

Background cont.


- Investigators could not find any U.S. studies.
- Some U.S. hospitals were beginning to change practice based on the few existing studies.

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The method

Inclusion criteria: Healthy volunteer health workers without diabetes, aged 18-64.

Exclusion criteria: hospitalized patients, people with diabetes, poor circulation/edema/pain in fingers, use of peritoneal dialysis, younger than 18 or older than 64, initial blood sugar result 140 dL/mL or greater.



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Purpose

- The purpose of this research study is to determine variations in blood glucose readings that exist in methods of preparing skin for capillary blood sample collection among healthy individuals who have been exposed to the handling of fruit.

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The method

- 28 participants (healthy individuals) washed hands, then gloved their control hand.
- Intervention hand stirred cut grapes in a cup for 5 minutes, then dried for 30 minutes.
- Control hand glucose result checked
- Intervention hand glucose results checked:
 - Finger #1 with alcohol wipe
 - Finger #2 with hand sanitizer wipe
 - Finger #3 – hands washed, then alcohol wipe




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Research question

What differences exist, based on the method of cleaning, in capillary blood glucose results of healthy individuals whose fingertips have been exposed to fruit sugar?

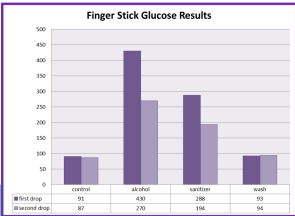
Specifically:

- Alcohol wipe
- Hand sanitizer wipes
- Soap and water handwashing



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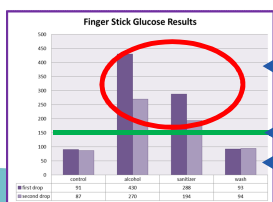
Fingersticks and Fruit!



Condition	First Drop	Second Drop
control	95	87
alcohol	430	230
sanitizer	290	194
wash	93	94

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Fingersticks and Fruit: Conclusion and Recommendations



False results could lead to inaccurate treatment

insulin treatment threshold

Handwashing provided the most accurate fingerstick glucose results

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The results

Finger	1 st drop	2 nd drop	P value 1 st vs 2 nd	P value intervention vs control at 1 st drop	P value intervention vs control at 2 nd drop	P value intervention comparison at 1 st drop	P value intervention comparison at 2 nd drop
Control (no fruit, hand washing)	91 (83-96)	87 (81-100)	0.219 (0.366)	NA	NA		
Intervention Finger 1 (fruit + alcohol)	430 (327-500)	270 (174-376)	0.0001 (0.0008)	0.0001 (0.0008)	0.0001 (0.0008)	1 vs 2: 0.0018 (0.015)	1 vs 2: 0.0083 (0.031)
Finger 2 (fruit + cleansing wipe)	288 (188-428)	194 (141-265)	0.0001 (0.0008)	0.0001 (0.0008)	0.0001 (0.0008)	2 vs 3: 0.0001 (0.0008)	2 vs 3: 0.0001 (0.0008)
Finger 3 (fruit + hand washing)	93 (89-100)	94 (88-98)	0.933 (0.099)	0.011 (0.044)	0.366 (0.366)	1 vs 3: 0.0001 (0.0008)	1 vs 3: 0.0001 (0.0008)

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Conclusions/Recommendations

The most accurate results are demonstrated when using handwashing.

Inpatient: BSWH subscribes to Mosby's Nursing Skills, which instructs handwashing and then alcohol. We recommend following Mosby's instructions.

- Assist patient's to go to the sink and wash hands if able.
- NPO patients may not be a priority
- If glucose is higher than usual for patient, prepare skin differently rather than only repeating test.

Outpatient: FDA and ADA instructs handwashing, so we recommend following their instructions.

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