POLYPUBLIE

Biomechanical modelling of indirect decompression in oblique lumbar intervertebral fusions – A finite element study. Supplément

Mathieu Chayer, Philippe Phan, Pierre-Jean Arnoux, Zhi Wang, Carl-Éric Aubin

Document en libre accès dans PolyPublie
Open Access document in PolyPublie

Date	2024
Type	Article de revue/Article
Version	Matériel supplémentaire / Supplementary material
URL de PolyPublie PolyPublie URL	https://publications.polymtl.ca/59443/
Évaluation par les pairs Peer reviewed	Révisé par les pairs / Refereed
Conditions d'utilisation Terms of use	Creative Commons Attribution-Utilisation non commerciale-Pas d'oeuvre dérivée 4.0 International / Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International (CC BY-NC-ND)
Référence Citation	Chayer, M., Phan, P., Arnoux, P.-J., Wang, Z., & Aubin, C.-É. (2024). Biomechanical modelling of indirect decompression in oblique lumbar intervertebral fusions – A finite element study. Clinical Biomechanics, 120, 106352 (9 pages). https://doi.org/10.1016/j.clinbiomech.2024.106352

Publication officielle
Official publication

Titre de la revue Journal title	Clinical Biomechanics (vol. 120)
Maison d'édition Publisher	Elsevier
URL officielle Official URL	https://doi.org/10.1016/j.clinbiomech.2024.106352
Mention légale Legal notice	© 2024 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (http://creativecommons.org/licenses/by- nc-nd/4.0/).

Ce fichier a été téléchargé à partir de PolyPublie, le dépôt institutionnel de Polytechnique Montréal
This file has been downloaded from PolyPublie, the institutional repository of Polytechnique Montréal
https://publications.polymtl.ca

Table S1 Comparison of the maximum stresses measured on the superior and inferior vertebral endplates in loading for SA and BPS constructs with the reported values from other FEM studies.

Study	Constructs	Reported range for Maximal vertebral endplate stress (MPa)	Loading conditions
This study	OLIF SA OLIF BPS	52-66 34-48	400N & 10Nm on L4
Cai et al. (2022)	OLIF SA OLIF BPS	5-15 5-7.5	500N & 7.5Nm on L3
Fang et al. (2020)	OLIF SA OLIF BPS	20-50 10-35	500N & 7.5Nm on L4
Hao et al. (2023)	OLIF SA OLIF BPS	20-70* 10-30*	200N & 5Nm on L4
Yang et al. (2022)	OLIF SA OLIF BPS	10-80 10-60	4-8 Nm on L3
Liu et al. (2022)	OLIF SA OLIF BPS	30* 10*	500N & 7.5Nm on L3
Qin et al. (2022)	OLIF SA OLIF BPS	35-75 20-60	400N & 10Nm on L3
Zhang et al. (2022)	OLIF SA OLIF BPS	80-200* 15-45*	150N & 10Nm on L3
Fan et al. (2023)	OLIF SA OLIF BPS	60-140* 15-45*	400N & 10Nm on L1
Ouyang et al. (2023)	OLIF SA OLIF UPS	75-350 76-270	400N & 10Nm on L4
Xue et Wu (2023)	OLIF SA	1-10	500N & 10Nm on L3
Zhong et al. (2023)	OLIF SA	10-30	500N & 7.5Nm on L1

*No value was reported for the maximum stress on endplates; the maximum stress on the cage was considered instead.

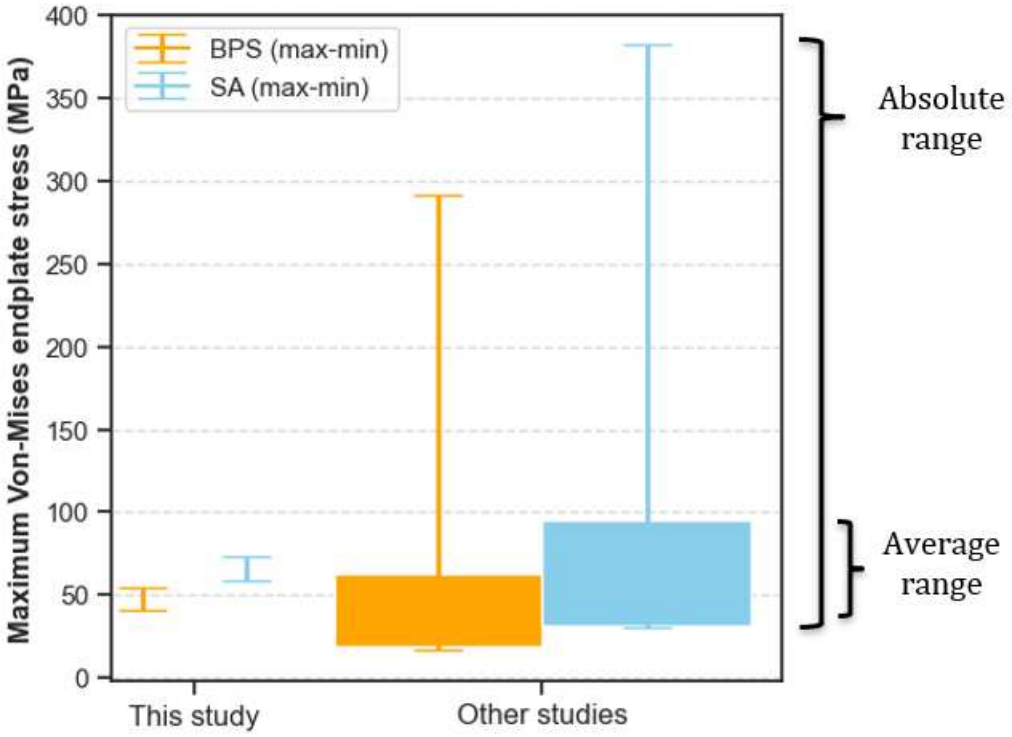


Figure S1 Comparison of the range of maximum stresses measured on vertebral endplates in this study with those reported in the OLIF numerical studies referenced in Table 5.