

**Table 1.** Timing of Major Milestones in Nervous System Development.

Parameter	Age (Day)
Neural plate (Figure 4A)	7.0
Head process (Figure 4A)	7.0
Neural folds (Figure 4D)	7.5
Neural tube formation initiated at somite pairs nos. 4 to 5 (Figure 4C)	8.5
Neural crest differentiation (Figures 4F)	8.5
Formation of the 3 primary brain vesicles (prosencephalon [forebrain], mesencephalon [midbrain], and rhombencephalon [hindbrain]; Figures 2, 3A, and 4G)	9.0
Cranial (anterior) neuropore closure	9.0
Caudal (posterior) neuropore closure	9.25–9.5
Dorsal root ganglia begin developing from neural crest cells (Figure 4H)	9.25–9.5
Cerebral hemispheres initiated (Figure 6)	10.0
Secondary neurulation (to extend the lumen of the closed neural tube into the solid core of tail bud mesenchyme) begins (Figure 10)	10.0
Pontine flexure forms	10.5
Olfactory bulbs initiated	10.5
Formation of the 5 secondary brain vesicles (telencephalon and diencephalon [forebrain], mesencephalon [midbrain], and metencephalon and myelencephalon [hindbrain]; Figures 2, 3B, and 6B)	10.5–11.0
<sup>a</sup> Ganglionic eminences (precursors of basal nuclei [e.g., caudate, putamen]) become prominent (Figures 6 and 12)	11
Cerebrocortical neurons (layer VI) neurons begin forming	11
Hippocampus (CA1, CA3, and dentate gyrus) neurons begin forming	11
Vomeronasal organ	11.5
<sup>a</sup> Cortical ventricular zone (stem cell layer) forms (Figure 7)	12
Cerebellar primordium initiated	12.0
Colliculi (rostral [superior] and caudal [inferior]) are partitioned	12.0–12.5
Choroid plexus established (Figure 6)	12.5–13.0
Cerebrocortical neurons (layer V) neurons begin forming	13
Hippocampus lamination becomes prominent (Figure 18B)	15–15.5
<sup>a</sup> External capsule forms	13
<sup>a</sup> Rostral (anterior) commissure	14
Cerebellar primordium enlargement becomes prominent (Figure 21A)	15.5
Cerebrocortical neurons (layers II and III) neurons begin forming	16
<sup>a</sup> Corpus callosum	16–17
<sup>a</sup> Corticothalamic connections established	17
Dentate gyrus becomes visible in the hippocampus (Figure 17C)	17–17.5
Cerebellar lobulation and cortical lamination become evident (Figure 21C)	17.5–18
<sup>a</sup> Corticospinal tracts reach cervical spinal cord segments	PND 1
<sup>a</sup> Synaptogenesis accelerates in the brain	PND 3
<sup>a</sup> Sensory barrels (for vibrissae) form in cerebral cortex	PND 3
<sup>a</sup> Corticospinal tracts reach lumbar spinal cord segments	PND 7
<sup>a</sup> Optic tract—onset of myelination	PND 8
<sup>a</sup> Hippocampus—onset of myelination	PND 13
<sup>a</sup> Corpus callosum—onset of myelination	PND 15

Source: Data adapted from values reviewed in references nos. (DeSesso 2006; Hoar and Monie 1981; Theiler 1972; Schneider and Norton 1979). Reproduced with minor modifications from Bolon and Ward (2015). CA = cornu ammonis.

Note: Values represent the day(s) of development. Numbers without associated letters denote embryonic days (E), while numbers with “PND” denote postnatal days.

<sup>a</sup>Denotes predicted value based on statistical modeling (Clancy et al. 2007; Clancy et al. 2013).

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