

START Program Experience: Research in Cerebral Blood Flow in Patients with Spontaneous Coronary Artery Dissection (SCAD)

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Introduction

- The Student Aging Researchers in Training (START) Program is a year-long research initiative focused on exposing undergraduate's students to aging and public health in the College of AHS.
- Promotes access, equity, and inclusion while providing hands-on research experience through lab placements based on the student's preferences, weekly seminars to expose students to a diverse set of speakers and produces opportunities for conference presentations.

This poster describes the experiences of Taylor Woods and Rachael Oluwatoyosi, undergraduate students who navigated academic and research pathways through the START program during the Fall and Spring semesters. It highlights their roles as research assistants in Dr. Dillon's Vascular and Physiology Lab, where they were introduced to Spontaneous Coronary Artery Dissection (SCAD), an understudied cardiovascular condition that primarily affects young women and can result in heart attacks.

Impact & Skills Gained

This experience strengthened our understanding of the research process and provided hands-on exposure to a lab environment.

Key skills developed included:

- Critical thinking and scientific reasoning
- Communication and teamwork
- Understanding physiological research methods
- Professional and academic growth

Research Experience & What we Learned

Our Research Experience

During our time in the START program, we participated in weekly sessions and lab-based learning where we developed skills in:

- Time management
- Reading and annotating research articles
- Understanding different research methods and study design
- Teamwork, collaboration, and communication
- Scientific writing (e.g., abstracts)
- Professional development and etiquette

After being placed in Dr. Dillon's Vascular Physiology Lab, we were introduced to tools used to measure cerebral blood flow, including Labchart software used to analyze the middle cerebral artery (MCA) velocity in SCAD-related research.

Key Takeaways about SCAD

- SCAD occurs when there are random tears in the arteries of the heart
- This can restrict blood flow and lead to heart attacks
- It often affects individuals without traditional risk factors (healthy women athletes ranging from ages 30-45)
- Many aspects of SCAD, including its broader effects on the body, remain unknown which is why more research is imperative in this field

Understanding SCAD

A tear in the artery wall allows blood to collect between layers and restrict normal blood flow.

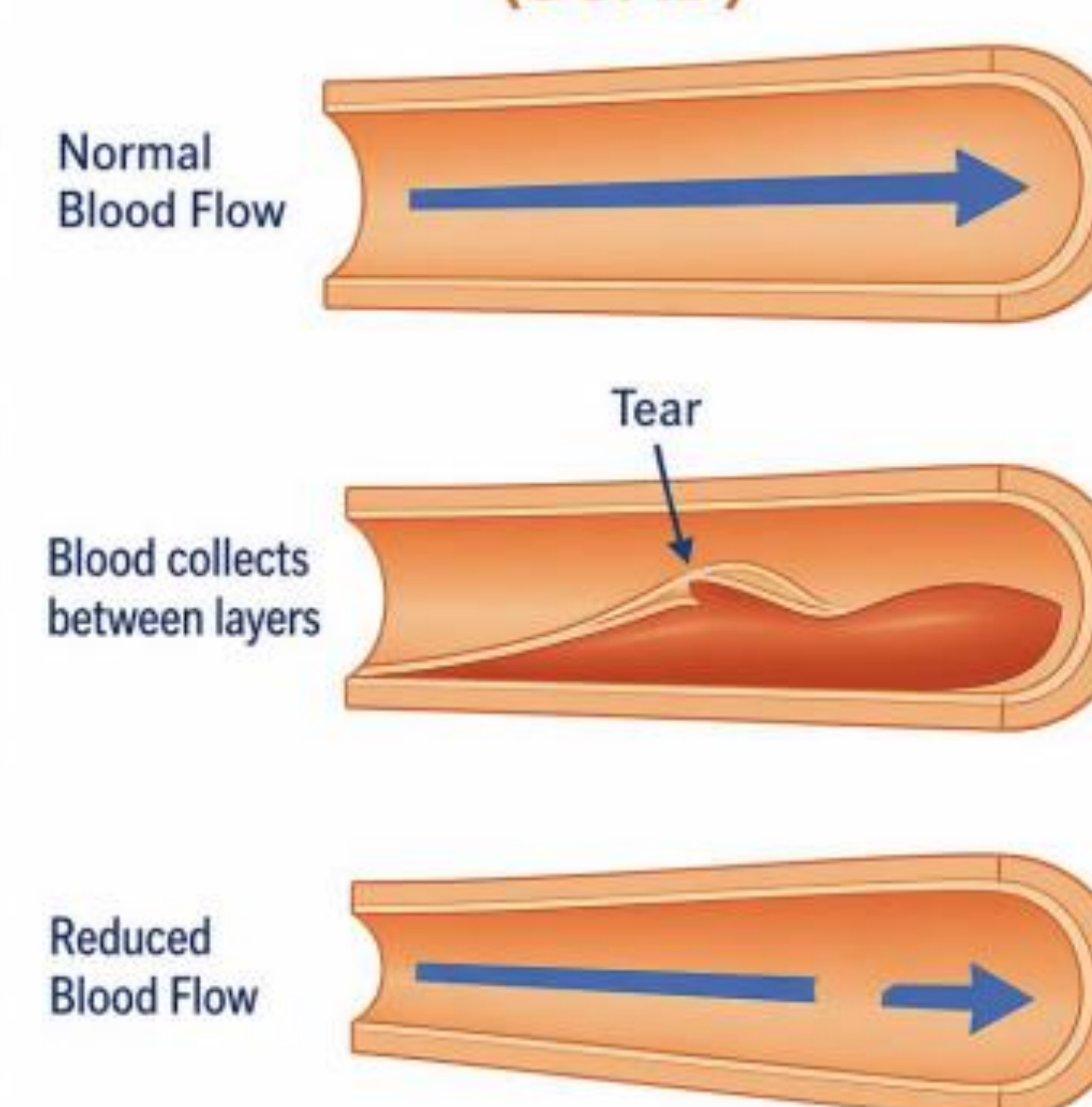
Future Research Approach

Our lab will investigate how SCAD may affect blood flow to the brain using a cold pressor test (CPT), a controlled physiological stressor.

Protocol Timeline



Tear in Coronary Artery Wall (SCAD)



Conclusion

Our time in the START program provided a strong and uniquely supportive foundation in research. While each participant's experience is different, the program equipped us with the essential skills and exposure needed for a successful introduction to the life of a researcher.

This experience highlighted the importance of studying SCAD, particularly because many aspects of its impact on the body remain unknown.

Acknowledgements

We would like to give a special thanks to our faculty advisor, Dr. Gabrielle Dillon, the graduate assistant of Dr. Dillon's Lab, Sneha Patel, and Diana Morales, our research advisor, for being so flexible and helpful during our time in the START Program!

