

FINAL REPORT

I. Project Title

Effects of Oral Ingestion of Bisphenol A on Type 2 Diabetes Risk Markers

II. Project Completion Date

After June 16th, 2017, study will continue with additional research staff following the completion of data collection and preliminary analyses.

III. Student(s), Department(s), and Major(s)

1. Alyssa Bird, College of Science and Math, Kinesiology
2. Dana Williams, College of Science and Math, Kinesiology

IV. Faculty Advisor and Department

Todd Hagobian, Kinesiology

V. Cooperating Industry, Agency, Nonprofit, or University Organization(s)

Center for Solutions Through Research in Diet & Exercise (STRIDE)

VI. Executive Summary

Eleven healthy adults (3 M, 8 F; 21.3 ± 0.8 yr; 24.0 ± 3.8 kg/m²) were block randomized to a single ingestion of placebo, low dose BPA (4 µg/kg-bw), or high dose BPA (50 µg/kg-bw) on separate days in a double-blinded, crossover fashion. Blood was drawn at baseline and repeatedly for 3 hours following each condition. Data collection has been completed for 11 subjects, and analyses of plasma BPA concentrations in these subjects have shown three distinct concentrations for high, low, and placebo conditions. Preliminary analyses of plasma insulin concentrations in 3 subjects appear to show differences in concentrations between conditions. In order to analyze insulin, proinsulin, estrogen, and glucose concentrations, this study will be continued into Summer 2017. Based on preliminary findings, we anticipate that oral ingestion of BPA will negatively affect risk markers in the pathogenesis of Type 2 Diabetes.

VII. Major Accomplishments

1. Completion of data collection through the successful recruitment of 11 subjects and completion of data collection.
2. Successfully established study methods and laboratory procedures for continuation of study by future research students.
3. Observed differences in plasma BPA and insulin concentrations between conditions (placebo, low, and high dose BPA).

VIII. Expenditure of Funds

The funds received from the grant totaled \$4,250. All allocated funds were spent within three categories. Through the grant funds our study was able to purchase necessary supplies, provide subject payment, and provide payment to phlebotomists for services.

Date	Type: Phlebotomist Services	Description	Amount
5/25/17	missapplied payroll for Kristen Davis off set by Poor richards purchase	Disbursement	123.15
10/7/16	660003-Supplies and Services	Phlebotomist Services,, \$17.00	119.00
11/1/16	660003-Supplies and Services	Phlebotomist Services,, \$17.00	246.50
11/23/16	660003-Supplies and Services	Phlebotomist Services, \$17.00	314.50
2/22/17	660003-Supplies and Services	PHLEBOTOMIST SERVICES - VanZee	90
3/20/17	660003-Supplies and Services	Phlebotomy -Vanzee	185
5/9/17	660003-Supplies and Services	Jill Jacoby	319
		Total	1397.15

Date	Type: Supplies	Description	Amount
11/10/16	660003-Supplies and Services	UT PCARD 08-16 HEANEY	1.42
1/18/17	660003-Supplies and Services	UT PCARD 09-16 HAGOBIAN	39.38
8/4/16	660003-Supplies and Services	REIMB 07/29 HAGOBIAN	97.41
10/10/16	660736-Hosting (003)	REIMB 09/16 HAGOBIAN	60.00
10/25/16	660736-Hosting (003)	REIMB SUPPLIES	70.00
11/21/16	660736-Hosting (003)	REIMB 10/21 HAGOBIAN	50.00
8/31/16	660003-Supplies and Services	AMAZON MKTPLACE PMTS	18.95
9/29/16	660003-Supplies and Services	C/D/N ISOTOPES	610.00
9/29/16	660003-Supplies and Services	AMAZON MKTPLACE PMTS	7.51
10/22/16	660003-Supplies and Services	REIMB 10/06 BIRD	19.10
10/28/16	660003-Supplies and Services	TFS*FISHERSCI ECOM CHI	87.45
10/28/16	660003-Supplies and Services	AMAZON MKTPLACE PMTS	14.98
10/28/16	660003-Supplies and Services	TFS*FISHERSCI ECOM CHI	135.07
11/30/16	660003-Supplies and Services	MCKESSON MEDICAL SURGICAL	175.32
12/29/16	660003-Supplies and Services	MCKESSON MEDICAL SURGICAL	153.30
2/22/17	660003-Supplies and Services	Use Tax PCARD 10-16 HEANEY	0.75
2/28/17	660003-Supplies and Services	WHOLEFDS SLO #10584 - Pcard Casey	100.00
4/4/17	660003-Supplies and Services	DBF SERVICE	100
4/28/17	660003-Supplies and Services	DBF SERVICES	68
5/25/17	660003-Supplies and Services	Spanish Brochure	110.6
5/30/17	660003-Supplies and Services	Qty 11 KAQ0621 Elisa kit plus	483.61
		Total	2,402.85

Date	Type: Subject Payments	Description	Amount
9/14/16	660003-Supplies and Services	DBF BPA STUDY - Mudderman 1st	30.00
10/6/16	660003-Supplies and Services	DBF BPA STUDY - Abood 1st	30.00
10/6/16	660003-Supplies and Services	DBF BPA STUDY - Mudderman 2nd	30.00
10/6/16	660003-Supplies and Services	DBF BPA STUDY - Ramos 3rd	30.00
10/10/16	660003-Supplies and Services	DBF BPA STUDY Mercado - 1st	30.00
10/10/16	660003-Supplies and Services	DBF BPA STUDY Ramos 1st - 2nd	60.00
10/22/16	660003-Supplies and Services	DBF 10/10 MERCADO - 2nd	30.00
10/22/16	660003-Supplies and Services	DBF 10/10 ABOOD 2nd	30.00
11/7/16	660003-Supplies and Services	DBF FOR BPA STUDY - Durand 1st	30.00
12/27/16	660003-Supplies and Services	DBF 12/03 LUDINGTON 1st	30.00
12/28/16	660003-Supplies and Services	DBF 12/02 MERCADO - 3rd	30.00
2/9/17	660003-Supplies and Services	DBF 01/17 ABOOD	30.00
2/9/17	660003-Supplies and Services	DBF 01/17 DURAND	60.00
		Total	450.00

Budget Transactions total	\$	4,250.00
Actual Funds Spent (total expenses that have hit Dashboard)	\$	4,250.00
Actual balance Remaining 65048		\$0.00

IX. Impact on Student Learning

The student-led research project “Effects of Oral Ingestion of Bisphenol A on Type 2 Diabetes Risk Markers” has had a profound impact on co-leaders Alyssa and Dana’s senior year at Cal Poly. The year-long research project allowed for application of course material learned in lecture and lab to study design and data analysis. Through the process, we have gained valuable skills in subject recruitment, study design, development of professional relationships with participants and department staff, and management of day-to-day activities. We have had the unique opportunity to conduct an invasive study that required multidisciplinary skills and the ability to think critically, thus allowing us to develop professionally. This year-long project coincided with full class schedules which required us to manage our time efficiently and prioritize research goals. This study brought about many challenges including difficulty establishing methods and procedures to get the study up and running. Once data collection began on subjects, we encountered staffing issues involving our phlebotomists, which was a severe setback early on. While these challenges put us behind schedule, they greatly improved our management skills in terms of conducting the study and coordinating with other research staff members on how to overcome obstacles and meet our objectives. Not only has conducting this study allowed us to begin developing of our own line of research, it has also allowed us to establish invaluable relationships with professors and staff within the Kinesiology department that have greatly furthered our education and career goals.