

# KPP *Klinical Update*

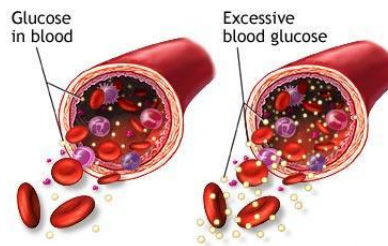
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## Diabetes

Understanding the disease state and treatment options

Every living cell in the human body needs energy to properly function. The main source of this energy is glucose, which is extracted from food while passing through the digestive tract. As food digests, the molecules of glucose pass through mucosal walls and enter the blood stream where they are transported throughout the entire body. Each living cell has a powerhouse in it called a mitochondria which converts molecules of glucose into energy that is then utilized by the cells to perform their function. During the process both waste and heat are generated which must be offloaded back into the blood.

Like every engine, cells need a constant supply of fresh fuel which, in this case, is the glucose traveling around the body in the bloodstream. When a cell is fuel deficient, it must pull glucose from the blood stream in through its cell wall. This process is accomplished via the utilization of insulin. Common forms of diabetes stem from a breakdown in the body's ability to either make or recognize its own insulin.



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Type	Common Name	Description
Type I	Juvenile diabetes Insulin dependent diabetes	The pancreas does not make insulin at all due to an autoimmune disease in which the beta cells, or insulin producing cells of the pancreas, are attacked and destroyed by the body's own immune system. Unlike its name suggests, type I diabetes can present in both children and adults, but is more often first diagnosed in children. Therapy must include an insulin replacement, most commonly dosed via subcutaneous shots.
Type II	Adult onset diabetes Non-insulin dependent diabetes	Most commonly caused by the body forming resistance to its own insulin but can also be caused by a reduction in insulin production in the pancreas. Oral medications can treat both the resistance and insulin production. As the disease advances, insulin replacement often becomes necessary.

