Table.1. Mean (± SD) $\delta^{15}N$ and $\delta^{13}C$ (‰) in blood cells, serum, milk, and hair of grey seals (*Halichoerus grypus*). Mother-pup pairs (n = 21) were repeatedly captured during lactation and post-weaning fast (T1: early lactation, T2: late lactation, T3: early post-weaning fast, T4: middle post-weaning fast). Different letters (A, B for mothers and a, b, c, d for pups) indicate significant difference in values between T1, T2, T3, and T4 for each tissue (ANOVA with repeated measures, paired t-test and Scheffé *post-hoc* test).

			Blood cells		Serum		Milk		Hair	
		n	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$
Mother	T1	21	14.1 ± 0.6^{A}	-17.1 ± 0.4^{A}	15.1 ± 0.7^{A}	-17.4 ± 0.5^{A}	17.7 ± 1.0^{A}	-23.6 ± 0.5^{A}		
	T2	21	14.1 ± 0.6^{A}	-17.1 ± 0.4^{A}	15.0 ± 0.7^{B}	-17.1 ± 0.4^{B}	15.0 ± 0.7^{B}	-22.6 ± 0.6^{B}	16.5 ± 0.5	-15.3 ± 0.6
Pups	T1	21	16.4 ± 0.6^{a}	-17.2 ± 0.5^{a}	16.4 ± 0.6^{a}	-18.2 ± 0.4^{a}				
	T2	21	16.7 ± 0.6^{a}	-17.3 ± 0.4^{a}	16.7 ± 0.6^{a}	-18.3 ± 0.4^{a}			15.1 ± 0.7	-16.8 ± 0.4
	T3	16	17.0 ± 0.7^{a}	-17.2 ± 0.4^{a}	17.0 ± 0.7^{a}	-18.3 ± 0.4^{a}				
	T4	12	16.8 ± 0.5^{a}	-17.1 ± 0.4^{a}	16.8 ± 0.5^{a}	-18.6 ± 0.3^{a}				

Note: For $\delta^{15}N$ values in milk: n=21 in T1, n=20 in T2; for $\delta^{13}C$ values in milk: n=18 in T1; n=14 in T2. For $\delta^{15}N$ and $\delta^{13}C$ values in pup hair: n=20.

Table 2. Mean (± SD) $\delta^{15}N$ and $\delta^{13}C$ (‰) and C:N ratios in blood cells, serum, and hair of northern elephant seal (*Mirounga angustirostris*) at different stages of the post-weaning fast (weeks 1, 4, 7, and 9). Different letters indicate significant difference in values between weeks 1, 4, 7, and 9 for each tissue (ANOVA with repeated measures, paired t-test and Scheffé *post-hoc* test).

		Blood cells		Serum		Hair	
	n	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$	$\delta^{15}N$	$\delta^{13}C$
Week 1	22	16.2 ± 0.7 [a]	-19.3 ± 0.1 [a]	17.6 ± 0.6 [a]	-20.6 ± 0.2 [a]	15.9 ± 0.9 [a]	-18.3 ± 0.3 [a]
Week 4	22	16.3 ± 0.6 [a]	-19.2 ± 0.2 [a]	17.9 ± 0.6 [a]	-20.9 ± 0.2 [b]	17.8 ± 0.6 [b]	-18.1 ± 0.3 [b]
Week 7	22	16.2 ± 0.6 [a]	-19.2 ± 0.2 [a]	18.2 ± 0.6 [b]	-21.0 ± 0.3 [b]		
Week 9	14	16.3 ± 0.5 [a]	-19.2 ± 0.1 [a]	18.5 ± 0.5 [b]	-21.0 ± 0.3 [b]		

Note: n = 20 in blood cells at week 1.

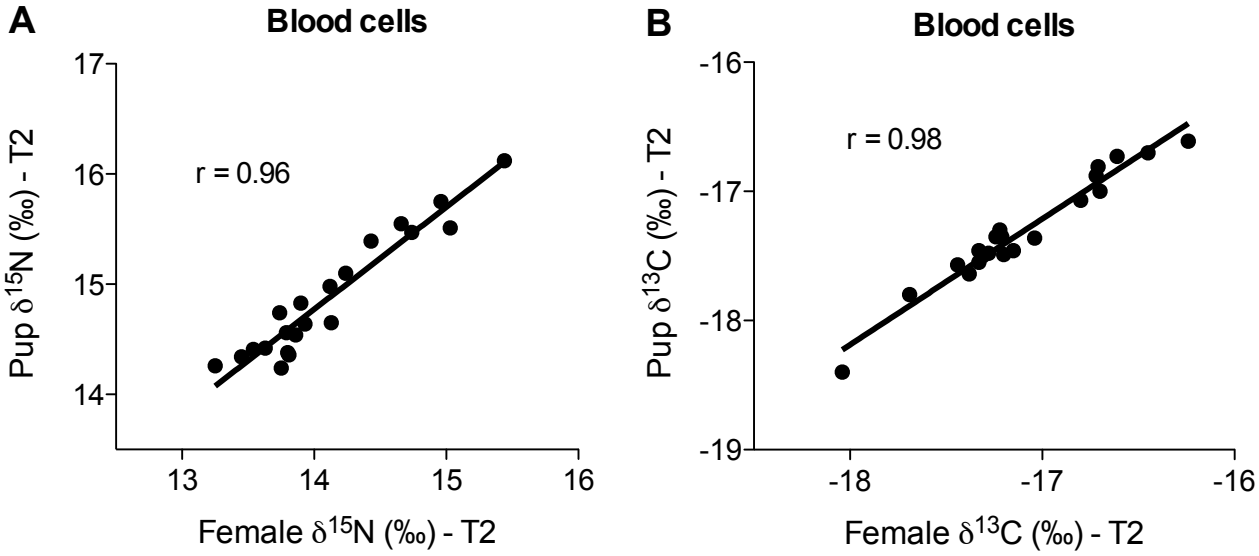

Fig 1. Relationships of δ^{15}N (A) and δ^{13}C (B) values between pup and maternal blood cells in T2 (late lactation) in grey seals (Pearson correlation coefficient).

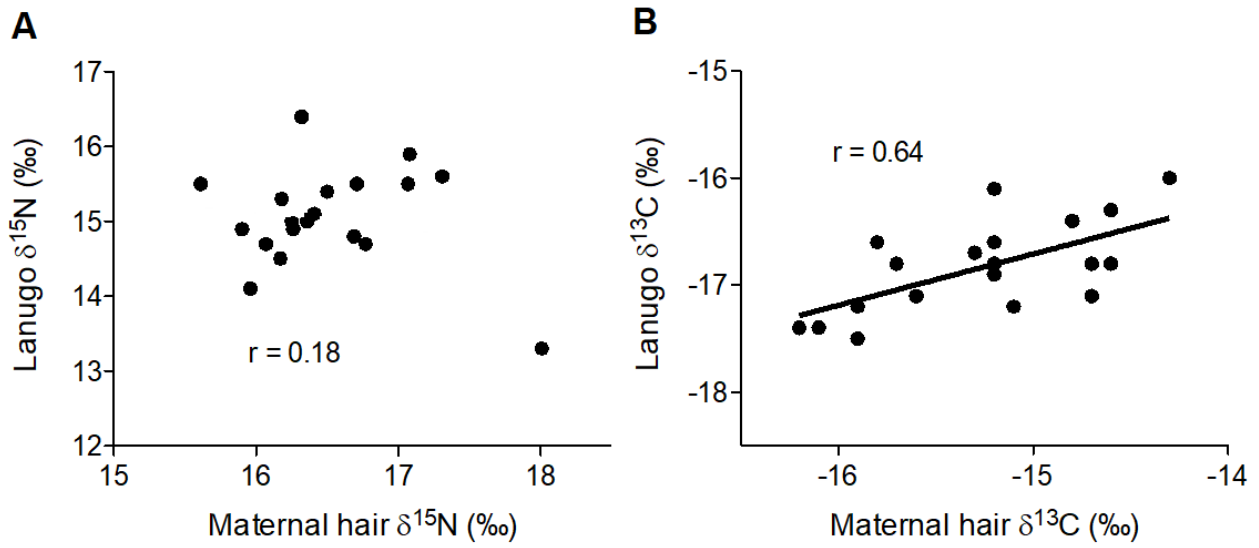

Fig 2. Relationships of δ^{15}N (A) and δ^{13}C (B) values between pup lanugo and maternal hair in grey seals, *Halichoerus grypus* (Pearson correlation coefficient).

Table 3. Relationships of stable isotope values between maternal and pup tissues (whole blood, blood cells, serum, and hair). The mother-to-pup isotopic fractionation ($\Delta X_{\text{pup-mother}}$) according to the tissue and the time of sampling (T1 *vs*. T2) is also given. GS: grey seal, NES: northern elephant seal, SES: southern elephant seal.
* significant ($p < 0.05$), ** highly significant ($p < 0.001$)

Species	Tissue	Time of sampling	$\delta^{15}N$		$\Delta^{15}N_{\text{pup-mother}}$	$\delta^{13}C$		$\Delta^{13}C_{\text{pup-mother}}$	Reference
SES	Whole blood	Late lactation	*	$r^2 = 0.33$ $p = 0.016$	+ 1.3‰	**	$r^2 = 0.87$ $p < 0.001$	+ 0.3‰	Ducatez et al., 2008
NES	Blood cells	Early lactation	*	$r^2 = 0.72$ $p = 0.004$	+ 0.6‰	**	$r^2 = 0.90$ $p < 0.001$	0‰	Habran et al., 2010
		Late lactation	*	$r^2 = 0.72$ $p = 0.003$	+ 1.3‰	**	$r^2 = 0.94$ $p < 0.001$	0‰	Habran et al., 2010
GS	Blood cells	Early lactation	**	$r^2 = 0.86$ $p < 0.001$	+ 2.4‰	**	$r^2 = 0.92$ $p < 0.001$	– 0.1‰	Present study
		Late lactation	**	$r^2 = 0.92$ $p < 0.001$	+ 2.6‰	**	$r^2 = 0.96$ $p < 0.001$	– 0.2‰	Present study
NES	Serum	Early lactation	*	$r^2 = 0.56$ $p = 0.030$	+ 1.1‰	**	$r^2 = 0.90$ $p < 0.001$	0‰	Habran et al., 2010
		Late lactation		$r^2 = 0.03$ $p = 0.683$	+ 0.5‰	*	$r^2 = 0.58$ $p = 0.028$	+ 0.4‰	Habran et al., 2010
GS	Serum	Early lactation	**	$r^2 = 0.90$ $p < 0.001$	+ 1.3‰	**	$r^2 = 0.62$ $p < 0.001$	– 0.8‰	Present study
		Late lactation	**	$r^2 = 0.79$ $p < 0.001$	+ 1.8‰	*	$r^2 = 0.38$ $p = 0.003$	– 1.2‰	Present study
GS	Hair – Lanugo			$r^2 = 0.03$ $p = 0.445$	– 1.4‰	*	$r^2 = 0.41$ $p = 0.002$	– 1.6‰	Present study

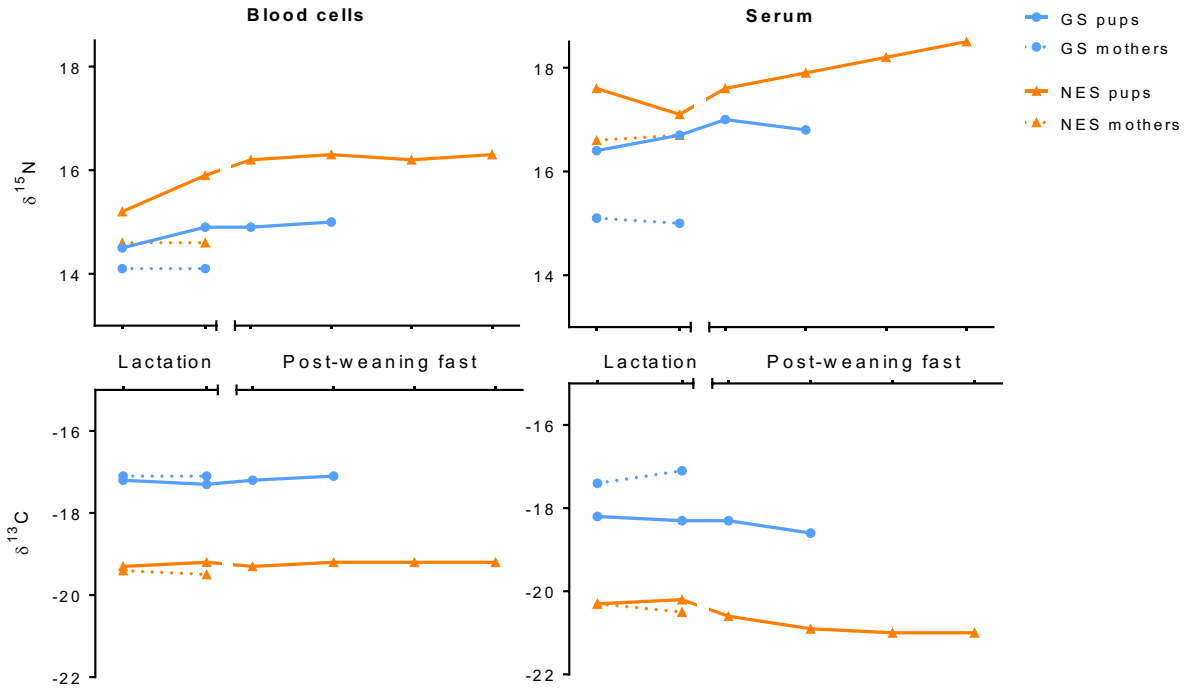

Fig 3. δ^{15}N and δ^{13}C values (‰) in blood cells and serum throughout the lactation and post-weaning fast periods in northern elephant seals (NES) and grey seals (GS). For clarity of graphs, error bars are not shown. A gap was left in the connecting line of NES pups because animals were different during lactation and during post-weaning fast.