

## The *Diabetics* Software

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Already for 7 years The Diabetology Clinic at the Clinical Hospital of the Medical Academy in Warsaw is specializing in continuous subcutaneous insulin infusion treatment of patients with type 1 diabetes. Its great professional experience has led to the development of a new system allowing dosing meal-time insulin. Insulin doses are calculated for carbohydrate products and fat protein foods. A special education program was adjusted to the requirements of pump therapy by introducing an expanded insulin exchange system. Insulin pumps of the new generation enable to skillfully profit from every meal bolus and, in effect, stabilize the daily glycemic profile. Preliminary study results show that patients benefiting from compound boluses (at least once per day) have lower HbA1c values, which in the majority of cases, are below 7.5%. However, this extended system of exchange calculations causes several difficulties. The *Diabetics* software was developed to facilitate application of compound boluses and calculation of meal-time insulin doses. It comprises of a list of food products together with their specifications regarding the amount of calories, carbohydrates, proteins and fat. The list has been extended and contains additional information on gluten-free products. The software allows for fast calculation of carbohydrate and fat protein exchanges in any meal prepared. This, in result, enables for adapting the insulin dose to each meal. After implementing an individual insulin-exchange index, depending on the meal, the software suggests the type of bolus, dose of insulin, and indicates the time at which it should be administrated in the prolonged bolus. However, it is recommended that the insulin-exchange index be determined in agreement with the treating doctor.

The main advantage of the presented software is that it facilitates calculations of carbohydrate and fat protein exchange in meals. It is extremely important to pay special attention to the total caloric content of a meal. The *Diabetics* software allows adjusting the insulin dose in compound boluses. At the same time, it encourages frequent application of compound boluses on a day-to-day basis. This enables preparation of home records containing a list of prepared meals and recipes with the calculated number of carbohydrate and fat protein exchanges.

The presented software meets all requirements, both from the technical and fundamental side, and is regarded as a useful tool in intensive insulin therapy. It is more and more frequently

applied by young and active patients of our out-patient clinic as well as by patients who wish to reach a close to normal glyceic results.