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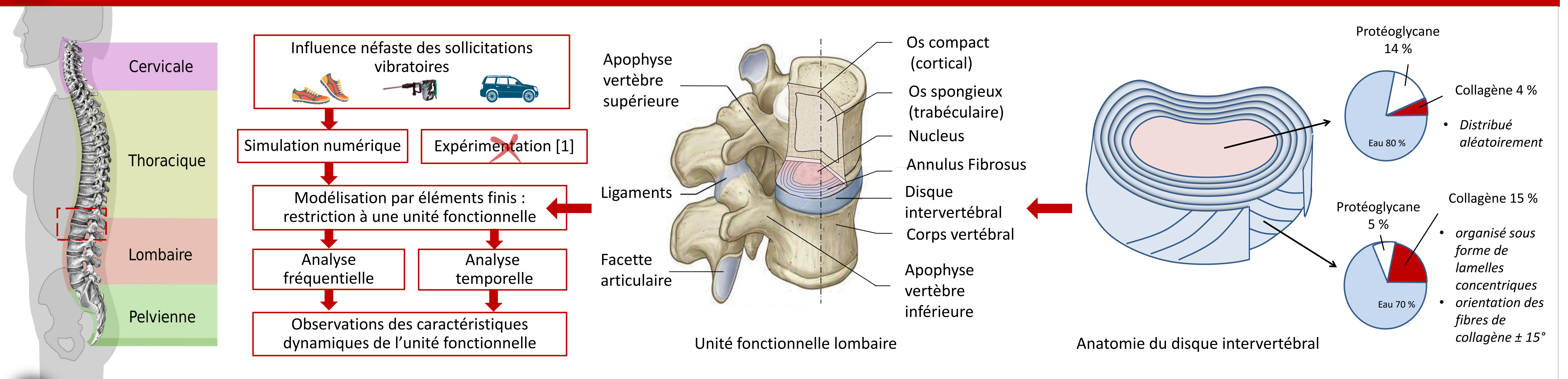
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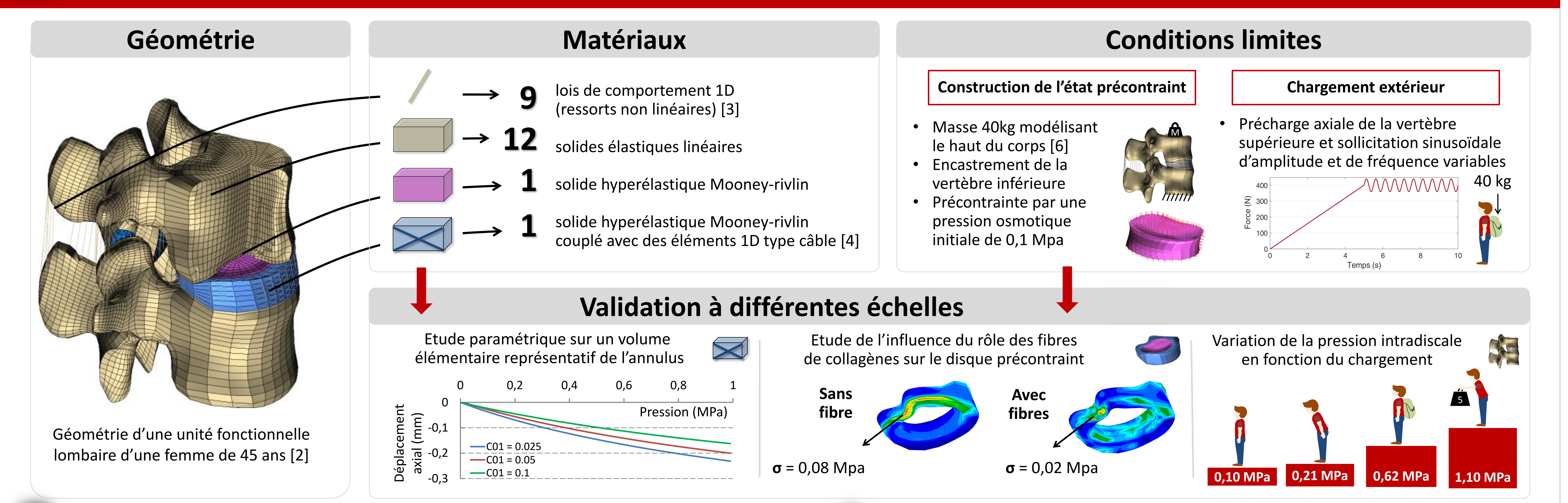
Comportement dynamique de disques intervertébraux soumis à de fortes sollicitations vibratoires

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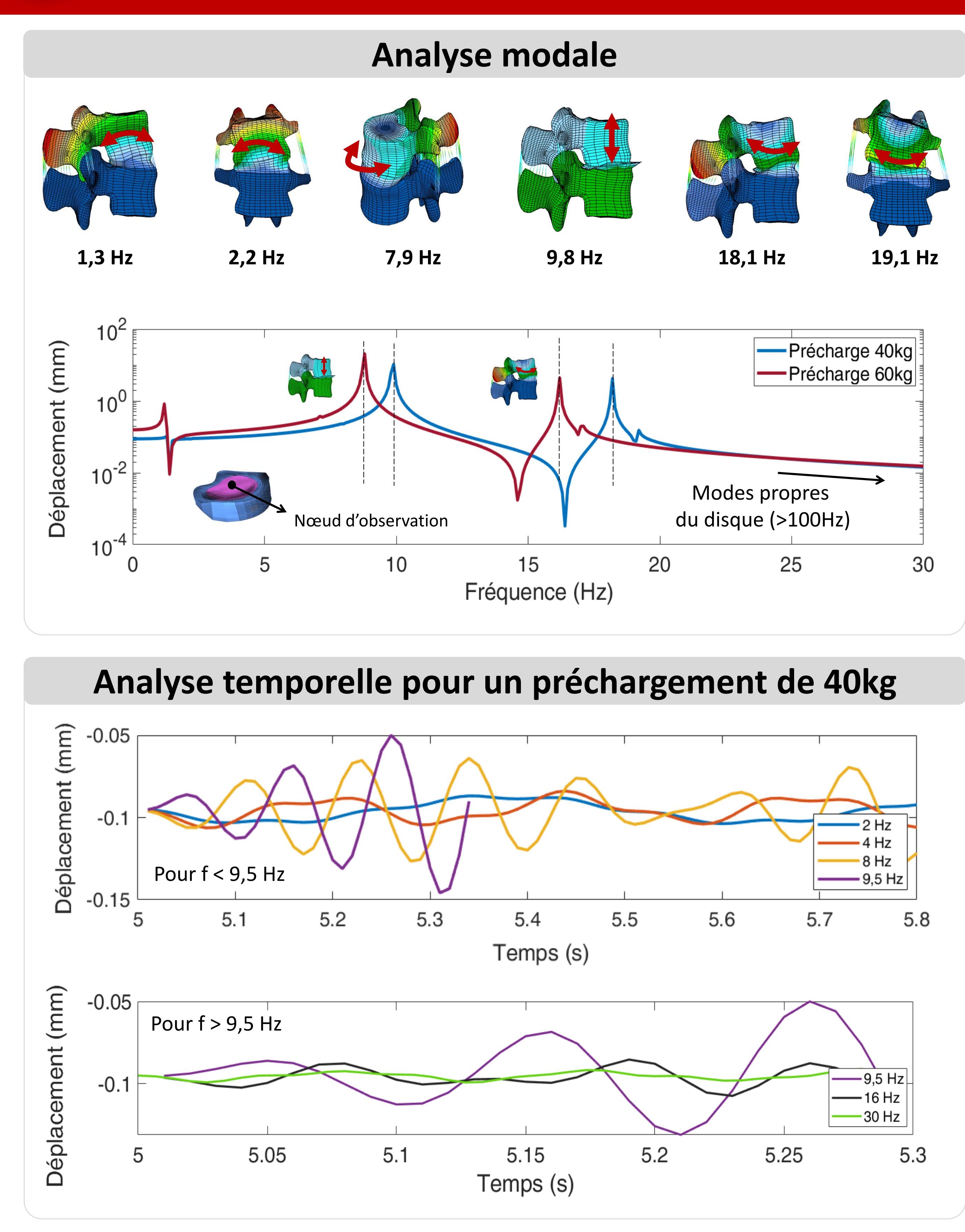
1 Contexte et motivations



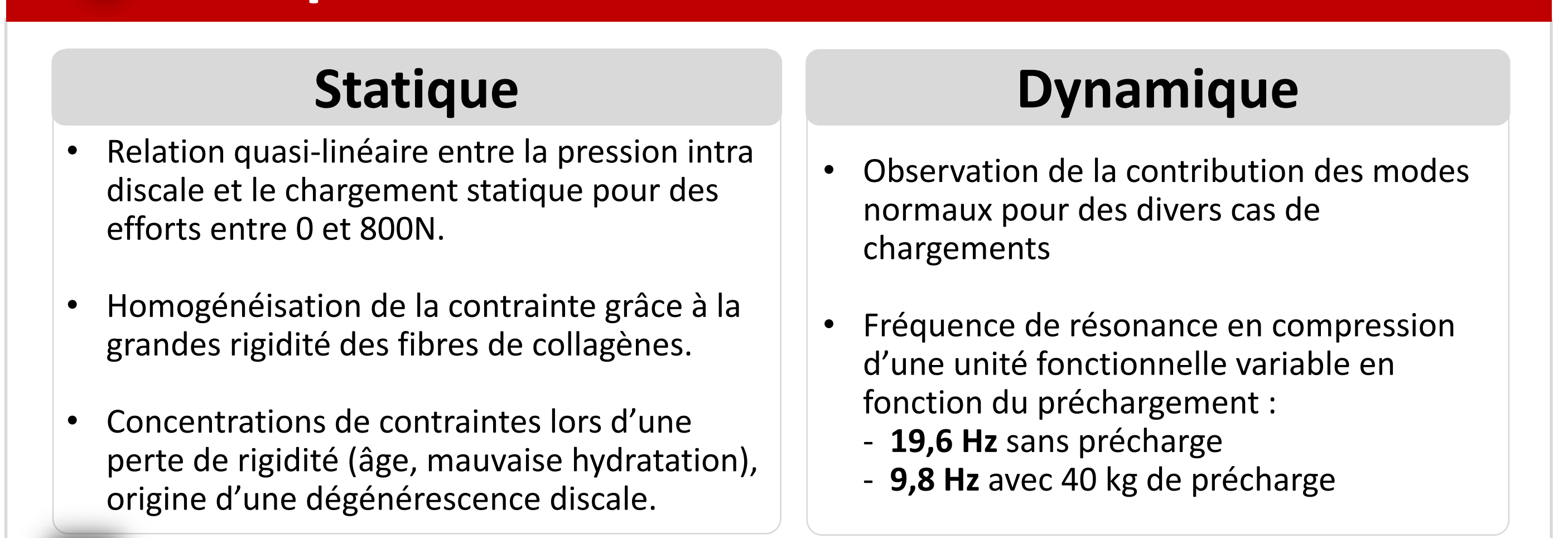
2 Méthode



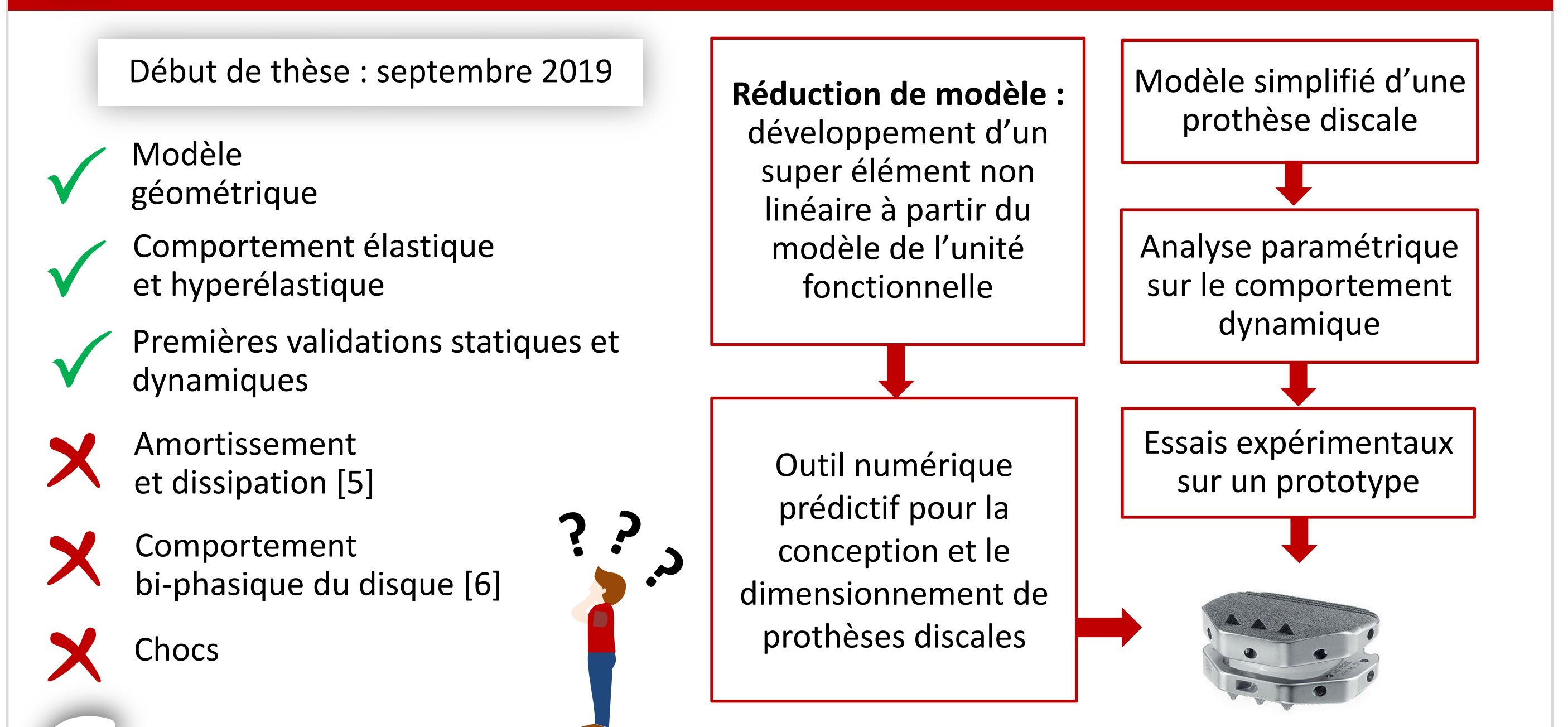
3 Résultats



4 Interprétations



5 Perspectives



6 Références

[1] N. Newell, JP Little, A. Christou, MA Adams, CJ Adam, SD Masouros. 2017. Biomechanics of the human intervertebral disc: A review of testing techniques and results.
[2] Sean M. Finleya, Darrel S. Brodke, Nicholas T. Spinab, Christine A. DeDena and Benjamin J. Ellisa, 2018. FEBio finite element models of the human lumbar spine, Computer Methods in Biomechanics and Biomedical Engineering.
[3] Frank A. Pintar, Narayan Yoganadan, Thomas Myers. 1992. Biomechanical properties of human lumbar spine ligaments.
[4] Robert Eberlein, Gerhard Holzapfel. 2001. An Anisotropic Model for Annulus Tissue and Enhanced Finite Element Analyses of Intact Lumbar Disc Bodies. Computer Methods in Biomechanics and Biomedical Engineering
[5] Izambert O, Mitton D, Thourot M, Lavaste F. 2003. Dynamic stiffness and damping of human intervertebral disc using axial oscillatory displacement under a free mass system.
[6] Wei Fan, Li-Xin Guo. 2017. Influence of different frequencies of axial cyclic loading on time-domain vibration reponse of the lumbar spine: A finite element study. Computers in Biology and Medicine.