

# Converting Nutrient Units for the New 2016 Nutrition Facts Label

**ESHA Research**

January 31, 2017



# Genesis R&D Training

## **Advanced Genesis Workshop**

**February 7-8, 2017 | Lombard, IL**

This workshop session will cover advanced topics in detail such as the due diligence process and documentation, ingredient and recipe management, advanced label topics, allergen statements, nutrient content claims, and more.

## **Genesis Professional Training**

**March 23-24, 2017 | Washington, DC**

This training session covers the fundamentals of the Genesis R&D Food program: creating ingredients, building recipes/formulas, obtaining nutrition analysis, analysis reporting, best practices, and basic labeling features.

## **Genesis Professional Training for Restaurants**

**March 27-28, 2017 | Lombard, IL**

This training session covers ingredient creation and recipe/menu building, best practices, and analysis reporting specific to the restaurant industry. Additionally, we will discuss how Genesis R&D helps you comply with the Restaurant Menu Labeling regulations.

For more information including cost and availability, please email at [training@esha.com](mailto:training@esha.com).

More training info listed on our website at <http://www.esha.com/services/training/>

# Upcoming Webinars

## **Taking a Closer Look at the New FDA Dietary Fiber Definition**

February 14, 2017

During this 30-minute webinar, we will cover the new Dietary Fiber definition in detail and how to use the Genesis R&D Food program for compliance with the 2016 regulations. In addition, we will discuss what fiber ingredient suppliers and manufacturers can do now to petition for inclusion of an ingredient.

To register, please visit: [www.esh.com/news-events/webinars](http://www.esh.com/news-events/webinars)



# Archived Webinars

## **New FDA Nutrition Facts Labels | Part 1**

### ***Overview of What's Changed in Genesis R&D***

ESHA Webinar Series Part 1 focuses on the new features in Genesis R&D Version 11.1 including the new FDA Nutrition Facts labels. We will also cover how Genesis will handle the new Fiber definition, Added Sugars, Vitamin D, Potassium, and more.

## **New FDA Nutrition Facts Labels | Part 2**

### ***FDA Label Nutrients, What's Changed?***

The final rules have implemented a number of significant changes to the Nutrition Facts labels. ESHA Webinar Series Part 2 covers many of the nutrient DV changes including Dietary Fiber, Added Sugar, Vitamin D, and Potassium.

## **New FDA Nutrition Facts Labels | Part 3**

### ***Best Practices for Transitioning to the New Label***

ESHA Webinar Series Part 3 covers user best practices for transitioning from the pre-existing labels to the new label formats.

To register, please visit: [www.esha.com/news-events/webinars](http://www.esha.com/news-events/webinars)



# About ESHA Research

ESHA Research was established in 1981 with the goal of providing a comprehensive nutrition database with few missing values and has since grown to become the leading provider of nutrition analysis and compliant labeling software and services.

## Our Solutions Include

- Food Formulation & Labeling Software
- Restaurant Menu Analysis & Labeling Software
- Supplement Formulation & Labeling Software
- Nutrition & Diet Analysis Software
- Consulting Services

# Agenda

- Background on Nutrient Unit Changes
- Conversions
- Introduction to the Nutrient Calculator
- Due Diligence & Documentation
- Q&A

# Nutrient *Unit Changes* + New Nutrients



## Vitamin A

- Voluntary nutrient (previously mandatory)
- Change from 5000 IU to 900 mcg RAE

## Vitamin E

- Voluntary nutrient
- Change from 30 IU to 15 mg a-tocopherol

## Folate

- Voluntary nutrient
- Change from 400 mcg to 400 mcg DFE

## Vitamin D

- Mandatory nutrient (previously voluntary)
- Change from 400 IU to 20 mcg

## UNIT CHANGES

**Vitamin A**  
**900 mcg**  
**RAE**  
was 5000 IU

**Vitamin E**  
**15 mg**  
**a-tocopherol**  
was 30 IU

**Folate**  
**400 mcg DFE**  
was 400 mcg

**Vitamin D**  
**20 mcg**  
was 400 IU


# Nutrient *Unit Changes* + New Nutrients

## Niacin

- Voluntary Nutrient
- Change from mg of Niacin to mg of Niacin Equivalents (NE)

## Total Carbohydrate

- Mandatory Nutrient
- 275 g (down from 300 g)

NEW LABELING REGULATIONS			
	<b>SODIUM</b> <b>2300 mg</b> down from 2400 mg	<b>TOTAL CARBS</b> <b>275 gm</b> down from 300 gm	
	<b>VITAMIN B6</b> <b>1.7 mg</b> down from 2 mg	<b>RIBOFLAVIN</b> <b>1.3 mg</b> down from 1.7 mg	
	<b>THIAMIN</b> <b>1.2 mg</b> down from 1.5 mg	<b>VITAMIN B12</b> <b>2.4 mcg</b> down from 6 mcg	
	<b>CHROMIUM</b> <b>35 mcg</b> down from 120 mcg	<b>NIACIN</b> <b>16 mg NE</b> down from 20 mg	<b>SELENIUM</b> <b>55 mcg</b> down from 70 mcg
	<b>COPPER</b> <b>0.9 mg</b> down from 2 mg	<b>CHLORIDE</b> <b>2300 mg</b> down from 3400 mg	<b>MOLYBDENUM</b> <b>45 mcg</b> down from 75 mcg
	<b>ZINC</b> <b>11 mg</b> down from 15 mg	<b>BIOTIN</b> <b>30 mcg</b> down from 300 mcg	<b>PANTOTHENIC ACID</b> <b>5 mg</b> down from 10 mg



# Conversions

## Vitamin D

- old: Vitamin D IU
- new: Vitamin D mcg

**Vitamin D Formula:** 1 Vitamin D mcg = 40 Vitamin D IU

## Niacin

- old: Niacin mg
- new: Niacin Equivalents mg

**Niacin Formula:** Niacin Equivalents = [niacin mg + (tryptophan mg / 60)]

## Folate

- old: Folate mcg
- new: Folate mcg DFE

**Folate Formula:** 1 Folate DFE = [Food Folate mcg + (1.7 x Folic Acid mcg)]

# Conversions

## Vitamin E

- Old unit: Vitamin E IU
- New unit: Vitamin E alpha tocopherol mg

### Natural source: from food

- Unit conversion: 1 mg alpha-tocopherol = 1.49 IU
- Calculation:  $\text{IU}/1.49 = \text{mg alpha-tocopherol}$   
(divide the number of IUs by 1.49)

### Synthetic source: from supplement

- Unit conversion: 1 mg alpha-tocopherol = 2.22 IU
- Calculation:  $\text{IU}/2.22 = \text{mg alpha-tocopherol}$   
(divide the number of IUs by 2.22)



# Conversions

## Vitamin A

- Old: Vitamin A IU
- New: Vitamin A mcg RAE

## Vitamin A Formulas:

The conversion between Vitamin A IU and Vitamin A RAE considers whether the Vitamin A is coming from an animal source (retinol) or a plant source (carotenoids), or a combination.

### **If you already know the Vitamin A IU value:**

For an animal source:  $\text{Vitamin A RAE} = \text{Vitamin A IU} / 3.33$

For a plant source:  $\text{Vitamin A RAE} = \text{Vitamin A IU} / 20$

### **If you have retinol and/or carotenoid values:**

Vitamin A RAE = 1 mcg retinol

Vitamin A RAE = 12 mcg beta-carotene equivalents

Vitamin A RAE = 24 mcg other provitamin A carotenoids (alpha carotene + cryptoxanthins)

# Nutrient Calculator

- Introduced in Genesis R&D + Food Processor Version 11.2
- Contact [sales@esha.com](mailto:sales@esha.com) if your program is not up to date
- Nutrient Calculator is available for the following nutrients:
  - Carbohydrates
  - The New Dietary Fiber Fields\*
  - Vitamin A
  - Vitamin B3
  - Vitamin D
  - Vitamin E
  - Niacin Equivalents
  - Folate/Folic Acid
  - Tryptophan



# Some calculations are straight forward

$$\text{Vitamin D mcg (mcg)} = \text{Vitamin D IU (IU)} / 40$$

Before Auto Calculation


Yields/Measures	Nutrients	Value	% DV	^
Cost	Vitamin D - IU (IU)	100.00	25.00	
Groups	Vitamin D - mcg (mcg)			

After Auto Calculation

Yields/Measures	Nutrients	Value	% DV	
Cost	Vitamin D - IU (IU)	100.00	25.00	
Groups	Vitamin D - mcg (mcg)	2.50		

# Some require you to answer questions

Calculate Nutrient ✕

 How would you like to Calculate Vitamin A - RAE?

→ Animal Source  
Vitamin A RAE (mcg) = Vitamin A IU (IU) / 3.33

→ Plant Source  
Vitamin A RAE (mcg) = Vitamin A IU (IU) / 20

Cancel

# Some require thorough knowledge about your ingredients – Dietary Fiber

- Due Diligence requires that YOU understand Beneficial vs. Non Beneficial Fiber
- As a reminder:

In order for dietary fiber to show on the new panel there must be scientific evidence of beneficial physiological effects to human health. This includes naturally occurring fibers AND added fibers (isolated or synthetic) that have been determined to be beneficial. Naturally occurring fiber (often referred to as “intrinsic”) occurs in foods such as vegetables, whole grains, fruits, cereal bran, flaked cereal and flours.

# Isolated and Synthetic Dietary Fiber - Approved

1. Guar Gum
2. Pectin
3. Cellulose
4. Locust Bean Gum
5. Psyllium Husk
6. Hydroxypropylmethylcellulose
7. [beta]-glucan soluble fiber



# That means if the ingredient is on this list....we just don't know yet:

- Gum Acacia
- Alginate
- Apple Fiber
- Bamboo Fiber
- Carboxymethylcellulose
- Corn Hull Fiber
- Cottonseed Fiber
- Galactooligosaccharides
- Inulin/Oligofructose/Synthetic Short Chain Fructooligosaccharides
- Karaya Gum
- Oat Hull Fiber
- Pea Fiber
- Polydextrose
- Potato Fibers
- Rice Bran Fiber
- High Amylose Corn/Maize Starch (Resistant Starch 2)
- Retrograded Corn Starch (Resistant Starch 3)
- Resistant Wheat and Maize Starch (Resistant Starch 4)
- Soluble Corn Fiber
- Soy Fiber
- Sugar Beet Fiber
- Sugar Cane Fiber
- Wheat Fiber
- Xanthan Gum
- Xylooligosaccharides
- Pullulan

# Dietary Fiber Auto Calculation

$$\text{Dietary (Beneficial) Fiber (2016)} = \text{Total Dietary Fiber} - \text{Other Fiber (2016)}$$

Total Dietary Fiber (g)	2.400
Total Soluble Fiber (g)	0.240
Total Insoluble Fiber (g)	2.160
Dietary Fiber (2016) (g)	2.400
Soluble Fiber (2016) (g)	
Insoluble Fiber (2016) (g)	
Other Dietary Fiber (2016) (g)	
Other Soluble Fiber (2016) (g)	
Other Insoluble Fiber (2016) (g)	

Are you missing values for other fiber??\*

\*Missing Nutrient Values will be set to 0 if used in a calculation.

\*If so, you could inaccurately match Total Dietary Fiber to Dietary Fiber 2016.

Be an active participant in the process!

# Documentation

- As a prudent manufacturer documentation is and has always been a great standard to strive for.
- Now more than ever with the new label requirements food manufacturers are being asked to keep track of how they arrived at their nutritional information.
- Documentation examples: analyses of nutrient databases, recipes or formulations, batch records or any other records that contain the required information to verify the nutrient content of the final product.

# Documentation

When there is not a test available to decipher sources of the following, documentation is required:

- Beneficial vs. non beneficial dietary fiber or a combo (including soluble and insoluble)
- Total vs added sugar or a combo (especially when added sugars are subject to non-enzymatic browning and/or fermentation and the manufacturer is declaring less added sugar than was added to the original recipe)
- Folate (when a food product contains both folate and folic acid and you are declaring this on your label)
- Vitamin E (when a food product contains both sources [RRR- $\alpha$ -tocopherol and all rac- $\alpha$ -tocopherol acetate] and this is declared on your label)

# If you must wait to transition your labels

- Document every time you contact your suppliers
- Do your best and stay consistent in your approach
- Keep abreast of the new FDA guidance to come

# Questions?

## Contact Us!

Phone: 503-585-6242

Email: [sales@esha.com](mailto:sales@esha.com)

## Helpful Resources

LinkedIn: [bit.ly/ESHA-LinkedIn](http://bit.ly/ESHA-LinkedIn)

Blog: [www.esha.com/blog](http://www.esha.com/blog)

eNewsletter: [www.esha.com/esha-enewsletter](http://www.esha.com/esha-enewsletter)

