

Foodfit

A newly designed web application to illustrate food and physical activity choices

Alyssa Rosenzweig

Computer and Cognitive Science, Psychology, Mathematics, Spanish
University of Pennsylvania

Dr. Ali Cinar and Meriyan Oruklu

Chemical and Biological Engineering

Malkeet Singh

Computer Science

Illinois Institute of Technology

ECDRE REU 2007

FoodFit

Who?

- Type 2 Diabetes, Prediabetes, Obesity
 - Treatment adherence
 - Silent symptoms
 - Accessibility
 - Complex/Overwhelming
- Type 1 Diabetes
 - GlucoSim
- Youth
 - Risk
 - Establish habits early

Why?

- Education
 - Healthy choices add up
 - Lifestyle
 - ...teach them to fish...
 - Classroom, clinical
- Prevention
 - Onset
 - Complications
 - Diabetes
 - Geriatric
- Integrate with GlucoSim



A Web-Based Educational Simulation Package for Glucose-Insulin Levels in the Human Body

Warning:

"The simulator does not differentiate between people regarding their sex, age, race, or BMI (body mass index); instead it represents an average person. Also, Glucosim does not take into account intra- and inter-personal variations and it should not be used for making medical decisions."

The Glucosim should only be used for educational purposes.



[Model Equations](#)

[Controller](#)

[Simulator](#)

[How To](#)

[Links](#)

[Diabetes](#)



**What is
Diabetes**

Click for animation
& video

[Simulator](#)

[Oral Glucose Tolerance Test](#)

[Healthy](#)

[Type I Diabetes](#)

[Multiple Insulin Injections](#)

[Insulin Pumps](#)

[Constant Injection Rate](#)

[Proportional-Integral-Derivative \(PID\)](#)

[Internal-Model-Control \(IMC\)](#)

[Model-Predictive-Control \(MPC\)](#)



Glucosim

Process Modeling,
Monitoring, and Control
Research

Home

Research

People

Publication

Software

ILLINOIS INSTITUTE
OF TECHNOLOGY

Glucosim

Model Equations

Controller

Simulation

How To

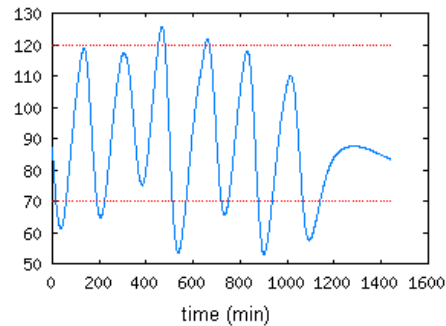
Links

Diabetes

A Web-Based Educational Simulation Package for Glucose-Insulin Levels in the Human Body

 [Output data file](#)

Blood Glucose (mg/dl)

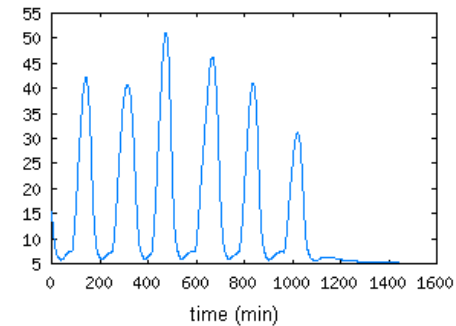


Warning:

"The simulator does not differentiate between people regarding their sex, age, race, or BMI (body mass index); instead it represents an average person. Also, Glucosim does not take into account intra- and inter-personal variations and it should not be used for making medical decisions."

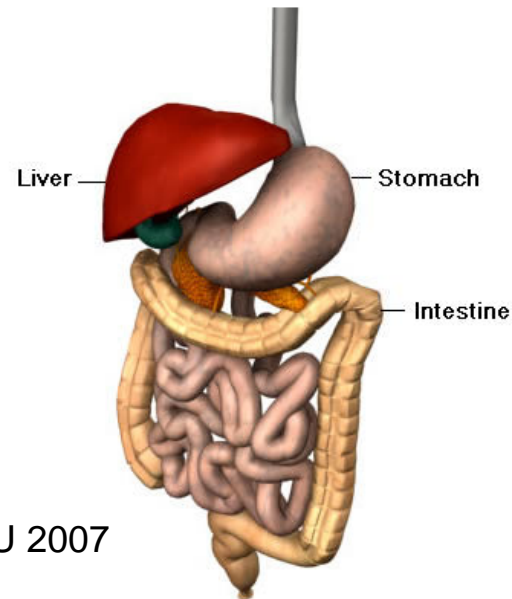
The Glucosim should only be used for educational purposes.

Blood Insulin (mU/ml)



Click on body parts to see the graph on that part.

****In order to see the graphs, turn off the pop-up blocker temporarily.**



FoodFit

Framework



- Planner
- Journal
- Reports
- Profile
- Info

FoodFit

Welcome to FoodFit, your interactive *food* and *fitness* companion. Use this free tool to learn about balancing your daily caloric needs.

Sign In

Returning users can continue right where they left off.

User Name

Password

[Sign In](#)

Register

Creating a free account allows you to save food and activity records, as well as your profile.

[Sign Up](#)

Try It!

Give FoodFit a try, but remember that you must register to save anything.

[Go Play](#)

FoodFit



Planner

- +Activity
- +Meal
- Load
- Save
- Analyze

12 AM	
1 AM	
2 AM	
3 AM	
4 AM	
5 AM	
6 AM	Running, 6mph X -1 hr-
7 AM	
8 AM	Breakfast X +
9 AM	
10 AM	
11 AM	
12 PM	
1 PM	
2 PM	
3 PM	
4 PM	
5 PM	

FoodToday

Breakfast	Lunch	Dinner	Snack
Coffee, brewed from ...	1	cup (8 fl oz)	X
Egg, whole, cooked, ...	1	large	X
Milk, nonfat, fluid, ...	1	fl oz	X
Muffins, blueberry, ...	1	medium	X
Pork, cured, bacon, ...	3	slice cooked	X

USDA National Nutrient Database

FrequentLists

Breakfast	Lunch	Dinner	Snack
<input type="checkbox"/>			Cereals ready-to-eat, general mills, honey nut ch... X
<input type="checkbox"/>			Cereals ready-to-eat, kellogg, kellogg's fruit lo... X
<input checked="" type="checkbox"/>			Coffee, brewed from grounds, prepared with tap wa... X
<input checked="" type="checkbox"/>			Egg, whole, cooked, scrambled X
<input type="checkbox"/>			Fast foods, croissant, with egg, cheese, and saus... X
<input checked="" type="checkbox"/>			Milk, nonfat, fluid, with added vitamin a (fat fr... X
<input checked="" type="checkbox"/>			Muffins, blueberry, commercially prepared X
<input type="checkbox"/>			Orange juice, raw X
<input checked="" type="checkbox"/>			Pork, cured, bacon, cooked, pan-fried X
<input type="checkbox"/>			...

+Food

Foodfit



- Saved food and activity planners
- Tab organization

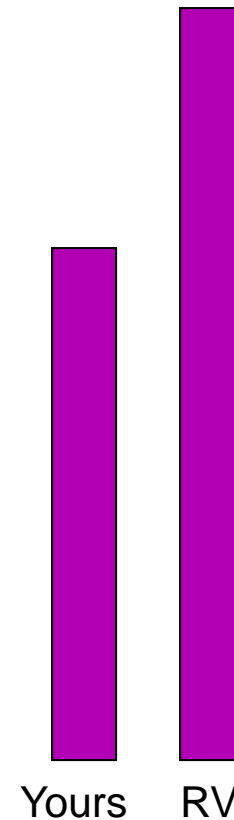
Food Name	QTY	Unit	Energy(Kcal)	CH(g)	Pr(g)	T. Fat(g)	Chol(mg)	Sod(mg)	Fiber(g)	S. Fat(g)	P. Fat(g)
Breakfast 8:00:00											
MILK, NONFAT, FLUID, W/ VIT A (FAT FREE OR SKIM)	<input type="text" value="1"/>	cup	83.3	12.1	8.2	0.1	4.9	102.9	N/A	N/A	0.0
EGG, WHL, CKD, SCRAMBLD	<input type="text" value="1"/>	cup	365.2	4.8	24.3	26.8	774.4	616	N/A	4.7	10.4
PORK, CURED, BACON, CKD, PAN-FRIED	<input type="text" value="3"/>	slice cooked	126.3	0.3	9.0	9.5	26.7	575.4	N/A	1.0	4.2
COFFEE, BREWED FROM GROUNDS, PREP W/ TAP H2O	<input type="text" value="1"/>	cup (8 fl oz)	2.3	N/A	0.2	0.0	N/A	4.7	N/A	N/A	0.0
MUFFINS, BLUEBERRY, COMMPLY PREP	<input type="text" value="1"/>	large	385.0	66.7	7.6	9.0	41.7	621.3	3.6	3.4	2.7
Add Another Food Item											
Sub Total			962.2	84.0	49.6	45.6	847.7	1920.4	3.6	9.2	17.5

Analyze

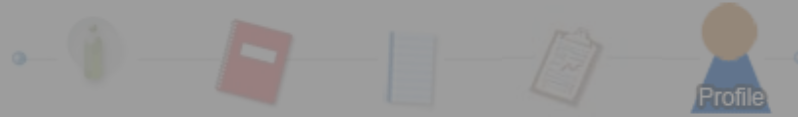
FoodFit



- Analyze
 - Macro- and micronutrients
 - Food group distribution
 - Daily caloric balance
 - Game
- Printable, PDFs
- Save



Foodfit



- Physical Description
 - Accurate analysis
- Editable

FoodFit



- FAQs
- Additional resources
- Tutorial
- Contact Information