agreement for both Waldenström (72%) and Elizabethtown classification (71 %) within the observers (intra-observer reliability).
- Better inter-observer reliability for Elizabethtown classification as compared to Waldenström.
- No significant effect of experience on the reliability of the classifications.
- Highest repeatability of stage 4 in Waldenström as well as Elizabethtown classification.

Literature review

- Hyman et al (2015) demonstrated substantial to almost perfect agreement between and within observers for the modified Waldenström classification.
- Senthil et al (2006) found substantial reliability of the lateral pillar classification, moderate reliability of Caterall classification and poor to fair reliability of Salter-Thompson classification.

Conclusion

- Elizabethtown classification is equally reliable as compared to Waldenström classification
- It has a short learning curve and can be used equally well by junior as well as senior clinicians