

Nutraceutical solutions: Harnessing the power of plants for ache relief and enhanced health

In recent years, there's been a shift in how people approach their health and well-being. Increasingly, individuals are turning to complementary remedies alongside conventional medicine. Among these remedies are nutraceutical ingredients, that harness the power of plants.

Several factors contribute to this trend. Some individuals seek complementary approach to manage side effects from conventional treatments, while others are drawn to the holistic approach that addresses the mind, body, and spirit. Additionally, scientific researches increasingly show that natural products are really effective for specific conditions.

It's crucial to emphasize that complementary therapies have to be meant as an add-on of conventional medical care and should be integrated into a comprehensive treatment plan in consultation with a healthcare professional. It's also essential to choose high quality products, and specifically botanical extracts, like the ones Indena has been producing for over a century.

One area where complementary approach has gained significant traction is in the management of chronic pain. The World Health Organization (WHO) recognizes pain as relevant topic for public health at a global level. Just to give a figure, chronic pain affects over 30% of people worldwide¹, who live with long-lasting pain that significantly diminishes their quality of life.

The impact of chronic pain is not simply related to a physical sensation, whereas it's a complex biopsychosocial experience. It can lead to physical limitations (simple daily activities become arduous, impacting mobility, self-care, and overall physical function), mental health challenges (chronic pain is strongly associated with bad mood, anxiety, and sleep disturbances)², social isolation (pain can make it difficult to maintain social connections, participate in hobbies, or engage in

work or family life), reduced quality of life (overall, chronic pain significantly diminishes an individual's quality of life, affecting their ability to enjoy life's simple pleasures and pursue their goals).

Beyond the individual experience, the economic burden of chronic pain is substantial. It manifests in healthcare costs (individuals with chronic pain often require frequent medical visits, diagnostic tests, medications, and other treat

ments, leading to significant healthcare expenditures) and lost productivity (chronic pain is a leading cause of work absenteeism and reduced productivity while at work). As a consequence, it means significant economic losses for individuals, employers, and society as a whole.

This scenario also explains why the global over-the-counter (OTC) analgesics market was estimated to be worth just over US\$28 billion in 2024 and it is expected to grow to almost \$41 billion by 2032³.

On the other hand, consumer interest in naturally derived pain relief options has been steadily increasing: studies reveal the trend and a significant rise in the use of complementary health approaches for pain management among American adults from 2002 to 2024⁴.

Nutraceuticals in ache management: natural ingredients for a complementary health approach

Pain has several and complex mechanisms, and there are many different kinds of pain, which need different treatments.

Nature may help effectively in managing ache discomforts. The holistic vision and the pleiotropic mechanism of action typical of natural ingredients may contribute to the need for a multidimensional approach to ache. Through the healing properties of plants and botanicals, people can find relief from these discomforts having at disposal add-on natural ingredients able to support conventional therapies for ache, for example by optimizing their intake and tolerability.

Indena has a wide products portfolio which can support ache management effectively, mainly in case of chronic pain.

The most recent is **CRONILIEF™, P-E-A Indena Phytosome®**, an innovative health food ingredient that will be launched at Vitafoods 2025. It is based on the formulation of P-E-A (Palmitoylethanolamide) with Indena Phytosome® technology to optimize its biological performances and health benefits.

Palmitoylethanolamide has emerged as a promising nutraceutical, being a natural lipid



Acmelea Oleracea

compound, specifically an endogenous fatty acid amide, produced in the body and known to play a key role in regulating inflammation and pain responses. Thanks to the so-called *entourage effect*, PEA works on multiple natural pathways positively linked to the modulation of the endocannabinoid system, influencing targets and receptors involved in the inflammatory response and in pain signalling. In CRONILIEF™, PEA natural compound gets all the advantages from Indena Phytosome® delivery system, showing optimized solubility in gastrointestinal fluids and bioabsorption, in favour of improved health benefits.

Other Indena products are effective mainly in **restoring a healthy inflammatory response**, which is essential for maintaining overall well-being, especially as we age or face chronic discomforts. Inflammation is a natural process that helps the body heal and protect itself, but when it becomes chronic or uncontrolled, it can lead to a variety of health issues, including joint soreness, and fatigue.

Some nutraceutical products from Indena are able to support the body's natural ability to regulate the physiological inflammatory response and fostering long-term health. They are:

- **CASPEROME®**, a full bouquet of boswellic acids featuring Indena Phytosome® technology providing a pleiotropic effect in favor of a healthy inflammatory response, proven efficacious in relieving stress and discomforts related to musculoskeletal and gut systems;
- **MERIVA®**, a highly bio absorbed curcumin formulated with Indena Phytosome® technology, turning ayurvedic power of curcuminoids into a science-backed ingredient supported by over 40 human studies and able to act against low chronic inflammation and supporting joint health;
- **MITIDOL®**, a smart ingredient combining ginger and acmella extracts, effectively joining forces to rebalance the inflammatory response in joint health thanks to a multi-target action including a proven double activity on the physiological function of human body endocannabinoid

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system;

- **QUERCEFIT®**, a quercetin-based ingredient enhancing the bioabsorption and properties of this flavanol delivered with Indena Phytosome® formulation, effective in supporting physical performance and function in sports and body fatigue-related conditions.

Moreover, an effective approach to managing chronic situations of distress can be **modulating the physiological transmission of discomfort signals** within the body. Indena's portfolio includes two products able to rebalance sensory pathways, supporting the management of prolonged or recurring ache improving overall comfort. In addition to the already mentioned **MITIDOL®**, there is **ACMELAIN™**, an innovative acmella extract standardized in alkylamides to be combined with other functional ingredients in favor of ache-relief

effect, thanks to proven modulation of natural endocannabinoid system.

Managing chronic discomforts also requires a comprehensive, 360-degree approach focused on improving the **individual's subjective experience**.

Natural substances like botanicals can help since many of these natural remedies target multiple areas, such as enhancing mood, improving sleep, or helping individuals manage emotional and cognitive responses. By addressing all dimensions of the person's well-being — including mental and emotional ones — this holistic strategy aims to create a more balanced and fulfilling life, recalibrating the body's response, enhancing comfort, and allowing individuals to feel the balance over life challenges. In this context, Indena's **RELISSA®** can be of help. It's a standardized, non-melatonin lemon balm extract formulated with Indena Phytosome® technology and with optimized biological performance, which can improve sleep quality and ensure a beneficial action in balancing moods and contrasting tension states.

Although chronic pain can be a difficult and multifaceted issue, it is not a hopeless one. By harnessing the benefits of botanical extracts, we can work towards improving human well-being and overall quality of life.

References:

- 1 Cohen et al., "Chronic Pain: An Update on Burden, Best Practices, and New Advances", The Lancet 397, no. 10289 (2021)
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- 3 Nature Outlook, 633, S25 (2024)
- 4 Nahin et al., "Use of complementary health approaches overall and for pain management by US adults in 2002, 2012, 2022 and trend 2024", JAMA. (2024)



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