

# Effect of management strategies for rearing supernumerary piglets on piglet survival and growth

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# The context

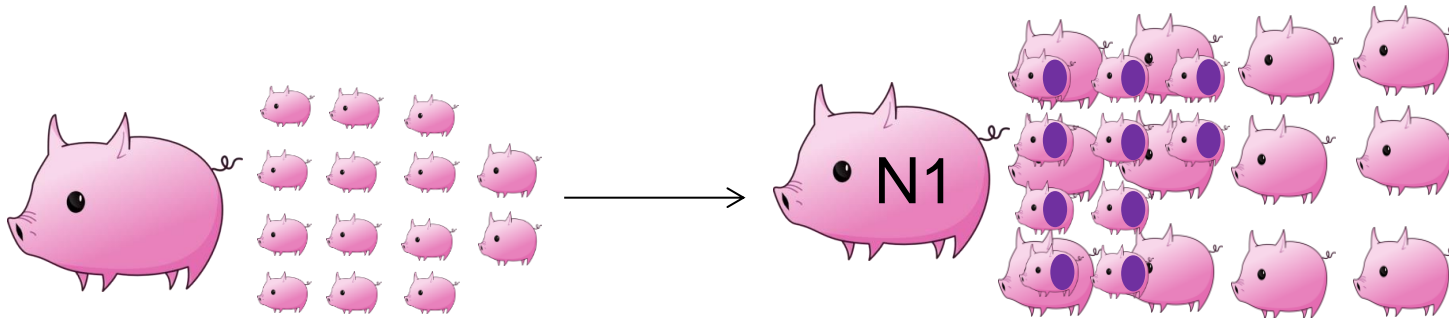
- Large numbers born alive = challenge
  - Piglets : Growth and survival
  - Sows : lesions at udder
  
- Management strategies
  - Nurse sows (Experiment 1)
  - Artificial rearing (Experiment 2)

# Nurse sows strategies



# Methods

## 1 step strategy

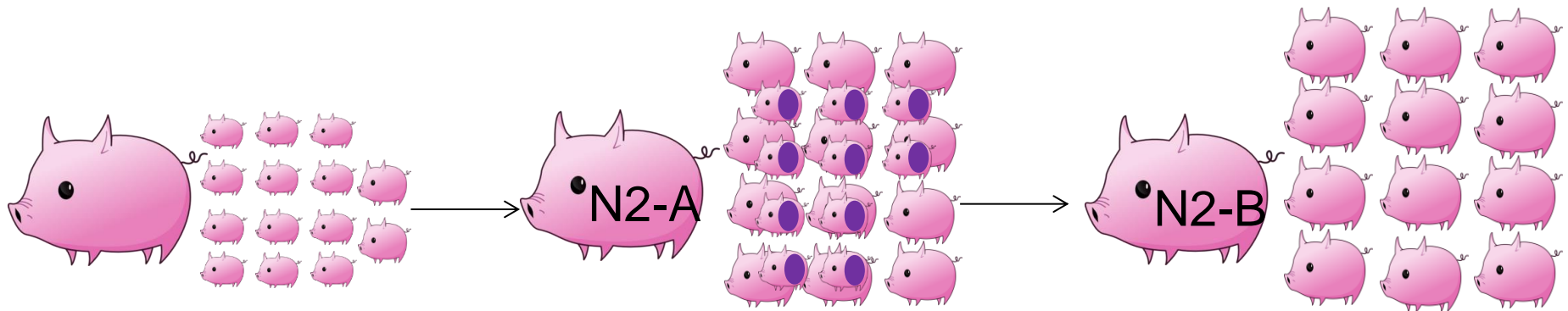


Control  
1 day farrowed

Nurse sow (N1)  
21 days lactation

# Methods

## 2 step strategy

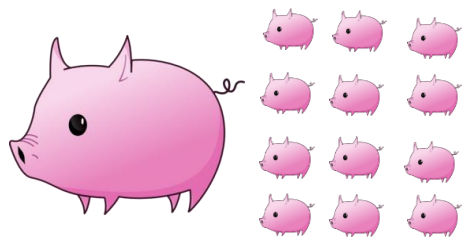


Control  
1 day farrowed

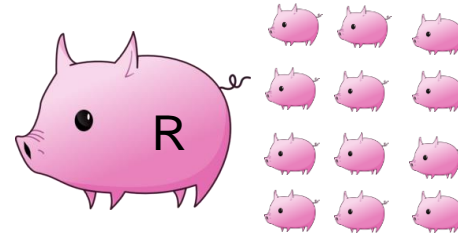
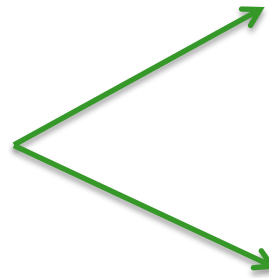
Nurse sow (N2-A)  
7 days lactation

Nurse sow (N2-B)  
21 days lactation

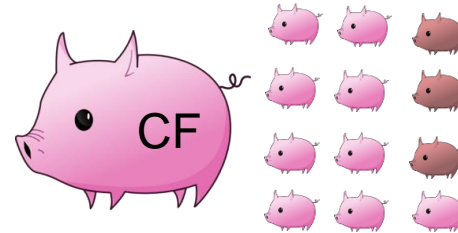
# Methods



Control  
1 day farrowed



All piglets  
remained  
with their dam



Some piglets  
exchanged:  
cross-fostering

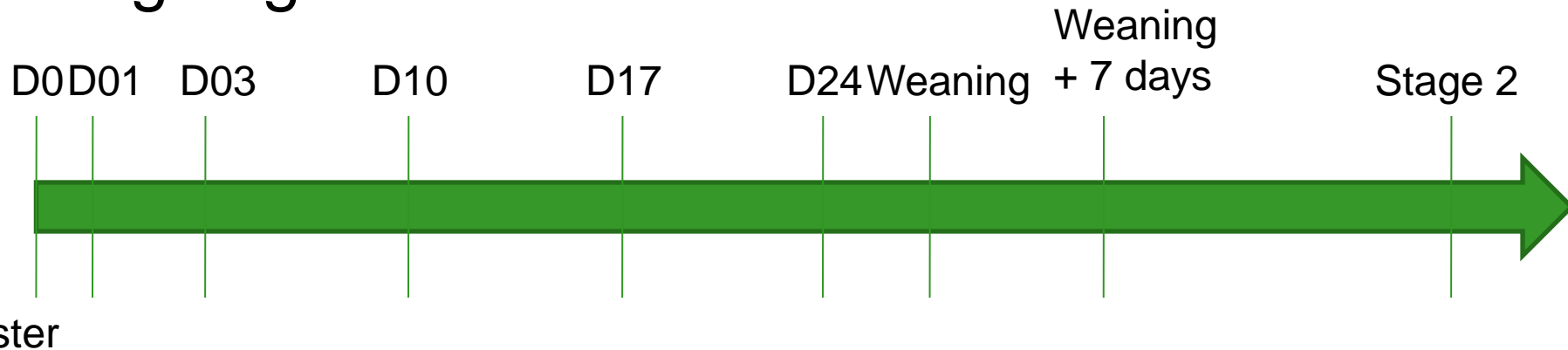
R = 9 litters / 118 piglets  
CF = 10 litters / 117 piglets  
N1 = 10 litters / 120 piglets  
N2-A = 9 litters / 106 piglets  
N2-B = 9 litters / 108 piglets

# Hypotheses

- Both strategies are effective in rearing supernumerary piglets until weaning
- 2 step-strategy better for growth and survival
  - Match stage of lactation and age of piglets

# Data collection and analysis

## Weighing schedule



## Statistical analysis

### General Linear Model

random effect of **sow** and **replicate**

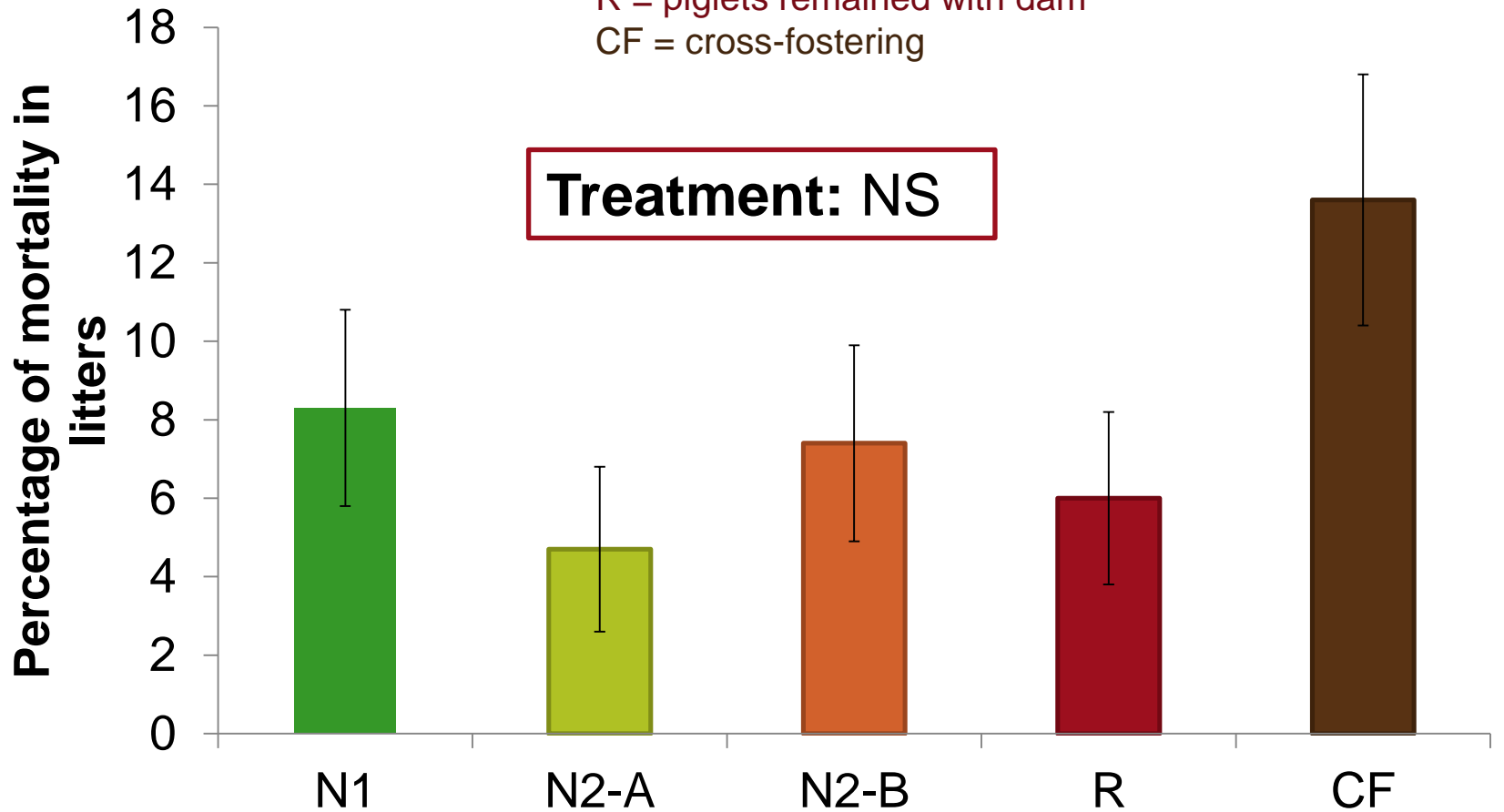
repeated effect of **day**

covariates: **age** (post-weaning data)



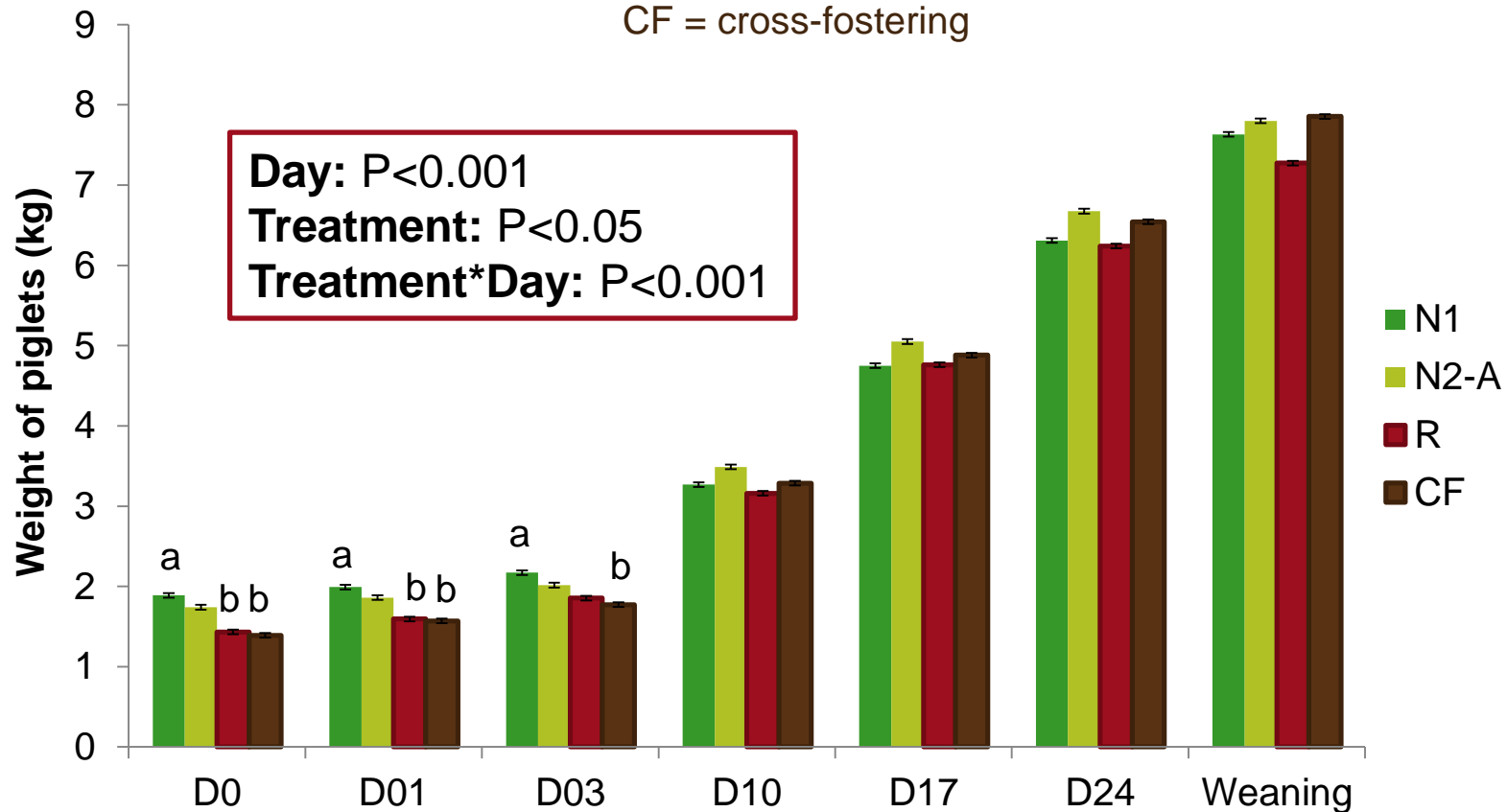
# Mortality

N1 = 1 day-old piglets reared by 21 d lactation nurse sow  
N2-A = 1 day-old piglets reared by 7 d lactation nurse sow  
N2-B = 7 days-old piglets reared by 21 d lactation nurse sow  
R = piglets remained with dam  
CF = cross-fostering



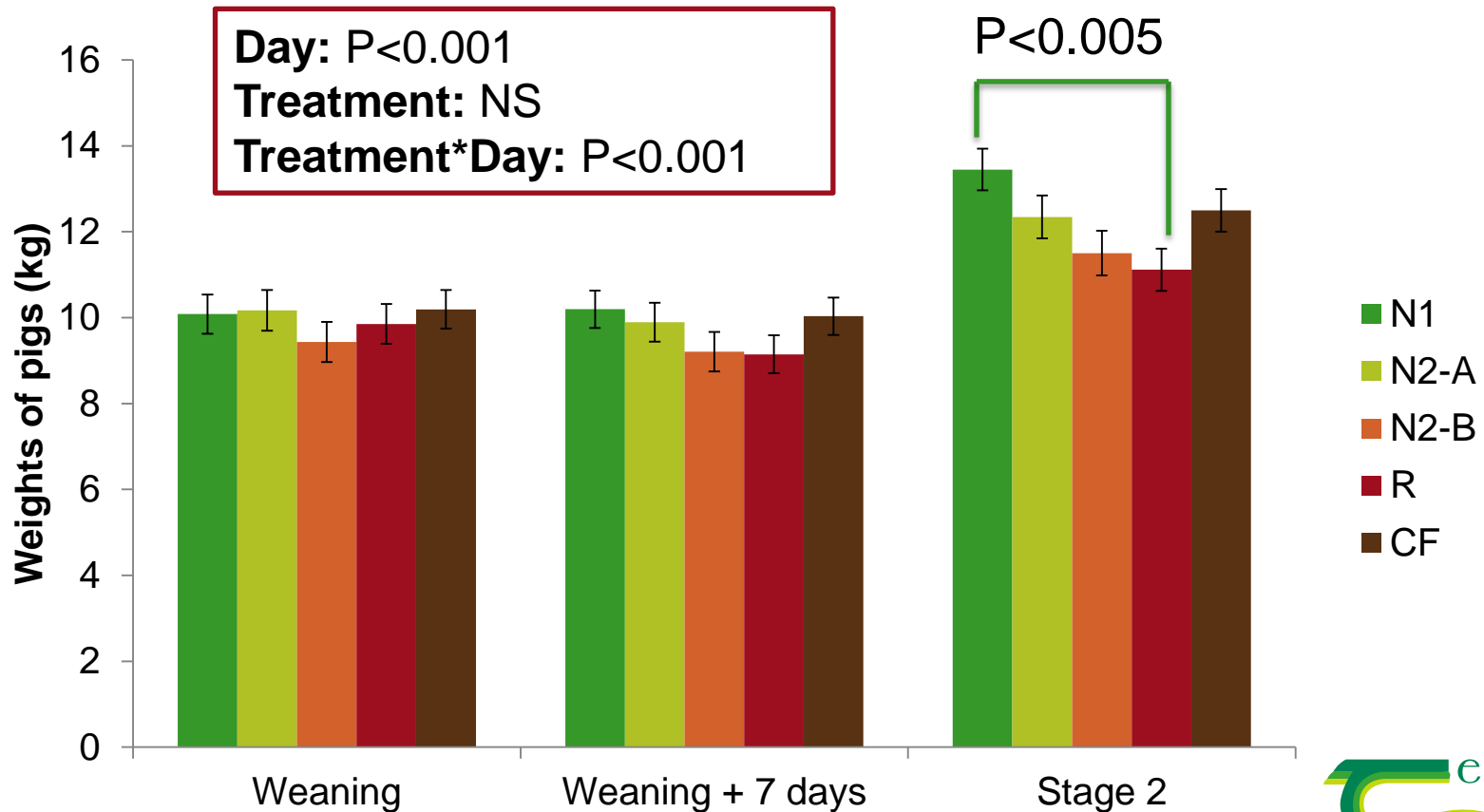
# Weights pre-weaning

N1 = 1 day-old piglets reared by 21 d lactation nurse sow  
N2-A = 1 day-old piglets reared by 7 d lactation nurse sow  
N2-B = 7 days-old piglets reared by 21 d lactation nurse sow  
R = piglets remained with dam  
CF = cross-fostering



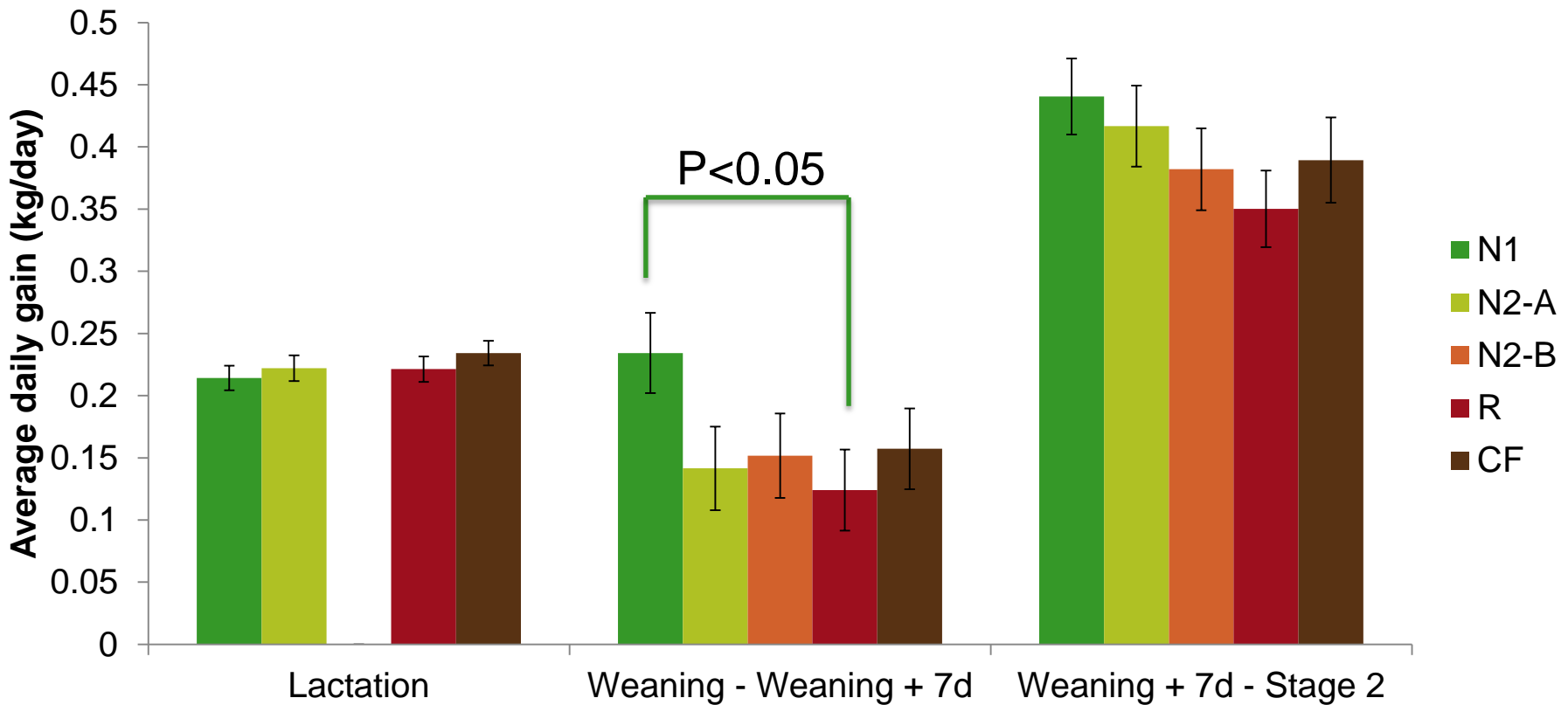
# Weights post-weaning

N1 = 1 day-old piglets reared by 21 d lactation nurse sow  
N2-A = 1 day-old piglets reared by 7 d lactation nurse sow  
N2-B = 7 days-old piglets reared by 21 d lactation nurse sow  
R = piglets remained with dam  
CF = cross-fostering



# Growth rates

N1 = 1 day-old piglets reared by 21 d lactation nurse sow  
N2-A = 1 day-old piglets reared by 7 d lactation nurse sow  
N2-B = 7 days-old piglets reared by 21 d lactation nurse sow  
R = piglets remained with dam  
CF = cross-fostering



# Conclusion

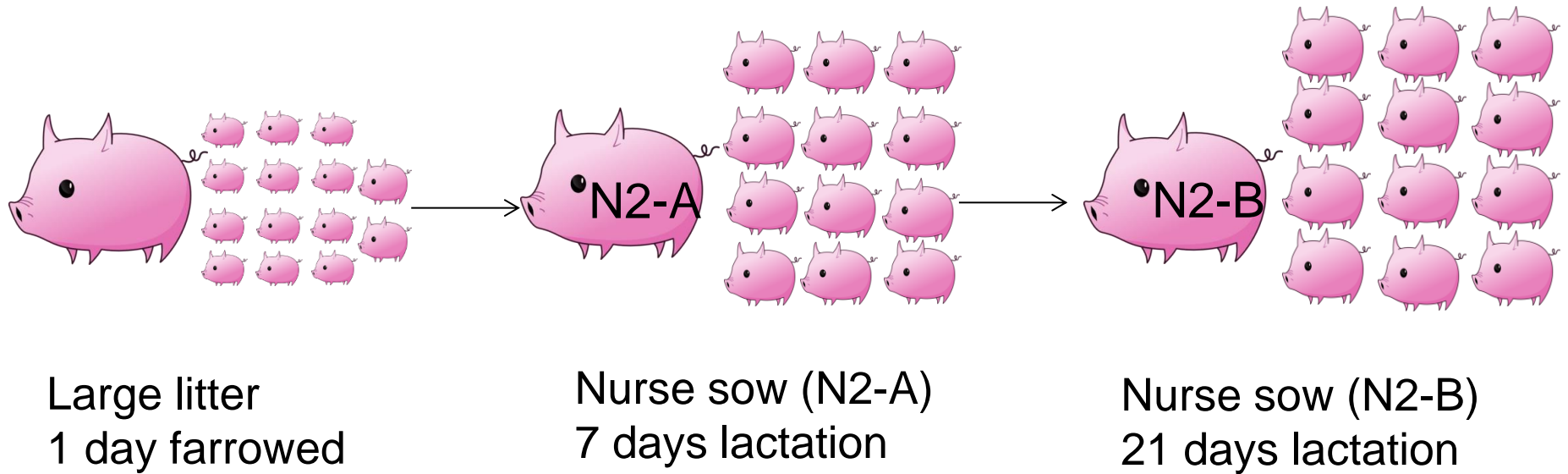
- Survival did not differ
- Newborn fostered onto nurse sow in late lactation (N1)
  - Numerically lower growth in lactation
  - Higher growth following weaning

# Artificial rearing

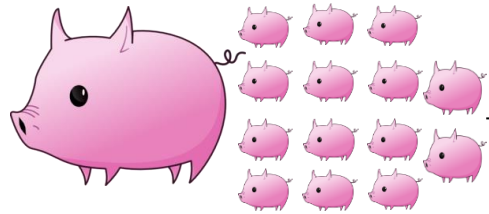


# Methods

## 2 step strategy



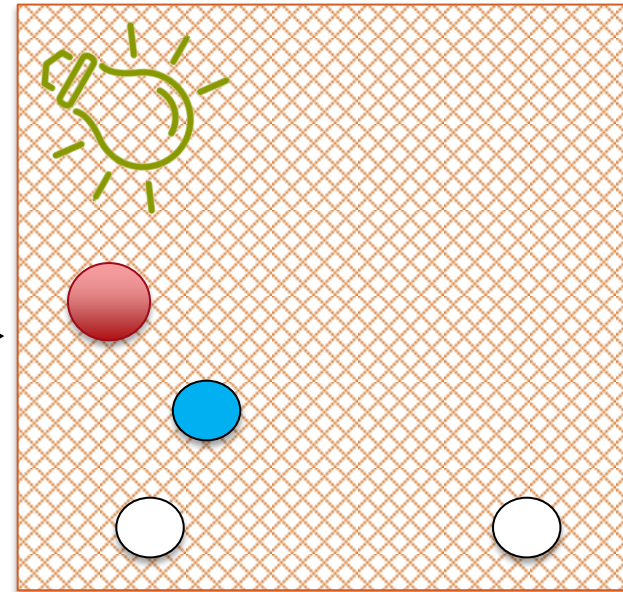
# Methods



Large litter  
1 day farrowed



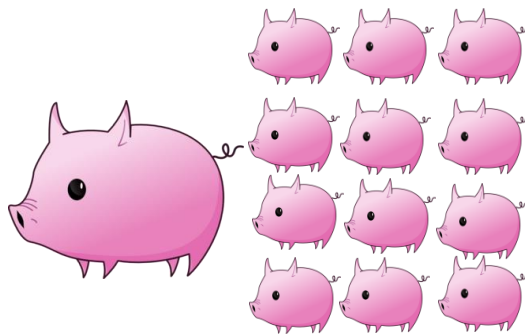
Nurse sow (N2-A)  
7 days lactation



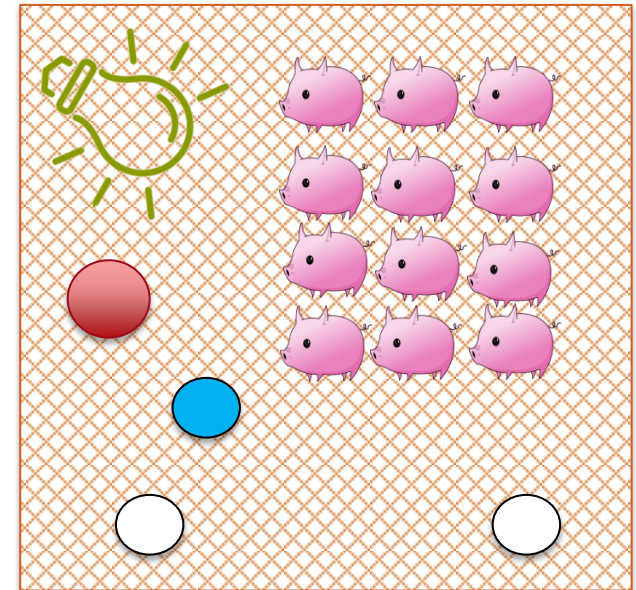


# Methods

Litter pairs recruited, same age/weight/size (12 piglets)



Versus



Sow reared (SR)

- Farrowing room
- 7 days to weaning

SR = 10 litters / 116 piglets

AR = 10 litters / 117 piglets

Artificially reared (AR)

- Milk replacer
- Separate room
- 7 days to weaning

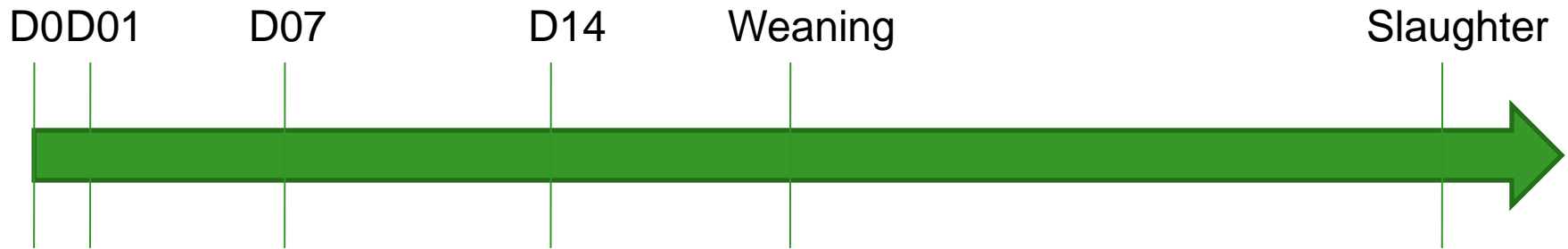
# Hypotheses

Artificially reared piglets should...

- Have higher survival
  - No risk of crushing
  - Lower risk of starvation
- Similar or higher growth
  - Growth check after transfer
  - Ad libitum milk replacer

# Data collection and analysis

## Weighing schedule



Transfer

## Statistical analysis

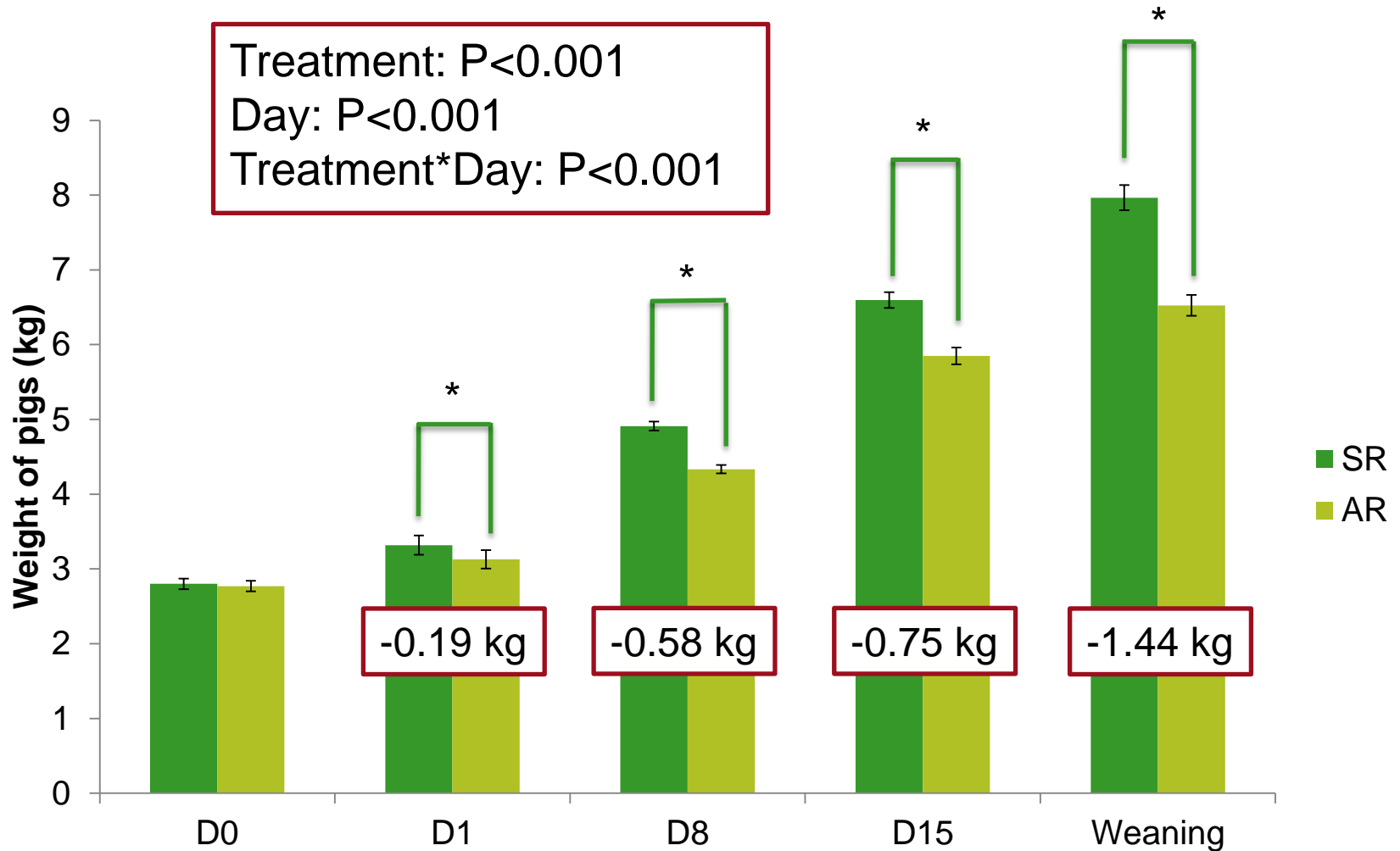
### General Linear Model

random effect of **sow** and **replicate**

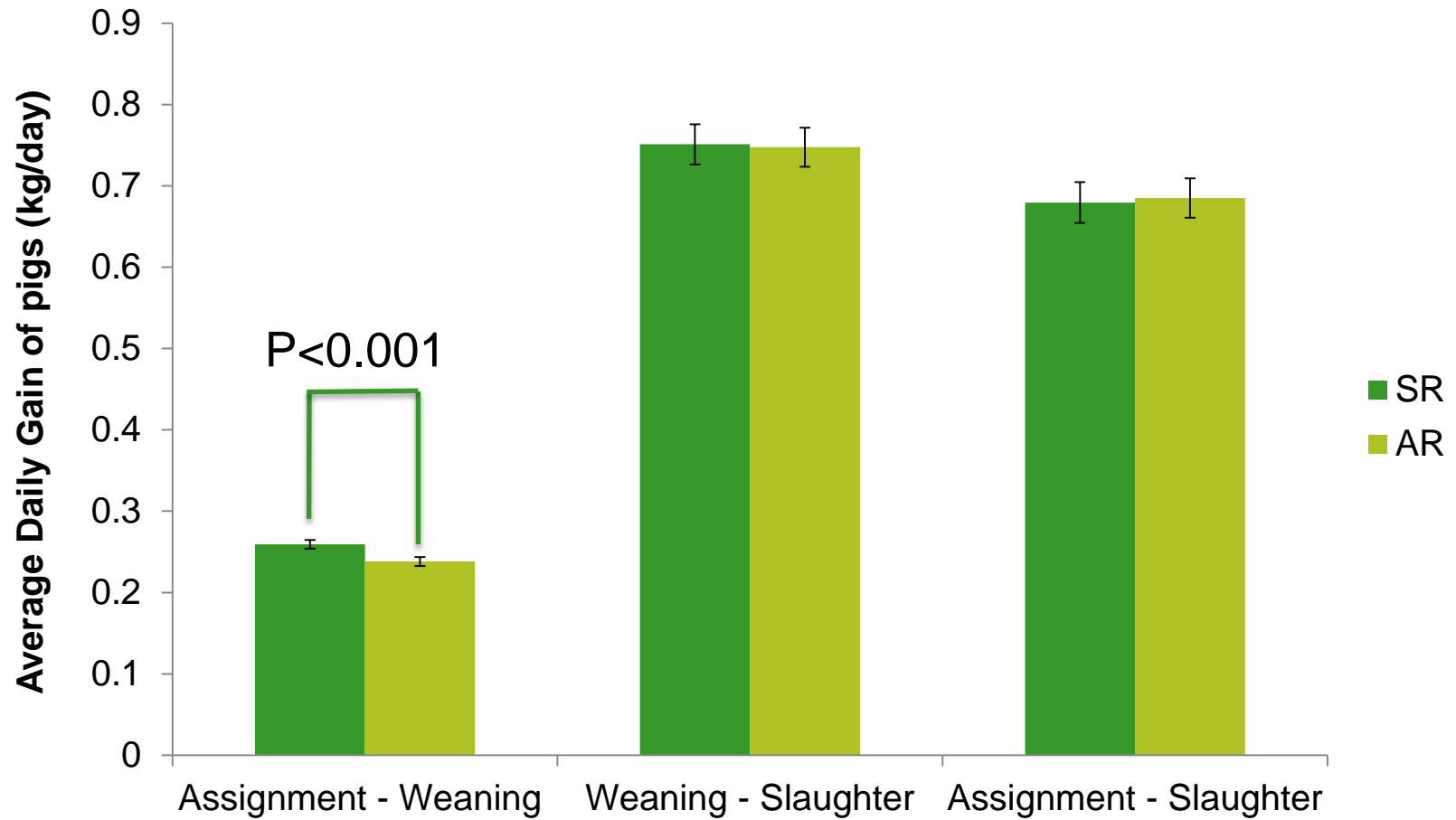
repeated effect of **day**

covariates: **transfer weight** and **age** (post-weaning data)

# Weights



# Growth rates



# Conclusion

- Survival not compromised
  - 7 days-old piglets
  - More checks in Rescue Deck room
- Growth check just after transfer
- Thrive after weaning



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# THANK YOU

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Research assistants: Sophie Verstraten, Sebastien Laboute and Clement Bezancon

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