DIGITAL FOOD PHOTOGRAPHY

Dietary surveillance and beyond

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Pediatrics

Measuring Exposure

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Problem: Accurate Portion Size Estimation

1. Interviewer-aided dietary recall:

   interviewer-aided probing and portion size selection

2. Self-administered dietary recall:

   automated probing and visually appealing portion size depiction

Potential Solution

- Take advantage of available technologies

Evolution

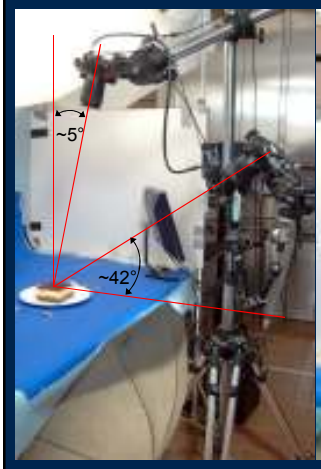
Photography System Components

1. 2-Nikon F80 cameras with 28-125 mm zoom lenses and AC power supplies
2. 2-Nikon Electronic cable releases
3. 2-Windows driven PCs, one per camera with mouse, keyboard and monitor cable
4. 2-USB cables to connect each camera to its PC
5. 2-Electronic flash sync cables
6. 1-15" LCD Monitor with monitor cable
7. 1-Computer monitor switcher
8. 2-Nikon Camera Control Pro software for direct computer control and capture
9. 1-Kinex viewfinder projector
10. Comet studio lighting kit with 2 flash heads and stands
11. Large soft light box
12. Reflective umbrella
13. Backdrop stand, paper backdrop, diffusion fabric, light stands and white mount board
14. Chroma-key blue paint
15. Heavy tripod with attached second mount
16. Kitchen preparation table

Food Photography System (FPS) Requirements

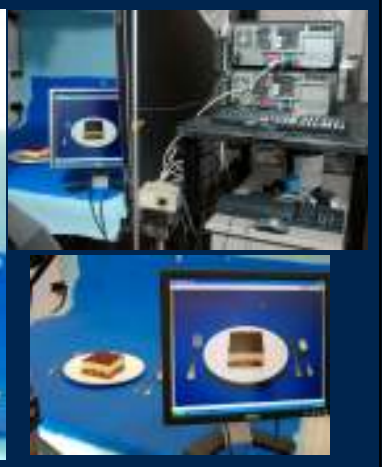
- Shoot two different angles of view
- Shoot photos of comparable size
- Shoot portion size series easily
- Simple to operate
- “On the job” quality assurance and safe storing

Photography System Components



2 Camera angles

Light box and Chroma Key background



1 PC per camera; 1 shared monitor

Food Photography Process

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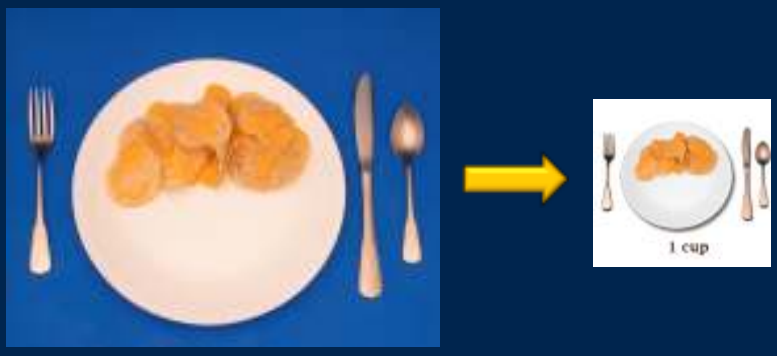
The Big Picture

Before **After**



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Portion Size Self-Assessment

Aerial view **Angled view**

ASA24™ ASA24 Automated Self-administered 24-hour Recall

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Portion Size in WebDASC
(for 9-11 year old Danish children)

- Web-based Dietary Assessment Software developed by the National Food Institute, Technical University of Demark. Department of Nutrition.
- WebDASC used:
  - ➢ 245 photo series from the CNRC Digital Food Photography Database
  - ➢ 75 photo series from the researcher's own making

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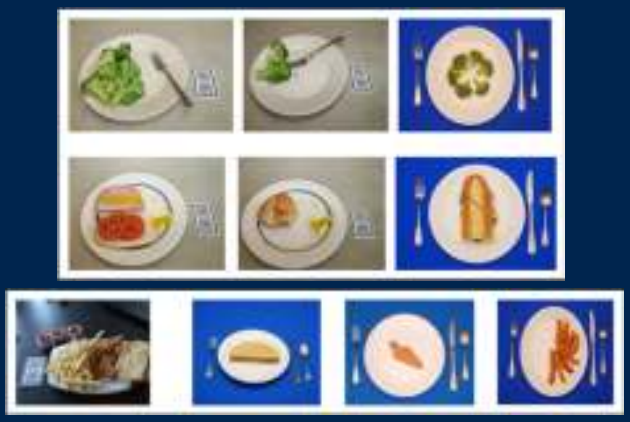
Standard or reference to estimate dietary intake and assess nutrients



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PENNINGTON BIOMEDICAL RESEARCH CENTER

Adult Video Games

Energy Balance **Carbohydrate Count**

Lynne Harris, Ph.C. and Wanda Pratt, Ph.D., Associate Professor, Division of Biomedical and Health Informatics

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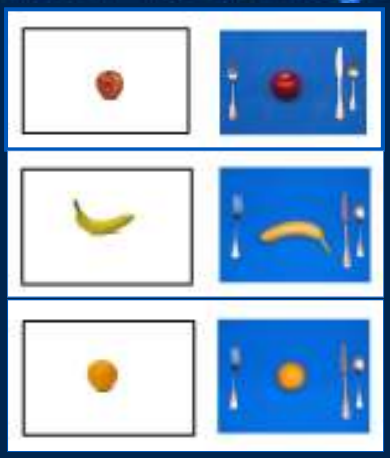
Standard or reference to calibrate other food images



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Nutrition Facts

learning your way to smarter eating

http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm267499.htm

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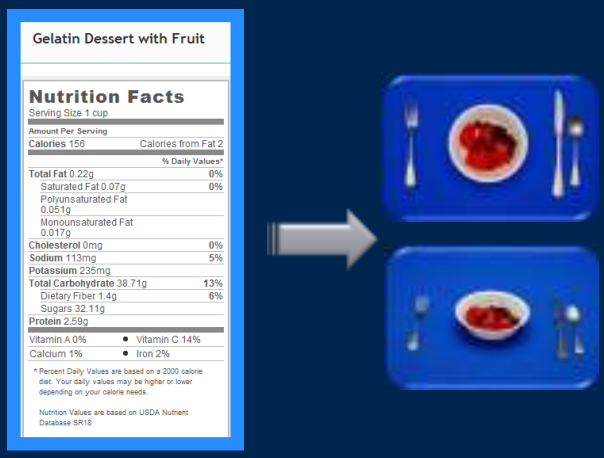
A picture is worth…



Calories 156

Carbs 39

Protein 2.6

Fat 0.2

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