

## Forensic Aspects of Hypoglycaemia

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### ABSTRACT

Diabetes complications of hypoglycaemia, hypoglycaemia unawareness and neuroglycopenia are often encountered by patients treated with insulin. It is feared by patients and families often leading to emotional and mental scars and can affect lifestyle and confidence. Hypoglycaemia can occur in premature babies, persons with hypopituitarism and Addison's Disease. Low blood glucose can affect athletes and the elderly leading to falls. Cases are individual and often difficult for families, clinicians, lawyers and courts to understand. Temporary mental impairment and PTSD injury may occur requiring counselling to overcome hypoglycaemia.

42 years T1D insulin treatment and personal hypoglycaemia experience following wrong insulin care 1987-94 led the author to research published reports. The first hypoglycaemic event was described by Banting, Best and Macleod at the time of insulin discovery as a treatment for diabetes in 1921/22. This review includes observations from 'Forensic Aspects of Hypoglycaemia' by Prof Vincent Marks, 629 case references, February 2019 and other published papers over many years.

Complications affecting stable Blood Glucose levels include Otitis Externa, Osteomyelitis, Neuropathy pain, infection treatment by IV antibiotic delivery, periodontal dental link with gum disease, inflammation, chemical change reducing insulin effectiveness, calcium stones in the saliva duct, sodium, calcium, magnesium electrolyte imbalance, Omega 3 deficiency, night saliva duct cortisol secretion, depression.

Use of insulin and C Peptide assay is beneficial in forensic investigations following unexplained death or insulin use as a weapon in alleged criminal matters.

Society can learn from this research to provide improved diabetes care for patients to achieve good health and long life despite the daily burden of managing a condition with no cure.

A duty of care exists by a witness, partner, friend or colleague to a person in a state of hypoglycaemia to assist and if severe summons paramedic help when the person is unable to help themselves because of temporary mental hypoglycaemia impairment.

**Keywords:** Blood glucose; Hypoglycaemia; Insulin; Temporary mental impairment

### PROFESSIONAL BIOGRAPHY

Derek Beatty gained his BSc in Biological Science & Business Studies, Edinburgh University, 1972, and his Diploma in Marketing, Slough College, 1977. He is a Director of Aston Clinton Scientific Ltd since 1997 supplying respiratory nebulisers and specialising in diabetes. He is a Healthcare Consultant.

He recently founded Mobile Med Tech Ltd to offer a Mobile Diabetes Service in Scotland involving NHS Scotland with experience in the team launching Europe's First Mobile MRI Service in 1990. He has had T1D for 42 years and overcome diabetic retinopathy.

Published featured articles include 'Shared Mobile Services' Medical Focus 1990; 'Sharing in Caring' The Health Service

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Journal, 1990; 'Shared Mobile Services Save Money for Providers', European Congress of Radiology, Vienna 1991; 'Mobile MRI, Safety and Operational Guidelines' 1992; 'A Listening Ear' 2017; www. DRI-FT.co.uk Diabetes Research Information-Facts for Treatment.

## FORENSIC ASPECTS OF HYPOGLYCAEMIA INVESTIGATION

- Diabetes complications of hypoglycaemia, hypoglycaemia unawareness and neuroglycopenia are often encountered by patients treated with insulin. It is feared by patients and families often leading to emotional and mental scars and can affect lifestyle and confidence. Hypoglycaemia can occur in premature babies, persons with hypopituitarism and Addison's Disease. Low blood glucose can affect athletes and the elderly leading to falls. Cases are individual and often difficult for families, clinicians, lawyers and courts to understand.
- Temporary mental impairment and PTSD injury may occur requiring counselling to overcome hypoglycaemia.
- 42 years T1D insulin treatment and personal hypoglycaemia experience following wrong insulin care 1987-94 led the author to research published reports. The first hypoglycaemic event was described by Banting, Best and Macleod at the time of insulin discovery as a treatment for diabetes in 1921/22. This review includes observations from 'Forensic Aspects of Hypoglycaemia' by Prof Vincent Marks, 629 case references. February 2019. Complications affecting stable Blood Glucose levels include Otitis Externa, Osteomyelitis, Neuropathy pain, infection treatment by IV antibiotic delivery, periodontal dental link with gum disease, inflammation, chemical change reducing insulin effectiveness, calcium stones in the saliva duct, sodium, calcium, magnesium electrolyte imbalance, Omega 3 deficiency, night saliva duct cortisol secretion, depression.
- Use of insulin and C Peptide assay is beneficial in forensic investigations following unexplained death or insulin use as a weapon in alleged criminal matters.
- Society can learn from this research to provide improved diabetes care for patients to achieve good health and long life despite the daily burden of managing a condition with no cure.
- A duty of care exists to a person in a state of hypoglycaemia to summons paramedic help when the person is unable to help themselves because of temporary mental hypoglycaemia impairment.

## Hypoglycaemia in Scotland, impaired hypoglycaemia awareness

### UK Ambulance Calls-2018

- Diabetes Severe Hypo Events account for
- 48,000-98,376 Emergency Calls Per Annum in the UK
- 63-73% are treated at scene
- 2-7% require repeat ambulance attendance within 2 days for Severe Hypo Event

## An Opportunity Exists to improve

- Prevalence of impaired hypoglycaemia among those who require an ambulance following a hypoglycaemic event is more than twice that found in the general population of people with diabetes'
- Improvements in Pre-Hospital Care for this population could lead to global improvements in health outcomes and decreased service costs.

## A MYSTERIOUS SOMETHING

- JB Collop, 8 January 1922
- An injection of insulin sourced from pancreas of dogs injected into diabetic dog removes cardinal symptoms of diabetes
- Later on 2 December 1922 something went wrong.
- 4 hours after insulin injection dog 27 had convulsive twitching, dog unconscious- dog died recorded as anaphylactic reaction
- No autopsy-Banting & Best wrote it off as a failed longevity experiment
- First Human Patients
- The Discovery of Insulin-Michael Bliss 1982
- Toronto Group-Discovered lethal effects of too much insulin
- Anxiety, sweating, trembling, hunger, convulsions
- Dr Joe Gilchrist had hypo attack in Christie Street, Toronto, arrested for drunkenness
- Rochester Group-June 1922-Lyman Bushman, hypo unconscious
- Large doses of insulin leading to insanity
- Mental health issue in diabetes-fluctuating BG levels
- Coroner Reports
- A diabetic patient on insulin with an unexplained death may be reported as a heart attack or other clinical trauma.
- Difficult to diagnose cause of death as hypoglycemia unless autopsy performed within about 6 hours.
- Insulin assay, C peptide tests on transfer to hospital when still alive if adrenalin does not kick in to keep patient alive.

1) Forensic Aspects of Hypoglycemia-Vincent Marks 2019 is a well written and comprehensive book about the diabetes complication of

- \* hypoglycaemia and hypoglycaemia unawareness
- \* hypoglycaemia in new-born babies
- \* hypoglycaemia in persons with hypopituitarism
- \* experience low blood glucose occasionally affecting athletes

2) It is a helpful reference book to understand the technical clinical and biochemistry content of hypoglycaemia and effect on patients with diabetes and their carers.

3) Vincent Marks provides a comprehensive and detailed summary account of many specific hypoglycaemia cases written over 15 chapter topics with 629 references.

4) There is a reference to the 'Human Insulin Scandal' in text.

- References to hypo incidents going back to around 1940 before Human Insulin was produced and introduced to treat diabetes.

5) The use of insulin assay and C Peptide assay appear to be beneficial in forensic investigations following sudden or unexplained death.

6) Use of insulin as a weapon in alleged criminal matters.

7) Insulin Murders-Marks & Richmond 2007 eg B Allitt

- Described are observations of spontaneous hypo episodes and neuroglycopenia.
- Today in 2020 a person in a state of hypoglycaemia convulsion and seizure in the UK is classified as a Number 1 Ambulance Emergency.

8) The legal profession and courts depend on expert witness evidence.

9) A few cases are described where expert opinion may vary depending on the knowledge and experience of those giving evidence in court.

10) Described are observations of spontaneous hypo episodes and neuroglycopenia.

11) Investigation has identified

- unexplained deaths in bed syndrome,
- hypoglycaemia unawareness,
- car accidents caused by low BG levels experienced by drivers,
- patient falls and collapsing when hypoglycaemia not fully understood.
- DCCT Trial, USA, 1993, intensive insulin therapy reduce complications.
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- DCCT Trial, USA, 1993, intensive insulin therapy to reduce complications.

15) In late 1980's the BDA received 3,000 letters of complaint from patients and carers about Human insulin and switch from Animal Insulin.

16) 900 plaintiffs were awarded £0.5 million in Legal Aid in the UK for Counsel Opinion with a view for a Class Action against the pharmaceutical industry.

17) Many believe in the UK this was the wrong approach and in effect claims should have been against certain UK prescribing clinicians who failed to heed advice and warnings from the

pharmaceutical industry and Medicines Control Agency that on switching from Animal Insulin to Human Insulin dose should be reduced by up to 20% and careful patient BG Blood Glucose monitoring be implemented by diabetes specialist nurses, clinicians and GP's.

18) It is known the BDA found the content of the 'Low Task Force Report on Human Insulin' was 'too alarmist' to place in the public domain when precedent case law and observations going back to 1933 Wauchope and 1940 Joseph Wilder as examples could have been investigated from 1989 and the draft report of December 1992 have references added to make the Report more correct and factual based on precedent information and facilitated earlier publication.

19) Controversy exists about the Forrest and Evans 'Human Insulin' legal counsel opinion findings where there are grey unfocused areas which might have been substantiated sooner.

20) Following the Human Insulin scandal the introduction of Analogue Insulin has helped in attempts to reduce the fast BG lowering action of Human Insulin by modified molecular structure, but risks may suggest possible carcinogenic risks.

21) This leaves serious question marks about the understanding of treatments using hyperglycaemic lowering agents to achieve optimal BG levels including insulin, metformin, etc. which today are better but not ideal especially due to lack of understanding and education of patients, carers and clinicians and nurses.

22) The introduction of CGM, Continuous Blood Glucose Monitoring, eg Libre, means today's patient can have a better understanding in blood glucose levels throughout the day and night and with careful insulin management, food intake, exercise, should lead to improved BG and less complications. Patient and carer education is essential to ensure success using new BG systems [1-44].

## AUTHOR'S EXPERIENCE

1) 1978/79-The author was treated for Type 1 Diabetes with insulin commencing February 1979, porcine insulin 30/70 mix. Diagnosis was November 1978. Cause, witness fatal car crash, genetic? Nigeria visits, virus? Initial treatment with Metformin. Treatment with insulin was commenced as patient at High Wycombe General Hospital, England.

2) 1985-The author was switched from porcine insulin Mixtard 30/70 to Human Insulin Mixtard 30/70. The same dose was prescribed. No advice was given, no prescribed dose reduction was implemented. The prescribing GP claimed Human Insulin was more pure and less complications would arise in the future. Consent was never given to effect the change. The author was told there was no choice and animal insulin would be withdrawn.

3) 1987-The family moved to Bricket Wood, St Albans, registered with a new GP practice and outpost surgery in Bricket Wood operating from the local church hall. The Church was paid rent from the NHS to operate from the Church Hall.

4) Medical device technology and NHS prescribing approval introduced invasive finger prick blood glucose patient monitoring devices to the NHS UK market to be issued by NHS prescription to Type 1 diabetic patients. The author was never supplied with a blood glucose measuring device nor blood glucose testing strips to enable to test blood glucose levels on a daily basis.

- The author believes this to be a breach of duty of care to a patient with Type 1 Diabetes.
- The author was driving up to 30,000 miles per annum for work.
- At a GP consultation irritability, behaviour change, mood swings, acute night-time perspiration, muscle cramps, severe blood boils were noted and discussed. These symptoms are now widely recognised as side effects associated with incorrect prescription and dose of Human Insulin to treat diabetes leading to hypoglycaemia unawareness.

5) Hypopituitarism, Addison's Disease, is treated by prescribed steroid treatment to manage Thyroid Disorder taken daily with dose adjustment required at certain times in life and regular referral to a specialist clinical endocrinologist.

- Specialist referrals are required.

6) Vincent Marks book 'The Forensics of Hypoglycaemia' refers in several places to Hypoglycaemia associated with Addison's Disease and Hypoglycaemia in fatal instances.

- Spontaneous Hypoglycaemia was unnoticed for some time in clinical areas then was rediscovered in 1991.
- Neuroglycopenia can cause anger and irritability. This was noted by the author's GP at a consultation in February 1994 and included in her defending evidence to her NHS employer.
- Neuroglycopenia is a symptom of hypoglycaemia unawareness.
- At the GP consultation in February 1994 the GP failed to diagnose neuroglycopenia.
- In 1994 no medical records were made available of the author's blood glucose levels until arranged separately to source BG monitoring testing medical devices on advice from a diabetes charity and records were commenced.
- No C peptide tests were available nor BG results.
- Spontaneous Hypoglycaemia can occur.
- The author suffered an instantaneous neuro hypoglycaemic attack with convulsions and seizure when experiencing undiagnosed hypoglycaemia unawareness on 23 February 2014 requiring immediate paramedic assistance which was denied by the author's ex-wife and attending Police Constables who had a public duty of care to summons an ambulance as did the on call GP who refused to attend a neuroglycopenia event when telephoned.
- On 23 February 1994 the author returned home early evening after considerable exercise in central London, taking the underground from Baker Street, collecting his car and driving back to Bricket Wood. He arrived home in a state of hypoglycaemia unawareness and experienced spontaneous hypoglycaemia with convulsions and seizure and in a state nearing neuroglycopenic hypoglycaemia and incapable of forming intent.

- The authors ex-wife negligently failed to summon an ambulance nor paramedic support but called the police. The two attending police constables the author recalls stating being told he should get into the car and drive and obtain a local carryout. This, the worst thing he could do and was gross negligence and misconduct in public office. His ex-wife refused to prepare the normal evening meal which had she done so would have led to return to normoglycemia.
- The author called the GP surgery and spoke with the on-call GP and requested an immediate GP visit. He refused and requested to speak with his ex-wife who took the phone and entered another room out of earshot. The author does not know what was said.
- The GP's refusal and failure to treat a spontaneous and life-threatening hypoglycaemic event was perceived as alleged gross medical negligence.
- Later the spontaneous hypoglycaemia returned and worsened with convulsions and seizure leaving the author incapable of forming intent and self-treating a life-threatening hypoglycaemic attack with convulsions and seizure of which he was told but has no recollection. The author recalls waking the next morning and going to work then returning home in the evening to discover his ex-wife and daughter had left.

## SUMMARY INVESTIGATION

- 1) The authors ex-wife, solicitors, and advisors failed to seek and understand expert medical opinion confirming hypoglycaemia unawareness issues and Human Insulin.
- 2) Applications for contact to see his daughter were dismissed based on fictitious fantasy and incorrect advice given, leading to it is believed a miscarriage of justice brought about by an alleged conspiracy to pervert justice to cover up alleged gross medical negligence with abuse of the author, a vulnerable adult.
- 3) Social Services it is believed were deliberately misled by the author's ex-wife and others, (one deceased) and it is believed negligently failed to investigate evidence.
- 4) This failure, on the balance of probability, was gross misconduct in public office, and may justify further investigation and Public Inquiry. (Senior Judge Scotland 2019)
- 5) The author had experienced spontaneous or non-iatrogenic hypoglycaemia and near death.
- 6) Witness neglect led to spontaneous neuro hypoglycaemia with seizure.
- 7) The event required hospitalisation, forensic analysis of C Peptide, glycogen, cortisol, growth hormone, blood glucose and insulin should have been collected on admission to hospital.
- 8) The authors ex-wife suffers from hypopituitarism which can cause hypoglycaemia leading to severe paranoia and anxiety and fictitious and misleading evidence placed before courts.
- 9) This may on the balance of probability been caused by hypoglycaemia experienced by her at the time of the hypoglycaemia event with her refusal to prepare a normal evening meal.

10) Similar cases are referred in Vincent Marks book from Turkey and India.

11) Ongoing hypoglycaemia research study has in 2020 identified for patient and carer advice:

#### Blood Glucose BG mmol/l

4.6 Inhibition and slurred speech

3.8 Counter regulatory hormone reaction

3.0 Brain takes longer to answer question if asked of patient

3.2-1.8 Severe hypoglycaemia

1.5 Severe convulsions and seizure, coma

12) The brain is slow to recover after a hypo episode and if hypo occurs it is important to delay driving for 45-60 minutes to allow BG and brain function to recover. If driving it is important to keep a glucose snack in the car close to the driver for easy access to glucose.

13) Hypo episodes can be frightening with incidence in T1 diabetes is more prevalent, likely to be 1 in 4 patients, and in T2 diabetes 1 in 10 patients.

14) Other issues involving hypoglycaemia are muscle cramp and in older patients' heart issues.

15) Insulin pump can be suspect leading to low blood glucose and BG levels must be monitored.

16) Dogs can often pick up hypos, in a sample 83% of hypos were picked up by dogs.

17) Hypos can be delayed and experienced up to 15 hours after insulin injection due to carry forward of insulin effect in the body. Exercise can also have this effect. Glucose can be stored in the liver and released during a hypo to assist recovery.

18) Low BG can occur at night and it is important to check BG before bed and if below 6 mmol/l it is important to have a snack before retiring to sleep. After a previous hypo it may be sensible to set an alarm to wake up early morning and check BG.

19) Medication can often lead to BG imbalance especially antibiotics and HRT.

20) Prevention of hypoglycaemia is always better than to have to treat and cure a hypo.

21) It is wrong to judge the behaviour of a diabetic patient who may have experienced a hypo. The responsibility lies with the prescribing doctor or specialist consultant to ensure a patient with diabetes and their carer receives sensible and correct advice on how to treat hypo events to prevent the need for paramedic or ambulance assistance and for the patient and their carer to know and understand what to do and when to summons ambulance support in a hypo emergency which could be anywhere, at home, at work, at school or college, visiting friends, in the street or at an event, theatre, cinema, football match, sports event.

22) In death in bed cases anatomical change can be noted for up to 6 hours but not thereafter.

Incidents tend to be non-conclusive following discovery of increased incidence of death in bed syndrome following patients switch from animal to human insulin treatment in 1980's and early 1990's

**Case 95** Claim against insurers 2005 was a case uncomfortable for insurers and explains why witness lied under oath in court and described diabetes claims as nonsense and hypoglycaemia as domestic violence and the court was deliberately misled by the witness. Was this a case of perverted justice?

2. **P275** Victim was alive and comatose and unable to give history of events. The attendant will almost certainly be unreliable and be misleading. The authors ex-wife and daughter were in attendance and their evidence was unreliable and misleading in court cases heard when witnesses were under oath.

**Chap 14** If hypoglycaemia is given as evidence courts are likely to be ignorant of the health condition and require experience of an expert witness.

## EVIDENCE IN THE AUTHORS CASE EXPERIENCE

1) In the case of the author and contact with his daughter Judge M relied on evidence from Social Services which was unreliable. The author believes the Social Worker was grossly negligent in public office and failed to recommend forensic evidence be obtained before any contact hearing. If such had been available on the balance of probability the order would have been overturned on appeal.

2) The Official Solicitor was very disappointed that the authors daughter was not seen by a Child Psychiatrist or Psychologist as was recommended by Appeal Court Judges and would suggest this recommended action was not implemented due to the writers ex-wife's alleged narcissism and determination to cover up her negligence along with the negligence of the GP involved and bizarre cover up conduct of others.

3) The Social Services report was unsafe, and diabetes dismissed without investigation and appointment of an expert witness to assist the court.

4) The GP had the author removed from the GP Practice Patient Listing in 1994 following evidence discovery and return of the authors hypoglycaemia warning awareness signs. She took out a High Court injunction order preventing local surgery contact or access in the Parish Church Hall following her having the vicar influenced to agree to such and deliberately deny the author NHS GP services until an alternative arrangement could be made.

5) The GP had dumped on the author a massive pile of clinical reference papers used as scaring technique to prevent contact with his daughter to cover up her alleged gross medical negligence in public office, cause the author to suffer symptoms of PTSD injury requiring psychological counselling to overcome the trauma and deliberately misled his ex-wife, his daughter, Hertfordshire Social Services, her employer the NHS, the General Medical Council, who allowed her to continue to

practice as a GP on the balance of probability treating adults and children following her alleged abuse of the author and his daughter when aged 11 and not Gillick-Competent.

## FRESH EVIDENCE

1. Forensic Aspects of Hypoglycaemia' by Vincent Marks (2019) consists of 374 pages of text and 621 references going back to insulin discovery in 1921 by Banting, Best and Macleod and is a helpful fresh evidence and case study account of actual cases involving hypoglycaemia since the discovery of the health condition in 1922 in Toronto.

### Fear and Paranoia of Witness to Neurohypoglycopenia

2. When certain facts emerged the author believes his ex-wife as a witness became terrified that the truth of her alleged negligence and failure to summons an ambulance to a diabetic emergency would come out and so hid under the influence of fear and paranoia to cover up her conduct and that of others in failing to summons an ambulance.

## PRECEDENT CASE LAW INCLUDES

1. 1940-Joseph Wilder, J. Criminal Path. GP's in this instance covered up and there was no hearing.

2. 1999 Padmore-Neurohypoglycopenic hypoglycaemia means patient is incapable of formulating intent. Identical o my experience when there was no intent.

3. 1994-The on call GP's failure to treat hypo promptly the author believes was gross medical negligence and allegedly criminal misconduct.

4. Findings are sometimes differences in medical opinion occur in events of hypoglycaemia.

5. C Peptide is now useful in forensic evidence in the event of problems and may be performed at A and E in an hypo emergency.

6. Prima facie evidence suggests the authors ex-wife as witness experienced fear and paranoia caused by mismanagement of treatment for hypopituitarism Addison's Disease, and failure to have annual biochemistry tests for T1 and T2 performed.

7. P108 Spontaneous hypoglycaemia.

8. Case 5.3 Non iatrogenic hypo.

9. It is believed and alleged the GP who failed to diagnose hypoglycaemia unawareness and her practice colleagues recognised their medical negligence and covered up this negligence by frightening the author and his advisors by way of High Court Order preventing access to NHS GP practice medical facilities and NHS care and required prescribed medication, and in the application dumped hundreds of pages of clinical reports on hypoglycaemia and diabetes to frightened the author by evidence volume.

10. The author read this with due diligence and along with other clinical text from diabetes and insulin research was used to enhance his understanding of hypoglycaemia.

11. At the time of insulin discovery by Banting, Best and Macleod, in 1922, and before and subsequently, led to the publication of diabetes information on the authors website www.dri-ft.co.uk to share and help other patients and carers with diabetes and the medical profession.

1. The authors research was initiated after personal experience 1994.

2. Review of 'Human Insulin' A Decade of Experience' triggered his interest.

3. Research links followed experience and knowledge of the long term diabetes complication of Otitis Externa and Osteomyelitis affecting 150 patients in Scotland and 350 in England each year along with:

- Gum disease in diabetes,

- Late night cortisol secretion through saliva duct 8.00pm-2.00am,

- Dental issues in Type 1 and Type 2 Diabetes,

- Mental health and blood glucose levels in diabetes

These are all areas of diabetes which require further research and patient awareness.

## EMOTIONAL DISTRESS

1) The author lost sight in his left eye in 2008 caused by retinopathy bleed and altitude pressure on a European flight. Sight was restored by vitrectomy, now stable and is the subject of the authors research presentation 'Diabetic Retinopathy Treatment at Home'. The experience and life change the author has experienced by alleged negligence cover up and deception involving an innocent child is filled with a lifetime of sadness.

2) The conduct involving the authors estranged daughter when aged 11 in 1994 he believes was diabetic discrimination, abuse, misconduct in public office and acts with intent to pervert justice. It is accepted that marriages sometimes break down for many reasons and this is a fact of life.

3) There can be no doubt that the effect of the misconduct by others for many years has been very detrimental to the authors emotional and ophthalmic health and wellbeing and has caused the author to suffer loss in excess of £275,000 and significant unnecessary interruptions in his business and home life.

4) It is with great sadness that his estranged daughter has been deprived of over 26 years of fatherly and grandparent support and friendship and it is believed has been misled to cover up alleged negligent conduct of certain professional and other persons.

5) The authors 42 years living with Type 1 Diabetes has been challenging.

God's message to the author in 1994 when recovering from catastrophic hypoglycaemia was 'there is a problem with patient treatment for diabetes, go out and try to fix it'.

6) The author believes in 1994 the Trustees of IDDT saved his life and helped get his diabetes stabilised and get his life back on

track. The campaign 'A Voice for Choice' has ensured continued availability of Animal (Porcine) Insulin, Wockhart Pharmaceuticals with improvements in Human and Analogue Insulins. New technology used in diabetes including Continuous Glucose Monitoring, Insulin Pumps, Flash Glucose Monitoring, Freestyle Libre, has saved lives and enabled many persons living with diabetes to enjoy a reasonably lifestyle with employment and happiness and better health.

7) The trust the author had placed in a local GP service to manage his personal health and diabetes from 1987-1994 has been breached forever by this experience. The trust he placed in his ex-wife and a professional business insurance broker has been breached forever. None have shown any remorse.

8) Health, happiness, job security, income stream are important to live a good life. The author has enjoyed this in the last 26 years since his recovery from acute hypoglycaemia in 1994.

9) Living with T1 diabetes the author keeps focused on what he is doing and does it to the best of his ability. This is important for future success and happiness.

10) The author avoids distractions if possible. he knows he has my God's blessing and support in this work for the benefit of others, that's his belief and it works for him!

## WITH THANKS

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- The All Party Diabetes Group at the Scottish Parliament;
- EuroSci Con for the opportunity to share this experience to benefit others and identify need for further research in areas described and improved patient care.

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