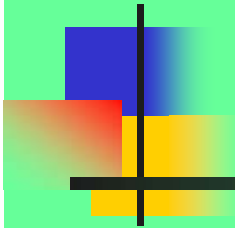


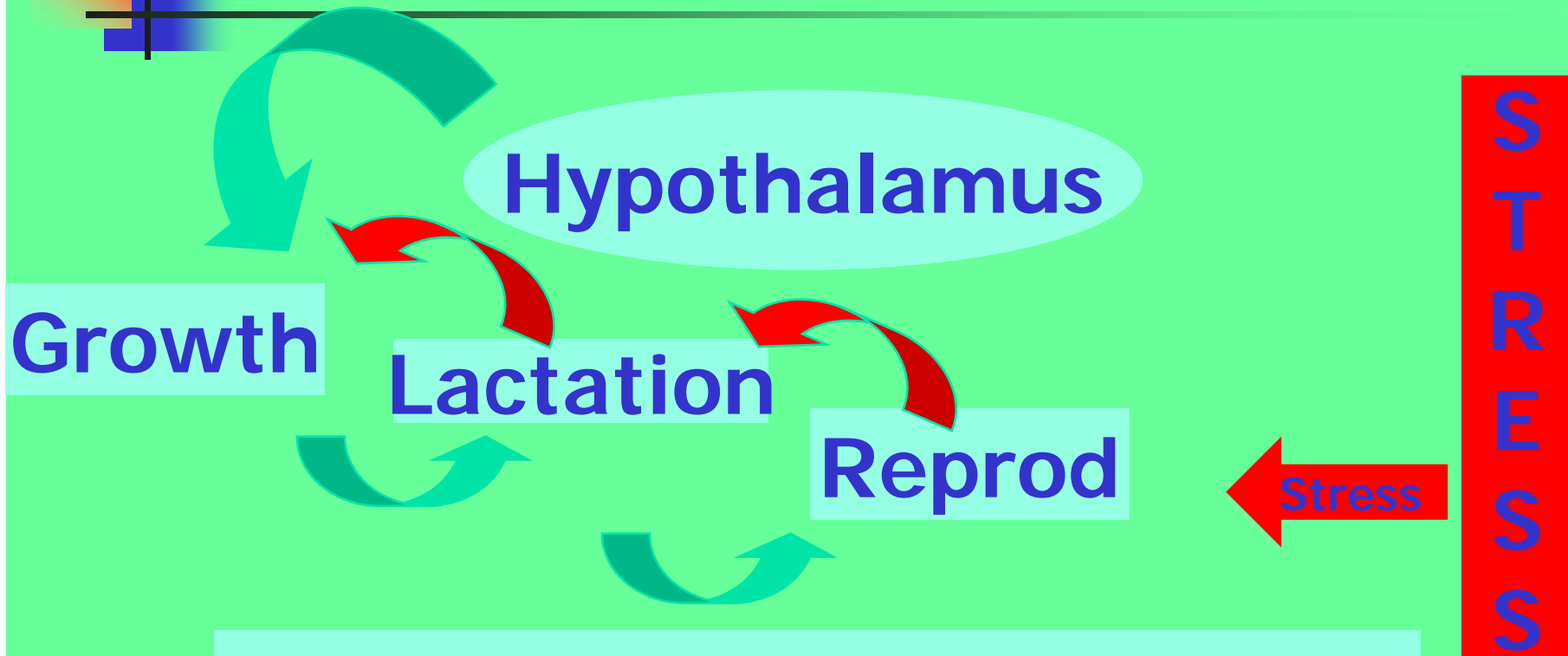
Effect Of Management Practices On Milk Yield and Fertility In Dairy Buffaloes



M Subhan Qureshi
Agricultural University
Peshawar, Pakistan

drmsqureshi@gmail.com

The body systems



Prioritization Affected by Management of:
Genetics
Environment

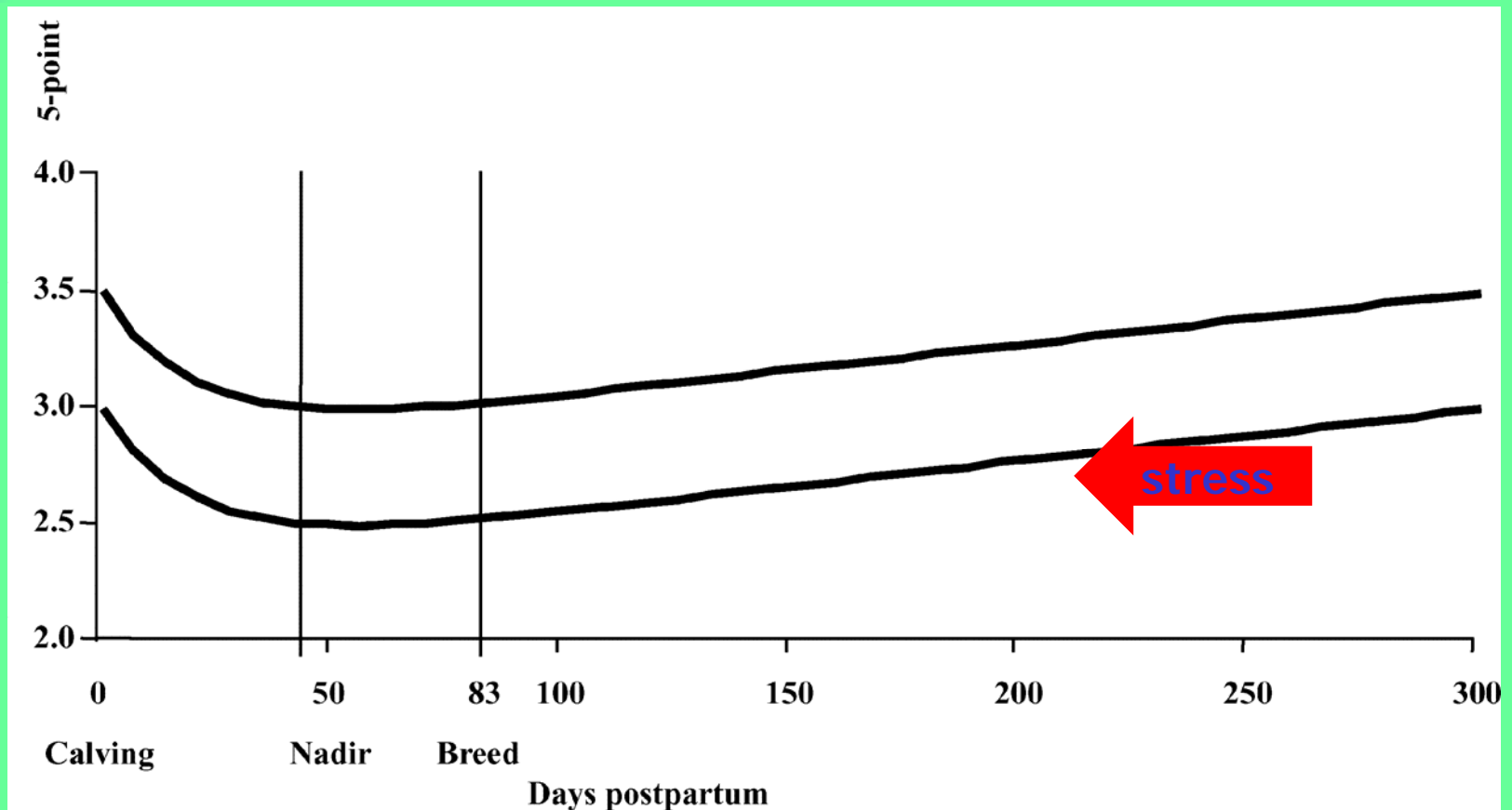


Genetic progress for MY

Poor genetics	Improved ← stress
Physiol BCS target high	low
Nutrients intake low	High
Metabolic stress low	High
Milk yield low	High
Health status high	Low
Liver metabolism; steroids high	low
Fertility high	Low

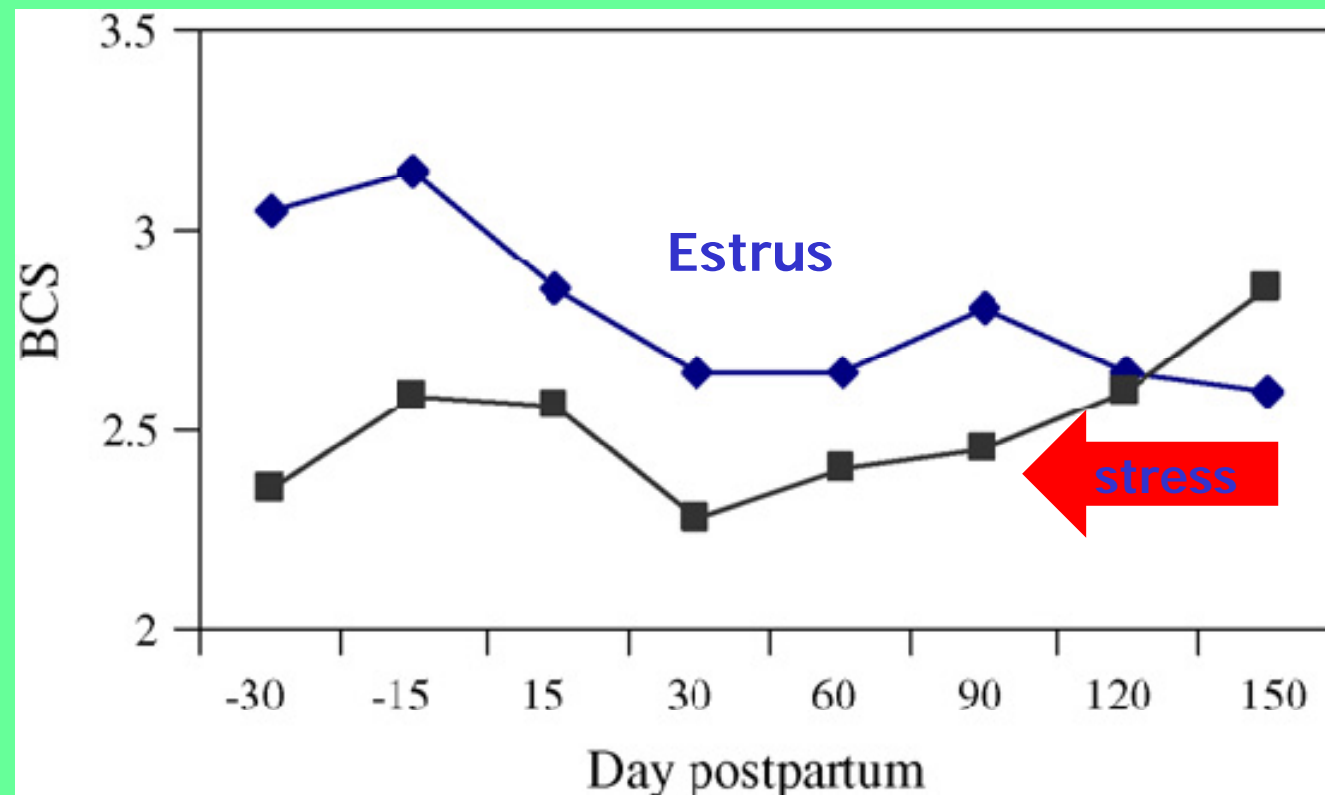
Ideal body condition score for dairy cows to minimize the effect of energy balance on reproductive failure

(Chagas et al, 2007)

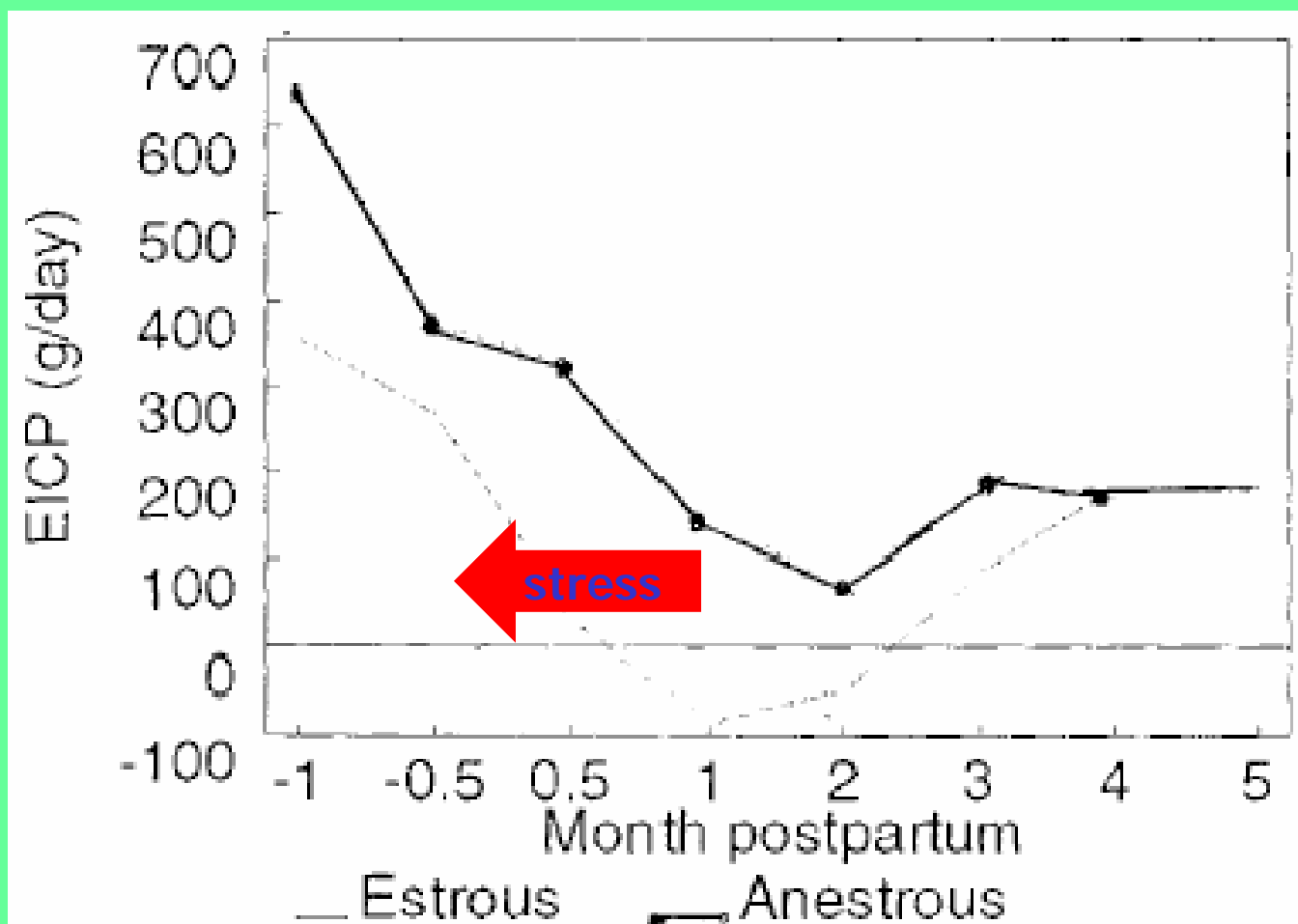


Postpartum body condition score (BCS) of estrous and anestrus buffaloes

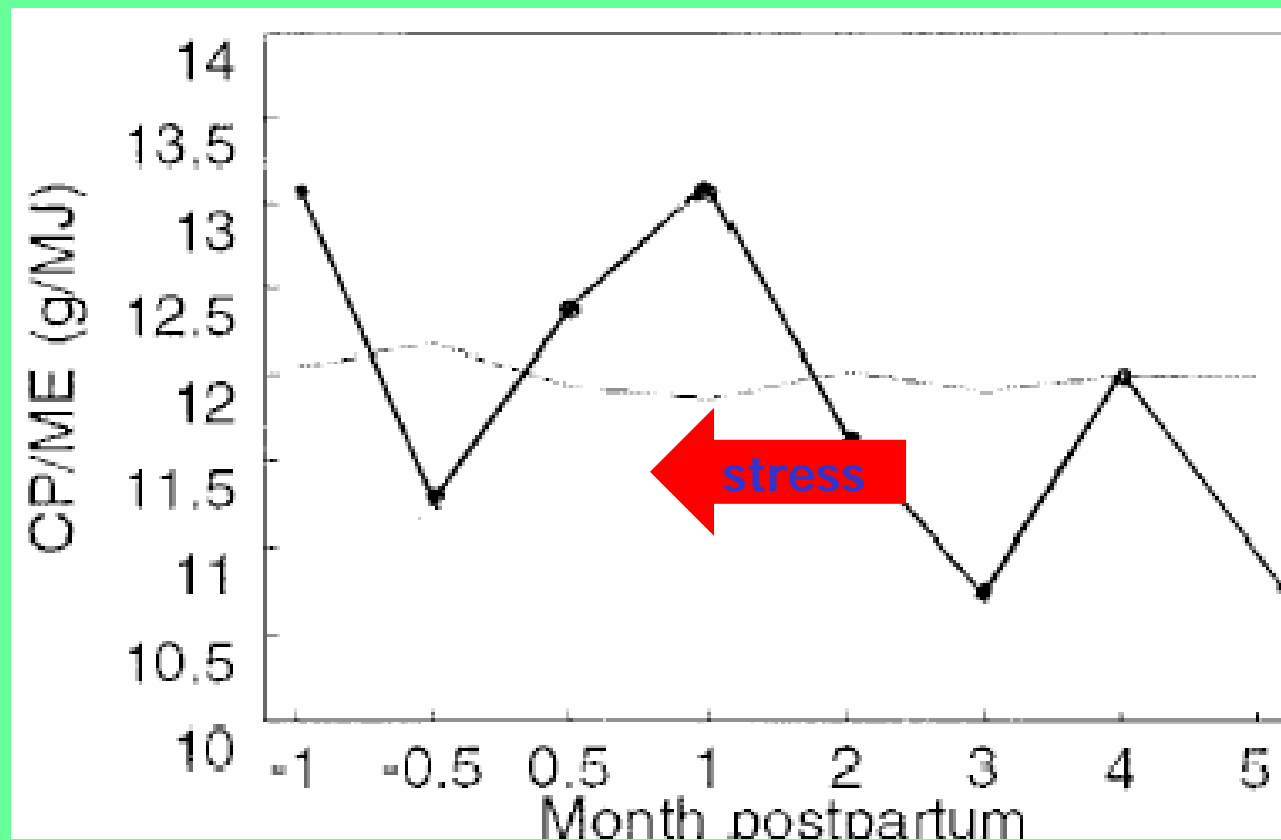
(Qureshi, Ahmad 2008)



Excess intake of crude protein (EICP) in estrous and anestrous buffaloes (Qureshi, 2010)

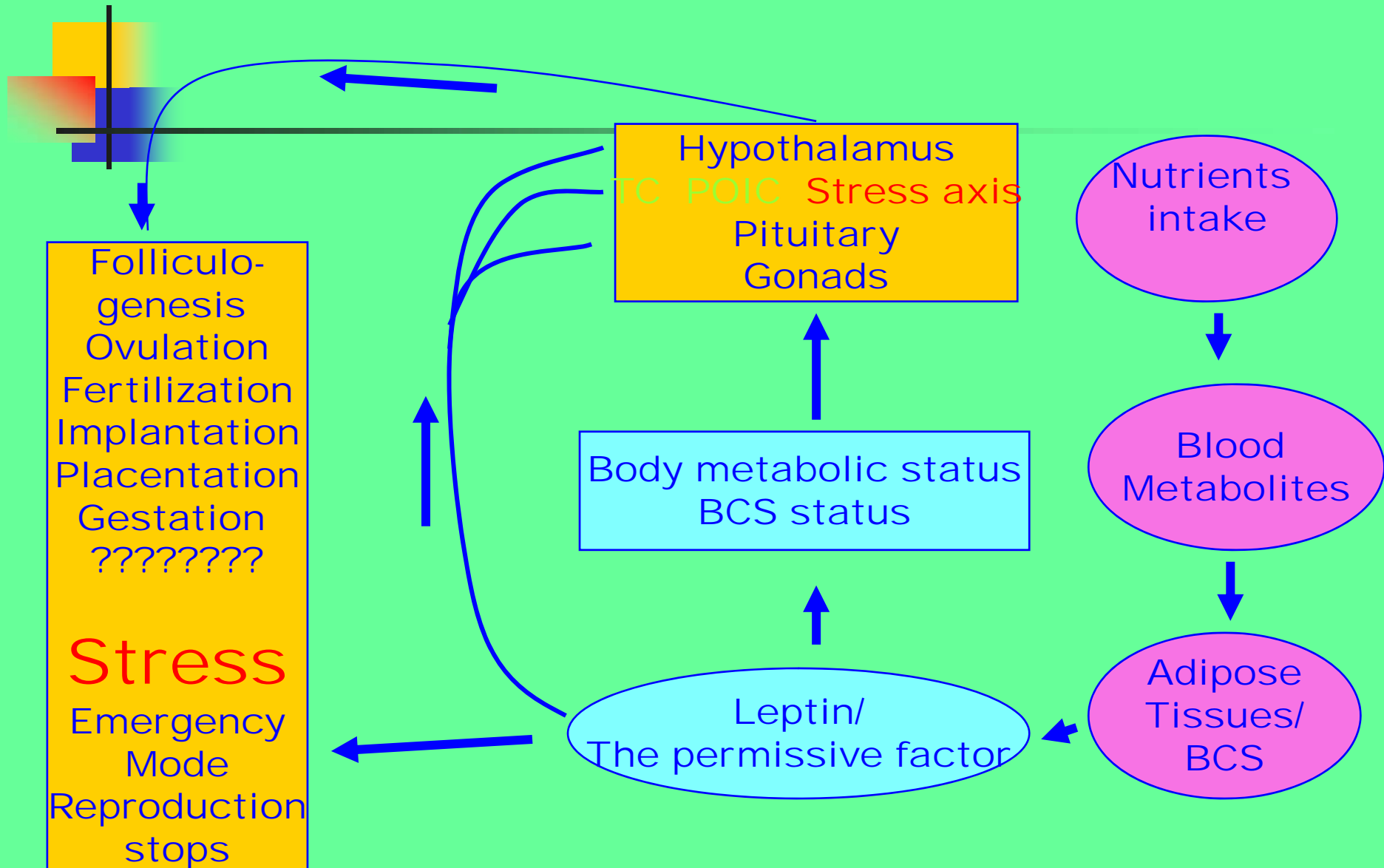


Ratio of crude protein/metabolizable energy intake (CP/ME) in estrous and anestrous buffaloes (Qureshi et al., 2002)



Nutrition Reproduction interaction

(Qureshi, 2010)



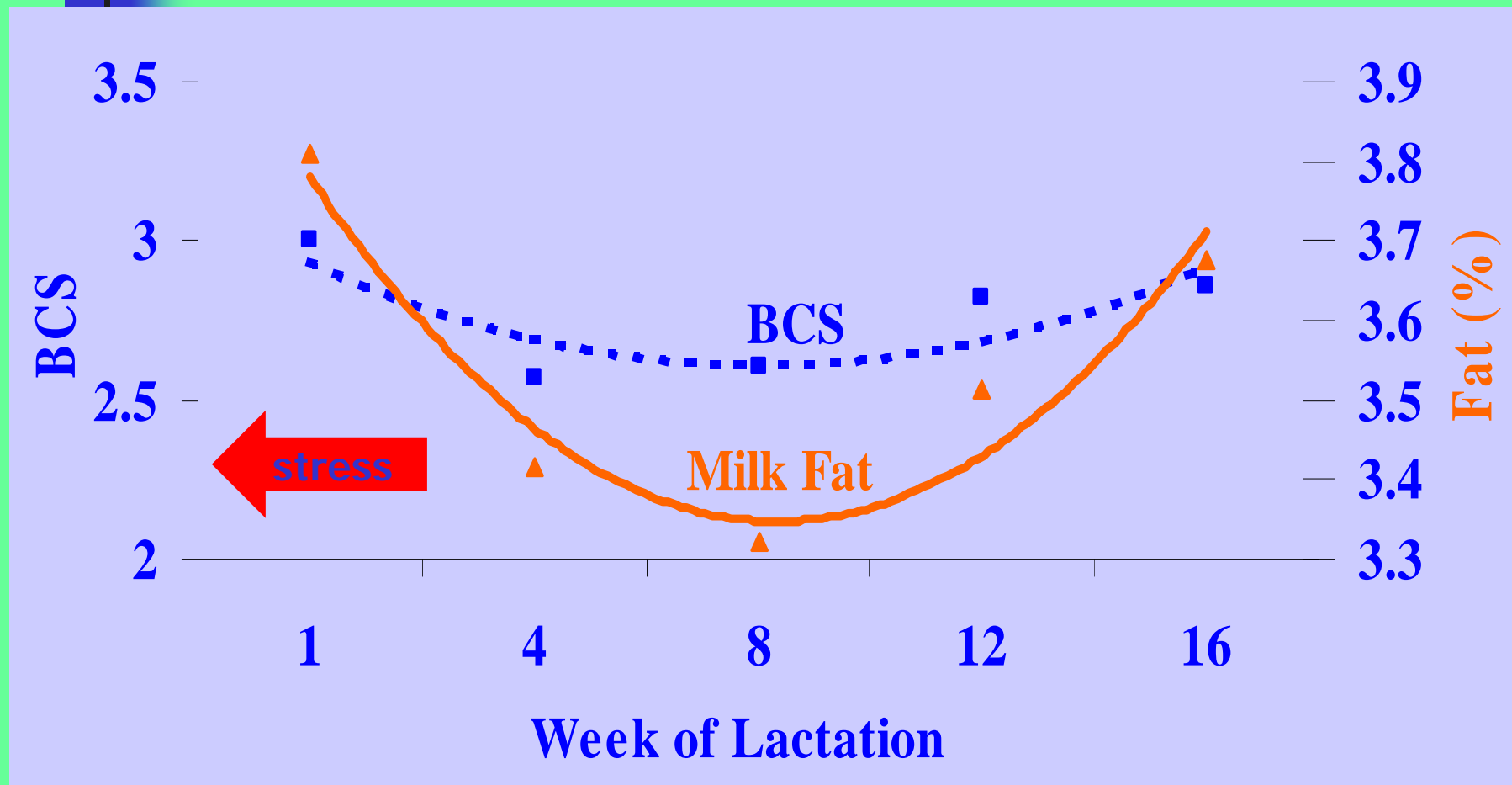


The Milk Regulating Factors

- **Animal Type**
 - Species, Breed and Age
- **Physiological status**
 - Hypothalamus and pituitary hormones
 - Lactation and Pregnancy status
 - Maintenance status
- **Nutritional status**
 - Dietary composition
 - Substrates availability
 - Rumen environment
- **Environmental status**
 - Normal mode
 - Emergency (stress) mode

Changes in BCS and Fats

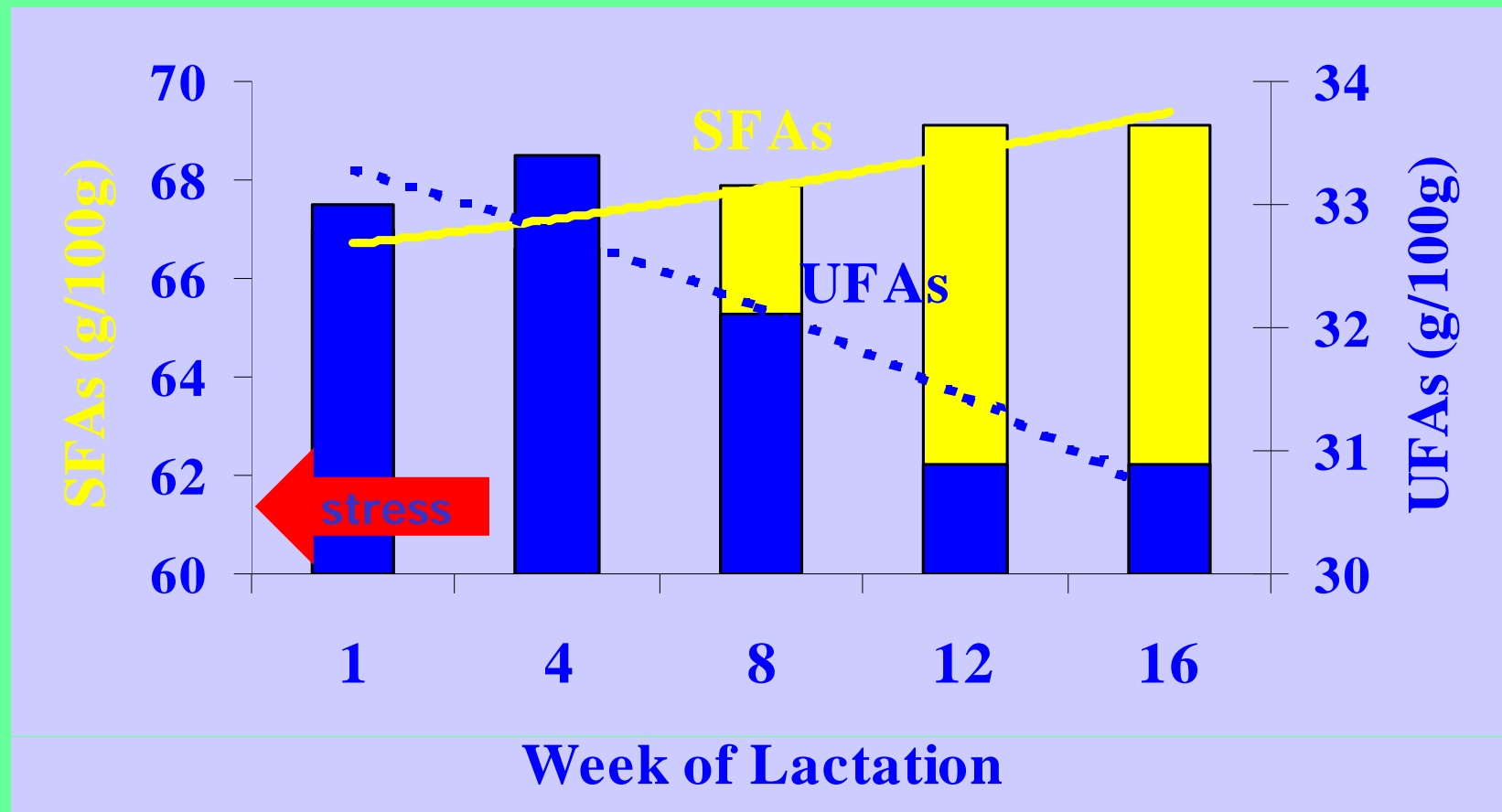
(Mushtaq and Qureshi, 2010)



($r=0.278$, $P<0.01$).

SFA and UFA

(Mushtaq and Qureshi, 2010)



$r = -1.0$



The fatty acids

- The concentrations of unsaturated fatty acids were higher in earlier weeks and declined during mid lactation.
- The proportion of short and medium chain fatty acids increased and pre-formed fatty acids decreased from wk 1 to 16 of lactation.
- The two hypercholestrolemic fatty acids (HCFA $C_{12:0}$ and $C_{14:0}$) increased with advancing lactation.
- The crossbred cows had higher SFAs but lower HCFA concentration than Nili-Ravi dairy buffaloes.



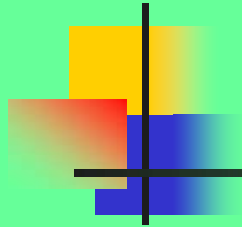
Research Group on Animal Stress Physiology

- The health, productivity, growth and fertility of an animal are controlled by the hypothalamus
- Coordinate to prioritize various activities
- Adjust the body metabolism to support certain activities.
- Loss in body weight, plasma BHB values indicative of NE balance
- Endocrine regulatory points
- Stressors interfere with precise timings of reproductive hormone
- Delay the onset of the LH surge
- Altered metabolic status
- Infertility and decreased productivity.



Research Group on Animal Stress Physiology

- Cooperation between the collaborating institutions
- Initiating joint research initiatives
- Sharing new information.
- This will help in understanding the mechanism of action of stress factors
- Role of blood metabolites, hormones and enzymes and other factors
- Students' research
- Farmers participation
- Agricultural University Peshawar, Pakistan would contribute their inputs.



Thanks