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## **Oscillatory shear index**

Aneurysms that are more likely to be ruptured have an adverse hemodynamic environment characterized by a higher maximum Oscillatory shear index (OSI), higher kinetic energy, and smaller low shear area (LSA).

Accordingly, variables that play an important role for the discrimination between ruptured and unruptured aneurysms include: maximum OSI, kinetic energy, LSA, aneurysm width, non-sphericity index (NSI), L2-Norm of mean curvature (MLN), as well as patient gender and age and aneurysm location. NSI, MLN, patient age, and aneurysm location were also retained most frequently in the models obtained by the cardinality- constrained SVM approach, further emphasizing the importance of these four variables <sup>1)</sup>.

The model's performance measures indicated a good generalizability for data acquired at different clinical institutions. Combining the model-based and similarity-based approach could further improve the assessment and interpretation of new cases, demonstrating its potential use for clinical risk assessment <sup>2</sup>.

## 1)

Detmer FJ, Chung BJ, Mut F, Slawski M, Hamzei-Sichani F, Putman C, Jiménez C, Cebral JR. Development and internal validation of an aneurysm rupture probability model based on patient characteristics and aneurysm location, morphology, and hemodynamics. Int J Comput Assist Radiol Surg. 2018 Nov;13(11):1767-1779. doi: 10.1007/s11548-018-1837-0. Epub 2018 Aug 9. PubMed PMID: 30094777.

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