

Relationship Between Dietary Iron and Perceived Stress in College Students

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INTRODUCTION

- In the U.S, young adults are most likely to report poor mental health than any other generation.¹
- Long-term stress affects the digestive, immune, reproductive, and cardiovascular system.²
- Iron is the most common nutritional deficiency in the world and is needed for growth and development. Adequate iron consumption may prevent depression.³
- The Recommended Dietary Allowance (RDA) is the average amount of a nutrient that should be consumed daily to be sufficient in 97% of healthy individuals. The RDA for iron in males is 8 mg, 18 mg for women, and 27 mg for pregnant women.⁴

OBJECTIVE

To examine differences in perceived stress in students who meet the RDA for iron vs. student who do not.

METHODS

- Data were collected between 2013-21 from an ongoing, cross-sectional College Health and Nutrition Assessment Survey (UNH IRB #5524).
- Participants were students 18-24 y recruited from an introductory nutrition course.
- Students completed a 3-day food record where average dietary iron intake was obtained and measured using an online analysis software.
- Stress measured via the 10-item Cohen's perceived stress scale via an online questionnaire. Scores range from 0-40.
- Differences in mean perceived stress scores among students who met the RDA vs. students who did not were analyzed using ANCOVA. Smoking status, total daily calorie intake, and Pell Grant status served as covariates.
- Associations between iron intake and perceived stress were analyzed using Pearson Correlation.

Perceived Stress Scale⁵

In the last month, how often have you felt...

1. Upset because of something that happened unexpectedly?
2. You were unable to control the important things in your life?
3. Nervous or stressed out?
4. Confident in your ability to handle your personal problems?
5. Things were going your way?
6. You could not cope with all the things you had to do?
7. Able to control irritations in your life?
8. You were on top of things?
9. Angered due to things that were outside of your control?
10. Difficulties piling up so high you could not overcome them?

Never	Almost Never	Sometimes	Fairly Often	Often
0	1	2	3	4

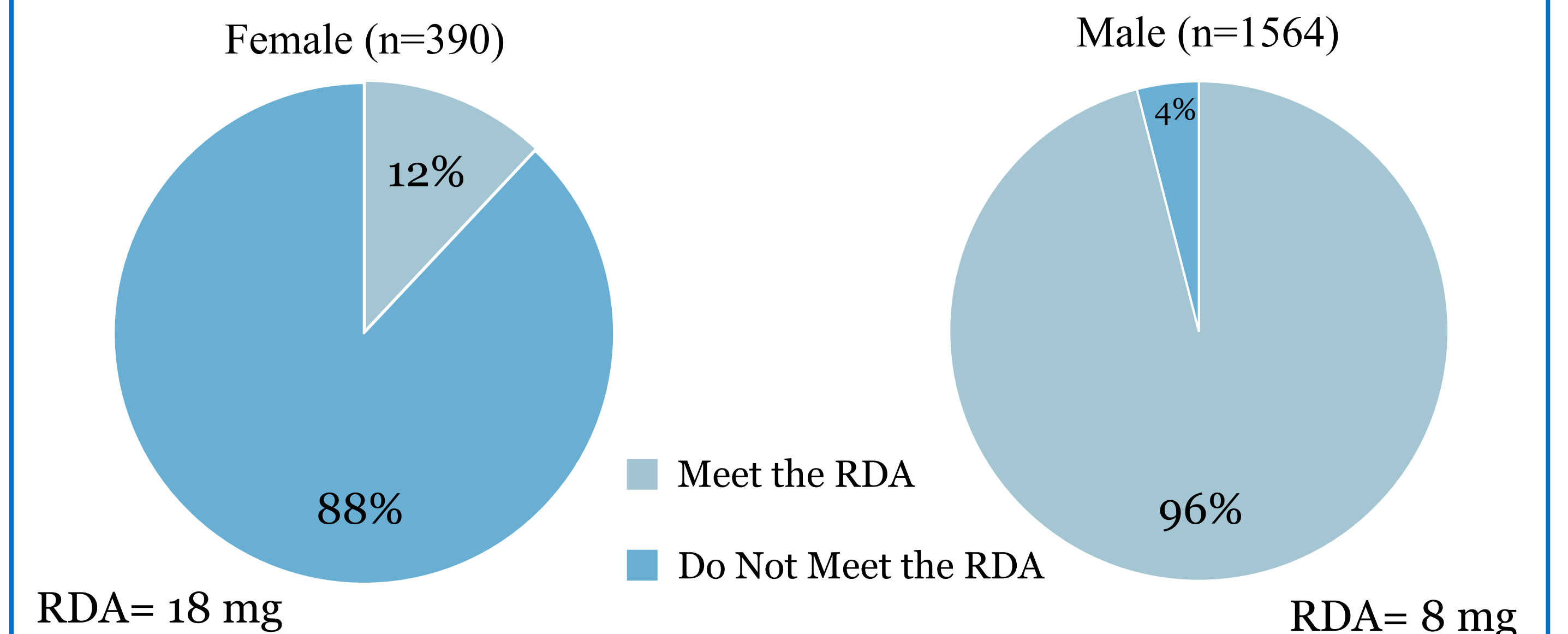
FINDINGS

- In the final sample, 12% of females and 96% of males met the RDA for iron.
- Mean iron intake for males was 18.4 ± 8.1 mg and 12.8 ± 5.2 mg for females ($p < .01$)
- No significant differences between mean perceived stress scores in males who met the RDA vs. those who did not (14.4 ± 6.6 vs 15.7 ± 5.2 , $P=0.648$), as well as females (16.2 ± 6.1 vs 16.8 ± 6.6 , $P=0.472$).
- No significant correlation between iron intake and PSS ($R=-0.029$, $P=0.09$).

IMPLICATIONS

Tailored solutions toward increased dietary iron consumption among college women can prevent iron deficiency regardless of perceived stress level.

Percent of Male and Female Students Who Meet the RDA For Iron



SUBJECT CHARACTERISTICS

	Total (n=4741)	Meet RDA For Iron (n=1954)	Do Not Meet RDA for Iron (n=2787)
Female, % (n)	65.5 (3334)	20.0 (390)	98.2 (2539)
Race, % white (n)	93.2 (4508)	92.2 (1685)	94.2 (2606)
Age, years \pm (SD)	18.9 (1.1)	19.1 (1.2)	18.8 (1.0)
Smoking Status, % yes (n)	5.2 (258)	7.2 (136)	3.5 (97)
Pell Grant Status, % yes (n)	26.8 (1026)	24.6 (356)	27.7 (595)
Average PSS Score, $m \pm$ (SD)	16.1 (6.6)	14.8 (6.5)	16.8 (6.5)

Perceived Stress of Students Who Meet RDA vs. Students Who Do Not

	Meet RDA	Do Not Meet	p-value
Female	16.2 \pm 6.1	16.8 \pm 6.6	0.47
Male	14.4 \pm 6.6	15.7 \pm 5.2	0.65

*Values reported as PSS score; Mean \pm SD

Mean Intake of Iron

Males	Females
18.4 \pm 8.1	12.8 \pm 5.2

*Values reported as mg/day; Mean \pm SD

ACKNOWLEDGEMENTS

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