



AGROPUR

# Health Benefits of Whey Proteins

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Joanie Zhang, CFS | May.07<sup>th</sup>.2021



# We are a cooperative

Founded in 1938, Agropur is a top 20 global dairy producer. As North America's largest whey protein manufacturer and producer of over 1 billion pounds of cheese per year, Agropur's 10 US, SQF Certified plants are behind some of the most prominent food, beverage and nutrition brands in the industry.



Established  
**1938**



**3,024**  
Members  
(dairy  
producers)



**\$5.5B**  
**US**  
In Sales  
(2019)



**6.5B**  
**Liters**  
Milk  
Processed



**8,800**  
Employees



**38**  
**Plants**  
28 in Canada  
10 in US



# Global Presence & Support

**Appleton, Wisconsin**  
United States  
U.S. Headquarters

**St. Hubert, Quebec**  
Canada  
Corporate Headquarters

**Querétaro City, Querétaro**  
Mexico  
Sales Office

**Rotterdam**  
Netherlands  
Warehouse

**Geneva**  
Switzerland  
Sales Office

**Shanghai**  
China  
Sales Office

**Singapore**  
Sales Office



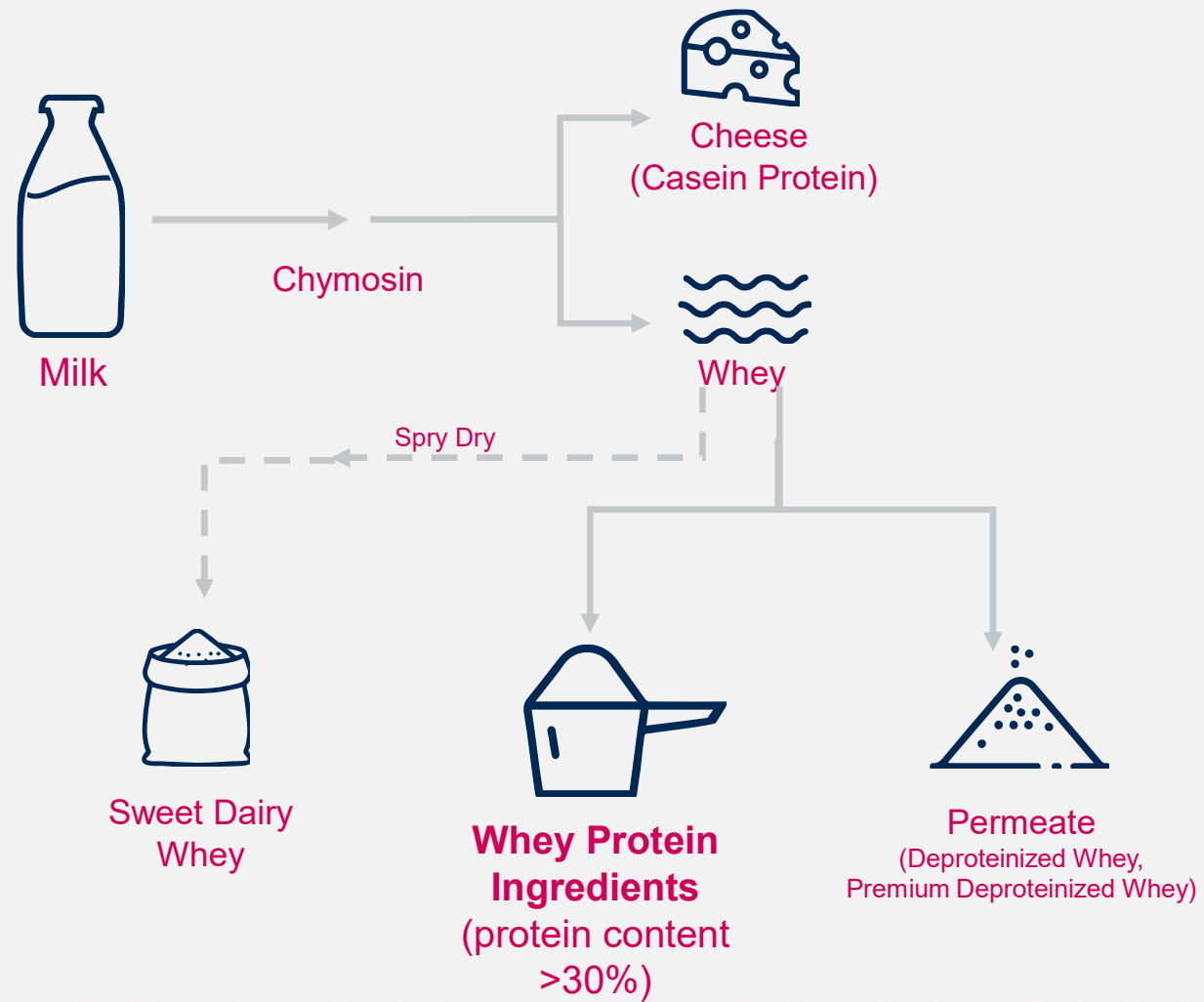
# OVERVIEW



- What is whey protein
- Types of whey protein ingredients
- Nutritional value of whey proteins
  - High quality protein
  - Mainstream nutrition
  - Sports nutrition
  - Healthy aging
  - Immunity enhancement
- Potential use of whey protein in product development



# What is whey protein?



# Types of whey protein ingredients

## 1. WPI (Whey Protein Isolate) protein content >90% dry basis

- BiPRO®: Proteins isolated with **ion-exchange** technology
  - BiPRO® 9500 (protein~95%, dry basis)
  - BiPRO® Crystal Clear (acid stable)
- ISO Chill®: Proteins isolated with **membrane-filtration** tech
  - ISO Chill® 9000 (protein ~90%)

## 2. WPC (Whey Protein Concentrate) protein content 35-85%

- ISO Chill® 8000 (protein ~80%)

## 3. WPH (Whey Protein Hydrolysate) Enzyme-hydrolyzed proteins

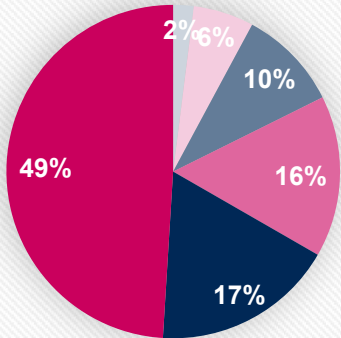
- BioZate® 3, 9 (protein ~90%)
- BioZate® 8000 (protein ~80%)





# Why whey protein is of high nutrition value?

**Bioactive Components in Whey Protein**



- Lactoferrin
- Immunoglobulin
- Alpha-lactalbumin
- Bovine Serum Albumin
- Glycomacropeptide
- Beta-lactoglobulin

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High quality protein source
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Complete protein with all essential amino acids
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Rich in branched chain amino acids (BCAAs)
- 

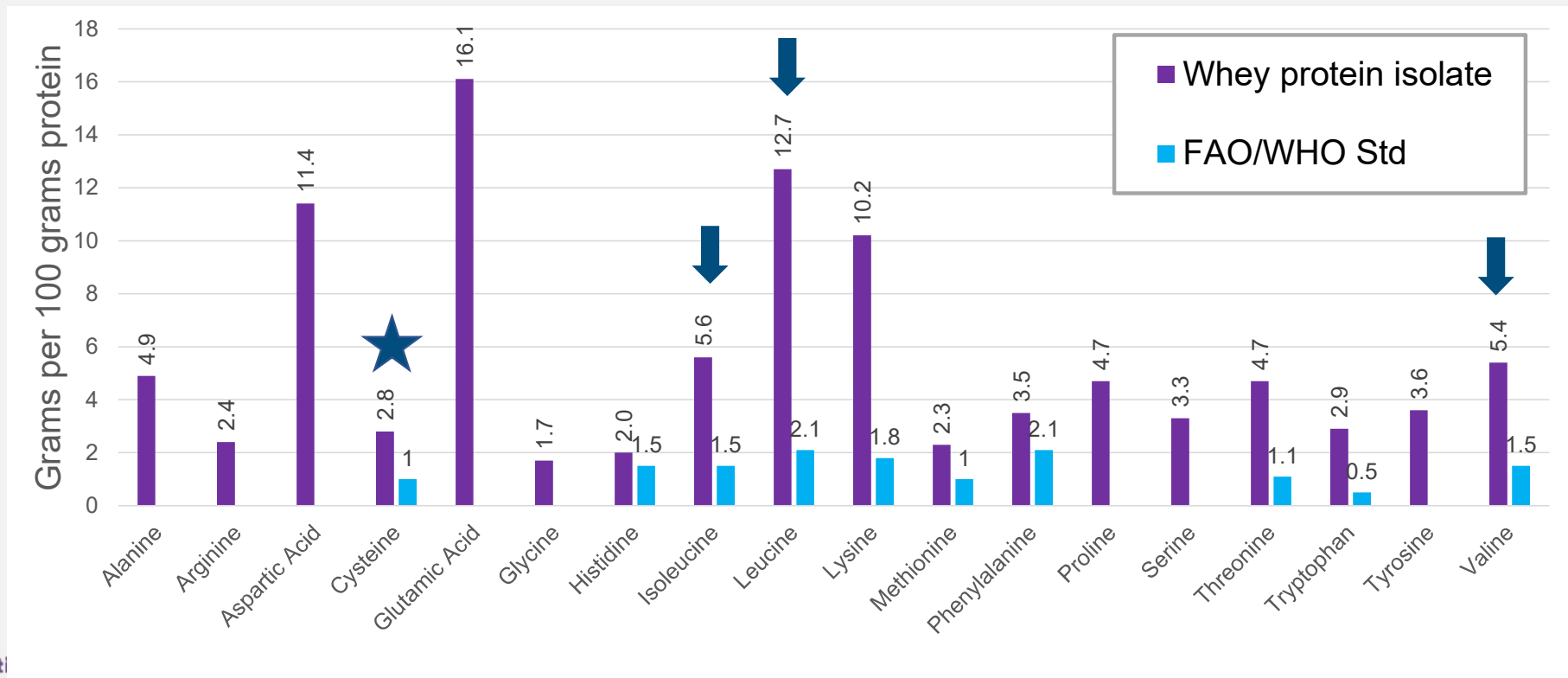
Efficient in muscle protein synthesis and enhances bone recovery
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Quickly digested and absorbed
- 

High in cysteine that can enhance anti-oxidation
- 

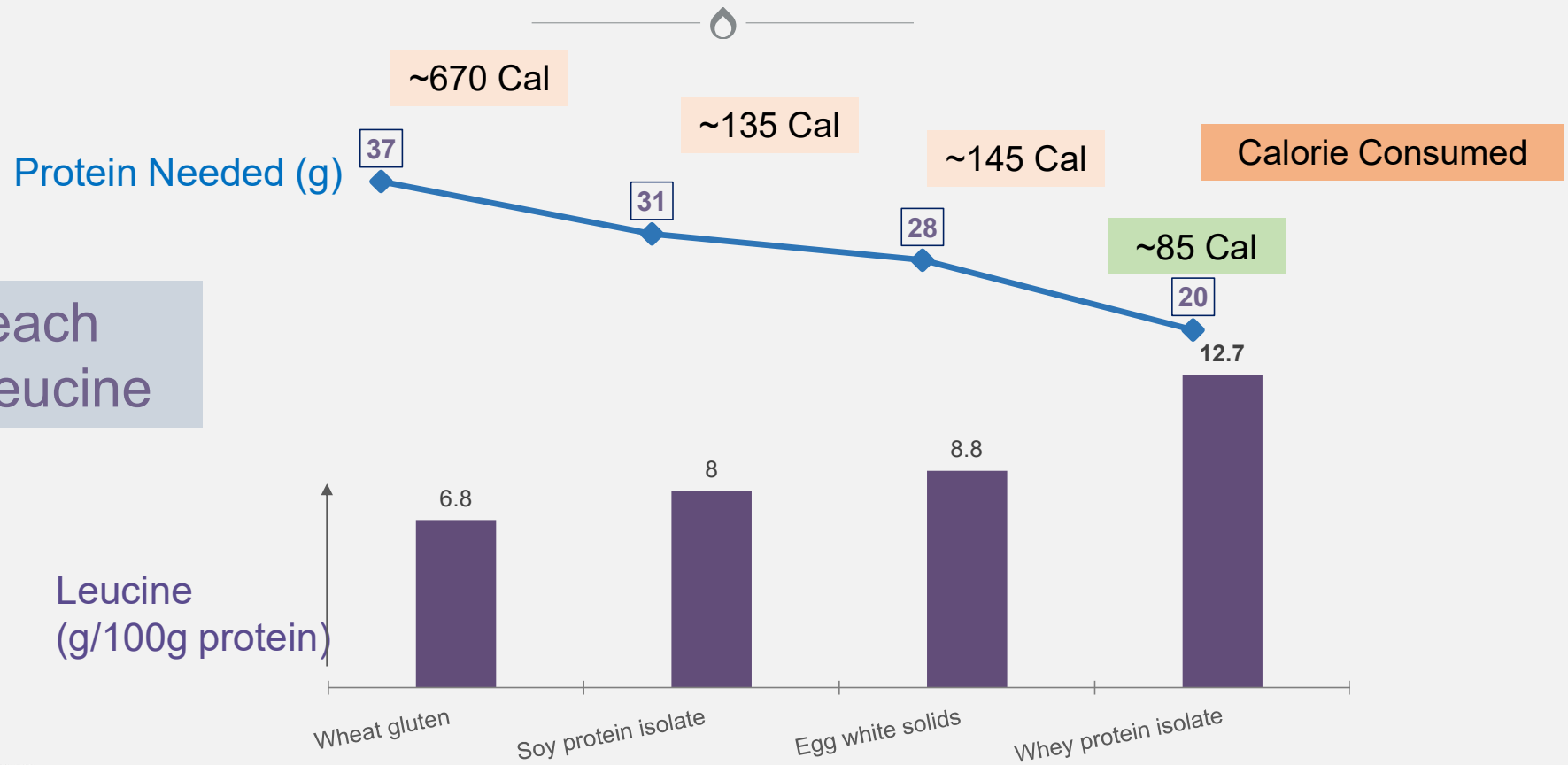
Immunomodulating and anti-viral properties

# Whey Protein Amino Acid Profile

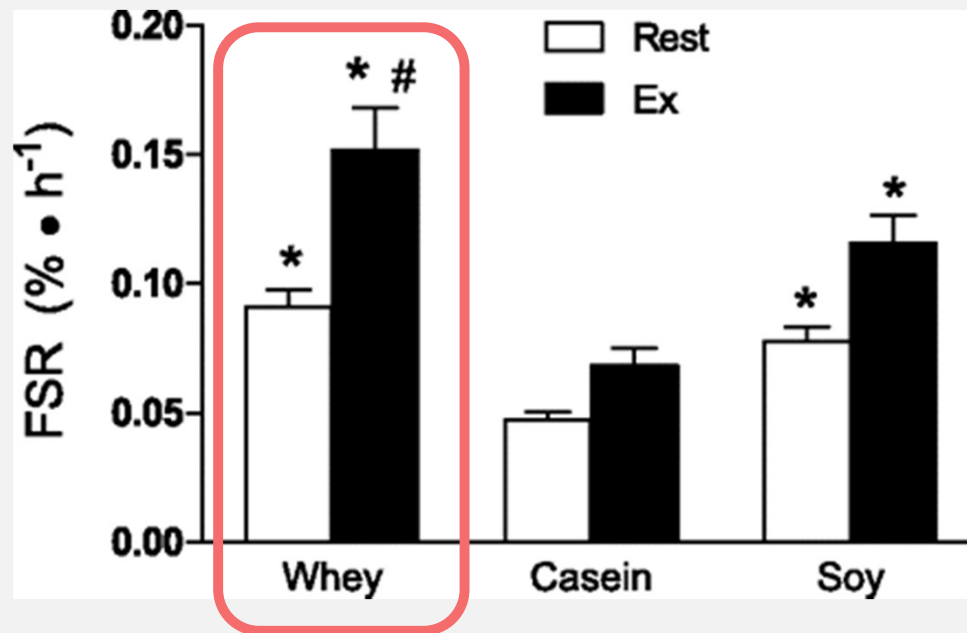




# Not All Proteins are Created Equal Nutritionally



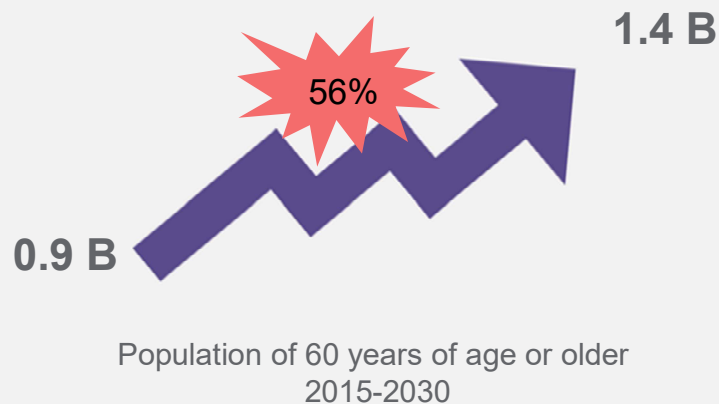
# Whey Protein is More Efficient to Enhance MPS (Muscle Protein Synthesis)



Tang, J. E., Moore, D. R., Kujbida, G. W., Tarnopolsky, M. A., & Phillips, S. M. (2009). *Journal of applied physiology*, 107(3), 987-992.

# Whey Protein in Healthy Aging

- The world's population is aging leading to extensive health concerns:
  - **sarcopenia** (loss of muscle mass and strength)
  - **osteoporosis** (loss of bone mass)



- Recommendations to the elders (age 65 or older): Increase daily protein intake



- ❖ **1.0-1.2 g** protein intake/ kg body weight/ day
- ❖ **1.2-1.5 g** protein intake/kg body weight/ day for those with acute or chronic diseases
  - **30g** of protein that contains 2.5g leucine/ meal

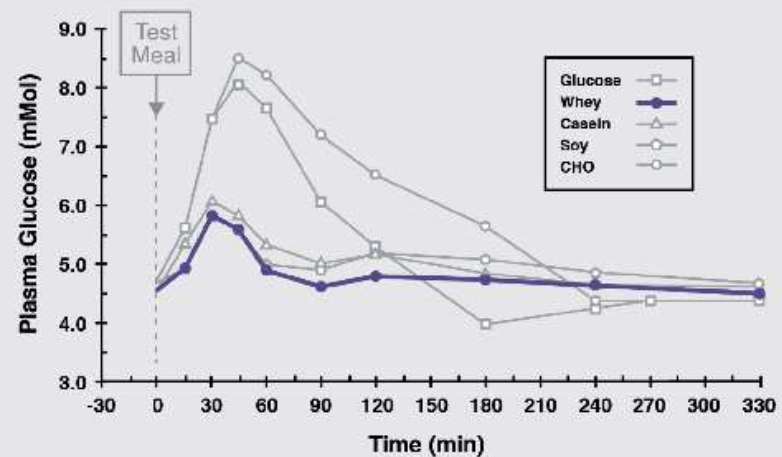
# Whey protein in dietary management of Type 2 Diabetes



**Increased daily protein intake for glycemic control.** Whey protein has been reported to improve postprandial glycemic control by increasing insulin secretion after meals. Ingested whey protein is an efficient insulin secretagogue that can be used for Type 2 diabetes.<sup>1</sup>

**Whey protein** is more effective in glycemic control compared with other protein sources.

\*Graph modified from: Acheson, Kevin J., et al. The American journal of clinical nutrition 93.3 (2011): 525-534.



# Whey protein in the times of COVID-19

A pure, complete protein, used in COVID-19 patients' nutrition management



One serving of high-quality whey protein contains almost half of a healthy adult's protein needs.

Undenatured whey protein can promote immune health and help alleviate symptom severity or complications from viral infections.

Adequate protein is critical for immune function.

Whey protein powder can last for several months, making it a great functional food option.

Some amino acids are absent from plant foods, so those who avoid meat may need supplementation as may the elderly, who are particularly at risk for protein malnutrition.

Source: <https://theana.org/COVID-19>

# How Much Protein Do You Need?



**>0.8g**

per kg of total body weight per day

With regular physical exercise, to help prevent the development of sarcopenia.

Extra **10-20g**

per day

Older adults, particularly those who are inactive or have chronic diseases, should receive sarcopenia assessments during the pandemic. Those with sarcopenia warrant extra protein supplementation.

**1.2-2.0g**

per kg of total body weight per day





Patients with sarcopenia and COVID-19 could benefit from early introduction of high-quality protein (1.2-2.0 g/kg/d) accompanied with exercise, which promotes immune response and metabolic stress.





# High Nutritional Value of Whey Protein



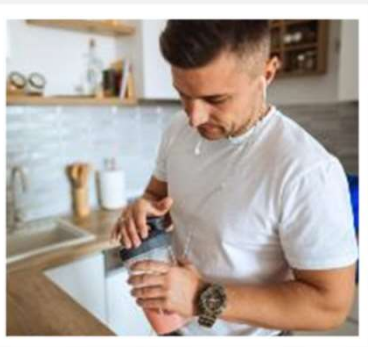
## Nutrition supplements

- ✓ Active lifestyle 
- ✓ Sports nutrition 
- ✓ Healthy aging 
- ✓ Weight management 
- ✓ Immunity boost 

## Medical foods

- ✓ Diabetic patients 
- ✓ Post-surgery recovery 

# Product Development using Whey Proteins



RTM Protein Blends



Nutrition Bar



Protein Shake



Protein Jello



RTD Beverage



Healthy Snacks



Drinkable Yogurt



Protein Tablets

# Whey Protein for All Life Stages



Infant Nutrition/ Sports Nutrition/ Weight Management/ Healthy Aging



# Health Benefits of Whey Proteins

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◊  
Better Dairy.  
Better World.



THANK YOU

