

# BIO | ANALOGICS®

## HEALTH MANAGEMENT SYSTEM

### NUTRITION MODULE

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***NOTE: IT IS RECOMMENDED THAT YOU STUDY THIS SECTION THOROUGHLY PRIOR TO USING THE NUTRITION MODULE.***

# HEALTH MANAGEMENT SYSTEM

## NUTRITION MODULE INSTALLATION

### 1.0 Program Installation

Before you begin to operate the HMS Nutrition module, you must first install the System Module (both disks) onto the hard drive of your computer. For instructions on installing these disks, refer to the System Module section of your manual.

### 2.0 Installing the Nutrition Module

Once the HMS System Module is installed, the system will reboot and automatically prompt you to insert the first module disk you wish to install. To install the modules, simply insert the first disk of the first module you wish to install and select the Next button. You will then be prompted to select the disk drive containing the module disk (A: or B:). Enter the appropriate source (the 3 ½" disk drive is usually A:) and select the Next button. The module will then begin the installation process. When the installation program is ready to start copying files to your hard drive, you will be prompted to press the Next button to finish the installation. When the module has been installed you will see the message "Installation Successful" and you will see the message "Do you have more modules to install?". To continue installing modules, answer Yes to this prompt. You may load as many modules as you have at this time.

If you wish to install a new or updated module after the initial system installation, select the Module menu from the task bar at the top of the screen and choose Install New Module. You will then be prompted to select the disk drive containing the module disk (A: or B:). Enter the appropriate source and select the Next button. The module will then begin the installation process. When the installation program is ready to start copying files to your hard drive, you will be prompted to press the Next button to finish the installation. You should now review the appropriate documentation for each module installed.

Once you have installed the Nutrition Module, you are ready to explore the options for creating customized nutrition/diet plans.

### 3.0 Setup Nutrition Recommendation

The HMS Nutrition module allows you to control two functions governing how the program will determine the individual's diet and nutrition plans. To enter the setup for the Nutrition module, select the System menu from the main task bar and then select the Setup Nutrition Recommendation option.

### 3.1 Daily Food Distribution

Your first option will be to input the Daily Food Distribution default you wish to use. Note that this is a “global” default used for all daily meal plans. By default, the HMS system sets the distribution to 20% protein, 60% carbohydrates and 20% fat (as recommended by the American Heart Association).

You may modify this default setting, as long as your recommendations are possible and the program can create a realistic meal plan (e.g. a 1% protein, 98% carbohydrate and 1% fat diet is not a possible distribution).

To change the HMS system defaults, highlight the field you wish to modify with your mouse and input the desired value. When you are finished, the total of these values must equal a 100% distribution.

### 3.2 Adding a Custom Food Item

The Nutrition module allows you to implement specific nutrition supplements, both macro-nutrients and micro-nutrients, in your meal plans.

**NOTE: THE NUTRITION MODULE ALLOWS FOR A GREAT DEGREE OF FLEXIBILITY WHEN CREATING NUTRITION SUPPLEMENTS, HOWEVER BIOANALOGICS DOES NOT PROVIDE CUSTOMER SERVICE IN THE PROPER USAGE AND APPLICATION OF NUTRITION SUPPLEMENTATION IN MEAL PLANS. THIS FEATURE IS A TOOL FOR YOU TO USE, BASED ON THE PRODUCTS YOU WISH TO IMPLEMENT AND YOUR PHILOSOPHY ON HOW THEY SHOULD BE USED.**

#### 3.2.1 Food Wizard

The Food Wizard option is available to help guide you through the process of adding custom nutrition supplements. You will be prompted to enter product name, unit of measurement and the appropriate measurement (in grams) for macro-nutrient distribution. As with all aspects of the HMS program the >> button will advance you to the next entry once the required information has been input. The << button will take you to the previous selection. The following steps are required using the Food Wizard.

a) Product Name

Input the product name as you wish it to appear on the exchange list and the client report. You may modify this name at any time by returning to the Setup Nutrition Recommendation screen.

b) Unit of Measurement

This entry describes the type of supplement you are creating (e.g. shake, bar, tablet or capsule). **DO NOT INPUT THE REQUIRED SERVINGS, EXCHANGES OR QUANTITY IN THE FIELD. ONLY THE UNIT OF MEASUREMENT.**

c) Macro-Nutrient Distribution

The next input requires you to input the appropriate grams of protein, carbohydrates and fat associated with the supplement you are adding to the exchange list.

If the supplement you are adding has caloric value, you must enter the exact macro-nutrient distribution for the module to function correctly.

If you are adding a micro-nutrient (e.g. vitamin) the distribution should be left at 0 values for each category. the program will make no caloric adjustment.

To add the supplement to the exchange list, select the Finished button and the supplement will be added and you will return to the Set-up Nutrition Recommendations option.

Adding a supplement to all meal plans

If you wish to add the product to all individual meal plans, the next input selection will require you to input the number of servings, exchanges or the quantity you wish to use.

**NOTE: THIS IS A "GLOBAL" DEFAULT AND WILL BE USED FOR EVERY INDIVIDUALS MEAL PLAN.**

d) Meal Placement

This selection requires you to select the meal, or meals you wish to add the supplement to. Simply use the mouse to highlight the selection box and a "x" will indicate your selection or selections.

**NOTE: THIS IS A "GLOBAL" DEFAULT AND WILL BE USED FOR EVERY INDIVIDUALS MEAL PLAN.**

### 3.2.2 Advanced Features

**WARNING: THE ADVANCED FEATURES OF THE NUTRITION RECOMMENDATIONS SET-UP REQUIRE SPECIFIC KNOWLEDGE PERTAINING TO THE PRINCIPALS OF NUTRITION AND MEAL PLANNING.**

**DO NOT USED THE ADVANCED FEATURES UNLESS YOU POSSES THIS KNOWLEDGE.**

*BioAnalogics does not provide technical support for the advanced features.*

#### 3.2.2.1 Overview

- e) Input the product name into the space provided.
- f) Input the appropriate caloric value for the product.
- g) Input the unit of measurement for the product. **DO NOT INPUT THE SERVING SIZE INTO THE MEASUREMENT FIELD.**
- h) You will be required to input data in at least 1 of fields provided in the marco-nutrient distribution. Depending upon the available data you can input calories, grams or a percentage. Based on your input, the program will calculate the other values.
- i) After you have input the required data, select the Advanced button. You will now be required to define how many servings of the supplement you wish to assign and at what meals you want them assigned to.

**NOTE: THIS IS A “GLOBAL DEFAULT” WHICH WILL BE RECOMMENDED FOR ALL CLIENTS.**

- j) After you have completed the advanced set-up, you MUST choose the option to add the item to the default list. If you do not choose the add button, the item will not be added.

## 4.0 Nutritional Module Overview

The HMS Nutrition module has been designed to provide you with the ability to create individualized dietary programs based on a standard food exchange plan.

## 5.0 Individualized Program

Each client's nutrition program is based on sophisticated mathematical calculations of individual requirements. However, the program allows you to modify any of the system recommendations. The caloric energy equation is the basis of the individualization. The following data provides an overview of the HMS programs dietary recommendations.

### 5.1 Basal Metabolic Rate

Each client's BMR is calculated based on the Cunningham Equation. This formula estimates individual's BMR based on their Lean Body Mass (LBM). This is the most accurate prediction available.

### 5.2 Specific Dynamic Action (SDA)

The digestive process (SDA) associated with the consumption of food is calculated by the inclusion of SDA.

### 5.3 Resting Energy Expenditure (REE)

The combination of individual's BMR and SDA is known as the Resting Energy Expenditure and is the basis of all dietary recommendations.

### 5.4 Activities of Daily Living (ADL)

Based on an individual's lean body mass and daily activity, energy expenditure is calculated based on the input of ADL.

### 5.5 Caloric Expenditure of Exercise

The client's "average" daily caloric expenditure is estimated based on the amount of exercise performed each day. This estimation is based on aerobic, resistance and rehabilitation exercises.

**NOTE: NO CALORIC EXPENDITURE FOR EXERCISE WILL BE CALCULATED IN THE DIETARY RECOMMENDATIONS IF THE EXERCISE RECOMMENDATIONS OF THE HMS PROGRAM ARE NOT UTILIZED.**

## 6.0 Client Selection

To produce a daily diet plan for a client, you must first either input a new client or recall an existing client from the Main Module. Note that you are **not** required to perform a **body composition test or exercise program before recommending a diet plan. However, to obtain the most accurate and individualized program these procedures are recommended.**

## 7.0 Nutrition/Diet Plan

Once you have selected a client and you wish to produce a diet plan, simply use the mouse pointer to select the Nutrition option from the task bar. Once selected, the dietary input screen will appear.

From this input screen you will be able to select the appropriate diet plan, caloric recommendation, caloric distribution and exchange meal plan.

### 7.1 Caloric Adjustments

Caloric adjustments for either a weight loss, weight maintenance or weight gain program are controlled by the client's "**goal weight**" input in the Body Composition Module.

If you input a weight that is lower than the client's current weight, a weight loss program is the only possible recommendation, although you can adjust the recommend caloric level.

If the client's goal weight is the same as their current weight, then a maintenance program is the only possible selection and the caloric recommendation cannot be changed.

If the client's goal weight is higher than their current weight, then a weight gain program is the only possible selection and the caloric recommendation can be changed.

**NOTE: YOU MAY RETURN TO THE BODY COMPOSITION MODULE AND CHANGE ANY APPROPRIATE DATA TO OBTAIN THE DESIRED RECOMMENDATIONS FOR THE CLIENT.**

### 7.2 Activities of Daily Living

Each client Activity of Daily Living factor must be selected. The appropriate selections are Light-Moderate-Heavy. Note that this value will be used to calculate and individualize the client's daily diet plan.

### 7.3 Nutrition Program Options

**NOTE: THE FOLLOWING PROGRAM OPTIONS ARE DEFINED BY THE CLIENT'S CURRENT WEIGHT AS IT COMPARES TO THEIR GOAL WEIGHT. SEE 4.1 OF THIS SECTION.**

7.3.1 Weight Loss

7.3.2 Weight Maintenance

### 7.3.3 Weight Gain

#### 7.4 Macro Nutrient Distribution

The program allows you to modify the recommended default of macro nutrients in the diet plan, as long as the total allotment of protein, carbohydrates and fat total 100. The system may also report that "the distribution is not allowed" if it is outside of practical guidelines of an exchange program.

#### 8.0 Caloric Energy Equation

The Caloric Energy Equation (CEE) can be viewed at any time from the main nutrition module screen by selecting the CEE button. The CEE is a complete analysis of the caloric content of the clients nutrition program.

#### 9.0 Meal Modification Option

The Meal button at the bottom of the nutrition module screen allows you to access a variety of different options in the diet plan.

##### 9.1 Control Buttons

Once you have selected the Meals option, notice the button control panel located at the lower right of the screen. The following is an overview of these functions.

**NOTE: AS YOU MODIFY THE DIET PLAN, NOTICE THE CONTINUALLY UPDATED NUTRITION PROGRAM CALCULATIONS (ORIGINAL / CURRENT) PROVIDED IN THE "MEAL OVERVIEW" SECTION OF THE NUTRITION MODULE.**

##### 9.1.1 Exchange Servings

The program will allow you to "exchange" food items within any meal. The following provides an overview of the exchange rules. Note that all exchanges may not be completely equal in nutrient value, but the program will redistribute them to account (average) for a complete serving size.

1 Protein = 1 Dairy  
2 Vegetable = 1 Fruit  
2 Vegetable = 1 Starch  
1 Fruit = 1 Starch

To "exchange" a food item, use the mouse and right button to highlight the item to be exchanged. You may modify the servings associated with any exchange as well as select the food item from the list of the applicable exchange items. Lastly, you can select the meal you wish to move the

exchange to. As always, use the mouse and right button to make your selection.

### **9.1.2 (+) Add**

The (+) ADD button will allow you to add a specific number of any exchanges to any meal.

### **9.1.3 (-) Delete**

The (-) Delete button will allow you to remove a specific number of any exchanges to any meal.

### **9.1.4 Default**

The Default button will reset all of the nutrition program recommendations back to their original settings (defaults).

### **9.1.5 Done**

Once the clients nutrition program has been completed, the Done button will return you to the System Module.

## **10.0 Printing A Report**

Once you have completed a nutrition program you can select the Finished button or the next module you wish to complete from the speed bar. The following reports are available from the report generator.

10.1 Nutrition / Meal Plan

10.2 Exchange list

10.3 Dietary overview with caloric energy equation