



# **Shoulder ulcers in sows: causes of variation**

**Barbro.Mattsson@svenskapig.se**

**Emma Ivarsson, SLU**

**Nils Holmgren, SvDHV**

**Nils Lundeheim, SLU**

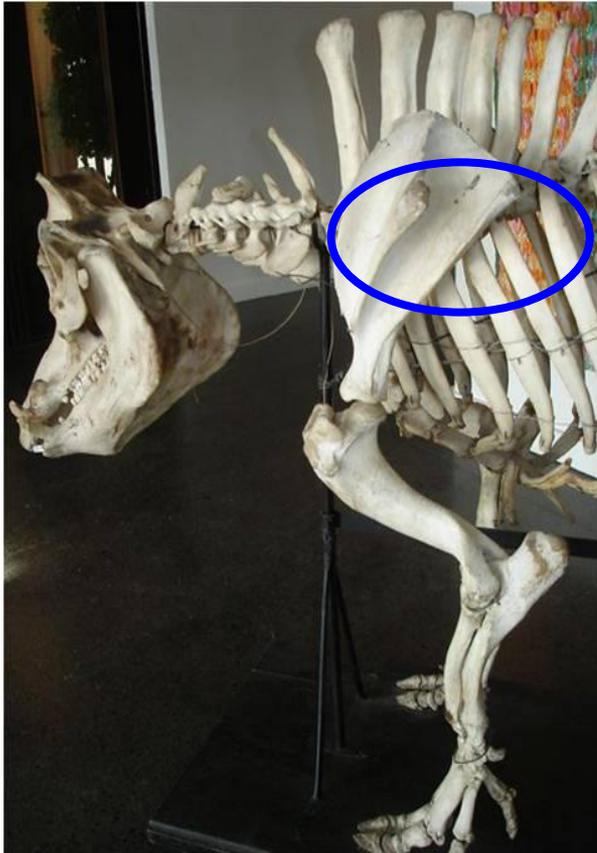
# Background



- **Shoulder ulcer in lactating sows appears to have increased in Sweden during the last years**
- **Demands on sows milk production has increased**

	<b>Year 1998</b>	<b>Year 2008</b>
<b>Piglet weaning-weight, kg</b>	<b>8,5</b>	<b>10</b>
<b>No. piglets weaned / litter</b>	<b>9,7</b>	<b>10,5</b>
<b>Est. milk prod. / sow and litter, kg</b>	<b>270</b>	<b>360</b>

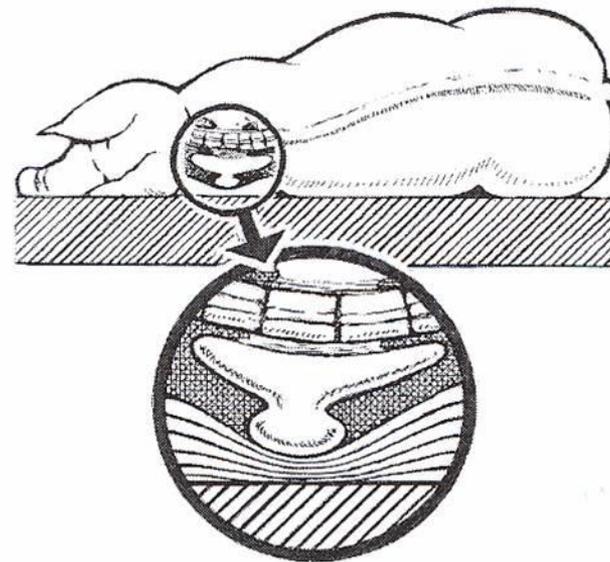
# Anatomy



Variation in high of the prominent tuber of the scapula measured at slaughter was 4 - 8 cm (105 sows)

# Shoulder ulcer

- Pressure against floor (and slatted floor) can cause insufficient blood flow and tissue death





# Registrations during the 4<sup>th</sup> lactating week in 60 Swedish piglet producing herds

- In total records on 2668 (L\*Y) sows
- **Ulcer score, 0 (free) – 4**

# Sow ulcer score, 0 (free) – 4





# Registrations during the 4<sup>th</sup> lactating week in 60 Swedish piglet producing herds

- In total records on 2668 (L\*Y) sows
- Ulcer score, 0 (free) – 4
- **Body condition, 1 - 4 (fat)**

# Sow body condition, class 1-4



**Class 1**  
**Skinny**



**Class 2**  
**Thin**



**Class 3**  
**Normal**



**Class 4**  
**Fat**

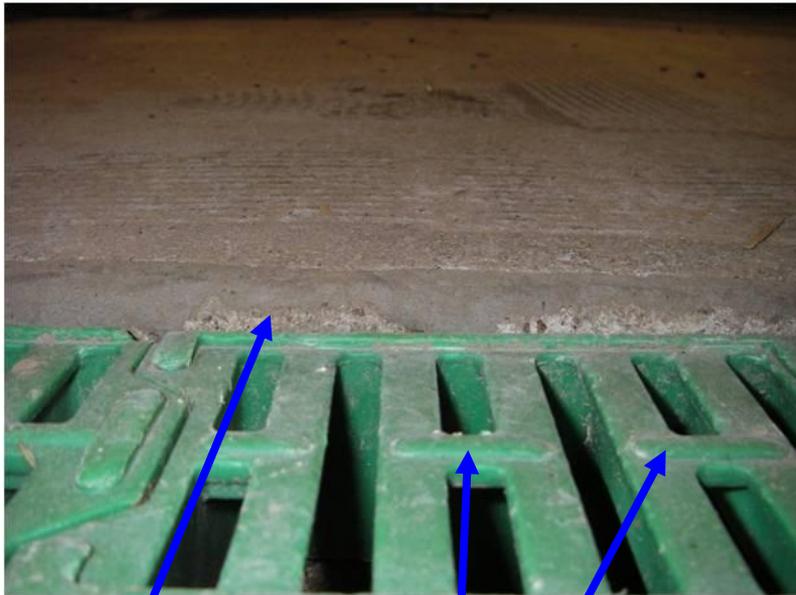


# Registrations during the 4<sup>th</sup> lactating week in 60 Swedish piglet producing herds

- In total records on 2668 (L\*Y) sows
- Ulcer score, 0 (free) – 4
- Body condition, 1 - 4 (fat)
- Litter size
- Parity number
- MMA
- Type of slatted floor (concrete, plastic or cast iron)

# Two common different types of slatted floor

Plastic



Edge between solid concrete lying area and slatted floor area. Edges on the slatted floor surface



Cast iron

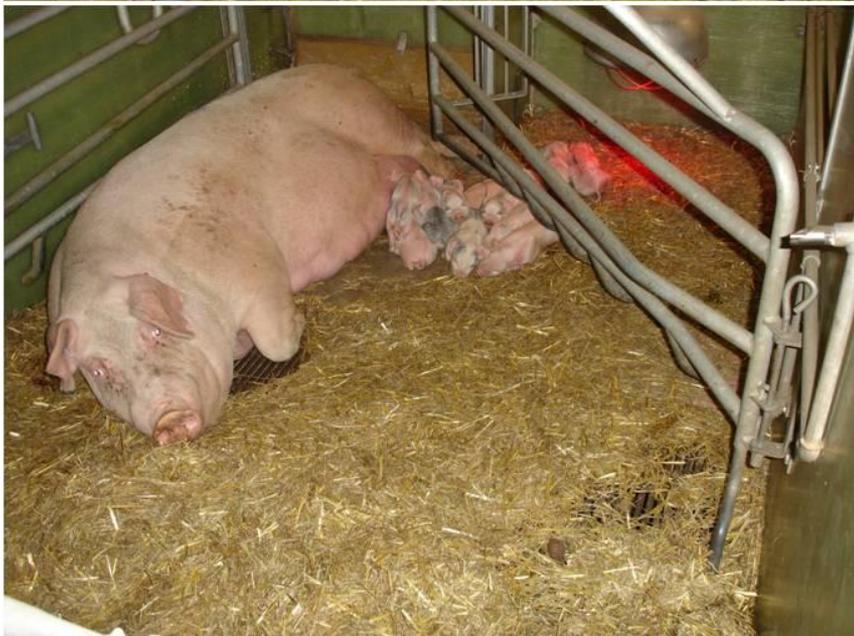


# Registrations during the 4<sup>th</sup> lactating week in 60 Swedish piglet producing herds

- In total records on 2668 (L\*Y) sows
- Ulcer score, 0 (free) – 4
- Body condition, 1 - 4 (fat)
- Litter size
- Parity number
- MMA
- Type of slatted floor (concrete, plastic or cast iron)
- For the sow available solid concrete floor area, m<sup>2</sup>



**Swedish  
farrowing pen:  
Min. 6 m<sup>2</sup> with  
max. 3 m<sup>2</sup> slatted floor**



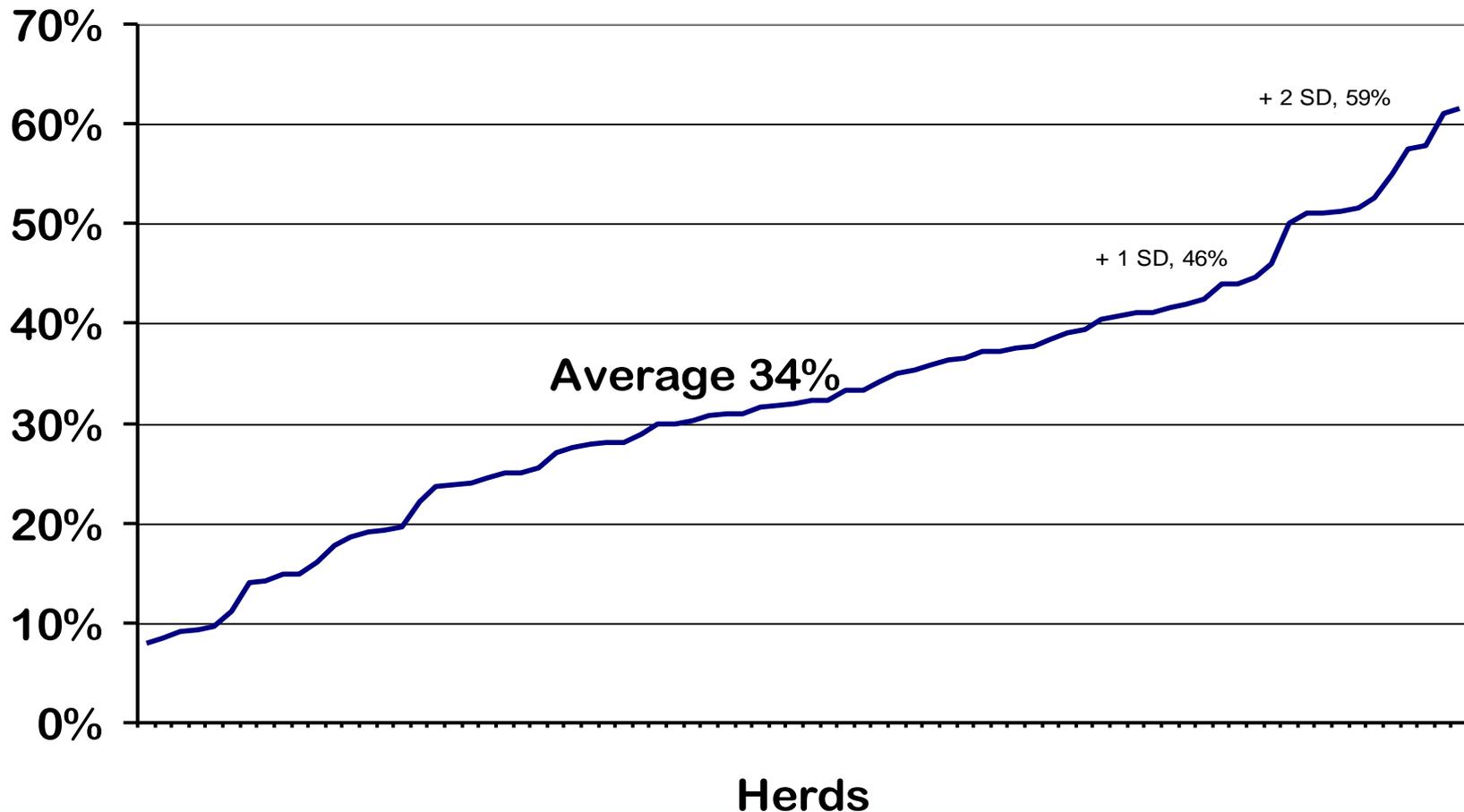
# Prevalence, shoulder ulcer



Ulcer score	2668 sows, %
0	65,8
1	13,6
2	13,6
3	5,6
4	1,4



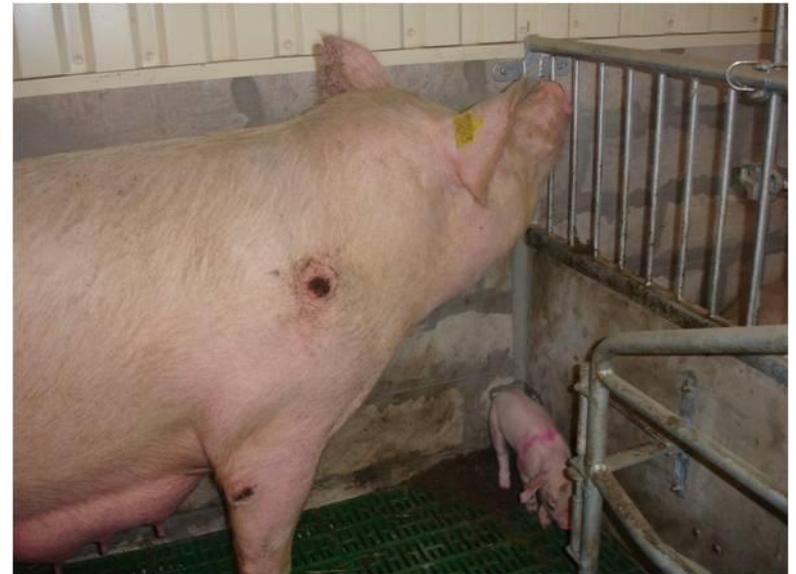
# Prevalence of shoulder ulcers all classes, 2668 sows in 60 herds



# Prevalence, shoulder ulcer



Ulcer score	Left side, %	Right side, %
1-2	16	21
3-4	3	5



# Risk factors for shoulder ulcer



Risk factor	Odds ratio	P-value
<b>Body condition</b>		
3-4	1	
1-2	4,2	<0,0001
<b>MMA</b>		
No	1	<0,001
Yes	2,0	

# Risk factors for shoulder ulcer



Risk factor	Odds ratio	P-value
Slatted floor		
Concrete	1	
Cast iron	1,9	es
Slatted floor		
Concrete	1	
Plastic	2,1	<0,02
Plastic and edges	3,1	<0,02

# Risk factors for shoulder ulcer



Risk factor	Odds ratio	P-value
For the sow available solid concrete floor area, m <sup>2</sup> >2,3 m <sup>2</sup> <1,5 m <sup>2</sup>	1 1,4	<0,05

# Summery



- Feed sows for good condition both before and after farrowing
- Healthy and active sows
- Solid concrete floor is to be preferred as laying area
- Avoid edges on laying area



Thank You!

