Maine Coon (MCO)

Breeding programme 17/05/2025

Note: the most recent updates can be found at: Breeding Decree - Breeding Programmes Cats | 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
Hypertrophic cardiomyopathy 1 Maine Coon (HCM 1)	Mandatory	DNA test MYBPC3: c.91G>C	From birth Before the first mating	One-time
Pyruvate Kinase Deficiency (PKDef)	Mandatory	DNA test *PKLR*: c.707-53G>A	From birth For the 1st mating	One-time
Hip dysplasia (HD)	Mandatory	RX: VD and laxity recording (Vezzoni or PennHIP)	From 12 months (laxity assessment from 6 months)	One-time
Patella Luxation (PL)	Mandatory	Palpation of kneecap	From 12 months For the 1st coverage	One-time
Polycystic Kidney Disease (PKD)	Recommended	Ultrasound	From 12 months	One-off
Polycystic Kidney Disease 1 (PKD 1)	Recommended	DNA test* PKD1 variant: c.9882C>A	From birth For the 1st coverage	One-off
Spinal Muscular Atrophy (SMA)	Recommended	DNA test L1X1 :g.161036890_16117670del	For the 1st coverage	One-off
Multidrug resistance (MDR 1)	Recommended	DNA test ABCB1: c.1930_1931del	For the 1st coverage	One-off
Progressive Retinal Atrophy **(PRA rdAc)**	Recommended	DNA test *CEP290*: c.7584+9T>G	For the 1st coverage	One-time
Dominant Blue Eyes (PAX3 Maine Coon)	Recommended by FIFe for cats with blue eyes	DNA test PAX3:c. 937C>T (OMIA:001688-9685)	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

Breeding advice is given here (schematically and in table form) for every possible parent combination.

- **Positive advice** or green means that this is a suitable mating 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 prohibition** 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 assessment** is mandatory for all cats born in Belgium from 1 January 2025 onwards.
If the tests have not yet been performed, it is best to always do them with laxity assessment.

CONDITION	POSSIBLE SCREENING RESULT	BREEDING ADVICE				
Deafness	BEAR test results: 1. **normal**: normal hearing in both ears 2. **unilateral**: completely deaf in one ear and normal hearing in the other ear 3. **bilateral**: completely deaf in both ears 4. **no result**: no BAER test was performed	Male / Female cat	Normal hearing	Unilateral deafness	Bilateral deafness	No result
		Normal hearing				
		Unilateral deafness				
		Bilateral deafness				
		No result				
Hypertrophic cardiomyopathy (HCM)	1. **Normal**: no signs of HCM visible on echocardiography. 2. **Suspected**: signs visible on echocardiography that may indicate HCM. The cat must be retested after 1 year. 3. **Affected**: clear signs of HCM are visible on echocardiography. 4. **No result**: no echocardiography was performed.	Male cat / Female	Normal	Suspicious	Affected	No result
		Normal				
		Suspicious				
		Affected				
		No result				

CONDITION	POSSIBLE SCREENING RESULT	BREEDING ADVICE				
Hypertrophic cardiomyopathy 1 Maine Coon (HCM 1)	This is an autosomal recessive inheritance: **1. Free** 2. **Carrier** (1 normal and 1 affected gene copy) 3. **Affected** (2 affected gene copies) 4. **No result**	Tomcat / Female cat	Free	carrier	sufferer	No result
		free				
		carrier				
		sufferer				
		No result				
Pyruvate Kinase Deficiency (PKDef)	This is an autosomal recessive inheritance: **1. Free** 2. **Carrier** (1 normal and 1 affected gene copy) 3. **Affected** (2 affected gene copies) 4. **No result**	Male / Female	Free	carrier	sufferer	No result
		free				
		carrier				
		sufferer				
		No result				

CONDITION	POSSIBLE RESULT OF SCREENING	BREEDING ADVICE				
Hip dysplasia	Both parents have a **laxity score** and the laxity index is known: 1. **minimum risk**: LI < 0.30. There is a minimum risk of HD. 2. **low risk**: LI 0.30 - 0.49. There is a low risk of HD. 3. **high risk**: LI 0.50 - 0.69. There is a high risk of HD. 4. **very high risk**: LI ≥ 0.70. There is a very high risk of HD	Male cat Female cat	Minimal risk	Low risk	High risk	Very high risk
		Minimal risk				
		Low risk				
		High risk				
		Very high risk				
	Both parents have only the **Pawpeds grading** 1. **Grade 0**: No signs of HD 2. **Grade 1**: Mild signs of HD 3. **Grade 2**: Moderate signs of HD. 4. **Grade 3**: Severe signs of HD	Male Female	Grade 0	Grade 1	Grade 2	Grade 3
		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 2 Parent 1	Grade 0	Grade 1	Grade 2	Grade 3
		Minimal risk				
		Low risk				
		High risk				
		Very high risk				

CONDITION	POSSIBLE SCREENING RESULT	BREEDING ADVICE
Patella Luxation (PL)	The degree of the most severely affected knee is considered the final degree for the animal 1. Grade 0: Normal. 2. Grade 1: Patella can be luxated manually, but returns to normal position when released. 3. Grade 2: Patella luxates during knee flexion or manual manipulation and only returns to its normal position after knee extension or manual repositioning. 4. Grade 3: Patella is continuously luxated and can be manually replaced, but will spontaneously luxate again when manual pressure is removed. 5. Grade 4: Patella is constantly dislocated and cannot be manually repositioned. 6. No result: no examination was performed	

Male cat / Female cat	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4	No result.
Grade 0						
Grade 1						
Grade 2						
Grade 3						
Grade 4						
No result						

CONDITION	POSSIBLE SCREENING RESULT	BREEDING ADVICE
Polycystic Kidney Disease (PKD)	1. **Normal**: no signs of PKD are visible on the ultrasound. 2. **Suspicious**: very minor abnormalities are visible on ultrasound that may be consistent with PKD. However, these are not sufficiently specific. 3. **Affected**: there are signs of PKD visible on the ultrasound. 4. **No result**: no ultrasound scan of the kidneys was performed.	

Male / Female cat	Normal	Suspicious	Affected	No result
Normal				
Suspicious				
Affected				
No result				

CONDITION	POSSIBLE SCREENING RESULT	BREEDING ADVICE
Polycystic Kidney Disease 1 (PKD 1)	It is an autosomal dominant inheritance: **1. Free** 2. **Heterozygous sufferer** (1 normal and 1 affected gene copy) 3. **Homozygous sufferer** (2 affected gene copies) **4. No result**	

Male / Female	Free	It. Affected	Male sufferer	No result
Free				
It. sufferer				

		Hom sufferer				
		No result				

CONDITION	POSSIBLE RESULT OF SCREENING	BREEDING ADVICE				
Spinal Muscular Atrophy (SMA)	This is an autosomal recessive inheritance: **1. Free** 2. **Carrier** (1 normal and 1 affected gene copy) 3. **Affected** (2 affected gene copies) 4. **No result**	Male / Female	Free	carrier	sufferer	No result
		free				
		carrier				
		sufferer				
		No result				
Multidrug resistance (MDR 1)	This is an autosomal recessive inheritance: **1. Free** 2. **Carrier** (1 normal and 1 affected gene copy) 3. **Affected** (2 affected gene copies) 4. **No result**	Male / Female	Free	carrier	sufferer	No result
		free				
		carrier				
		sufferer				
		No result				
Progressive Retinal Atrophy **(PRA rdAc)**	This is an autosomal recessive inheritance: **1. Free** 2. **Carrier** (1 normal and 1 affected gene copy) 3. **Affected** (2 affected gene copies) 4. **No result**	Male / Female	Free	carrier	sufferer	No result
		free				
		carrier				
		sufferer				
		No result				

CONDITION	POSSIBLE RESULT OF SCREENING	BREEDING ADVICE				
Dominant Blue Eyes (PAX3 Maine Coon)	This is an autosomal dominant inheritance: **1. Free** 2. **Heterozygous carrier** (1 normal and 1 affected gene copy) **3. Homozygous carrier** (2 affected gene copies) **4. No result** Under normal circumstances, only free cats are permitted for breeding in cases of dominant inheritance. However, in order not to compromise the gene pool, in this initial phase, heterozygous carriers are permitted to breed with free cats.	Male / Female	Free	It. Affected	Hom. Affected	No result
		Free				
		It. sufferer				
		Hom sufferer				
		No result				

Overall 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 mate 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.

Polydactyly is a natural phenotypic variant that occurs in Maine Coons. For the time being, there are no known disadvantages to this trait as long as it is not bred to extremes. However, breeders should be aware that deliberately breeding for extreme traits (such as as many toes as possible) can have serious adverse effects on the animal's welfare. It is therefore strongly discouraged.
No FIFe pedigrees can be issued for cats suffering from polydactyly.

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