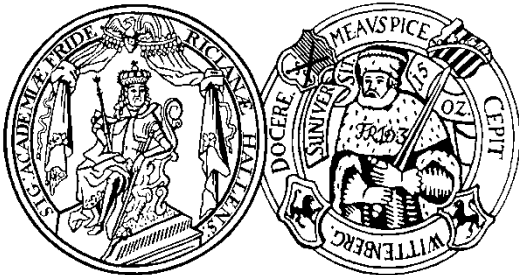


Impact of single-sex and mixed-sex group housing of boars physically castrated or vaccinated against GnRH (Improvac®) on feeding duration and shoulder lesions

T. Schmidt, M. Grodzycki, M. Paulick, F. Rau, E. von Borell*



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Department of Animal Husbandry & Ecology

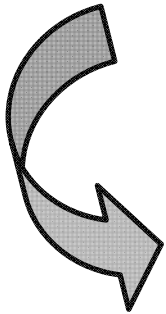
Introduction: Piglet Castration & Alternatives

Physical castration **without pain-treatment** in most countries



Alternatives are sought to improve pig welfare

(review: von Borell *et al.*, 2009; PIGCAS, 2009)

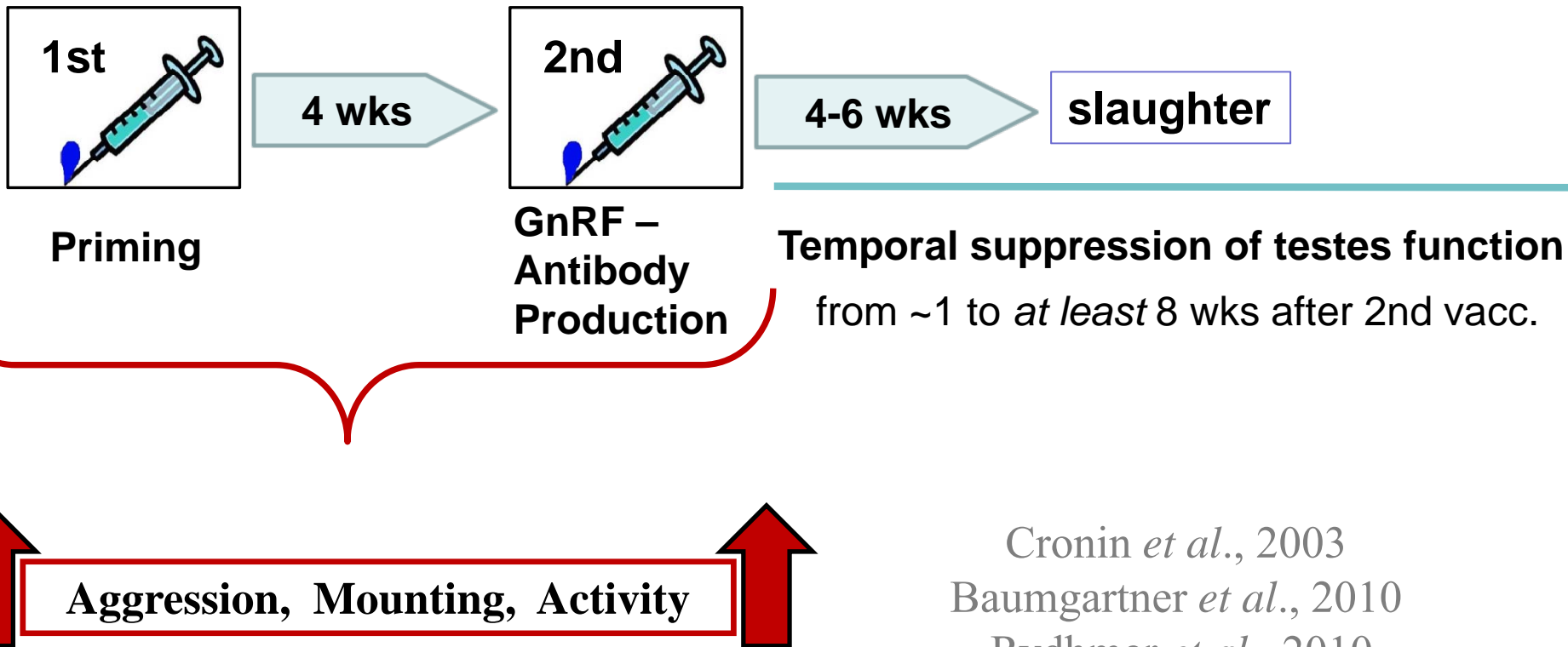


GnRF vaccination licensed
in most major pig-producing countries

(Improvac®, Pfizer Animal Health)



Introduction: GnRF Vaccination (Improvac®, Pfizer Animal Health)



Cronin *et al.*, 2003
Baumgartner *et al.*, 2010
Rydhmer *et al.*, 2010

Further research needed regarding welfare aspect
(Prunier *et al.*, 2006; Baumgartner *et al.*, 2010)



Introduction: Aim of study

Most aggressive interactions occur during feeding (Meese & Ewbank, 1973)

Feeding behaviour:

Influenced by higher aggression level ?

Dunshea *et al.*, 2001; Cronin *et al.*, 2003

Skin lesions:

Impact of aggressive interactions on health ?

Mixed-sex housing can reduce aggression

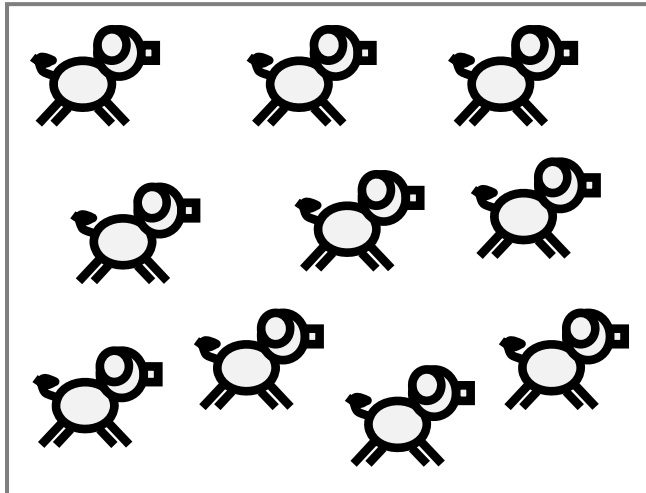
(Séguin *et al.*, 2006; Boyle & Björklund, 2007, Borberg & Hoy, 2009)



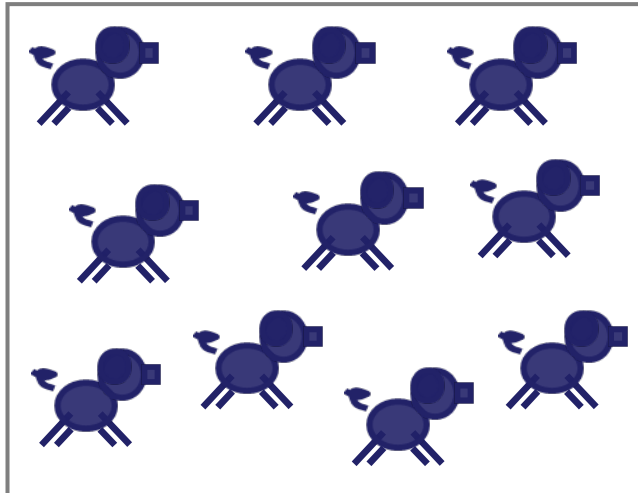
4 Treatments



Physically Castrated



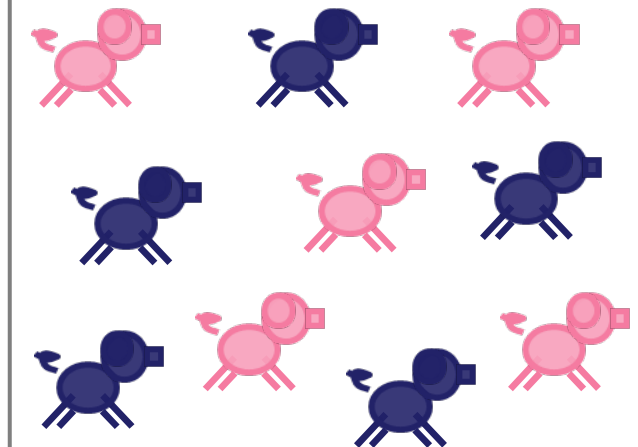
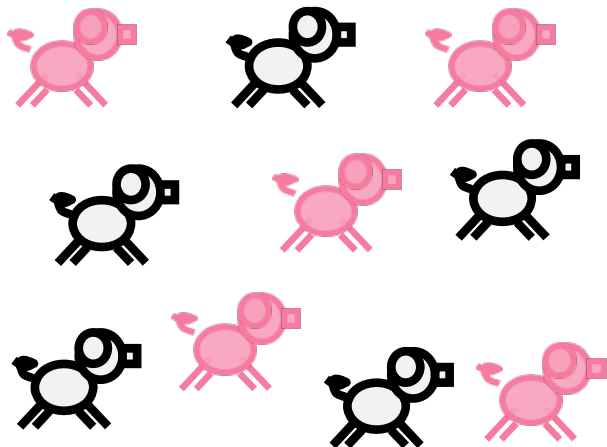
GnRF- Vaccinated



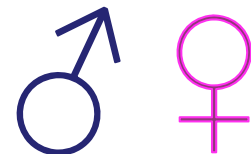
Single - Sex



N = 10 (per pen)



Mixed - Sex



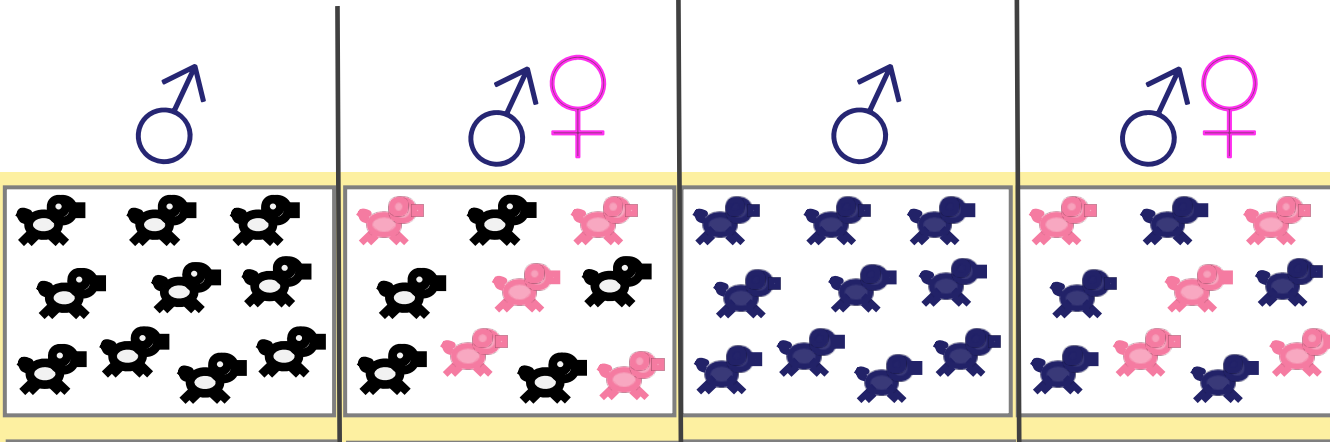
N = 5 / 5 (per pen)

Pi x (LW x German LR)

**Physically
Castrated**

**GnRF-
Vaccinated**

**4 Replicates
= 160 animals**



2 weeks

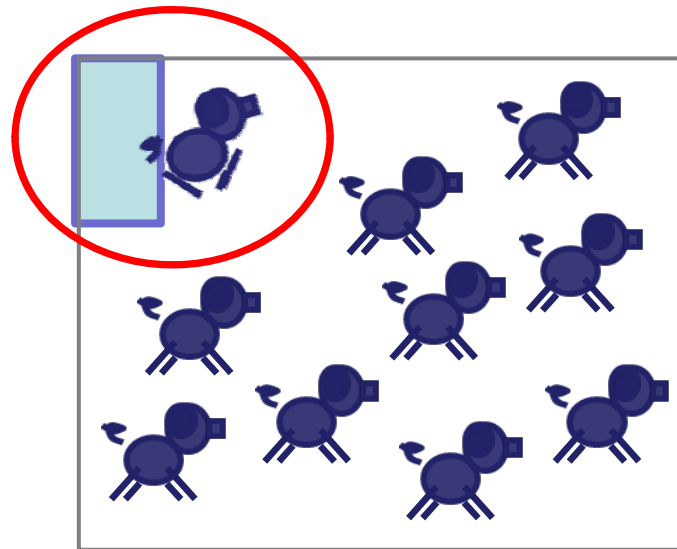
Statistical analysis (JMP, SAS Institute Inc.):
Repeated measure mixed models & Tukey-Kramer HSD
Fixed effects: **treatment, time & treatment x time**
Random effects: **pen and replicate**

Methods: Feeding behaviour



1 IVOG[®] Single-Space Station **per Pen** (Insentec, The Netherlands)

Plausibility analysis adapted from Eissen *et al.*, 1998

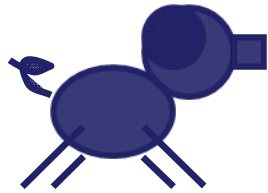


Feeding duration
per visit & day (min)
Feed intake per day (g)
& per visit, **ADG**
Visits per day (#)
Feeding speed (g/min)



Methods: Skin Lesion Scores

Indirect measure of aggression Turner *et al.* (2006)



Evaluations of 10 body regions for each pig
weekly throughout the fattening time

> **Shoulders susceptible to fighting**

Scores 1- 2 (scratches)

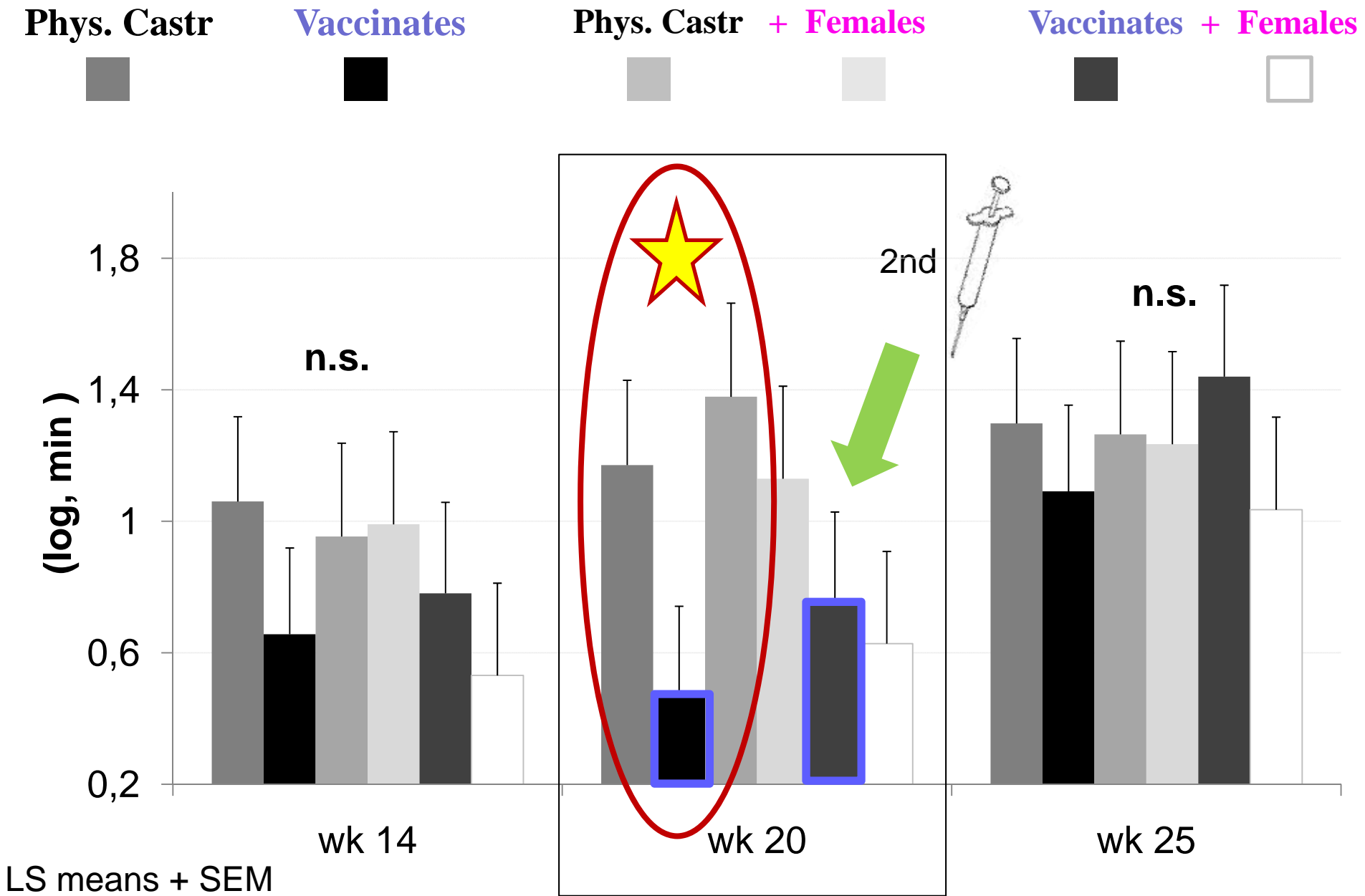
Scores 3- 4 (graze/abrasion)

Scores 5- 6 (severe wound)

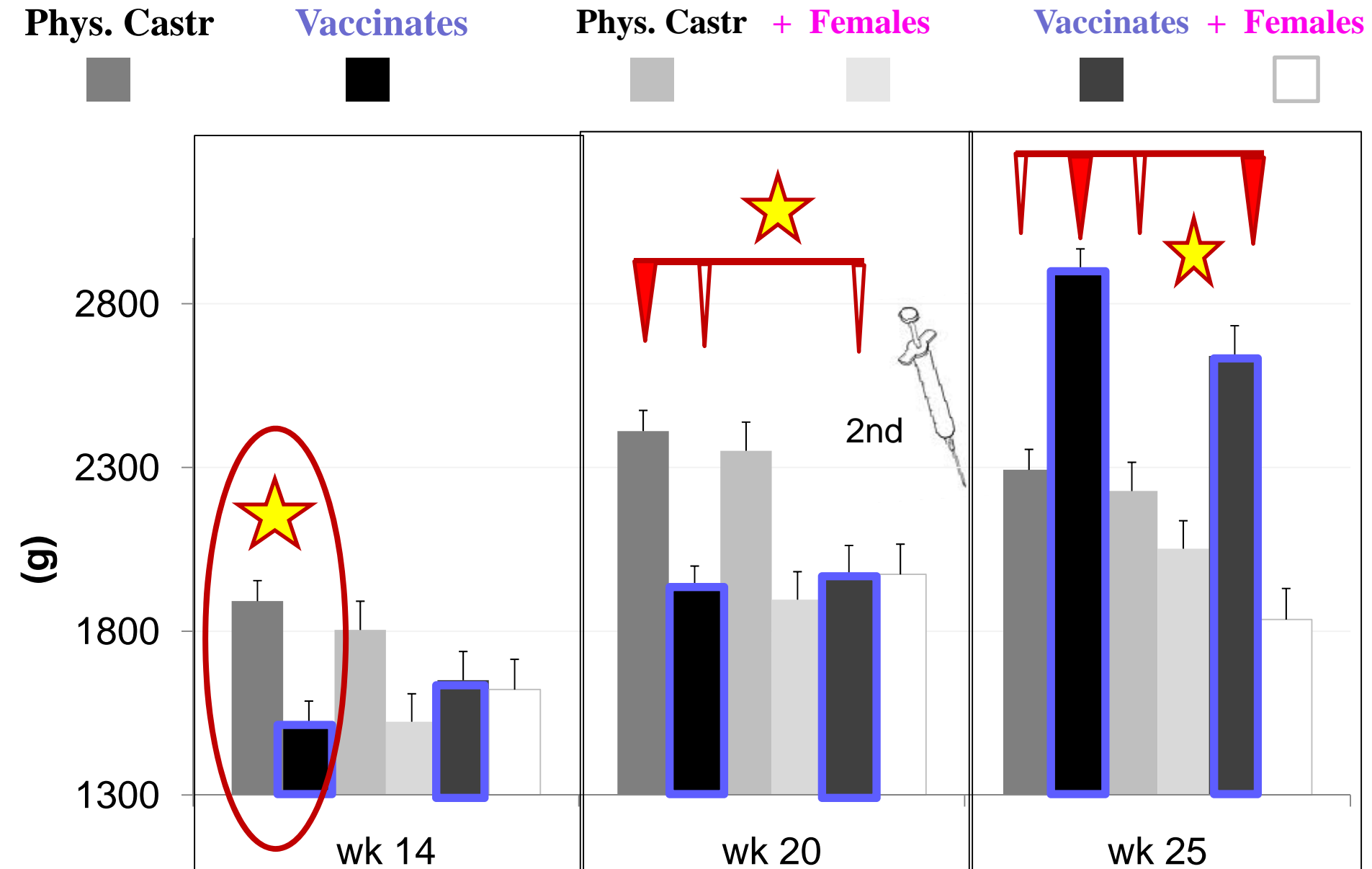
(adapted from Ekesbo, 1984)



Results: Feeding duration **per visit**



Results: Feed intake **per day**



LS means + SEM

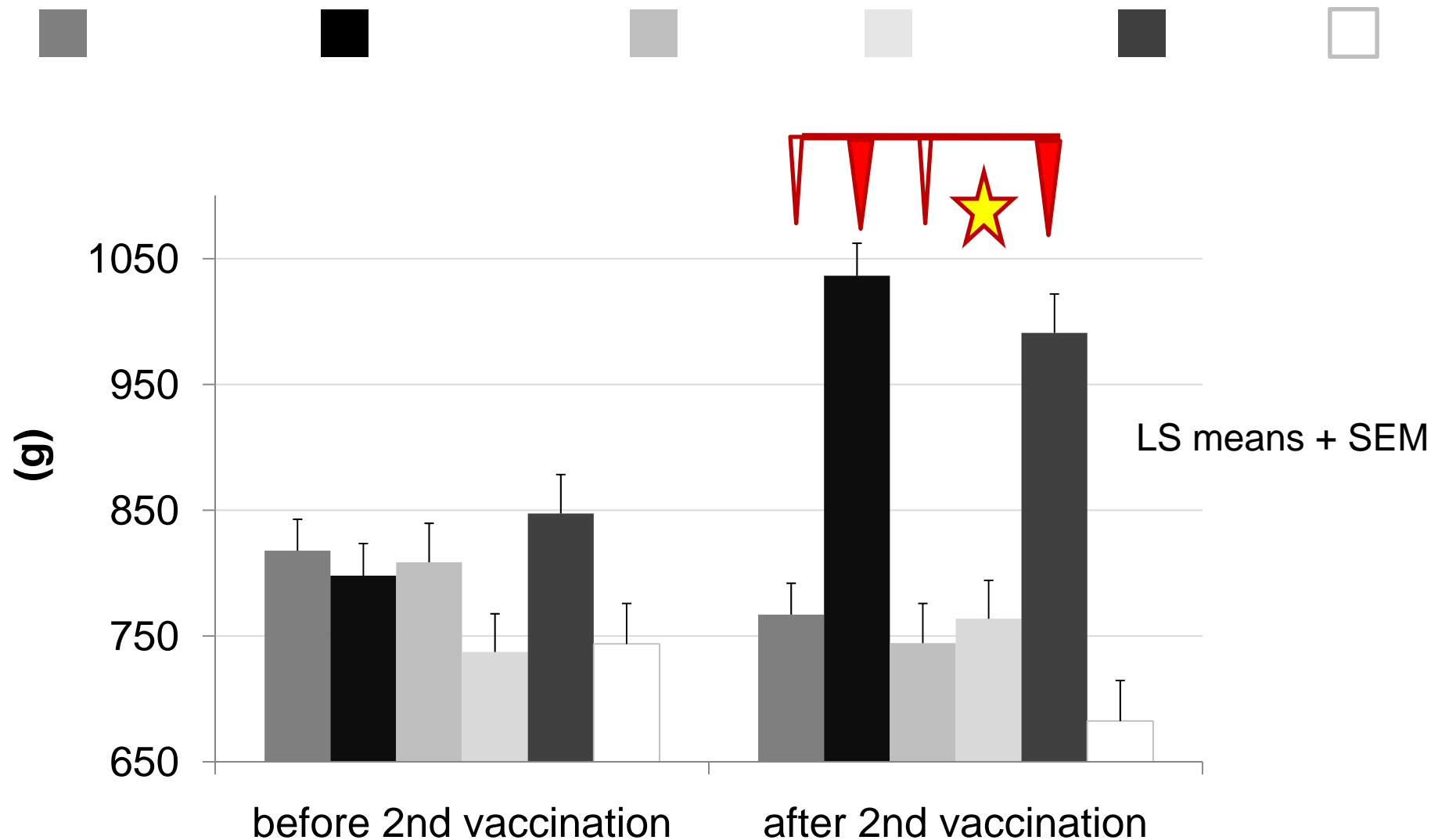
Results: **ADG**

Phys. Castr

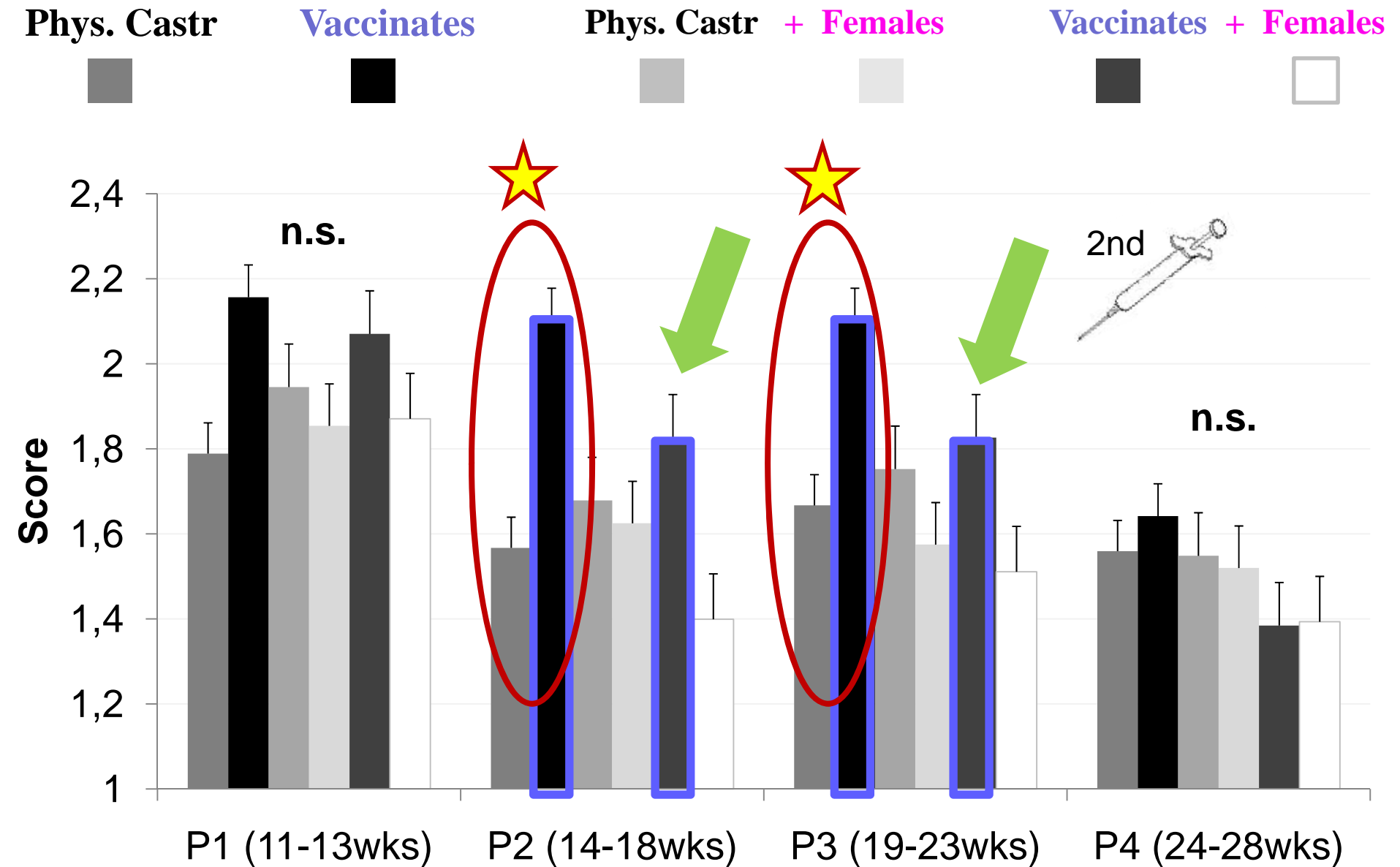
Vaccinates

Phys. Castr + Females

Vaccinates + Females



Results: Shoulder Lesions



LS means + SEM

Summary / Discussion:

Single-sex Vaccinates:

Shorter feeding duration, due to more aggression ?

Confirmed by **higher shoulder lesion scores**

Consistent with more aggressive behaviour in other single-sex studies

Cronin et al., 2003

Baumgartner et al., 2010

Rydhmer et al., 2010

Not consistent with Mixed-sex Vaccinates:

Feeding duration (per visit) and lesion scores
NOT different from Physical Castrates

Less aggression at the feeder in mixed-sex groups

Boyle & Björklund (2007)

Lesion scores mainly superficial scratches, not severe wounds

No disadvantages apparent after 2nd vaccination
with effective suppression of testes function

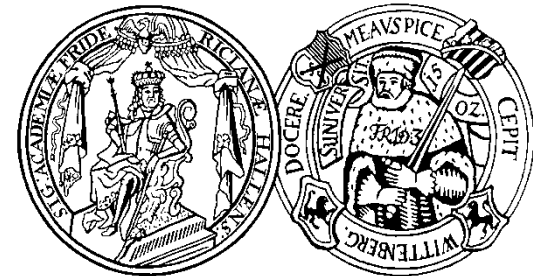


Thank you !



Acknowledgements

- ❖ Pfizer Animal Health
- ❖ State Institute for Agriculture in Saxony Anhalt, Germany



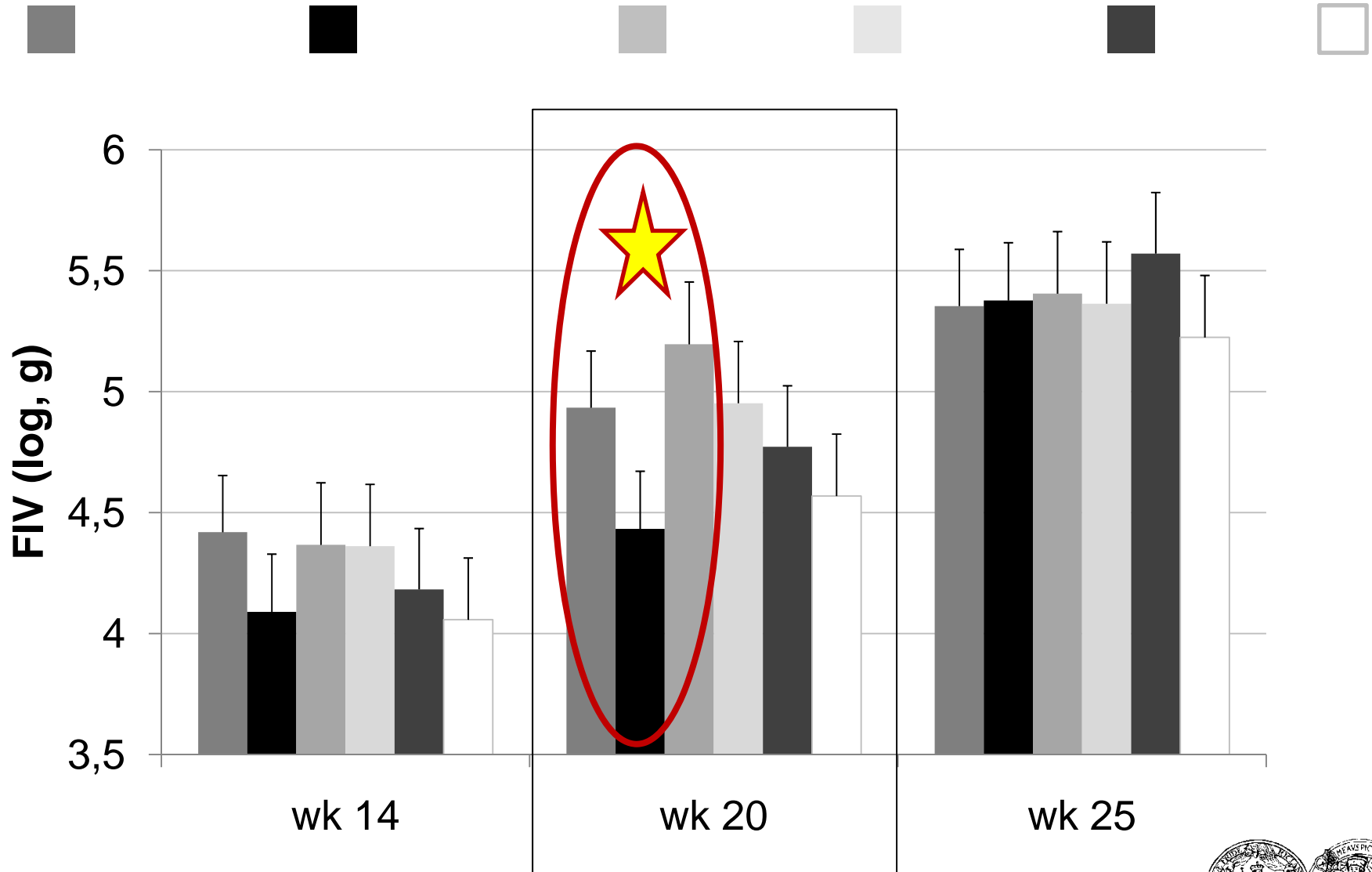
Results: Feed intake **per visit**

Phys. Castr

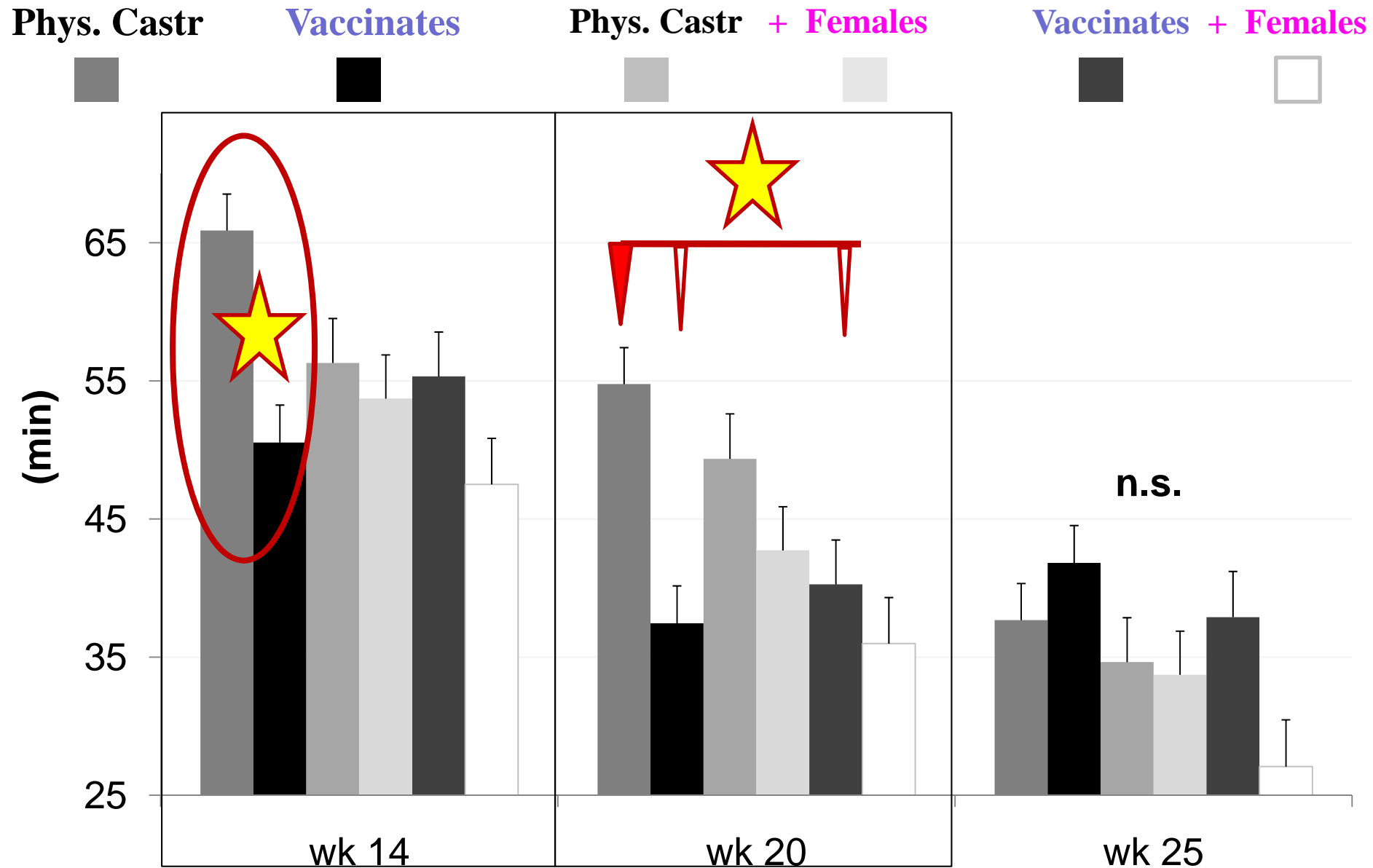
Vaccinates

Phys. Castr + Females

Vaccinates + Females



Results: Feeding duration **per day**



scratch	$n \leq 5$		1
	$n > 5$		2
	$\leq 3\text{cm}$	superficial	3
graze/abrasion	$> 3\text{cm}$		4
	single	deep cut, bleeding	5
severe wound	multiple	lesion, necrosis	6