

Table S1. Final model for asymmetries in Front Ear max temperature (L-R)

Variable	Categories	coefficient	S.E.	P-value	Asymmetries towards	Active hemisphere (hypothesised)
Constant	n/a	0.584	0.2829	$P=0.039$		
Recording day	Disbudding day (D2)	Reference category				
	Day before disbudding session (D1)	-0.850	0.322	$P=0.005$	Right ear	Left hemisphere
	Day after disbudding session (D3)	-0.381	0.322	$P=0.214$		

Table S2. Final model for Muzzle maximum temperature

Variable	Categories	Mean	S.E.	P-value
Constant		32.994	0.177	$P<0.001$
THI	n/a	0.227	0.024	$P<0.001$

Table S3. Final model for Muzzle average temperature

Variable	Categories	Mean	S.E.	P-value
Constant		29.749	0.307	$P<0.001$
THI	n/a	0.418	0.040	$P<0.001$

Table S4. Final model for Hair Whorl max temperature

Variable	Categories	Coefficient	S.E.	P-value
Constant		30.523	0.266	$P < 0.001$
THI	n/a	0.335	0.032	$P < 0.001$

Table S5. Final model for Inner Corner Eye max temperature (L-R) in the disbudding session (D2 x T1)

Variable	Categories	Mean	S.E.	P-value	Asymmetries towards	Active hemisphere (hypothesised)
Constant	n/a	-0.081	0.105	$P = 0.444$		
Calf group	InexObs	Reference category				
	Disbudded	0.183	0.235	$P = 0.434$		
	ExpObs	0.625	0.235	$P = 0.008$	Left eye	Right hemisphere

Table S6. Final model for Inner Corner Eye max temperature (L-R) on D3 x T1

Variable	Categories	Coefficient	S.E.	P-value	Asymmetries towards	Active hemisphere (hypothesised)
Constant	n/a	0.534	0.246	<i>P</i> =0.030		
Calf response to the camera	Move away	Reference category				
	Approach	-0.707	0.336	<i>P</i> =0.035	Right eye	Left hemisphere
	Not moving	0.182	0.274	<i>P</i> =0.507		
Calf group	InexObs	Reference category				
	Disbudded	-0.680	0.246	<i>P</i> = 0.006	Right eye	Left hemisphere
	ExpObs	-0.793	0.260	<i>P</i> = 0.002	Right eye	Left hemisphere