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Progenitor cells may aid successful islet compensation in

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Abstract

Obesity is associated with insulin resistance and type 2 diabetes. Fortunately most obese, insulin-resistant individuals do not develop type 2 diabetes as they can overcome reduced efficiency of insulin action by increasing the functional β -cell mass. Compelling evidences suggest β -cells neogenesis through progenitor/stem cells residing in pancreatic ductal cells and islets, but the role of β -cell regeneration in obesity/insulin resistance from progenitor/stem cells is not clear. Based on many indirect evidences in human studies such as unchanged β -cell replication, apoptosis and size during compensation in insulin resistance in humans, we suggest successful β -cells mass compensation in metabolically healthy obesity is contributed by neoformation of β -cells, through expansion of progenitor cells/stem cells in synergy with β -cell replication.

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