

SICK Diabetes Mellitus (DKA)

Today during your pet's exam, blood work revealed a significantly elevated blood glucose, consistent with diabetes mellitus, in addition to acid-base and electrolyte derangements concerning for a diabetic complication called diabetic ketoacidosis.

In dogs, diabetes mellitus is similar to Type I diabetes in people and occurs when the pancreas (an endocrine organ within the abdomen) is unable to produce sufficient insulin to direct glucose out of the blood stream and into the cells. The cells are unable to use glucose as an energy source and the excess blood glucose begins to spill into the urine.

In cats, diabetes mellitus appears to be more similar to Type II diabetes in people, which is characterized by insulin resistance. Clinical signs of diabetes may vary, but can include weight loss, increased hunger and appetite, increased thirst, and increased urination. Diabetic complications cause more severe clinical signs, including lethargy, inappetence, vomiting, and weakness.

In cases of unregulated or poorly regulated diabetes, patients can develop a life-threatening metabolic crisis called diabetic ketoacidosis (DKA). DKA can also occur in previously well-regulated diabetics that develop another acute illness, as the stress hormones associated with illness render patients insulin resistant.

Diabetic ketoacidosis occurs when the body- unable to use glucose as an energy source- starts to break down fat into ketones and use those ketones as an alternative energy source. Without adequate insulin, ketones cannot be safely or completely metabolized, and instead build up in the blood stream. Because they are acids, they acidify the blood stream and cause significant, multisystemic illness. Diabetic ketoacidosis generally has a favorable prognosis with intensive supportive care but is life-threatening if left untreated.

Given our concern for diabetic ketoacidosis, we advise emergent transfer to an emergency or emergency and specialty center able to perform additional diagnostics and provide intensive care.

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