**Supplementary Data** to: Ferreira GS, Werneburg I, Lautenschlager S, Evers SW. *Contrasting brains and bones: neuroanatomical evolution of turtles (Testudinata)*, in: Dozo MT, Paulina-Carabajal A, Macrini TE, Walsh S, Paleoneurology of Amniotes: new directions in the study of fossil endocasts.

**Table S1**. Data availability for all specimens used in this chapter. Data type abbreviation: BE, braincase endocast model; BR, brain model; BS, basisphenoid model; CC, chondrocranial sphenoid cartilage mode; CN-, cranial nerves II-XII; CT, CT slice data; EL, endosseous labyrinth model; LHV, lateral head vein model; MCA, major cranial arteries model; ML, membranous labyrinth model. Repository abbreviations: DM, Digimorph; M3, MorphoMuseuM; MB, MorphoBank; MS, MorphoSource. Institutional abbreviation follow the same collection codes as in Table 1.

<sup>&</sup>lt;sup>1</sup>When using these datasets please cite: Werneburg I, Evers SW, Ferreira GS (2021b) 3D models related to the publication: On the "cartilaginous rider" in the endocasts of turtle brain cavities. MorphoMuseuM 7:146 https://doi.org/10.18563/journal.m3.146

Taxon	Specimen	Media availability
Annemys sp.	IVPP-V-18106	MS#000376666 (BE); MS#000374487 (EL); DM (CT)
Apalone spinifera	FMNH-22178	MS#000376651 (BE); MS#000372723 (EL); MS#000042603 (CT)
Apalone spinifera	YPM VZ-12970	MS#000376270 (BR); MS#000376276 (BE); MS#000376187 (ML); MS#000376184 (EL); MS#000375596 (CT)
Caretta caretta	NHMUK-19403151	MS#000376288 (BE); MS#000373007 (EL); MS#000077382 (CT)
Caretta caretta	GPIT-PV-122905	MS#000376291 (BR); MS#000376294 (BE); MS#000376193 (ML); MS#000376190 (EL); MS#000375567 (CT)
Carettochelys insculpta	USNM-327690	CT: permission request pending
Chelodina reimanni	ZMB-49659	M3#774 <sup>1</sup> (BE); CT: permission request pending
Chelonia mydas	ZMB-37416MS	M3#775 <sup>1</sup> ; CT: permission request pending
Chelydra serpentina	UFRVP-1	MS#000376682 (BE); MB#3143 (CT)
Chelydra serpentina	YPM VZ-14442	MS#000376640 (BR); MS#000376643 (BE); MS#000376199 (ML); MS#000376196 (EL); MS#000375573 (CT)
Cuora amboinensis	NHMUK-69421454	MS#000376654 (BE); MS#000373088 (EL); MS#000077390 (CT)
Cuora amboinensis	SMNS-48672	MS#000376634 (BR); MS#000376637 (BE); MS#000376205 (ML); MS#000376202 (EL); MS#000375591 (CT)
Emydura subglobosa	PIMUZ-2009.37	MS#000376267 (BE); MS#000373416 (EL); MS#000354142 (CT)
Emydura subglobosa	GPIT-PV-122906	MS#000376273 (BR); MS#000376279 (BE); MS#000376217 (ML); MS#000376214 (EL); MS#000376016 (CT)
Emys orbicularis	SMF-1987a	MS#000376710 (BE); MS#000373422 (EL); MS#000354014 (CT)
Emys orbicularis	SMNS-11390	MS#000376282 (BR); MS#000376285 (BE); MS#000376223 (ML); MS#000376220 (EL); MS#000376024 (CT)
Eubaena cephalica	DMNH-96004	MS#000376657 (BE); MS#000373447 (EL); MS#000056542 (CT)
Gopherus berlandieri	AMNH-73816	M3#779 <sup>1</sup> (BE); CT: permission request pending
Kinixys belliana	AMNH-10028	M3#780 <sup>1</sup> (BE); CT: permission request pending
Kinosternon subrubrum	FMNH-211711	MS#000376685 (BE); MS#000373575 (EL); MS#000077404 (CT)
Kinosternon subrubrum	YPM VZ-10089	MS#000376691 (BR); MS#000376694 (BE); MS#000376229 (ML); MS#000376226 (EL); MS#000376028 (CT)
Macrochelys temminckii	GPITRE-10801	M3#781 <sup>1</sup> (BE); CT permission request pending
Malacochersus tornieri	SMF-58702	M3#787¹ (BE); MS#000373679 (EL); MS#000354087 (CT)

<sup>\*</sup> Podocnemis unifilis (SMF 55470) is mistakenly identified as Peltocephalus dumerilianus in MS#000354131.

Naomichelys speciosa	FMNH-PR-273	MS#000376663 (BE); MS#000373728 (EL); MS#000355953 (CT)
Pelodiscus sinensis	GPIT-PV-122907	M3#783 <sup>1</sup> (BE); MS#000373752 (EL); MS#000355874 (CT)
Pelusios niger	SMNS-4625	M\$#000376303 (BR); M\$#000376306 (BE); M\$#000376235 (ML); M\$#000376232 (EL); M\$#000376033 (CT)
Platysternon megacephalum	YPM VZ-12559	M\$#000376697 (BR); M\$#000376704 (BE); M\$#000376247 (ML); M\$#000376244 (EL); M\$#000376037 (CT)
Platysternon megacephalum	SMF-69684	M3#784 <sup>1</sup> (BE); MS#000373800 (EL); MS#000354125 (CT)
Podocnemis erythrocephala	SMNS-6063	M\$#000376297 (BR); M\$#000376300 (BE); M\$#000376241 (ML); M\$#000376238 (EL); M\$#000376042 (CT)
Podocnemis unifilis	SMF-55470	M3#785 <sup>1</sup> (BE); MS#000373764 (EL); MS#000354131* (CT)
Proganochelys quenstedti	MB-1910452	M3#788 <sup>1</sup> (BE); CT: no permission to upload
Proganochelys quenstedti	SMNS-16980	MS#000376688 (BE); CT: no permission to upload
Rhinochelys pulchriceps	CAMSMB-55775	MS#000376676 (BE); MS#000057625 (EL); MS#000057446 (CT)
Rhinoclemmys funerea	YPM-12174	M3#791 <sup>1</sup> (BE); CT: permission request pending
Sandownia harrisi	MIWG-3480	MS#000376660 (BE); MS#000373980 (EL); MS#000042933 (CT)
Testudo graeca	YPM-14342	M3#793 <sup>1</sup> (BE); CT: permission request pending
Testudo hermanni	AMNH-134518	M3#794 <sup>1</sup> (BE); CT: permission request pending
Trachemys scripta	MS 000376944	M\$#000377039 (CC); M\$#000377035 (BS); M\$#000377031 (BE); M\$#000377027 (BR); M\$#000377023 (CN-XII); M\$#000377019 (CN-X-XI); M\$#000377015 (CN-IX); M\$#000377007 (CN-VIII); M\$#000376999 (CN-VII); M\$#000376995 (CN-VI); M\$#000376991 (CN-V); M\$#000376987 (CV-IV); M\$#000376983 (CN-III); M\$#000376977 (CN-II); M\$#000376967 (MCA); M\$#000376963 (ML-right); M\$#000376955 (ML-left); M\$#000376951 (EL-right); M\$#000376951 (EL-left); CT: permission request pending
Xinjiangchelys radiplicatoides	IVPP-V-9539	MS#000376669 (BE); MS#000374528 (EL); MS#000114669 (CT)