

MD7511Advanced Injectable Therapies

Injectable Therapies

View Online



[1]

A randomised, 52-week, treat-to-target trial comparing insulin detemir with insulin glargine when administered as add-on to glucose-lowering drugs in insulin-naive people with type 2 diabetes:

<http://link.springer.com.ezproxy4.lib.le.ac.uk/article/10.1007/s00125-007-0911-x/fulltext.html>.

[2]

Akram, J. et al. 1999. Insulin lispro (Lys(B28), Pro(B29)) in the treatment of diabetes during the fasting month of Ramadan. *Diabetic Medicine*. 16, 10 (Oct. 1999), 867-874.

DOI:<https://doi.org/10.1046/j.1464-5491.1999.00164.x>.

[3]

Aldam, P. et al. 2014. Perioperative management of diabetic patients: new controversies. *British Journal of Anaesthesia*. 113, 6 (Dec. 2014), 906-909.

DOI:<https://doi.org/10.1093/bja/aeu259>.

[4]

Ali, S. et al. 2016. Guidelines for managing diabetes in Ramadan. *Diabetic Medicine*. 33, 10 (Oct. 2016), 1315-1329. DOI:<https://doi.org/10.1111/dme.13080>.

[5]

Anderson, B. et al. 2005. The art of empowerment: stories and strategies for diabetes educators. American Diabetes Association.

[6]

Anderson, J.W. et al. 2003. Importance of Weight Management in Type 2 Diabetes: Review with Meta-analysis of Clinical Studies. *Journal of the American College of Nutrition*. 22, 5 (Oct. 2003), 331–339. DOI:<https://doi.org/10.1080/07315724.2003.10719316>.

[7]

Ashwell, S.G. et al. 2006. Improved glycaemic control with insulin glargine plus insulin lispro: a multicentre, randomized, cross-over trial in people with Type 1 diabetes. *Diabetic Medicine*. 23, 3 (Mar. 2006), 285–292. DOI:<https://doi.org/10.1111/j.1464-5491.2005.01781.x>.

[8]

Bailey, S. 2011. *Academic writing: a handbook for international students*. Routledge.

[9]

Bajwa, S. et al. 2015. Interdisciplinary position statement on management of hyperglycemia in peri-operative and intensive care. *Journal of Anaesthesiology Clinical Pharmacology*. 31, 2 (2015). DOI:<https://doi.org/10.4103/0970-9185.155141>.

[10]

Bakiner, O. et al. 2009. Repaglinide plus single-dose insulin glargine: a safe regimen for low-risk type 2 diabetic patients who insist on fasting in Ramadan. *Acta Diabetologica*. 46, 1 (Mar. 2009), 63–65. DOI:<https://doi.org/10.1007/s00592-008-0062-7>.

[11]

Barker, P. et al. 2015. Peri-operative management of the surgical patient with diabetes 2015. *Anaesthesia*. 70, 12 (Dec. 2015), 1427–1440. DOI:<https://doi.org/10.1111/anae.13233>.

[12]

Benkhadra, K. et al. 2016. Real Time Continuous Glucose Monitoring in type 1 diabetes: A Systematic review and Individual Patient Data Meta-Analysis. *Clinical Endocrinology*. (Dec. 2016). DOI:<https://doi.org/10.1111/cen.13290>.

[13]

Bergenstal, R.M. et al. 2012. A Randomized, Controlled Study of Once-Daily LY2605541, a Novel Long-Acting Basal Insulin, Versus Insulin Glargine in Basal Insulin-Treated Patients With Type 2 Diabetes. *Diabetes Care*. 35, 11 (Nov. 2012), 2140–2147.
DOI:<https://doi.org/10.2337/dc12-0060>.

[14]

Bergenstal, R.M. et al. 2008. Adjust to Target in Type 2 Diabetes: Comparison of a simple algorithm with carbohydrate counting for adjustment of mealtime insulin glulisine. *Diabetes Care*. 31, 7 (Jul. 2008), 1305–1310. DOI:<https://doi.org/10.2337/dc07-2137>.

[15]

Bergenstal, R.M. et al. 2010. Effectiveness of Sensor-Augmented Insulin-Pump Therapy in Type 1 Diabetes. *New England Journal of Medicine*. 363, 4 (Jul. 2010), 311–320.
DOI:<https://doi.org/10.1056/NEJMoa1002853>.

[16]

Bretzel, R.G. et al. 2008. Once-daily basal insulin glargine versus thrice-daily prandial insulin lispro in people with type 2 diabetes on oral hypoglycaemic agents (APOLLO): an open randomised controlled trial. *The Lancet*. 371, 9618 (Mar. 2008), 1073–1084.
DOI:[https://doi.org/10.1016/S0140-6736\(08\)60485-7](https://doi.org/10.1016/S0140-6736(08)60485-7).

[17]

Burnett, J.C.D. 2006. Long- and Short-Haul Travel by Air: Issues for People With Diabetes on Insulin. *Journal of Travel Medicine*. 13, 5 (Sep. 2006), 255–260.
DOI:<https://doi.org/10.1111/j.1708-8305.2006.00057.x>.

[18]

Buse, J.B. et al. 2014. Contribution of Liraglutide in the Fixed-Ratio Combination of Insulin Degludec and Liraglutide (IDegLira). *Diabetes Care*. 37, 11 (Nov. 2014), 2926–2933.
DOI:<https://doi.org/10.2337/dc14-0785>.

[19]

Buse, J.B. et al. 2011. Use of Twice-Daily Exenatide in Basal Insulin-Treated Patients With Type 2 Diabetes. *Annals of Internal Medicine*. 154, 2 (Jan. 2011).
DOI:<https://doi.org/10.7326/0003-4819-154-2-201101180-00300>.

[20]

Crasto, W. 2016. *Handbook of Insulin Therapies*. Adis; 1st ed. 2016 edition.

[21]

Crasto, W. 2016. *Handbook of Insulin Therapies*. Adis; 1st ed. 2016 edition.

[22]

Crasto, W. 2016. *Handbook of Insulin Therapies*. Adis; 1st ed. 2016 edition.

[23]

Crasto, W. 2016. *Handbook of Insulin Therapies*. Adis; 1st ed. 2016 edition.

[24]

Crasto, W. 2016. *Handbook of Insulin Therapies*. Adis; 1st ed. 2016 edition.

[25]

Crasto, W. 2016. *Handbook of Insulin Therapies*. Adis; 1st ed. 2016 edition.

[26]

Crasto, W. et al. 2009. Insulin U-500 in severe insulin resistance in type 2 diabetes mellitus. *Postgraduate Medical Journal*. 85, 1002 (Apr. 2009), 219-222.
DOI:<https://doi.org/10.1136/pgmj.2008.073379>.

[27]

Daly, H. et al. 2015. Development of a self-management education module for those with type 2 diabetes on injectable therapies. *Practical Diabetes*. 32, 8 (Oct. 2015), 305–310a. DOI:<https://doi.org/10.1002/pdi.1979>.

[28]

Davies, M. et al. 2005. Improvement of Glycemic Control in Subjects With Poorly Controlled Type 2 Diabetes: Comparison of two treatment algorithms using insulin glargine. *Diabetes Care*. 28, 6 (Jun. 2005), 1282–1288. DOI:<https://doi.org/10.2337/diacare.28.6.1282>.

[29]

Davies, M. et al. 2005. Improvement of Glycemic Control in Subjects With Poorly Controlled Type 2 Diabetes: Comparison of two treatment algorithms using insulin glargine. *Diabetes Care*. 28, 6 (Jun. 2005), 1282–1288. DOI:<https://doi.org/10.2337/diacare.28.6.1282>.

[30]

Davies, M.J. et al. 2014. Efficacy and safety of insulin degludec given as part of basal-bolus treatment with mealtime insulin aspart in type 1 diabetes: a 26-week randomized, open-label, treat-to-target non-inferiority trial. *Diabetes, Obesity and Metabolism*. 16, 10 (Oct. 2014), 922–930. DOI:<https://doi.org/10.1111/dom.12298>.

[31]

Davies, M.J. et al. 2009. Exenatide compared with long-acting insulin to achieve glycaemic control with minimal weight gain in patients with type 2 diabetes: results of the Helping Evaluate Exenatide in patients with diabetes compared with Long-Acting insulin (HEELA) study. *Diabetes, Obesity and Metabolism*. 11, 12 (Dec. 2009), 1153–1162. DOI:<https://doi.org/10.1111/j.1463-1326.2009.01154.x>.

[32]

Davies, M.J. et al. 2017. Impact of baseline HbA1c, diabetes duration and BMI on clinical outcomes in the LixiLan-O trial testing iGlarLixi (insulin glargine/lixisenatide titratable fixed-ratio combination) versus insulin glargine and lixisenatide monocomponents. *Diabetes, Obesity and Metabolism*. (Apr. 2017). DOI:<https://doi.org/10.1111/dom.12980>.

[33]

Davies, M.J. and Chatterjee, S. 2017. Trial watch: Insulin initiation for type 2 diabetes mellitus in primary care. *Nature Reviews Endocrinology*. 13, 6 (Apr. 2017), 317–318. DOI:<https://doi.org/10.1038/nrendo.2017.41>.

[34]

Diabetes & Metabolism - Présentation - EM consulte:
<http://www.em-consulte.com/article/80031/alertePM#N1010C>.

[35]

Diamant, M. et al. 2010. Once weekly exenatide compared with insulin glargine titrated to target in patients with type 2 diabetes (DURATION-3): an open-label randomised trial. *The Lancet*. 375, 9733 (Jun. 2010), 2234–2243. DOI:[https://doi.org/10.1016/S0140-6736\(10\)60406-0](https://doi.org/10.1016/S0140-6736(10)60406-0).

[36]

EASD Virtual Meeting:
<http://www.easdvirtualmeeting.org/resources/systematic-review-and-meta-analysis-of-the-efficacy-and-safety-of-sgl2-inhibitors-in-patients-with-type-2-diabetes-mellitus>.

[37]

Efficacy and safety of a fixed-ratio combination of insulin degludec and liraglutide (IDegLira) compared with its components given alone: results of a phase 3, open-label, randomised, 26-week, treat-to-target trial in insulin-naïve patients with type 2 diabetes - ClinicalKey:
<https://www-clinicalkey-com.ezproxy4.lib.le.ac.uk/#!/content/journal/1-s2.0-S2213858714701743>.

[38]

Eng, C. et al. 2014. Glucagon-like peptide-1 receptor agonist and basal insulin combination treatment for the management of type 2 diabetes: a systematic review and meta-analysis. *The Lancet*. 384, 9961 (Dec. 2014), 2228–2234. DOI:[https://doi.org/10.1016/S0140-6736\(14\)61335-0](https://doi.org/10.1016/S0140-6736(14)61335-0).

[39]

Evans, M. et al. 2011. A review of modern insulin analogue pharmacokinetic and pharmacodynamic profiles in type 2 diabetes: improvements and limitations. *Diabetes, Obesity and Metabolism*. 13, 8 (Aug. 2011), 677–684.
DOI:<https://doi.org/10.1111/j.1463-1326.2011.01395.x>.

[40]

F Game 2012. *Annals of The Royal College of Surgeons of England*. 94, 5 (2012).
DOI:<https://doi.org/doi:10.1308/003588412X13171221591655>.

[41]

Fineman, M.S. et al. 2012. GLP-1 based therapies: differential effects on fasting and postprandial glucose. *Diabetes, Obesity and Metabolism*. 14, 8 (Aug. 2012), 675–688.
DOI:<https://doi.org/10.1111/j.1463-1326.2012.01560.x>.

[42]

Frandsen, C.S.S. and Madsbad, S. 2014. Efficacy and safety of dipeptidyl peptidase-4 inhibitors as an add-on to insulin treatment in patients with Type 2 diabetes: a review. *Diabetic Medicine*. 31, 11 (Nov. 2014), 1293–1300.
DOI:<https://doi.org/10.1111/dme.12561>.

[43]

Frandsen, C.S.S. and Madsbad, S. 2014. Efficacy and safety of dipeptidyl peptidase-4 inhibitors as an add-on to insulin treatment in patients with Type 2 diabetes: a review. *Diabetic Medicine*. 31, 11 (Nov. 2014), 1293–1300.
DOI:<https://doi.org/10.1111/dme.12561>.

[44]

Frisch, A. et al. 2010. Prevalence and Clinical Outcome of Hyperglycemia in the Perioperative Period in Noncardiac Surgery. *Diabetes Care*. 33, 8 (Aug. 2010), 1783–1788.
DOI:<https://doi.org/10.2337/dc10-0304>.

[45]

Fullerton, B. et al. 1996. Intensive glucose control versus conventional glucose control for type 1 diabetes mellitus. Cochrane Database of Systematic Reviews. John Wiley & Sons, Ltd.

[46]

Garber, A.J. et al. 2006. Attainment of glycaemic goals in type 2 diabetes with once-, twice-, or thrice-daily dosing with biphasic insulin aspart 70/30 (The 1-2-3 study). *Diabetes, Obesity and Metabolism*. 8, 1 (Jan. 2006), 58–66.
DOI:<https://doi.org/10.1111/j.1463-1326.2005.00563.x>.

[47]

Garber, A.J. et al. 2007. Premixed insulin treatment for type 2 diabetes: analogue or human? *Diabetes, Obesity and Metabolism*. 9, 5 (Sep. 2007), 630–639.
DOI:<https://doi.org/10.1111/j.1463-1326.2006.00654.x>.

[48]

Giugliano, D. et al. 2011. Efficacy of Insulin Analogs in Achieving the Hemoglobin A1c Target of <7% in Type 2 Diabetes: Meta-analysis of randomized controlled trials. *Diabetes Care*. 34, 2 (Feb. 2011), 510–517. DOI:<https://doi.org/10.2337/dc10-1710>.

[49]

Goudswaard, A.N. et al. 1996. Insulin monotherapy versus combinations of insulin with oral hypoglycaemic agents in patients with type 2 diabetes mellitus. Cochrane Database of Systematic Reviews. John Wiley & Sons, Ltd.

[50]

Gough, S.C.L. et al. 2013. Low-Volume Insulin Degludec 200 Units/mL Once Daily Improves Glycemic Control Similarly to Insulin Glargine With a Low Risk of Hypoglycemia in Insulin-Naive Patients With Type 2 Diabetes: A 26-week, randomized, controlled, multinational, treat-to-target trial: The BEGIN LOW VOLUME trial. *Diabetes Care*. 36, 9 (Sep. 2013), 2536–2542. DOI:<https://doi.org/10.2337/dc12-2329>.

[51]

Gregory T. Mucha, Stacia Merkel, William Thomas, John P. Bantle Fasting and insulin glargine

in individuals with type 1 diabetes. *Diabetes Care*.

[52]

Guevara-Aguirre, J. et al. 2004. Beneficial Effects of Addition of Oral Spray Insulin (Oralin) on Insulin Secretion and Metabolic Control in Subjects with Type 2 Diabetes Mellitus Suboptimally Controlled on Oral Hypoglycemic Agents. *Diabetes Technology & Therapeutics*. 6, 1 (Feb. 2004), 1–8. DOI:<https://doi.org/10.1089/152091504322783341>.

[53]

Gururaj Setty, S. et al. 2016. New insulins and newer insulin regimens: a review of their role in improving glycaemic control in patients with diabetes. *Postgraduate Medical Journal*. 92, 1085 (Mar. 2016), 152–164. DOI:<https://doi.org/10.1136/postgradmedj-2015-133716>.

[54]

Gurwitz, J.H. 1994. Glucocorticoids and the Risk for Initiation of Hypoglycemic Therapy. *Archives of Internal Medicine*. 154, 1 (Jan. 1994). DOI:<https://doi.org/10.1001/archinte.1994.00420010131015>.

[55]

Hannele Yki-Järvinen 2013. Is There Evidence to Support Use of Premixed or Prandial Insulin Regimens in Insulin-Naive or Previously Insulin-Treated Type 2 Diabetic Patients? *Diabetes Care*. 36, Suppl 2 (2013). DOI:<https://doi.org/doi:10.2337/dcS13-2026>.

[56]

Hannele Yki-Jarvinen, Leena Juurinen, Michael Alvarsson, Tord Bystedt, Ian Caldwell, Melanie Davies Initiate insulin by aggressive titration and education (Initiate): randomized study to compare initiation of insulin combination therapy in type 2 diabetic patients individually and in groups. *Diabetes Care*.

[57]

Heller, S. et al. 2012. Insulin degludec, an ultra-longacting basal insulin, versus insulin glargine in basal-bolus treatment with mealtime insulin aspart in type 1 diabetes (BEGIN

Basal-Bolus Type 1): a phase 3, randomised, open-label, treat-to-target non-inferiority trial. *The Lancet*. 379, 9825 (Apr. 2012), 1489–1497.
DOI:[https://doi.org/10.1016/S0140-6736\(12\)60204-9](https://doi.org/10.1016/S0140-6736(12)60204-9).

[58]

Heller, S.R. et al. 2004. Hypoglycaemia with insulin aspart: a double-blind, randomised, crossover trial in subjects with Type 1 diabetes. *Diabetic Medicine*. 21, 7 (Jul. 2004), 769–775. DOI:<https://doi.org/10.1111/j.1464-5491.2004.01244.x>.

[59]

Hermansen, K. et al. 2006. A 26-Week, Randomized, Parallel, Treat-to-Target Trial Comparing Insulin Detemir With NPH Insulin as Add-On Therapy to Oral Glucose-Lowering Drugs in Insulin-Naive People With Type 2 Diabetes. *Diabetes Care*. 29, 6 (Jun. 2006), 1269–1274. DOI:<https://doi.org/10.2337/dc05-1365>.

[60]

Hermansen, K. and Davies, M. 2007. Does insulin detemir have a role in reducing risk of insulin-associated weight gain? *Diabetes, Obesity and Metabolism*. 9, 3 (May 2007), 209–217. DOI:<https://doi.org/10.1111/j.1463-1326.2006.00665.x>.

[61]

Hirsch, I.B. et al. 2014. Options for prandial glucose management in type 2 diabetes patients using basal insulin: addition of a short-acting GLP-1 analogue versus progression to basal-bolus therapy. *Diabetes, Obesity and Metabolism*. 16, 3 (Mar. 2014), 206–214. DOI:<https://doi.org/10.1111/dom.12136>.

[62]

Hirsch, I.B. et al. 2017. Safety and efficacy of insulin degludec/insulin aspart with bolus mealtime insulin aspart compared with standard basal-bolus treatment in people with Type 1 diabetes: 1-year results from a randomized clinical trial (BOOST T1). *Diabetic Medicine*. 34, 2 (Feb. 2017), 167–173. DOI:<https://doi.org/10.1111/dme.13068>.

[63]

Holman, R.R. et al. 2008. 10-Year Follow-up of Intensive Glucose Control in Type 2 Diabetes. *New England Journal of Medicine*. 359, 15 (Oct. 2008), 1577–1589.
DOI:<https://doi.org/10.1056/NEJMoa0806470>.

[64]

Holman, R.R. et al. 2007. Addition of Biphasic, Prandial, or Basal Insulin to Oral Therapy in Type 2 Diabetes. *New England Journal of Medicine*. 357, 17 (Oct. 2007), 1716–1730.
DOI:<https://doi.org/10.1056/NEJMoa075392>.

[65]

Holman, R.R. et al. 2007. Addition of Biphasic, Prandial, or Basal Insulin to Oral Therapy in Type 2 Diabetes. *New England Journal of Medicine*. 357, 17 (Oct. 2007), 1716–1730.
DOI:<https://doi.org/10.1056/NEJMoa075392>.

[66]

Holman, R.R. et al. 2009. Three-Year Efficacy of Complex Insulin Regimens in Type 2 Diabetes. *New England Journal of Medicine*. 361, 18 (Oct. 2009), 1736–1747.
DOI:<https://doi.org/10.1056/NEJMoa0905479>.

[67]

Holman, R.R. et al. 2009. Three-Year Efficacy of Complex Insulin Regimens in Type 2 Diabetes. *New England Journal of Medicine*. 361, 18 (Oct. 2009), 1736–1747.
DOI:<https://doi.org/10.1056/NEJMoa0905479>.

[68]

Holman, R.R. et al. 2009. Three-Year Efficacy of Complex Insulin Regimens in Type 2 Diabetes. *New England Journal of Medicine*. 361, 18 (Oct. 2009), 1736–1747.
DOI:<https://doi.org/10.1056/NEJMoa0905479>.

[69]

Holman, R.R. and Turner, R.C. 1985. A Practical Guide to Basal and Prandial Insulin Therapy. *Diabetic Medicine*. 2, 1 (Jan. 1985), 45–53.
DOI:<https://doi.org/10.1111/j.1464-5491.1985.tb00592.x>.

[70]

Holt, R.I.G. et al. 2016. Textbook of Diabetes. John Wiley & Sons, Incorporated.

[71]

Holt, R.I.G. 2010. Textbook of diabetes. Wiley-Blackwell.

[72]

Holt, R.I.G. et al. 2016. Textbook of Diabetes. John Wiley & Sons, Incorporated.

[73]

Holt, R.I.G. 2010. Textbook of diabetes. Wiley-Blackwell.

[74]

Home, P. et al. 2014. Insulin Therapy in People With Type 2 Diabetes: Opportunities and Challenges? Diabetes Care. 37, 6 (Jun. 2014), 1499–1508.
DOI:<https://doi.org/10.2337/dc13-2743>.

[75]

Home, P.D. et al. 2015. New Insulin Glargine 300 Units/mL Versus Glargine 100 Units/mL in People With Type 1 Diabetes: A Randomized, Phase 3a, Open-Label Clinical Trial (EDITION 4). Diabetes Care. 38, 12 (Dec. 2015), 2217–2225. DOI:<https://doi.org/10.2337/dc15-0249>.

[76]

Home, P.D. 2012. The pharmacokinetics and pharmacodynamics of rapid-acting insulin analogues and their clinical consequences. Diabetes, Obesity and Metabolism. 14, 9 (Sep. 2012), 780–788. DOI:<https://doi.org/10.1111/j.1463-1326.2012.01580.x>.

[77]

Hommel, I. et al. 2015. Perioperative diabetes care: room for improving the person centredness. *Diabetic Medicine*. 32, 4 (Apr. 2015), 561–568. DOI:<https://doi.org/10.1111/dme.12600>.

[78]

Horvath, K. et al. 1996. Long-acting insulin analogues versus NPH insulin (human isophane insulin) for type 2 diabetes mellitus. *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd.

[79]

Horvath, K. et al. 1996. Long-acting insulin analogues versus NPH insulin (human isophane insulin) for type 2 diabetes mellitus. *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd.

[80]

Hui, E. et al. 2010. Comparison of Humalog Mix 50 with human insulin Mix 30 in type 2 diabetes patients during Ramadan. *International Journal of Clinical Practice*. 64, 8 (Mar. 2010), 1095–1099. DOI:<https://doi.org/10.1111/j.1742-1241.2010.02347.x>.

[81]

Hui, E. et al. 2010. Comparison of Humalog Mix 50 with human insulin Mix 30 in type 2 diabetes patients during Ramadan. *International Journal of Clinical Practice*. 64, 8 (Mar. 2010), 1095–1099. DOI:<https://doi.org/10.1111/j.1742-1241.2010.02347.x>.

[82]

Hwang, J.L. and Weiss, R.E. 2014. Steroid-induced diabetes: a clinical and molecular approach to understanding and treatment. *Diabetes/Metabolism Research and Reviews*. 30, 2 (Feb. 2014), 96–102. DOI:<https://doi.org/10.1002/dmrr.2486>.

[83]

Insulin glargine or NPH combined with metformin in type 2 diabetes: the LANMET study: <http://link.springer.com.ezproxy4.lib.le.ac.uk/article/10.1007/s00125-005-0132-0/fulltext.html>.

[84]

Insulin treatment and the problem of weight gain in type 2 diabetes. - PubMed - NCBI:
<http://www.ncbi.nlm.nih.gov/pubmed/17102158>.

[85]

Intensity of peri-operative glycaemic control and postoperative outcomes in patients with diabetes: a meta-analysis - ClinicalKey:
<https://www-clinicalkey-com.ezproxy3.lib.le.ac.uk/#!/content/journal/1-s2.0-S0168822713001873>.

[86]

Ismail-Beigi, F. 2012. Glycemic Management of Type 2 Diabetes Mellitus. *New England Journal of Medicine*. 366, 14 (Apr. 2012), 1319–1327.
DOI:<https://doi.org/10.1056/NEJMcp1013127>.

[87]

Jackson, M.J. et al. 2016. Perioperative management of diabetes in elective patients: a region-wide audit. *British Journal of Anaesthesia*. 116, 4 (Apr. 2016), 501–506.
DOI:<https://doi.org/10.1093/bja/aev554>.

[88]

Jenkins, K. 2014. II. Needle phobia: a psychological perspective. *British Journal of Anaesthesia*. 113, 1 (Jul. 2014), 4–6. DOI:<https://doi.org/10.1093/bja/aeu013>.

[89]

June James End-of-life care: Anything but a pathway.

[90]

June James Safety and insulin: implementation of national guidance at a local level. *Journal of Diabetes Nursing*.

[91]

Kahler, P. et al. 2014. Targeting intensive versus conventional glycaemic control for type 1 diabetes mellitus: a systematic review with meta-analyses and trial sequential analyses of randomised clinical trials. *BMJ Open*. 4, 8 (Aug. 2014), e004806–e004806. DOI:<https://doi.org/10.1136/bmjopen-2014-004806>.

[92]

Khedkar, A. et al. 2010. A dose range finding study of novel oral insulin (IN-105) under fed conditions in type 2 diabetes mellitus subjects. *Diabetes, Obesity and Metabolism*. 12, 8 (Feb. 2010), 659–664. DOI:<https://doi.org/10.1111/j.1463-1326.2010.01213.x>.

[93]

Kramer, C.K. et al. 2013. Short-term intensive insulin therapy in type 2 diabetes mellitus: a systematic review and meta-analysis. *The Lancet Diabetes & Endocrinology*. 1, 1 (Sep. 2013), 28–34. DOI:[https://doi.org/10.1016/S2213-8587\(13\)70006-8](https://doi.org/10.1016/S2213-8587(13)70006-8).

[94]

Kuhlmann, M. and Marre, M. 2010. Lessons learned from biosimilar epoetins and insulins. *The British Journal of Diabetes & Vascular Disease*. 10, 2 (Mar. 2010), 90–97. DOI:<https://doi.org/10.1177/1474651409355454>.

[95]

Kutz, A. et al. 2017. The association of admission hyperglycaemia and adverse clinical outcome in medical emergencies: the multinational, prospective, observational TRIAGE study. *Diabetic Medicine*. (Feb. 2017). DOI:<https://doi.org/10.1111/dme.13325>.

[96]

L. Luzi 1989. Effect of loss of first-phase insulin secretion on hepatic glucose production and tissue glucose disposal in humans. *American Journal of Physiology - Endocrinology and Metabolism*. 257, 2 (Aug. 1989), E241–E246.

[97]

Lambert, K. and Holt, R.I.G. 2013. The use of insulin analogues in pregnancy. *Diabetes, Obesity and Metabolism*. 15, 10 (Oct. 2013), 888–900.
DOI:<https://doi.org/10.1111/dom.12098>.

[98]

Lankisch, M.R. et al. 2008. Introducing a simplified approach to insulin therapy in type 2 diabetes: a comparison of two single-dose regimens of insulin glulisine plus insulin glargine and oral antidiabetic drugs. *Diabetes, Obesity and Metabolism*. (Sep. 2008).
DOI:<https://doi.org/10.1111/j.1463-1326.2008.00967.x>.

[99]

Lasserson, D.S. et al. 2009. Optimal insulin regimens in type 2 diabetes mellitus: systematic review and meta-analyses. *Diabetologia*. 52, 10 (Oct. 2009), 1990–2000.
DOI:<https://doi.org/10.1007/s00125-009-1468-7>.

[100]

Lasserson, D.S. et al. 2009. Optimal insulin regimens in type 2 diabetes mellitus: systematic review and meta-analyses. *Diabetologia*. 52, 10 (Oct. 2009), 1990–2000.
DOI:<https://doi.org/10.1007/s00125-009-1468-7>.

[101]

Lea, Mary R. □Creme, Phyllis 2008. *Writing At University*. McGraw-Hill Education.

[102]

Levy, N. et al. 2016. Perioperative management of diabetes and the emerging role of anaesthetists as perioperative physicians. *British Journal of Anaesthesia*. 116, 4 (Apr. 2016), 443–447. DOI:<https://doi.org/10.1093/bja/aew049>.

[103]

Liu, D. et al. 2013. A practical guide to the monitoring and management of the complications of systemic corticosteroid therapy. *Allergy, Asthma & Clinical Immunology*. 9, 1 (2013). DOI:<https://doi.org/10.1186/1710-1492-9-30>.

[104]

Luc JC van Loon 2000. Plasma insulin responses after ingestion of different amino acid or protein mixtures with carbohydrate. *The American Journal of Clinical Nutrition*. 72, 1 (Jan. 2000), 96–105.

[105]

Luzio, S.D. et al. 2010. The glucose lowering effect of an oral insulin (Capsulin) during an isoglycaemic clamp study in persons with type 2 diabetes. *Diabetes, Obesity and Metabolism*. 12, 1 (Jan. 2010), 82–87.
DOI:<https://doi.org/10.1111/j.1463-1326.2009.01146.x>.

[106]

Manju Chandran, Steven V. Edelman Have insulin, will fly: diabetes management during air travel and time zone adjustment strategies. (Practical Pointers). *Clinical Diabetes*.

[107]

Martha M. Funnell Overcoming barriers to the initiation of insulin therapy. *Clinical Diabetes*.

[108]

Matthew C. Riddle, Julio Rosenstock, John Gerich The treat-to-target trial: randomized addition of glargine or human NPH insulin to oral therapy of type 2 diabetic patients. *Diabetes Care*.

[109]

Mattoo, V. et al. 2003. A comparison of insulin lispro Mix25™ and human insulin 30/70 in the treatment of type 2 diabetes during Ramadan. *Diabetes Research and Clinical Practice*. 59, 2 (Feb. 2003), 137–143. DOI:[https://doi.org/10.1016/S0168-8227\(02\)00202-4](https://doi.org/10.1016/S0168-8227(02)00202-4).

[110]

McBain, H. et al. 2017. Barriers to and enablers of insulin self-titration in adults with Type 2 diabetes: a qualitative study. *Diabetic Medicine*. 34, 2 (Feb. 2017), 253–261.
DOI:<https://doi.org/10.1111/dme.13196>.

[111]

McCrimmon, R.J. 2017. Old habits are hard to break: lessons from the study of hypoglycaemia. *Diabetic Medicine*. 34, 2 (Feb. 2017), 148-155. DOI:<https://doi.org/10.1111/dme.13277>.

[112]

Menting, J.G. et al. 2013. How insulin engages its primary binding site on the insulin receptor. *Nature*. 493, 7431 (Jan. 2013), 241-245. DOI:<https://doi.org/10.1038/nature11781>.

[113]

Mollema, E.D. et al. 2001. Phobia of self-injecting and self-testing in insulin-treated diabetes patients: opportunities for screening. *Diabetic Medicine*. 18, 8 (Dec. 2001), 671-674. DOI:<https://doi.org/10.1046/j.1464-5491.2001.00547.x>.

[114]

Morçöl, T. et al. 2004. Calcium phosphate-PEG-insulin-casein (CAPIC) particles as oral delivery systems for insulin. *International Journal of Pharmaceutics*. 277, 1-2 (Jun. 2004), 91-97. DOI:<https://doi.org/10.1016/j.ijpharm.2003.07.015>.

[115]

Nathan, D.M. et al. 2006. Management of Hyperglycemia in Type 2 Diabetes: A Consensus Algorithm for the Initiation and Adjustment of Therapy: A consensus statement from the American Diabetes Association and the European Association for the Study of Diabetes. *Diabetes Care*. 29, 8 (Aug. 2006), 1963-1972. DOI:<https://doi.org/10.2337/dc06-9912>.

[116]

Nathan, D.M. 2014. The Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications Study at 30 Years: Overview. *Diabetes Care*. 37, 1 (Jan. 2014), 9-16. DOI:<https://doi.org/10.2337/dc13-2112>.

[117]

Nauck, M. 2016. Incretin therapies: highlighting common features and differences in the modes of action of glucagon-like peptide-1 receptor agonists and dipeptidyl peptidase-4 inhibitors. *Diabetes, Obesity and Metabolism*. 18, 3 (Mar. 2016), 203–216. DOI:<https://doi.org/10.1111/dom.12591>.

[118]

New IDegLira data show rapid and predictable glycaemic improvements in people with type 2 diabetes:
<http://www.multivu.com/players/English/72762519-novo-nordisk-IDegLira-treatment/>.

[119]

New Insulin Glargine 300 U/mL: Glycemic Control and Hypoglycemia in a Meta-Analysis of Phase 3a EDITION Clinical Trials in People with T2DM - ClinicalKey:
<https://www-clinicalkey-com.ezproxy3.lib.le.ac.uk/#!/content/journal/1-s2.0-S1499267114003086>.

[120]

Owens, D.R. et al. 2011. Effects of initiation and titration of a single pre-prandial dose of insulin glulisine while continuing titrated insulin glargine in type 2 diabetes: a 6-month 'proof-of-concept' study. *Diabetes, Obesity and Metabolism*. 13, 11 (Nov. 2011), 1020–1027. DOI:<https://doi.org/10.1111/j.1463-1326.2011.01459.x>.

[121]

Owens, D.R. 2013. Stepwise intensification of insulin therapy in Type 2 diabetes management-exploring the concept of the basal-plus approach in clinical practice. *Diabetic Medicine*. 30, 3 (Mar. 2013), 276–288. DOI:<https://doi.org/10.1111/dme.12019>.

[122]

P. Schneiter 1998. Kinetics of dexamethasone-induced alterations of glucose metabolism in healthy humans. *American Journal of Physiology - Endocrinology and Metabolism*. 275, 5 (Nov. 1998), E806–E813.

[123]

Park, S.W. et al. 2017. Insulin degludec/insulin aspart once daily in Type 2 diabetes: a

comparison of simple or stepwise titration algorithms (BOOST : SIMPLE USE). *Diabetic Medicine*. 34, 2 (Feb. 2017), 174–179. DOI:<https://doi.org/10.1111/dme.13069>.

[124]

Peter Mansell The dose adjustment for normal eating (DAFNE) education programme. *Journal of Diabetes Nursing*.

[125]

Philip Raskin, Elsie Allen, Priscilla Hollander, Andrew Lewin, Robert A. Gabbay, Peter Hu Initiating insulin therapy in type 2 diabetes: a comparison of biphasic and basal insulin analogs. *Diabetes Care*.

[126]

Pickup, J.C. et al. 2017. Glycemic Control During Continuous Subcutaneous Insulin Infusion Versus Multiple Daily Insulin Injections in Type 2 Diabetes: Individual Patient Data Meta-analysis and Meta-regression of Randomized Controlled Trials. *Diabetes Care*. 40, 5 (May 2017), 715–722. DOI:<https://doi.org/10.2337/dc16-2201>.

[127]

Pozzilli, P. et al. 2005. Biokinetics of buccal spray insulin in patients with type 1 diabetes. *Metabolism*. 54, 7 (Jul. 2005), 930–934. DOI:<https://doi.org/10.1016/j.metabol.2005.02.008>.

[128]

Prandial inhaled insulin plus basal insulin glargine versus twice daily biaspart insulin for type 2 diabetes: a multicentre randomised trial - ClinicalKey: <https://www-clinicalkey-com.ezproxy4.lib.le.ac.uk/#!/content/journal/1-s2.0-S0140673610606320>.

[129]

Raccach, D. et al. 2017. Review of basal-plus insulin regimen options for simpler insulin intensification in people with Type 2 diabetes mellitus. *Diabetic Medicine*. (Jun. 2017). DOI:<https://doi.org/10.1111/dme.13390>.

[130]

Raccach, D. et al. 2017. Review of basal-plus insulin regimen options for simpler insulin intensification in people with Type 2 diabetes mellitus. *Diabetic Medicine*. (Jun. 2017). DOI:<https://doi.org/10.1111/dme.13390>.

[131]

Raccach, D. et al. 2017. Review of basal-plus insulin regimen options for simpler insulin intensification in people with Type 2 diabetes mellitus. *Diabetic Medicine*. 34, 9 (Sep. 2017), 1193–1204. DOI:<https://doi.org/10.1111/dme.13390>.

[132]

Raccach, D. et al. 2017. Review of basal-plus insulin regimen options for simpler insulin intensification in people with Type 2 diabetes mellitus. *Diabetic Medicine*. 34, 9 (Sep. 2017), 1193–1204. DOI:<https://doi.org/10.1111/dme.13390>.

[133]

Randomized controlled trial of insulin detemir versus NPH for the treatment of pregnant women with diabetes - ClinicalKey:
<https://www-clinicalkey-com.ezproxy3.lib.le.ac.uk/#!/content/journal/1-s2.0-S0002937815005931>.

[134]

Richter, B. and Neises, G. 1996. 'Human' insulin versus animal insulin in people with diabetes mellitus. *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd.

[135]

Riddle, M.C. et al. 2013. Adding Once-Daily Lixisenatide for Type 2 Diabetes Inadequately Controlled by Established Basal Insulin: A 24-week, randomized, placebo-controlled comparison (GetGoal-L). *Diabetes Care*. 36, 9 (Sep. 2013), 2489–2496. DOI:<https://doi.org/10.2337/dc12-2454>.

[136]

Riddle, M.C. et al. 2014. New Insulin Glargine 300 Units/mL Versus Glargine 100 Units/mL in People With Type 2 Diabetes Using Basal and Mealtime Insulin: Glucose Control and Hypoglycemia in a 6-Month Randomized Controlled Trial (EDITION 1). *Diabetes Care*. 37, 10 (Oct. 2014), 2755–2762. DOI:<https://doi.org/10.2337/dc14-0991>.

[137]

Riddle, M.C. et al. 2014. Randomized, 1-year comparison of three ways to initiate and advance insulin for type 2 diabetes: twice-daily premixed insulin versus basal insulin with either basal-plus one prandial insulin or basal-bolus up to three prandial injections. *Diabetes, Obesity and Metabolism*. 16, 5 (May 2014), 396–402. DOI:<https://doi.org/10.1111/dom.12225>.

[138]

Rodbard, H.W. et al. 2017. Safety and efficacy of insulin degludec/liraglutide (IDegLira) added to sulphonylurea alone or to sulphonylurea and metformin in insulin-naïve people with Type 2 diabetes: the DUAL IV trial. *Diabetic Medicine*. 34, 2 (Feb. 2017), 189–196. DOI:<https://doi.org/10.1111/dme.13256>.

[139]

Rorsman, P. and Renström, E. 2003. Insulin granule dynamics in pancreatic beta cells. *Diabetologia*. 46, 8 (Aug. 2003), 1029–1045. DOI:<https://doi.org/10.1007/s00125-003-1153-1>.

[140]

Rosenstock, J. et al. 2013. Better Glycemic Control and Weight Loss With the Novel Long-Acting Basal Insulin LY2605541 Compared With Insulin Glargine in Type 1 Diabetes: A randomized, crossover study. *Diabetes Care*. 36, 3 (Mar. 2013), 522–528. DOI:<https://doi.org/10.2337/dc12-0067>.

[141]

Rosenstock, J. et al. 2013. Efficacy and Safety of Lixisenatide Once Daily Versus Exenatide Twice Daily in Type 2 Diabetes Inadequately Controlled on Metformin: A 24-week, randomized, open-label, active-controlled study (GetGoal-X). *Diabetes Care*. 36, 10 (Oct. 2013), 2945–2951. DOI:<https://doi.org/10.2337/dc12-2709>.

[142]

Rosenstock, J. et al. 2014. Improved Glucose Control With Weight Loss, Lower Insulin Doses, and No Increased Hypoglycemia With Empagliflozin Added to Titrated Multiple Daily Injections of Insulin in Obese Inadequately Controlled Type 2 Diabetes. *Diabetes Care*. 37, 7 (Jul. 2014), 1815–1823. DOI:<https://doi.org/10.2337/dc13-3055>.

[143]

Rosenstock, J. et al. 2014. Improved Glucose Control With Weight Loss, Lower Insulin Doses, and No Increased Hypoglycemia With Empagliflozin Added to Titrated Multiple Daily Injections of Insulin in Obese Inadequately Controlled Type 2 Diabetes. *Diabetes Care*. 37, 7 (Jul. 2014), 1815–1823. DOI:<https://doi.org/10.2337/dc13-3055>.

[144]

Rowles, S. et al. 2011. ABCD position statement on diabetes and end of life care. *Practical Diabetes International*. 28, 1 (Jan. 2011), 26–27. DOI:<https://doi.org/10.1002/pdi.1547>.

[145]

Rowles, S. et al. 2011. ABCD position statement on diabetes and end of life care. *Practical Diabetes International*. 28, 1 (Jan. 2011), 26–27. DOI:<https://doi.org/10.1002/pdi.1547>.

[146]

Russell-Jones, D. and Khan, R. 2007. Insulin-associated weight gain in diabetes – causes, effects and coping strategies. *Diabetes, Obesity and Metabolism*. 9, 6 (Nov. 2007), 799–812. DOI:<https://doi.org/10.1111/j.1463-1326.2006.00686.x>.

[147]

Shosuke Satake, Mary Courtney Moore, Kayano Igawa, Margaret Converse, Benjamin Farmer, Doss W. Neal Direct and indirect effects of insulin on glucose uptake and storage by the liver. (Original Articles). *Diabetes*.

[148]

Simmons, J.H. et al. 2007. Reliability of the Diabetes Fear of Injecting and Self-Testing Questionnaire in Pediatric Patients With Type 1 Diabetes. *Diabetes Care*. 30, 4 (Apr. 2007),

987-988. DOI:<https://doi.org/10.2337/dc06-1553>.

[149]

Simmons, L.R. et al. 2012. Steroid-Induced Diabetes: Is It Just Unmasking of Type 2 Diabetes? *ISRN Endocrinology*. 2012, (2012), 1-5.
DOI:<https://doi.org/10.5402/2012/910905>.

[150]

Srinivasan, B.T. et al. 2008. Recent advances in the management of type 2 diabetes mellitus: a review. *Postgraduate Medical Journal*. 84, 996 (Oct. 2008), 524-531.
DOI:<https://doi.org/10.1136/pgmj.2008.067918>.

[151]

Srinivasan, B.T. and Davies, M. 2014. Glycaemic management of type 2 diabetes. *Medicine*. 42, 12 (Dec. 2014), 711-717. DOI:<https://doi.org/10.1016/j.mpmed.2014.09.011>.

[152]

Suggested insulin regimens for patients with type 1 diabetes mellitus who wish to fast during the month of Ramadan - ClinicalKey:
<https://www-clinicalkey-com.ezproxy3.lib.le.ac.uk/#!/content/journal/1-s2.0-S0149291808002737>.

[153]

Swinnen, S.G. et al. 1996. Insulin detemir versus insulin glargine for type 2 diabetes mellitus. *Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd.

[154]

Tapley, M. and Needham, E. 2012. Improving end of life care for people with diabetes. *Practical Diabetes*. 29, 8 (Oct. 2012), 306-307a. DOI:<https://doi.org/10.1002/pdi.1711>.

[155]

Tikkanen-Dolenc, H. et al. 2016. Frequent and intensive physical activity reduces risk of cardiovascular events in type 1 diabetes. *Diabetologia*. (Dec. 2016). DOI:<https://doi.org/10.1007/s00125-016-4189-8>.

[156]

Villani, M. et al. 2017. Emergency treatment of hypoglycaemia: a guideline and evidence review. *Diabetic Medicine*. 34, 9 (Sep. 2017), 1205–1211. DOI:<https://doi.org/10.1111/dme.13379>.

[157]

W. Blair Geho 2014. A Single-blind, Placebo-controlled, Dose-ranging Trial of Oral Hepatic-directed Vesicle Insulin Add-on to Oral Antidiabetic Treatment in Patients With Type 2 Diabetes Mellitus. *Journal of Diabetes Science and Technology*. 8, 3 (2014). DOI:<https://doi.org/doi:10.1177/1932296814524871>.

[158]

Wahren, J. and Kallas, A. 2012. Loss of Pulsatile Insulin Secretion: A Factor in the Pathogenesis of Type 2 Diabetes? *Diabetes*. 61, 9 (Sep. 2012), 2228–2229. DOI:<https://doi.org/10.2337/db12-0664>.

[159]

Walker, R.A. et al. 2010. *Diabetes: a practical guide to managing your health*. Dorling Kindersley.

[160]

Wang, C. et al. 2015. Biphasic vs basal bolus insulin regimen in Type 2 diabetes: a systematic review and meta-analysis of randomized controlled trials. *Diabetic Medicine*. 32, 5 (May 2015), 585–594. DOI:<https://doi.org/10.1111/dme.12694>.

[161]

Wang, W. et al. 2017. Effects of Insulin Plus Glucagon-Like Peptide-1 Receptor Agonists (GLP-1RAs) in Treating Type 1 Diabetes Mellitus: A Systematic Review and Meta-Analysis. *Diabetes Therapy*. (Jun. 2017). DOI:<https://doi.org/10.1007/s13300-017-0282-3>.

[162]

Yki-Jarvinen, H. et al. 2007. Initiate Insulin by Aggressive Titration and Education (INITIATE): A randomized study to compare initiation of insulin combination therapy in type 2 diabetic patients individually and in groups. *Diabetes Care*. 30, 6 (Jun. 2007), 1364-1369. DOI:<https://doi.org/10.2337/dc06-1357>.

[163]

Yki-Jarvinen, H. and Kotronen, A. 2013. Is There Evidence to Support Use of Premixed or Prandial Insulin Regimens in Insulin-Naive or Previously Insulin-Treated Type 2 Diabetic Patients? *Diabetes Care*. 36, Supplement_2 (Aug. 2013), S205-S211. DOI:<https://doi.org/10.2337/dcS13-2026>.

[164]

Young, L.A. and Buse, J.B. 2014. GLP-1 receptor agonists and basal insulin in type 2 diabetes. *The Lancet*. 384, 9961 (Dec. 2014), 2180-2181. DOI:[https://doi.org/10.1016/S0140-6736\(14\)61409-4](https://doi.org/10.1016/S0140-6736(14)61409-4).

[165]

Zambanini, A. et al. 1999. Injection related anxiety in insulin-treated diabetes. *Diabetes Research and Clinical Practice*. 46, 3 (Dec. 1999), 239-246. DOI:[https://doi.org/10.1016/S0168-8227\(99\)00099-6](https://doi.org/10.1016/S0168-8227(99)00099-6).

[166]

Zinman, B. et al. 2011. Insulin degludec, an ultra-long-acting basal insulin, once a day or three times a week versus insulin glargine once a day in patients with type 2 diabetes: a 16-week, randomised, open-label, phase 2 trial. *The Lancet*. 377, 9769 (Mar. 2011), 924-931. DOI:[https://doi.org/10.1016/S0140-6736\(10\)62305-7](https://doi.org/10.1016/S0140-6736(10)62305-7).

[167]

2016. : Summary of Revisions. *Diabetes Care*. 39, Supplement 1 (Jan. 2016), S4-S5. DOI:<https://doi.org/10.2337/dc16-S003>.

[168]

2012. Basal Insulin and Cardiovascular and Other Outcomes in Dysglycemia. *New England Journal of Medicine*. 367, 4 (Jul. 2012), 319–328. DOI:<https://doi.org/10.1056/NEJMoa1203858>.

[169]

Clinical effectiveness and cost-effectiveness of continuous subcutaneous insulin infusion for diabetes: systematic review and economic evaluation.

[170]

2008. Effects of Intensive Glucose Lowering in Type 2 Diabetes. *New England Journal of Medicine*. 358, 24 (Jun. 2008), 2545–2559. DOI:<https://doi.org/10.1056/NEJMoa0802743>.

[171]

Efficacy and Safety of Glucagon-like peptide-1 receptor agonists in type 2 diabetes Systematic review and mixed-treatment comparison analysis.

[172]

2008. Hyperglycemia and Adverse Pregnancy Outcomes. *New England Journal of Medicine*. 358, 19 (May 2008), 1991–2002. DOI:<https://doi.org/10.1056/NEJMoa0707943>.

[173]

Insulin Therapies: An Educational Toolkit.

[174]

4AD. Professor Kamlesh Khunti - Coding, Classification and Diagnosis of Diabetes.

[175]

1993. The Effect of Intensive Treatment of Diabetes on the Development and Progression

of Long-Term Complications in Insulin-Dependent Diabetes Mellitus. *New England Journal of Medicine*. 329, 14 (Sep. 1993), 977–986.
DOI:<https://doi.org/10.1056/NEJM199309303291401>.

[176]

2002. Training in flexible, intensive insulin management to enable dietary freedom in people with type 1 diabetes: dose adjustment for normal eating (DAFNE) randomised controlled trial. *BMJ*. 325, 7367 (Oct. 2002), 746–746.
DOI:<https://doi.org/10.1136/bmj.325.7367.746>.

[177]

Type 2 Diabetes Therapies and Management : an Educational Toolkit.