

# Historical Geographies of Diabetes and Emotion

gENTRY hANKS

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# 1 How Is This Geographical?

Turning to David Livingstone (1993) and embracing his approach to “The Geographical Tradition,” I employ his questions “What role, for example, did geography play in past society? Was it used for political, or religious or economic purposes by particular groups? Who benefited from the latest theory, and who lost out?” (p. 2). With these questions in mind, Firstly I bring to the fore an overview of different perspectives on diabetes from different places and pieces of history, then provide an examination of medical literature, historical writings and archival material to geographically situate the social, political and economic contexts of historical scientific thought on diabetes in relation to emotion, which will include historical examples of what role emotion plays and how it has been understood throughout a history of diabetes. Livingstone (1993) warns, “reconstructing intellectual history is never a once-and-for-all activity” (p. 3), but allows one to “work with a more realistic picture of geographical knowledge as a cultural product and a political resource, without assuming that scientific knowledge is somehow immune to such forces” (p. 3). There are limitations to this historical approach beginning with the fact that “the past...is only contemplated in terms of the present” (Livingstone, 1993, p. 3). There is also the business of selection, because “inevitably historians are involved in selecting from the available sources the material they deem significant in light of the problems under scrutiny” (p. 4), I will be unable to tell a whole or complete story where facts are somehow able to represent themselves, but instead, “the historian stage-manages their performance on the contemporary scene” (Livingstone, 1993, p. 5). Philo (1987) has noted “Much of what passes for the history of medicine follows a Carlyle-like path in stressing the ideas and deeds of heroic ‘great men’, be these doctors, learned writers or politicians who made medical reforms possible” (p. 329). In the

28 case of diabetes, these ‘great men’ are Banting and Best. But, I do strive  
29 “if not to close off such a path, at least to supplement it by establishing  
30 a medical history that recovers something of how patients themselves have  
31 thought and acted with respect to both their illnesses and their physicians”  
32 and to contribute to a “...more general project of forging a medical history  
33 sensitive to the entire milieu—economic, political, social, cultural, intellectual—  
34 in which medical thinking and practice has always been embedded.(Philo,  
35 1987, p. 329) as it relates to diabetes. I put forth that, over time and place,  
36 different geographical locations within the body have come to be understood  
37 as the “seat” of the illness. For this analysis I will rely on literature review  
38 and Archival methods. Archival materials are a staple of historical geography  
39 and they like geography have a sorted history with colonialism and power.  
40 The collections I drew from, The Sir Frederick Banting Papers and the Hughes  
41 (Elizabeth) Papers, are housed at the University of Toronto’s Fisher Rare Book  
42 Library in Toronto, Ontario.

## 43 2 Background

44 Mainstream historical accounts of diabetes are well documented (Engelhardt,  
45 1989; Tattersall, 2009), but are often too quick to fast forward to the discovery  
46 of insulin. There have descriptions of the symptoms of diabetes at least as old  
47 as the 11th century BCE when Susruta, an Indian physician, documented the  
48 condition, which didn’t receive this name until Greek physician, Aretaeus in  
49 100 BCE. He used the Greek word, *dia-bainein* meaning “to siphon” (Sattley,  
50 1996).

51 Up until the Renaissance, the medical writings of prolific Greek scholar  
52 and physician Claudius Galen (130–201 BCE) were seen as doctrine not only

53 in European medicine, but were also regarded in the medical practices of Per-  
54 sia and Arabia (Henschen, 1969). Galen wrote about the seat of the illness  
55 (diabetes), that is, where the disease was geographically located as indicated  
56 by organ names. He described diabetes as a type of dropsy and gave rise to  
57 a long held misbelief that the kidneys were responsible for the symptoms of  
58 diabetes (Henschen, 1969).

59 Using divisions from medical historians as provided by Sanders (2001) will  
60 prove useful in organizing some background information on diabetes. Sanders  
61 warns the reader at the beginning of his book that there is no way to provide  
62 a complete or whole history and “the omission of any event or individual’s  
63 role in the history of diabetes in no way lessens the importance of that con-  
64 tribution” (p. xiii). Sanders (2001) names the 4 divisions of the history of  
65 diabetes, “The Descriptive Period: describing and naming the disease, The  
66 Diagnostic Period: learning how to diagnose the disease, The Experimental  
67 Period: learning what causes the disease and the Therapeutic Era: learning  
68 how to treat the disease.” (p. 1), which are well accepted by medical hisotrians  
69 (Papaspnyros, 1964). Sanders has also offered a fifth period, “The Era of Com-  
70 plications, in which we learn how diabetes causes additional health problems”  
71 (p. 1). These periods are not discrete as there are temporal and geographical  
72 overlaps. For example, 2000 years before Hippocrates, physicians in Egypt  
73 had already described diabetes and were already seeking ways to diagnose and  
74 treat the condition (Sanders, 2001).

## 75 **2.1 Describing Diabetes**

76 Egyptian physicians produced 7 papyri from 2000 BCE to 1200 BCE, one of  
77 particular interest– The Ebers (Bryan and Smith, 1974). The Ebers Papyrus  
78 was written circa 1550 BCE and describes polyuria (frequent urination that

79 causes dehydration and extreme weight loss) and remedies for polyuria (Bryan  
80 and Smith, 1974). While Hippocrates (460– 377 BCE), perhaps the most  
81 widely recognized Greek Physician, didn’t write about diabetes specifically,  
82 he too described conditions of extreme urination and body wasting (Avicenna  
83 and Gruner, 1930).

84 Another Greek physician, Aretaeus (130–200 CE), who was mentored by  
85 Hippocrates and a coeval of Galen, hailed from Cappadocia, which is in modern  
86 day Turkey (Henschen, 1969). As mentioned earlier, Aretaeus is credited with  
87 using the term diabetes to describe the body as a siphon through which liquids  
88 entered and then were quickly dispelled. Aretaeus, like Galen, believed that  
89 the source of diabetes was located in the kidneys. He also believed it to be a  
90 disease of the bladder. According to Aretaeus (1856), “for the thirst there is  
91 need for a powerful remedy, for in kind it is the greatest of all sufferings; and  
92 when fluid is drunk, it stimulates the discharge of urine; and sometimes as it  
93 flows off it melts and carries away with it the particles of the body” (p. 487).  
94 This liquification of the flesh into urine is used to describe diabetes in quite  
95 a few historical medical accounts. ALthough he isn’t the first to describe the  
96 pancreas, Rufus of Ephesus <sup>1</sup> is credited with coining the term *pancreas* (c. 100  
97 CE): *pan* meaning all and *kreas* meaning flesh due to the organ’s perceived  
98 amorphous shape (Papaspys, 1964).

99 Although Hindu medical writings described urine from a person with dia-  
100 betes as honeyed well before Europeans (Frank, 1957), Western historians place  
101 emphasis on the Latin term *mellitus*, which then allows the West to claim lin-  
102 guistic authority over medical knowledge. The Vedic Scriptures in Sanskrit  
103 provided the basis of Hindu medical knowledge, which came to be a set of  
104 three medical textbooks known as *samhitas* and were named for 3 renowned

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<sup>1</sup>The exact origin of the term is not known and contested (Sanders, 2001).

hindu physicians— Chakara, Susruta and Vagbhata (Frank, 1957). These texts are believed to have been written between 100 BCE and 700 CE. Many European physicians of the ancient world mistakenly identified the residue left from evaporated urine of PWD as salt instead of sugar. Hindu medicine primarily focused on prevention of diabetes and very little on the treatment of the symptoms (Frank, 1957). The treatments they did implement were unfortunately diets high in carbohydrates and emetics along with the helpful suggestion of weight reduction and plenty of exercise (Sanders, 2001). The medical writings of Chakara and Vagbhata offer 20 varieties of diseased urine or urination known as *prameha*, one of which Chakara describes the patient as losing strength, then flesh and finally the loss of a healthy complexion (Frank, 1957). While Chakara and Susruta briefly mention that insects are attracted to the urine of PWD, the writings of Vagbhata provide more detail about how diabetes is acquired, which is of importance in a medical system that focuses on prevention. *Prameha* was described by Hindu physicians as having the potential to be inherited or acquired and displaying characteristics (Frank, 1957) such as extreme thirst, obesity, chronic fatigue, obesity, recurring infections, impotence and excessive urination in both frequency and quantity (Frank, 1957).

In 3rd century BCE China, a dialogue between the Yellow Emperor and his personal minister was written and came to be widely known as the *Nei Ching* and was revised in the 8th century CE (Veith, 1950). The *Nei Ching*, believed to be written by Huang Ti (The Yellow Emperor), is the foundation of Chinese and Japanese traditional medicine and like Hindu medicine was also prevention focused. Symptoms like insatiable thirst and abnormally frequent and copious urination make an appearance in the *Nei Ching* (Veith, 1950).

After the demise of the Roman Empire, during the middle ages of Europe,

132 medical concepts were based in the writings of Hippocrates and relied on  
133 understanding the four humors– blood, phlegm, yellow bile and black bile  
134 (Lloyd et al., 1983). The middle ages, for the most part, aren’t known for  
135 their advances in physiology and anatomy. This vacuum of knowledge led  
136 to a robust desire to understand the composition of the human body in the  
137 centuries to come (Sanders, 2001).

138 During the 11th and 12th centuries two prolific physicians, Avicenna from  
139 Persia and Maimonides of Arabia, proffered new knowledge about diabetes.  
140 Avicenna (Ibn Sina) was a philosopher and physician who attempted to com-  
141 pile as much medical knowledge of his time into a medical textbook– the *Qa-*  
142 *nun*, which was originally written in Persian and translated into Latin in the  
143 12th century (Avicenna and Gruner, 1930). Avicenna was held in such high  
144 regard that he was often referred to as Galen’s equal (Sanders, 2001). In the  
145 *Qanun* (The *Canon of Medicine*) Avicenna gave detailed accounts of tasting  
146 sweet urine, unyielding wounds, diabetic gangrene, and withering bodies, as  
147 well as and understanding that diabetes could either be primary or secondary  
148 (Avicenna and Gruner, 1930).

149 Islamic beliefs were incongruent with the practice of cadaver dissection,  
150 causing Avicenna to be somewhat lacking in his knowledge of human anatomy  
151 and giving way to his heavily philosophical understandings of medicine. Hu-  
152 man cadaver dissection was a rare practice in Greek antiquity (?). According  
153 to Von Staden (1992), “the first half of the third century B.C, two Greeks,  
154 Herophilus of Chalcedon and his younger contemporary Erasistratus of Ceos,  
155 became the first and last ancient scientists to perform systematic dissections of  
156 human cadavers” (p. 223). The practice of dissecting pigs was part of human  
157 anatomy education and dissecting human cadavers didn’t make a reappearance  
158 in Europe until the 14th century (Von Staden, 1992).

159 In mid to late 12th century Arabia, a rabbi, astronomer and philosopher,  
160 Moses Maimonides (Rambam) familiarized himself with the writings of Galen,  
161 which inspired his own magnum opus, *The Medical Amorphisms of Moses*  
162 (Maimonides et al., 1989). Maimonides wrote nearly 1500 aphorisms, which  
163 began with the phrase “Moses says” (Maimonides et al., 1989), as these bite  
164 sized medical principles were a tradition of medical writing that harkens back  
165 to Hippocrates (Sanders, 2001). When the term diabetes came to the scene,  
166 Maimonides pointed out that up-to-date physicians called the illness diabetes,  
167 while many others still merely described the symptoms, polydipsia (excessive  
168 thirst) and polyuria (excessive urination)’ Like Galen, Maimonides located the  
169 illness within the kidneys, adding to that, the bladder. Unlike Galen’s rare  
170 experience with PWD, Maimonides claimed to have encountered 20 or more  
171 people displaying symptoms of diabetes over a 10 year period (Maimonides  
172 et al., 1989). This difference led Maimonides to arrive at the conclusion that  
173 the disease was place based; he posited that diabetes was more prevalent in  
174 warmer climates (Maimonides et al., 1989).

## 175 **2.2 Diagnosing Diabetes**

176 Although the Renaissance began roughly in 14th century Europe, it wasn’t  
177 until the 16th century that medicine saw a rebirth and revision of scientific  
178 concepts. Traditional medical concepts from Galen and Avicenna were no  
179 longer taken for granted, but challenged and questioned. Osler (1921), a med-  
180 ical historian, noted that the diagnostic period ushered in 3 essential new ways  
181 of thinking in medicine: “1) it shattered authority, 2) it laid the foundation  
182 of an accurate knowledge of human anatomy, and 3) it demonstrated how the  
183 body’s functions should be studied intelligently” (p. ).



## 2.3 Diabetic Therapy

In the 17th century the term *Mellitus*, the Latin for “honeyed,” was tacked on to *Diabetes*, giving us the contemporarily used term *Diabetes Mellitus*, by a physician from London, Thomas Wills (Sattley, 1996). Wills arrived at this term through sampling his patients’ urine, which, if it tasted sweet like honey, meant a diagnosis of Diabetes Mellitus. The tasting of urine<sup>2</sup> remained the standard for monitoring glucose levels into the 1900s (Sattley, 1996).

Physicians were all but left to watch their patients fade away. Many prescribed low-calorie diets, but little else prolonged the lives of people with diabetes until the discovery of human-consumable insulin (Ebstein, 1989). Of course this discovery didn’t come without the help of companion animals (Balfe and Babinec, 2008)<sup>3</sup> and agricultural livestock. In 1921, Canadian surgeon, Banting, along with Best, treated a canine with diabetes by injecting extracts from a non-diabetic dog’s pancreas (Zimmermann, 1989). From there they joined Drs. Collip and Macleod<sup>4</sup> in injecting a purer form of animal insulin into an adolescent, Leonard Thompson, whose high blood sugar lowered over the next 24 hours (Sattley, 1996).

In 1935, Hinsworth delineated something that had been understood as one illness into two types (Sattley, 1996). There are people with insulin sensitivity, but without the capability to produce insulin (Type I) and others with insensitivity, but with the capability to produce insulin (Type II). With this breakthrough research in diabetes proliferated bringing with it medical and technological innovation. Towards the end of the 1930s various kinds of beef

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<sup>2</sup>Urine and blood are key bodily fluids for surveillance in the management of diabetes. PWD are required to take a snapshot as evidence of blood glucose level at a particular time with a blood glucose meter.

<sup>3</sup>See Wilkie (2013) for research on health and multi-species encounters.

<sup>4</sup>The Best and Banting Collections in the Fisher Rare Book Library at the University of Toronto reveals a contested claim and ownership over the patent right of insulin between Best and Banting and Macleod and Collip.

207 and pork insulin were developed to try and match the speed and variance  
208 of human insulin. While the livestock based insulin was a tremendous help,  
209 insulin therapy was nowhere near as effective as a human pancreas (Sattley,  
210 1996). During the discovery of insulin in Canada, Joslin was the first doctor in  
211 the US to do comparative and complementary research on insulin therapy.

212 After the discovery of insulin therapy, diabetes is arguably one of the first  
213 illnesses that forced physicians to relinquish power and decision making to the  
214 patient. This has challenged “today’s conventional model of doctor-patient  
215 relations—in which the former is seen as an expert professional to whom the lat-  
216 ter must bow deferentially—actually an invention of fairly recent date” (Philo,  
217 1987, p. 330). The physician had to trust the patient to carbohydrate count,  
218 account for exercise and properly dose insulin amounts based on a variety of  
219 factors. This dynamic factor of patient decision making comes in stark con-  
220 trast to the aforementioned medical paradigm of physician as expert. Patients  
221 with diabetes are now having to be trusted as experts of their own illnesses.

222 Over the next several decades there was a proliferation of synthetic insulins,  
223 oral medications, syringes, urine test strips, glucose meters, insulin pumps,  
224 and other new technologies (Phillip and Battelino, 2012) for the treatment  
225 and management of diabetes. The drive in innovation has generally been to  
226 make these apparatuses smaller and more portable to enhance mobility, which  
227 consequently increased one-time-use (disposable) supplies<sup>5</sup>. With the arrival  
228 of the insulin pump and an artificial pancreas we continue on a post-human  
229 trajectory<sup>6</sup>.

230 Most surviving records of people with diabetes are largely descriptive of  
231 physiological conditions rather than emotional states. There is a lack or ab-

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<sup>5</sup>My initial analysis of the data reveals a sense of guilt associated with the amount of biomedical waste and its disposal for some PWD.

<sup>6</sup>See Wilson (2011) for a reflection on mobility, digital frontiers and more-than-human contact.

sence of literature and records detailing the emotional lives of PWD. The voices of patients who have been described as having the symptoms of diabetes have largely been represented by physicians and not the patients themselves. The arrival of insulin allows those with access to have a voice. These voices from the archives don't necessarily fill the void of undocumented emotional lives of the past, but their letters of extreme gratitude, expressions of hope and happiness bring to light a heretofore quiet misery.

### 3 The Eradication of Emotion

Boehm and Hoffmann (1878) experimented on cats whereby they observed glucose levels in the urine after exposure to several conditions. It was later found that physical pain, bondage and temperature weren't necessary ingredients for raising levels of sugar in the urine, but although Boehm and Hoffman didn't acknowledge it in their publication, emotional excitement was certainly involved. Bond (1896) published an article based on his presentation to the annual general meeting of the British Medical Association in 1896 regarding the potential relationship between diabetes, glycosuria and insanity. During Bond's study he was the Assistant Medical Officer at the London County Asylum in Banstead, from whence his research cases hailed. Of 180 recent cases (mostly male) admitted to the asylum he observed 32 cases which showed sugar in the urine, glycosuria, some of which were from true cases of diabetes and others of unknown etiology. In the cases of glycosuria, Bond found, "in other cases of glycosuria, where no anti-diabetic treatment was adopted, and where recovery still occurred, [he] was also able to point to a considerable degree of parallelism between the presence and amount of glycosuria, on the one hand, and the presence and acuteness of the mental symptoms on the

other” (p. 295). Bond subdivided the cases of true diabetes into two subcategories, those whose diabetes presented after manifestations of mental illness and those whose diabetes presented before manifestations of mental illness. In the latter, Bond believed, “the mental phenomena were actually caused by the diabetes” (p.297). Conversely, Bond found it unlikely that glycosuria was the cause of mental symptoms in most cases (p. 299). Other medical doctors participating in the discussion portion of Bond’s article mentioned the following observations. Dr. Savage thought it “common to find alternation between diabetes and insanity both in families and individuals” (p. 311) and “ [has] seen a good number of patients suffering from true diabetes who, when they have become insane, have lost all the symptoms of diabetes, and when they have recovered from the insanity they have again developed diabetes” (p 311). Savage also noted that in the cases where he had observed both diabetes and insanity in the same individual, he saw a tendency toward particular mental illnesses, those of melancholia or dementia (Bond, 1896). Dr. Goodall (Bond, 1896) discussed the possibility that while insanity and diabetes may not be directly causative in either direction of flow, “persons suffering from diabetes undoubtedly show various morbid physical manifestation” and “are neurotic in many ways; members of neurotic families no doubt; they show hypochondriasis, irritability, sometimes excitement, mania, and so on ” (p. 311). Goodall went on to posit that people with diabetes “have hysterical manifestations and mental instability, but perhaps the very fact of the family being neurotic keeps them from becoming insane, as appears to obtain in the case of so many people who have insane relatives” (p. 311). Dr. Bower (Bond, 1896) mentioned a case of a female patient who had suffered from diabetes for many years, but “no sugar was found in the urine as long as she remained maniacal...in two or three months she passed out of the maniacal state and became demented,

284 then the sugar reappeared” (p. 312). Cannon et al. (1911) reported “in cases  
285 of mental disease, also, states of depression have been described accompanied  
286 by sugar in the urine” (p. 280). When Boehm and Hoffman’s experiment  
287 was repeated to address the emotional factors, which they had not addressed  
288 in their results other than to intimate that the designation of “Fesselungsdi-  
289 abetes” was not justifiable as “emotional glycosuria” (Cannon, 1916, p.281).  
290 Their results found that pain was the contributing factor in elevated sugar  
291 levels in the cats. The discovery that “during fright (or rage?) the adrenal  
292 secretion is increased, and the fact that injection of epinephrin gives rise to  
293 glycosuria, suggested taht glycosuria might be called forth by emotional ex-  
294 citement” (p. 282). When the experiment was repeated without the element  
295 of pain, an increase in sugar in the urine occurred. The work and writings  
296 of Naunyn described instances of crisis, long term anxiety and profound grief  
297 as possible causes of cases of diabetes in some individuals as well as raised  
298 sugar levels in the urine of those already known to have the disease who have  
299 experienced grave anger or fear (p. 72).

300 A study by Folin, Dennis and Smillie where the urine of 34 medical students  
301 (all male) was checked for the presence of sugar both before and after a major  
302 medical exam found that of those students only one had sugar in the urine both  
303 before and after the exam, whereas a total of 7 students were found to present  
304 with sugar in the urine after taking the exam. After running this experiement,  
305 they decided to run another one, based on an assumption that women were  
306 more emotional and would thusly present with more instances and/or higher  
307 levels of sugar in the urine, they tested 36 sophmores at a women’s college  
308 and found that only six students presented with sugar in the urine after an  
309 examination (Bowman and Kasanin, 1929, p. 343).

310 Whitehorn (1934) conducted research at McLean Hospital in Waverly, Mas-

311 sachusetts of a 12 year period beginning in 1921 with 958 mental patients. He  
312 studied the emotional reactions of patients in relationship to blood sugar (not  
313 sugar in urine). Due to difficulty in establishing a consensus among staff in  
314 reading affect of patients for minor emotional reactions, the experiment only  
315 included major episodic emotional reactions of which there was no doubt about  
316 emotional distress (p. 988). Of the 958 mental patients, only 13 were known  
317 diabetics. According to Whitehorn (1934):

318 All of these cases, when psychiatrically improved or recovered,  
319 showed some improvement in the diabetic tendency, as a decrease  
320 either in their insulin requirement, or in their necessary food re-  
321 striction;... The association of mental improvement and somatic  
322 improvement raises the question as to which is the cause and which  
323 is the effect. I had expected that the administration of insulin or  
324 of a better balanced diet might improve the mental condition more  
325 especially because the patients were able to maintain or increase  
326 body weight, but experience did not justify this expectation. The  
327 depression appeared to run its course, unaffected by these aids;  
328 yet when the depression cleared the organism required less assis-  
329 tance from without in handling carbohydrate metabolism. So far as  
330 this evidence goes, it indicates that the depressed mood itself may  
331 decrease the capacity to metabolize carbohydrates (p. 998).

332 Whitehorn's understanding speaks to the role of mood or emotion in dia-  
333 betes as certainly correlationally and questionably causative. Cannon's work  
334 (Cannon et al., 1911) on elevated sugar levels in the urine during emotional  
335 distress is refuted by the work of Whitehorn and many contradictory research  
336 discussions are pointed out by Bowman and Kasanin (1929) (Stragnell, 1921;  
337 Miles and Root, 1922; Masson, 1923; NEILSON, 1927). Menninger (1935)  
338 conducted a thorough review of pre 1934 literature dealing with emotion and  
339 raised sugar levels in the urine and blood. He concluded "the evidence sup-  
340 porting the theory of emotinoal causation of glycosuria in mental disease is  
341 somewhat contradictory" (p. 2). There is a great confusion, which states

342 “arises in the interpretation of these various findings, not because of their  
343 very excellent chemical studies, but because of the vagueness of the specifica-  
344 tion of the emotional factors involved” (p. 2). Menninger describes a major  
345 quandry in this type of research that not only rings true in research of the  
346 early twentieth century, but remains true:

347       The “emotional glycosuria” theory seems correct in the physiology  
348       of its somatic functioning but it is inadequate in the delineation of  
349       the psychic factor, namely the “emotion.” That glycosuria and all  
350       the train of thalamic functioning, vegetative nervous stimulation  
351       to the adrenals, with glucose mobilization may result from psychic  
352       stimulation, is established. But it is still very much of an unsolved  
353       problem as to what the “emotion” may be. The origin of this emo-  
354       tion and the associations with it, which differentiate its external  
355       manifestations as “fear of death,” or “anger,” is entirely unsolved.  
356       Such vague general descriptive terms as “emotion” and “fear” and  
357       “anger” are as non-specific in psychiatric medicine as “cholic” and  
358       “dyspepsia” are in internal medicine. It is an unfortunate fact that  
359       in the description of an emotion as to its specificity of origin or mo-  
360       tive, the psychiatrist is accused of talking a foreign language, and  
361       the average medical man abruptly drops the investigation at this  
362       point (p. 2–3).

363       Daniels (1948), a doctor in the field of psychosomatic medicine in the 1930s  
364       and 1940s explained that the lack of attention to the role of emotion in diabetes  
365       sprang from a lack of evidence supporting a relationship between war stress  
366       and an appreciable increase in diabetes cases in post-WWI soldiers:

367       At this time, Joslin. . . entirely reversed an earlier tentative position  
368       that emotion might have a part in the onset and course of diabetes  
369       and issued an authoritative statement to the contrary. Chief em-  
370       phasis was laid on obesity and heredity, with a complete denial  
371       that emotional factors may even significantly influence the sugar  
372       level during the course of the disease (p. 288).

373       This particular change of focus has greatly influenced the geneticization  
374       and biomedicalization of diabetes. Daniels’s call for an attention to the role of

375 emotion in the onset and course of diabetes was in effect silenced by Joslin, one  
376 of the most well known names in the diabetes medical community <sup>7</sup>. Daniels  
377 wasn't convinced:

378       A counter-current to the receding tide of medical interest in emo-  
379       tional factors in diabetes appeared in the reexamination of the liter-  
380       ature and direct observation of clinical cases by psychoanalytically-  
381       oriented psychiatrists in 1935—36. Both the reevaluation of liter-  
382       ature and the case material demonstrated unequivocally the role  
383       of emotion in the course of the disease by influencing the blood-  
384       sugar level in established diabetes. This has been further amply  
385       confirmed. Observations point in certain cases to a correlation be-  
386       tween depression or conversion symptoms and increased sugar, and  
387       also between exhilaration and anxiety symptoms and a temporary  
388       clearing of or decrease in sugar (p. 288).

389       While, perhaps, at the time it was not known if emotion was or was not in-  
390       volved in the precipitation of diabetes, “it [had] been definitely established that  
391       emotions play a role in the fluctuation of sugar level in cases of diabetes” (?,  
392       p. 290). The role of emotion has been seen as more prevalent and important,  
393       particularly in the first half of the twentieth century. The bulk of research and  
394       writing arrived through psychosomatic medicine. In the late 1800s and early  
395       1900s, there was a distinction made based on the etiology of one's diabetes.  
396       The initial presentation of diabetes after prolonged times of sorrow, anxiety  
397       and crisis was classified as emotional glycosuria. Emotional glycosuria also re-  
398       ferred to increased sugar levels in the urine of those who already have diabetes  
399       following cases of mental illness and depression. Although medical doctors  
400       in the past and present acknowledge that emotion plays a role in the course  
401       of the illness, exactly how and to what degree has been and still is not well  
402       understood. Astutely, Burch et al. (1962) noted, “that as new understanding

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<sup>7</sup>Joslin is still a well known name in diabetes medical research because his research legacy remains visible in clinics dedicated to diabetes research and patient treatment at the main clinic in Boston and branches throughout the US.



403 of the disturbed physiology of the disease has developed, or as new advances  
404 have been made in therapy, interest in the role of emotional factors has re-  
405 ceded” (p, 131/93). While the main current focus of medical communities  
406 centers on heredity and obesity, a focus on emotion has largely fallen by the  
407 wayside, particularly in medical fields that have achieved legitimacy through  
408 their willingness to neglect the role of emotion in human health. This has  
409 created a rift in the treatment of diabetes– maintaining a split between mind  
410 and body– and has been positioned as a metabolic disorder. This mind/body  
411 split in current medical practice relies on the assumption that emotion is not  
412 bodily and vice versa. This split is furthered through a carving up of geop-  
413 graphical delineations of the body, almost completely obscuring the concept  
414 that the mind/body dualism is a false one. The carving up of bodies, as it  
415 were, parallels that of medical disciplines and academic fields in general.

416     The current focus on heredity and obesity in the discourse surrounding  
417 diabetes hasn’t always had the lime light. Emotion was once very much con-  
418 sidered as part of the etiology of diabetes. As Daniels (1948) proposed, “In  
419 seriously considering emotional conflict in the etiology, it is not necessary to  
420 discard facts relating either to heredity or obesity, as both appear of great clin-  
421 ical importance and must be included in any calculation” (p. 289). While we  
422 acknowledge that food is a major factor in diabetes, we neglect the emotional  
423 and cultural connections to food as agents of belonging and identity. Histor-  
424 ically the prime way of treating diabetes involved a restricted diet, which in  
425 conjunction with polyuria, lead to dangerously low body weights. Throughout  
426 the history of diabetes research body size has certainly taken up its fair share  
427 of ink, paper and computer screens, but is in most instances deployed to reify  
428 the notion that obesity is the main culprit of Type 2 diabetes and that people  
429 with Type 1 diabetes should be or are typically thin (add archival letter from

430 dr to Banting about his female T1D patient struggling with weight gain). The  
431 many cases of people with Type 2 being thin and cases of people with T1D as  
432 larger are severely overlooked.

433       Contemporarily, it is rare that a physician takes into account the emotional  
434 factors in the course of diabetes (among other illnesses). Because diabetes is a  
435 dynamic disease, there has been a turn in North America to address this com-  
436 plexity with professionals called certified diabetic educators (CDE). Depending  
437 on where you are, what type of health care you have and your level of mobility  
438 influences your access to a CDE. The current model of treatment relies on the  
439 individual requisitioning a team of doctors and professionals, thereby splitting  
440 one's own person into compartments based solely on the bodily geographic  
441 location of symptoms or secondary problems. This team often consists of a  
442 family doctor, an endocrinologist, an opthamologist, a nutritionist or dietician,  
443 a podiatrist, and a gynocologist (for women). Oddly, although men's sexual  
444 and reproductive health is also affected by diabetes, it is almost unheard of  
445 that they are approached about these topics outside of written information  
446 plastered on walls and layed out on waiting room tables, let alone are men  
447 encouraged to broach this subject with medical professionals.

448       Interestingly in the last hundred years we have seen people desperate for  
449 insulin therapy (as seen in the letters to Drs. Banting and Best) and have  
450 come full circle to a phenomenon called diabulima, whereby one restricts in-  
451 sulin intake in order to lose weight or to maintain a lower weight. Much like  
452 Anorexia Nervosa or Bulimia, receiving compliments on one's weight or ap-  
453 pearance after practicing diabulima only serves as a positive reinforcement  
454 to continue underuse of insulin. Likewise the ability to eat almost anything  
455 and not gain weight, as well as not having to pay for insulin and use needles  
456 to inject it makes diabulimia all the more appealing. This highly emotional

457 practice serves to play into a vicious cycle of hormonal undulations, which in  
458 turn leads to self-loathing and shame, while simultaneously garnering societal  
459 approval.

460 While there seemed to be a trend toward understanding causal and cor-  
461 relational relationships between emotion and diabetes, this trend faded with  
462 the rise of a focus on obesity, medicalization and genetics. Only now in and  
463 after the affective turn do we again see a rise in interest between the two.  
464 The quantification of this disease has paralleled a trend in quantifying the  
465 self (Lupton, 2013), which I will explore in the next chapter. From the calo-  
466 rie counting of starvation diets before the discovery of insulin to historical  
467 and current practices of carbohydrate counting (as seen in Hughes’ correspon-  
468 dance), quantifying carbohydrate to insulin unit ratios, measuring blood sugar  
469 and BMIs, diabetes requires an extreme self quantification with constant data  
470 collection, consideration and analysis. Technology propels us toward an ever  
471 increasing quantified existence (Lupton, 2000), which is most certainly bound  
472 up with an everyday emotional experience of ourselves and the world.

## 473 4 Annotations and Quotes

474 Medical and academic literature regarding diabetes produced from the 1930s  
475 through the 1970s is saturated with snippets of biological and environmental  
476 determinism, which ultimately allowed the baby to be thrown out with the  
477 bath water.

- 478 1. “The prevailing features in this class of case seem to be melancholia  
479 —an exaggeration of that frequently associated with non-insane diabetics  
480 —accompanied by delusions, these either of persecution, or visceral ones,  
481 the latter being possibly mistinterpretations of real bodily discomfort

- 482 attendant on the presence of diabetes” (Bond, 1896, p. 297)
- 483 2. (Major, 1933) One of Hippocrates disciples, Aretaeus, is attributed with  
484 the first use of the word *diabetes* in connection with a description of  
485 symptoms associated with diabetes. This is generally accepted, but not  
486 without criticism.
- 487 3. (Fishbein, 1959) In medical resources and literature geared towards women  
488 in the 1950s and 60s mention diabetes in several contexts: According to  
489 McKusick (1959), ”Babies born of mothers with diabetes are much more  
490 likely to suffer from respiratory distress after birth than if the mother  
491 did not have the disease” (p. 4), which almost reads as a warning to not  
492 reproduce if you have diabetes.

## 493 5 Archival Data

494 Part of Sir Frederick Banting Collection contained laboratory notes on the  
495 dogs used to test out different extracts. The dogs were depancreatized and  
496 then injected with various concoctions of a sort of blended up pancreas extract.  
497 The following examples of laboratory notes actually record the emotional state  
498 of the dogs, which is in stark contrast to clinical notes on human patients  
499 (completely lacking any note of emotional or mental well being). Perhaps this  
500 is a result of human understandings of animals as lacking rational intelligence  
501 and wholly reliant on instinct and a less ‘controllable’ emotional existence.

59

Dog 35      Dec 11

10.00 P.M.

Dog in good spirits  
& lively.

Bl. Sugar . 46

6 c.c. (about  $\frac{1}{2}$ ) of whole  
gl. extract. The gland  
was removed from  
this dog Dec. 8, cut up  
into small pieces into  
.2% Acetic Alcohol ( $\frac{1}{5}$ %)  
masscerated. allowed  
to stand till Dec 10.  
then masscerated & the  
alcohol filtered off  
& evaporated. The  
precipitate emulsified  
in saline

11.00 A.M. Bl. Sugar  
                                 .38

Figure 1: Banting's laboratory notes showing description of dog 33's emotional state- December 11, 1921

502 MS Collection 76 Box 6B Folder 1 Aug. 11 contd 1921 10AM /CHB/ Dog  
503 409 not feeling so well. Blood sugar .30 Dog 92- feeling better. Not groaning,  
504 but still labored breathing- well formed stool 8cc extract Blood sugar .21

505 10PM /FGB/ Dog 409 Blood sugar - .30 dog in good spirits Dog 92 Blood  
506 Sugar -.30 Condition improving steadily. No vomiting, abdominal grunt and  
507 labored breathing ceased. Dog in good spirits 12cc of extract given 4cc of  
508 which went subcutaneous

509 Aug 15, 1921 Dog 92 9:00PM Dog peevish Aug 16 10:00AM Blood Sugar  
510 - .30 Dog is in fair spirits Aug 17 Dog 92 10:00AM Dog's spirits improved as  
511 leg is not so sore 3:00PM Dog in excellent spirits

512 Elizabeth Hughes was a patient of Dr. Allen of New York and came to  
513 be treated by Banting via Dr. Joslin. She was the daughter of a wealthy,  
514 political family, which afforded her access to insulin very early on. Her father  
515 Charles Evans Hughes served as the Governor of New York from 1907-1910,  
516 an Associate Justice of the Supreme Court and later became the Secretary  
517 of State from 1921-1925. Elizabeth, like many people of means with chronic  
518 illness in the late 19th and early 20th centuries, headed for warmer, tropical  
519 climates in hopes of improving their health. Elizabeth spent time in Bermuda  
520 beginning in 1922.

521 MS Collection 00334 Box 1 Folder 13 January 8, 1922 Letter from Elizabeth  
522 Hughes to Mrs. Charles Evans Hughes, mailed from Bermuda to Washington,  
523 D. C. "I am getting along beautifully now on the new diet and am not feeling  
524 the change any in strength at all. In fact I really feel better than when I was  
525 on a high caloric diet and 'showing traces all the time. I fear the excitement  
526 of Nov. did it, but I wouldn't have missed it for anything, but I don't want  
527 another excitement like it to upset me again. Mrs. B is planning to raise my  
528 carbohydrate again, slowly but surely, if everything goes 'bien' till then after

529 my next fast day and , as far as my tests go now I'll be able to stand it alright,  
530 she feels sure."

531 MS Collection 00334 Box 1 Folder 15 January 15, 1922 Letter from Eliz-  
532 abeth Hughes to Mrs. Charles Evans Hughes, mailed from Bermuda to USA  
533 Elizabeth requests her mother to bring "a couple of tins of beef sterile cubes"  
534 and a "pound box of agar" when she comes to Bermuda to visit her.

535 MS Collection 00334 Box 1 Folder 16 January 22, 1922 Letter from Eliza-  
536 beth Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage  
537 in Bermuda to USA "I'm doing just what I expected to do down here, as you  
538 can see an out-of-door life and it's already doing me good. I do feel so well  
539 here, and my diet seems to be going finely now, and we're slowly increasing  
540 my carbohydrate as Blanche has probably written you about in detail. I'm  
541 actually on 12 grams today and I haven't been on that for ages you know!"

542 MS Collection 00334 Box 1 Folder 17 January 29-30, 1922 Letter from  
543 Elizabeth Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon  
544 Cottage in Bermuda to USA "...and also Blanche needs some things for the  
545 tests, small bottles, which I'm enclosing a list of and, which you will also bring  
546 with you...I'm feeling great these days and we've been able to increase my  
547 carbohydrate from 7 to 12 grams, but as I showed a slight trace on 13, I guess  
548 I'm not quite equal to that much yet a-while, but nevertheless a raise of 5  
549 grams at a time is nothing to sniff at, and in a few weeks after I've gotten  
550 thoroughly accustomed to 12, we'll try once more. I just adore my diet now.  
551 We arrange it on all 3 meals cutting out my egg-nog and I like it much better."

552 MS Collection 00334 Box 1 Folder 18 February 5, 1922 Letter from Eliza-  
553 beth Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage  
554 in Bermuda to USA " I keep thinking everyday, how lucky I am to be down  
555 here away from all epidemics and cold, where we only get tropical rains, and

556 again, I want to tell you how grateful I am to both you and father for this  
557 wonderful opportunity which will remain with me during my whole life. And  
558 it certainly is doing me good, for everybody speaks to me about how much  
559 better I'm looking than when they saw me last ... You'll be surprised when  
560 I tell you I've changed my diet again, and have now commenced taking some  
561 vegetables, fruit etc. again and I feel it's going to do me good. I need vita-  
562 mins you know, and I 've been on that concentrated diet for so long, the exact  
563 same thing everyday that we thought the time had come to change, so now  
564 I'm really having a wonderful time for not having touched a thing like that  
565 for a year. I naturally relish it for instance, today I'm eating for breakfast 5  
566 grams of oatmeal with 20 grams of cream on it and an omelet. For my picnic  
567 lunch 75 of cold lamb, 30 of lettuce, cocoa made with 20 of cream and my  
568 baked custard made of 40 of cream and an egg. Tonight I get an omelet, 20g  
569 of lettuce and cocoa made with 60g of milk. Isn't that a swell menu though  
570 and you've no idea how good it tastes !? I'll keep my breakfast always the  
571 same, but I'll take a little of spinach, celery, and those low 5% vegetables and  
572 fruits. Increasing my carbohydrate in vegetables etc. Blanche says she thinks  
573 I'll stand better than in milk on account of the milk-sugar you see, well I guess  
574 I will and in a few weeks if this goes alright will try again, in that way you  
575 see now my diet is 45 of protein, 56 of fat 12 of carb, 750 calories for 4 days of  
576 the week then the day before my fast day, we reduce the carbs to ten grams  
577 daily. I feel fine these days, so much better than I did in Wash [D.C.] and  
578 I sleep marvelously...and another thing, I'm going to take a daily rest after  
579 lunch, even though I don't get up till ten or so, and that with not exercising  
580 quite so much is doing me lots of good for I certainly must be looking better  
581 if everybody mentions is, n'est-ce-pas?"

582 MS Collection 00334 Box 1 Folder 19 March 10, 1922 Letter from Elizabeth



583 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
584 Bermuda to USA “Dearest Family, I’m really feeling like myself again these  
585 days and my eye of course is absolutely fully recovered, it was about last  
586 Tuesday, but I had a miserable cough that held on a long while keeping me  
587 awake at night etc. but now due to some fine cough medicine the Doctor gave  
588 me it’s disappeared, and I as I say, I’m myself once more, only being extremely  
589 careful in every way. . . my diet’s fine and so am I.”

590 MS Collection 00334 Box 1 Folder 20 March 13, 1922 Letter from Elizabeth  
591 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
592 Bermuda to USA “No sooner am I fully recovered from one thing, something  
593 else seems to happen, and in this last case I consider myself extremely lucky.  
594 Last night as we were getting supper, I entered the dining room with both  
595 hands full of dishes, (bread in one, bacon in the other), when I caught my foot  
596 in the rug and stumbled and fell, knocking myself very hard into the chair at  
597 the table so that I broke my glasses, and got an ugly cut right next to my eye  
598 . . . ”

599 MS Collection 00334 Box 1 Folder 24 March 31, 1922 Letter from Elizabeth  
600 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
601 Bermuda to USA “Everybody says I’m looking better and I sure do feel fine  
602 am gaining slowly but surely in strength, although remembering what you  
603 said and am not taxing it to its utmost as you said, but am curbing myself  
604 like a good, obedient daughter that I am, although it goes against my poor  
605 ‘[illegible]’ most terribly. I feel I’m terribly lazy.”

606 MS Collection 00334 Box 1 Folder 25 April 3, 1922 Letter from Elizabeth  
607 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
608 Bermuda to USA “Well I’ve got some good news for you, I’ve been on 13 grams  
609 of carbohydrate all week and have stood it perfectly so tomorrow (this being

610 my half-day) we'll try 14 grams. I have a hunch I'll be able to stand that too,  
611 although I don't know of course, but I have a feeling my blood-sugar's really  
612 down now, and I have hope it'll stay!"

613 MS Collection 00334 Box 1 Folder 26 April 10, 1922 Letter from Elizabeth  
614 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
615 Bermuda to USA She is up to 15 g of carb and eating a wider variety of food.

616 MS Collection 00334 Box 1 Folder 27 April 14, 1922 Letter from Elizabeth  
617 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
618 Bermuda to USA "I'm having 16 grams of carbohydrate, having stood my  
619 15 absolutely as perfectly as I could. I'm beginning to feel hopeful now, and  
620 we're going to find out my tolerance then keep me on that until I get home and  
621 have a blood-test by Dr. Allen himself, after I'm entirely rested. But I don't  
622 think the trip will hurt me at all this time, because it was nothing before, but  
623 my terribly upset condition at the time. I was probably showing sugar from  
624 the time I left Wash. until I got down here! I'm on more carbohydrate now,  
625 did you stop to realize, than I've been on for a year and a half and am in  
626 much better condition otherwise too. I'm eating every kind of food now, like  
627 grapefruit, strawberries, tomatoe, fish, and as you see they are all agreeing  
628 with me marvelously."

629 MS Collection 00334 Box 1 Folder 29 April 21, 1922 Letter from Elizabeth  
630 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage  
631 in Bermuda to USA "I'm feeling and looking much better, and am having  
632 perfectly delicious things to eat and such a variety. It's tood good to be true  
633 almost."

634 MS Collection 00334 Box 1 Folder 30 April 24, 1922 Letter from Elizabeth  
635 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
636 Bermuda to USA "... 'slowly but surely' being our motto...and just think-

637 what a difference 8 grams will make in my diet all of a sudden, you see we've  
638 gone from 12 to 20 this time and I feel very happy, proud and encouraged, for  
639 I feel quite sure I'll be able to tolerate the 20 all right, don't you?"

640 MS Collection 00334 Box 1 Folder 31 April 28, 1922 Letter from Elizabeth  
641 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage  
642 in Bermuda to USA "I've at last reached my goal, and am on 20 grams of  
643 carbohydrate today for the first time... just think what a difference this makes  
644 in my diet and in me, for I'm beginning to feel more energy all the time and  
645 everybody says grow to looking better each time they see me- so there 'ain't  
646 it a grand & glorious feelin though?' "

647 MS Collection 00334 Box 1 Folder 32 May 16, 1922 Letter from Elizabeth  
648 Hughes to Mrs. Charles Evans Hughes, mailed from Honeymoon Cottage in  
649 Bermuda to USA "I'm certainly feeling all myself again in every way but my  
650 strength and I won't try to conceal to you what an awfully hard blow I sure  
651 did get in that respect, although Blanche says it was to be expected... I'm still  
652 very weak... Now I'm taking 5 grams of carbohydrate on my fast day, which  
653 makes a whole lot of difference to me as you can imagine... so you see my  
654 'pancreas' wasn't effected one one bit thank goodness." In this letter she goes  
655 on to discuss a clip from the newspaper about insulin (which was praised by  
656 Joslin). Blanche Burgess also writes in the letter about Elizabeth's weakness  
657 and mentions the newspaper clipping as well, "I am much interested in the  
658 clipping you sent her. It appears the doctors are at last really finding a cure  
659 for diabetes."

660 James Havens was a patient of Dr. Williams of Rochester, NY. He is known  
661 as the first American from the United States to receive insulin treatment.  
662 Williams came to know of insulin therapy from a friend whose golf partner was  
663 acquainted with men in the School of Medicine at the University of Toronto. It

664 seems in the world of insulin, the same things remain important as in the rest  
665 of life— who you know and where you are.

JAMES D. HAVENS  
Postage Stamps for Collectors  
1370 EAST AVENUE  
ROCHESTER, N.Y.  
Dec. 11th 1922

Dear Dr. Banting:-

A little while ago we celebrated a Feast Day here in the U.S.A. called Thanksgiving. Without the "e" it would have been a Fast Day but on the contrary it was quite the opposite for me. I've celebrated a lot of Fast Days in the last few years but it's been some time since I've celebrated a Thanksgiving Day in the real old New England manner. A week ago last Thursday, however, marked an historical event as I then tasted my first Egg on Toast; Egg on Toast is my idea of the only food necessary in heaven. Moreover if they don't pass out at least that much rations up there I guess I prefer the other place.

Dad and Dr. Williams grouped themselves around me in a half circle and watched the slaughter of the would-be hen on toast with great enthusiasm.

I hiked up to my Studio and made the enclosed contributions to the Art and Beauty of the Age. I know you haven't any false dignity; maybe this type of fool stuff would upset any type of dignity. Anyhow you see to what depths my own august esthetic mind has fallen; but I can't help feeling that way lately and if it keeps on I'll puff up and burst with good spirits. Spirits are forbidden over here but Insulin is "within the law" and yet has all the old kick of the stuff Dad has hidden somewhere prohibition doesn't know about.

If these are worthy caricatures of myself it must be of my former self --- they are too thin. Dr. Williams says you wouldn't know me. Dad greets me with "golly you're fat." When I went to the grocery for the

Figure 2: Letter from James Havens to Dr. Banting (December 11, 1922)

-2-

JAMES D. HAVENS  
Postage Stamps for Collectors  
1370 EAST AVENUE  
ROCHESTER, N. Y.

first time in quite a spell the grocer looked at me sort of surprised like and said "why you're better aintcha?" He thought I'd been to Florida or the Fountain of Youth or somewhere and been cured. I do hope something will come up to make you come over here and make the acquaintance of my new self soon; lots of any brand of cigaretts on hand if you prefer the Lowly Camel I'll soon be able to "walk a mile" and then come to get you some.

Well, Thanksgiving has recently become a great institution over here; you ought to celebrate it there. It makes a fellow think a lot of great sentimental stuff about his good fortune and how lucky he is; he discounts all the little whims he's been cussing out the past 364 days and really convinces himself the world is a fine old house of optimism after all. You can bet your last farthing a lot of people are thinking the same things, and laying it to Insulin; but I'm going one step further back and laying it to Dr. Banting.

*work at university*  
Merry Christmas is coming around all of a sudden and I'm going to have a merry one all right; so are the above mentioned Lot of Other People. *I sure hope you do; you deserve it.*  
~~If you don't come over here I feel as if I might just rise up and sail over there without wings or an aeroplane.~~

Respectfully (?) -- anyway

In deep appreciation,

*Jim D. Havens*

Figure 3: Letter from James Havens to Dr. Banting P. 2 (December 11, 1922)

666 The following primary source material is from the Bating Collection (MS  
667 COLL 76) in Fisher Rare Book Library at the University of Toronto as well  
668 as the University of Toronto Archives. On Decemeber 15, 1922, one of Dr.  
669 Josilin's patients, Richard Witner, sent a letter to Banting from Rock Hill,  
670 South Carolina, which expresses gratitude for the impact insulin has had on  
671 his life: "As long as I live I'll think of you with the greatest gratitude. You  
672 have saved the lives of so many and given happiness to diabeteics all of the  
673 world." Here, Witner does not merely acknowledge the saving of lives in a  
674 medical or physical sense, but also recognizes the impact on the emotional  
675 lives of PWD the world over.

676 Helen Zualey, another of Joslin's patients, wrote to Banting from her Port-  
677 land, Maine home on December 14, 1922. She wrote, "Thru your wonderful  
678 discovery of insulin [I] am able to enjoy one of the best things I have been  
679 deprived of, namely a good diet. I feel like a different girl." Here Helen brings  
680 up one of the emotional relationships regarding diabetes, that is, the human  
681 relationship to food.

682 Richard Lester of Savannah, Georgia wrote to Dr. Banting on January  
683 26, 1923 to describe his daughter's state before using insulin: "In the mean-  
684 time, the child who is of a very happy nature, and extraordinarily bright,  
685 became dazed, and took no interest in anything." Richard goes on to describe  
686 his daughter after being treated with insulin: "the patient was sitting up in  
687 bed singing and playing with her toys. In 48 hours she was up. While still  
688 emaciated, she is apparently herself."

689 Elise Downing Spinar write to Bating about her husband on June 25, 1924.  
690 She described his state: "Until about 2 months ago he has carried on fairly  
691 well despite a very active life. Then he had a complete breakdown, lost weight  
692 rapidly and found he was suffering from acetone poinsoning." Elise's husband

693 went to Duff House in Scotland for treatment and “now he finds that with  
694 injecting insulin twice a day that he is able to absolutely control the acetone  
695 and sugar, and from a nervous wreck he seems to be strong, vigorous and  
696 altogether a different man.” This letter illustrates how one becomes a “nervous  
697 wreck” when living with diabetes.

698 Greta Rudberg of Sweden sent a letter written on September 15, 1925  
699 to Banting describes her son’s state after using insulin: “Not only is his life  
700 thereby saved but he is as well, happy and full of life as any sound child.”  
701 She makes a point to go beyond gratitude for saving his life and speaks to the  
702 quality of his emotional life.

703 Ruth Henry of New York (January 6, 1928) wrote to Banting, “I would  
704 venture to tell you of one rich and joyous life that had returned from the Valley  
705 of the Shadow as a result of your work. Now here I am, a normal happy and I  
706 even hope useful individual in the strenuous life a rural parsonage, glad to be  
707 alive and grateful to you.”

708 In the late 1920s, after the wider spread and availability of insulin, there  
709 were some who began to notice various concerns. John Comyn of Kent, Eng-  
710 land wrote, “I do not wish to seem ungrateful for I am most grateful for what  
711 you have already done in the research line; but injections at the rate of 3 per  
712 day every day of one’s life become wearying and depressing at times” (Decem-  
713 ber 1, 1929).

714 Alice Faulkner of Selma, Alabama wrote to Banting on January 2, 1929  
715 about her daughter with diabetes, “ The doctors here are more afraid of the  
716 harm that the insulin will do than they are aware of the good it does.” This  
717 shows a glimpse into the emotional risk taken on by Physicians administering  
718 insulin for the first time, perhaps fearful of causing hypoglycemia. Alice de-  
719 scribed her daughter after the use of insulin, “In fact, she has more life and

720 ‘pep’ than anyone I know of.”



DEAR DR. BANTING  
I AM FEELING SO  
GOOD AND GETTING  
SO MUCH TO EAT -  
I GET OATMEAL AND  
POTATO  
I WAS IN THE  
HALLOWE'EN PARADE  
AND GOT A PRIZE.  
HERE ARE SOME  
PICTURES, DON'T I LOOK  
FAT? WITH LOVE  
JANET

Figure 4: Letter to Dr. Banting from Janet

721 The introduction of insulin into medicine was by a group of men at the  
722 University of Toronto, who then sent the recipes to a group of men at Eli Lilly  
723 Corp for improvemnet, production and distribution.

724 In the following letter, Dr. Woodyatt writes to Dr. MacLeod to update  
725 him on the improvement of his patients with diabetes. One patient stands out  
726 to him among the rest:

727 We have one man appeared to be incapable of burning more than 46  
728 g. of glucose, whose power to burn has increased by 33 g. for each  
729 cc. of this same preparation. I think that this striking improve-  
730 ment is due in part to the tremendous relief of mental depression  
731 that it was for this man to find that his condition was not hope-  
732 less and that he could again take a comfortable diet... Diabetics  
733 are extremely sensitive to psychic influences, and I have seen in  
734 the past many cases whose actual severity varied tremendously in  
735 response to such things<sup>8</sup>

736 .

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<sup>8</sup>Letter to Dr. MacLeod, October 4 1922. University of Toronto Archives, A1982-0001, Box 15, Folder 4

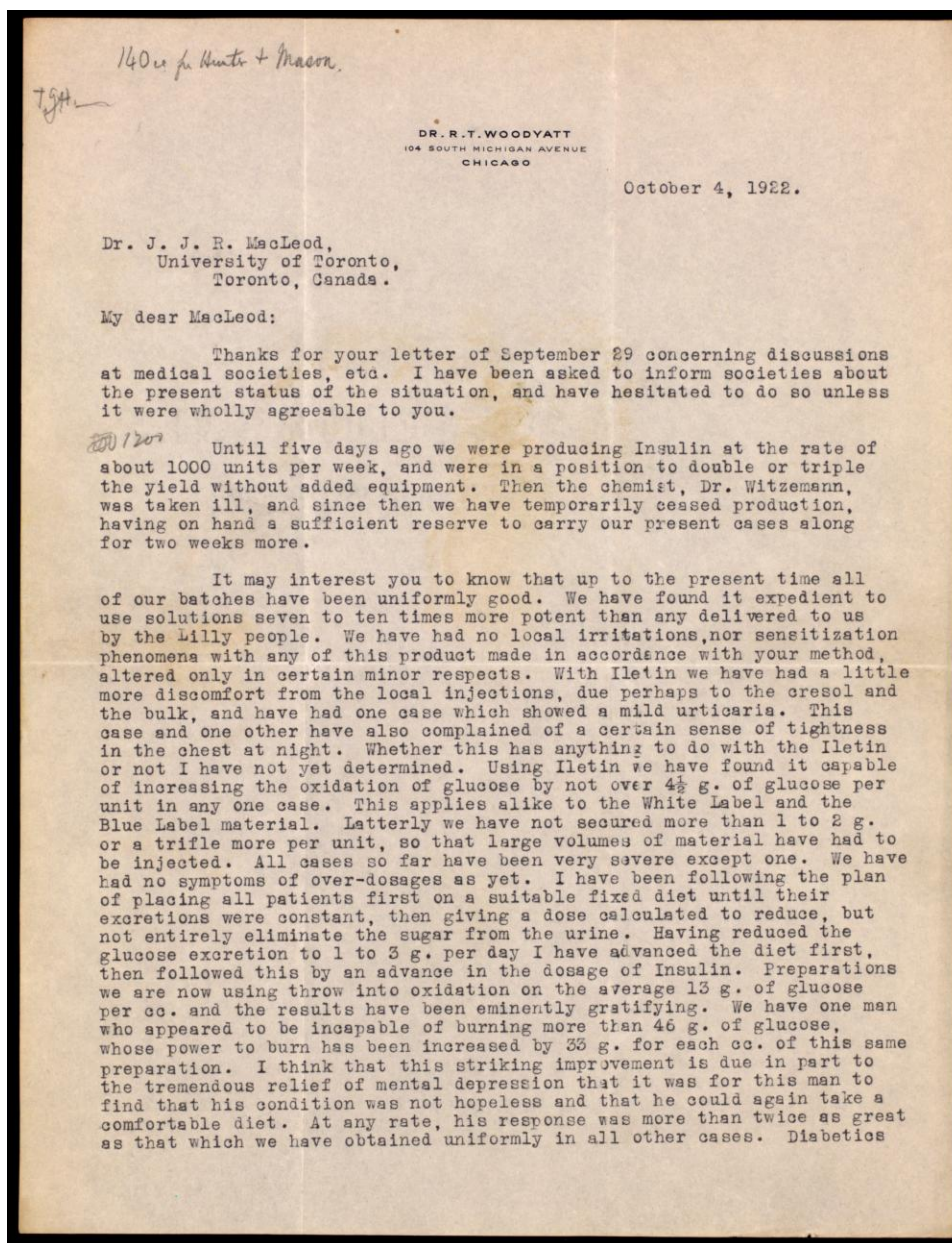


Figure 5: Letter from Dr. R.T Woodyatt to Dr. MacLeod (October 4, 1922)



DR. R.T. WOODYATT  
104 SOUTH MICHIGAN AVENUE  
CHICAGO

are extremely sensitive to psychic influences, and I have seen in the past many cases whose actual severity varied tremendously in response to such things.

We have used Insulin to desugarize borderline cases by temporary dosages followed by omission of the Insulin. Once a case is desugarized in this way he may remain sugar free on the same diet for a considerable length of time afterwards, in much the same way that this occurs following a desugarization by diet adjustment alone. I have not attributed this apparently lasting effect of Insulin to anything more than the improvement which follows desugarizations in general, but am watching it with interest.

I hope very much that Dr. Clowes will not fail to stop in Chicago on his way back from Toronto, as there are many questions which I would like to discuss with him. As the knowledge of Insulin has been spread abroad, there are many more applicants for Insulin treatment than can possibly be accommodated as you are well aware. I wonder what your plans are concerning the holding of a meeting or conference of some sort before very long to decide what you wish done about the data which is accumulating. Would you like to have me send you the detailed case reports up to date?

I wish to say that this Insulin effect is as striking and the results as brilliant as anything I have ever seen in medicine or surgery. It constitutes one of the great advances. Also I deem it a great privilege to be in a position to make and apply it. I am very grateful to you and the other gentlemen up there, and if you come down here I can show you some appreciative patients.

Yours very truly,

*R.T. Woodyatt*

Figure 6: Letter from Dr. R.T Woodyatt to Dr. MacLeod P. 2 (October 4, 1922)

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