

The EUROP carcass grading system cannot predict the eating quality of beef

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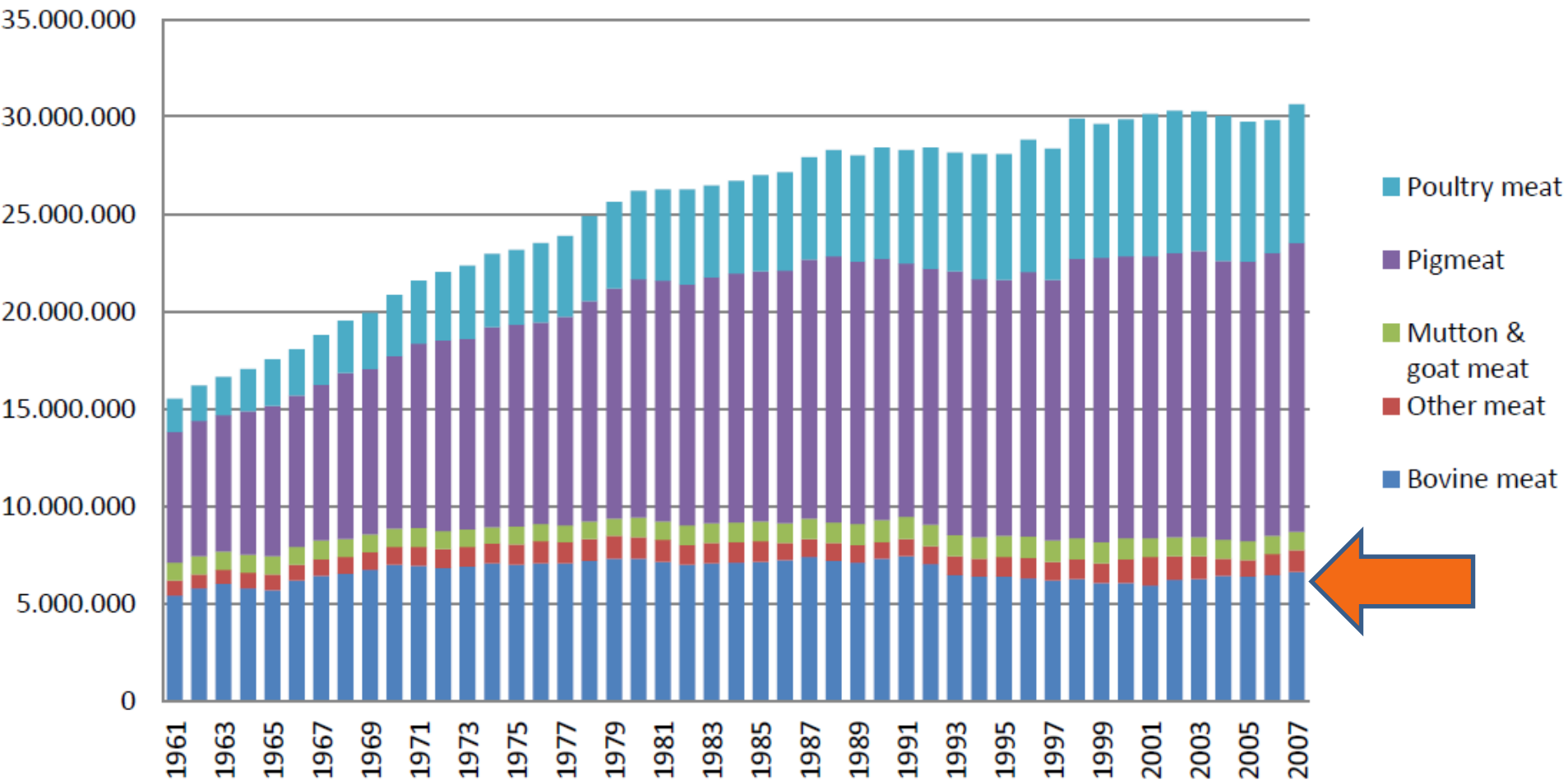


Outline

- Importance of Eating Quality
- EUROP carcass grading system
- Analysis to assess EUROP vs Consumer Eating Quality
- Demonstrate no association

Decreased market share of beef in the European market

Meat supply for group of 8 EU countries - Germany, France, Italy, Spain, UK, Netherlands, Hungary, Finland - in tonnes



Which is better?




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European Carcass Classification

Fatness score


Conformation score

	I	2	3	4L	4H	5L	5H
E							
U ⁺							
U							
R							
O ⁺							
O							
P ⁺							
P							

European Carcass Classification

Fatness score

Conformation score

	1	2	3	4L	4H	5L	5H
E							
U+							
U							
R							
O+							
o							
P+							
P							

Increasing Lean Meat Yield decreases IMF



Increasing Yield
Decreasing IMF

IMF Improves Eating Quality

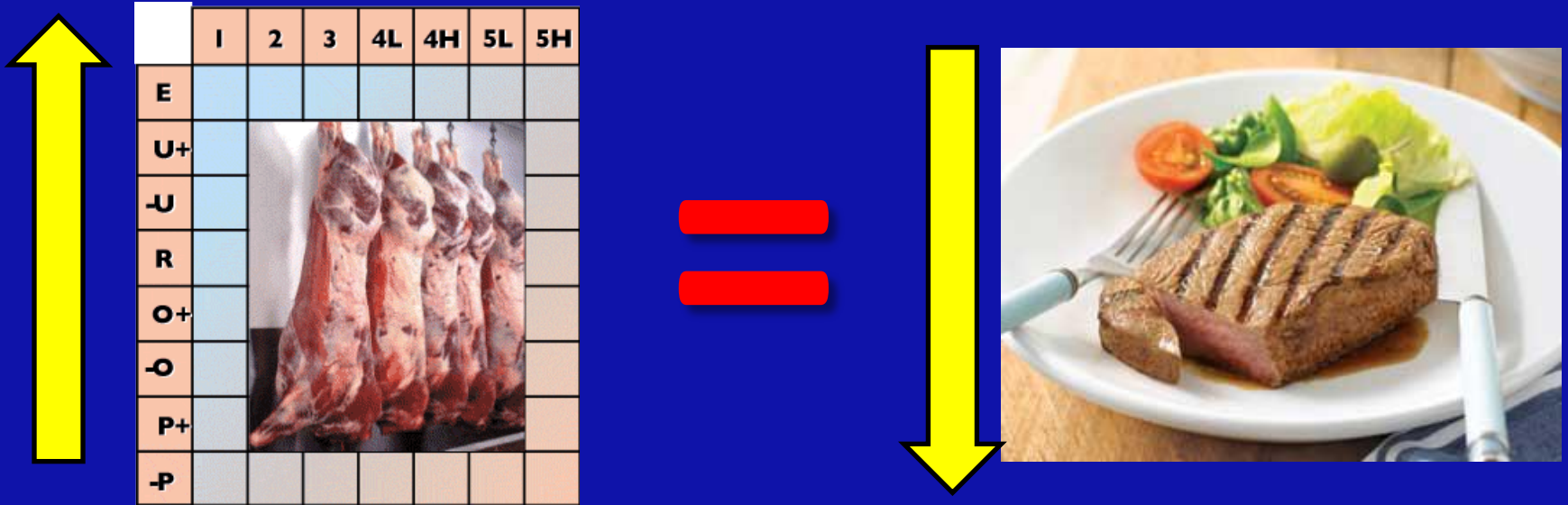


Increasing sensory scores

Hypothesis

Hypothesis

- EUROP score will negatively correlate with eating quality



Experimental Design

Design

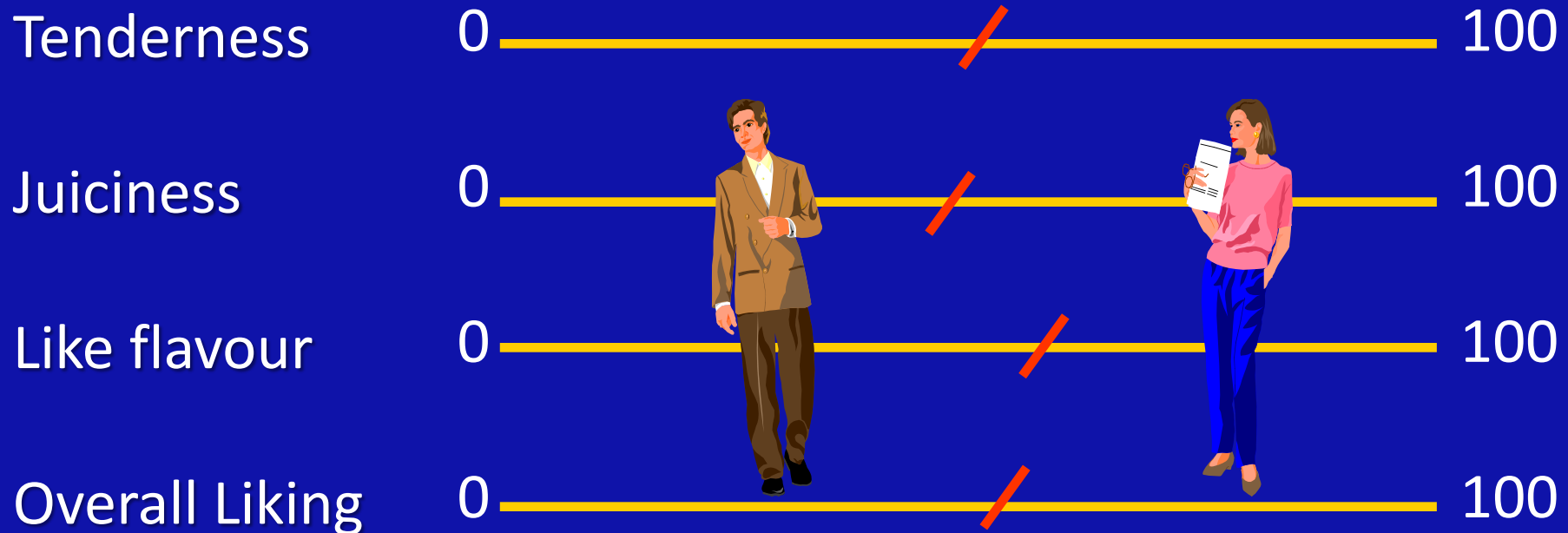
- 100 carcasses
 - Cows and Young Bulls
 - Polish and French Cattle and Consumers
 - EUROP Score Range E- to P+
 - 7 Cuts
 - Oysterblade, Tenderloin, Outside, Rump, Topside, Striploin, knuckle

Variable	N	Mean	Std Dev	Minimum	Maximum
USoss	100	300.3	163.05	120	590
UMB	100	341.8	154.76	100	780
CarcWt	100	330.4	49.97	202	474.8

Taste Panels



Untrained Consumer taste panels



MQ4

Tenderness x 0.3

+

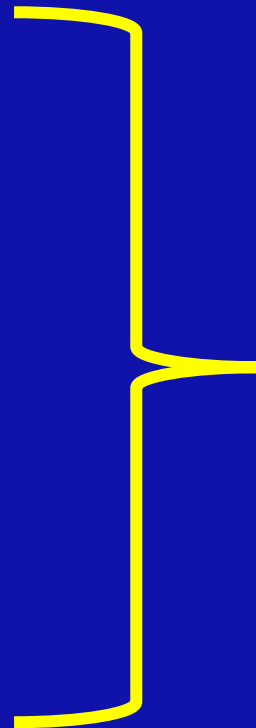
Juiciness x 0.1

+

Flavour x 0.3

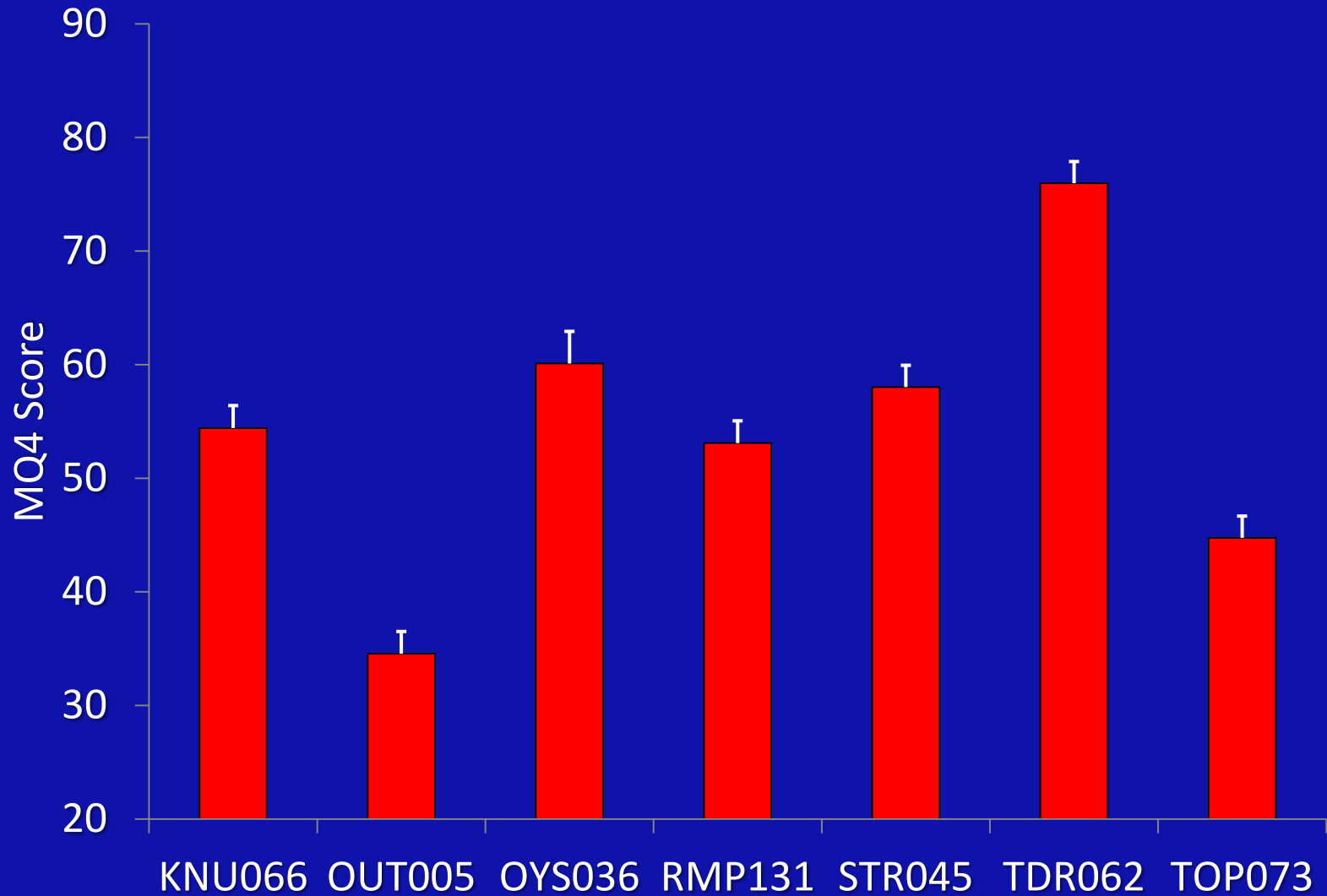
+

Overall Liking x 0.3



MQ4 score

Average MQ4 Score for each cut

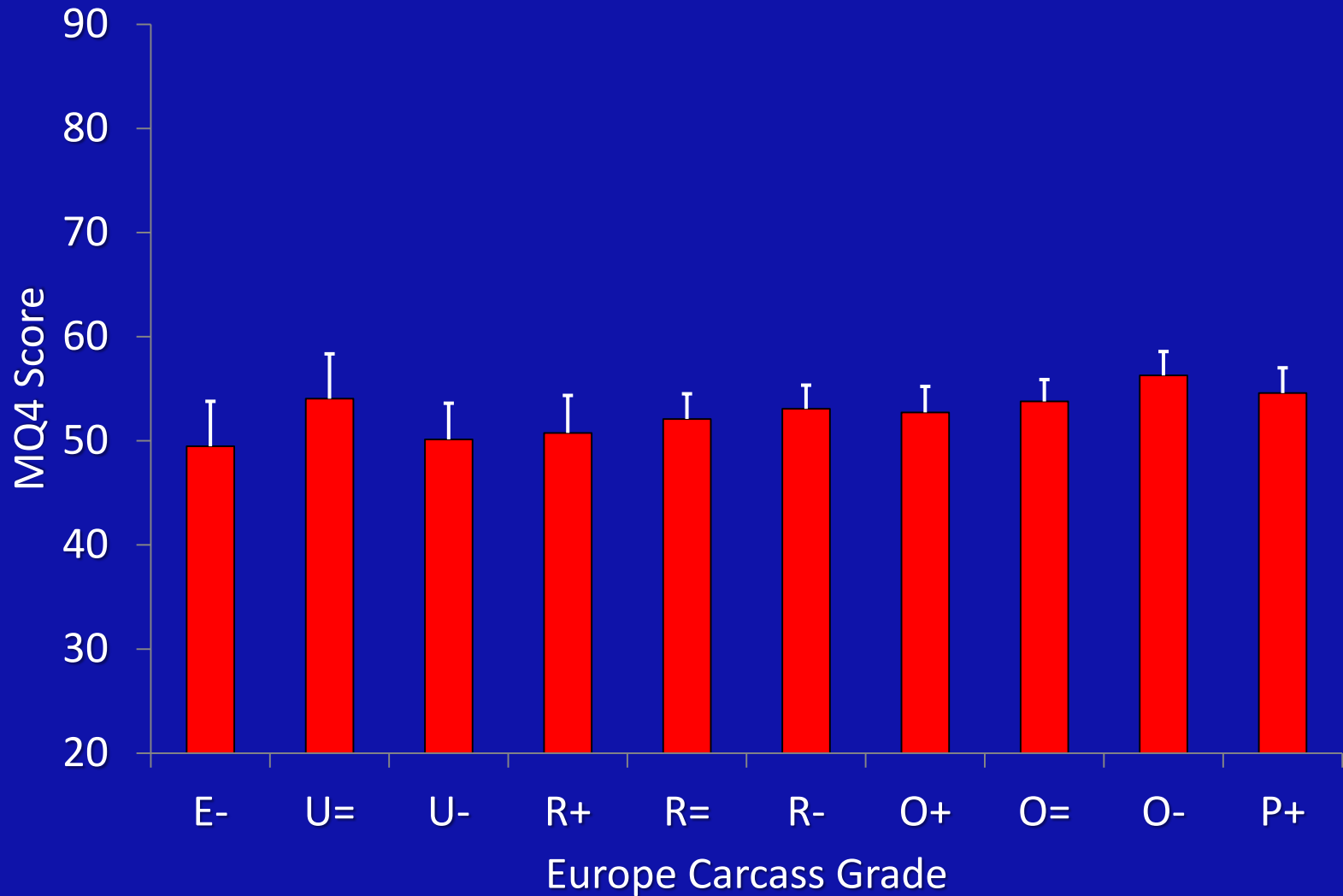


Statistical Analysis

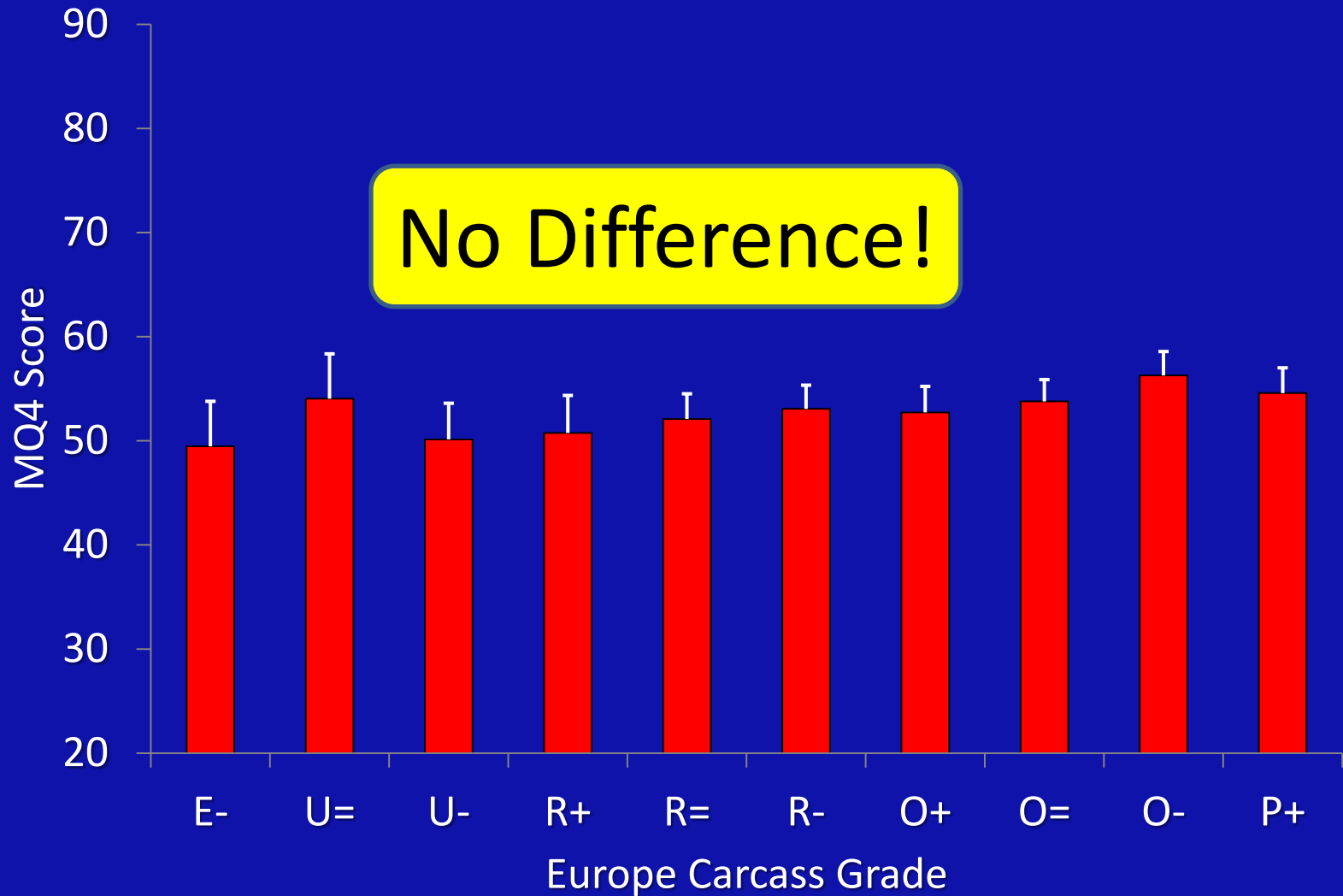
- Linear mixed effects model
 - Base model
 - Source Country
 - Consumer Country
 - Gender
 - Cut
 - Additional covariates tested
 - EUROP score
 - USA Ossification score
 - USA Marbling score
 - Carcass Weight

Results

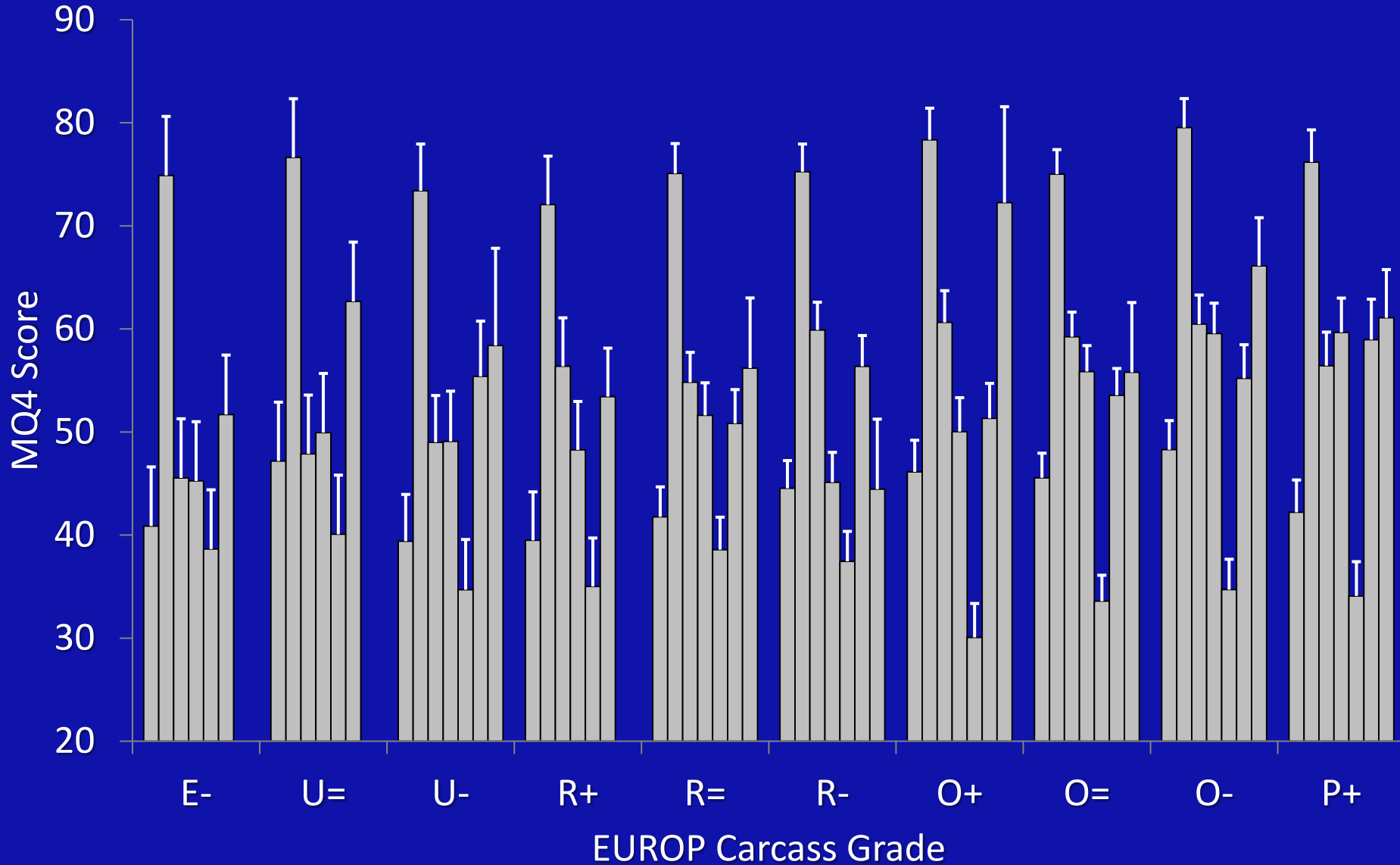
The MQ4 score and EUROP Grade



The MQ4 score and EUROP Grade

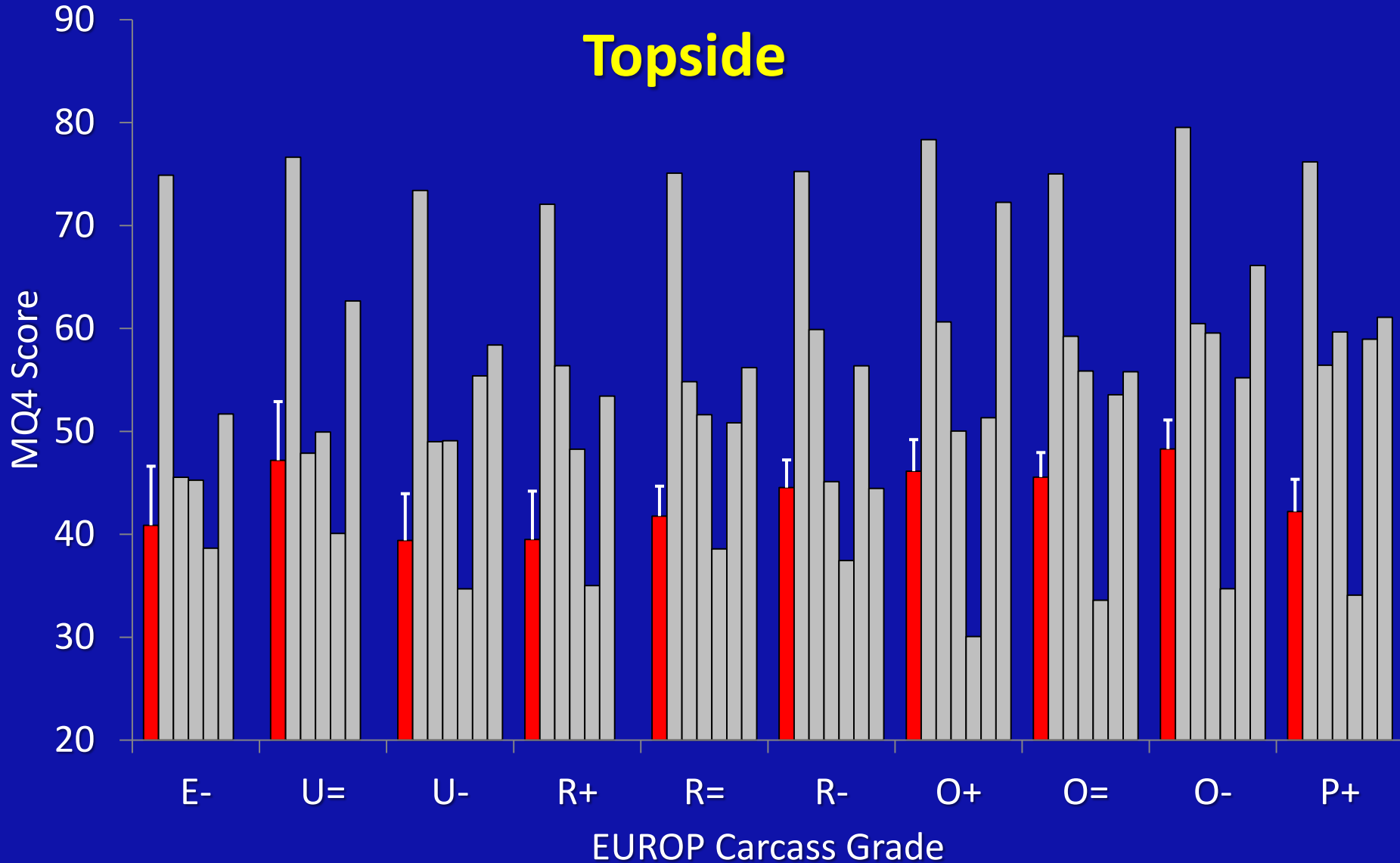


MQ4 score and EUROP Grade



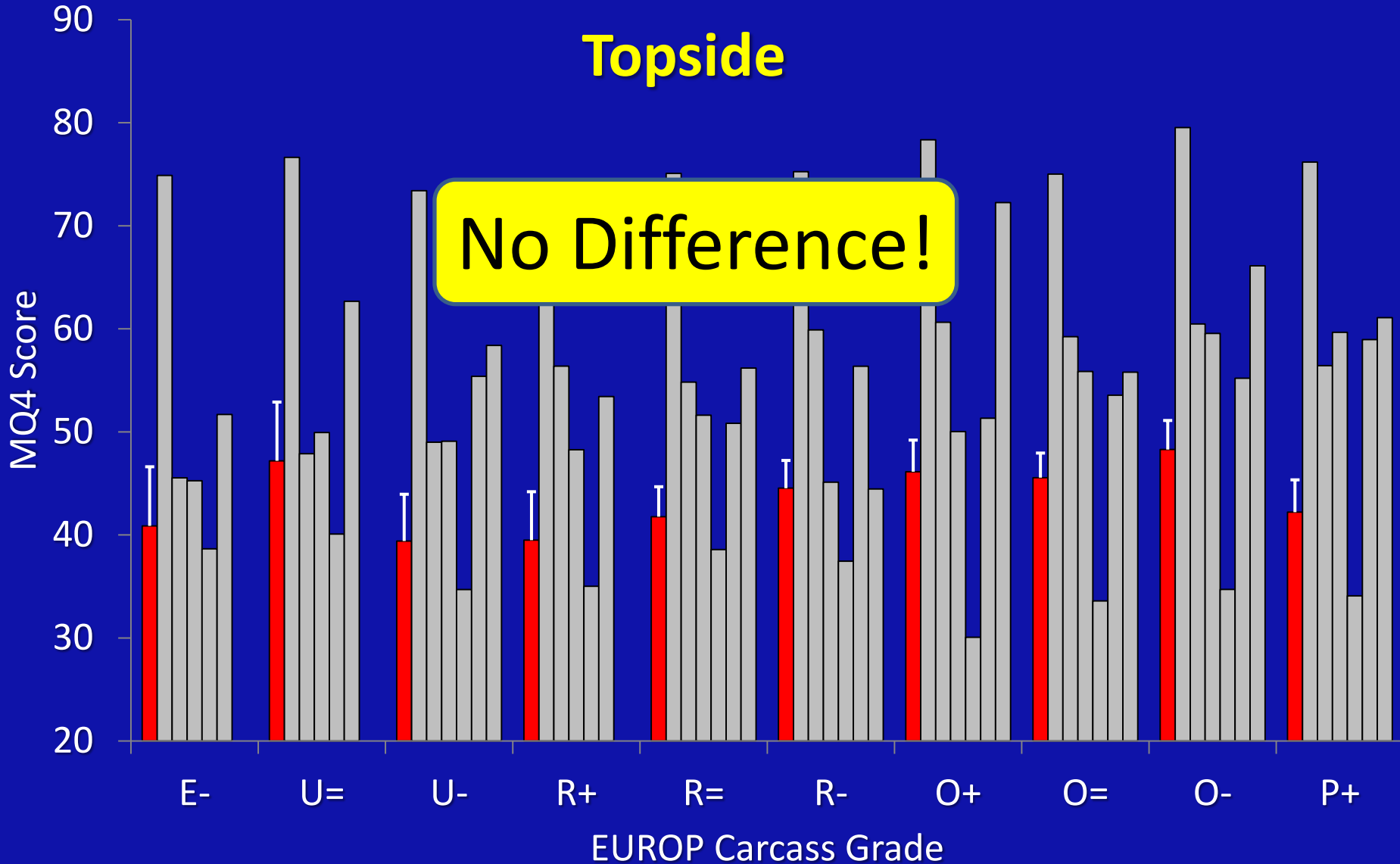
MQ4 score and EUROP Grade

Topside

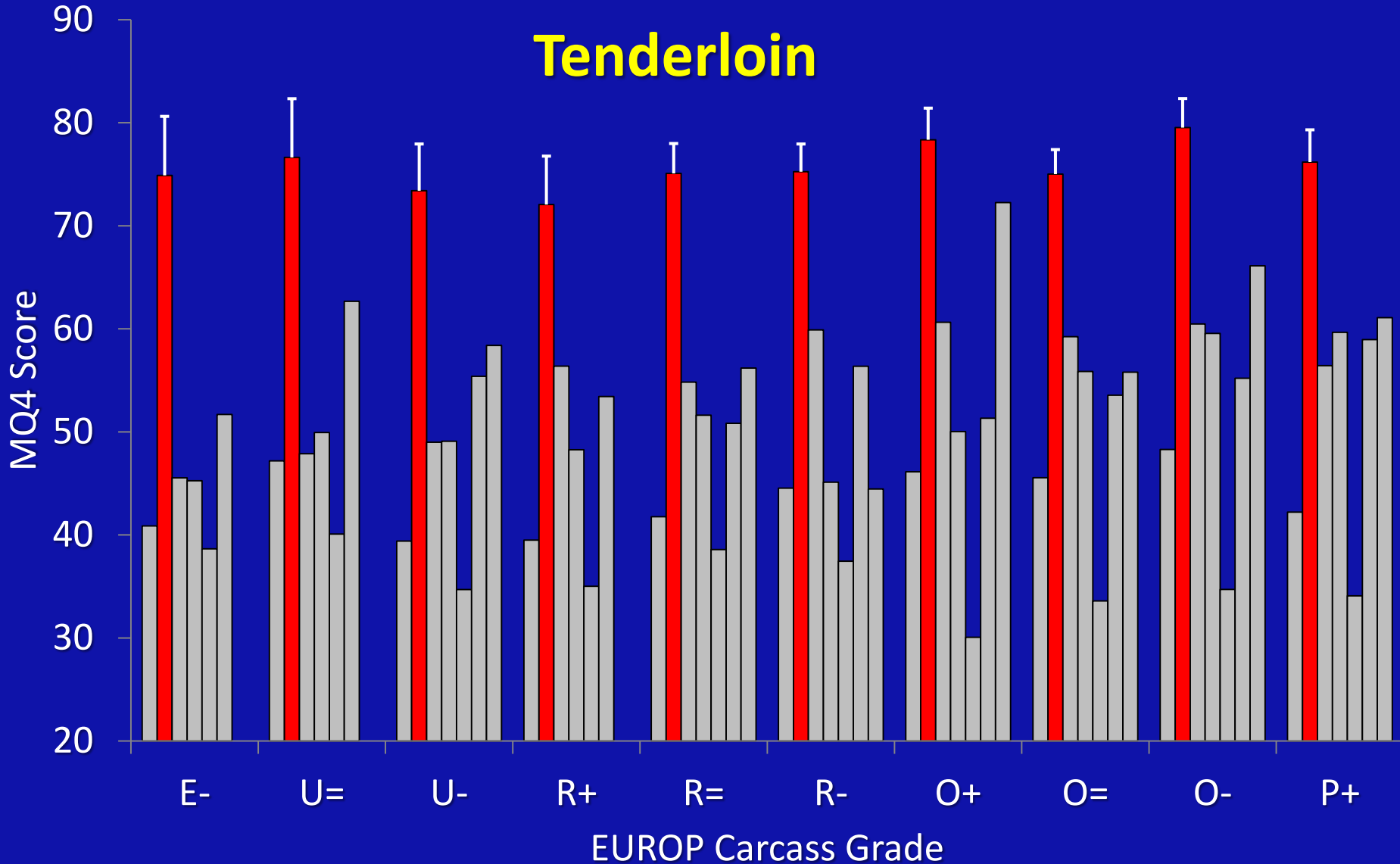


MQ4 score and EUROP Grade

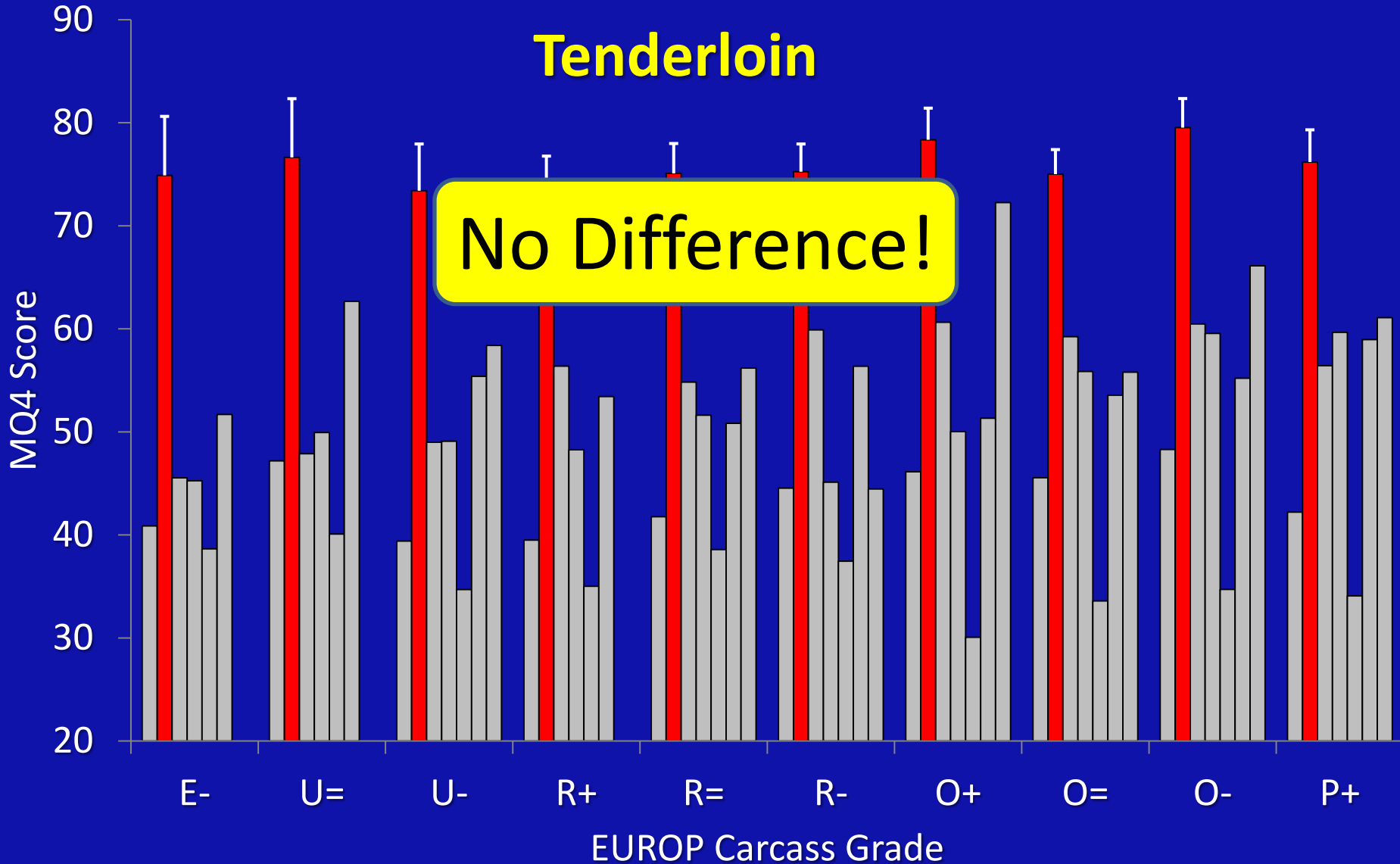
Topside



MQ4 score and EUROP Grade

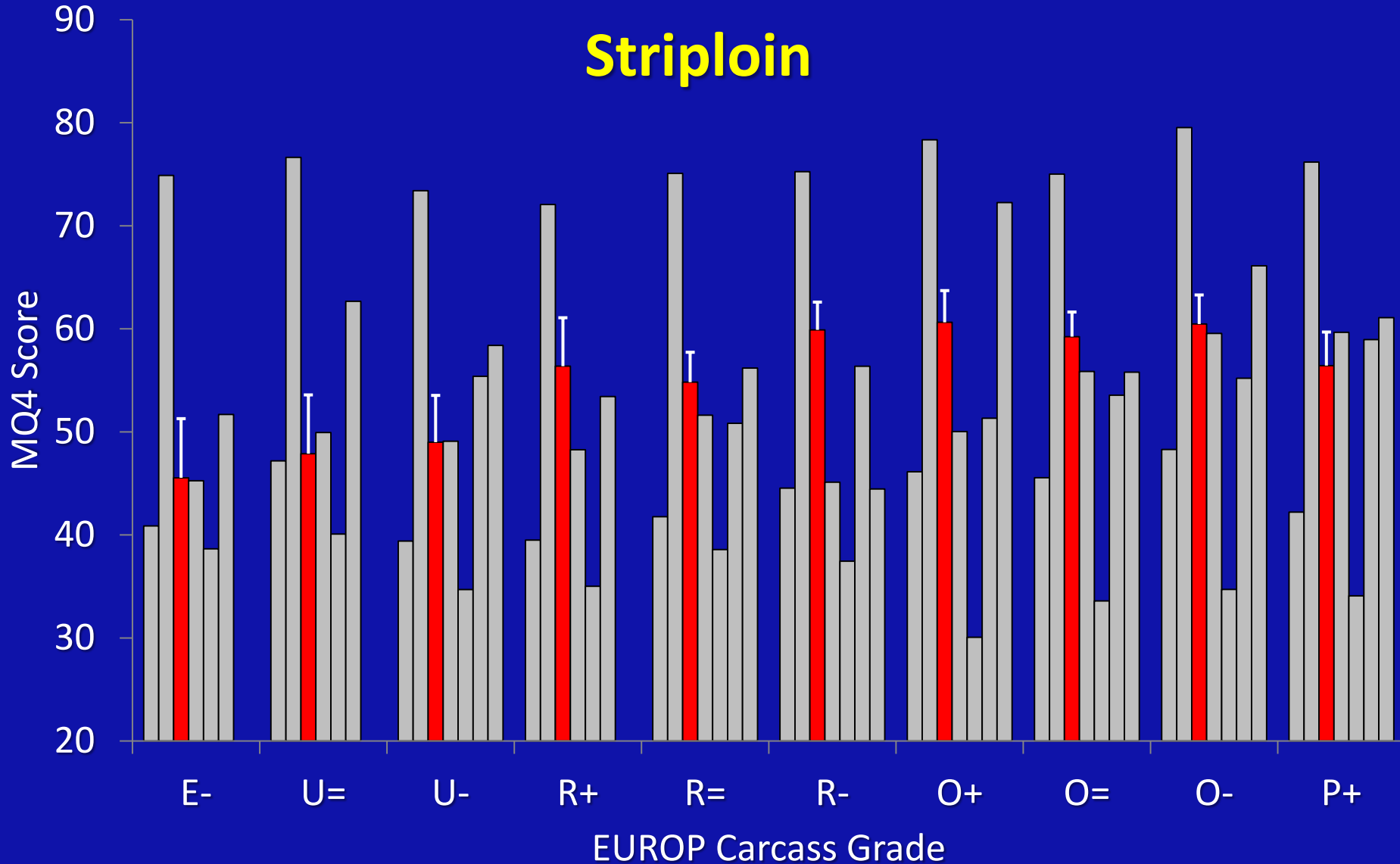


MQ4 score and EUROP Grade



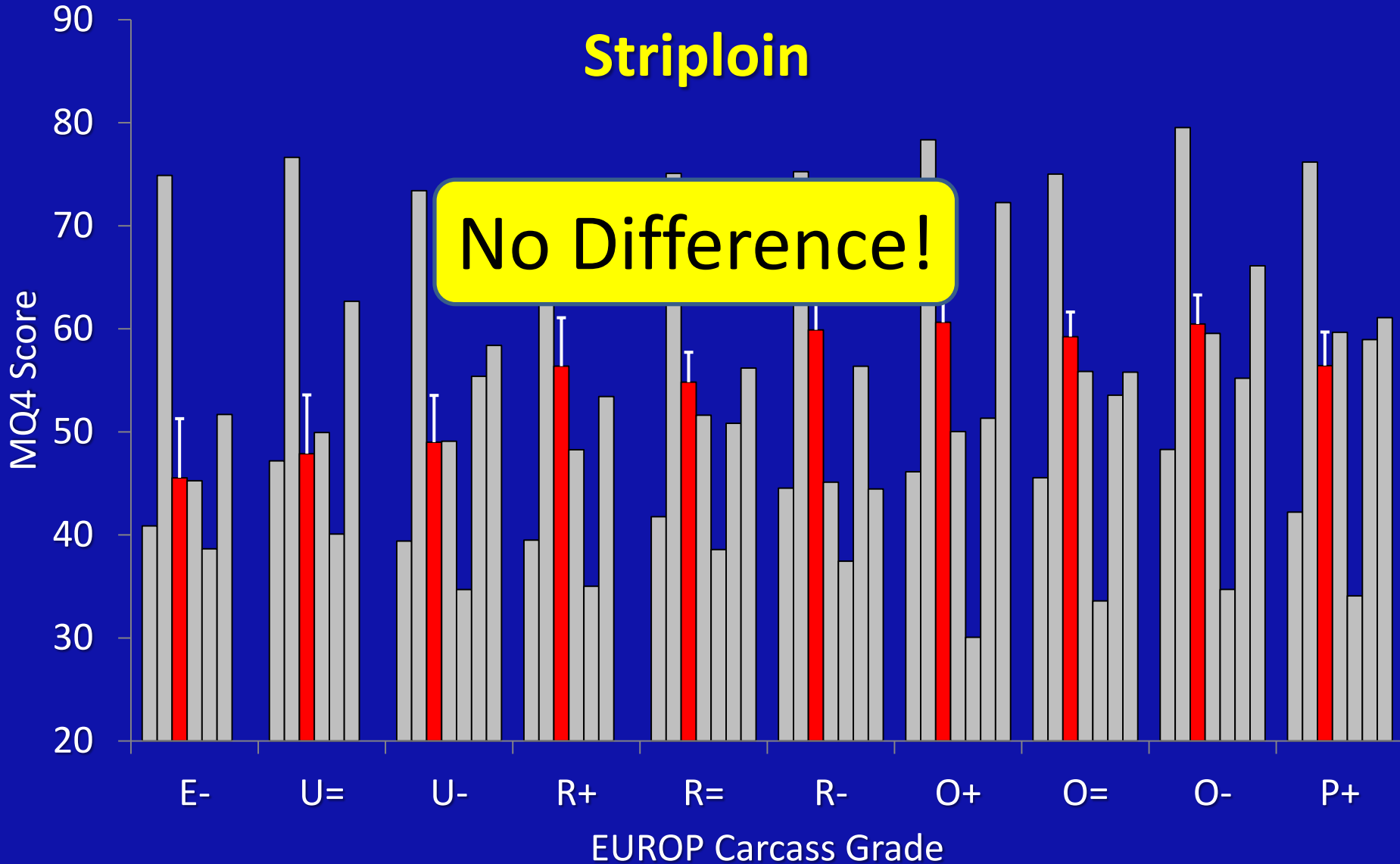
MQ4 score and EUROP Grade

Striploin



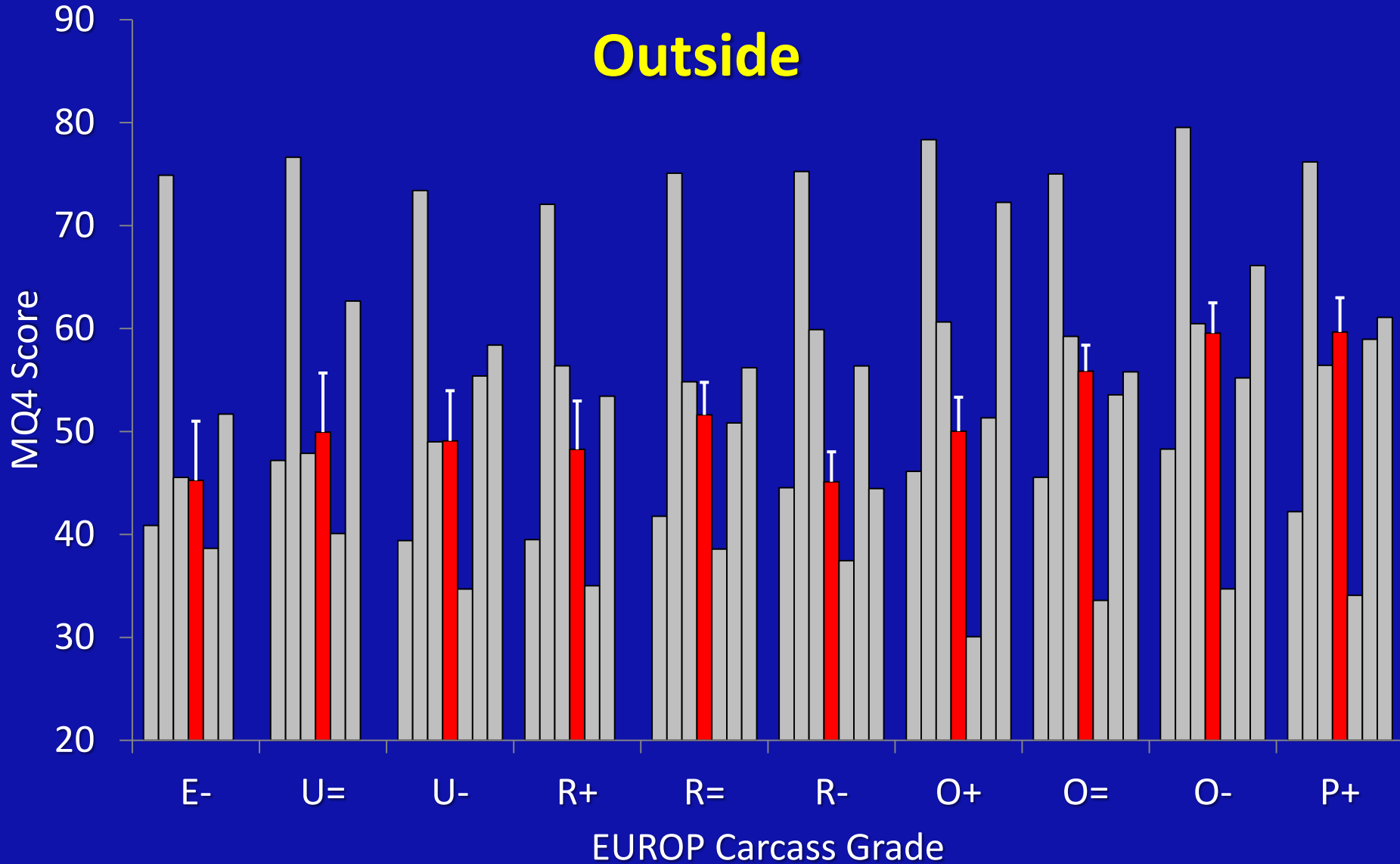
MQ4 score and EUROP Grade

Striploin



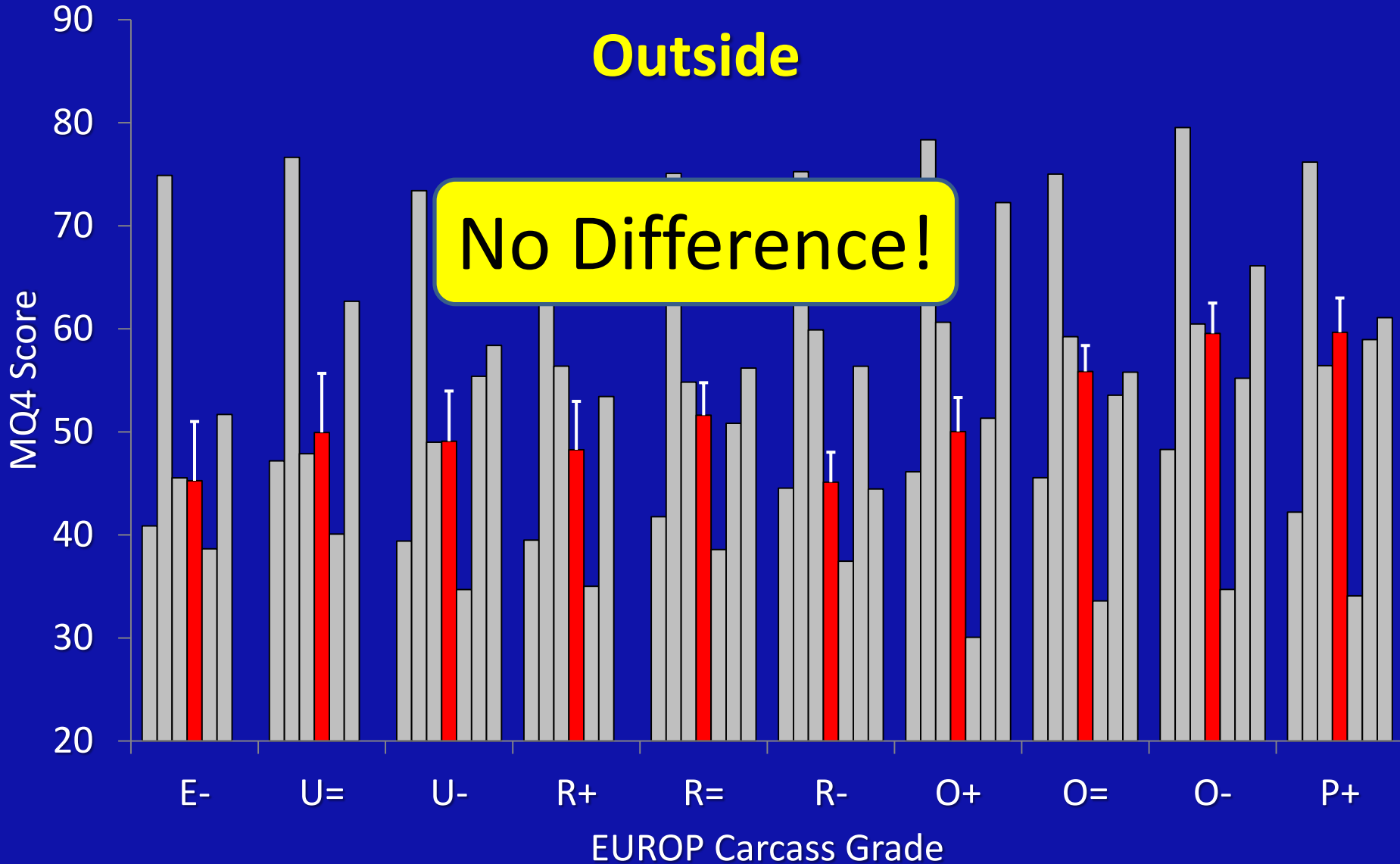
MQ4 score and EUROP Grade

Outside



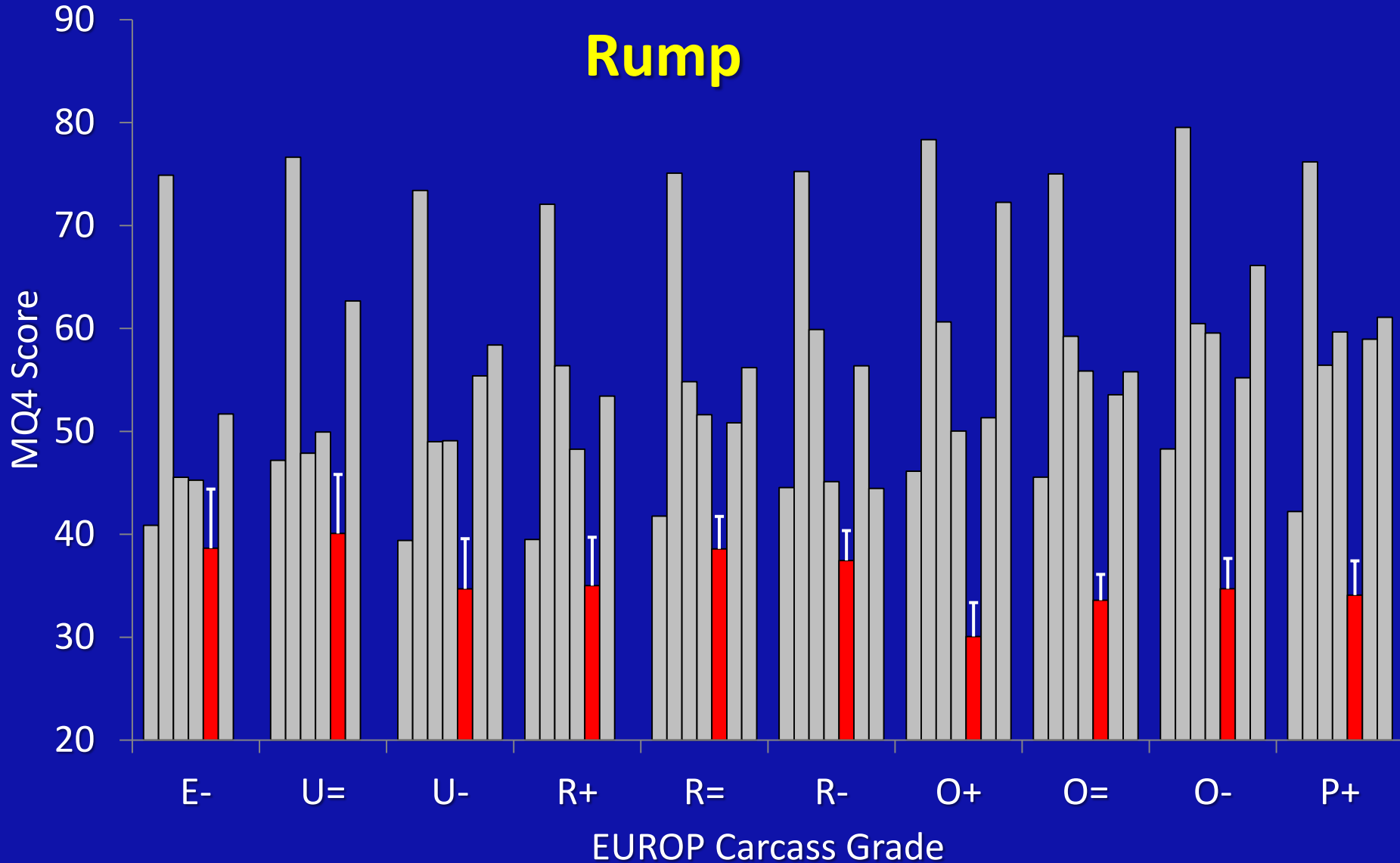
MQ4 score and EUROP Grade

Outside

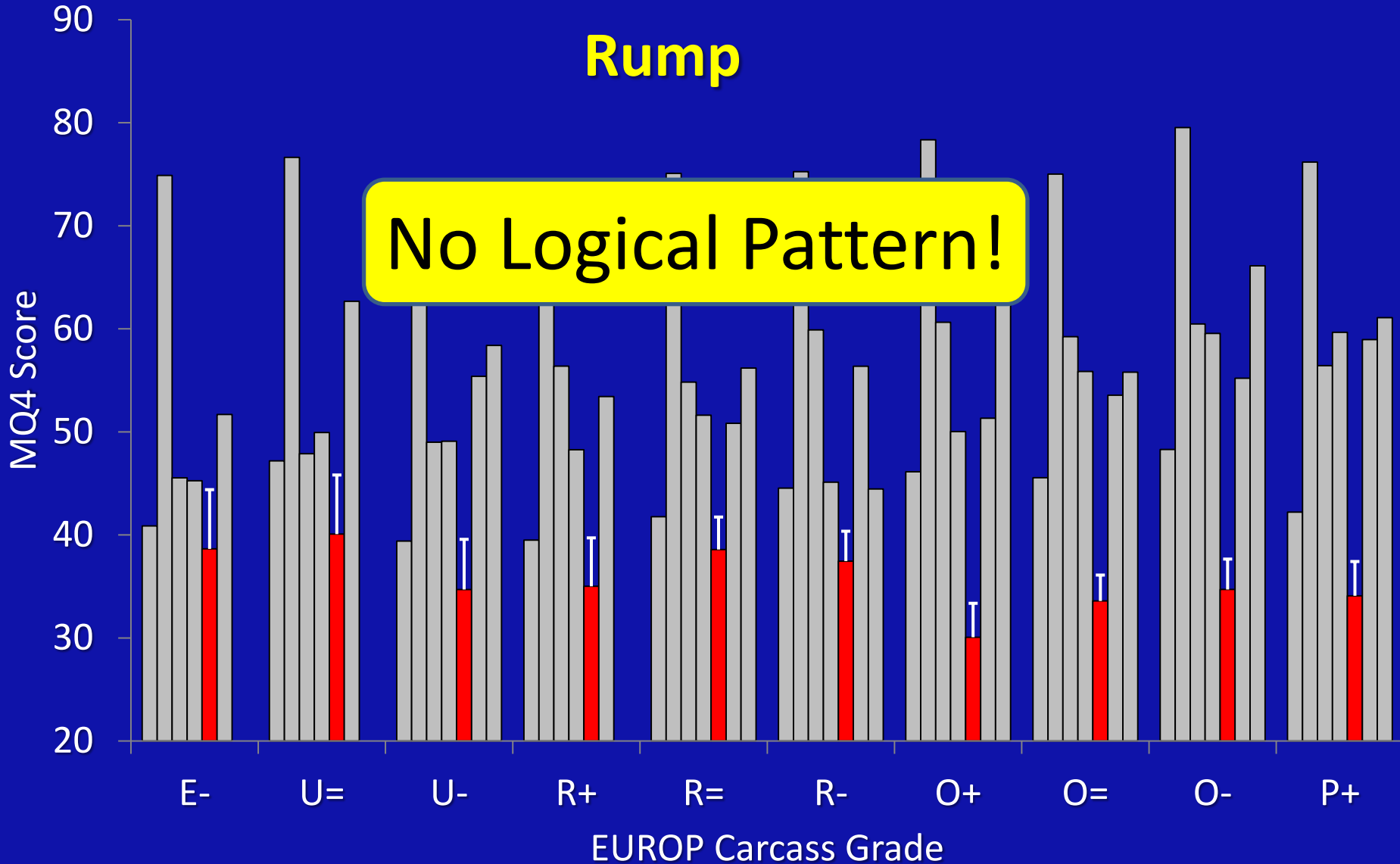


MQ4 score and EUROP Grade

Rump

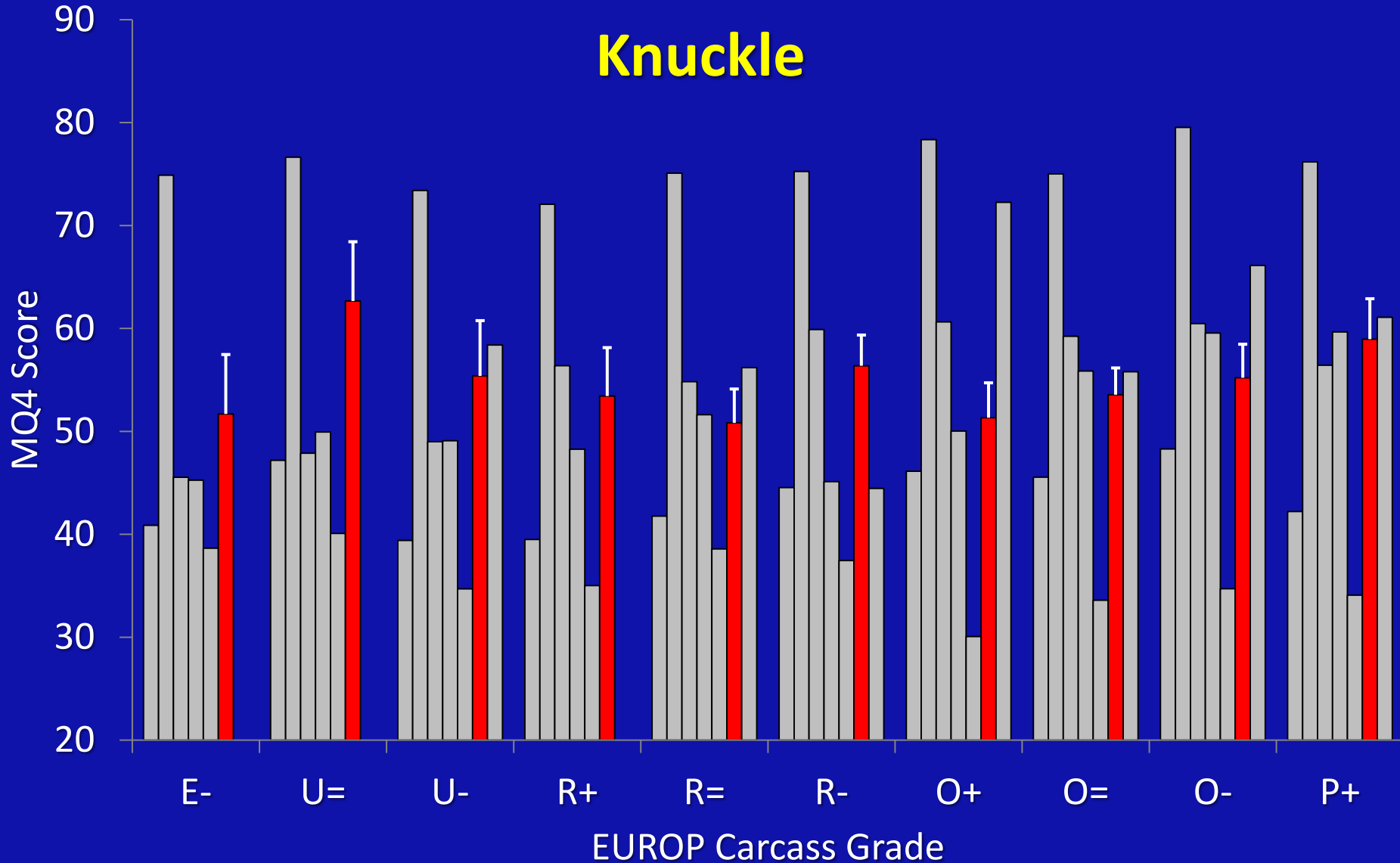


MQ4 score and EUROP Grade



MQ4 score and EUROP Grade

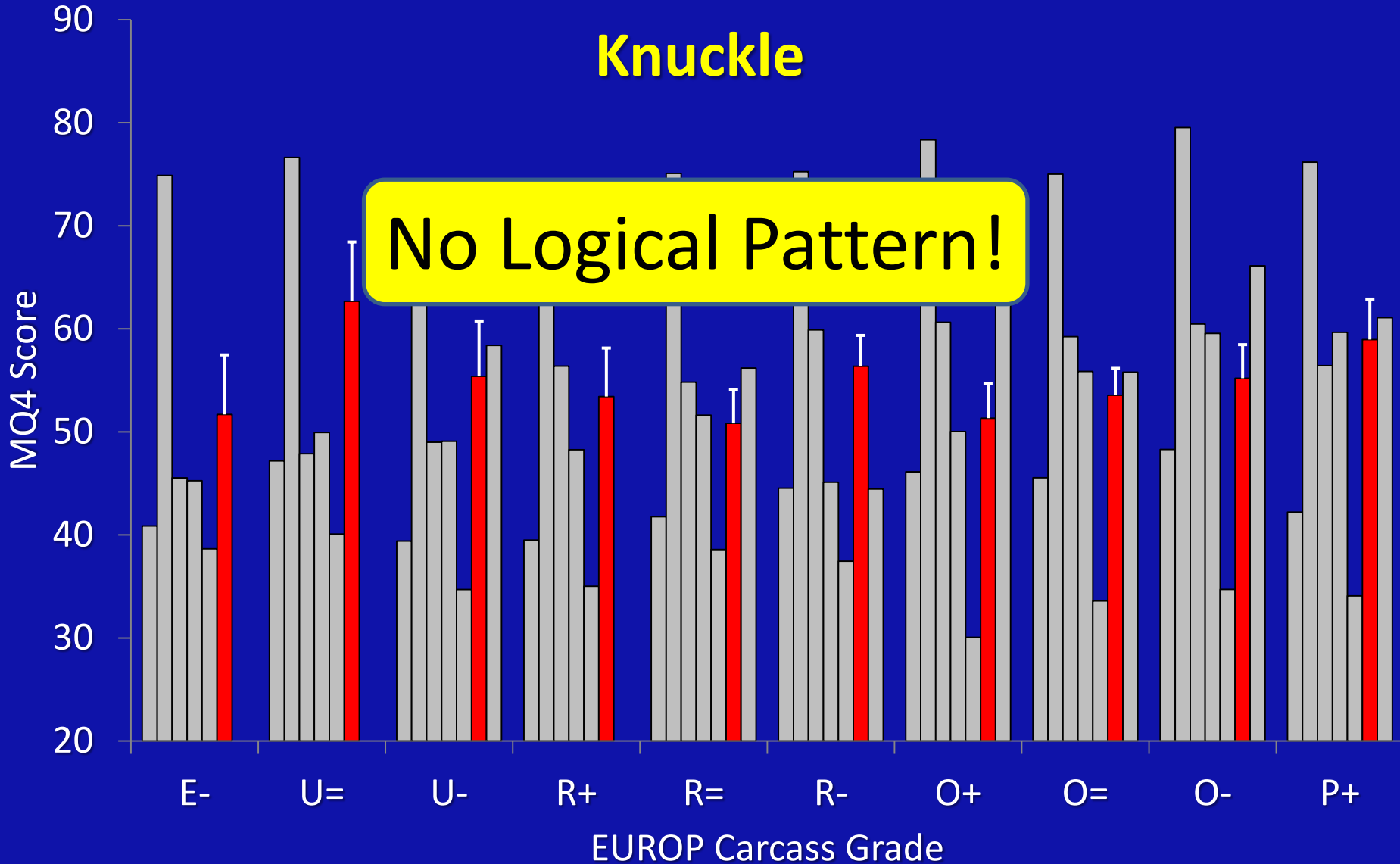
Knuckle



MQ4 score and EUROP Grade

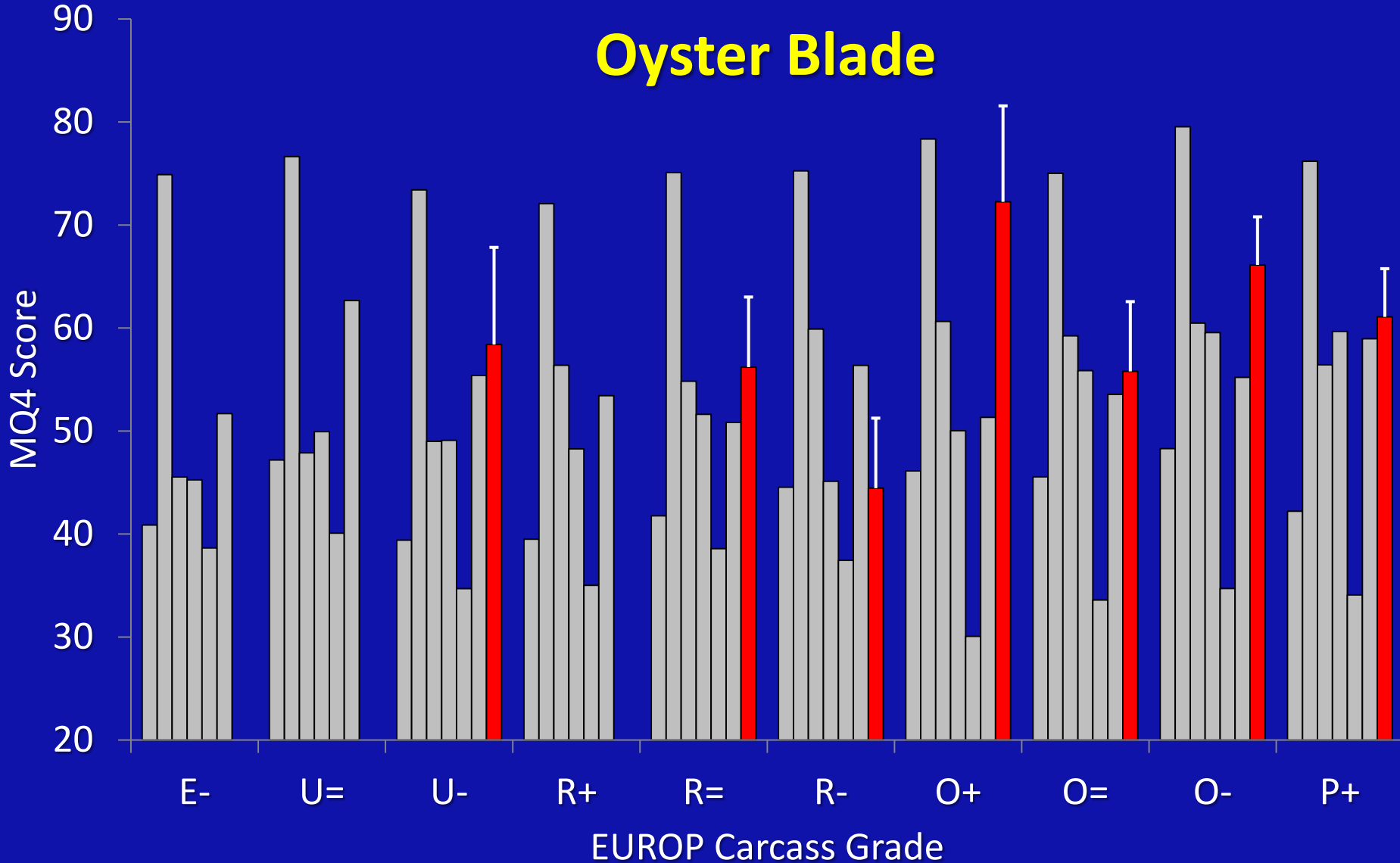
Knuckle

No Logical Pattern!



MQ4 score and EUROP Grade

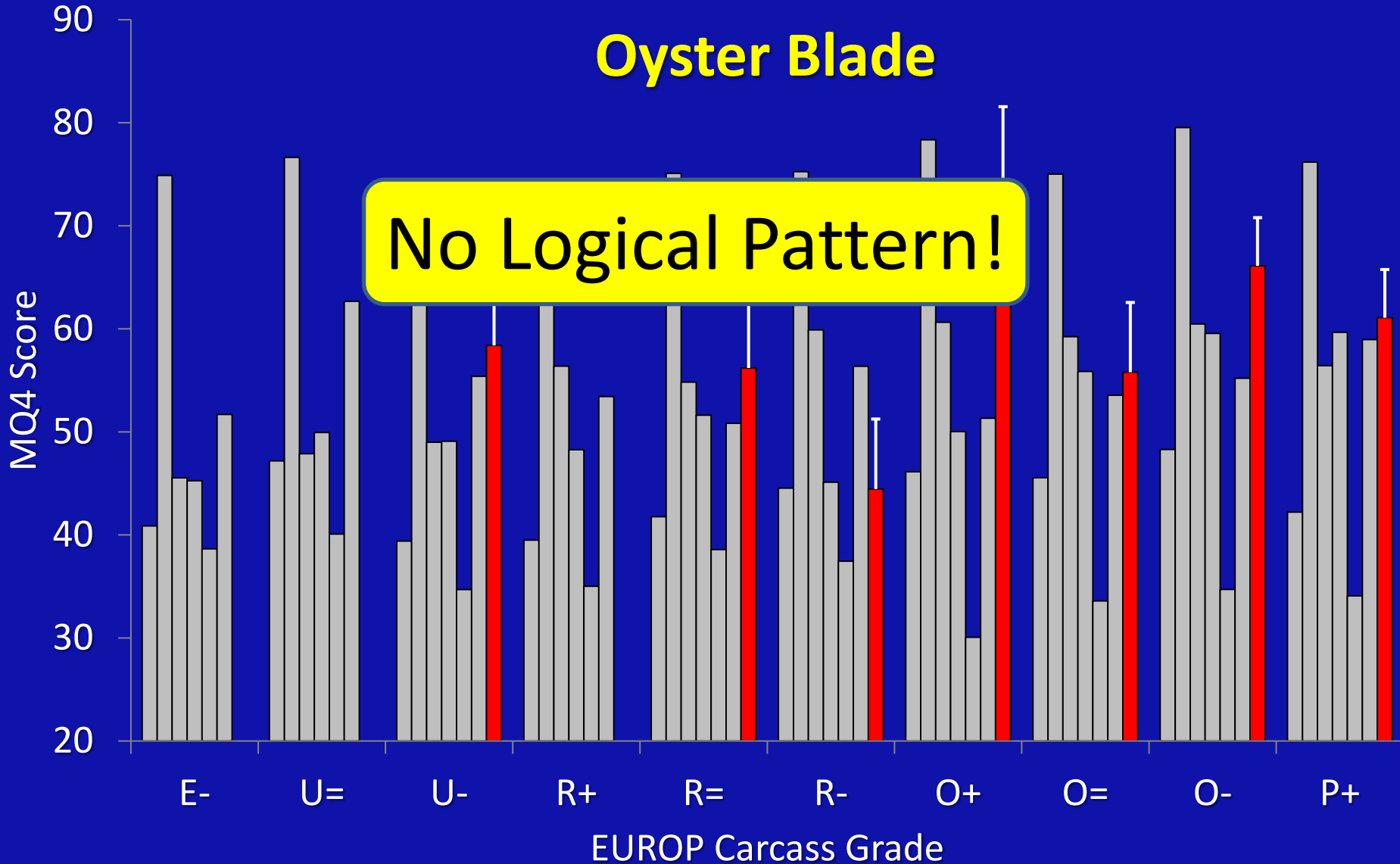
Oyster Blade



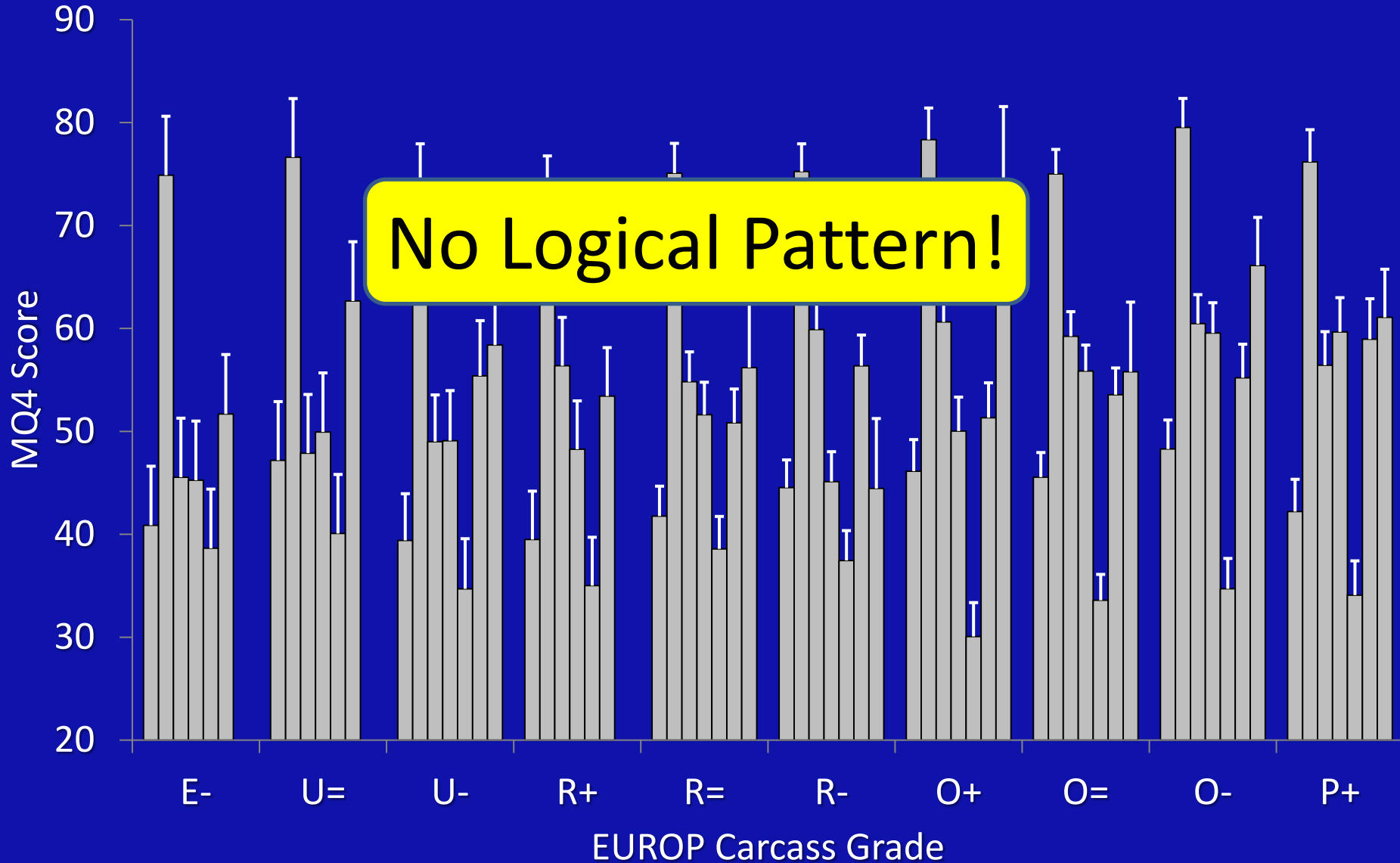
MQ4 score and EUROP Grade

Oyster Blade

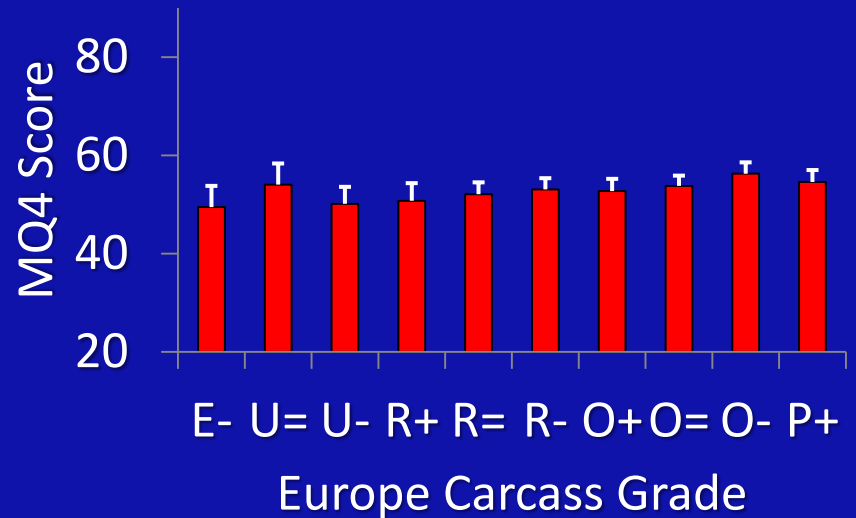
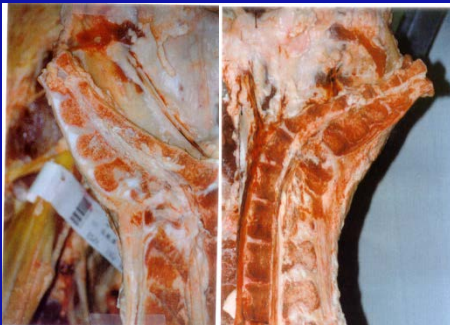
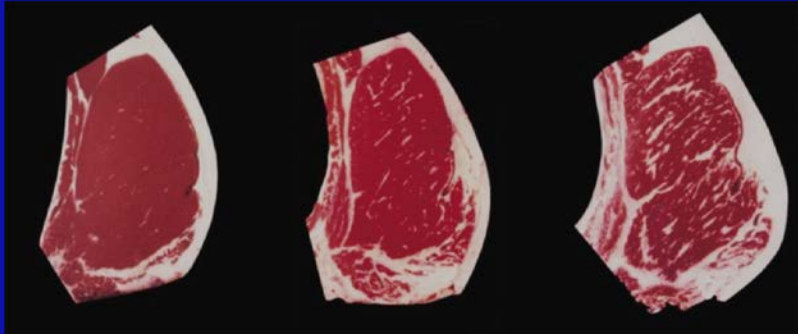
No Logical Pattern!



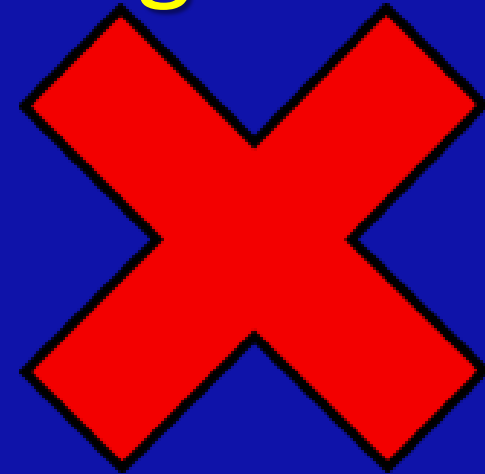
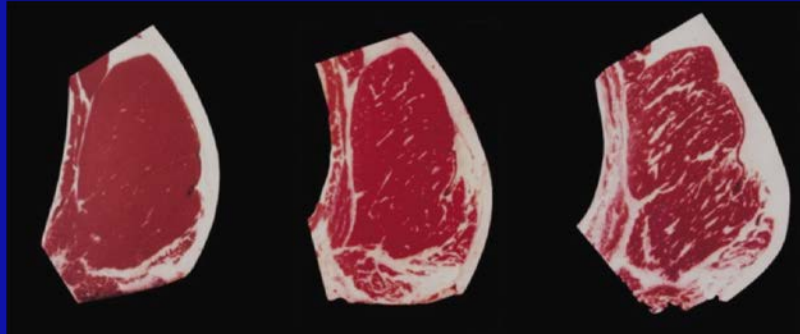
MQ4 score and EUROP Grade



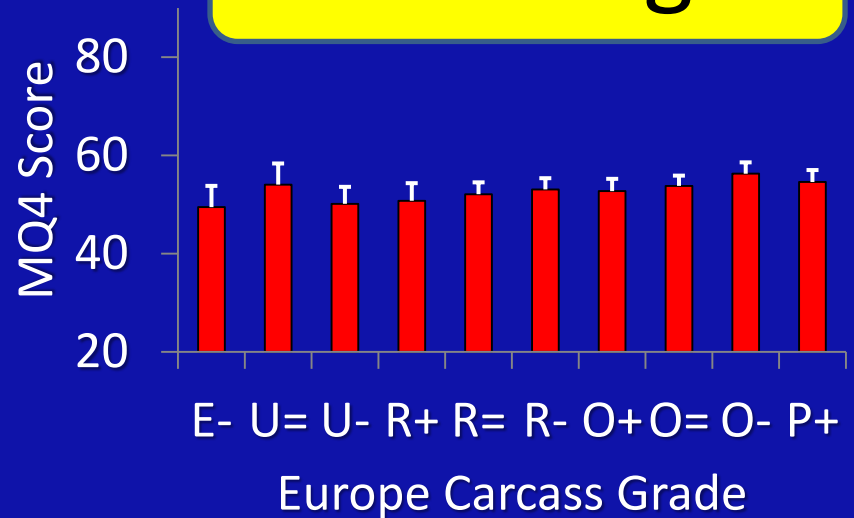
Fatness, Age and Weight?



Fattness, Age and Weight?

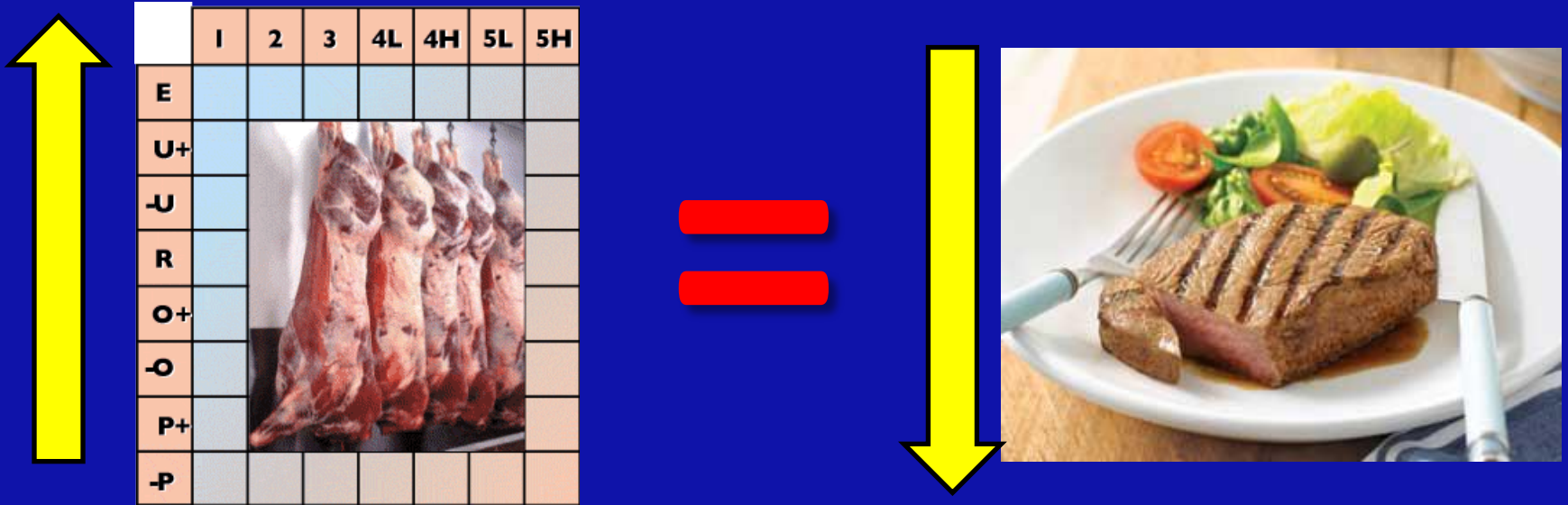


No Change!



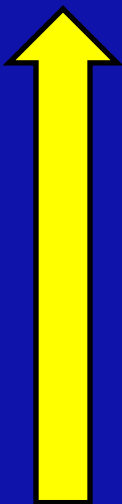
Hypothesis

- EUROP score will negatively correlate with eating quality

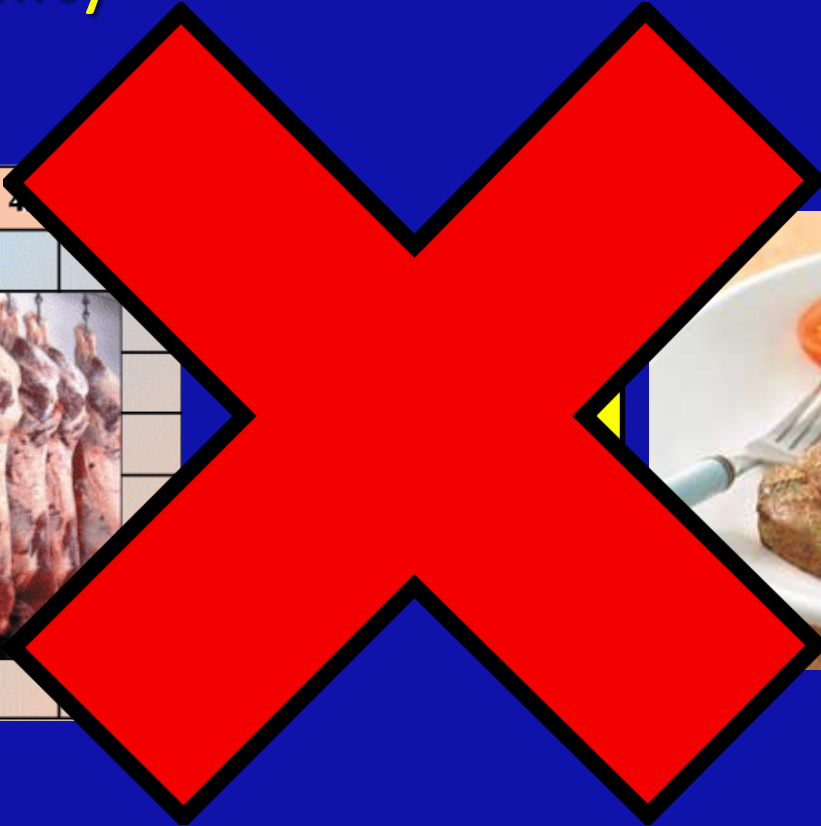


Hypothesis

- EUROP score will negatively correlate with eating quality



	1	2	3	4L	4
E					
U+					
U					
R					
O+					
O					
P+					
P					



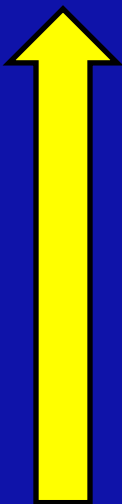
Hypothesis

- EUROP score will negatively correlate with eating quality

Implication:

EUROP can not be used as a proxy system to describe Eating Quality

A specific eating quality system is required!



	I
E	
U+	
U	
R	
O+	
O	
P+	
P	



Conclusion

Conclusions

- EUROP score does not correlate with eating quality

	1	2	3	4L	4H	5L	5H	
E								
U+								
U								
R								
O+								
O								
P+								
P								

≠



Acknowledgements



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- Françoise Turin



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