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## PURPOSE

Investigate the relationship between urine specific gravity (USG), body mass, lean body mass, and body fat percentage in collegiate, female athletes.

## METHODS

- Female collegiate athletes (n = 22)
- 1<sup>st</sup>, morning urine void, 3-day period (total n = 66)
- Body comp assessed via a standing, foot-to-foot BIA
- USG – digital refractometer – in triplicate
- Urine color via a digital urine color chart (range 1 – 8)
- Pearson’s correlations for continuous variables
- Spearman’s rho for ordinal variables

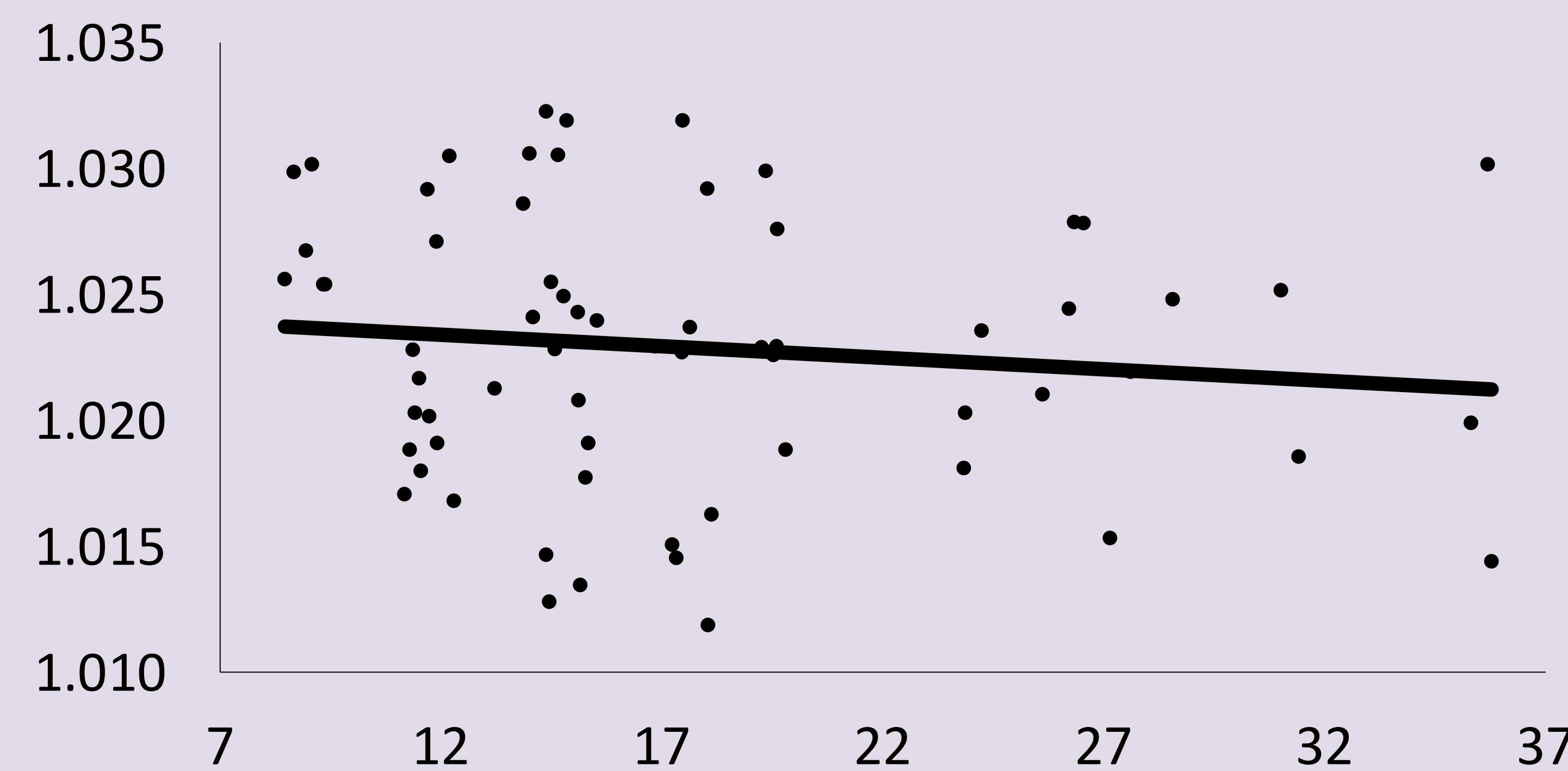
## RESULTS

- Average USG ( $1.0229 \pm 0.0053$ )
- Weakly and negatively correlated
  - Lean body mass ( $r = -0.08$ ;  $49.8 \pm 4.6$  kg)
  - Body mass ( $r = -0.12$ ;  $67.4 \pm 10.0$  kg)
  - Fat mass ( $r = -0.12$ ;  $17.6 \pm 6.9$  kg)
  - Body fat% ( $r = -0.13$ ;  $25.3 \pm 6.3$  %)
- Moderately-strong, positive correlation with urine color ( $r = 0.64$ ,  $M = 4$ , range 2-7 au)
- Urine color was weakly and negatively correlated with
  - Lean body mass ( $r = -0.05$ )
  - Body mass ( $r = -0.15$ )
  - Fat mass ( $r = -0.19$ )
  - Body fat% ( $r = -0.23$ )

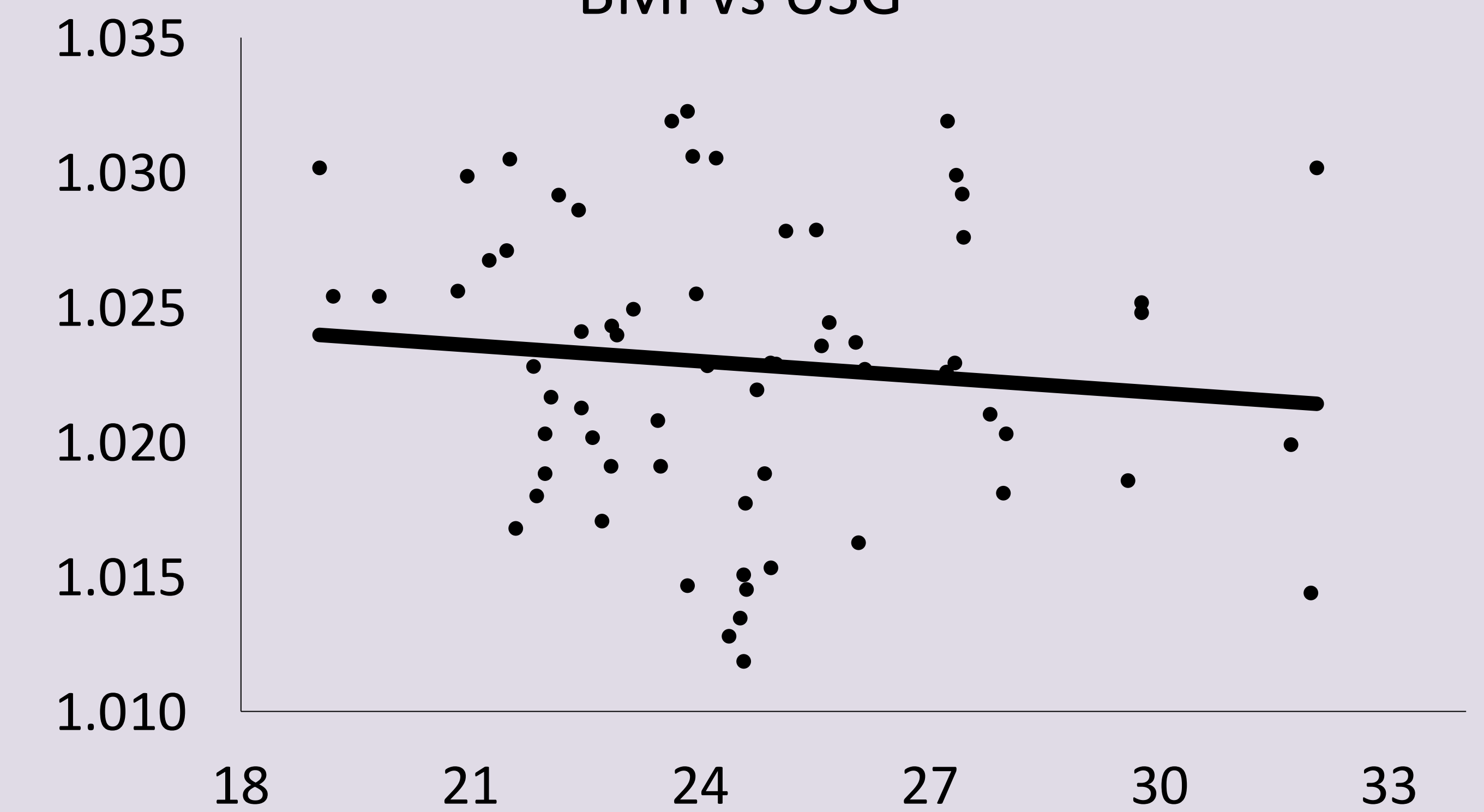
## MAIN FINDING

### Urine Indices of Hydration Not Meaningfully Related to Body Composition Metrics

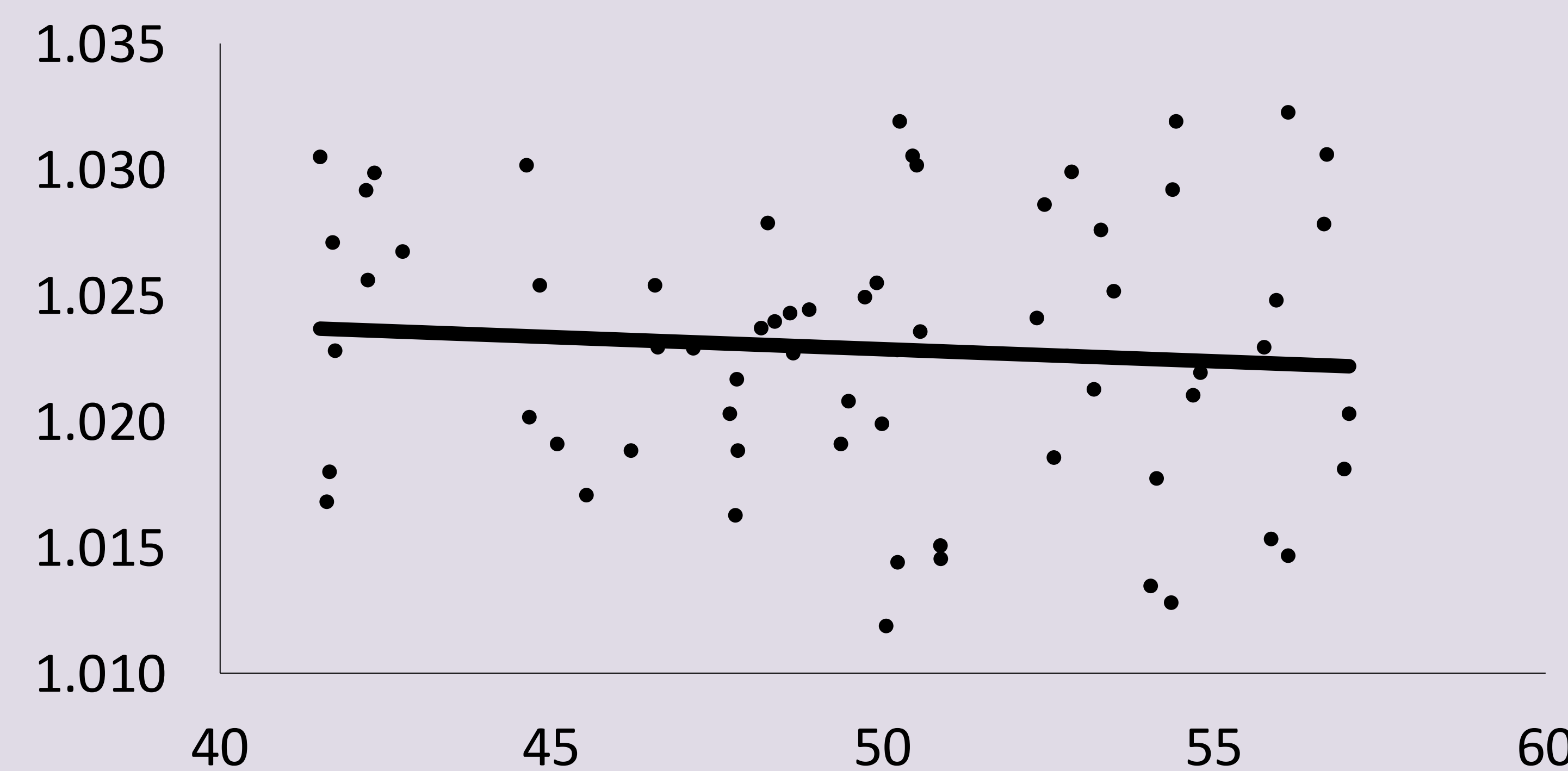
Fat Mass vs USG



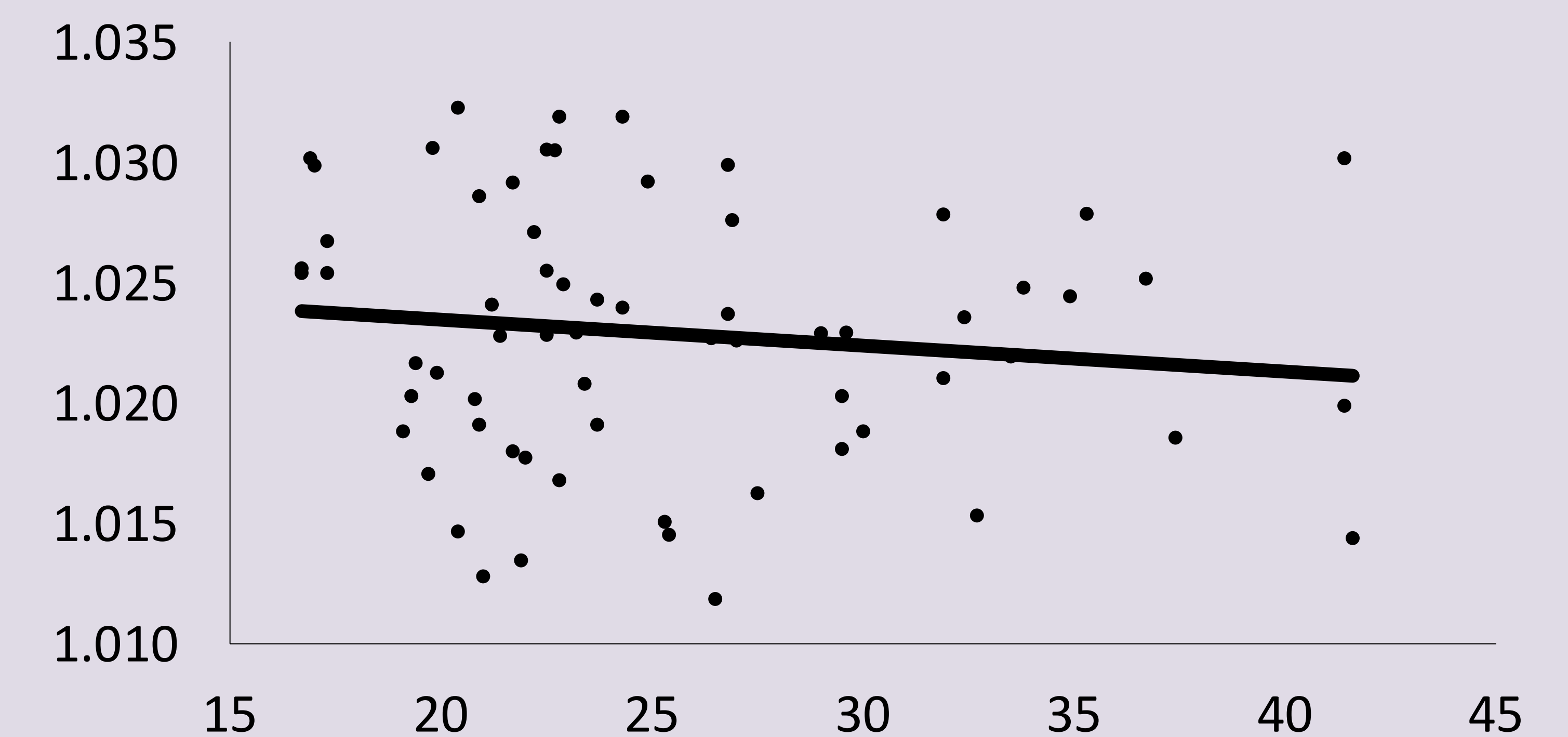
BMI vs USG



Lean Body Mass vs USG



Body Fat % vs USG



## CONCLUSIONS

- Larger body sizes and masses were related to more-favorable urine hydration indices
- These data weakly support the opposite of our hypothesis that higher lean body mass would be associated with higher USG and urine color
- Spring sport collegiate athletes may have different hydration habits compared to others

## PRACTICAL APPLICATIONS

- Individualized hydration indices could support more-meaningful athlete monitoring
- Additional research and critical thinking are needed to further elucidate hydration recommendations for athletes