

Supplementary material

Evolution of placentotrophy: using viviparous sharks as a model to understand vertebrate placental evolution

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Table S1. Table of known parity mode, mode of embryonic nutrition, and other reproductive parameters of extant shark species

Viviparous reproductive modes were assigned to species based on evidence of maternal contributions during pregnancy: lecithotrophic (embryos are reliant on yolk stores), lecithotrophic with histotrophy (embryos absorb maternal secretions in the form of histotroph), placental (development of a placental connection between the embryo and mother during pregnancy; note that placental nutrient transport has not necessarily been shown), oophagy (embryos ingest ova produced by the mother), and adelphophagy (embryos ingest sibling in utero). It should be noted that all viviparous species are initially lecithotrophic

Order	Family	Species	Parity mode	Mode of embryonic nutrition	Size at birth (cm)	Litter size range (mean)	Gestation period	References
Carcharhiniformes	Carcharhinidae	<i>Carcharhinus acronotus</i>	Viviparous	placental	31–36	1–5 (3.53)	11 months	Hamlett 2005; Driggers <i>et al.</i> 2004
		<i>C. albimarginatus</i>	Viviparous	placental	70–82	1–10	12 months	Cortés 2000; Compagno <i>et al.</i> 2005; Wheeler 1962
		<i>C. altimus</i>	Viviparous	placental	70–90	3–15		Fourmanoir 1961; Cortés 2000.
		<i>C. brachyurus</i>	Viviparous	placental	69–75	13–20	~12 months	Bass <i>et al.</i> 1973; Chiaramonte 1996; Cortés 2000
		<i>C. brevipinna</i>	Viviparous	placental	60–70	6–8	11–12 months	Branstetter 1981; Capapé <i>et al.</i> 2003
		<i>C. cautus</i>	Viviparous	placental	~40	1–5 (2.9)	7–9 months	Lyle 1987; White <i>et al.</i> 2002
		<i>C. dussumieri</i>	Viviparous	placental	37–38	2		Teshima and Mizue 1972
		<i>C. falciformis</i>	Viviparous	placental	75–85	5–8 (6.5)	12 months	Gilbert and Schlermitzauer 1966; Branstetter 1981; Gilbert 1984; Stevens 1984b
		<i>C. fitzroyensis</i>	Viviparous	placental	47.7–52.8	1–7 (3.7)	7–9 months	Lyle 1987; Simpfendorfer 1993
		<i>C. isodon</i>	Viviparous	placental	48–58	2–6 (4)		Castro 1993
		<i>C. leiodon</i>	Viviparous	placental	35–51	~4–6		Moore <i>et al.</i> 2014
		<i>C. leucas</i>	Viviparous	placental	43–45	5–10		Clark and Von Schmidt 1965; Branstetter and Stiles 1987
		<i>C. limbatus</i>	Viviparous	placental	50–65	~6–8	12 months	Branstetter 1981; Capapé <i>et al.</i> 2004
<i>C. longimanus</i>	Viviparous	placental	60–65	2–9 (6)	10–11 months	Bigelow and Schroeder 1948;		

<i>C. macloti</i>	Viviparous	probably placental	40–45	1–2 (3)	12 months	Lessa <i>et al.</i> 1999b Stevens and McLoughlin 1991
<i>C. melanopterus</i>	Viviparous	placental	48–50	2–5 (3.7)	10–11 months	Gilbert 1984; Stevens 1984a; Lyle 1987; Cortés 2000
<i>C. obscurus</i>	Viviparous	placental	85–100	6–9 (8)	16 months	Clark and Von Schmidt 1965
<i>C. perezi</i>	Viviparous	probably placental	73	4–6		Cortés 2000
<i>C. plumbeus</i>	viviparous	placental	40–45	4–10 (6.5)	12 months	Baranes and Wendling 1981; Hamlett <i>et al.</i> 1985; McAuley <i>et al.</i> 2007; Piercy <i>et al.</i> 2016
<i>C. porosus</i>	Viviparous	probably placental	30	2–7	> 10 months	Compagno 1984; Cortés 2000
<i>C. sealai</i>	Viviparous	probably placental	35–45	1–2	9 months	Bass <i>et al.</i> 1973; Cortés 2000
<i>C. signatus</i>	Viviparous	placental	65	12–18		Hazin <i>et al.</i> 2000; Cortés 2000
<i>C. sorrah</i>	Viviparous	placental	62	1–8 (3.1)	10 months	Stevens and Wiley 1986; Compagno 1988; Stevens and Wiley 1986
<i>C. tilstoni</i>	Viviparous	placental	60	1–6 (3)	10 months	Stevens and Wiley 1986
<i>C. wheeleri</i>	Viviparous	probably placental	70	1–4 (2.4)		Compagno 1984; Cortés 2000
<i>Galeocerdo cuvier</i>	Viviparous	lecithotrophic with histotrophy	80–90	3–57 (32.6)	15–16 months	Whitney and Crow 2007; Castro <i>et al.</i> 2016
<i>Isogomphodon oxyrhynchus</i>	Viviparous	placental	43	3–7 (6)		Lessa <i>et al.</i> 1999a
<i>Loxodon macrorhinus</i>	Viviparous	placental	40–46	1–2 (2)	9–12 months	Stevens and McLoughlin 1991; Gutteridge <i>et al.</i> 2013
<i>Negaprion acutidens</i>	Viviparous	placental	60	6–12 (9)	10–11 months	Stevens 1984a
<i>Negaprion brevirostris</i>	Viviparous	placental	60–65	5–17 (11)	12 months	Clark and Von Schmidt 1965; Hamlett and Wourms 1984
<i>Prionace glauca</i>	Viviparous	placental	36–43	4–75 (37)	9–12 months	Otake and Mizue 1985; Castro and Mejuto 1995; Skomal and Natanson, 2003
<i>Rhizoprionodon acutus</i>	Viviparous	placental	33–50(39)	1–8 (4)	12 months	Capapé <i>et al.</i> 2006a
<i>R. lalandii</i>	Viviparous	placental	30–35	1–5 (3)	11–12 months	Motta <i>et al.</i> 2007
<i>R. longurio</i>	Viviparous	placental	15–31	1–12 (7)	10–11 months	Frías-Espicueta <i>et al.</i> 2014

	<i>R. oligolinx</i>	Viviparous	probably placental	21–26	3–5		Setna and Sarangdhar, 1949
	<i>R. porosus</i>	Viviparous	placental	~33–37	1–8 (4)	10–11 months	Mattos <i>et al.</i> 2001
	<i>R. taylori</i>	Viviparous	placental	22–26	1–10 (4.5)	11.5 months	Simpfendorfer 1992; Simpfendorfer 1993
	<i>R. terraenovae</i>	Viviparous	placental	29–32	1–7 (5)	11–12 months	Hamlett <i>et al.</i> 1987; Castro and Wourms 1993
	<i>Scoliodon laticaudus</i>	Viviparous	placental	14	6–18 (13)	5–6 months	Devadoss 1988; Wourms 1993
	<i>Scoliodon sorrakowah</i>	Viviparous	placental				Mahadevan 1940
	<i>Triaenodon obesus</i>	Viviparous	placental	~59	1–5 (3)		Randall 1977
Hemigaleidae	<i>Hemigaleus microstoma</i>	Viviparous	placental	~47	1–19 (8)	~6 months	Stevens and Cuthbert 1983; White 2007
	<i>Hemipristis elongatus</i>	Viviparous	probably placental	45–52	2–11 (6)	7–8 months	Compagno 1984; Last and Stevens 2009
	<i>Paragaleus pectoralis</i>	Viviparous	placental	39–50	2–7 (5)	12 months	Capapé <i>et al.</i> 2005
Proscylliidae	<i>Eridacnis radcliffei</i>	Viviparous	lecithotrophic	10–11	2 (2)		Nair and Appukkuttan 1974
	<i>Proscyllium habereri</i>	Oviparous	lecithotrophic		2 (2)		Dodd and Dodd 1985; Compagno 1988
Pseudotriakidae	<i>Gollum attenuatus</i>	Viviparous	oophagous	34–42	2 (2)		Yano 1993
	<i>Pseudotriakis microdon</i>	Viviparous	oophagous with histotrophy	116–120	2 (2)		Yano 1992
Scyliorhinidae	<i>Apristurus aphyodes</i>	Oviparous	lecithotrophic				Iglésias <i>et al.</i> 2002
	<i>A. brunneus</i>	Oviparous	lecithotrophic	7	2		Cortés 2000; Flammang <i>et al.</i> 2007a
	<i>A. exsanguis</i>	Oviparous	lecithotrophic				Sato <i>et al.</i> 1999
	<i>A. kampae</i>	Oviparous	lecithotrophic				Flammang <i>et al.</i> 2007a
	<i>A. laurussoni</i>	Oviparous	lecithotrophic				Nakaya and Sato 1998
	<i>A. macrorhynchus</i>	Oviparous	lecithotrophic				Nakaya 1975
	<i>A. manis</i>	Oviparous	lecithotrophic				Flammang <i>et al.</i> 2007b
	<i>A. melanoasper</i>	Oviparous	lecithotrophic				Iglésias <i>et al.</i> 2004
	<i>A. microps</i>	Oviparous	lecithotrophic				Ebert <i>et al.</i> 2006
	<i>A. platyrhynchus</i>	Oviparous	lecithotrophic				Nakaya 1975
	<i>A. riveri</i>	Oviparous	lecithotrophic				Flammang <i>et al.</i> 2007b
	<i>A. saldanha</i>	Oviparous	lecithotrophic				Ebert <i>et al.</i> 2006
	<i>A. spongiceps</i>	Oviparous	lecithotrophic				Flammang <i>et al.</i> 2007b
	<i>Asymbolus analis</i>	Oviparous	lecithotrophic				Bustamante <i>et al.</i> 2013
	<i>A. rubiginosus</i>	Oviparous	lecithotrophic				Bustamante <i>et al.</i> 2013
	<i>Bythaelurus canescens</i>	Oviparous	lecithotrophic				Concha <i>et al.</i> 2010
	<i>B. clevai</i>	Viviparous	lecithotrophic	14	2		Seret 1987
	<i>B. dawsoni</i>	Oviparous	lecithotrophic				Francis 2006
	<i>B. hispidus</i>	Viviparous	lecithotrophic	~12	2		Akhilesh <i>et al.</i> 2013a

	<i>B. lutarius</i>	Viviparous	lecithotrophic	11	2		Springer 1979; Francis 2006
	<i>B. naylori</i>	Oviparous	lecithotrophic				Ebert and Clerkin 2015
	<i>Cephaloscyllium laticeps</i>	Oviparous	lecithotrophic				Awruch <i>et al.</i> 2009
	<i>C. umbratile</i>	Oviparous	lecithotrophic				Taniuchi 1988
	<i>C. ventriosum</i>	Oviparous	lecithotrophic				Schaaf Da Silva and Ebert 2008
	<i>Cephalurus cephalus</i>	Viviparous	lecithotrophic	2.1– 6.5			Balart <i>et al.</i> 2000
	<i>Figaro boardmani</i>	Oviparous	lecithotrophic				Bustamante <i>et al.</i> 2013
	<i>Galeus antillensis</i>	Oviparous	lecithotrophic				Konstantinou <i>et al.</i> 2000
	<i>G. arae</i>	Oviparous	lecithotrophic				Konstantinou <i>et al.</i> 2000
	<i>G. atlanticus</i>	Oviparous	lecithotrophic				Munoz-Chapuli and Perez Ortega 1985
	<i>G. cadenati</i>	Oviparous	lecithotrophic				Konstantinou <i>et al.</i> 2000
	<i>G. eastmani</i>	Oviparous	lecithotrophic				Horie and Tanaka 2000
	<i>G. piperatus</i>	Oviparous	lecithotrophic				Mathews 1975
	<i>G. polli</i>	Viviparous	lecithotrophic	11.7	5–13		Ebert <i>et al.</i> 2006
	<i>G. melastomus</i>	Oviparous	lecithotrophic				Costa <i>et al.</i> 2005
	<i>G. murinus</i>	Oviparous	lecithotrophic				Iglésias <i>et al.</i> 2002
	<i>G. nipponensis</i>	Oviparous	lecithotrophic				Horie and Tanaka 2000
	<i>G. sauteri</i>	Oviparous	lecithotrophic				Chen <i>et al.</i> 1996
	<i>G. springeri</i>	Oviparous	lecithotrophic				Springer 1979; Konstantinou <i>et al.</i> 2000
	<i>Halaaelurus boesemani</i>	Oviparous	lecithotrophic				Springer and D'Aubrey 1972
	<i>H. buergeri</i>	Oviparous	lecithotrophic				Nakaya 1975
	<i>H. dawsoni</i>	Oviparous	lecithotrophic				Francis 2006
	<i>H. lineatus</i>	Oviparous	lecithotrophic				Bass <i>et al.</i> 1975
	<i>H. natalensis</i>	Oviparous	lecithotrophic				Bass <i>et al.</i> 1975
	<i>Haploblepharus pictus</i>	Oviparous	lecithotrophic				Pretorius and Griffiths 2013
	<i>Holohalaaelurus regani</i>	Oviparous	lecithotrophic				Richardson <i>et al.</i> 2000
	<i>Parmaturus xaniurus</i>	Oviparous	lecithotrophic				Flammang <i>et al.</i> 2008
	<i>Poroderma pantherinum</i>	Oviparous	lecithotrophic				Pretorius and Griffiths 2013
	<i>Scyliorhinus canicula</i>	Oviparous	lecithotrophic				Henderson and Casey 2001
	<i>S. capensis</i>	Oviparous	lecithotrophic				Ebert <i>et al.</i> 2006
	<i>S. retifer</i>	Oviparous	lecithotrophic				Castro <i>et al.</i> 1988
	<i>S. stellaris</i>	Oviparous	lecithotrophic	10.6			Capapé <i>et al.</i> 2006b
	<i>S. torazame</i>	Oviparous	lecithotrophic	8			Cortés 2000; Horie and Tanaka 2002
Sphyrnidae	<i>Eusphyra blochii</i>	Viviparous	placental	46	3–11 (7)	~12 months	Appukuttan 1978
	<i>Sphyrna lewini</i>	Viviparous	placental	39–57	14–41 (25)	~8 months	White <i>et al.</i> 2008; Lyons and Adams 2015
	<i>S. mokarran</i>	Viviparous	placental	65	6–33 (15.4)	~11 months	Clark and Von Schmidt 1965; Stevens and Lyle 1989
	<i>S. tiburo</i>	Viviparous	placental	35	3–15 (9)	4.5–5 months	Gilbert and Schlernitzauer 1966;

Triakidae	<i>S. tudes</i>	Viviparous	placental	30	5–12		Manire <i>et al.</i> 1995; Parsons 1993 Castro 1989
	<i>Furgaleus macki</i>	Viviparous	lecithotrophic	20	9–16	7–9 months	Simpfendorfer and Unsworth 1998
	<i>Galeorhinus galeus</i>	Viviparous	lecithotrophic with histotrophy	30			Lucifora <i>et al.</i> 2004; Walker 2011
	<i>G. japonicus</i>	Viviparous	lecithotrophic	21–25	8–22	~10 months	Chen and Mizue 1973; Tanaka <i>et al.</i> 1978
	<i>Gogolia filewoodi</i>	Viviparous	lecithotrophic	22	2		Compagno 1973
	<i>Hypogaleus hyugaensis</i>	Viviparous	placental	30–32	2–15 (9.6)	11 months	Simpfendorfer <i>et al.</i> 2002
	<i>Iago omanensis</i>	Viviparous	placental	16–19	2–24	10–12 months	Henderson <i>et al.</i> 2006
	<i>Mustelus antarcticus</i>	Viviparous	lecithotrophic with histotrophy		3–37	11–12 months	Storrie <i>et al.</i> 2009
	<i>M. asterias</i>	Viviparous	lecithotrophic with histotrophy	28–30	6–18	11 months	Capapé and Quignard 1977; Farrell <i>et al.</i> 2010
	<i>M. californicus</i>	Viviparous	placental	20–30	3–16	10–12 months	Yudin and Cailliet 1990; Castro 1996; Pérez-Jiménez and Sosa-Nishizaki 2010
	<i>M. canis</i>	Viviparous	placental	30–40	3–18 (9.53)	11–12 months	Conrath and Musick 2002; Jones and Hamlett 2004
	<i>M. dorsalis</i>	Viviparous	placental	22–23			Cortés 2000; Pérez Jiménez <i>et al.</i> 2005
	<i>M. griesus</i>	Viviparous	placental	30		10 months	Teshima <i>et al.</i> 1974
	<i>M. hacat</i>	Viviparous	placental	30–35	3–23 (16)		Pérez-Jiménez <i>et al.</i> 2005
	<i>M. henlei</i>	Viviparous	placental	28	1–20	10 months	Pérez-Jiménez and Sosa-Nishizaki 2008
	<i>M. lenticulatus</i>	Viviparous	lecithotrophic	30–32	(10.7)	11 months	Francis and Mace 1980
	<i>M. lunulatus</i>	Viviparous	placental	28–34	6–19 (12.9)	~11 months	Pérez-Jiménez and Sosa-Nishizaki 2010
	<i>M. manazo</i>	Viviparous	lecithotrophic	30	1–8	10 months	Teshima 1981; Yamaguchi <i>et al.</i> 2000
	<i>M. minicanis</i>	Viviparous	placental	22.4– 29.5	2–6 (3.3)		Tagliafico <i>et al.</i> 2017
	<i>M. mustelus</i>	Viviparous	placental	42	2–23 (11.5)	9–11 months	Smale and Compagno 1997
	<i>M. norrisi</i>	Viviparous	placental	29–30	7–14		Heemstra 1997; Tagliafico <i>et al.</i> 2017
<i>M. palumbes</i>	Viviparous	lecithotrophic	34	3–15		Smale and Compagno 1997	
<i>M. schmitti</i>	Viviparous	lecithotrophic with histotrophy	36	2–13		Heemstra 1997; Galíndez <i>et al.</i> 2010	
<i>M. walkeri</i>	Viviparous	lecithotrophic with histotrophy	27	5–7		Rigby <i>et al.</i> 2016	
<i>Triakis megalopterus</i>	Viviparous	lecithotrophic	42–45	5–15 (9.7)	19–21 months	Smale and Goosen 1999	
<i>T. semifasciata</i>	Viviparous	lecithotrophic	17–20	1–37	10–12 months	Ebert and Ebert 2005	

Lamniformes	Alopiidae	<i>Alopias pelagicus</i>	Viviparous	oophagous	158–190	2		Liu <i>et al.</i> 1999; Castro 2009
		<i>A. superciliosus</i>	Viviparous	oophagous	135–140	2		Chen <i>et al.</i> 1997
		<i>A. vulpinus</i>	Viviparous	oophagous	100–158	3–7	9 months	Gubanov 1972; Moreno <i>et al.</i> 1989
	Cetorhinidae	<i>Cetorhinus maximus</i>	Viviparous	probably oophagous	150	6		Matthews 1950; Francis and Duffy 2002
	Odontaspidae	<i>Carcharias taurus</i>	Viviparous	oophagous with adelphophagy	95–125	2	9–12 months	Gilmore 1993; Goldman <i>et al.</i> 2006
	Lamnidae	<i>Carcharodon carcharias</i>	Viviparous	oophagous with histotrophy	91–152	8–10		Cortés 2000; Sato <i>et al.</i> 2016
		<i>Isurus oxyrinchus</i>	Viviparous	oophagous with adelphophagy	~74	4–15	23–25 months	Hsu and Joung 2005; Castro 2013
		<i>I. paucus</i>	Viviparous	oophagous				Gilmore 1983
		<i>Lamna ditropis</i>	Viviparous	oophagous		4–5		Gallucci <i>et al.</i> 2008
			<i>L. nasus</i>	Viviparous	oophagous	2–5	8–9 months	Francis and Stevens 2000; Jensen <i>et al.</i> 2002
	Pseudocarchariidae	<i>Pseudocarcharias kamoharui</i>	Viviparous	oophagous	41.5	4		Oliveira <i>et al.</i> 2010
Orectolobiformes	Brachaeluridae	<i>Brachaelurus colcloughi</i>	Viviparous	lecithotrophic	17–19	6–7		Kyne <i>et al.</i> 2011
	Ginglymostomatidae	<i>Ginglymostoma cirratum</i>	Viviparous	lecithotrophic	28–31	21–50	5–6 months	Castro 2000
		<i>Nebrius ferrugineus</i>	Viviparous	oophagous				Teshima <i>et al.</i> 1995; Teshima <i>et al.</i> 1999
	Hemiscylliidae	<i>Chiloscyllium griseum</i>	Oviparous	lecithotrophic				Aiyar and Nalini 1938; Jagadis and Ignatius 2003
		<i>C. plagiosum</i>	Oviparous	lecithotrophic	11.2			Chen and Liu 2006
		<i>C. punctatum</i>	Oviparous	lecithotrophic				Harahush <i>et al.</i> 2007
		<i>Hemiscyllium ocellatum</i>	Oviparous	lecithotrophic				Heupel <i>et al.</i> 1999
	Orectolobidae	<i>Orectolobus halei</i>	Viviparous	lecithotrophic	25–30	17–47 (36)	10–11 months	Huveneers <i>et al.</i> 2007; Huveneers <i>et al.</i> 2011
		<i>O. maculatus</i>	Viviparous	lecithotrophic	20–25	8–31 (21)	10–11 months	Huveneers <i>et al.</i> 2011
		<i>O. ornatus</i>	Viviparous	lecithotrophic	20	4–18 (9.4)	10–11 months	Huveneers <i>et al.</i> 2011
Parascylliidae	<i>Cirrhoscyllium exolitum</i>	Oviparous	lecithotrophic				Goto and Nakaya 1996	
	<i>C. japonicum</i>	Oviparous	lecithotrophic				Goto and Nakaya 1996	
	<i>Parascyllium ferrugineum</i>	Oviparous	lecithotrophic	17			Compagno 2001; Last and Stevens 2009	
	Stegostomatidae	<i>Stegostoma fasciatum</i>	Oviparous	lecithotrophic	30		Robinson <i>et al.</i> 2011	
	Rhincodontidae	<i>Rhincodon typus</i>	Viviparous	lecithotrophic	> 64	300	Joung <i>et al.</i> 1996	
Heterodontiformes	Heterodontidae	<i>Heterodontus portusjacksoni</i>	Oviparous	lecithotrophic	23–24	10–16	Cortés 2000; Powter and Gladstone 2008	
Echinorhiniformes	Echinorhinidae	<i>Echinorhinus brucus</i>	Viviparous	lecithotrophic	42–46	10–36	Akhilesh <i>et al.</i> 2013b	

Pristiophoriformes	Pristiophoridae	<i>Pristiophorus cirratus</i>	Viviparous	lecithotrophic with histotrophy	~36	6–22		Stevens 2002; Last and Stevens 2009
Squatiniiformes	Squatinaidae	<i>Squatina aculeata</i>	Viviparous	lecithotrophic	30.3–35.0	8–12	~12 months	Capapé 2005
Squaliformes	Centrophoridae	<i>S. californica</i>	Viviparous	lecithotrophic	25–36	1–11 (6)	~10 months	Natanson and Cailliet 1986
		<i>S. oculata</i>	Viviparous	lecithotrophic		5–8		Capapé <i>et al.</i> 1990
		<i>S. squatina</i>	Viviparous	lecithotrophic			7–18	Capapé <i>et al.</i> 1990
		<i>Centrophorus granulosus</i>	Viviparous	lecithotrophic with histotrophy	37–39	4–7 (5.3)		Cotton <i>et al.</i> 2015
		<i>C. harrissoni</i>	Viviparous	lecithotrophic	35–40	1–2		Graham and Daley 2011
		<i>C. squamosus</i>	Viviparous	lecithotrophic with histotrophy	44			Girard and Du Buit 1999; Figueiredo <i>et al.</i> 2008
		<i>C. moluccensis</i>	Viviparous	lecithotrophic	34–35	1–2		Le Bourg <i>et al.</i> 2014
		<i>C. zeehaani</i>	Viviparous	lecithotrophic	38–45	1–2		Graham and Daley 2011; Pethybridge <i>et al.</i> 2011
		<i>Deania calcea</i>	Viviparous	lecithotrophic with histotrophy	28–33	10 (6)		Irvine <i>et al.</i> 2012; Paiva <i>et al.</i> 2012
		<i>Deania quadrispinosa</i>	Viviparous	lecithotrophic	23–25	17		Irvine <i>et al.</i> 2012
	Dalatiidae	<i>Dalatias licha</i>	Viviparous	lecithotrophic	32–39	6		Ranzi 1932; Capapé <i>et al.</i> 2008
	Etmopteridae	<i>Etmopterus baxteri</i>	Viviparous	lecithotrophic	22–24	6–12		Irvine 2004; Pethybridge <i>et al.</i> 2011
		<i>E. princeps</i>	Viviparous	lecithotrophic with histotrophy	15.7–17.5	7–18 (12)		Cotton <i>et al.</i> 2015
		<i>E. spinax</i>	Viviparous	lecithotrophic	12.6	7–8	> 12 months	Capapé <i>et al.</i> 2001; Porcu <i>et al.</i> 2013
	Oxydontidae	<i>Oxynotus bruniensis</i>	Viviparous	lecithotrophic	25–27	8		Finucci <i>et al.</i> 2016
		<i>Oxynotus centrina</i>	Viviparous	lecithotrophic	21–24		~12 months	Capapé <i>et al.</i> 1999
	Somniosidae	<i>Centroselachus crepidater</i>	Viviparous	lecithotrophic				Pethybridge <i>et al.</i> 2011
		<i>C. coelolepis</i>	Viviparous	lecithotrophic	24–31			Moura <i>et al.</i> 2011
	Squalidae	<i>Squalus acanthias</i>	Viviparous	lecithotrophic	18–20		22 months	Hisaw and Albert 1947; Wourms 1993
		<i>S. blainvillei</i>	Viviparous	lecithotrophic	18–21	1–6	> 12 months	Ranzi 1932; Kousteni and Megalofonou 2011
		<i>S. megalops</i>	Viviparous	lecithotrophic	23–27	2–4		Watson and Smale 1998; Pethybridge <i>et al.</i> 2011
		<i>S. mitsukurii</i>	Viviparous	lecithotrophic	21–26	1–6		Wilson and Seki 1995
Hexanchiformes	Chlamydoselachidae	<i>Chlamydoselachus anguineus</i>	Viviparous	lecithotrophic with histotrophy	55	2–10 (6)	~42 months	Tanaka <i>et al.</i> 1990

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