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Special Issue Reprint

## New Advances in Insulin

**Edited by: Tomislav Bulum**

Since insulin discovery, thousands of lives have been saved, and the life expectancy of people with diabetes has been significantly extended. Since its discovery, insulin has been continuously improved through pharmacological development and optimized for therapeutic purposes, including the development of intermediate- and long-acting insulins, the ability to produce human insulin, and finally, the development of insulin analogs with improved properties using recombinant DNA technology. Although recent trends show a decline in complications among patients with type 1 diabetes—largely due to improved management practices and advancements in care technologies such as continuous glucose monitoring and modern insulin delivery systems—the risk of microvascular and macrovascular complications remains high. This Reprint offers a comprehensive overview of insulin secretion and action, the development and action of insulin analogs, and their impact on glycemic control and the chronic complications of diabetes. Advances in diabetes treatment have been vast in the 100 years since the discovery of insulin, resulting in extraordinary progress in the development of novel molecules to improve glucose control, simplify insulin regimens, and enhance quality of life. However, insulin remains the only replacement therapy for type 1 diabetes, and this new data presented here may encourage and support further research in this important field.



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