The Balchem Beat

Issue 19 February 2024

balchem
HUMAN NUTRITION & HEALTH

The Balchem Beat

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Editor's Note:

Dear Balchem Community,

We are thrilled to bring you groundbreaking news in the world of nutrition research. Balchem, in partnership with Virginia Tech, is proud to announce the establishment of the Virginia Tech Mineral Metabolism Research Center. This collaboration represents a major leap forward in our commitment to advancing scientific knowledge on the crucial role minerals play in human health.

In addition to this exciting collaboration, we introduce Centennial™ 7513, our latest spray dried lipid powder – a versatile creamer perfect for a myriad of culinary applications. Explore the culinary possibilities and partner with us to elevate your creations.

Our INjoy™ Flavor Systems unlock a world of unique yet familiar tastes for ice cream bases. Take frozen indulgence to new heights with INhance™ Variegates, introducing diverse textures like crunchy, creamy, or velvety mouthfeels.

Dive into the realm of nutrition with us as we uncover the benefits of creatine and magnesium, collaborating to enhance performance. Additionally, our investigation into choline's effects on mood and brain health reveals VitaCholine® as a crucial contributor to overall well-being.

Lastly, our Science Update sheds light on a comprehensive review paper emphasizing the importance of choline for liver health in both mothers and infants. The findings reinforce the need to ensure sufficient choline intake, advocating for its inclusion in maternal multivitamin supplements.

At Balchem, we are not just contributing to research; we are actively shaping the future of nutrition. Join us on this journey of collaborative excellence, innovation, and a commitment to holistic well-being.

Warm regards,
The Balchem Beat Editorial Team

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Photo courtesy of Virginia Tech

Balchem and Virginia Tech Announce Collaboration

Balchem and Virginia Polytechnic Institute and State University (Virginia Tech) have become joint founders of the Virginia Tech Mineral Metabolism Research Center – a research center of excellence dedicated to studying the impact of mineral nutrition in human health.

This collaboration aims to review the most up-to-date, scientifically backed information on the relationship between various minerals and human health, and to identify open research questions in the field to help guide and inform researchers and clinicians.

This initiative is being led by Stella Volpe, PhD, RDN, ACSM-CEP, FACSM – the current Head of the Department of Human Nutrition, Foods, and Exercise (HNFE) at Virginia Tech. She will work with a team of researchers on an independently written review article on the state of science on magnesium. The article is due to be published in 2024. Dr. Volpe, who heads the project with a wealth of experience and expertise in mineral supplementation and nutrition interventions, states:

"I am honored to be leading this team of dedicated academics in this endeavor. The project plays an important role in the future of nutrition, because it aims to provide a credible and comprehensive overview of the current state of scientific research on minerals and human health to clinicians and researchers."

Stella Volpe, PhD, RDN, ACSM-CEP, FACSM
Head of the Department of Human Nutrition, Foods, and Exercise (HNFE) at Virginia Tech

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Albion® Minerals

"We are proud to support Virginia Tech on this project because we truly believe it will help the scientific community reach a deeper understanding of minerals in human health. We see this collaboration as a testament to our commitment to supporting independent research, which we will also leverage to continue to develop effective, innovative ingredients that can benefit consumers globally. Our Albion® Minerals brand has been at the forefront of mineral research for over six decades, pioneering ingredient formats such as magnesium bisglycinate chelate and chelated iron, while always using science as the foundation for product innovation and development."

Dr. Eric Ciappio, PhD, RD, the Strategic Development Manager, Nutrition Science at Balchem

According to existing research, magnesium can support a wide range of bodily functions, including blood pressure regulation, muscle and nerve function, bone formation and managing blood glucose concentrations.[1]

Considering the large scale of scientific research available, its popularity, and the array of benefits the mineral possesses, this reliable, timely review paper on magnesium is essential for determining the direction of future research.

For more information about Balchem visit our website:

INJoy™ flavor systems

INhance™ variegates

Unique, yet Familiar Flavors:
Frozen Dessert and Ice Cream Solutions

People are continuing to look for ways to connect and contribute positively to the world. A mainstay of connecting people is through food, and what better way than with frozen desserts! Our INjoy™ Flavor Systems present unique, yet familiar flavors on ice cream bases. Then enhance frozen treats with INhance™ Variegates. Add various textures like a crunchy, creamy, or velvety mouthfeel.

Want some flavor inspirations? Our 2024 TrenDish™ trends and tasting concepts are coming soon. Don't delay, schedule a meeting today

More information here

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CREATINE MAGNAPOWER®

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Maximizing athletic performance extends beyond intense training – it involves nourishing your body with essential elements like nutrition, quality sleep, hydration, and strategic supplements.

Benefits of Creatine and Other Key Nutrients in Sports Nutrition

In the realm of sports nutrition, creatine emerges as a standout, being extensively researched and widely embraced for its role in elevating exercise and sports performance [1]. However, it's important to note that creatine doesn't act in isolation – the essential mineral Magnesium plays an important role in the function of creatine. Join us as we explore the benefits of creatine and magnesium, supporting performance enhancement.

How does creatine work?

Creatine supplementation increases the concentrations of both creatine and phosphocreatine in the body – two molecules involved in the production of the molecule that your muscles rely on for the energy to perform, known as adenosine triphosphate (ATP) [2]. But ATP doesn't work alone – it relies on the essential mineral magnesium to help stabilize its structure to help ensure that energy is generated properly. Magnesium plays several important roles related to performance, including supporting energy metabolism, muscle and nerve function, and contributing to the synthesis of proteins, bones, and DNA [3].

Maximizing Performance with Creatine and Magnesium

Creatine provides multiple benefits to athletes when used alongside a resistance training program. It is considered the most effective supplement currently available to athletes for

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Whether designing supplements for weightlifters, elite athletes, or the 55+ active consumer [9], Creatine MagnaPower® is an excellent fit for your product line.

improving high-intensity exercise capacity and lean body mass during training [1,4]. Magnesium is an essential mineral with multiple health benefits supporting cellular energy production and muscle function [5]. Incorporating these into your fitness regimen supports your path to peak performance.

Creatine MagnaPower® & Performance

Creatine MagnaPower® is a unique blend of creatine and magnesium that helps provide purposeful nutrition for athletes. Beyond the standalone benefits of creatine and magnesium, this specialized blend helps to improve cellular hydration and increase anabolic signaling in athletes [6], delivering significant muscular performance benefits, with no loading phase required [7]. Creatine MagnaPower® supplementation has also shown to improve several markers of performance – from bench press work capacity [8] to sprinting performance in elite soccer players [7].

Interested in learning more about Creatine MagnaPower® or other nutritional solutions for athletes? Contact the team at Balchem and let us help you!

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4) Dietary Supplements for Exercise and Athletic Performance - Health Professional Fact Sheet (nih.gov)
5) Food and Nutrition Board, Institute of Medicine, 1997.
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Your Culinary Game-Changer!

EXCITING NEWS! INTRODUCING **CENTENNIAL™ 7513**, OUR LATEST SPRAY DRIED LIPID POWDER.

Centennial™ 7513 is a powerhouse versatile creamer with the perfect blend of coconut oil and non-fat dry milk and lends itself to a wide range of applications. This high fat, low sodium creamer has been utilized in countless applications including dessert, savory, beverage, dairy and bakery, showcasing its wide adaptability for various culinary creations. Balchem powders enhance the culinary experience, with specially formulated value-added functional ingredients that ignite a spectrum of flavor sensations in any application.

Partner with us to explore the endless culinary possibilities thatCentennial™ 7513 can bring to your business. Click here for more information

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VitaCholine®

How Choline Can Support Mood and Brain Health

Choline's Role in Mood and Brain Health
Choline plays a crucial role in enhancing mood and brain health. Let's dive into how choline impacts mood regulation, memory, learning, and brain cell communication.

Mood Regulation and Choline: Choline is involved in the synthesis of the neurotransmitter acetylcholine, which plays a critical role in mood regulation. Adequate choline intakes are essential for maintaining a proper acetylcholine synthesis, which has an important role in the maintenance of a normal mood. [1, 2]

Choline and Memory/Learning: Acetylcholine has multiple important roles, including supporting memory and cognitive function. Adequate choline intake is key to providing proper support for these important functions.[2]

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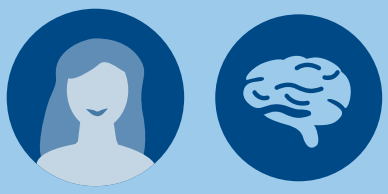
Brain Cell Communication and Choline: Choline plays a significant role in facilitating communication between brain cells and throughout the body by supporting the production and release of neurotransmitters. Optimal levels of choline are necessary for efficient signal transmission within the brain and aiding muscle control, thereby supporting overall brain function.[2]

Understanding Choline: Key Player in Mood and Brain Health

Choline is an essential nutrient that supports our memory, mood, muscle control, and various bodily functions, playing a vital role in the well-being of the brain and nervous system [2]. While our bodies can produce limited amounts of choline, we can't make enough to meet our daily requirements and so we need to consume choline in the diet to maintain our health [2,3]. The main dietary sources of choline in the United States consist primarily of animal-based products that are particularly rich in choline – meat, poultry, fish, dairy products, and eggs [2]. Unfortunately, nearly 90% of American adults fall short of the recommended choline intake in their diet [4].

Cognition Boost: The Role of Choline in Mental Processes

Cognition, the foundation of our mental process, is fundamental to our daily lives. Choline has been recognized for its role in cognitive function [4]. It serves as a precursor to acetylcholine, a neurotransmitter essential for memory, regulation of mood, and supporting attention. [2, 4] Clinical trials have even demonstrated its ability to improve cognitive performance[5].



OPTIMIZING CHOLINE INTAKE FOR ENHANCED MOOD AND BRAIN HEALTH

For products and wellness strategies aimed at supporting mood and brain health, optimizing choline intake is essential. Here are some tips to consider:

Balancing choline intake:
Choline can be obtained naturally from various foods like eggs, liver, fish, and certain vegetables. Incorporating these choline-rich ingredients in your products can naturally boost choline levels. In addition, considering choline supplementation can be beneficial, especially if your target consumers' diets are lacking in choline-rich foods. [2]

Lifestyle factors:
Don't forget about the basics – like regular exercise, adequate sleep, and stress management techniques that can all contribute to overall health and well-being.

Personalized advice:
Individuals' choline needs may vary based on factors such as age, sex, and overall health. Providing personalized advice tailored to your consumers' specific needs can help guide them towards maintaining optimal mood and brain health.

VitaCholine®: Supercharge Your Body and Mind

VitaCholine® is a key player in brain health [4]. Its dynamic function contributes to supporting the production of acetylcholine, a neurotransmitter that is essential for regulating our mood, especially on challenging days[1,2]. VitaCholine® is an essential part of a well-balanced diet to help promote your overall wellness.

Looking for more valuable information on how VitaCholine® can meet the rising demand for cognitive health supplements? Check out Balchem expands VitaCholine production to meet rising demand for cognitive health supplements (nutritioninsight.com) (by Milana Nikolova, Dec. 13, 2023).

Balchem's Commitment to Your Holistic Well-Being: A Journey of Support

At Balchem Corporation, we're not just providing solutions; we're curating experiences that elevate your entire well-being. From our award-winning VitaCholine® to our family of Albion Minerals, Balchem offers multiple innovative nutritional options to help consumers support a healthy mood across various application formats and business segments.

Contact us for more information.

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SCIENCE UPDATE

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New review sheds light on importance of choline for liver health in mom and baby

A new comprehensive review paper outlining the latest advancements in maternal choline intake and liver function of the baby was published in January 2024, featuring some of the leading experts in the field of choline nutrition research.

While the benefits of the relationship between maternal choline intake and baby's brain and spinal cord development often take center stage when discussing prenatal choline benefits, the authors provide detail on the nutrient's essential role in liver health and development. In short, they describe research findings that show that choline from mom's diet is actively transported to the baby, demonstrating the importance of choline for baby's development but also possibly increasing the susceptibility of the mother to fatty liver, outlining the importance of adequate choline consumption for both mom and baby.

Given the critical roles choline plays in development, the authors go on to advocate that "public health policies are needed to ensure sufficient choline intake through adding choline to maternal multivitamin supplements." Given that the intake of choline in the maternal diet is well below the recommendation, the authors conclude that "Current knowledge suggests that adding up to 250 mg of choline to maternal multivitamin supplements should be a safe and an effective way to help in bringing the average choline intake of pregnant and nursing mothers closer to the recommended amount."

This paper follows up the latest EFSA claim for choline from July 2023 ("Maternal choline intake during pregnancy and lactation contributes to normal liver function of the fetus and exclusively breastfed infants"), which provides opportunities for brands to utilize this information in messaging to help raise awareness of the importance of choline in mom's diet.

If you're interested in learning more about how choline can benefit both mom and baby, contact us today!

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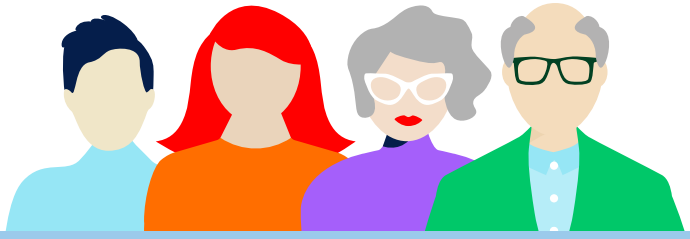
Functional Ingredients on the Verge of a Breakout Year

CINNAMON	BEET ROOT
Known for: Blood sugar & metabolism support	**Known for:** Performance & cardiovascular health
$26.9M | **+56.7%**	**$63.6M** | **+69.6%**
MAGNESIUM	**CREATINE**
Known for: Mood support, bone health & more	**Known for:** Performance
$281.3M | **+41.5%**	**$62.7M** | **+35.5%**

According to SPINS 2024 Trend Predictions, functional ingredient trends often have their origins in supplements before expanding to new categories. The following are a few functional ingredients with low-to-mid level sales volume experiencing **high growth.**

The forecast is for continued success in supplements while being breakout candidates elsewhere.

Source: SPINS 2024 Trend Predictions



Consumers Seek Multiple Benefits from Foods, Beverages, and Nutrients

2023 saw more consumers looking to manage weight and improve emotional/mental health in terms of benefits they are seeking from foods, beverages, and nutrients.

Energy and fighting fatigue along with emotional/mental health are especially important to younger consumers. Older generations are especially interested in heart health.

40% **GEN Z & GEN X** Energy/less fatigue benefits

42% **Millennials** Energy/less fatigue benefits

44% **Boomers** Healthy Aging benefits

Source: 2023 Food and Health International Food Information Council, Survey of 1,022 US consumers

Events

SEE YOU THERE

- **Regional IFT Portland, 2/26/24**
  Portland, OR
- **ASB Bakery Tech, Booth #215, 2/27-2/29**
  Chicago, IL
- **Regional IFT Cascadia, 2/27/24**
  Seattle, WA
- **Regional IFT British Columbia, 2/28/24**
  Burnaby, BC
- **Research Chefs Association (RCA) Conference, Booth #40, 3/5/24 – 3/7/24**
  Quincy, MA
- **Regional IFT Southern California, 3/12/24**
  Garden Grove, CA

Schedule a meeting with us, here:

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