# Diet Analysis Plus: Instructor User’s Guide

## Contents

### System Setup
- Introduction
- System Requirements

### Course Set-Up
- Introduction
- Setting Up Courses
- Creating Course Identification Numbers
- Editing Courses, Assignments, and the Custom Nutrient List
- Managing Students, Sections, and Teaching Assistants
- Viewing Submitted Reports and Assignments

### AMDR and DRI Calculations
- Introduction
- Questionnaire
- Activity Level Calculations

### Reports in DA Plus
- Introduction
- Energy Balance
- Fat Breakdown
- Intake vs. Goals
- MyPlate Analysis
- DRI Report
- Daily Food Log
- Daily Activity Log
- Exchanges Spreadsheet
- Intake Spreadsheet
- Activities Spreadsheet
- Source Analysis
- 3 Day Average
System Setup

To ensure the best experience with DA Plus and enjoy all of its features, please use the information in this section to optimize your computer system and browser settings. System requirements, browser configuration, and software conflicts are important issues when troubleshooting. Due to the constantly shifting nature of Web browsers, it is important to follow these recommendations, to take advantage of the most compatible configuration.

This section lists the basic hardware, software, and system settings you need to run Diet Analysis Plus. If your system meets the basic hardware needs, you can download any of the free software you need from the links in the following sections.

Windows System Requirements

- Microsoft Windows XP, Vista, or 7
- Web browsers: Firefox 3+, Chrome, and Internet Explorer 6, 7, or 8
- Internet Connection: Use of the Diet Analysis Plus web site requires an Internet connection speed of 56k or higher
- To print tests, Adobe Acrobat Reader 4.05b or higher. (Get Reader from get.adobe.com/reader/.)
- Adobe Flash Player 9 or higher is required. (Get Player from http://get.adobe.com/flashplayer/.)

Macintosh System Requirements

- Mac OS X 10.4 or higher
- Web browsers: Firefox 3+ and Safari 3+
- Adobe Flash Player 9 or higher is required. (Get Player from http://get.adobe.com/flashplayer/.)
- Internet Connection: Use of the Diet Analysis Plus web site requires an Internet connection speed of 56k or higher

Linux System Requirements

- Red Hat Linux 9.0 (or similar), X Windows System.
- Web browser: Firefox 3+
- Adobe Acrobat Reader 4.05b or higher is required to print tests. (Get Reader from get.adobe.com/reader/.)
Adobe Flash Player 9 or higher is required. (Get Player from http://get.adobe.com/flashplayer/.)

Internet Connection: Use of the Diet Analysis Plus web site requires an Internet connection speed of 56k or higher.

Course Set-Up

Introduction

Use the Instructor tab to create and manage courses, provide descriptions of your courses, import personal files, and generate Course Access Codes for student enrollment.

Setting Up Courses

The first step in managing a course is to create it.
To create a course

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click the Instructor tab.</td>
</tr>
</tbody>
</table>

![Instructor Home](image)

| 2    | Click the Create New Course button to open the Create or Edit Course page. |

| 3    | Enter the following information in the appropriate boxes: |
|      | ▪ Course Name. |
|      | This should be the name of the course as it appears in your department or institution catalog. |
|      | ▪ Begin Date and End Date. |
|      | The dates of a course are used to help instructors keep courses organized -- they have no effect on enrollment, assignments, or grading. Enter it directly, or click the calendar menu icons to the right of the date text boxes. |

Creating Course Identification Numbers

Instructors create **Course Identification Numbers** as part of the process of making a course. These codes are used to allow students and teaching assistants (TAs) to log in and register for courses.

Only one code is needed per course; you may regenerate a code, but doing so invalidates the previous code.
### To Create a Course Identification Number

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Click the <strong>Instructor</strong> tab.</td>
</tr>
<tr>
<td>2</td>
<td>Select the course from the <strong>Select Course</strong> drop-down list.</td>
</tr>
<tr>
<td>3</td>
<td>Click the <strong>generate</strong> link in the Student and/or TA section(s).</td>
</tr>
<tr>
<td>4</td>
<td>A new Course Identification Number will now be displayed.</td>
</tr>
<tr>
<td></td>
<td><img src="image" alt="Instructor Home" /></td>
</tr>
</tbody>
</table>

**Note:** If a course has multiple sections, you may create Course Identification Numbers for each **section** which will enroll the user directly in that section. If a user enters the general Course Identification Number for your course that has multiple sections, then the students will be assigned to sections by adding them to the section with the fewest students in it at that time.

| 5    | Distribute the Course Identification Number to your students along with instructions on how to use it. Students can enroll themselves by entering the number on their Home page when they log into DA+. |

**Note:** You can use the **re-generate** link to create a new Course Identification Number for an existing course; however, this will invalidate the old code.
Editing Courses, Assignments, and the Custom Nutrient List

From the Instructor Home page, you can select a course and edit information such as the Course Info, Assignments, Nutrient List, Students, Sections, and Teaching Assistants.

Editing or Deleting Courses
To Edit or Delete an existing course, choose the course in the Select Course drop-down menu. Then click either the edit course info or delete course links.

Editing Lab Assignments
Lab assignments are not enabled by default. To edit which Lab Assignments are associated with a course, click the Edit Assignments button to open the Assign Labs page. From here you can choose which labs you would like to assign to the course as well as their (optional) due dates. When assigning a lab, the Due Date is not enforced but will be displayed to students. Students can still complete and submit assignments after the due date.

Editing the Custom Nutrient List
The default nutrient set is enabled by default. The instructor can modify this, but some nutrients are required for reports are thus always enabled. Required nutrients are indicated by dimmed (grayed-out) checkboxes. To edit the default Nutirent List, click the Edit Custom Nutrient List button.

Managing Students, Sections, and Teaching Assistants
To manage enrolled students, as well as create sections for a course, click the Manage Students and Sections button to open the Manage Sections page. If you plan on having several sections of a course, you may generate a Course Identification Number for each section to enroll users into those sections directly. You can then provide these numbers to students so they can enroll in the correct section. Click the Manage Teaching Assistants button to perform similar actions with course TAs.

From the Manage Sections page you can also email, move, or unenroll selected students or TAs, edit section information, or regenerate section Course Identification Numbers (although this will invalidate the previous section code).

Viewing Submitted Reports and Assignments
Instructors can view and add comments to reports and assignments submitted by students enrolled in a course. Click the View Student Submissions button and select the correct course or section from the Submissions page. You can then select the student and submission (either Lab or Report) for review. Each page of a submission has an area for Instructor Comments at the bottom.
AMDR and DRI Calculations

Introduction

For you as an instructor, it is important to understand what conditions are being compared and the limitations of the information provided in DA Plus. This section describes in detail how profile data is used in the calculations for the AMDR (Acceptable Macronutrient Distribution Range) and DRI (Dietary Reference Intake).

The values for these recommended daily ranges of carbohydrates and fat are based on KiloCalorie (kCal) values. These recommended values are determined from two different sources of information: from either the student’s responses in the activity level questionnaire or from the activity level the student selected.

Questionnaire

Note: The following formula uses height in centimeters and weight in kilograms.

The student's base KiloCalorie needs are based on their Lean Body Mass. This can be determined when students are able to supply their body fat percentage. If this information is not known, then an alternate formula is used to calculate the base KiloCalories. And we end up using their full weight for calculations of the additions below.

Known body fat %:

All Students - Base kCal = (21.6 * (weight - (bodyFat%*weight/100))) + 367

If the student is unable to supply their body fat percentage, then an alternate formula is used to calculate the base KiloCalories.

Unknown body fat %:

Males - Base kCal = (10 * weight) + (6.25 * height) - (5 * age) + 5

Females - Base kCal = (10 * weight) + (6.25 * height) - (5 * age) - 161

Once the Base kCal value is determined, then the KiloCalories are added based on the responses to the Activity Questionnaire. If we know the student's lean body mass we use that, if not then we use their full weight. Because the activity questionnaire uses time ranges for durations the following assumptions are used for calculations:
Activity Duration

- A response of none or unknown is treated as 0 hours spent on the activity.
- A response of 1-30 minutes is treated as 0.25 hours spent on the activity.
- A response of 31-59 minutes is treated as 0.75 hours spent on the activity.
- A response of 1-2 hours is treated as 1.5 hours spent on the activity.
- A response of 2-3 hours is treated as 2.5 hours spent on the activity.
- A response of 3+ hours is treated as 3.5 hours spent on the activity.

Activity Category

- Occupation adds:
  - Sedentary: Time at occupation/7 * 1.5 * weight (1.5 is the MET for this occupation level)
  - Standing/Moving: Time at occupation/7 * 2.8 * weight (2.8 is the MET for this occupation level)
  - Active: Time at occupation/7 * 4 * weight (4 is the MET for this occupation level)

- Leisure Time adds: (The MET depends on the walk pace response)
  - Unknown: Duration in hours/7 * 2 * weight (2 is MET for this walk place)
  - Casual: Duration in hours/7 * 2 * weight (2 is MET for this walk place)
  - Steady: Duration in hours/7 * 3 * weight (3 is MET for this walk place)
  - Brisk: Duration in hours/7 * 3.8 * weight (3.8 is MET for this walk place)

- Light Exercise adds:
  - Duration in hours/7 * 3.5 (the MET) * weight

- Moderate Exercise adds:
  - Duration in hours/7 * 5 (the MET) * weight

- High-intensity Exercise adds:
  - Duration in hours/7 * 7 (the MET) * weight
  - If a user indicates they are an elite athlete then we use the the specific weekly
hour time provided rather than one of the estimation ranges listed above. We
still divide by 7.

**Activity Level Calculations**

In the kCal formulas listed below, `actvLvl` is based on the **Activity Factor Multiplier**. The Activity Factor Multiplier corresponds to which activity level the student selected: **Sedentary, Low Active, Active, or Very Active**. See the **Activity Factor Multiplier** section for more details. Age is in years.
■ Age 19+:
  — Male: $662 - 9.53\times age + activLvl \times (15.91\times weight + 539.6\times height)$
  — Female: $354 - 6.91\times age + activLvl \times (9.36\times weight + 726\times height)$
  — Pregnant: add 340
  — Lactating: add 330

■ Age 9-18:
  — Male: $88.5 - 61.9\times age + activLvl \times (26.7\times weight + 903\times height) + 25$
  — Female: $135.5 - 30.8\times age + activLvl \times (10\times weight + 934\times height) + 25$

■ Age 4-8:
  — Male: 1742
  — Female: 1642

■ Age 42-3:
  — Male: 1046
  — Female: 992

■ Age .6-1:
  — Male: 743
  — Female: 676

■ Age .5 and below:
  — Male: 570
  — Female: 520

**Activity Factor Multiplier**

- Activity Level is **Sedentary**:
  - value of 1 for all types
• Activity Level is **Low Active**:
  o Age 19+: Male: 1.11, Female: 1.12
  o Age 18 and Under: Male: 1.13, Female: 1.16

• Activity Level is **Active**:
  o Age 19+: Male: 1.25, Female: 1.27
  o Age 18 and Under: Male: 1.26, Female: 1.31

• Activity Level is **Very Active**:
  o Age 19+: Male: 1.48, Female: 1.45
  o Age 18 and Under: Male: 1.42, Female: 1.56

**Pregnancy Modifiers**

Regardless of which method above is used to determine the daily kCal value, if a profile indicates they are pregnant or lactating we add kCals as follows:

• Pregnancy is:
  o 0-19 weeks: add 10 kCal
  o 20-27 weeks: add 340 kCal
  o 28+ weeks: add 452 kCal
  o Breastfeeding 0-6 months: add 330 kCal
  o Breastfeeding 7+ months: add 400 kCal

**Calculating DRI Values**

Regardless of which method above is used to determine the daily kCal value, the **Modified Weight Change** response provided by the student modifies the DRI for that individual. For each pound per week change the user desires then we either add (for weight gain) or subtract (for weight loss) 500 kCal to the daily value.

**Note:** The kCals values used in the following formulas are determined from the calculations listed above.

**Carbohydrates (in grams)**
  o Lower Limit: \(((\text{kCal}/100)*45)/4\)
Fat (in grams):
- Lower Limit: \(((kCal/100)*20)/9\)
- Upper Limit: \(((kCal/100)*35)/9\)

Protein (in grams per kilogram of body weight):

*Note:* The formulas below are based on the student's weight in kilograms and the multiplier associated with the student's age range.

DRI for protein (in grams) = weight*groupMultiplier

Group Multipliers:
- Pregnant: 1.1
- Lactating: 1.1
- Infant 1 or less: 1.5
- Child 2-3 years: 1.5
- Child 4-8 years: 1.1
- Youth 9-13 years: 0.95
- Youth 14-18 years: 0.85
- Adult 19-30 years: 0.80
- Adult 31-50 years: 0.80

Other DRI Values
All other DRI values are based on the age and gender or the user as shown in the attached chart: DRI Table Spreadsheet.

Reports in DA Plus

Introduction

Diet Analysis Plus generates a variety of reports showing analyses of the diet and activity information provided by students. In addition to data processed from student profiles, the DA Plus database derives information from several other sources. The data for brand name foods often comes directly from the companies that make them. Some of those foods have data for many nutrients. Others have data for only the nutrients the companies are required by regulation to report.
Energy Balance

The Energy Balance Report compares number of kCal consumed based on the foods eaten and burned on a given day. Calories are different from nutrients in an important way. Their consumption is affected not just by food eaten, but also by energy expended in activity.

The Energy Balance report shows net caloric intake over time. It lets you see whether you retained more calories than you needed, fewer calories than you needed, or used about the same amount as you ate.

The kCal Consumed column shows how many calories were eaten. The kCal Burned column shows how many calories the student used performing activities. The Net Calories column shows whether the student ate more than they burned, or burned more than they ate. The Net kCal column shows how many calories are needed per day according to the profile.

Here are three things you should consider when working with Energy Balance Reports:

- Only days where food was eaten are included in any calculations.
- The Summary at the bottom averages the totals line divided by the number of days included in the report (this may not match the number of days in the date range selected if some days had no food intake recorded).
- kCal burned assumes that for any time not spent on activities recorded in DA Plus are spent resting and automatically determines the kCal burned from that rest time.

Fat Breakdown

The Fat Breakdown report expresses what percentage of the day's kCal were from each type of fat. This report assumes 9 kCal per gram of Fat. When averaged over multiple days this report only includes days which have at least one food eaten and recorded in DA Plus. There is no DRI recommendation for many fats, but nutritionists and other standards bodies often describe recommendations for different fats as percentages of total caloric intake.

Some foods include data for the many types of fats, but most do not. The Unspecified graph includes all fats that were not specified by type.

Intake vs. Goals

The Intake vs. Goals report compares actual dietary intake with the DRI goals for your profile.

This report compares the student's intake of nutrients (based on the food eaten recorded in DA Plus) to the DRI values. Where there is a recommendation, DA Plus generates a percentage bar to show how intake compares to the DRI. When averaged over multiple days, this report only includes those days which have at least one food eaten recorded in DA Plus.
The **DRI** column shows the recommended amount of each nutrient the student should have consumed based on the data in the profile. The **Intake** column shows the amount of each nutrient that was actually consumed.

The graph shows the percentage of the recommended DRI consumed of each nutrient.

For some nutrients an exclamation point (!) may appear in the left hand column of the report when the intake has exceeded the **Tolerable Upper Intake Level** for that nutrient. These limits are described in the Upper Limits Table.

**Macronutrient Ranges**

The **Macronutrient Ranges** report compares the student's intake of nutrients (based on the food eaten recorded in DA Plus) to the DRI values. The first graph in this report shows the **Recommended** percentages for each macronutrient. The second graph shows **Actual** caloric (kcal) intake. It also shows calories from **alcohol**. Where there is a recommendation, DA Plus generates a percentage bar to show how intake compares to the DRI. When averaged over multiple days this report only includes days which have at least one food eaten recorded in DA Plus.

Calories come from the three **macronutrients**: **protein**, **carbohydrates**, and **fat**. (Calories can also come from alcohol, which is not a nutrient.)

The Dietary Reference Intakes (DRI) for these energy yielding nutrients are called the **Acceptable Macronutrient Distribution Ranges (AMDR)**. These ranges are the minimum and maximum percentages of each macronutrient that should comprise total caloric intake. Those percentages are:

- 45 to 65 percent from carbohydrates (purple bar in recommendation represents 53%)
- 10 to 35 percent from protein (green bar in recommendation represents 21%)
- 20 to 35 percent from fat (yellow bar in recommendation represents 26%)

**MyPlate Analysis**

The MyPlate Analysis report creates a graphic comparison of the student's dietary intake with the recommendations of the MyPlate guidelines provided by the USDA. DA Plus stores the MyPlate values for all foods in the database. The MyPlate Analysis report shows a recommended number of daily servings for the food group categories of Grains, Vegetables, Fruits, Dairy, and Protein Foods.

For detailed explanations of the MyPlate recommendations, click the links to specific items on the report screen, or click the MyPlate logo to go to the [www.choosemyplate.gov](http://www.choosemyplate.gov) home page.
Note: Custom foods and recipes added using the Create or Edit Foods and Recipes section of the Track Diet tab do not have MyPlate values, and are not included in the My Plate Analysis report.

DRI Report

The DRI report is a summary of the AMDR (Acceptable Macronutrient Distribution Range) calculation described in the AMDR and DRI Calculations section. If a custom value is specified for any DRI, that custom value is displayed here. These custom values are also used for any reports which use a DRI. All other reports use these DRI as the baseline for comparisons with actual dietary intake.

This report shows the basic profile information that affects the recommendations, and then lists all the nutrients. Some nutrients have a dash next to them instead of a number; these nutrients do not have a recommendation.

Daily Food Log

The Daily Food Log is a list of foods students consume for a given time period. A report can be submitted to instructors, and the entries here are used to calculate values in the other reports.

Daily Activity Log

The Daily Activity Log is a list of activities students engage in for a given time period. A report can be submitted to instructors, and the entries here are used to calculate values in the other reports.

Exchanges Spreadsheet

The Exchanges Spreadsheet report details how each of the foods eaten on a selected day contribute to the exchange values calculated for profile. The exchange values for each food are provided by the DA Plus database. This report can be exported to a csv (comma separated values) file that can be opened by most spreadsheet programs.

Note: This report can be exported to a .CSV (comma seperated values) file that can be opened by most spreadsheet programs. Custom foods and recipes added using the Create or Edit Foods and Recipes section of the Track Diet tab do not have exchange values.

Intake Spreadsheet

The Intake Spreadsheet report details how each of the foods eaten on a selected day contribute to your diet's nutrient intake. It shows all the foods eaten on the selected date, and the amount of each nutrient contained in each food.
Note: This report can be exported as a .CSV (comma separated values) file that can be opened by most spreadsheet programs.

Activities Spreadsheet

The Activities Spreadsheet details how each of the activities on a selected day contribute to the kCal burned for that day. This report lists the rate at which calories were burned by the activity (in calories per kilogram per hour), the duration of the activity, and the total number of calories burned.

The Activities Spreadsheet report also shows the MET (Metabolic Equivalent) value for each activity. A MET value is defined as the ratio of the work metabolic rate to the resting metabolic rate. One MET is defined as 1 kcal/kg/hour and is roughly equivalent to the energy cost of sitting quietly.

The report will account for all 24 hours in the day. If the student did not record 24 hours of activity, Diet Analysis Plus will calculate unaccounted for time as having been spent resting.

Note: This report can be exported to a .CSV (comma separated values) file that can be opened by most spreadsheet programs.

Source Analysis

The Source Analysis report details how each food eaten on the selected day contributed to the day's intake of the selected nutrient. It provides a graphical representation in the form of a percentage bar for each food's contribution to the day's total intake. Any nutrient on the DRI list can be viewed.

Some foods may appear with a gold or silver star next to their names. A gold star marks foods containing more than 20% of the DV. A silver star marks foods containing 10% to 20% of the DV. Note that the KiloCalorie report does not assign stars.

The Amount column shows how much the student ate of each food.

The column named for the Nutrient shows how much of the nutrient was contained in the amount eaten.

The graph shows how each food contributes to the total intake of the nutrient selected. The graph does not show the percentage of the DRI, or the percentage of the Daily Value.

Note: "100%" on the graph is equal to "all that was consumed." It does not express anything about how much the student "should" have eaten.

3 Day Average

The 3 Day Average report combines nutrient intake data over a three day period. A text or RTF report can be generated and submitted to instructors.
Combination Report

A Combination report can be generated for a specific time period by selecting different reports to combine as well as specific meals. A text or RTF report can be generated and submitted to instructors.

Technical Support

If you have trouble using or accessing DA Plus, you can contact support to get further assistance. From the Cengage Learning Technical Support site you can get information on how to contact our experts by phone, e-mail form, or online chat.

To access Online Chat/Customer Service Support, you can either click the Technical Support link at the bottom of any page in DA Plus or direct your browser to www.cengage.com/support/.

Once you are at the Cengage Learning support site, you can follow these steps:

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select Diet Analysis Plus from the Student drop-down menu.</td>
</tr>
<tr>
<td>2</td>
<td>Click Go and the Technical Support page will open.</td>
</tr>
<tr>
<td>3</td>
<td>Choose from any of the following technical support resources:</td>
</tr>
<tr>
<td></td>
<td>- Select Chat Online to chat with a technical support representative.</td>
</tr>
<tr>
<td></td>
<td>- Select Submit your questions Under Contact Us to access the online e-mail form.</td>
</tr>
<tr>
<td></td>
<td><strong>Note:</strong> Chat and e-mail support are available 24/7. When using an e-mail form, support requests are usually responded to within 48 hours.</td>
</tr>
</tbody>
</table>

To contact technical support personnel by phone, call **1-800-354-9706** (Option 5, then Option 2).

- Monday - Thursday: 8:30am - 9pm EST
- Friday: 8:30am - 6pm EST