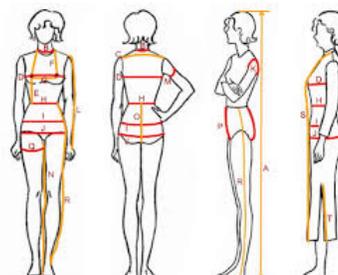


Mass clothing production for post-breast cancer patients

Background: After breast cancer treatment, which may include total or partial breast removal and other physical changes, patients have difficulty finding clothes that fit them properly. In some cases, their clothing must be tailored or custom-made, which can be very costly compared to mass-produced clothes. If we can find a trend in these body measurements, then clothing manufacturers can group similar measurements into common sizes, rather than making individual garments for each person.

Data: Over 60 body measurements were collected on 25 patients. Our independent variable for this study was breast height, which can be easily measured at home by customers. Other measurements were treated as dependent variables (neck height, mid-neck girth, bust/chest girth, hip height, etc.)

Measurement	Patient 1	Patient 2
Neck height	125.1	130.6
Breast height	106.2	115.1
Mid-neck girth	41.9	30.6
Bust/chest girth	120.1	85.6
Hip height	82.5	73

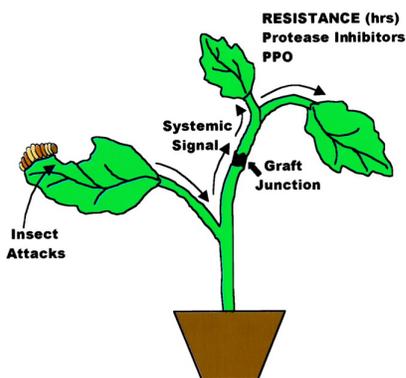


Results: After data analysis, no significant relationship found between breast height and bust/chest girth (horizontal).

Author: Li Gen, Statistics MS student

Effect of JA on plant defense against corn rootworm

Background: Jasmonic acid (JA) is a phytohormone whose major function is regulating plant responses to abiotic and biotic stresses, as well as plant growth and development. When plants are attacked by insects, they response by releasing JA. This release activates the expression of protease inhibitors, among many other anti-herbivore defense compounds.



Experimental design: Two plant varieties, a mutant strain with low JA and a non-mutated strain with high JA, were exposed to both the western corn rootworm (*WCR*) and southern corn rootworm (*SCR*). Plants were exposed over two time frames: for 3 days and for 7 days. Researchers were limited to only 50 seeds for the mutant (low JA) strain.

Treatments will be applied using a randomized complete block design, with 8 possible treatment combinations. There will be three replications within each block.

Blk1	Blk2	Blk3	Blk4
Comb2	Comb4	Comb6	Comb7
Comb3	Comb7	Comb7	Comb3
Comb5	Comb1	Comb3	Comb5
Comb8	Comb5	Comb5	Comb4
Comb7	Comb3	Comb2	Comb6
Comb1	Comb2	Comb4	Comb8
Comb6	Comb6	Comb1	Comb2
Comb4	Comb8	Comb8	comb1

Results: Data collection is ongoing.

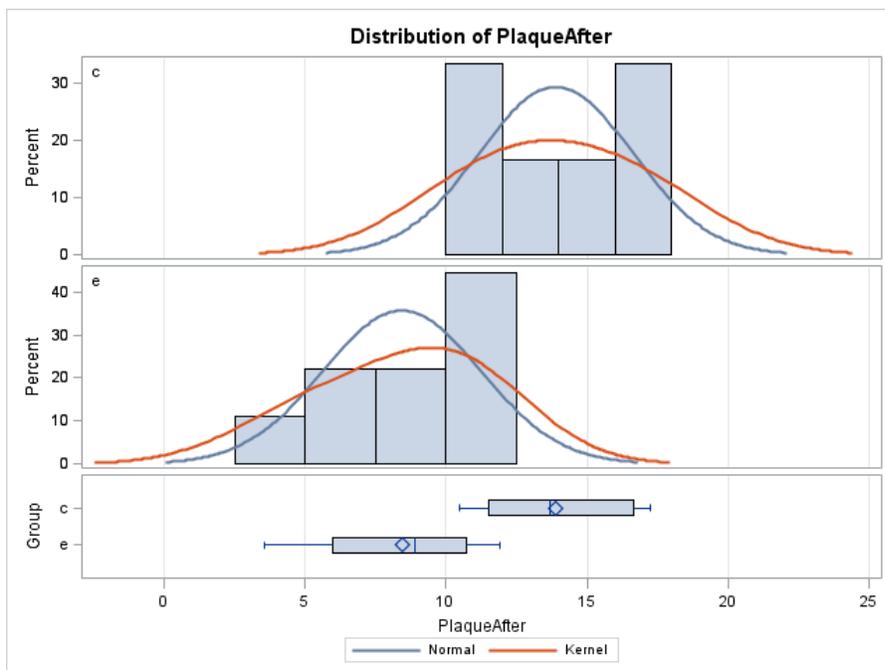
Author: Zou Yuwei, Statistics MS student

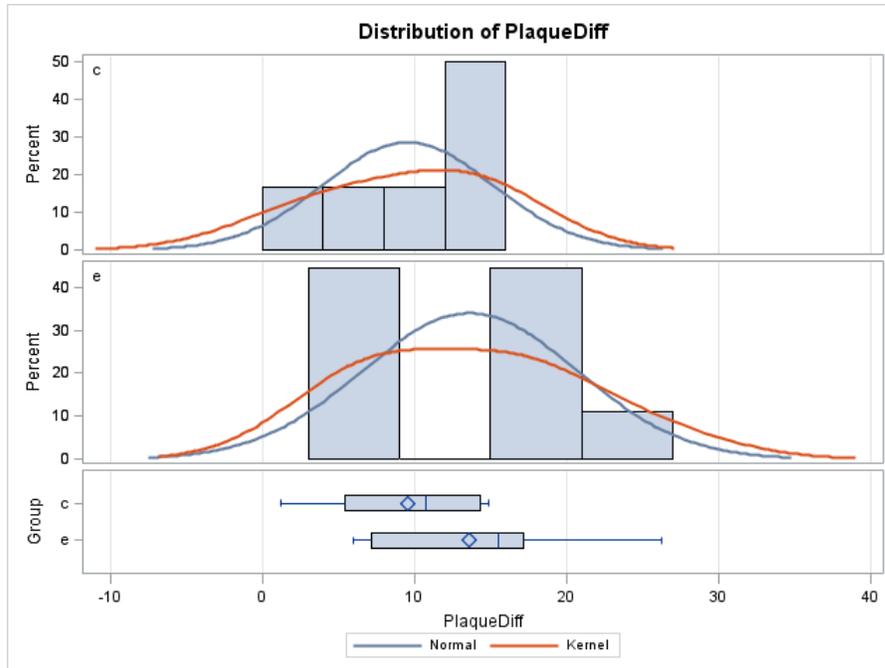
Effectiveness of delmopinol on plaque adhesion

Background: Delmopinol is a chemical compound commonly used in mouthwashes for the management of gingivitis. Delmopinol is thought to interact with the thin layer of saliva polymers and protein covering teeth and gums, forming a barrier to prevent microbial adhesion and colonization of the tooth and gum surface. This study evaluated the effectiveness of delmopinol.

Experimental design: Initial plaque levels were measured on 15 subjects. In an experimental group, 9 subjects rinsed with 10 mL of Butler GUM Perio-Shield rinse containing delmopinol twice daily. In a control group, 6 subjects rinsed twice daily with distilled water. After two weeks of including the rinse with a daily dental routine, plaque levels were measured again for each subject.

- Average final plaque level (control) = 13.89% (s.e. = 1.11%)
- Average final plaque level (experimental) = 8.42% (s.e. = 0.93%)





- Average change in plaque level (control) = 9.55% (s.e. = 2.279%)
- Average change in plaque level (experimental) = 13.63% (s.e. = 2.35%)

Results: Data were analyzed using two-sample *t*-test to compare the experimental group to the control for both the final plaque reading and the difference in plaque readings.

The difference between the control and experimental group's average final plaque level was statistically significant (p -value = 0.0025). However the difference between the control and experimental group's change in plaque level was not statistically significant (p -value = 0.2570). In conclusion, rinsing with delmopinol produced significantly lower plaque levels, however the amount by which it decreased plaque levels was not significantly better than rinsing with water.

Author: Andrew Haag, Statistics MS student

Consulting Services

The **Department of Statistics at UNL** provides a variety of consulting resources.

- Faculty and graduate students can contact one of our faculty directly to set up an appointment.
- The Statistics Help Desk is available to answer drop-in questions for UNL students and faculty.
- The Department also participates in the Survey, Statistics, and Psychometric Core Facility to provide support for the social and behavioral sciences.

For a complete list of services offered and contact information, visit our department website:

<http://statistics.unl.edu>

The **Statistics Help Desk** is staffed by senior graduate students at two locations: 250 Avery Hall (City Campus) and 346AA Hardin Hall (East Campus). Hours vary from semester to semester. Contact the Statistics Help Desk at:

- East Campus phone: (402) 472-5405
- City Campus phone: (402) 472-7254
- Online request form: <http://statistics.unl.edu/resources/helpdesk/index.shtml>