



# Science Report 2018

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**PROFIL'S RESEARCH FOCUS**  
Profil focuses on diabetes and obesity research; that focus makes us the best in our field.

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**Dr. Tim Heise**  
Lead Scientist  
Chairman of the Board of Directors  
Co-Founder of Profil

## Preface

*A drug is a substance which,  
if injected into a rabbit,  
produces a paper.*  
Otto Loewi  
(1873-1961)

It is my great honour and pride to present the Profil Science Report 2018. Altogether, Profil's scientific experts published 29 scientific publications (cumulated impact factor of > 150) and 56 scientific presentations at international meetings in 2018. The wide variety of topics reflects the versatility of our scientists and our expertise in many areas of metabolic research. Our publications cover our main focus areas of diabetes technology and pharmacology, but you will also find papers on the metabolic effects of drugs treating hypertension and heart failure, and on more broader topics such as digital health and value-based healthcare.

It is certainly unusual for a non-academic institution to play such an active role in scientific publications. The “publish or perish” verdict often used to describe the pressure in academia for rapid publications does not apply to Profil – the career of our scientists is not dependent on scientific publications. Nevertheless, we do feel that we have a major obligation of publishing our research in order to make our small contribution to scientific progress and ultimately to a better treatment of people with diabetes.

In contrast to Otto Loewi's quote above, we think that a (novel) drug does (or at least has the potential to do) much more than producing a paper when injected into a (human) rabbit. We always hope that the drugs and technology we investigate might eventually help to further improve or facilitate diabetes treatment. However, to fully understand a novel drug's or technology's potential, further input and research will be necessary. Our papers and presentations are therefore an important way for us to communicate with the many scientists around the world. We really would like to get their feedback on our findings and to inspire them and us to further investigations. As Fuller Albright, one of the pioneers in nutrition and metabolic research, once put it in the conclusion of one of his publications "In any case, as usual, a lot more work is necessary". We are proud that our research not only contributes to a (slightly) better understanding of diabetes therapy, but also triggers "a lot more work" from our group and many others.

Scientific research is always teamwork, and many have contributed to the listed publications and the research behind them. Therefore, let me conclude with a word of gratitude: We are indebted to all our sponsors that rely on our expertise and knowledge to properly design, conduct and analyse their studies. I am very grateful to the whole Profil-team that works hard every day to achieve (and publish) highest quality research. And, last, but not least, I would like to thank Prof. Freimut Schliess for compiling our scientific achievements in yet another beautiful Science Report.

Foremost, however, I would like to express my sincere gratitude to all the participants in our study, healthy people and people with diabetes. Without their trust and their commitment our work would not be possible.

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## Metrics

TABLE 1: TOTAL OUTPUT			
	Count	$\Sigma$ Impact Factors	Mean Impact Factor
<b>Scientific Publications</b>	<b>29</b>	<b>153,00</b>	<b>5,46</b>
Original Articles	22	142,86	6,80
Reviews	2	2,55	1,28
Letters/Comments	5	7,59	1,52
<b>Scientific Congress Presentations</b>	<b>56</b>	n/a	n/a
Orals	29	n/a	n/a
Poster	27	n/a	n/a
<b>Advanced Trainings</b>	<b>16</b>	n/a	n/a
<b>Granted Research Consortia</b>	<b>3</b>	n/a	n/a
<b>Scientific Communication</b>	<b>58+</b>	n/a	n/a
Webinars	3	n/a	n/a
Blogs	45	n/a	n/a
Media Reports	10+	n/a	n/a

**TABLE 2: PROFIL SCIENTIST(S) FIRST/SENIOR AUTHOR**

	Count	$\Sigma$ Impact Factors	Mean Impact Factor
<b>Scientific Publications</b>	<b>20</b>	<b>61,98</b>	<b>3,26</b>
Original Articles	13	51,84	4,32
Reviews	2	2,55	1,28
Letters/Comments	5	7,59	1,52
<b>Scientific Congress Presentations</b>	<b>40</b>	n/a	n/a
Orals	25	n/a	n/a
Poster	15	n/a	n/a

**TABLE 3: PUBLISHED STUDIES (PARTLY) OPERATED BY PROFIL**

	Count	$\Sigma$ Impact Factors	Mean Impact Factor
<b>Scientific Publications</b>	<b>17</b>	<b>116,03</b>	<b>7,25</b>
Original Articles	17	116,03	7,25
Reviews	n/a	n/a	n/a
Letters/Comments	n/a	n/a	n/a
<b>Scientific Congress Presentations</b>	<b>45</b>	n/a	n/a
Orals	25	n/a	n/a
Poster	20	n/a	n/a

**TABLE 4: PUBLISHED STUDIES (PARTLY) OPERATED BY PROFIL**
**+ PROFIL SCIENTIST(S) FIRST/SENIOR AUTHOR**

	Count	$\Sigma$ Impact Factors	Mean Impact Factor
<b>Scientific Publications</b>	<b>11</b>	<b>39,88</b>	<b>3,99</b>
Original Articles	11	39,88	3,99
Reviews	n/a	n/a	n/a
Letters/Comments	n/a	n/a	n/a
<b>Scientific Congress Presentations</b>	<b>33</b>	n/a	n/a
Orals	22	n/a	n/a
Poster	11	n/a	n/a

# Scientific Publications

## Original Articles

1. Heise, T.<sup>1</sup>, Meiffren, G., Alluis, B., Seroussi, C., Ranson, A., Arrubla, J., Correia, J., Gaudier, M., Soula, O., Soula, R., DeVries, J.H., Klein, O., Bode, B.  
Biochaperone lispro versus faster aspart and insulin aspart in patients with type 1 diabetes using continuous subcutaneous insulin infusion: A randomized euglycemic clamp study.  
**Diabetes Obes. Metab.** 2018 Dec 18. doi:10.1111/dom.13621.  
[Epub ahead of print]  
**IF(2018): 5,98**
2. Klonoff, D.C., Evans, M.L., Lane, W., Kempe, H.P., Renard, E., DeVries, J.H., Graungaard, T., Hyseni, A., Gondolf, T., Battelino, T.  
A randomized, multicentre trial evaluating the efficacy and safety of fast-acting insulin aspart in continuous subcutaneous insulin infusion in adults with type 1 diabetes (onset 5).  
**Diabetes Obes. Metab.** 2018 Dec 9. doi:10.1111/dom.13610.  
[Epub ahead of print].  
**IF(2018): 5,98**
3. Benesch, C., Kuhlenkötter, M., Heise, T.  
Considering blood dilution improves the precision of continuous whole blood glucose measurements.  
**J. Diabetes Sci. Technol.** 2018 Sep 26:1932296818803621.  
doi:10.1177/ 1932296818803621. [Epub ahead of print]  
**IF(2018): -**
4. DeVries, J.H., Bailey, T.S., Bhargava, A., Gerety, G., Gumprecht, J., Heller, S., Lane, W., Wysham, C.H., Zinman, B., Bak, B.A., Hachmann-Nielsen, E., Philis-Tsimikas, A.  
Day-to-day fasting self-monitored blood glucose variability is associated with risk of hypoglycaemia in insulin-treated patients with type 1 and type 2 diabetes: a post hoc analysis of the SWITCH Trials.  
**Diabetes Obes. Metab.** 2018 doi:10.1111/ dom.13565. Epub 2018 Nov 26  
**IF(2018): 5,98**

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<sup>1</sup> Underlined: authors from Profil

5. Hövelmann, U., Olsen, M.B., Mouritzen, U., Lamers, D., Kronshage, B., Heise, T.  
Low doses of dasiglucagon consistently increase plasma glucose levels from hypoglycaemia and euglycaemia in people with type 1 diabetes mellitus.  
**Diabetes Obes. Metab.** 2018 doi:10.1111/dom.13562. Epub 2018 Nov 28.  
**IF(2018): 5,98**
  
6. Al-Qaissi, A., Papageorgiou, M., Javed, Z., Heise, T., Rigby, A.S., Garrett, A.T., Hepburn, D., Kilpatrick, E.S., Atkin, S.L., Sathyapalan, T.  
Environmental effects of ambient temperature and relative humidity on insulin pharmacodynamics in adults with type 1 diabetes mellitus.  
**Diabetes Obes. Metab.** 2018 doi:10.1111/dom.13555. Epub 2018 Nov 4.  
**IF(2018): 5,98**
  
7. Ambery, P., Parker, V.E., Stumvoll, M., Posch, M.G., Heise, T., Plum-Mörschel, L., Tsai, L.-F., Robertson, D., Jain, M., Petrone, M., Rondinone, C., Hirshberg, B., Jermutus L.  
MEDI0382, a GLP-1 and glucagon receptor dual agonist, in obese or overweight patients with type 2 diabetes: a randomised, controlled, double-blind, ascending dose and phase 2a study.  
**Lancet** 391(10140):2607-2618, 2018  
**IF(2017): 53,25**
  
8. Andersen, G., Meiffren, G., Lamers, D., DeVries, J.H., Ranson, A., Seroussi, C., Alluis, B., Gaudier, M., Soula, O., Heise T.  
Ultra-rapid biochaperone lispro improves postprandial blood glucose excursions vs insulin lispro in a 14-day crossover treatment study in people with type 1 diabetes.  
**Diabetes Obes. Metab.** 20(11):2627-2632, 2018  
**IF(2018): 5,98**
  
9. Ruan, Y., Bally, L., Thabit, H., Leelarathna, L., Hartnell, S., Tauschmann, M., Wilinska, M.E., Evans, M.L., Mader, J.K., Kojzar, H., Dellweg, S., Benesch, C., Arnolds, S., Pieber, T.R., Hovorka, R.  
Hypoglycaemia incidence and recovery during home use of hybrid closed-loop insulin delivery in adults with type 1 diabetes.  
**Diabetes Obes. Metab.** 20(8):2004-2008, 2018  
**IF(2018): 5,98**
  
10. Bally, L., Thabit, H., Ruan, Y., Mader, J.K., Kojzar, H., Dellweg, S., Benesch, C., Hartnell, S., Leelarathna, L., Wilinska, M.E., Evans, M.L., Arnolds, S., Pieber, T.R., Hovorka, R.  
Bolusing frequency and amount impacts glucose control during hybrid closed-loop  
**Diabet. Med.** 35(3):347-351, 2018  
**IF(2017): 3,13**



11. DeVries, J.H., Desouza, C., Bellary, S., Unger, J., Hansen, O.K.H., Zacho, J., Woo, V.  
Achieving glycaemic control without weight gain, hypoglycemia, or gastrointestinal adverse events in type 2 diabetes in the SUSTAIN clinical trial programme.  
**Diabetes Obes. Metab.** 20(10):2426-2434, 2018  
**IF(2018): 5,98**
  
12. Forst, T., Alghdhan, M.K., Fischer, A., Weber, M.M., Voswinkel, S., Heise, T., Kapitza, C., Plum-Mörschel L.  
Sequential treatment escalation with dapagliflozin and saxagliptin improves beta cell function in type 2 diabetic patients on previous metformin treatment: an exploratory mechanistic study.  
**Horm. Metab. Res.** 50(5):403-407, 2018  
**IF(2017): 2,56**
  
13. Moser, O., Eckstein, M.L., McCarthy, O., Deere, R., Bain, S.C., Haahr, H.L., Zijlstra, E., Heise, T., Bracken, R.M.  
Heart rate dynamics during cardio-pulmonary exercise testing are associated with glycemic control in individuals with type 1 diabetes.  
**PLoS One** 13(4):e0194750, 2018  
**IF(2016): 2,81**
  
14. Ólafsdóttir, A.F., Polonsky, W., Bolinder, J., Hirsch, I.B., Dahlqvist, S., Wedel, H., Nyström, T., Wijkman, M., Schwarcz, E., Hellman, J., Heise, T., Lind, M.  
A randomized clinical trial of the effect of continuous glucose monitoring on nocturnal hypoglycemia, daytime hypoglycemia, glycemic variability, and hypoglycemia confidence in persons with type 1 diabetes treated with multiple daily insulin injections (GOLD-3).  
**Diabetes Technol. Ther.** 20(4):274-284, 2018  
**IF(2017/2018): 2,91**
  
15. Stinkens, R., van der Kolk, B.W., Jordan, J., Jax, T., Engeli, S., Heise, T., Jocken, J.W., May, M., Schindler, C., Havekes, B., Schaper, N., Albrecht, D., Kaiser, S., Hartmann, N., Letzkus, M., Langenickel, T.H., Goossens, G.H., Blaak, E.E.  
The effects of angiotensin receptor neprilysin inhibition by sacubitril/valsartan on adipose tissue transcriptome and protein expression in obese hypertensive patients.  
**Sci. Rep.** 8(1):3933, 2018  
**IF(2017): 4,12**

16. Zijlstra, E., Coester, H.V., Heise, T., Plum-Mörschel, L., Rasmussen, O., Rikte, T., Pedersen, L.K., Qvist, M., Sparre, T.  
Injecting without pressing a button: an exploratory study of a shield-triggered injection mechanism.  
**Diabetes Obes. Metab.** 20(5):1140-1147, 2018  
**IF(2018): 5,98**
  
17. Hövelmann, U., Bysted, B.V., Mouritzen, U., Macchi, F., Lamers, D., Kronshage, B., Møller, D.V., Heise, T.  
Pharmacokinetic and pharmacodynamic characteristics of dasiglucagon, a novel soluble and stable glucagon analog.  
**Diabetes Care** 41(3):531-537, 2018  
**IF(2018): 13,40**
  
18. Engeli, S., Stinkens, R., Heise, T., May, M., Goossens, G.H., Blaak, E.E., Havekes, B., Jax, T., Albrecht, D., Pal, P., Tegtbur, U., Haufe, S., Langenickel, T.H., Jordan, J.  
Effect of sacubitril/valsartan on exercise-induced lipid metabolism in patients with obesity and hypertension.  
**Hypertension** 71(1):70-77, 2018  
**IF(2016): 6,86**
  
19. Zijlstra, E., Jahnke, J., Fischer, A., Kapitza, C., Forst, T.  
Impact of injection speed, volume, and site on pain sensation.  
**J. Diabetes Sci. Technol.** 12(1):163-168, 2018  
**IF: -**
  
20. Barnard, K.D., Kropff, J., Choudhary, P., Neupane, S., Bain, S.C., Kapitza, C., Forst, T., Link, M., Mdingi, C., DeVries, J.H.  
Acceptability of implantable continuous glucose Monitoring Sensor.  
**J. Diabetes Sci Technol.** 12(3):634-638, 2018  
**IF: -**
  
21. Heise, T., Kaplan, K., Haahr, H.L.  
Day-to-day and within-day variability in glucose-lowering effect between insulin degludec and insulin glargine (100 U/mL and 300 U/mL): a comparison across studies.  
**J. Diabetes Sci. Technol.** 12(2):356-363, 2018  
**IF: -**
  
22. Zijlstra, E., Demissie, M., Graungaard, T., Heise, T., Nosek, L., Bode, B.  
Investigation of pump compatibility of fast-acting insulin aspart in subjects with type 1 diabetes.  
**J. Diabetes Sci. Technol.** 12(1):145-151, 2018  
**IF: -**

## Reviews

23. Schloot, N.C., Hood, R.C., Corrigan, S.M., Panek, R.L., Heise, T.  
Introduction of biosimilar insulins in Europe.  
**Diabetes Res. Clin. Pract.** doi:10.1016/j.diabres.2018.12.007.  
Epub 2018 Dec 21.  
**IF(2018): 2,55**
  
24. Schliess, F., Heise, T., Benesch, C., Mianowska, B., Stegbauer, C., Broge, B., Gillard, P., Binkley, G., Crône, V., Carlier, S., Delval, C., Petkov, A., Beck, J.P., Lodwig, V., Gurdala, M., Szecsenyi, J., Rosenmüller, M., Cypryk, K., Mathieu, C., Renard, E., Heinemann L.  
Artificial pancreas systems for people with type 2 diabetes: conception and design of the European CLOSE project  
**J. Diabetes Sci. Technol.** 2018 doi:10.1177/1932296818803588.  
Epub 2018 Sep 2  
**IF: -**

## Letters / Comments

25. Heise, T., Heckermann, S., DeVries, H.J.  
Variability of insulin degludec and glargine 300 U/mL: a matter of methodology or just marketing?  
**Diabetes Obes. Metab.** 20(9):2051-2056, 2018  
**IF(2018): 5,98**
26. Zijlstra, E.  
Analysis of "Laboratory and Benchtop Performance of a Mealtime Insulin Delivery System".  
**J. Diabetes Sci. Technol.** 12(4):828-830, 2018  
**IF: -**
27. Petersmann A, Nauck M, Müller-Wieland D, Kerner W, Müller UA, Landgraf R, Freckmann G, Heinemann L.  
Definition, classification and diagnosis of diabetes mellitus.  
**Exp. Clin. Endocrinol. Diabetes** 126(7):406-410, 2018  
**IF(2018): 1,63**
28. Schliess, F.  
Digital innovation in diabetes: from health promotion to diabetes care provision.  
**Open Access Government.** ISSN 2516-3817:96-97, October 2018  
**IF: -**
29. Schliess, F.  
Diabetes: a paradigm case for rewarding innovation in value-based healthcare.  
**Open Access Government.** ISSN 2516-3817:84-86, July 2018  
**IF: -**

# Scientific Presentations

## Oral Presentations

### **12. Herbsttagung der Deutschen Diabetes Gesellschaft (DDG) und 34. Jahrestagung der Deutschen Adipositas Gesellschaft (DAG). Wiesbaden, Germany, November 9 – 10, 2018**

30. Plum-Mörschel, L.  
Was die Pharmakologie von Insulinen für die Praxis bedeutet.  
Industriesymposium Novo Nordisk Pharma GmbH: Insuline heute und in der Zukunft.
31. Plum-Mörschel, L.  
Künftige Entwicklung in der Diabetologie.  
DDG Symposium: Klinische Studien in einer Schwerpunktpraxis.

### **18<sup>th</sup> Diabetes Technology Meeting (DTM). Bethesda, November 8 – 10, 2018**

32. Zijlstra, E.  
New drugs in the pipeline.
33. Heinemann, L.  
Inhaled and oral insulins.
34. Heinemann, L.  
The achilles heel of insulin infusion.

### **DiaLate. Düsseldorf, Germany, September 21 – 22, 2018**

35. Heinemann, L.  
Digitalisierung in der Diabetologie.

### **16. Düsseldorfer Diabetestag. Handwerkskammer Düsseldorf, Düsseldorf, Germany, September 8, 2018**

36. Arnolds, S.  
Neue Forschungsansätze.

**54. European Association for the study of diabetes (EASD) Annual Meeting. Berlin, Germany, October 1 – 5, 2018**

37. Meiffren, G., Klein, O., Seroussi, C., Ranson, A., Arrubla, J., Correia, J., Gaudier, M., Soula, O., Soula, R., Alluis, B., Glezer, S., Heise, T., Bode, B.  
The ultra-rapid insulin biochaperone lispro shows favourable pharmacodynamics and pharmacokinetics compared to faster insulin aspart and insulin aspart in insulin pumps.  
**Diabetologia** 61 (Suppl. 1):A-57, 2018
38. Plum-Mörschel, L., Leohr, J.K., Liu, R., Reddy, S.R., Dellva, M.A., Lim, S.T., Loh, M.T., Knadler, M.P., Hardy, T.A., Kazda, C.  
Ultra rapid lispro (URLi) reduces postprandial glucose excursions vs lispro in patients with type 1 diabetes at multiple meal-to-dose timing intervals.  
**Diabetologia** 61 (Suppl. 1):A-60, 2018
39. Suico, J., Hövelmann, U., Zhang, S., Shen, T., Bergman, B., Sherr, J., Zijlstra, E., Frier, B., Plum-Mörschel, L.  
Nasal glucagon: a viable alternative to treat insulin-induced hypoglycaemia in adults with type 1 diabetes.  
**Diabetologia** 61 (Suppl. 1):A-150, 2018
40. Parker, V., Ambery, P., Robertson, D., Posch, M., Plum-Mörschel, L., Wang, T., Petrone, M., Heise, T., Meier, J., Hirshberg, B.  
MEDI0382, a dual GLP-1 glucagon receptor agonist, promotes rapid glucose control and significant weight loss in patients with type 2 diabetes.  
**Diabetologia** 61 (Suppl. 1):A-164, 2018

**Typ 1 Diabetes Selbsthilfegruppe Köln-Weyertal. Cologne, Germany, September 18, 2018**

41. Arnolds, S.  
Profil ADA Beiträge, aktuelle Studien, neue Substanzen.

**American Diabetes Association (ADA) 78<sup>h</sup> Scientific Sessions. Orlando, FL, June 22 – 26, 2018**

42. Heise, T.  
Fast and furious or just marketing fiction? Expectations from new and developing rapid acting insulins.  
Symposium: Insulin therapy – to the future and back.
43. Hövelmann, U., Braendholt-Olsen, M., Mouritzen, U., Lamers, D., Kronshage, B., Heise, T.  
Low doses of dasiglucagon consistently increase plasma glucose (PG) levels in hypoglycemia and euglycemia in people with type 1 diabetes (T1DM).  
**Diabetes** 67 (Suppl. 1):102-OR, 2018

44. Heinemann, L., Freckmann, G., Waldenmaier, D., Ehrmann, D., Hermanns, N. rtCGM usage is associated with a significant reduction of time spent in hypoglycemia in patients with type 1 diabetes treated with multiple daily injections – results of the HypoDE study.  
**Diabetes** 67 (Suppl. 1):211-OR, 2018
45. Hermanns, N., Heinemann, L., Freckmann, G., Waldenmaier, D., Ehrmann, D. Predictors of hypoglycemia avoidance in a randomized controlled rtCGM trial (HypoDE).  
**Diabetes** 67 (Suppl. 1):298-OR, 2018
46. Glezer, S., Hövelmann, U., Teng, S., Lamers, D., Odoul, M., Correia, J., Zijlstra, E., Gaudier, M., Soula, O., Duracher, D. Biochaperone glucagon (BCG), a stable ready-to-go liquid glucagon formulation, is well tolerated and quickly restores euglycemia after insulin-induced hypoglycemia.  
**Diabetes** 67 (Suppl. 1):305-OR, 2018

**53. Jahrestagung der Deutschen Diabetes Gesellschaft (DDG). Berlin, Germany, May 9 – 12, 2018**

47. Heinemann, L., Dänschel, W., Dänschel, I. Messinger, D., Schramm, W., Vesper, I., Weissmann, J., Kulzer, B. Integriertes personalisiertes Diabetes Management (iPDM) verbessert die glykämische Einstellung von insulinbehandelten Patienten mit Typ-2 Diabetes: Ergebnisse des PDM-ProValue Studienprogramms.  
**Diabetologie und Stoffwechsel** 13(S01):S12, 2018
48. Heise, T. Einblicke in die frühe klinische Forschung am Beispiel neuer Insuline. Crashkurs Diabetes Mellitus – Klinik und Wissenschaft
49. Heise, T. Therapievorteile durch neue Insuline? Symposium: Praxisdialog – Insulintherapie des Typ-2-Diabetes

**Diabetika Düsseldorf. Kassenärztliche Vereinigung Nordrhein, Düsseldorf, Germany, April 28, 2018**

50. Arnolds, S. Neue technische Optionen für das Diabetes Management
51. Arnolds, S. Technologie in der Diabetikerversorgung.

**Typ 1 Diabetes Selbsthilfegruppe Monheim. Monheim, Germany, March 21, 2018**

52. Arnolds, S.  
Diabetesforschung bei Profil, aktuelle Studien, neue Substanzen.

**11<sup>th</sup> International Conference on Advanced Technologies and Treatments for Diabetes (ATTD). Vienna, Austria, February 14 – 17, 2018**

53. Meiffren, G., Andersen, G., Lamers, D., Ranson, A., Gaudier, N., Soula, O., Heise, T.  
Biochaperone lispro, an ultra-rapid insulin lispro formulation, improves post-prandial blood glucose control in a 14-day multiple-daily insulin injections study in subjects with T1DM.  
**Diabetes Technol. Ther.** 20(S1):A-31, 2018

**Moving towards the ideal insulin for pumps. Novo Nordisk Symposium held in conjunction with the 11<sup>th</sup> International Conference on Advanced Technologies and Treatments for Diabetes (ATTD 2018). Vienna, Austria, February 15, 2018**

54. Zijlstra, E.  
Pursuing ultra-fast insulins for pumps.

**Typ 1 Diabetes Selbsthilfegruppe Düsseldorf. Düsseldorf, Germany January 30, 2018**

55. Arnolds, S.  
Diabetesforschung bei Profil, aktuelle Studien, neue Substanzen.

**MLM Medical Labs. Mönchengladbach, Germany January 11, 2018**

56. Arnolds S.  
Introduction to Profil and training on diabetes.



## Poster Presentations

### 54. European Association for the Study of Diabetes (EASD) Annual Meeting. Berlin, Germany, October 1 – 5, 2018

57. Kapitza, C., Leohr, J., Liu, R., Reddy, S.R., Dellva, M.A., Matzopoulos, M., Knadler, M.P., Loh, M.T., Hardy, T.A., Kazda, C.  
Ultra rapid lispro (URLi) reduces postprandial glucose excursions vs lispro in patients with type 2 diabetes at multiple meal-to-dose timing intervals.  
**Diabetologia** 61 (Suppl. 1):A-814, 2018
58. Kazda, C., Leohr, J., Liu, R., Hardy, T.A., Reddy, S., Chua, S.P.C., Guo, X.  
Hövelmann, U., Kapitza, C.  
Ultra rapid lispro (URLi) shows faster insulin absorption vs lispro during insulin pump (CSII) use in patients with type 1 diabetes.  
**Diabetologia** 61 (Suppl. 1):A-817, 2018
59. Ambery, P., Stumvoll, M., Posch, M., Heise, T., Plum-Mörschel, L., Tsai, L.-F., Robertson, D., Petrone, M., Rondinone, C., Parker, V., Hirshberg, B., Jermutus, L.  
MEDI0382, a glucagon-like peptide/glucagon receptor dual agonist, in patients with type 2 diabetes: a multiple-ascending-dose study.  
**Diabetologia** 61 (Suppl. 1):A-718, 2018
60. Ambery, P., Stumvoll, M., Posch, M., Heise, T., Plum-Mörschel, L., Tsai, L.-F., Robertson, D., Petrone, M., Rondinone, C., Parker, V., Hirshberg, B., Jermutus, L.  
Robust glucose control and weight loss after 6 weeks of treatment with MEDI0382, a balanced GLP-1/Glucagon receptor dual agonist, in patients with type 2 diabetes.  
**Diabetologia** 61 (Suppl. 1):A-743, 2018
61. Heise, T. Ranson, A., Gaudier, M., Soula, O., Alluis, B., Zijlstra, E., Glezer, S., Meiffren, G.  
Pooled analysis of clinical trials investigating the pharmacokinetics (PK) of ultra-rapid insulin biochaperone Lispro vs lispro in subjects with type 1 and type 2 diabetes.  
**Diabetologia** 61 (Suppl. 1):A-815, 2018
62. Soula, O., Plum-Mörschel, L., Anastassiadis, E., Andersen, G., Glezer, S., Ranson, A., Alluis, B., Correia, J., Seroussi, C., Gaudier, M., Meiffren, G.  
Biochaperone 222, the new excipient enabling the ultra-rapid biochaperone lispro formulation, is completely absorbed and rapidly excreted after subcutaneous injection.  
**Diabetologia** 61 (Suppl. 1):A-816, 2018

63. Herbrand, T., Plum-Mörschel, L., Mégret, C., Heise, T., Vacher, V., Anastassiadis, E., Klein, O., Gaudier, M., Soula, O., Glezer, S., Alluis, B., Meiffren, G.  
Better postprandial glucose control with biobhaperone combo than with lispro Mix25 or separate glargine and lispro (G+L) administrations in subjects with type 2 diabetes.  
**Diabetologia** 61 (Suppl. 1):A-818, 2018

**American Diabetes Associatio (ADA) 78h Scientific Sessions. Orlando, FL, June 22 – 26, 2018**

64. Ehrmann, D., Heinemann, L., Freckmann, G., Waldenmaier, G., Hermanns, N.  
Impact of rtCGM usage on a combined patient-reported outcome – a post-hoc analysis of the HypoDE study.  
**Diabetes** 67 (Suppl 1):824-P, 2018
65. Thabit, H., Leelarathna, L., Wilinska, M.E., Benesch, C., Arnolds, S., Mader, J.K., Pieber, T.R., Evans, M., Hovorka, R.  
Looking beyond HbA1c – evaluating glycemic control during closed-loop use in type 1 diabetes.  
**Diabetes** 67 (Suppl 1):973-P, 2018
66. Heise, T., Ranson, A., Gaudier, M., Soula, O., Alluis, B., Zijlstra, E., Glezer, S., Meiffren, G.  
Moderated poster discussion:  
Pooled analysis of clinical trials investigating the pharmacokinetics (PK) of ultra-rapid insulin biochaperone lispro (BCLIS) vs lispro (LIS) in subjects with type 1 diabetes (T1D) and type 2 diabetes (T2D).  
**Diabetes** 67 (Suppl. 1):998-P, 2018
67. Heise, T., Plum-Mörschel, L., Mégret, C., Herbrand, T., Vacher, V., Anastassiadis, E., Klein, O., Gaudier, M., Soula, O., Glezer, S., Alluis, B., Meiffren, G.  
Moderated poster discussion:  
Better post-prandial glucose (PPG) control with biochaperone combo (BC Combo) than with lispro mix 25 (LMx) or separate glargine and lispro (G+L) administrations in subjects with type 2 diabetes (T2DM).  
**Diabetes** 67 (Suppl. 1):1001-P, 2018
68. Kazda, C.M., Leohr, J., Liu, R., Hardy, T., Reddy, S., Chua, S.P.C., Guo, X., Hövelmann, U., Kapitza, C.  
Ultra-rapid lispro (URLi) shows faster absorption of insulin lispro vs humalog during insulin pump (CSII) use in patients with T1D.  
**Diabetes** 67 (Suppl. 1):1006-P, 2018

69. Kapitza, C., Leohr, J., Liu, R., Reddy, S., Dellva, M.A., Matsopoulos, M., Knadler, M.P., Loh, M.T., Hardy, T., Kazda, C.M.  
Ultra-rapid lispro (URLi) reduces post-prandial glucose excursions vs humalog in patients with T2D at multiple meal-to-dose timing intervals.  
**Diabetes** 67 (Suppl. 1):1009-P, 2018
70. Plum-Mörschel, L., Leohr, J., Liu, R., Reddy, S., Dellva, M.A., Matzopoulos, M., Knadler, M.P., Hardy, T., Kazda, C.M.  
Ultra-rapid lispro (URLi) reduces post-prandial glucose excursions vs humalog in patients with T1D at multiple meal-to-dose timing intervals.  
**Diabetes** 67 (Suppl. 1):1010-P, 2018
71. Meiffren, G., Plum-Mörschel, L., Ranson, A., Anastassiadis, E., Seroussi, C., Correia, J., Anderson, G., Gaudier, M., Soula, O., Glezer, S., Alluis, B.  
Biochaperone 222 (BC222), the new excipient enabling the ultra-rapid biochaperone lispro (BCLIS) formulation is completely absorbed and rapidly excreted after subcutaneous (s.c.) injection.  
**Diabetes** 67 (Suppl. 1): 1024-P, 2018
72. Bode, B.W., Klein, O., Seroussi, C., Ranson, A., Arrubla, J., Correia, J., Gaudier, M., Soula, O., Soula, R., Alluis, B., Meiffren, G., Glezer, S., Heise, T.  
The ultra-rapid insulin (URI) biochaperone lispro (BCLICS) shows favorable pharmacodynamics (PD) and pharmacokinetics (PK) vs faster aspart (FIA) and insulin aspart (ASP) in insulin pumps (CSII).  
**Diabetes** 67 (Suppl. 1):1035-P, 2018
73. Anbery, P., Stumvoll, M.W., Posch, M.G., Heise, T., Plum-Mörschel, L., Tsai, L.-F., Robertson, D., Petrone, M., Rondinone, C., Parker, V.E., Hirshberg, B., Jermutus, L.  
Robust glucose control and weight loss after six weeks of treatment with MEDI0382, a balanced GLP-1/glucagon receptor dual agonist in patients with type 2 diabetes.  
**Diabetes** 67 (Suppl. 1):1067-P, 2018
74. Robertson, D., Stumvoll, M.W., Posch, M.G., Heise, T., Plum-Mörschel, L., Klein, G., Tsai, L.-F., Petrone, M., Hirshberg, B., Rondinone, C., Parker, V.E., Jermutus, L., Ambery, P.  
MEDI0382, a dual GLP1/glucagon receptor agonist, in patients with type 2 diabetes – a multiple-ascending-dose study.  
**Diabetes** 67 (Suppl. 1):1070-P, 2018

**9th Scientific Meeting of the Diabetes Poland Society. Katowice, Poland, May 24 – 26, 2018**

75. Gruchala, A., Cypryk, K., Bobeff, K., Schliess, F., Szadkowska, A., Mlynarski, W., Mianowska, B.  
Potrzeby oraz oczekiwania pacjentów z cukrzycą typu 2 dotyczące nowoczesnych rozwiązań technologicznych – “CLOSE-Lodz Survey”.

**53. Jahrestagung der Deutschen Diabetes Gesellschaft (DDG). Berlin, Germany, May 9 – 12, 2018**

76. Dänschel, I., Dänschel, W., Messinger, D., Schramm, W., Vesper, I., Weissmann, J., Heinemann, L., Kulzer, B.  
Therapieoptimierung durch integriertes personalisiertes Diabetesmanagement: Ergebnisse des PDM-ProValue Studienprogramms.  
**Diabetologie und Stoffwechsel** 13(S01):S34, 2018
77. Heinemann, L., Freckmann, G., Ehrmann, D., Faber-Heinamann, G., Guerra, S., Waldenmaier, D., Hermanns, N.  
Effekte von rtCGM bei Erwachsenen mit Typ-1-Diabetes und Hypoglykämieproblemen, die mit einer multiplen Insulininjektions-Therapie behandelt werden: Ergebnisse der multizentrischen, randomisierten kontrollierten HypoDE-Studie.  
**Diabetologie und Stoffwechsel** 13(S01):S46, 2018
78. Kulzer, B., Dänschel, W., Dänschel, I., Messinger, D., Schramm, W., Vesper, I., Weissmann, J., Heinemann, L.  
Integriertes personalisiertes Diabetes-Management (iPDM) verbessert die Therapiezufriedenheit von Ärzten und insulinbehandelten Patienten mit Typ-2 Diabetes: Ergebnisse des PDM-ProValue Studienprogramms.  
**Diabetologie und Stoffwechsel** 13(S01):S65, 2018
79. Kaltheuner, L., Kaltheuner, M., Heinemann, L.  
Lipohypertrophien bei Patienten mit Diabetes: Visualisierung durch Thermografie.  
**Diabetologie und Stoffwechsel** 13(S01):S71, 2018
80. Hermanns, N., Ehrmann, D., Freckmann, G., Waldenmaier, D., Faber-Heinemann, G., Heinemann, L.  
Effekte von rtCGM auf patient-reported-outcomes: eine post-hoc Analyse der HypoDE-Studie.  
**Diabetologie und Stoffwechsel** 13(S01): S74, 2018

**11th International Conference on Advanced Technologies and Treatments for Diabetes (ATTD).  
Vienna, Austria, February 14 – 17, 2018**

81. Ruan, Y., Bally. L., Thabit, H., Mader, J., Kojzar, H., Dellweg, S., Benesch, C., Hartnell, S., Leelarathna, L., Wilinska, N., Evans, M., Arnolds, S., Pieber, T., Hovorka, R.  
Hypoglycemia occurrence and recovery during home use of closed-loop insulin delivery and sensor-augmented pump therapy in adults with type 1 diabetes.  
**Diabetes Technol. Ther.** 20(S1):A-59, 2018
82. Ruan, Y., Bally. L., Thabit, H., Mader, J., Kojzar, H., Dellweg, S., Benesch, C., Hartnell, S., Leelarathna, L., Wilinska, N., Evans, M., Arnolds, S., Pieber, T., Hovorka, R.  
Overtreatment of hypoglycemia in adults with type 1 diabetes does not appear to deteriorate glycemic control during closed-loop insulin delivery.  
**Diabetes Technol. Ther.** 20(S1):A-62, 2018
83. Heise, T., Meiffren, G., Kronshage, B., Lamers, D. Anastassiadis, E., Ranson, A., Alluis, B., Gaudier, M., Soula, O.  
Biochaperone lispro, an ultra-rapid insulin lispro formulation, improves post-prandial blood glucose control in a 14 day multiple daily insulin injection study in subjects with T2DM.  
**Diabetes Technol. Ther.** 20(S1):A-134, 2018

# Advanced Training Courses

## Science Circle

84. Ulrike Hövelmann  
Profil GmbH, Neuss, Germany  
**The ultra-rapid lispro shows faster absorption of insulin lispro versus humalog during insulin pump use in patients with T1DM.**  
September 12, 2018
85. Dr. Jorge Arrubla  
Profil GmbH, Neuss, Germany  
**Head-to-head comparison between biocheperone lispro, faster aspart and insulin aspart.**  
September 12, 2018
86. Oliver Klein  
Profil GmbH, Neuss, Germany  
**Pharmacokinetic and pharmacodynamic properties of faster insulin aspart.**  
September 12, 2018
87. Prof. Dr. Hans deVries  
Profil GmbH, Neuss, Germany  
**The Onset 5 trial.**  
September 12, 2018
88. Prof. Dr. Andreas Erhardt  
Center for Gastroenterology and Hepatology, Petrus-Hospital Wuppertal,  
Wuppertal, Germany  
**Non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatohepatitis (NASH): pathogenesis and new diagnostic procedures.**  
March 14, 2018



## Training Clinical Trial Recruitment Team

89. Dr. Sabine Arnolds  
Profil GmbH, Neuss, Germany  
**Neue Ansätze in der klinischen Diabetesforschung**  
June 26, 2018

## External training course

90. Dr. Sabine Arnolds  
Profil GmbH, Neuss, Germany  
**Good clinical practice (GCP) course for study nurses.**  
Practice Dr. Zeller, Essen, Germany, June 20, 2018

## Profil Open House Day

91. Dr. Hans-Veit Coester, Dr. Theresa Herbrand  
Profil GmbH, Neuss, Germany  
**Die klinische Studie: von der Planung bis zur Durchführung**  
June 6, 2018
92. Dr. Sabine Arnolds  
Profil GmbH, Neuss, Germany  
**Neue Forschungsansätze – Diabetes-Therapien und Technologien der Zukunft**  
June 6, 2018
93. Dr. Theresa Herbrand  
Profil GmbH, Neuss, Germany  
**Flow-mediated dilation und weitere Untersuchungsmethoden bei Profil**  
June 6, 2018

## Trainings Clinical Pharmacology

94. Prof. Dr. Hans deVries  
Profil GmbH, Neuss, Germany  
**American Diabetes Association (ADA) and European Association for the Study of Diabetes (EASD) consensus on hyperglycemia.**  
November 27, 2018
95. Dr. Theresa Herbrand  
Profil GmbH, Neuss, Germany  
**Pharmacological expert opinion – a case study.**  
November 14, 2018

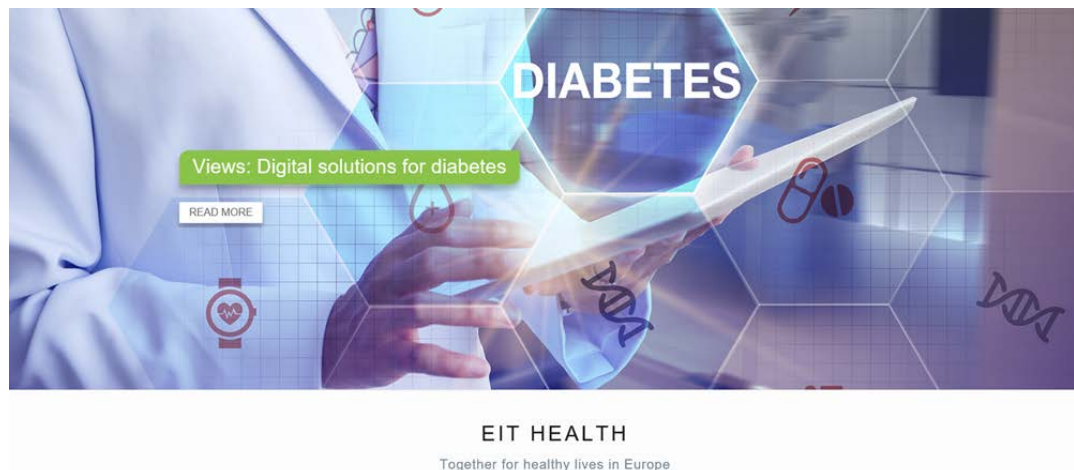
96. Dr. Sybille Dellweg  
Profil GmbH, Neuss, Germany  
**The acquisition of epidemiological data.**  
October 30, 2018
97. Prof. Dr. Stephan Wnendt  
MLM Medical Labs, Mönchengladbach, Germany  
**Update in pharmacological analytics and site visit.**  
July 7, 2018
98. Dr. Grit Andersen  
Profil GmbH, Neuss, Germany  
**Pharmaco- and toxicokinetics and pharmacodynamics of active ingredients and harmful substances.**  
May 24, 2018
99. Dr. Marc Stoffel  
Profil GmbH, Neuss, Germany  
**Drug-drug interactions.**  
March 6, 2018
100. Dr. Michael Reber  
Clinical Pharmacologist, Hausärztezentrum Opund, Switzerland  
**Psychosomatic foundations**  
February 16, 2018
101. Dr. Grit Andersen  
Profil GmbH, Neuss, Germany  
**How to prepare a medical expert opinion?**  
January 30, 2018





## Granted Research Consortia

102. EIT Health e.V. and EIT Health Germany GmbH



A Knowledge and Innovation Community (KIC) on Healthy Living and Active Ageing, funded by the European Institute of Innovation and Technology (EIT).  
First funding period: 2015 – 2022  
<http://eithealth.eu/>

Profil GmbH is EIT Health core partner and a full voting member of the EIT Health e.V. Partner Assembly.

Profil GmbH is represented in the EIT Health Germany GmbH Supervisory Board.

EIT Health innovation project by design:  
**CLOSE: Automated Glucose Control at Home for People with Chronic Disease.**



Members of the CLOSe Consortium & guests. Barcelona, July 2017.

*Funding period:* July 2016 – December 2019

*Involved EIT Health partners:* Air Liquide Healthcare, Sanofi, Profil GmbH, IESE Business School, Katholic University Leuven, Medical University of Lodz.

*Additional project partners:* Aqua Institute for Applied Quality Improvement and Research in Health Care, European Research and Project Office GmbH

*Coordinating organisation:* Profil GmbH

[https://www.eithealth.eu/en\\_US/close](https://www.eithealth.eu/en_US/close)

<http://eit-health.de/activities/innovation-projects/close-diabetes/>

EIT Health innovation project by idea:

**Diabeloop for kids (D4kids).**

*Funding period:* January 2018 – December 2018

*Involved EIT Health partners:* Commissariat à l'énergie atomique et aux énergies alternatives - laboratoire d'électronique des technologies de l'information (CEA-Leti), Profil GmbH, Katholic University Leuven

*Additional partners:* Diabeloop, Ceritd

*Coordinating organisation:* CEA-Leti

<https://www.eithealth.eu/diabeloop-for-children>



Members of the D4kids Consortium. Paris, January 2018.

103. Competence Center for Biomarker Research in Medicine (CBMED).

COMET K1 Center for Biomarker Research at CBmed.  
Funded by the Austrian Research Promotion Agency

*First funding period: 2015 – 2019*

<http://www.cbmed.org/en/index.php>

Profil GmbH is chairing the consortium board of the CBmed GmbH.

Profil GmbH is part of the project area “Metabolism & inflammation”  
Project 3.6

Minimally invasive biomarkers for liver function.

*Funding period: June 2015 – December 2018*

104. Regional Innovation Network (RIN) Diabetes.

*Funding: Ministerium für Innovation, Wissenschaft und Forschung des Landes  
Nordrhein Westfalen.*

*Funding period: 2014 – 2018*

<http://www.rin-diabetes.de/>

# Scientific Communication

## Webinars

<http://www.profil.com/knowledge-center/webinars>

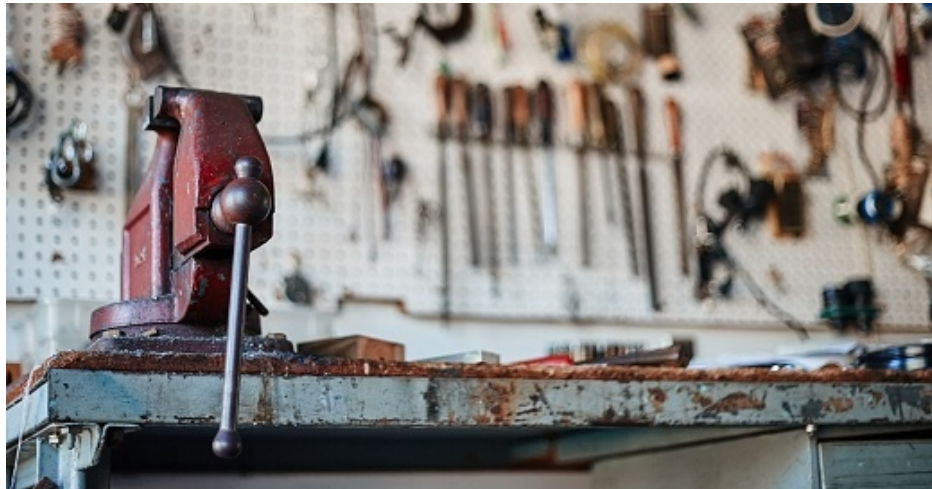
105. **Webinar on EU-funded R&D partnerships in healthy living and active ageing.**  
F. Schliess, J. Haardt. September 12, 2018
106. **Beyond HbA1c: CGM based outcome measures in clinical trials.**  
H. deVries. June 13, 2018
107. **Studying endothelial function in clinical trials.**  
T. Herbrand. March 22, 2018

## Blogs

<http://blog.profil.com/blog>

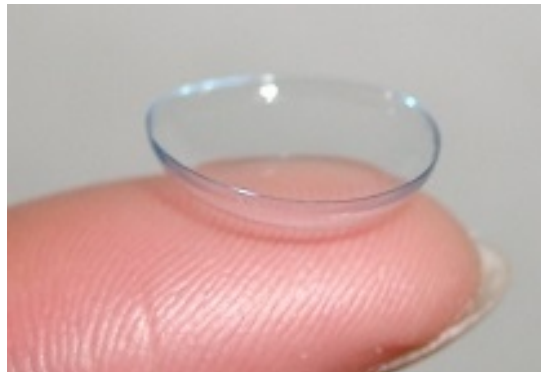
108. **Pramlintide as adjunct therapy for the treatment of type 1 diabetes.**  
S. Famula. December 18, 2018
109. **Obesity treatment with lorcaserin.**  
D. Lamers. December 11, 2018
110. **New data on cardiovascular outcomes with dapagliflozin.**  
O. Klein. December 4, 2018
111. **Glucose-Responsive Insulin.**  
E. Zijlstra. November 28, 2018
112. **New strategies for the treatment of obesity and metabolic dysfunctions.**  
U. Hövelmann. November 13, 2018
113. **What news in the treatment of Type 2 diabetes was presented at EASD 2018?**  
J. Arrubla. November 6, 2018
114. **Profil at 18th Annual Diabetes Technology Meeting (DTM).**  
S. Meister. October 29, 2018
115. **Artificial Intelligence to Screen for Diabetic Retinopathy; The Times They Are A-Changin'.**  
H. deVries. October 23, 2018
116. **New timelines for the EU Portal and implementation of the EU Clinical Trial Regulation.**  
G. Andersen. October 17, 2018
117. **"Profil World" - The clinical diabetes research newsletter - October 2018.**  
L. Bochmann. October 11, 2018
118. **54th EASD Annual Meeting – Profil's contributions to the scientific sessions.**  
S. Arnolds. October 10, 2018
119. **Profil explores opportunities for artificial pancreas in type 2 diabetes.**  
F. Schliess. October 2, 2018
120. **Work stress is the new smoking.**  
T. Herbrand. September 25, 2018

- 121. **Profil at EASD Annual Meeting 2018**  
L. Bochmann. September 14, 2018
- 122. **Do-It-Yourself artificial pancreas systems (DIY APS).**  
F. Schliess. September 5, 2018



- 123. **Targeting the incretin/glucagon system: a glimmer of hope.**  
U. Hövelmann. August 28, 2018
- 124. **Free webinar on EU-funded R&D partnerships in healthy living and active ageing.**  
S. Meister. August 14, 2018
- 125. **Even moderate overweight increases the risk for cardiovascular disease, recent study says.**  
D. Lamers. August 7, 2018
- 126. **The new European medical device regulation (MDR).**  
C. Benesch. August 2, 2018
- 127. **Clamp studies with ultra-long-acting insulins – new challenges for an old procedure.**  
O. Klein. July 24, 2018
- 128. **"Profil World" - The clinical diabetes research newsletter - July 2018.**  
L. Bochmann. July 18, 2018

129. **Diabetes: a paradigm case for rewarding innovation in value-based healthcare.**  
L. Bochmann. July 11, 2018
130. **Gut microbiota and type 2 diabetes.**  
T. Herbrand. July 4, 2018
131. **CGM in pregnant women with type 1 diabetes.**  
G. Andersen. June 26, 2018
132. **Cardiovascular endpoints in trials with glucose-lowering medications.**  
J. Arrubla. June 20, 2018
133. **Smart ideas for noninvasive glucose monitoring.**  
E. Zijlstra. June 13, 2018



134. **SUSTAIN 7 - Semaglutide is superior to Dulaglutide**  
D. Lamers. June 5, 2018
135. **Vitamin D supplementation – is there a role in type 1 diabetes?**  
S. Famulla. May 30, 2018
136. **Profil announces new live webinar session.**  
L. Bochmann. May 23, 2018
137. **Influence of technical downtime on the outcome of automated glucose clamps.**  
M. Kuhlenkötter. May 8, 2018
138. **D4kids: Profil joined a new pan-European Artificial Pancreas initiative.**  
F. Schliess. May 2, 2018

139. **Profil is committed to the highest quality - including the training of our staff.**  
S. Schwarzer. April 24, 2018
140. **Cardiovascular outcome trials of incretin drugs: what have we learned?.**  
J.H. deVries. April 18, 2018
141. **Nutrition standardization during clinical trials: Methods of standardised food intake.**  
N. Carrasco Schmitz. April 12, 2018
142. **Insulin injection: recent improvements and alternatives.**  
E. Zijlstra. April 4, 2018
143. **New tracking tool for EMA's relocation to Amsterdam.**  
G. Andersen. March 27, 2018
144. **"Profil World" - The clinical diabetes research newsletter - March 2018.**  
L. Bochmann. March 23, 2018
145. **Flow-Mediated Vasodilation (FMD): why we do it and how to do it.**  
T. Herbrand. March 1, 2018
146. **Pancreatic  $\beta$ -cell function changes in response to pharmacological or life-style interventions.**  
U. Hövelmann. February 21, 2018
147. **Free webinar on endothelial function in clinical trials using Flow-Mediated Vasodilation (FMD).**  
T. Dicenco. February 15, 2018
148. **Implementation of EU directive 536/2014: Ethic committees prepare for the next level.**  
G. Andersen. February 7, 2018
149. **Dr. Tim Heise about Profil's 2017 Science Report.**  
T. Heise. February 2, 2018
150. **Advanced precision of continuous whole blood glucose concentration measurements.**  
C. Benesch. January 23, 2018
151. **Artificial pancreas for type 2 diabetes: the CLOSE project.**  
F. Schliess. January 18, 2018
152. **Bringing glucose clamps up to speed for novel insulins.**  
O. Klein. January 10, 2018



## Media Reports (Selection)

153. **EIT Health's CLOSE project detailed in scientific journal.**  
EIT Health Latest News, September 25, 2018





Check for updates

*Review Article*

**Artificial Pancreas Systems for People With Type 2 Diabetes: Conception and Design of the European CLOSE Project**

Journal of Diabetes Science and Technology  
1-2  
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George Binkley<sup>5</sup>, Véronique Crône<sup>6</sup>, Sébastien Carlier<sup>6</sup>,  
Cécile Delval<sup>6</sup>, Anton Petkov<sup>7</sup>, Jan-Philipp Beck<sup>8</sup>,  
Volker Lodwig, PhD<sup>9</sup>, Mikolaj Gurdala<sup>10</sup>,  
Joachim Szecsenyi, MD, PhD<sup>11</sup>, Magda Rosenmüller, MD, PhD<sup>5</sup>,  
Katarzyna Cypryk, MD, PhD<sup>11</sup>, Chantal Mathieu, MD, PhD<sup>4</sup>,  
Eric Renard, MD, PhD<sup>12</sup>, and Lutz Heinemann, PhD<sup>13</sup>

**Abstract**  
In the last 10 years tremendous progress has been made in the development of artificial pancreas (AP) systems for people with type 1 diabetes (T1D). The pan-European consortium CLOSE (Automated Glucose Control at Home for People with Chronic Disease) is aiming to develop integrated AP solutions (APplus) tailored to the needs of people with type 2 diabetes (T2D). APplus comprises a product and service package complementing the AP system by obligatory training as well as home visits and telemedical consultations on demand. Outcome predictors and performance indicators shall help to identify people who could benefit most from AP usage and facilitate the measurement of AP impact in diabetes care. In a first step CLOSE will establish a scalable APplus model case working at the interface between patients, homecare service providers, and payers in France. CLOSE will then scale up APplus by pursuing geographic distribution, targeting additional audiences, and enhancing AP functionalities and interconnectedness. By being part of the European Institute of Innovation and Technology (EIT) Health public-private partnership, CLOSE is committed to the EIT "knowledge triangle" pursuing the integrated advancement of technology, education, and business creation. Putting stakeholders, education, and impact into the center of APplus advancement is considered key for achieving wide AP use in T2D care.

**Keywords**  
closed-loop, digital health, education, homecare, public-private partnership, France

Check for updates

*Analysis Article*

**Analysis of "Artificial Pancreas (AP) Systems for People With Type 2 Diabetes: Conception and Design of the European CLOSE Project"**

Journal of Diabetes Science and Technology  
1-3  
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DOI: 10.1177/1932294918803590  
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SAGE

Andrew A. Bremer, MD, PhD<sup>1</sup> and Guillermo Arreaza-Rubin, MD<sup>2</sup>

**Abstract**  
In an article in *Journal of Diabetes Science and Technology*, Schless and coauthors describe the conception and design of the European Automated Glucose Control at Home for People with Chronic Disease (CLOSE) initiative for the implementation of artificial pancreas (AP) systems for people with diabetes. The CLOSE consortium aims to develop integrated AP solutions (APplus) tailored to the needs of individuals with type 2 diabetes (T2D) by developing superior risk- and cost-benefit scenarios for AP operation to achieve acceptance by users and caregivers and a high likelihood for reimbursement. CLOSE is integrating the AP platform into the center of a comprehensive product and service package specifically tailored to defined T2D patient groups and care environments, leading to an interactive collaboration with users, health care providers, and other stakeholders in diabetes care. This is a very ambitious but well-conceived and delineated project which takes into consideration most of the relevant factors that may influence AP implementation in T2D care.

**Keywords**  
type 2 diabetes, artificial pancreas, closed loop, automated management, personalized medicine, at home care

154. **The CLOSE-Lodz Survey with type 2 diabetes patients.**  
EIT Health Latest News, August 23, 2018
155. **Diabetes – a paradigm case for rewarding innovation in value-based healthcare.**  
EIT Health Latest News, July 6, 2018
156. **CLOSE. A collaborative approach to innovation in diabetes care.**  
EIT Health Success Story, February 21, 2018
157. **CLOSE consortium meets to map out 2018.**  
EIT Health Latest News, February 20, 2018
158. **Best practice for diabetes patients: CLOSE project receives positive evaluation.**  
EURICE News, February 12, 2018

159. **Positive on-site monitoring report for CLOSE.**  
EIT Health Connections, January 10, 2018
160. **Interview: CLOSE crosses EIT Health pillars to 'close the loop' for diabetes patients.**  
EIT Health News, January 10, 2018
161. **Diabetes patients may benefit from using dasiglucagon, study finds.**  
DiabetesPro SmartBrief, January 4, 2018
162. **Dasiglucagon well tolerated for severe hypoglycemia.**  
Physicians Briefing - HealthDay News, January 3, 2018