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Table S1. The percentage of pregnant female lizards reported as failing to give birth to any viable offspring when housed experimentally under seemingly favourable conditions for that species (see literature cited; i.e. individuals within studies that had no added stressors, such as hormone injections, and where dams were exposed to thermal regimes providing the greatest pregnancy success)

Stage refers to the embryonic stage of pregnancy at which lizards were captured: E = early pregnant; L = late-pregnant (see text for rationale behind stage of pregnancy). Type refers to the embryonic nutritional support provided (references in brackets): I = predominantly lecithotrophic with type I chorioallantoic placenta; II = type II chorioallantoic placenta; III = type III chorioallantoic placenta; IV = type IV chorioallantoic placenta (microlecithal eggs). ND = no data (pregnancy status not stated/type of placentation unknown)

Family ***Species***	**Stage**	**Type**	**% failure (N females)**	**Literature cited**
Diplodactylidae				
Hoplodactylus maculatus (common gecko)	L	I	12% (9)	Cree *et al.* 2003; unpub. obs. (Girling *et al.* 1997)
Naultinus manukanus (Marlborough green gecko)	L	ND	0% (10)	Hare *et al.* 2007

Family ***Species***	**Stage**	**Type**	**% failure** **(N females)**	**Literature cited**
Iguanidae				
Sceloporus jarrovi (Yarrow's spiny lizard)	ND	I	10% (10)	Beuchat 1988 (D. G. Blackburn, pers. comm.)
S. jarrovi (Yarrow's spiny lizard)	L	I	0% (15)	Mathies and Andrews 1997 (D. G. Blackburn, pers. comm.)
Lacertidae				
Lacerta (Zootoca) vivipara	ND	I	25% (56)	Uller and Olsson 2003 (Stewart *et al.* 2004)
Lacerta (Zootoca) vivipara	ND	I	0% (5)	Van Damme *et al.* 1995 (Stewart *et al.* 2004)
Scincidae				
Egernia whitii (White's skink)	L	I	13% (60)	While and Wapstra 2007 (Weekes 1935)
Eulamprus heatwolei (yellow-bellied water skink)	ND	ND	22% (80)	Langkilde *et al.* 2005
Eu. quoyii (eastern water skink - cool temperate population)	E	I	20% (10)	Caley and Schwarzkopf 2004 (Weekes 1935)
Eu. quoyii (eastern water skink - warm tropical population)	E	I	33% (12)	Caley and Schwarzkopf 2004 (Weekes 1935)
Eu. tympanum (southern water skink)	ND	I	33% (30)	Rohr 1997 (Thompson *et al.* 2001*b*)

Family ***Species***	**Stage**	**Type**	**% failure (N females)**	**Literature cited**
Eu. tympanum (southern water skink)	ND	I	0% (93)	Schwarzkopf 1992 (Thompson *et al.* 2001*b*)
Mabuya multifasciata (many-lined sun skink)	E	I	8% (115)	Ji *et al.* 2007 (Weekes 1935)
Niveoscincus metallicus (metallic skink)	E	II	5% (20)	Swain and Jones 2000 (Thompson *et al.* 1999*a*)
N. ocellatus (spotted snow skink)	E	II	7% (29)	Wapstra 2000 (Thompson *et al.* 2001*a*)
N. ocellatus (spotted snow skink)	E	II	3% (32)	Wapstra *et al.* 2004 (Thompson *et al.* 2001*a*)
N. ocellatus (spotted snow skink - high elevation)	L	II	13% (15)	Atkins *et al.* 2007 (Thompson *et al.* 2001*a*)
N. ocellatus (spotted snow skink - low elevation)	L	II	16% (19)	Atkins *et al.* 2007 (Thompson *et al.* 2001*a*)
Oligosoma maccanni (McCann's skink)	E	ND	20% (30)	Hare *et al.* (2010)
O. maccanni (McCann's skink)	L	ND	17% (6)	Holmes and Cree 2006
Pseudemoia pagenstecheri (tussock skink)	E	III	13% (12)	Shine and Downes 1999 (Thompson *et al.* 1999*b*)
Sphenomorphus indicus (brown forest skink)	E	ND	12% (65)	Ji *et al.* 2006*b*
Tiliqua nigrolutea (blotched blue-tongued skink)	ND	ND	13% (30)	Edwards *et al.* 2002

Table S2. Factors that have been explored as possible causes of pregnancy failure in viviparous lizards under a suite of conditions experienced during captivity, whether they are potentially favourable (as detailed in Table S2) or not

Within each factor, species are listed alphabetically. Stage refers to the embryonic stage of pregnancy at which lizards were captured; E = early pregnant (stages 1–33); L = late-pregnant (stages 34–40). See text for rationale behind grouping of embryonic stages. Type refers to the mode of placentation provided (references in brackets); I = predominantly lecithotrophic with type I chorioallantoic placenta; II = type II chorioallantoic placenta; III = type III chorioallantoic placenta; IV = type IV chorioallantoic placenta (microlecithal eggs). ND = no data (pregnancy status not stated/type of placentation unknown). Y = yes, N = no, ? = indicates inferred by primary authors. Studies where clutch size was experimentally reduced via yolkectomy, embryo removal, etc. are excluded

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
Thermal regimes						
Eulamprus heatwolei (yellow-bellied water skink)	E	ND	ND	N	Reducing the hours of behavioural thermoregulation (2 h/d vs. 8 h/d) had no effect on final litter size.	Shine and Harlow 1993
Eulamprus quoyii (eastern water skink)	E	I	Y	Y?	Females from tropical and temperate locations housed in environments mimicking the temperate midsummer environment had more stillbirths and deformed offspring than those housed in environments mimicking the tropical midsummer.	Caley and Schwarzkopf 2004 (Weekes 1935)

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
Eulamprus tympanum (southern water skink)	ND	I	N?	N	Hours of behavioural thermoregulation (2 h day^{-1} vs. 4 h day^{-1} vs. 8 h day^{-1}) had no effect on pregnancy outcome.	Schwarzkopf and Shine 1991 (Thompson *et al.* 2001*b*)
Hoplodactylus maculatus (common gecko)	L	I	Y	N	Females in warm regime had more successful pregnancies (80% of embryos) vs. those in the cool regime (67% of embryos).	Cree *et al.* 2003 (Girling *et al.* 1997)
Hoplodactylus maculatus (common gecko)	E	I	Y	Y	Females in cool regime (with behavioural thermoregulation) had no viable offspring c.f. those in the warm regime.	Rock and Cree 2003 (Girling *et al.* 1997)
Lerista bougainvillii	ND	ND	N	N	Reciprocal transplants of females to hot climate enclosures had no effect c.f. cold climate enclosures.	Qualls 1997
Mabuya multifasciata (many-lined sun skink)	E	I	ND	N	Females kept at constant 26, 28 or 30°C vs. allowed to thermoregulate vs. in field enclosures did not differ in final litter size. Well developed young produced by 86% of females with the remainder producing stillbirths.	Ji *et al.* 2006*a* (Weekes 1935)
Niveoscincus metallicus	E	II	Y	N	Females from the cool basking regime (20 h $week^{-1}$)	Swain and Jones 2000

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
(metallic skink)					had fewer successful pregnancies (70%) compared with those from the warm basking regime (95% at 70 h week^{-1}).	(Thompson *et al.* 1999*a*)
Niveoscincus ocellatus (spotted snow skink)	L	II	Y	ND	Females sourced from low or high elevations placed at 10°C for 0, 1, 2 or 3 weeks; females from high elevations had more inviable litters c.f. low elevation females when cooled for 3 weeks.	Atkins *et al.* 2007 (Thompson *et al.* 2001*a*)
Niveoscincus ocellatus (spotted snow skink)	E	II	N?	N	Reduced availability of behavioural thermoregulation (4 h day^{-1} vs 10 h day^{-1}) had no effect.	Wapstra 2000; Wapstra *et al.* 2004 (Thompson *et al.* 2001*a*)
Oligosoma maccanni (McCann's skink)	E	ND	Y	N	Basking opportunities available for 28 h week^{-1} resulted in more failed pregnancies than basking available for 40 or 56 h week^{-1}.	Cree and Hare (Submitted)
Pseudemoia pagenstecheri (tussock skink)	L	III	N	N	Restriction of thermal basking regime during the last month of gestation had no effect.	Shine and Downes 1999 (Thompson *et al.* 1999*b*)
Sceloporus jarrovi (Yarrow's spiny lizard)	ND	I	Y	ND	Females allowed to behaviourally thermoregulate or kept at constant temperatures between 28–34°C had	Beuchat 1988 (D. G. Blackburn, pers. comm.)

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
					higher pregnancy success (88–95% viable offspring) c.f. those kept at constant 26 or 36°C (<50%).	
Sceloporus jarrovi (Yarrow's spiny lizard)	L	I	Y	ND	Females allowed to behaviourally thermoregulate or kept at constant temperatures of 32°C had more viable offspring (93–100%) c.f. those kept at constant 36°C.	Mathies and Andrews 1997 (D. G. Blackburn, pers. comm.)
Sphenomorphus indicus (brown forest skink)	E	ND	N	N	Females kept indoors at 24°C or 28°C, vs. outdoors, vs. allowed to behaviourally thermoregulate did not differ in success; all regimes had some stillbirths.	Ji *et al.* 2006*b*
Parasites						
Lacerta (*Zootoca*) *vivipara*	ND	I	N	N	Females with haematophagous mites vs. no mites showed no difference in rates of pregnancy success; but females with high levels of mites had higher mortality than those with few or no mites.	Sorci and Clobert 1995 (Stewart *et al.* 2004)
Lacerta (*Zootoca*) *vivipara*	ND	I	N	N	Haemogregarinid hematozoa had no effect on pregnancy outcome; females with high parasite load had heavier offspring.	Sorci *et al.* 1996 (Stewart *et al.* 2004)
Niveoscincus ocellatus	L	II	Y?	ND	Only stillbirths recorded from females until scale mites	Atkins and Wapstra 2004

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
(spotted snow skink)					(*Ophionyssus scincorum*) were found and treated. From 10 days post-treatment all births were viable.	(Thompson *et al.* 2001*a*)
Oligosoma maccanni (McCann's skink)	E	ND	Y?	N	Only 6% of females with scale mites (*Ophionyssus scincorum*) had any viable neonates vs 80% of treated females in a different year.	Hare *et al.* (2010)
Nutrition						
Eulamprus tympanum (southern water skink)	ND	I	ND	Y	Females exposed to reduced food intake prior to ovulation produced smaller litters than those with a high food intake prior to ovulation.	Rohr 1997 (Thompson *et al.* 2001*b*)
Eulamprus tympanum (southern water skink)	ND	I	N?	Y	Reduced final litter size for females exposed to low basking regimes (and hence reduced resources due to lower ability to store food as energy) during the year prior to reproduction vs high basking regimes.	Doughty and Shine 1998 (Thompson *et al.* 2001*b*)
Lacerta (*Zootoca*) *vivipara* (common lizard)	E	I	N?	N	Food supplementation (*ad libitum* in captivity) did not significantly increase final litter size compared to natural conditions (wild).	Uller and Olsson 2005 (Stewart *et al.* 2004)
Niveoscincus metallicus	E	II	N	N?	Reduced food intake during pregnancy had no effect.	Swain and Jones 2000

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
(metallic skink)						(Thompson *et al.* 1999*a*)
Niveoscincus metallicus (metallic skink)	L	II	N?	Y	Caudal autotomy/loss of fat store (regardless of position of tail loss or timing of tail loss) caused a significant reduction in litter size.	Chapple *et al.* 2002 (Thompson *et al.* 1999*a*)
Pseudemoia pagenstecheri (tussock skink)	E	III	N?	N	Reduced food intake during pregnancy had no effect.	Shine and Downes 1999 (Thompson *et al.* 1999*b*)
Hormonal manipulation						
Egernia whitii (White's skink)	L	I	N	N	Arginine vasotocin (AVT) injection (to induce parturition) had no effect c.f. natural births.	While and Wapstra 2007 (Weekes 1935)
Hoplodactylus maculatus (common gecko)	L	I	N	N	A single injection of adrenocorticotrophic hormone (ACTH) had no effect c.f. a saline injection.	Preest *et al.* 2005 (Girling *et al.* 1997)
Hoplodactylus maculatus (common gecko)	L	I	Y	N	Corticosterone implant caused complete pregnancy failure c.f. ~80% success from those with cholesterol or no implant.	Cree *et al.* 2003 (Girling *et al.* 1997)
Lacerta (*Zootoca*) *vivipara* (European common lizard)	L	I	N	N	Corticosterone implant had no effect c.f. a saline implant.	De Fraipont *et al.* 2000 (Stewart *et al.* 2004)
Lacerta (*Zootoca*) *vivipara*	ND	I	Y	Y?	Transdermal application of corticosterone c.f. sesame	Meylan *et al.* 2002

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
(common lizard)					oil application reduced litter size and increased the proportion of stillborn young.	(Stewart *et al.* 2004)
Lacerta (*Zootoca*) *vivipara* (common lizard)	ND	I	N	N	Transdermal application of corticosterone had no effect c.f. sesame oil application, but juveniles from corticosterone treatment were smaller.	Meylan and Clobert 2005 (Stewart *et al.* 2004)
Lacerta (*Zootoca*) *vivipara* (common lizard)	L	I	ND	N	Transdermal application of corticosterone had no effect c.f. sesame oil application.	Uller *et al.* 2005 (Stewart *et al.* 2004)
Lacerta (*Zootoca*) *vivipara* (common lizard)	L	I	N	N	Transdermal application of corticosterone had no effect c.f. sesame oil application.	Vercken *et al.* 2007 (Stewart *et al.* 2004)
Sceloporus jarrovi (Yarrow's spiny lizard)	L	I	Y	Y	Females receiving indomethacin injection had fewer live births than those receiving saline or progesterone. Females with progesterone or indomethacin implants retained young longer and had more stillbirths and fewer young than those receiving saline implants.	Guillette *et al.* 1991 (D. G. Blackburn, pers. comm.)
Social & olfactory						
Eulamprus heatwolei (yellow-bellied water	ND	ND	N?	N	Individuals housed with aggressive neighbours (*Egernia saxatilis* or *Eulamprus heatwolei*) did not	Langkilde *et al.* 2005

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
skink)					differ from those housed alone.	
Lacerta (*Zootoca*) *vivipara* (common lizard)	E	I	Y	N	Monandrous females had smaller litters and increased proportions of late reproductive failures c.f polyandrous females.	Eizaguirre *et al.* 2007 (Stewart *et al.* 2004)
Pseudemoia pagenstecheri (tussock skink)	E	III	N	N	Exposure to the scent of a skink predator (*Drysdalia coronoides*; white-lipped snake) had no effect c.f. no exposure to predator scent.	Shine and Downes 1999 (Thompson *et al.* 1999*b*)
Other husbandry						
Eulamprus tympanum (southern water skink)	E	I	N	N	No effect of individuals being housed indoors vs. *in situ* within field enclosures.	Allsop *et al.* 2006 (Thompson *et al.* 2001*b*)
Oligosoma maccanni (McCann's skink)	E	ND	N	N	No effect of abdominal palpation (to estimate pregnancy status and litter size) vs. not using abdominal palpation.	Hare *et al.* (accepted)
Pseudemoia pagenstecheri (tussock skink)	E	III	Y	Y?	High incidence of aborted and cannibalised offspring from lizards kept indoors (1996–97) vs outdoors (1997–98); authors proposed that stress was higher indoors.	Shine and Downes 1999 (Thompson *et al.* 1999*b*)

Factor tested ***Species***	**Stage**	**Type**	**Lower pregnancy success**	**Lower final litter size**	**Outcomes**	**Citation**
Sphenomorphus indicus (brown forest skink)	E	ND	Y	N	Reduced pregnancy success (88%) for females held indoors with access to a thermal gradient vs held in outdoor enclosures (100%)	Ji *et al.* 2006*b*

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