

## **INTRODUCTION:**

Residency is one of the most demanding times in a physician's life. Doctors endure many hours of training while being pushed to the limits of mental and physical exhaustion. One element of physician wellness that can help avoid burn out is to maintain a regular exercise regimen. Exercise has great overall health benefits and can help relieve the stress associated with training during residency. This study questions if the resident's dedication to healthcare is a burden to their own health. Do residents feel that they have adequate time during the day to engage in exercise?

## **OBJECTIVES:**

A study was conducted with first-year and senior residents and attending physicians in the University of Missouri Department of Family and Community Medicine from April to August 2013. A survey was done inquiring about exercise rates and habits to 110 resident and attending physicians. During both inpatient and non-inpatient rotations, residents reported exercising less than attending physicians. No residents exercised more than 150 minutes/week during inpatient rotations compared to 18.42% of attendings. Only 6.9% of residents exercised more than 150 minutes/week during non-inpatient rotations, compared to 25% of attendings. Residents and attendings reported different barriers to regular exercise. Residents reported lack of time for a traditional structured workout as a major barrier.

A combined cross-sectional study and longitudinal cohort study were done to compare matched controls in 2 academic hospital centers in the eastern and western United States. BMI and blood pressure were objectively measured, and an eating and exercise habits recall was obtained for 375 enrolled medical and surgical residents at the onset of each postgraduate year. Nearly half (43%) of overweight residents described themselves as normal weight. Residents were more likely to be overweight (BMI  $\geq 25$ ) at the beginning of PGY-3 than at the beginning of PGY-1 (49% versus 30%; odds ratio 2.26; 95% confidence interval 1.19–4.28).

The objective of this study was to assess the participation of family medicine resident physicians at University of Illinois College of Medicine in Peoria in a healthy, recommended, amount of exercise. We also wanted to assess any potential barriers for residents performing exercise as well as if residents used exercise as a form of coping with stress. We also wanted to assess how many residents were aware of the community resources available to them for attaining a discounted gym membership.

## **METHODS:**

-In this study, we asked resident physicians in the UICOMP family residency program a series of questions to better understand if they are having enough time to engage in effective exercise. We utilized an established constant of what is considered effective exercise by using the criteria illustrated by the American Heart Association (AHA) Recommendations for Physical Exercise:

Recommendations for Physical Exercise:

At least 30 minutes of moderate-intensity aerobic activity at least 5 days per week for a total of 150 minutes

**OR**

At least 25 minutes of vigorous aerobic activity at least 3 days per week for a total of 75 minutes

## OR a COMBO of the two PLUS

Moderate to high intensity muscle strengthening activity at least 2 days per week.

- We also provided survey participants with the criteria illustrated by the AHA to determine what constitutes moderate intensity exercise and vigorous intensity exercise.
- We assessed resident's responses to AHA exercise adherence with the following study instruments: overall as a residency, post-graduate year, gender.
- Inclusion Criteria: Estimated subjects were 30. Population included all UICOMP Family Medicine Resident Physicians. All ages are were inclusive. Estimated male to female ratio was 13:15.
- There were no theoretical risks or potential benefits to survey participants. We did not receive any subject compensation.

## RESULTS

With respect to performing 150 minutes of moderate intensity aerobic activity per week, only one female and 2 male residents met this criteria. With respect to the alternative recommendation of 75 minutes of vigorous aerobic activity per week, five residents met this criteria. Out of the five residents that met this criteria, three were second-year residents and two were third year residents. No first-year residents met this criteria. With respect to performing moderate to high intensity muscle strengthening activity at least two days/week, seven residents met this criteria. Out of the seven residents one was a first year resident, four were second year residents, and two were third year residents. Again, out of the seven residents, four were female and three were male. The pattern seen was that first year residents were consistently not hitting exercise goals compared to their senior residents. 76% of residents reported using exercise as a coping mechanism for stress. When broken down by residency class, greater than 55% of every class reported using exercise as a coping mechanism for stress. 96% of residents reported that they were aware that they had access to a free/discounted gym membership. Only one resident reported having a physical limitation to performing exercise. 96% of residents reported that having an unpredictable work schedule was a major barrier to exercising regularly. As an overall residency, 57.7% of residents believed that they had enough time to exercise. Only 22% of the first year residents felt that they had enough time to exercise. 62.5% of second residents and 44% of third year residents felt that they had enough time exercise. The most common time spent exercising while on an outpatient rotation by residents was 60 minutes/week. Broken down by gender, 33% of females felt that they had enough time to exercise and 54.6% of males felt that they had enough time to exercise. There were seven residents that did not see any weight change during residency. Outliers included one resident that had lost ten pounds during residency and one resident had gained twenty five pounds during residency. The majority of residents had gained somewhere between five to fifteen pounds during the residency training.

## DISCUSSION

All p values from Chi square tests, or Wilcoxon tests were larger than 0.05. Regardless of statistical significance, there is still merit in the information we collected. Family medicine residents at UICOM-P fail to serve as ambassadors of health in regards to AHA exercise recommendations. The largest barrier is palpably time constraints and a concrete exercise regime. Exercise is an overwhelmingly preferred coping mechanism

for stress. This is a potential translation into resident wellness. In the Spring of 2019, the UICOMP Family Medicine Residency Program was granted a new resident lounge at Unity Point Health Methodist Hospital which is equipped with cardiovascular equipment as well as muscle strengthening equipment. This will make exercising readily accessible to residents.

### **LIMITATIONS AND FUTURE RECOMMENDATIONS**

The major limitation to our study was the power of the study. There just were not enough participants. Any future study aiming to seek similar data could be improved if there were more participants. Suggestions would be to include other residents (would require OSF IRB approval), medical students, and attendings. Furthermore, having participants elaborate on answering “no” to meeting minimum exercises recommendations would prove beneficial in terms of wanting to pinpoint a specific topic of concern worth undergoing process improvement. For example, having participants rank a list of explanations as to why they cannot exercise more often would be interesting to look at. Another limitation was email fatigue with residents. Although the survey was anonymous, on greater than three occasions we had relayed the message that this was a two part survey and one resident did not take the second part of the survey. Two residents did not take the survey. Many residents did not answer numerical values to how much exercise they perform. Perhaps, factoring in this email fatigue, we should have given them multiple choice ranges to choose from so they can click instead of having to type.

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### **REFERENCES**

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