Utrecht, The Netherlands, February 2024

To whom it concerns,

With this letter I, dr. Paul Mandigers, wish to express my concern that the Danish Government is thinking of banning the Cavalier King Charles Spaniel.

Pedigree dog breeds are indeed at risk. The genetic variation is, in most breeds limited, and the number of type related disorders and genetic diseases is high, regardless of the breed. The current population of dogs are literally paying the price for choices made, by our ancestors, many years ago. For this reason, I and many fellow scientists, are all working on the identification of mutations and give advice to improve breeding. In the last few years we have identified several new disorders, phenotyped diseases, found mutations and given direct advice to improve breeding. I list of all my publications can be found at <a href="https://www.veterinair-neuroloog.nl/publicaties">https://www.veterinair-neuroloog.nl/publicaties</a> or my personal university webpage: <a href="https://www.uu.nl/medewerkers/PJJMandigers">https://www.uu.nl/medewerkers/PJJMandigers</a>

The Cavalier King Charles Spaniel (CKCS) is one of the breeds I have been working on as of 2009. In 2011 the Dutch Government, Dutch Kennel Club and Dutch Cavalier Club contacted me to help screen their breeding stock to improve the breed. As of 2011 all CKCS breeders in the Netherlands must screen their CKCS with MRI for the disorders Chiari-Malformation and Syringomyelia [1] and with ultrasound the cardiac health status. In 2018 the Danish Cavalier Club joint our program and just recently we have published a study that describes the effectiveness of the screenings program in both countries. The number of affected CKCS is slowly reducing and we believe that if all breeders in these countries would only use non-affected CKCS it is possible to ban syringomyelia within a few generations. Such a result will reflect on all other countries, where CKCS are only screened by willing breeders which means that a large part of the population is not screened at all. In the Netherlands and Denmark, the number of affected CKCS is dropping each year and we can safely say that the Dutch and Danish CKCS breeders are the most responsible breeders we have been working with.

Banning the breed at this time is not prudent as the breeders in Denmark are, doing more than their utmost best to improve the breed that has been neglected by their ancestors for so long.

We have published two studies to demonstrate the effectiveness of selection. In 2017 we published a paper demonstrating that our method of selection works [1] and just recently we demonstrated that there is improvement [2]. Based on the last study we have advised several Kennel Clubs to enforce screening the parents using MRI and only to breed with healthy CKCS. This will undoubtfully improve the breed even quicker.

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If a breed club is willing to change the way they select their breeding stock and implement hard choices, we should support them.

The Danish Cavalier Club has demonstrated on several occasions to me that they are a true testimony of responsible breeders.

Signed

Dr. Paul Mandigers

MVM, DVM, PHD, Dip ECVN, Dip EBY

## References

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- 2. Limpens C, Smits VTM, Fieten H, Mandigers PJJ. MRI-based screening and selection decreased the prevalence of syringomyelia in the Dutch and Danish Cavalier King Charles Spaniel. Frontiers in Veterinary Medicine. 2023. *Frontiers in Veterinary Science*, 01-09. https://doi.org/10.3389/fvets.2024.1326621

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