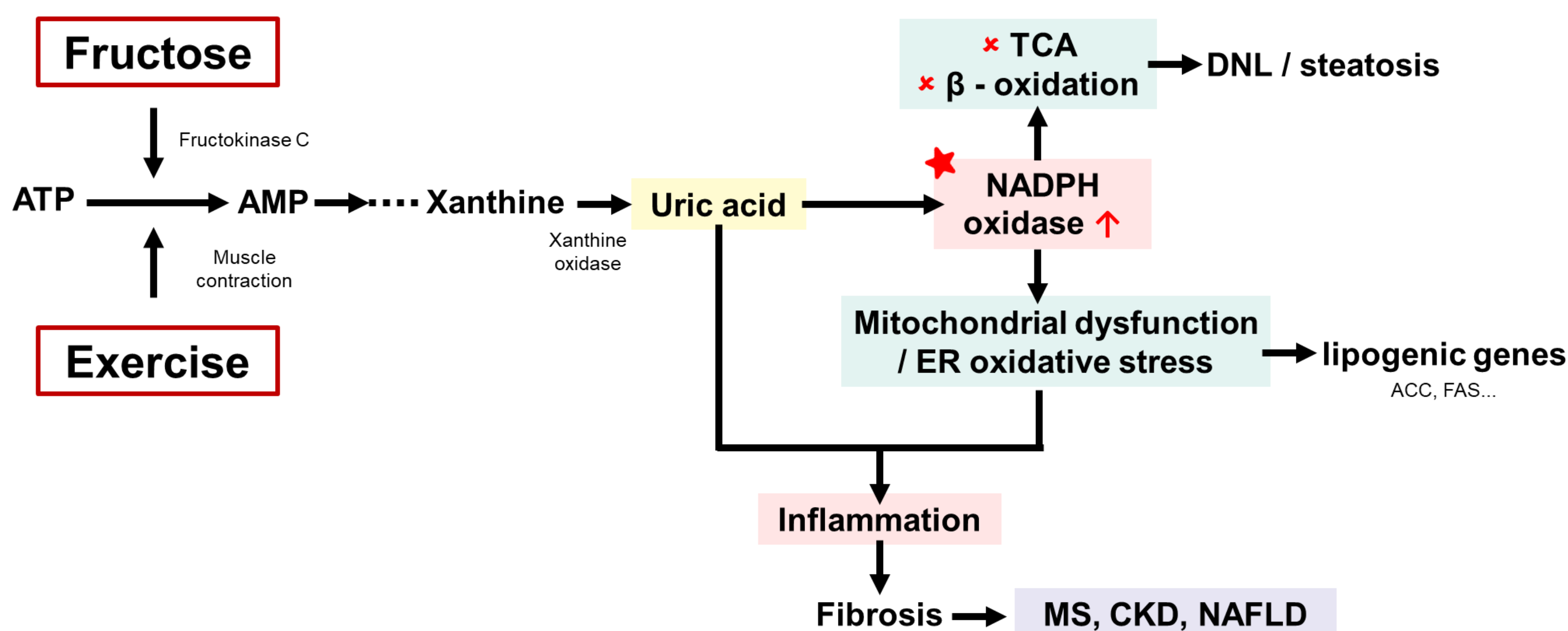


Introduction

✓ Hyperuricemia

- Intensive exercise and high-fructose diet increase plasma uric acid respectively, and even reached hyperuricemia (Dudzinska et al., 2018; Rodrigues et al., 2018).
- Long-term hyperuricemia is associated with the development of hypertension, cardiovascular, and liver and kidney diseases (Zhang et al., 2020).

✓ Physical mechanism of uric acid



- The prooxidative and proinflammatory effects of uric acid exacerbates the lipogenic process in the liver and kidney.

✓ Our pilot study

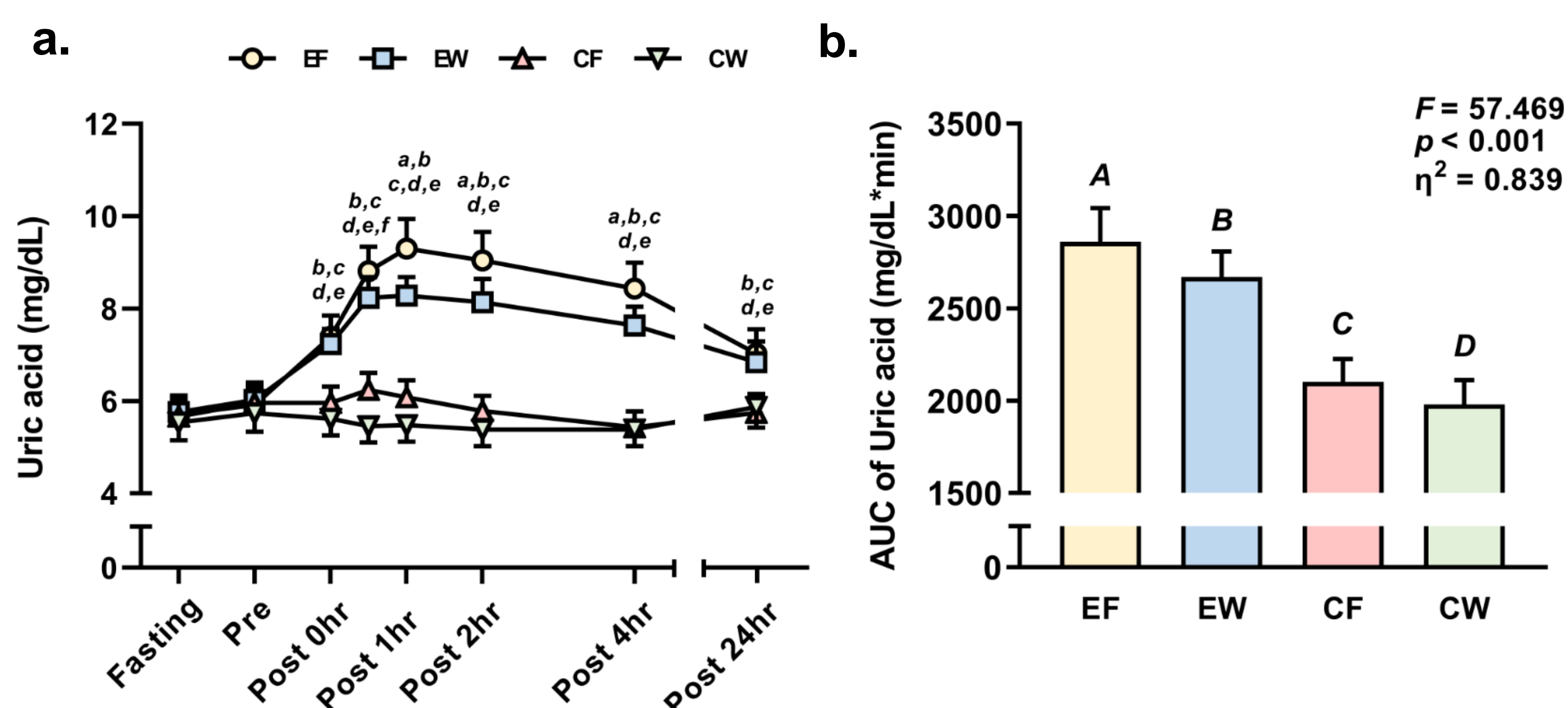
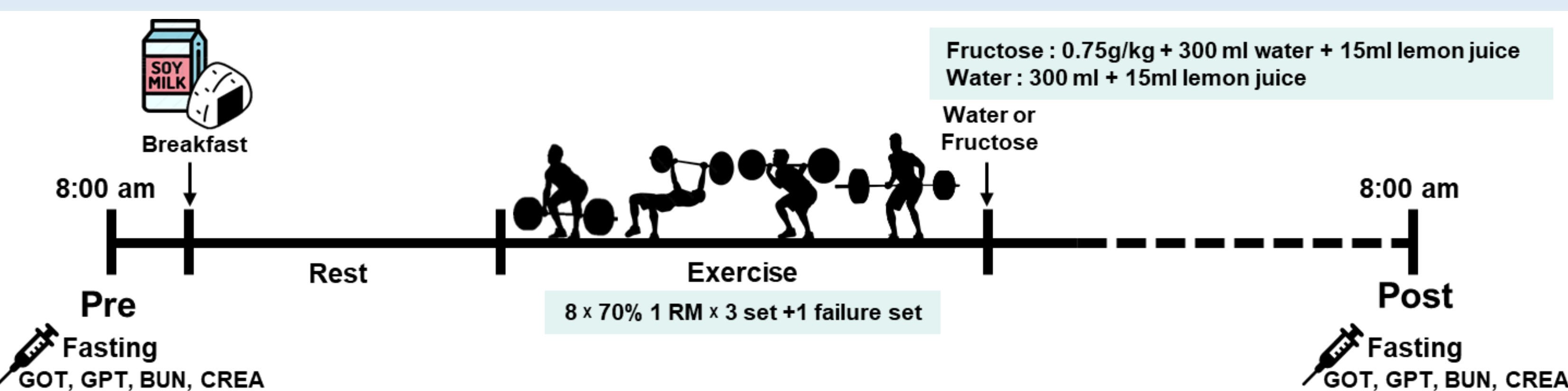


Fig. 1 (a.) The plasma concentration of uric acid during the intervention with Exercise + Fructose trial (EF); Exercise + Water trial (EW); Control + Fructose trial (CF); Control + Water trial (CW). a: EF vs. EW; b: EF vs. CF; c: EF vs. CW; d: EW vs. CF; e: EW vs. CW; f: CW vs. CF; $p < 0.05$. (b.) The area under the curve of uric acid. Post-hoc significant differences represent as different letters.

✓ Purpose of this study

- This study investigated the effect of acute resistance exercise combined with high fructose intake on liver and kidney function.

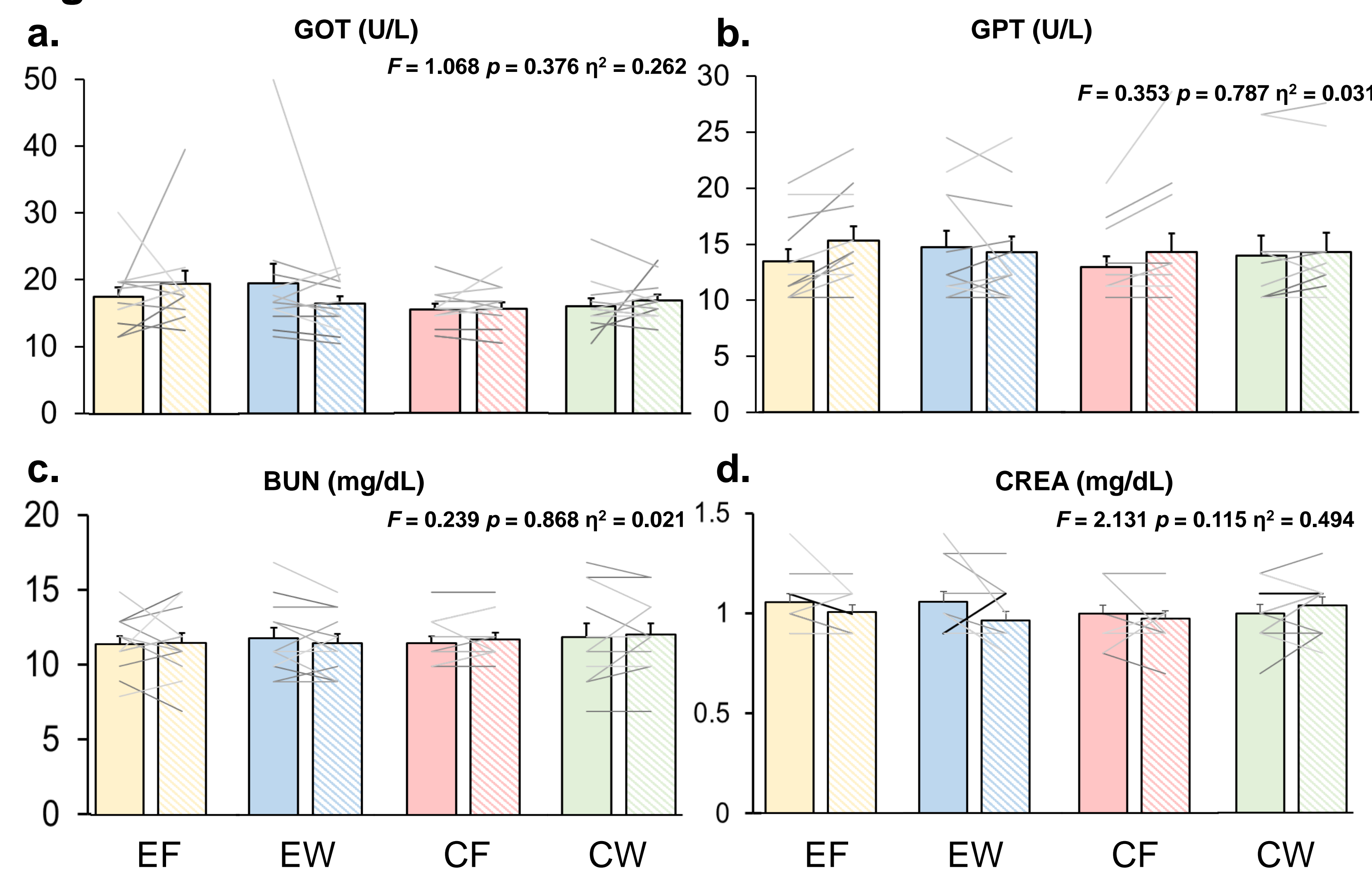
Methods



- **Participants:** 12 healthy men, (age: 20-27)
- **Using a balanced crossover design :**
EF: Exercise + Fructose trial; EW: Exercise + Water trial;
CF: Control + Fructose trial; CW: Control + Water trial.
- **fasting blood samples** were collected before the trials and the next morning (GOT, GPT, BUN and CREA)

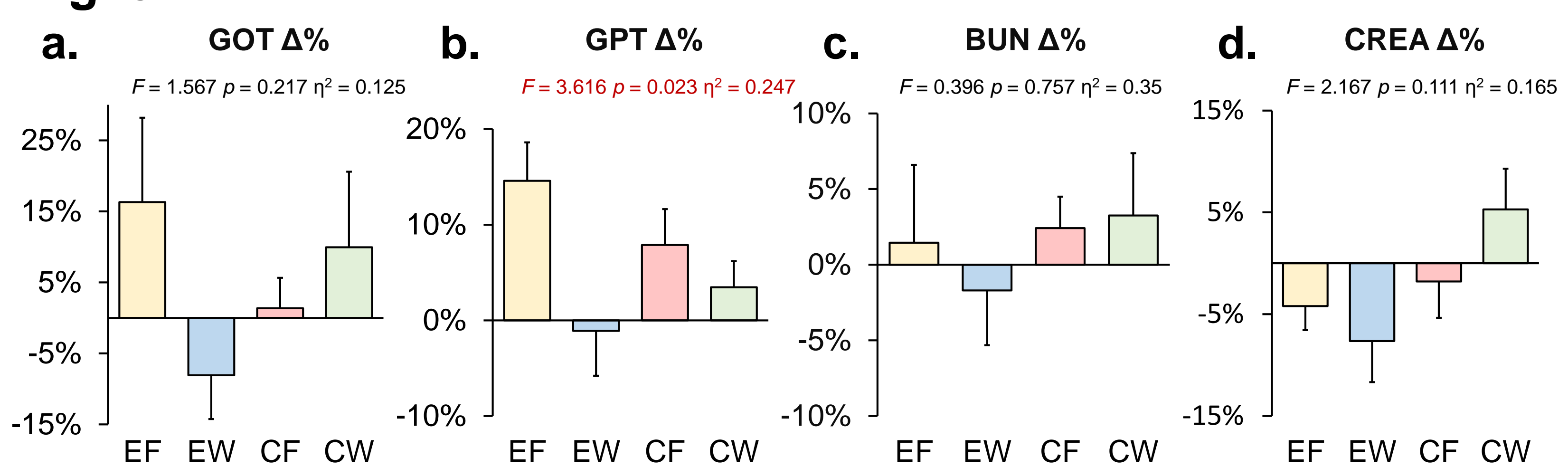
Results

Fig. 2



- No significant differences were observed among the four trial in biomarkers of liver and kidneys.

Fig. 3



- For Δ GPT%, a significant interaction effect ($p = 0.023$, fig.3b) was observed, but no post-hoc significant difference was observed between the four trials.

Fig. 4

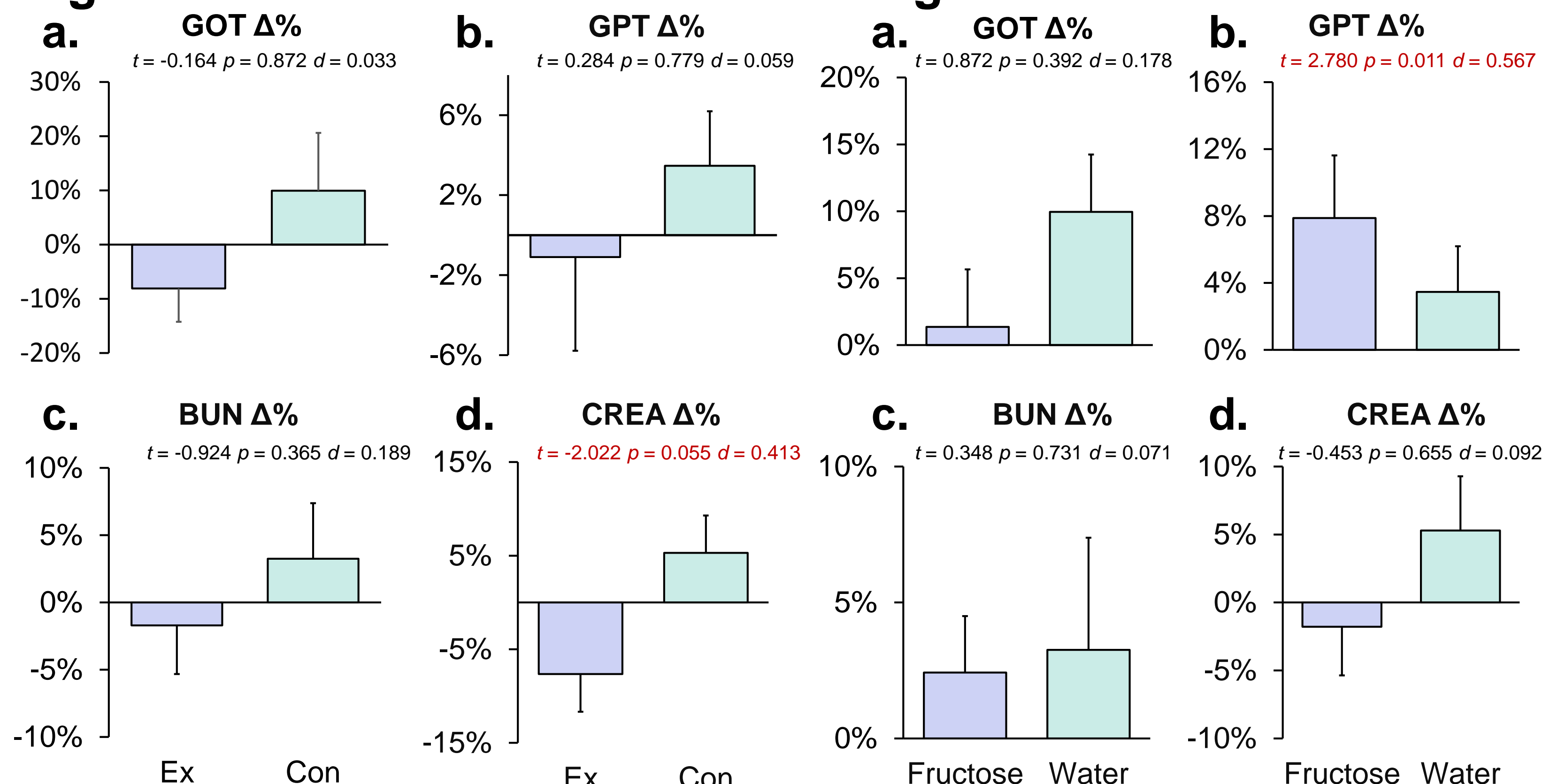
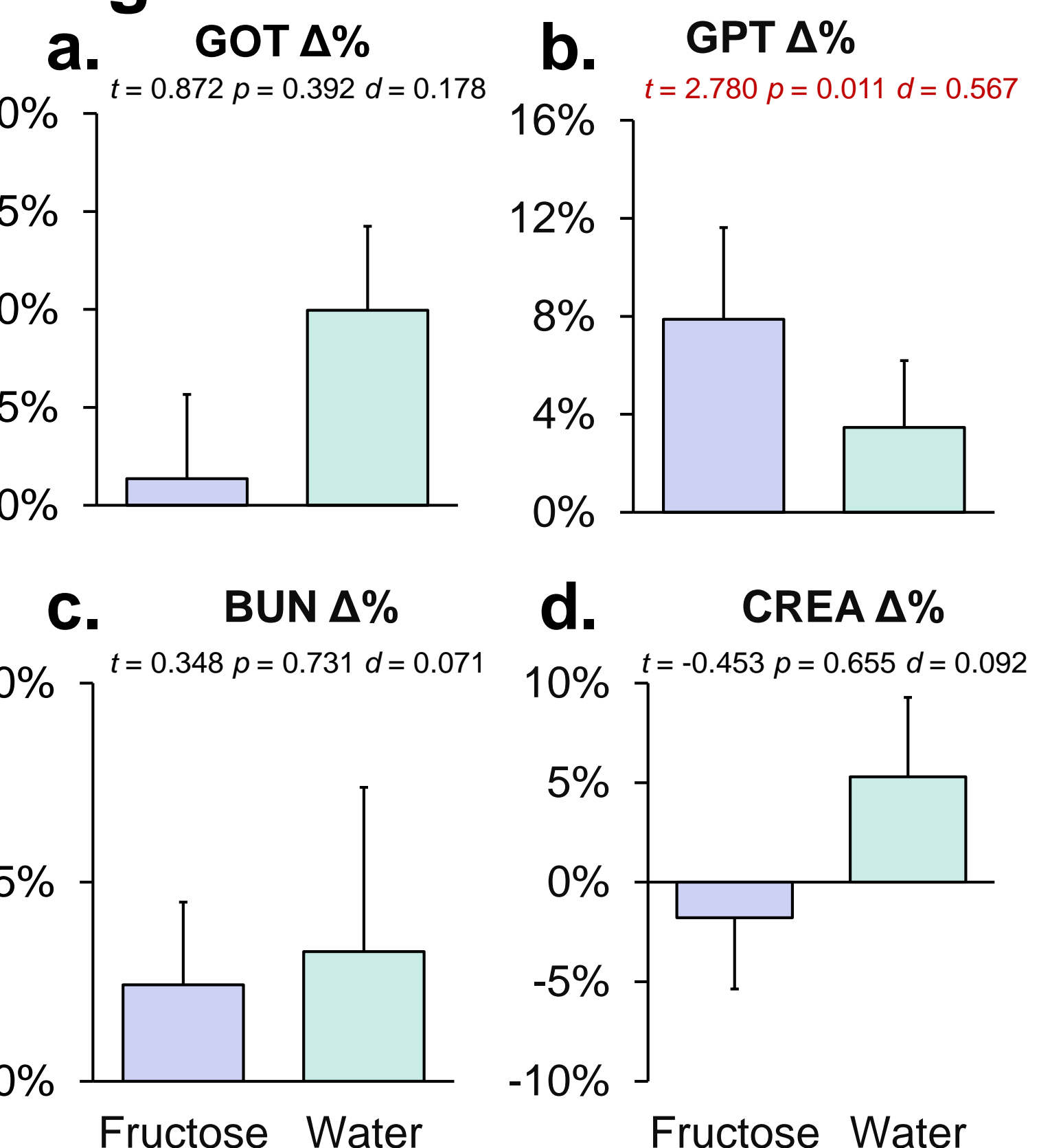


Fig. 5



- No significant difference was observed between exercise and control trials in the relative change percentage of blood sample, but exercise trial had a downward trend in Δ CREA% ($p = 0.055$, figure 4d).
- Δ GPT% was significantly higher in fructose-drinking trial than water-drinking trial ($p = 0.011$, figure 5b).

Conclusion

- The effect of acute resistance exercise combined with high fructose did not impair liver and kidney function in healthy men.
- Future work will need to investigate the effects of acute resistance exercise combined with high fructose intake on liver and kidney function in different population.