

Norwegian Forest Cat (NFO)

Breeding programme 17/05/2025



Note: the most recent updates can be found at: [Breeding Decree - Cat Breeding Programmes | Vlaanderen.be](https://www.vlaanderen.be)



Other names

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Aim of the programme

The breeding programme aims to reduce the most common hereditary disorders without excluding too many cats, in order to preserve genetic diversity within the breed population.

Instead of systematically excluding animals, we have drawn up breeding recommendations based on carefully considered combinations. Naturally, the physical health of the animals is taken into account, and cats suffering from one of these disorders are excluded from breeding.

Performance tests

CONDITION	RECOMMENDATION	SCREENING METHOD	AGE	FREQUENCY
Deafness	Mandatory for completely white cats (W-locus gene)	BAER test	From 6 weeks Before the first mating	One-time
Hypertrophic cardiomyopathy (HCM)	Mandatory	Echocardiography	From 12 months	Valid for 2 years
Pyruvate Kinase Deficiency (PKDef)	Mandatory	DNA test <i>PKLR: c.707-53G>A</i>	From birth For the ^{1st} mating	One-time
Glycogen storage disease type 4 (GSD4)	Mandatory for FIFe	DNA test <i>GBE1:g.34744479_34781895delinsN[334]</i>	From birth For the ^{1st} mating	One-time
Hip dysplasia (HD)	Recommended	RX: VD and laxity recording (Vezzoni or PennHIP)	From 12 months (laxity assessment from 6 months)	One-time
Patella Luxation (PL)	Recommended	Palpation of kneecap	From 12 months For the ^{1st} mating	One-time

*For DNA testing:

Free by descent: when both parents of a breeding animal have been tested free of an affected or abnormal allele by means of DNA and parentage verification has shown that they are the parents, the breeding animal does not need to be tested again, but it can be assumed that the breeding animal is also free of the affected or abnormal allele in question.

Breeding advice per performance test

Here, breeding advice is given (schematically and in table form) for every possible parent combination.

- **A positive recommendation** or green means that this is a suitable pairing based on this test.
- **Conditional positive advice** or orange means that this is not an ideal pairing based on this test, but that the pairing is permitted. Such combinations are permitted in order not to compromise the genetic diversity of a breed.
- **Breeding ban** or red means that this is not a suitable pairing based on this test. These animals may not be combined.

Animals suffering from autosomal **recessive disorders** may only be used if the welfare of the animal and its offspring is assured.

For **hip dysplasia**, a **laxity scan** is mandatory for all cats born in Belgium from 1 January 2025 onwards.

If the tests have not yet been carried out, it is best to always do them with laxity imaging.

CONDITION	POSSIBLE SCREENING RESULT	BREEDING ADVICE											
		Male	Female	cat	Normal	hearing	Unil	ater	al	Bilat	eral	No	res
Deafness	<p>BEAR test results:</p> <ol style="list-style-type: none"> normal: normal hearing in both ears unilateral: completely deaf in one ear and normal hearing in the other ear bilateral: completely deaf in both ears no result: no BAER test was performed 	Female	cat	Male	Normal	hearing	Unil	ater	al	Bilat	eral	deaf	ness
					Normal	hearing							
					Unilateral	deafness							
Hypertrophic cardiomyopathy (HCM)	<ol style="list-style-type: none"> Normal: no signs of HCM are visible on echocardiography. suspicious: signs visible on echocardiography that may indicate HCM. The cat must be retested after 1 year. Affected: clear signs of HCM are visible on echocardiography. No result: no echocardiography was performed. 	Female	cat	Male	Normal	hearing	Unil	ater	al	Bilat	eral	deaf	ness
					Normal	hearing							
					Suspicious	hearing							
Pyruvate Kinase Deficiency (PKDef)	<p>This is an autosomal recessive inheritance:</p> <ol style="list-style-type: none"> Free Carrier (1 normal and 1 affected gene copy) Affected (2 affected gene copies) No result 	Female	cat	Male	Normal	hearing	Unil	ater	al	Bilat	eral	deaf	ness
					Normal	hearing							
					Unilateral	deafness							
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CONDITION	POSSIBLE RESULT OF SCREENING	BREEDING ADVICE				
		Male	Free	carrier	sufferer	No result
Glycogen storage disease type 4 (GSD4)	<p>This is an autosomal recessive inheritance:</p> <ol style="list-style-type: none"> Free Carrier (1 normal and 1 affected gene copy) Affected (2 affected gene copies) No result 	Female				
		free				
		carrier				
		sufferer				
		No result				

CONDITION	POSSIBLE RESULT OF SCREENING	BREEDING ADVICE						
		Male cat	G r a d e 0	G r a d e 1	G r a d e 2	G r a d e 3	G r a d e 4	No res ult
Patella Luxation (PL)	<p>The degree of the most severely affected knee is considered the final degree for the animal</p> <ol style="list-style-type: none"> Grade 0: Normal. Grade 1: Patella can be luxated manually, but returns to normal position when released. Grade 2: The patella luxates during knee flexion or manual manipulation and only returns to its normal position after knee extension or manual reduction. Grade 3: Patella is continuously luxated and can be manually replaced, but will spontaneously luxate again when manual pressure is removed. Grade 4: Patella is constantly dislocated and cannot be manually repositioned. No result: no examination was performed 	Female cat						
		Grade 0						
		Grade 1						
		Grade 2						
		Grade 3						
		Grade 4						
		No result						

CONDITION	POSSIBLE SCREENING RESULT	BREEDING ADVICE						
		Female	Male	Minimal risk	Low risk	High risk	Very high risk	
Hip dysplasia	Both parents have a laxity score and the laxity index is known: <ol style="list-style-type: none"> minimum risk: LI < 0.30. There is a minimum risk of HD. low risk: LI 0.30 - 0.49. There is a low risk of HD. High risk: LI 0.50 - 0.69. There is a high risk of HD. Very high risk: LI \geq 0.70. There is a very high risk of HD. 	Female	Male	Minimal risk				
	Low risk							
	High risk							
	Very high risk							
	Both parents have only the Pawpeds grading <ol style="list-style-type: none"> Grade 0: No signs of HD Grade 1: Mild signs of HD Grade 2: Moderate signs of HD. Grade 3: Severe signs of HD 	Female	Male	Grade 0				
	Grade 1							
	Grade 2							
	Grade 3							
	If one of the parents has a laxity score, but the other only has a Pawpeds grading (e.g. for mating abroad)	Parent 1	Parent 2	Minimal risk				
	Low risk							
	High risk							
	Very high risk							

General breeding advice

The **mandatory tests** must be carried out in accordance with the specified conditions and frequency. If one or more of these results is a 'breeding ban', this combination may not be carried out.

Depending on the number of clinical examinations that may result in a **conditional positive breeding recommendation (orange)**, a maximum number of conditional positive results is permitted:

- 1-2 examinations: max. 1 conditional positive
- 3-4 examinations: max. 2 conditional positives
- 5 or more examinations: max. 3 conditional positive results

In such cases, **further follow-up** by the breeder is required before repeating such mating.

The **inbreeding coefficient** in the FBe database is calculated using Wright's formula **over 5 generations** (if known).

The inbreeding coefficient (COI) of an offspring may **be a maximum of 1% higher than the average COI of both parents**.

If **fewer than 3 generations** of the parents are known, the combination is only permitted if there are no common ancestors on both the father's and mother's side. All breeding recommendations for the mandatory tests must then be positive. A female cat may not be mated with her grandfather, her father, her brother, her half-brother, her son or her grandson.

To prevent disease-causing mutations from spreading too widely within the breed or population, it is essential not to allow a male cat to be used for breeding too often (popular sire effect). In this way, we limit the spread of harmful genetic variants and contribute to the long-term health of the breed.

Our website:

<http://www.felisbelgica.be/>

Our Facebook page:

<https://www.facebook.com/Felis-Belgica-255959984470978/>

Our Instagram page:

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