

Appendices

Appendix A: Research Participant Consent Form



INFORMED CONSENT LETTER FOR ADULT PARTICIPANTS

11/01/2013

Dear participant:

I am a Marketing student at the University of New Hampshire in Durham, NH and I am conducting a research project to find out how adolescents with type 1 diabetes care for their disease and handle complications, such as eating disorders and diabetes burnout. This research is part of a larger project, my Senior Honors Thesis, which will aim to develop a new product and design a marketing plan for this product. The product is a computer game to help children and teenagers with diabetes manage their disease. I am writing to invite you to participate in this project. I plan to work with approximately 50 participants in this study. You must be at least 18 years old to participate in this study.

If you agree to participate in this study, you will be asked to share your thoughts on this new product concept and your personal experiences as an adolescent with type 1 diabetes. The focus group is anticipated to take no longer than an hour and a half. You may be subject to audio or video recording as a future reference for the researchers for the duration of the research project. These recordings will only be used in formulating our research strategy as well as writing and presenting this thesis project. You will not receive any compensation to participate in this project.

The potential risks of participating in this study are minimal. Although you are not anticipated to receive any direct benefits from participating in this study, communicating your experiences and ideas may benefit future generations who will utilize this game to improve diabetes care.

Participation in this study is strictly voluntary. If you refuse to participate, you will not experience any penalty or negative consequences. If you agree to participate, you may refuse to answer any question and/or if you change your mind, you may withdraw at any time during the study without penalty or negative consequences.

I seek to maintain the confidentiality of all data and records associated with your participation in this research. There are, however, rare instances when I am required to share personally-identifiable information (e.g., according to policy, contract, regulation). For example, in response to a complaint about the research, officials at the University of New Hampshire, designees of the sponsor(s), and/or regulatory and oversight government agencies may access research data. While I plan to maintain confidentiality of your responses, other focus group

participants may repeat responses outside the focus group setting. Data will be kept on a password protected computer; only my faculty advisor and I will have access to this data. Any video or audio recording will also be kept on this computer and will only be accessed by my advisor and myself and will be deleted at the end of the study. I will report the data in aggregate and maintaining confidentiality for all research participants. The results may be used in reports, presentations, and publications.

If you have any questions about this research project or would like more information before, during, or after the study, you may contact Emily Stone at e.stone2267@gmail.com. If you have questions about your rights as a research subject, you may contact Dr. Julie Simpson in UNH Research Integrity Services at 603-862-2003 or Julie.simpson@unh.edu to discuss them.

I have enclosed two copies of this letter. Please sign one indicating your choice and return. The other copy is for your records. Thank you for your consideration.

Sincerely,

Emily Stone
University of New Hampshire Undergraduate Student
Senior Honors Marketing Thesis Researcher

Yes, I, _____ consent/agree to participate in this research project.

No, I, _____ do not consent/agree to participate in this research project.

Signature

Date

Appendix B: IRB Approval Letter

University of New Hampshire

Research Integrity Services, Service Building
51 College Road, Durham, NH 03824-3585
Fax: 603-862-3564

04-Nov-2013

Stone, Emily
Marketing, Paul College
GSS Box 13965
44 Brady Avenue
Derry, NH 03038

IRB #: 5849

Study: Dia-BEAT-it: An Online Game for Children and Teenagers with Type 1 Diabetes

Approval Date: 31-Oct-2013

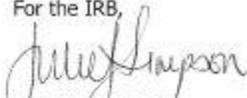
The Institutional Review Board for the Protection of Human Subjects in Research (IRB) has reviewed and approved the protocol for your study as Expedited as described in Title 45, Code of Federal Regulations (CFR), Part 46, Subsection 110.

Approval is granted to conduct your study as described in your protocol for one year from the approval date above. At the end of the approval period, you will be asked to submit a report with regard to the involvement of human subjects in this study. If your study is still active, you may request an extension of IRB approval.

Researchers who conduct studies involving human subjects have responsibilities as outlined in the attached document, *Responsibilities of Directors of Research Studies Involving Human Subjects*. (This document is also available at <http://unh.edu/research/irb-application-resources>.) Please read this document carefully before commencing your work involving human subjects.

If you have questions or concerns about your study or this approval, please feel free to contact me at 603-862-2003 or Julie.simpson@unh.edu. Please refer to the IRB # above in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB,



Julie F. Simpson
Director

cc: File
Niman, Neil

Appendix C: Focus Group Projective Techniques Results

Word Association Prompts:

1. Diabetes
2. Sugar
3. Games
4. Apps
5. A1C
6. Rewards
7. Blood sugar
8. Endocrinologist
9. Exercise
10. Carbohydrate

Drawing Prompt: Diabetes Burnout

Word Association Exhibit A:

challenge
balance
fun
annoying
improve
exciting
check
helpful
love
count

“challenge, balance, fun, annoying, improve, exciting, check, helpful, love, count”

Word Association Exhibit B:

insulin
yummy
uno
iPhone
good
good
100
doctor
yes
food

“insulin, yummy, uno, iPhone, good, good, 100, doctor, yes, food”

Word Association Exhibit C:

1. Sucks!
2. Coffee
3. fun!
4. huh?
5. Great.
6. Positive
7. "test"
8. Doctor
9. yuck!
10. LOVE THEM!

“sucks!, coffee, fun!, huh?, great, positive, test, doctor, yuck!, LOVE THEM!”

Word Association Exhibit D:

- ① Pancreas
- ② baking
- ③ football
- ④ smart phone
- ⑤ bad
- ⑥ money/prizes
- ⑦ perfect 100
- ⑧ hormones
- ⑨ running
- ⑩ bagle

“pancreas, baking, football, smart phone, bad, money/prizes, perfect 100, hormones, running, bagle”

Word Association Exhibit E:

hard
high
fun
iphone
too high
candy
ok
scared
annoying
delicious

“hard, high, fun, iPhone, too high, candy, ok, scared, annoying, delicious”

Word Association Exhibit F:

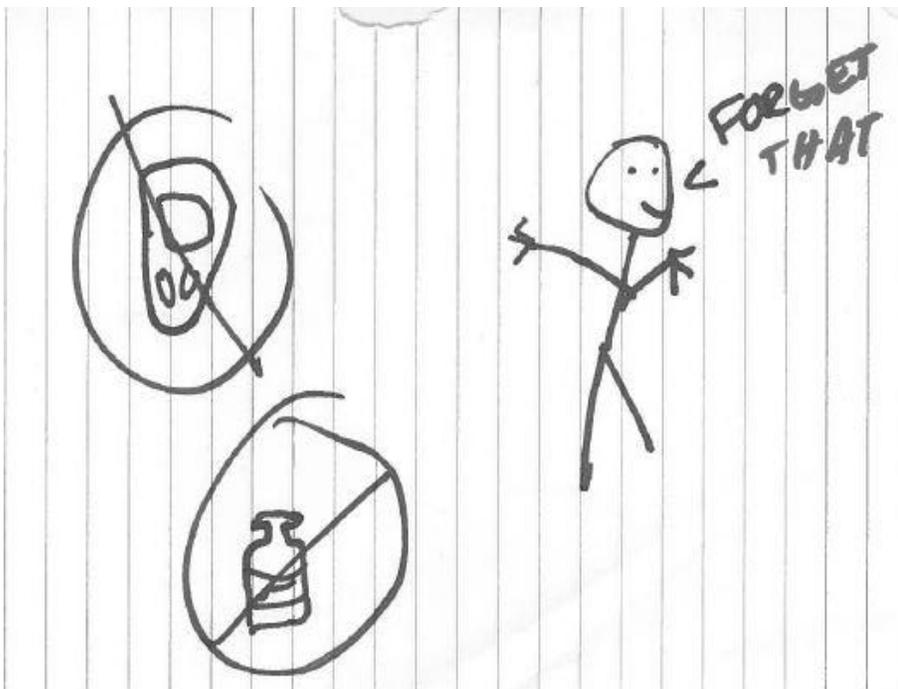
1) camp
2) insulin
3) sports
4) iPhone
5) test
6) candy
7) meter
8) Dr Goldstein
9) sweat
10) bolus

“camp, insulin, sport, iPhone, test, candy, meter, Dr. Goldstein, sweat, bolus”

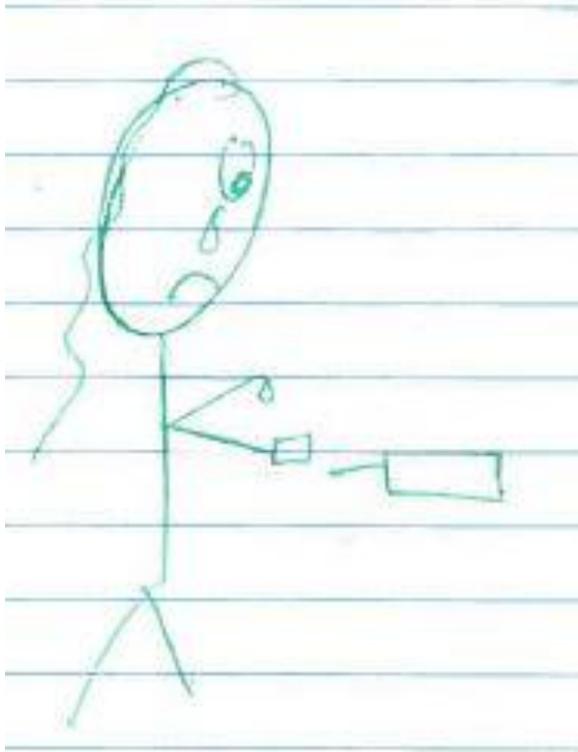
Drawing Exhibit A:



Drawing Exhibit B:



Drawing Exhibit C:



Appendix D: Survey Results

Cross Tabulation A

Level of Education and Likeliness to play Dia-BEAT-it

		What is your highest level of education?					Total
		Elementary school	Middle school	High school	Undergraduate degree	Graduate degree	
"Dia-BEAT-it" is an online game that allows players to earn points and progress through different levels...	Very Unlikely	0	0	0	0	0	0
	Unlikely	0	0	3	1	0	4
	Neither likely nor unlikely	0	0	6	0	0	6
	Likely	0	4	5	2	0	11
	Very Likely	1	2	2	3	0	6
	Total		1	6	16	6	0

Cross Tabulation B

Gender and Likeliness to play Dia-BEAT-it

		"Dia-BEAT-it" is an online game that allows players to earn points and progress through different le...					Total
		Very Unlikely	Unlikely	Neither likely nor unlikely	Likely	Very Likely	
What is your gender	Male	0	3	1	3	2	9
	Female	0	1	5	8	4	18
	Total	0	4	6	11	6	27

Cross Tabulation C
Level of Education and Feelings about “Chat” function

		What is your highest level of education?					Total
		Elementary school	Middle school	High school	Undergraduate degree	Graduate degree	
While playing this game, you would be able to chat with friends who also play through a “messenger”...	Like	1	6	11	5	0	21
	Dislike	0	0	0	0	0	0
	Unsure	0	0	5	1	0	6
	Total	1	6	16	6	0	27

Cross Tabulation D

Level of Education and feelings about Competition feature

		What is your highest level of education?					Total
		Elementary school	Middle school	High school	Undergraduate degree	Graduate degree	
While playing the game, you would be able to compete with friends who also play. Is this a feature y...	Like	1	5	10	5	0	19
	Dislike	0	0	0	1	0	1
	Unsure	0	1	6	0	0	7
	Total	1	6	16	6	0	27

Appendix E: Glossary

Autoimmune disease: Any of a large group of diseases characterized by abnormal functioning of the immune system that causes one's immune system to produce antibodies against their own tissues

Beta cells: Any of the insulin-producing cells in the islets of Langerhans

Blood glucose/Blood sugar: Measurement of glucose in the bloodstream

Blood glucose monitor/Meter: Medical device for determining the approximate concentration of glucose in the blood

Continuous Glucose Monitor: A blood glucose monitor with a small sensor that is inserted under the skin. This monitor automatically checks blood glucose levels every few minutes.

Diabetes burnout: A state in which a person with diabetes grows tired of managing their disease and simply ignores it for a period of time

Diabetes nurse educator: Healthcare professionals who focus on helping people with and at risk for diabetes and related conditions achieve behavior change goals

Diabulimia: The manipulation by diabetic patients of insulin treatments in order to lose weight

Endocrinologist: physician who specializes in the diagnosis and treatment of conditions affecting the endocrine system

Insulin: A hormone produced in the pancreas by the islets of Langerhans that regulates the amount of glucose in the blood

Glaucoma: A condition of increased pressure within the eyeball, causing gradual loss of sight

Glucagon: A hormone formed in the pancreas that promotes the breakdown of glycogen to glucose in the liver. Type 1 diabetics carry glucagon in the form of an injection so the hormone can be administered to them in a case of extreme hypoglycemia.

Glucose strip: A strip of sensitized material inserted into a glucose monitor for checking one's blood sugar

Hemoglobin A1C (HbA1C): A form of hemoglobin that is measured primarily to identify the average plasma glucose concentration over prolonged periods of time

Hyperglycemia: An excess of glucose in the bloodstream

Hypoglycemia: Deficiency of glucose in the bloodstream

Infusion sets: A constant connection between your body and an insulin pump. Infusion sets have several components, including a cannula or needle, a site or hub, adhesive dressing, tubing, and a connector to the pump cartridge.

Insulin pump: Medical device used for the administration of insulin in the treatment of diabetes mellitus, also known as continuous subcutaneous insulin infusion therapy

Insulin therapy: Treatment of diabetes by administration of exogenous insulin

Insulin-to-carbohydrate ratios: Ratios, which are used to calculate the insulin doses people with diabetes need for specific amounts of food containing carbohydrate. It differs from person to person and must be calculated on an individual basis.

Ketoacidosis: A serious complication of diabetes that occurs when one's body produces high levels of blood acids called ketones. Due to a lack of insulin, a body in ketoacidosis begins to break down fat as an alternate fuel, producing a buildup of toxic acids in the bloodstream.

Ketone: Organic compounds that result when body fat is broken down for energy

Lancet: A small, broad, two-edged surgical knife or blade with a sharp point

Neuropathy: Disease or dysfunction of one or more peripheral nerves, typically causing numbness or weakness and may lead to amputation

Pancreas: A large gland behind the stomach that secretes digestive enzymes into the duodenum. Embedded in the pancreas are the islets of Langerhans, which secrete into the blood the hormones insulin and glucagon.

Sensitivity factors: The amount a diabetic's blood glucose is lowered by the injection of 1 unit of insulin. It differs from person to person and must be calculated on an individual basis.

Type 1 diabetes: A form of diabetes mellitus that results from autoimmune destruction of insulin-producing beta cells of the pancreas