

# Breeding values for longevity in jumping horse competition in France

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## Material and methods

Data: All horses in jumping competition from 1972 to 2008 born during 1968 or later:  
209,269 horses, 987,879 years spent in competition

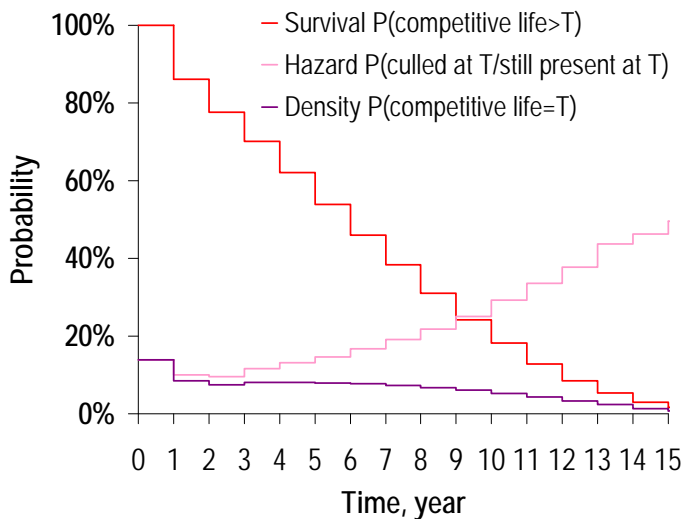
Trait: discrete measure of time, i.e number of years spent in competition, Model : competitive life corrected for jumping performance = functional longevity, Method: survival analysis with Survival kit (Ducrocq and Sölkner, 1998)



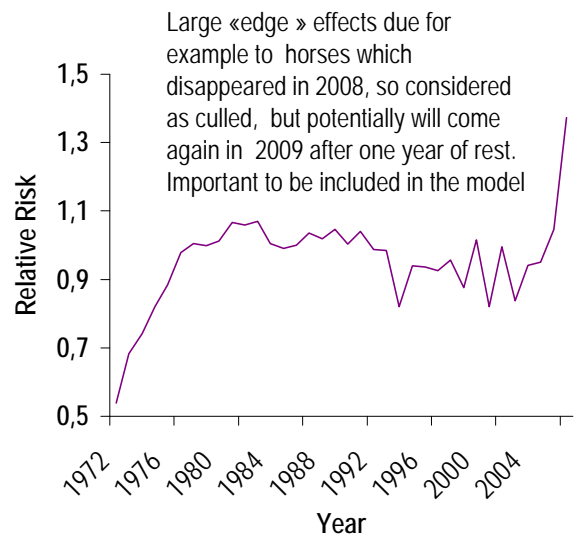
Never Forget Jazz

## Results

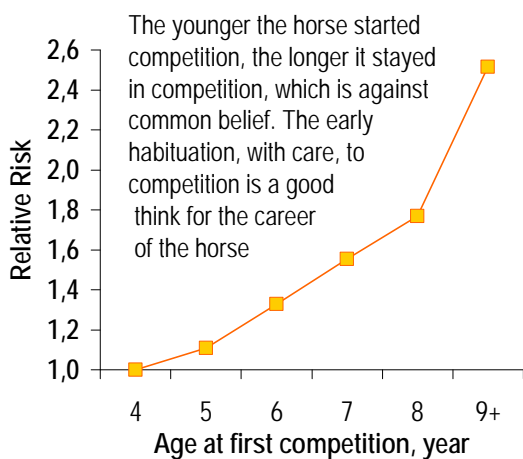
### Basic Functions



### Environmental Effects : Year of performance

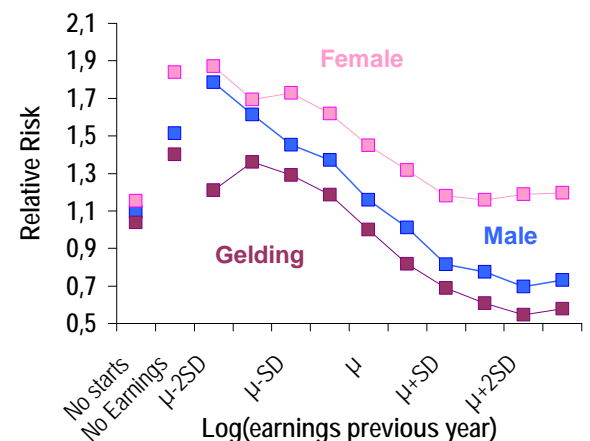


### Management of horse : Age at first competition



### Functional Longevity : Effect of horse jumping ability

- 1- Higher relative risk for females (culled for breeding)
- 2- The higher the performance the lower the risk to be culled
- 3- Plateau for best horses (>2SD)
- 4- No effect for horses without starts previous year (rest)



## Conclusion : Heritability and Selection



Heritability=0.10  
3303 sires with accuracy>0.60, Breeding values as relative risk: mean 0.98, SD 0.11, min 0.70, max 1.54  
Late evaluation which now should be used earlier with genomic selection

