

## WHEN BONE PALAEOPATHOLOGIES PLAY HIDE AND SEEK: A CASE STUDY ON SAUROPOD DINOSAURS

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Palaeopathology is the study of ancient pathologies preserved in the fossil record. While fossil pathologies have caught interests over the last decades, only those featuring externally-visible manifestations have been extensively studied. A study initially aimed at analysing growth dynamics of two basal sauropods (cf. *Isanosaurus* and *Spinophorosaurus nigerensis*) lead us to consider that several palaeopathologies have gone unnoticed. Indeed, our histological survey unexpectedly unveiled palaeopathologies that were not expressed externally, but well internally under the microscope. Both samples featured abnormal radial fibrolamellar bone that we interpret as spiculated periosteal reactions ('hair-on-end' and sunburst pattern for cf. *Isanosaurus* and *S. nigerensis* respectively). A neoplastic origin for this bone tissue is favoured for the former specimen, whereas another neoplastic origin or a viral condition are favoured for the latter.

This indicates that several palaeopathologies have flown under the radar and that assessments of palaeopathological frequencies within fossilised populations likely underestimate the true value. We suggest that microscopic and/or CT scanning should become standard when assessing pathologies in the fossil record.