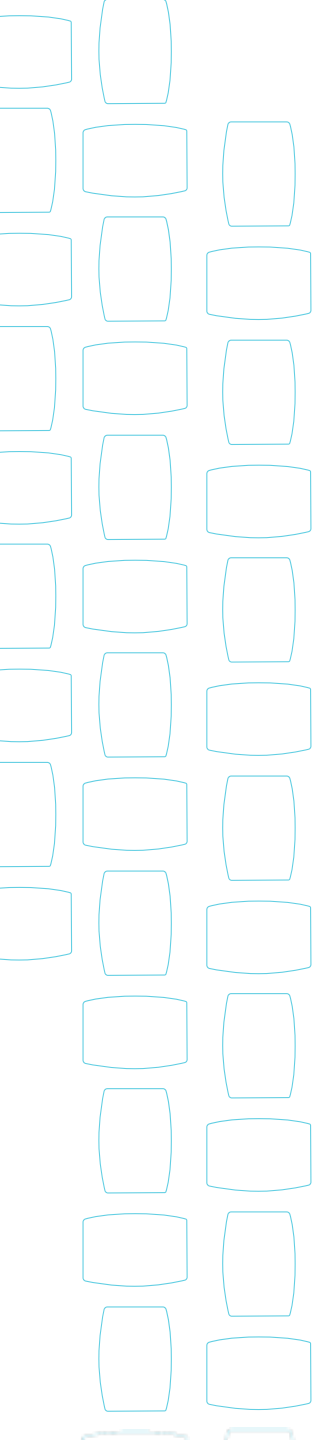


NUTRACEUTICALS

Total solutions for Cognitive Health
by Lubrizol



 | HEALTH



The **COVID-19** pandemic has recentered our **focus** on **cognitive health** and **mental well-being**.

Consumers are interested more on **preventative health** and **undoing** past **negative health choices**.

In this respect, **nutraceuticals** have an **exceptional positioning** within healthy ageing.

Consumers want **reassurance, transparency** and **maximum authenticity** around health claims made in the products they are taking.

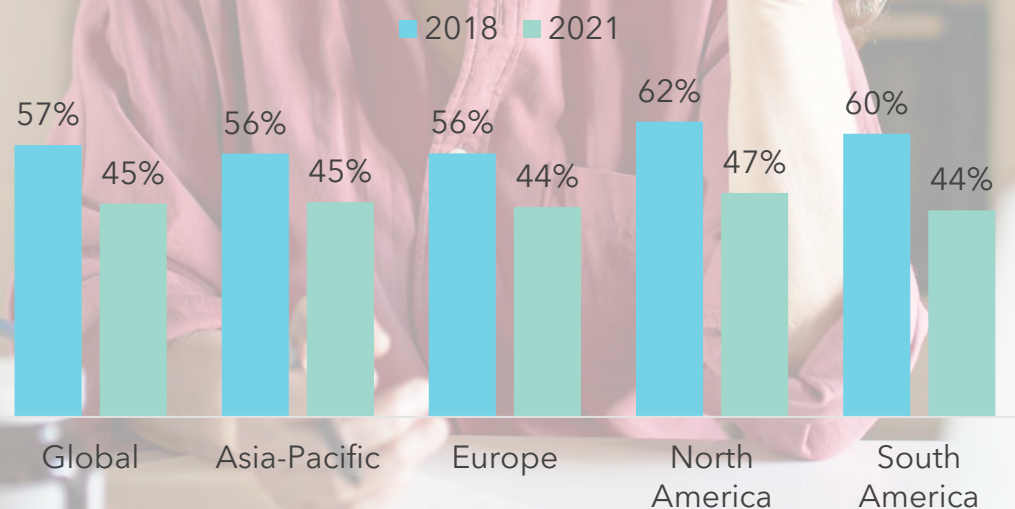
Mental and Cognitive Health

In the wake of the COVID-19 pandemic, the demand for products focused on healthy aging and the prevention of cognitive decline has increased significantly.

Consumers are looking for holistic solutions that support their cognitive and emotional well-being.

Innovation around nutraceutical ingredients that support the cognitive function and help improve sleep quality, mood and relieve stress will be key.

Proportion of consumers who say that they are satisfied with their cognitive health



Source: FMCG Gurus: Assessing the Importance of Cognitive Health - Global Report 2021



BRAIN HEALTH

IS KEY FOR A HEALTHY AGING

The Cognitive Health market is anticipated to reach **US\$11.6 billion** by 2024

CAGR: 19.6%

Main market drivers:



Aging population



Willingness to enhance brain functions



Natural Solutions on Demand



Excessive exposure to digital devices

Nutraceuticals Role in New Cognitive Health Awareness

Preventative
Healthcare

Address
Cognitive
Health

Promote
Mental
well-being

Support
Healthy
Aging

Lipofoods™

Nutraceutical Ingredients

Mission

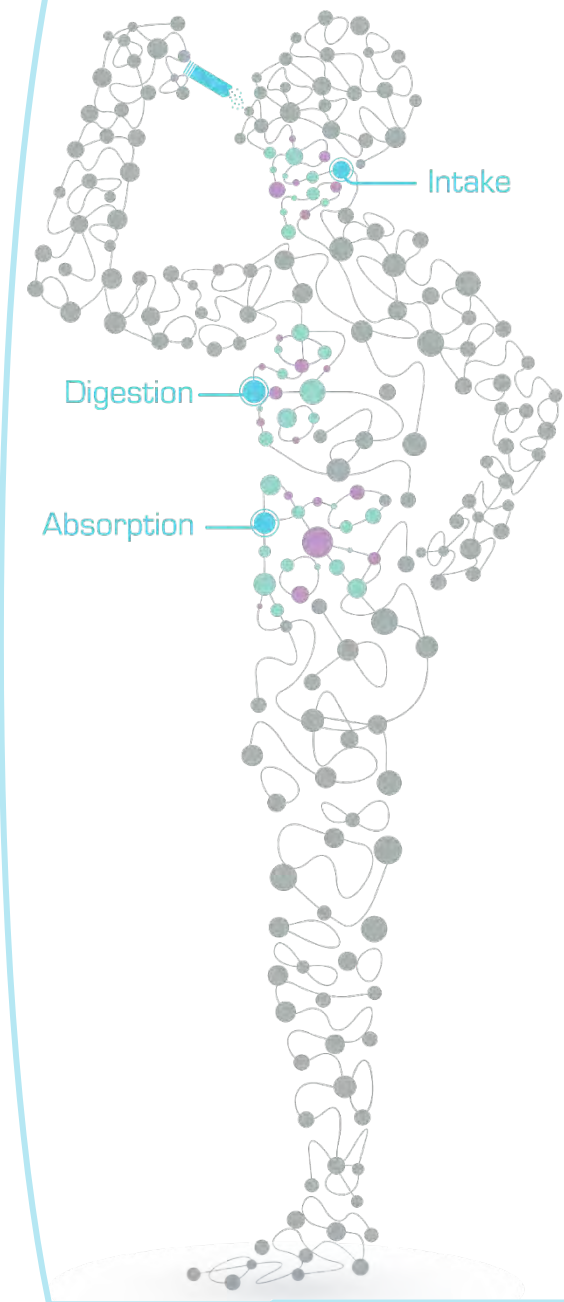
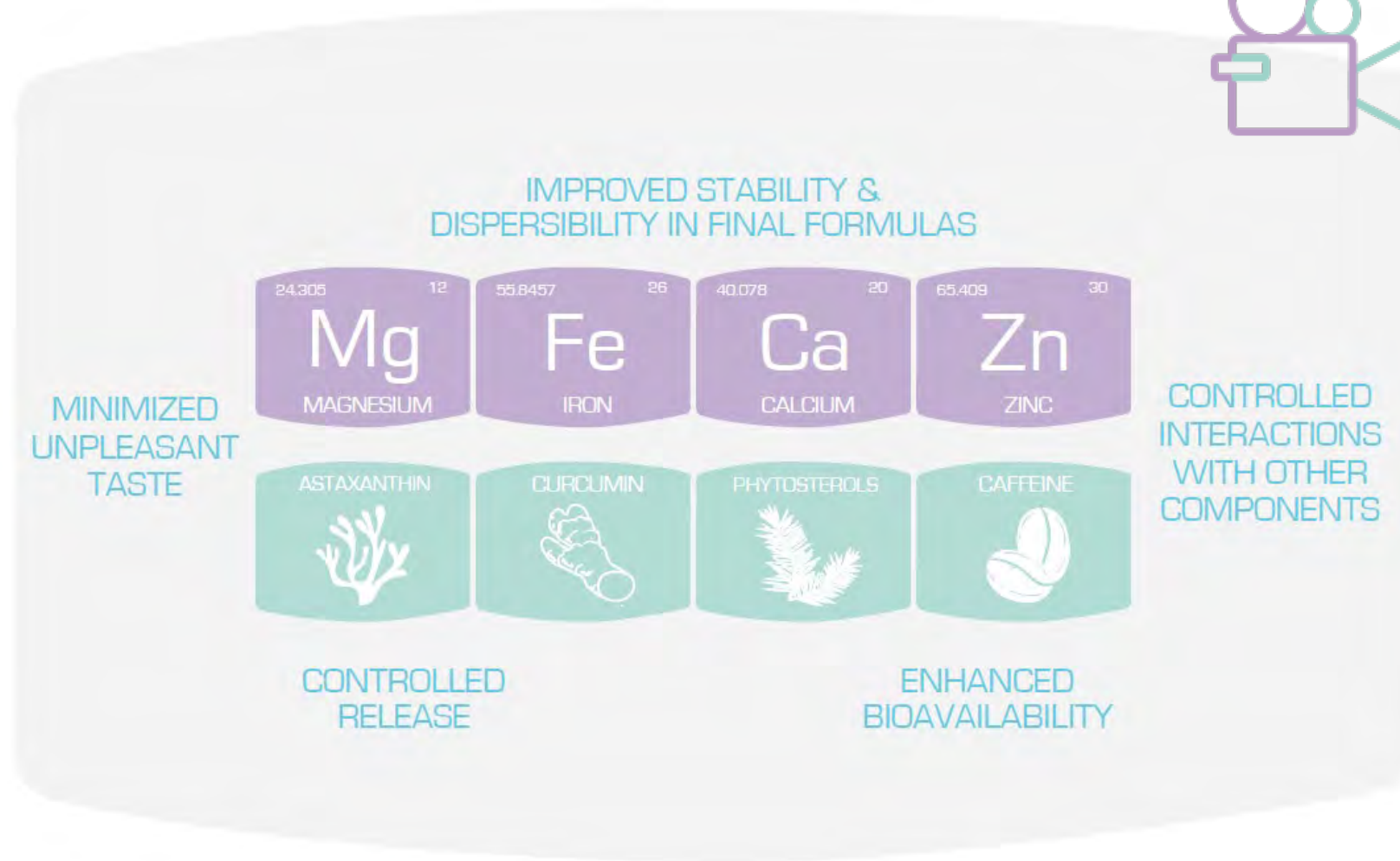
Apply Lipofoods™
microencapsulation expertise
to develop unique ingredients
with scientific backing

Vision

Enable differentiated
Nutraceutical Solutions through
technological Lipofoods™
branded ingredients



MICROENCAPSULATION BENEFITS



Mental & Cognitive Health

Lubrizol branded ingredients with scientific backing can help preserve cognitive function and prevent age-related cognitive decline.



Bioavailable and stable
source of iron



Sustained caffeine release
with a clean taste



Concentrated source of
magnesium for an active lifestyle



Naturally stable astaxanthin
for healthy aging



Bioavailable & soluble curcumin
with proven anti-aging benefits

* Under development

Cognitive Health
and Mental wellness

DAY

NIGHT

OUR NUTRACEUTICAL INGREDIENTS ADDRESS ALL COGNITIVE HEALTH AND MENTAL WELLNESS NEEDS

NEWCAFF™

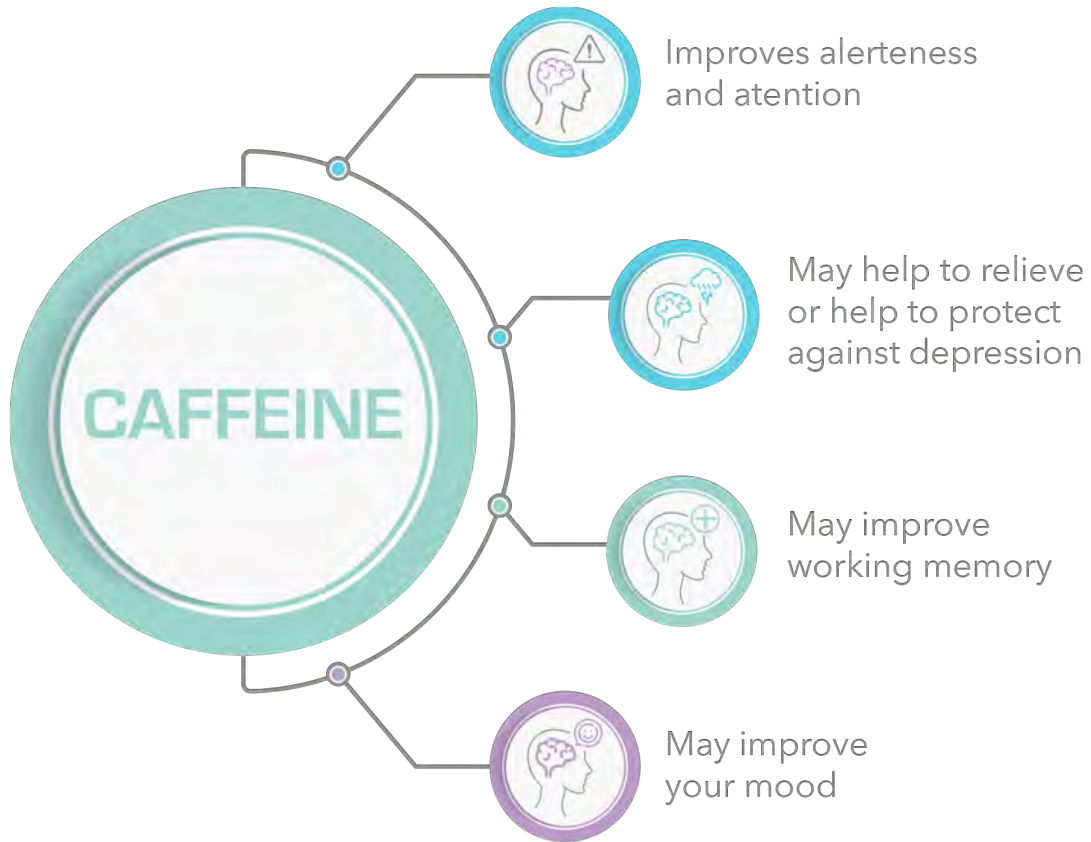
microcapsules

Sustained caffeine release
with a clean taste





BENEFITS



CHALLENGES



Rapidly and completely absorbed within 45 minutes of ingestion

It has a **strong bitterness**, difficult to mask in formulations

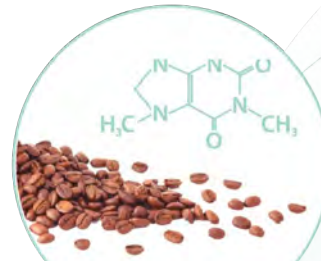
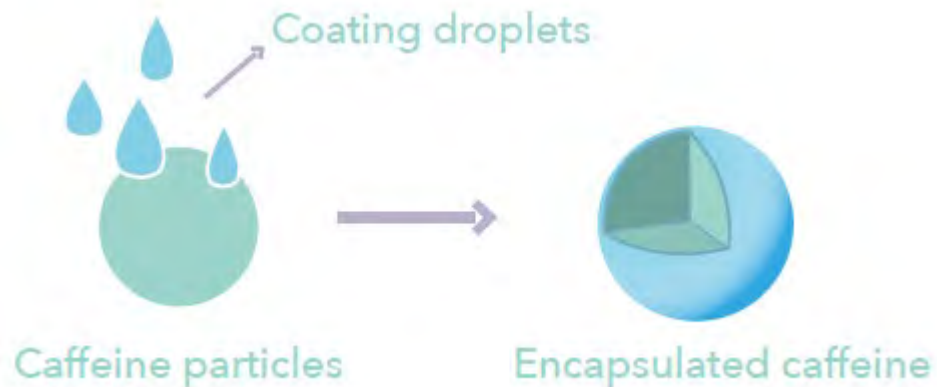
It cannot provide a long-lasting effect leading to **energy fluctuations**

NEWCAFF™

microcapsules

Sustained caffeine release with a clean taste

Caffeine particles perfectly coated with a special mixture of lipids to totally mask the bitterness



Efficacy

- ✓ Clean "non-bitter" taste
- ✓ Controlled caffeine release
- ✓ Cleaner final formulas
- ✓ Available in 2 concentrations



NEWCAFF™

microcapsules



**Nutritional powders, tablets,
capsules and other dietary
supplements**



LIPOFER™

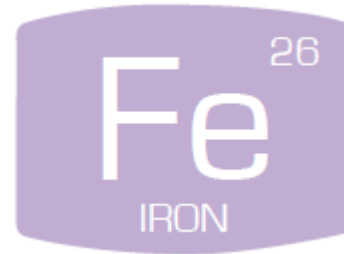
microcapsules

Bioavailable and stable
source of iron



IRON BENEFITS AND CHALLENGES

IRON SUPPLEMENTATION



Iron has been shown to contribute to maintaining a **normal cognitive function** and to the **reduction** of **tiredness** and **fatigue**



Can be challenging due to the reactivity of iron, causing:

- × **Undesirable side effects**
- × **Unpleasant metallic taste**
- × **Difficult product development and compliance**

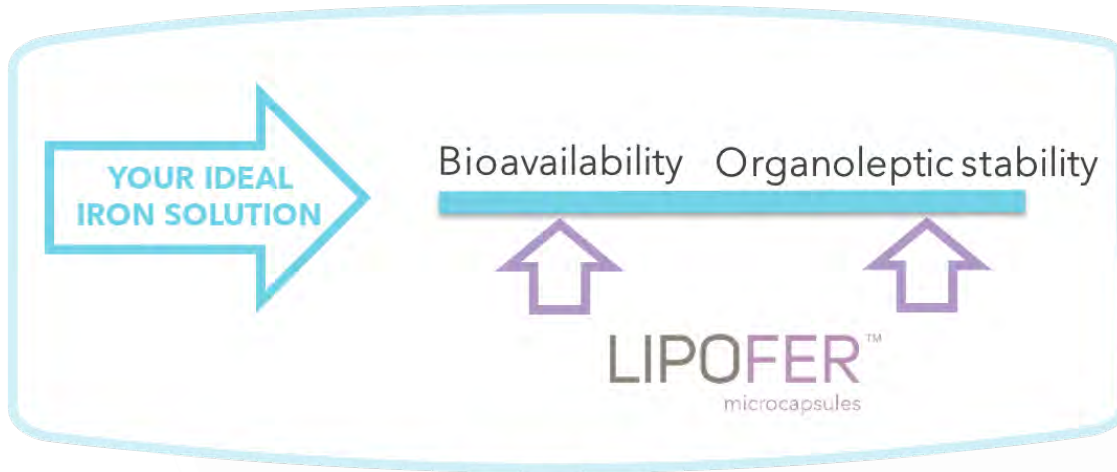
LIPOFER™

microcapsules



Micronized + microencapsulated iron

Bioavailable & stable source of iron

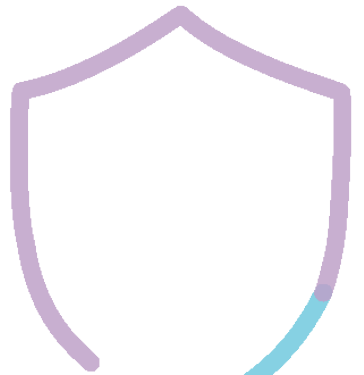


- ✓ Reduces metallic taste
- ✓ Controls interactions with other components
- ✓ Water dispersible
- ✓ No digestive tract irritation

LIPOFER™ microcapsules



**Milk powder, dairy products
and dietary supplements**



ASTAGILE™

microcapsules

Naturally stable astaxanthin
for healthy aging



ASTAXANTHIN



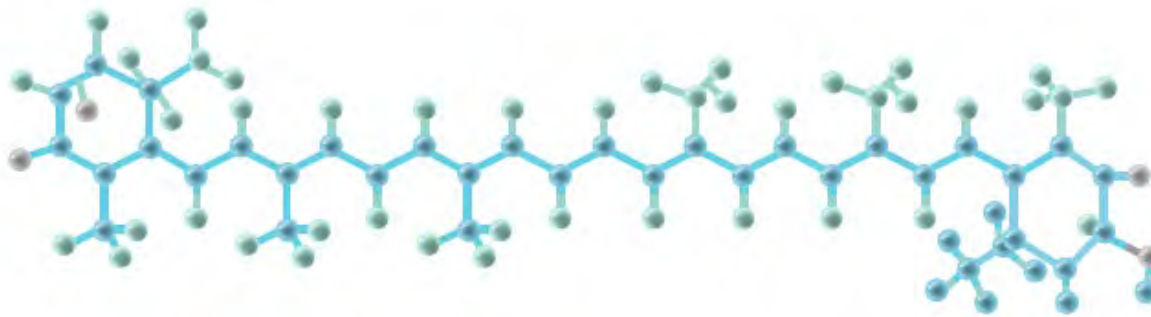
RED-ORANGE CAROTENOID

Found in a freshwater green microalgae called *Haematococcus pluvialis*

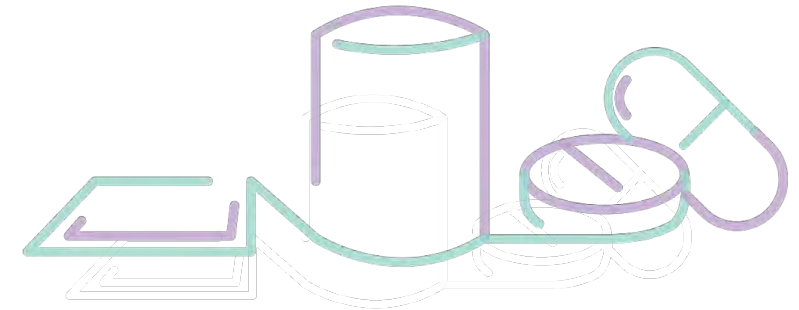


Antioxidant protection to the **brain structures** and a **neuroprotective** effect by reducing oxidative stress

However, due to its highly conjugated, double-bond structure, it is particularly sensitive to oxidation and therefore unstable



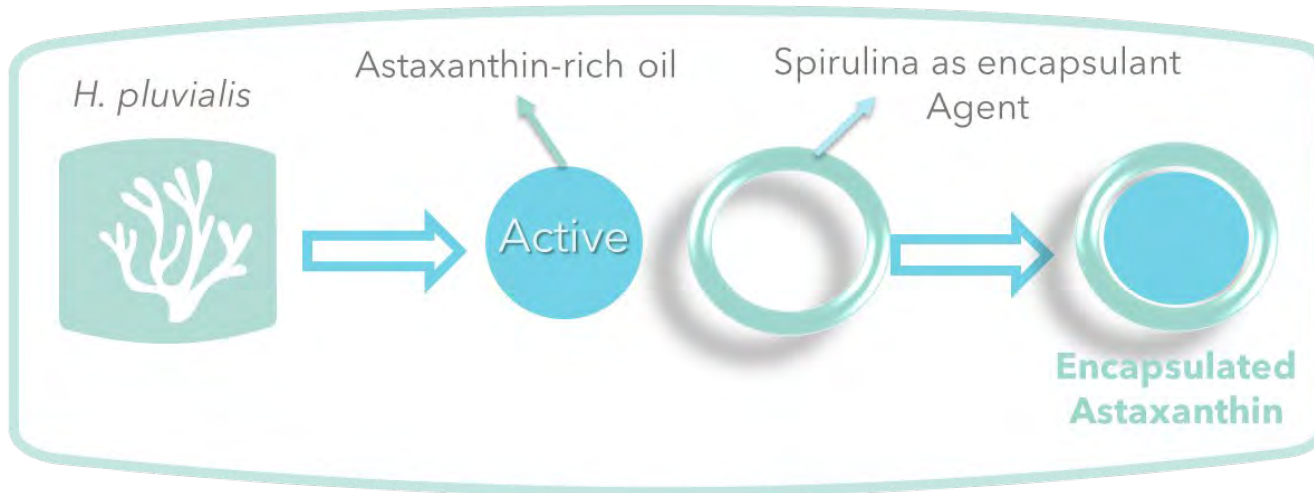
Significantly limits its use in nutraceutical applications



ASTAGILE™

microcapsules

Naturally Stable Astaxanthin for Healthy Aging

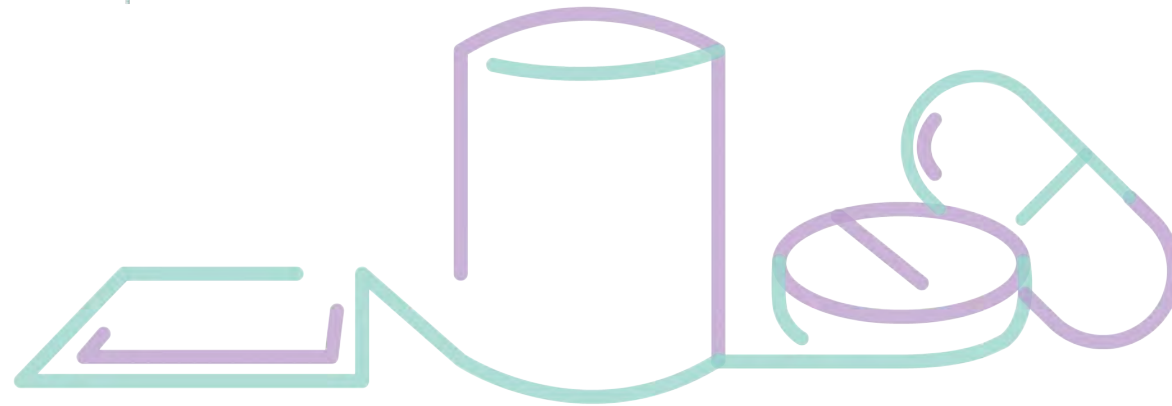


Efficacy

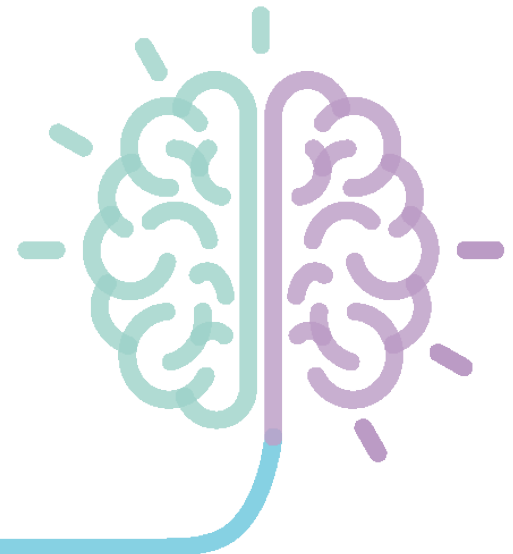
- ✓ 100% natural nootropic ingredients
- ✓ Powerful antioxidant effect
- ✓ Improves astaxanthin benefits by other microalgae
- ✓ Proven neuroprotective efficacy

ASTAGILE™

microcapsules



**Nutritional powders, tablets,
capsules and other dietary
supplements**



CURCUSHINE™

microcapsules

Bioavailable and soluble curcumin
with anti-aging benefits



CURCUMIN BENEFITS AND CHALLENGES

CURCUMIN

Is turmeric's (one of the most revered plants in Ayurveda), main bioactive polyphenol with potent anti-oxidant & anti-inflammatory properties.



Curcumin helps against sleep deprivation thanks to nitric oxide modulation

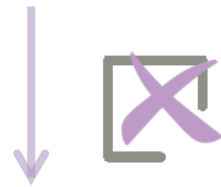


Beauty sleep

Curcumin may help with anxiety...



...and depression

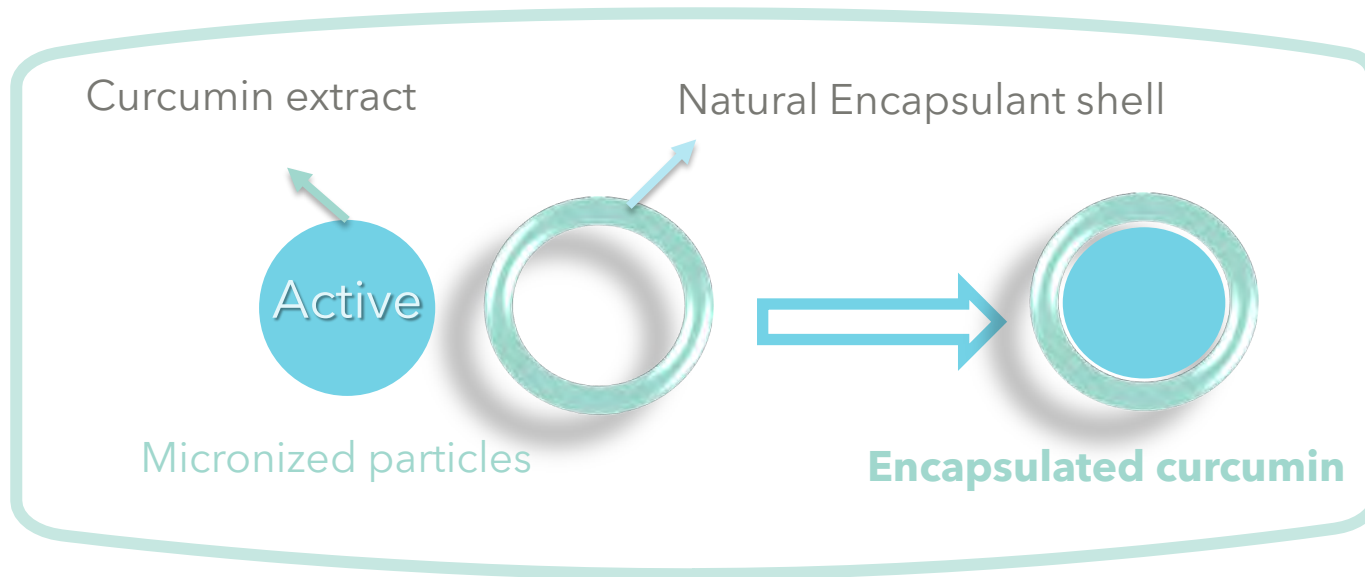


However, the potential of curcumin is limited by its **poor solubility** and **bioavailability**...

CURCUSHINE™

microcapsules

**Bioavailable & soluble curcumin
with anti-aging benefits**

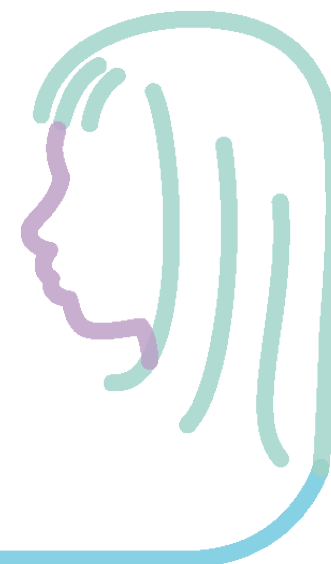


- ✓ Highly soluble
- ✓ Innovative delivery system
- ✓ Better anti-oxidant performance
- ✓ Odorless and tasteless

CURCUSHINE™ microcapsules



**Dietary supplements and
functional beverages**



MAGSHAPE™

microcapsules

Concentrated source of
magnesium for an active lifestyle





The active
nutrition
consumer...



...demands
active lifestyle
solutions



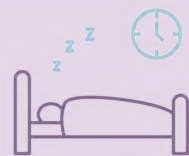
Magnesium benefits



Mental Wellness



Energy &
Endurance



Sleep support



Magnesium contributes to a
reduction of tiredness & fatigue



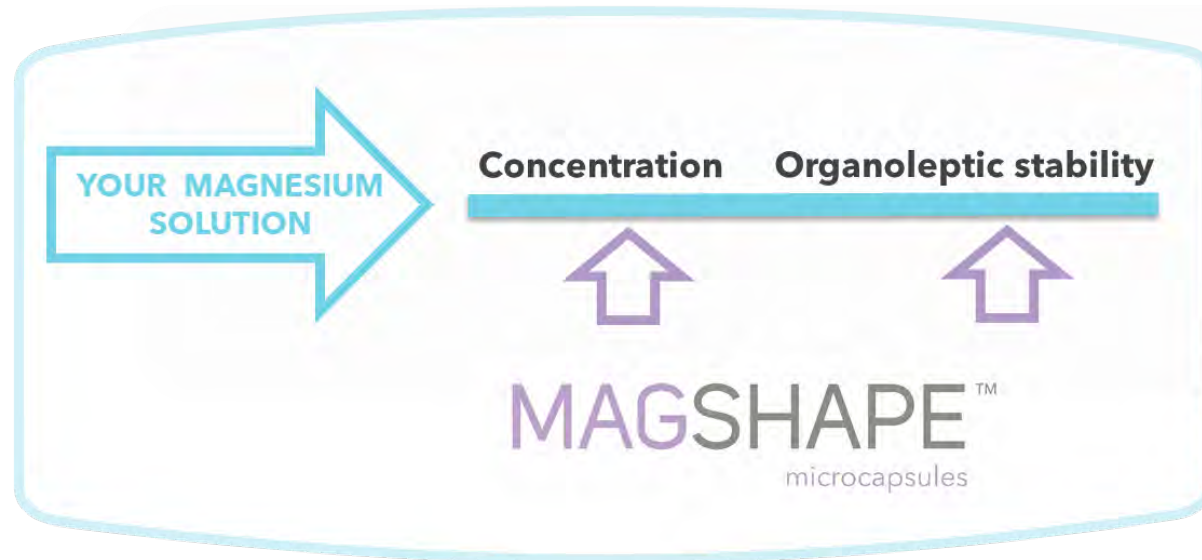
Magnesium contributes to
normal psychological function



However adequate levels
of magnesium have been
frequently overlooked



**Concentrated source
of magnesium for an
active lifestyle**

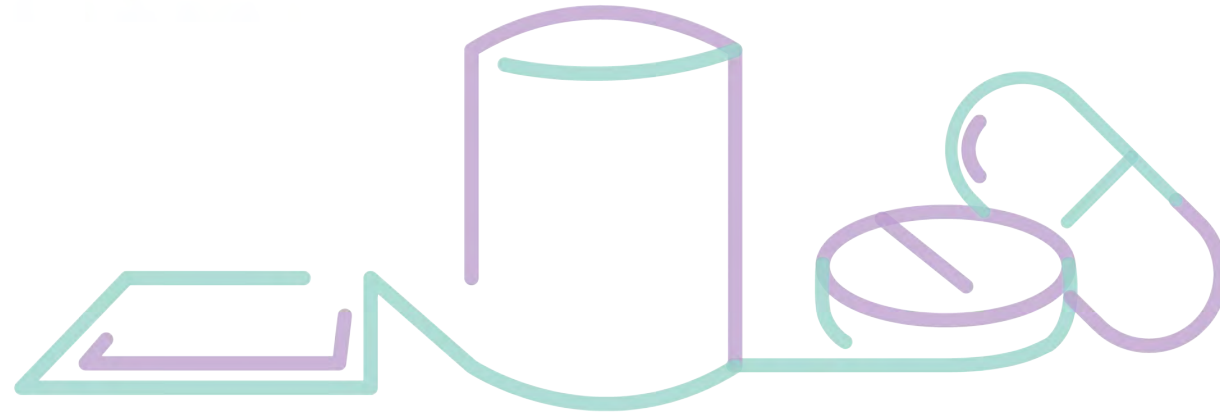


- ✓ Helps to relax and address / alleviates fatigue
- ✓ Provides vitality and stress relief
- ✓ Improves the muscular function
- ✓ Boosts energy levels for a better performance

MAGSHAPE™

microcapsules

**Dietary supplements and
nutritional powders**



KEY TAKE-AWAYS

- **COVID-19** has boosted the consumers focus on **cognitive and mental health**.
- Consumers want **scientific proof** and maximum authenticity around **claims made** on the products they are taking.
- Branded ingredients and **scientific evidence** to support claims are a way to offer reassurance over **product efficacy**.

Lubrizol provides effective, safe, clinically supported branded ingredients with added value to support cognitive health





LUBRIZOL
LIFE SCIENCE

Thank You

For more information visit us at

www.lipofoods.com

or contact us at

[**nutraceuticals@lubrizol.com**](mailto:nutraceuticals@lubrizol.com)

Lipofoods™

Nutraceutical Ingredients