other insulin.

NPH, Neutral protamine Hagedorn.

Dosage.

Conventional management is a twice-daily insulin regimen of a combination of **rapid-acting** and **intermediate-acting** insulin drawn up into the same syringe and injected before breakfast and before the evening meal. The amount of morning regular insulin is determined by patterns in the late morning and lunchtime blood glucose values. The morning intermediate-acting dosage is determined by patterns in the late afternoon and supper blood glucose values. Fasting blood glucose patterns at breakfast help determine the evening dose of intermediate insulin, and the blood glucose patterns at bedtime help determine the evening dose of rapid-acting (regular) insulin. For some children, better morning glucose control is achieved by a later (bedtime) injection of intermediate-acting insulin.

Regular insulin is best administered at least 30 minutes before meals. This allows sufficient time for absorption and results in a significantly greater reduction in the postprandial rise in blood glucose than if the meal were eaten immediately after the insulin injection. Intensive therapy consists of multiple injections throughout the day with a once- or twice-daily dose of long-acting (Ultralente) insulin to simulate the basal insulin secretion and injections of rapid-acting insulin before each meal. A multiple daily injection program reduces microvascular complications of diabetes in young, healthy patients who have type 1 DM.

The precise dose of insulin needed cannot be predicted. Therefore, the total dosage and percentage of regular- to intermediate-acting insulin should be determined empirically for each child. Usually 60% to 75% of the total daily dose is given before breakfast, and the remainder is given before the evening meal. Furthermore, insulin requirements do not remain constant but change continuously during growth and development; the need varies according to the child's activity level and pubertal status. For example, less insulin is required during spring and summer months when children are more active. Illness also alters insulin requirements. Some children require more frequent insulin administration. This includes children with difficult-to-control