

*OWNER'S HANDBOOK AND USER GUIDE*

*For Use With Urine Glucose Measurements*

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*INSULIN  
DOSAGE  
COMPUTER 41*

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BETTER CONTROL MEDICAL COMPUTERS INC.



BCMC BETTER CONTROL  
MEDICAL COMPUTERS INC.

**BCMC INSULIN DOSAGE COMPUTER 41**

**OWNER'S HANDBOOK**

**and**

**USER GUIDE**

**For Use with Urine Glucose Measurements**

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Medical Computers Inc., 1986



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**The IDC-41 BG/UG Insulin Dosage Computer**

## ABBREVIATED USER INSTRUCTIONS

1. Measure your first-voided UG.
2. Push ON. Wait for DAY = ?
3. Push DAY key (MON, TUE, ....). Wait for MEAL = ?
4. Push B, L, D, S (Breakfast, Lunch, Dinner, or Snack). Wait for UG = ?
5. Key in UG and push R/S. Wait for Day UG Meal = ?
6. Verify data entered. If correct, push R/S. If not, push NO.
7. Your insulin dosage will be displayed.
8. If you missed the insulin dosage, you may recall it by pushing ON, wait for DAY = ? and then pushing the key INS.
9. If you wish to enter more or less carbohydrates, push CHO key while dosage is displayed and answer the questions. You may also recall the last dose by pushing INS and then pushing CHO.
10. If you wish to enter exercise (3 levels, 1, 2 or 3), then push EX key while dosage is displayed. Answer questions as they are displayed. You may also recall the last dose by pushing INS and then pushing EX. Fractional exercise levels, e.g. 2.5 are permitted.
11. Push key labelled RXN if you want the computer to calculate your mean UG for Breakfast.

Display will show: MEAL mean±SD N. For example:

B	1.55	+ - 0.75	5
↓	↓	↓	↓
Breakfast	Mean	Standard Deviation	Number of entries

Push R/S to continue to the Lunch means.  
Push R/S to continue to the Dinner means.  
Push R/S to continue to the Snack means.  
Push R/S and the computer will shut itself off.

12. Hypoglycemia: if a reaction was experienced, the next meal entry must be a UG = RXN regardless of the UG when the INSULIN DOSAGE COMPUTER asks for DAY UG MEAL = ?

## **INTRODUCING YOUR INSULIN DOSAGE COMPUTER**

### **THE PHILOSOPHY OF YOUR BCMC INSULIN DOSAGE COMPUTER**

The BCMC Insulin Dosage Computer represents a totally new concept in the control of diabetes. This personalized computer incorporates the contributions of many world renowned diabetologists. Together with their knowledge and experience as well as the direction of your Doctor, the INSULIN DOSAGE COMPUTER is now able to assist you in achieving better control of your diabetes.

#### **Overview**

The INSULIN DOSAGE COMPUTER is designed to assist in providing better control of urine glucose levels for diabetics who respond to twice daily injections of REGULAR and INTERMEDIATE acting insulins. It is intended that the user of the INSULIN DOSAGE COMPUTER should measure his first-voided urine glucose before each main meal and the bedtime snack, using a particular method of measurement for which he has been trained. Each measurement is keyed into the INSULIN DOSAGE COMPUTER using the procedures described below. The INSULIN DOSAGE COMPUTER is programmed beforehand with your current doses of once or twice daily REGULAR and NPH or LENTE insulin injections as prescribed by your physician. Based on the urine glucose readings entered, the INSULIN DOSAGE COMPUTER ascertains any upward or downward trend in the readings and at the Breakfast and Dinner entries, displays either the initial insulin values if no trend is detected or values which have been altered to correct an upward or downward trend. The INSULIN DOSAGE COMPUTER will continue to alter the dosages until the desired target urine glucose level is reached and maintained.



## **When to Inject**

It is intended that the insulins be administered no more than 30 minutes before the meal and no later than just prior to the meal. Frequently, best results are achieved with this system when the insulin is administered 15 to 30 minutes before the meal. Your Doctor will advise you about when to inject.

## **Choosing Insulins**

The algorithms in the IDC are designed to adjust Regular and Intermediate-acting insulins, not SEMILENTE and ULTRALENTE insulins. Lente is a mixture of SEMI- and ULTRALENTE insulins. ULTRALENTE contains excess zinc. When Regular insulin is added to LENTE, the Regular binds to the excess zinc to form more ULTRALENTE. Thus patients who mix Regular and LENTE are in fact using an undefined mixture of SEMILENTE and ULTRALENTE. Thus, to preserve the identity of each insulin, patients who must use LENTE should be instructed not to mix the insulins and preferably to draw-up the Regular first and inject it alone and then to draw up the LENTE and inject it into an independent, adjacent site. Otherwise, an early effect of Regular is realized only when relatively large amounts of Regular are mixed with LENTE.

Most NPH and Regular insulins can be mixed in any proportions without the loss of the identity of either insulin.

## **Choosing Injection Sites**

Appropriate sites for subcutaneous injection must be chosen, the location depending on your preferences while trying to allow for the variability and rapidity of absorption, the effects of exercise, work and other habits. In most cases consistent use of a single area (either the arms,

or the legs, or the abdomen) before a given meal will produce the best results. Injection site rotation may not produce consistent results. Your Doctor will advise you in choosing injection sites.

### **Lifestyle**

The INSULIN DOSAGE COMPUTER seeks to adapt insulin dosages to your lifestyle patterns with respect to diet and exercise. Consistency in these aspects of diabetes control will result in the most rapid improvements in metabolic control. Therefore, regular meals at regular times in accordance with established nutritional guidelines for diabetics as recommended by your Doctor are essential. Physical exercise of an episodic or unanticipated nature should be compensated by extra calories in the form of snacks or by insulin reduction at mealtime using the IDC Exercise Option under the guidance of your physician.

### **Urine Glucose Measurements (UG)**

The least invasive method for diabetes control has been and still is, measuring glucose concentrations in the urine. In the last few years, great advances have been made in developing urine glucose test strips which are not affected by other drugs such as aspirins, antibiotics, or vitamins. The new test strips allow a quantitative interpretation of urine glucose levels from as low as a negative (0 g/dl) reading to as high as a 5 g/dl reading. This relatively easy and reliable method for measuring glucose in the urine, as well as the low cost makes it a viable means for diabetes control. Added to this is the common known fact that the renal threshold for most people remains in the same range over long periods of time.

The combination of accurate urine glucose readings and an unvarying renal threshold can now be elegantly exploited with the BCMC Insulin Dosage Computer to achieve improved diabetes control.

All urine measurements used by the computer to adjust insulin are based on first-voided specimens. To do this, you would simply hold the reagent pad on the plastic strip under the urine stream for about one second, remove excess urine as instructed by the manufacturer, wait exactly two minutes and then compare the resultant colour to the 16 scales on the vial.

You must measure the urine only before each meal and try to avoid passing urine at other times. If more voidings are required, then you must measure each time, add the values and then divide by the number of voidings, thus calculating an average urine glucose level over time.

## **THE MAJOR CHARACTERISTICS OF YOUR BCMC INSULIN DOSAGE COMPUTER**

### **Major Functions**

The INSULIN DOSAGE COMPUTER is designed to perform the following functions:

- i. Receive and store initial information identifying you and your estimated insulin requirements before starting with the system. Usually your Physician or a Health Professional does this initial programming according to the Physician Manual provided with your INSULIN DOSAGE COMPUTER.
- ii. Receive and process subsequent information entered by you on first-voided urine glucose readings taken each DAY of the week and before the following main meals (BREAKFAST, LUNCH, DINNER, BEDTIME SNACK). The INSULIN DOSAGE COMPUTER will display appropriate questions to prompt you for the information required.

- iii. After storing sufficient readings to establish initial urine glucose (UG) trends, the INSULIN DOSAGE COMPUTER calculates appropriate changes in your REGULAR and NPH or LENTE injection dosages to achieve or maintain a target UG level and to counteract any upward or downward trend. These values are displayed at BREAKFAST and DINNER and are constantly updated.
  
- iv. Your current insulin dosages as recommended by your Physician are based on your body weight and height (the body mass index) and an estimate of your sensitivity and your known responses to regular and intermediate acting insulins. The INSULIN DOSAGE COMPUTER may change these in small amounts as you use it. Changes of between 0 and 3 Units in these doses are computed for increased or decreased urine glucose levels.
  
- v. Various limits are applied to restrict the maximum dose and the magnitude of any change.
  
- vi. The mean and standard deviation is computed and can be displayed to show how closely you have achieved a target set by your doctor.

## **YOUR PRESCRIPTION FOR YOUR BCMC INSULIN DOSAGE COMPUTER**

*The INSULIN DOSAGE COMPUTER is specifically pre-programmed for you according to a prescription provided by your physician.*

In this regard, your physician prescribes the type and dosages of insulins to be taken once or twice a day before breakfast and if necessary, before dinner, as well as a maximum amount of insulin the Dosage Compu-

ter can recommend. He provides additional important safety data, and will advise you how long before eating you should inject. He specifies the type of urine test strips that are to be used, and also the units (exchanges, choices, grams) which you use in estimating your diet if you use the Carbohydrate Option, as detailed below.

Your doctor will also determine your reference urine target. He may use targets (RG) between .1 g/dl and 5 g/dl depending on your apparent renal threshold. All urine measurements are first-voided specimens and the UG target should never be set to less than 0.1 g/dl.

It is of the utmost importance that the computer should not be used by any one but yourself, since keying in unnecessary values will interfere with the proper computation of your recommended dosages.

## **USING YOUR BCMC INSULIN DOSAGE COMPUTER**

### **GETTING STARTED**

Your BCMC Insulin Dosage Computer is fully equipped; the batteries will be installed by BCMC and your starting values, provided by your physician, are programmed into your personalized computer. Tampering with the computer or removing the batteries may erase your programming and you must then refer to the section on Service.

The INSULIN DOSAGE COMPUTER device used to record UG readings and calculate recommended insulin values is a sophisticated handheld calculator specially programmed for the purpose and provided with a plastic overlay for the keyboard which identifies keys labelled (B, L, D, S) assigned by the program to identify the main meals (BREAKFAST, LUNCH, DINNER, SNACK), and the days of the week (MON, TUES, WED, THURS, FRI, SAT, SUN), and special functions (INS, NO, EX, minus, LATE, SOON and CHO).

The nature of the INSULIN DOSAGE COMPUTER is such that it must proceed through a large number of program steps before storing data and calculating changes in insulin dosages and in some cases this can take several seconds to accomplish. You must be patient and wait for the INSULIN DOSAGE COMPUTER to prompt for the next information required. On completion of a data storage/dosage computing cycle, the INSULIN DOSAGE COMPUTER will turn itself off.

### **OPERATING THE KEYS**

Assume that you have received the INSULIN DOSAGE COMPUTER on a Wednesday morning and you begin to use it immediately. Assume you have measured your first-voided urine according to the strip manufacturer's instructions. You must then convert the fractions to decimal points, i.e.  $\text{neg} = 0$ ,  $1/10 = .1$ ,  $1/4 = .25$ ,  $1/2 = .5$  etc. Now you are ready to begin.

Just before lunch, you would make a urine glucose measurement by following the procedure you learned as part of your training in the use of the INSULIN DOSAGE COMPUTER.

You would then turn the INSULIN DOSAGE COMPUTER on and wait until it has greeted you by name or initials and has asked DAY=? Referring to the markings on the white surface of the keyboard, you would push the key for WED.

Whenever keys are pushed to enter information into the INSULIN DOSAGE COMPUTER, a great deal of computation and manipulation of stored information takes place and this may take considerable time. Sometimes when a key is pushed as in this case, it may appear that something is wrong because there is no immediate change in the display. However, it is very important that you wait because once you have pushed

a key in response to a question such as DAY=?, the INSULIN DOSAGE COMPUTER is working and will change the display when it is ready. A small bird and the letters USER and PRGM will soon appear and the bird will move across the display as further computations take place.

Whenever the INSULIN DOSAGE COMPUTER is about to ask for more information or give you information, a tone will sound.

In our example, after pushing WED and waiting, you would see the bird and the letters mentioned above and after the bird moved across the display, the tone would sound and you would see WED MEAL = ? Since the measurement you made is your pre-lunch first-voided urine glucose, referring again to the black markings on the white plastic, you would push the key marked L. Again, it is necessary to wait for the bird to appear and move across the display and for the tone to sound. The next question you will see is WED UGL = ? Using the numbers on the keys in the lower right side of the keyboard, you would enter the UG measurement you obtained, for example, .5 g/dl. The display will show the numbers you have entered followed by a dash (.5 -). This dash is to remind you that a further step is necessary to enter the UG.

After you have entered the UG value, you must push the key marked R/S in the lower right corner.

The INSULIN DOSAGE COMPUTER will then ask you to check and verify that you have entered the correct value by displaying WED UGL = 0.50? If you have made some mistake and this is not correct, you would push the key for NO and the INSULIN DOSAGE COMPUTER will start again at the beginning. If the display shows the correct day, meal and UG reading, you would push R/S and the INSULIN DOSAGE COMPUTER will store the information and compare it to previously stored values.

UG readings entered at lunch and bedtime snack are stored and computations are made with them, but no information is given to you at these times unless your Physician has programmed your INSULIN DOSAGE COMPUTER for 3 injections/day. When the INSULIN DOSAGE COMPUTER has finished with the lunch or snack information you have entered, it simply turns itself off. In all cases it is important that you allow the INSULIN DOSAGE COMPUTER to complete its calculations and turn itself off.

### **Operating Keys at Dinner**

In our example, you would take another UG measurement just before dinner and enter this as before by turning on the INSULIN DOSAGE COMPUTER, waiting for DAY =? to appear, pushing WED, then waiting for WED MEAL = ? and pushing the key labelled D and waiting for WED UGD = ? and pushing number keys corresponding to the UG measurement followed by the R/S key. The display will show WED UGD = 1.00? (the day, the meal and the UG reading you have entered followed by a question mark) asking for you to check that it is correct and push either NO if it is not, or R/S if it is. If the information is correct and you have pushed R/S, the INSULIN DOSAGE COMPUTER will compare it with values previously stored which again, takes some time. It will then beep and display "INJECT AND WAIT", the recommended amounts of REGULAR and NPH or LENTE insulins, and turn itself off.

### **Operating Keys at Snack Time**

Referring again to our example, just before bedtime snack you would make another UG measurement and enter it as before by pushing WED, S and entering the UG value in turn, waiting for the question each time. The INSULIN DOSAGE COMPUTER will simply store this information and turn itself off.



## **Operating Keys at Breakfast**

On Thursday morning, before breakfast you would make a UG measurement and enter it as before, substituting THURS and B. The INSULIN DOSAGE COMPUTER will compare this to previous values you have entered and calculate what change, if any, should be made in the insulin dosages. It will then display the latest recommended amounts of REGULAR and NPH or LENTE insulins for you to inject.

This process is repeated every day before each of the four meals. Twice each day, at breakfast and dinner, the computer will display when you should inject and the recommended dosages of insulin.

## **MISSED URINE GLUCOSE**

If you have missed entering a previous UG reading, the INSULIN DOSAGE COMPUTER must take this into account and will ask ? MISSED UG? If you had not missed the reading, you would push NO. This causes the INSULIN DOSAGE COMPUTER to start over again by asking for the day, meal and UG. If you have missed the previous UG reading, you would simply push R/S and the INSULIN DOSAGE COMPUTER will take this into account and proceed.

Do not enter a missed previous UG after the present UG entry has been made. When this occurs, ignore the missed entry.

If for some reason you are unable to measure your urine glucose at breakfast or at dinner, but you would like the computer to recommend an insulin dose, you may enter R/S when it asks DAY UGB = ? The computer will make a decision on past data to recommend a dose to you.

## **RECALLING YOUR LAST INSULIN DOSAGE**

If at any time you miss seeing the recommended insulin dosages or forget what they are, turn the computer on and wait for it to stop

on DAY = ?, then push the key for INS. The display will show when to inject and then the dosages of REGULAR and NPH or LENTE last recommended.

## **ERRORS**

If you have made a mistake while entering any of your data you can simply start over at the beginning by pressing the NO key.

If you have made a mistake keying in your urine glucose (UG) values, you can delete one character at a time in the display using the ← key. Each press of the ← key deletes one right-most character in the display.

## **THE MEAN: A MEASURE OF YOUR DIABETES CONTROL**

Your doctor has set a urine target for you to achieve. This target may be 0.5, 1.0, 1.5 or any other level in g/dl of glucose in the urine. He will never set your target at negative (0 g/dl) because it is quite normal to spill just a trace of glucose in the urine. Furthermore this helps to avoid hypoglycemia.

About once a week, you should check your mean urine glucose value by pushing the key RXN after it has been turned ON and displays your name and DAY = ?. The computer will then compute an average over the last seven entries. The display might look like this:

B: 1.4 + - 0.8 7

In this instance, B represents all the breakfast entries and 1.4 represents your average UG value in the last seven days. The number  $\pm 0.8$  represents the amount of variability. The number 7 represents the total number of breakfast entries you have keyed into the computer during the last seven days. Push R/S and the computer will determine your lunch means. Push R/S and it will continue to the dinner and then the snack means. Push R/S and the computer will shut itself off.

The purpose of computing the means is to establish whether you have achieved the target your doctor has set for you. Suppose he has targeted you at 1.5 g/dl and your means are now 1.4 g/dl, you will then have achieved the level of control desired. At this point your doctor may re-examine whether tighter control might be achieved by you if the UG reference target is lowered slightly. Your doctor will take into account your renal threshold for glucose losses in the urine and the possible risks or incidence of symptomatic hypoglycemia in making these changes. The mean is always calculated in g/dl even if you measure your UG/BG in mmol.

### **CARBOHYDRATE (+CHO) AND EXERCISE (EX) OPTION**

You may on your physician's recommendation use the Carbohydrate (+CHO) and Exercise (EX) Option. This permits you to accommodate anticipated altered carbohydrate intake at breakfast and dinner, as well as to accommodate anticipated exercise to be undertaken either sooner or later in relation to breakfast or dinner.

Assume that your physician has trained you to adjust your diet using the method of exchanges. Just before breakfast, you would make a urine glucose measurement and decide whether you will eat more (+) or less (-) carbohydrate, or exercise, or both. Then you would proceed as usual and turn the INSULIN DOSAGE COMPUTER on and wait until it has greeted you by name or initials and has asked Day=? Referring to the markings on the white surface of the keyboard, you would push the key for the day. Remember to wait until it prompts for the next question. Next it will prompt for the meal. Push the appropriate meal key and wait until it asks for your UG = ? Enter your UG value by keying in the numbers and pushing R/S. It will ask for verification; check the data and if correct, push R/S.

The INSULIN DOSAGE COMPUTER will as usual display the recommended dose but while this dose is displayed, you must push the CHO key.

The INSULIN DOSAGE COMPUTER will now ask if you will eat more (+) or less (-) carbohydrates (+/-CHO). Now you must enter the altered amount of carbohydrate intake in grams. Suppose you will eat an additional 20 grams of CHO. Push 20 and follow with R/S. If you were planning to eat 15 grams less, push 15 then minus and R/S. Minus changes the sign from + to - . It will ask for verification, you must then check your data and push R/S. The computer will now recommend an altered dose adjusted to an increased or decreased carbohydrate intake.

If you have decided to do exercise, you must proceed as usual but push the EX key while the dose is displayed or you can simply recall the dose and push the EX key while the dose is displayed again.

The computer will then ask the exercise level. Key in 1, 2 or 3 (1 - mild; 2 - moderate; 3 - strenuous). It will then ask for verification. If correct push R/S. Now it will ask SOON / LATE. Push SOON if the exercise is soon following the meal by 1 to 4 h. Push LATE if the exercise is late following the meal by more than 4 h and follow with R/S. The INSULIN DOSAGE COMPUTER will compute the necessary adjustments to the insulin dosages for that meal. It will then beep and display when you should inject, the revised dosages of Regular and NPH or LENTE insulins, and then turn itself off.

You may plan exercises both SOON and LATE. This can be entered sequentially while the dose is displayed. Using the CHO and EX options will not alter the internal doses but will increase or decrease the current doses for this time only.

## **WHEN TO NOTIFY YOUR PHYSICIAN**

### **Hypoglycemia (Reactions)**

If you have unexpected hypoglycemia or a severe insulin reaction which you know is not caused by some error you have made in your insulin

dose, or your failure to eat properly, or some exercise you have not allowed for, and you have taken extra sugar or food to compensate, this may indicate that the doses of insulin recommended by the INSULIN DOSAGE COMPUTER are too large or that your sensitivity to insulin has suddenly changed. At the next meal, you should enter the key for RXN instead of the UG value you would otherwise enter. This will ensure that the reaction is included in the calculations that the INSULIN DOSAGE COMPUTER performs to determine the recommended insulin values for the next day. If nothing changes on the next day or if the condition continues, you should call your physician for advice on what to do. Your doctor may have to raise your UG target if hypoglycemia persists.

It is important that you only use the RXN key if you have a definite reaction which required treatment and you are sure that it was not caused by exercise or failure to eat.

Sometimes the insulin dose may not appear to change after the RXN key is used. This is the case when a very small amount of insulin (<5 U) is taken. The reduction of the dose by 10% is, however, calculated internally and may not show in the actual dose recommended.

### **Hypoglycemia at Night**

During the initial adjustment phase, the INSULIN DOSAGE COMPUTER may increase your dinner time insulin dosages. This may cause hypoglycemia at night. Once a week you should set an alarm to awaken you at 3:00 a.m. Measure your BG. If it is less than 65 mg/dl (3.6 mmol/l), you should enter a UG = RXN at breakfast time particularly if your UG value is high before breakfast. The insulin dose will be reduced the next evening. If this occurs repeatedly, you must notify your physician.

### **Hyperglycemia**

If your BG is over 400 mg/dl (22 mmol/l) or 240 mg/dl (13 mmol/l) with ketones in your urine, you should notify your physician promptly.

## **Illness**

Do not use the INSULIN DOSAGE COMPUTER during hospitalization or postoperatively unless specifically advised to do so by your doctor.

If you are experiencing an infection or intercurrent illness that destabilizes your blood/urine glucose control radically, it is best to call your doctor immediately and follow his advice until your condition stabilizes. He or his nurse-practitioner may wish to reset the computer for you.

## **MAINTENANCE AND SERVICE**

### **CARE OF YOUR BCMC INSULIN DOSAGE COMPUTER**

Your personalized insulin dosage computer is a special Hewlett-Packard calculator. Each calculator is precision crafted with the utmost care. Every calculator is thoroughly inspected for electrical, mechanical and cosmetic flaws and is designed to be durable and dependable. Your INSULIN DOSAGE COMPUTER requires virtually no attention to ensure proper operation. All you need to do is:

1. Replace the batteries when the BAT annunciator in the display appears (refer to Batteries).
2. Do not insert fingers or any objects into any port. To do so could alter the prescription or could even damage the Continuous Memory in the calculator.
3. Do not remove the IDC BG/UG microchip from its port on the top, back side of the computer since this may erase your prescription and accumulated data.

## TEMPERATURE SPECIFICATIONS

Operating: 0° to 45° C      32° to 113° F  
Storage: -20° to 65° C      -4° to 149° F

## BATTERIES

Because your BCMC INSULIN DOSAGE COMPUTER uses so little power, disposable batteries will provide many (up to 24) months of operation. The total number of months depends on how fresh the batteries were when you purchased and installed them.

Disposable batteries should be installed as described under Replacing the Batteries. Use only the following alkaline batteries in your INSULIN DOSAGE COMPUTER.

Eveready E90*	Mallory MN9100	UCAR E90
National AM5(s)	Panasonic AM5(s)	VARTA 7245
Duracell MN 9100	Energizer E90 NEDA 910A	

These batteries, like those originally supplied with your INSULIN DOSAGE COMPUTER, are not rechargeable.

## WARNING

Do not attempt to recharge the batteries. Do not store batteries near a source of high heat or dispose of them in fire. Doing so may cause them to leak or explode.

## REPLACING THE BATTERIES

The prescription in your INSULIN DOSAGE COMPUTER will normally be preserved for about 30 to 60 seconds while the batteries are out of the calculator. However, you must turn the calculator off before

removing the batteries in order to preserve Continuous Memory. This gives you ample time to replace the batteries with new ones. Leaving batteries out of the calculator for extended periods will result in loss of the information in the INSULIN DOSAGE COMPUTER. If this occurs, the INSULIN DOSAGE COMPUTER will have to be reprogrammed by your Doctor, according to instructions in the Physician Manual.

To replace the batteries, use the following procedure (you may want to read through the entire battery replacement procedure prior to replacing the batteries):

1. If the calculator is on, turn the calculator off by pushing the ON key.
2. Turn the calculator over in your hand and push up on the lip on the battery holder. This releases the battery holder and you may remove it from the calculator.
3. Remove the batteries from the battery holder, making sure you do not mix them up with the new batteries.
4. Look at the polarity marks (+ and -) on the end of the battery holder. It shows how the batteries should be inserted into the battery holder. Insert the new batteries, and carefully note the position of each battery. If any of the batteries are inserted wrong, the calculator will not turn on.
5. Insert the battery holder into the calculator such that the exposed ends of the batteries are pointing toward the gold colored contacts.
6. Push the battery holder into the calculator until it goes no further. Then snap the lower edge of the holder into place.



7. Turn the calculator over. Push ON . Wait for DAY=? Push DOSE. It should display the last insulin dosages recommended and turn itself off.

If any of the batteries are inserted incorrectly, the INSULIN DOSAGE COMPUTER may not turn on. If, when you insert the new batteries it fails to turn on, immediately remove the battery holder and check the position of the batteries. The INSULIN DOSAGE COMPUTER cannot be damaged by inserting the batteries wrong; it simply will not function.

### **SERVICE**

Using state-of-the-art technology, the INSULIN DOSAGE COMPUTER memory circuits operate continuously -- even while it is turned off. Because these circuits are always drawing very low power from the batteries, they are susceptible to disruption at all times. Disruption can be caused by electrostatic discharge to the unit; strong magnetic fields; plugging devices into the INSULIN DOSAGE COMPUTER that are not supported by BCMC for use with the INSULIN DOSAGE COMPUTER; or other conditions that can traumatize the computer.

Of course, all causes of disruption should be avoided, but should disruption occur, and the display blanks out, or the calculator will not respond to keystrokes, do the following:

1. Ensure that the batteries are fresh, are properly installed, and that the batteries and the contacts are not dirty.
2. Turn the calculator off then back on. If the calculator does not respond, service is required (refer to Repair Policy and Warranty).

## **REPAIR POLICY AND WARRANTY**

The BCMC INSULIN DOSAGE COMPUTER is warranted by BCMC Better Control Medical Computers Inc. against any defects in materials and workmanship for one year from the date of the original purchase. During the warranty period, we will repair or at our option, replace at no charge a product that proves to be defective.

### **What is Not Covered**

The batteries or damage caused by the batteries are not covered by this warranty. However, certain battery manufacturers may arrange for repair of the calculator if it is damaged by the batteries. This warranty does not apply if the product has been damaged by accident or misuse, or as a result of service or modification by other than an authorized BCMC or Hewlett-Packard repair centre.

No other express warranty is given. The repair or replacement of a product is your exclusive remedy. ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS IS LIMITED TO THE ONE-YEAR DURATION OF THIS WRITTEN WARRANTY. Some states and provinces do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. IN NO EVENT SHALL BCMC BETTER CONTROL MEDICAL COMPUTERS, INC. BE LIABLE FOR CONSEQUENTIAL DAMAGES. Some states and provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state, province to province, country to country.

## **Battery Damage**

Do not return any batteries in or with the INSULIN DOSAGE COMPUTER. The batteries or damage caused by the batteries are not covered by the one-year limited warranty.

If your BCMC INSULIN DOSAGE COMPUTER is damaged by battery leakage, you should first contact the battery manufacturer for warranty information. Some battery manufacturers may arrange for the repair of the computer if it has been damaged by leaking batteries. If the battery manufacturer warrants against battery damage, you should deal directly with that manufacturer for repairs. If the battery manufacturer does not warranty against battery damage, you should send the computer to BCMC for repair. Whether the computer is under warranty or not, there will be a charge for repairs made by BCMC when the computer has been damaged by the batteries. To avoid this charge, contact the battery manufacturer first when your computer has been damaged by the batteries.

## **How to Obtain Repair Service**

You may have your computer repaired at BCMC Better Control Medical Computers Inc. any time it needs service, whether the unit is under warranty or not. There is a charge for repair after the one year warranty period.

## **SHIPPING INSTRUCTIONS**

Do not return any batteries in or with your computer. Please refer to Battery Damage.

Should your BCMC INSULIN DOSAGE COMPUTER require service, the computer should be returned with the following items:

1. Description of the problem.
2. A sales slip or other proof of purchase (if the warranty has not expired).
3. Whether the unit is under warranty or not, it is your responsibility to pay shipping charges.
4. After warranty repairs are completed, the repair centre returns the unit with postage prepaid.
5. On out of warranty repairs, the unit will not be repaired until payment method has been established.
6. INSULIN DOSAGE COMPUTERS are normally serviced and reshipped within five working days of receipt. Refer all inquiries to the address below.

**BCMC - Better Control Medical Computers, Inc.**

52 Wendover Road  
Toronto, Ontario  
M8X 2L3 Canada  
(416) 231-2195





*BETTER CONTROL MEDICAL COMPUTERS INC.*

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