



Life Stages Report 2023, Part 1:

Women's Health



Introduction

A woman's health needs continually change throughout her lifetime. However, brands should look beyond female-specific conditions such as pregnancy and menopause. While these are important, there is a huge white space for nutraceutical products for general health; sports nutrition; and cognitive wellness products specifically formulated for women's bodies. In this report, we look at the latest trends, research, and ingredient innovations.

The Life Stages Report 2023 is written in two parts that will be published throughout 2023. This is part one.



Women's health is
not just female-
specific conditions

WOMEN'S health is not just about periods, pregnancy, and menopause.

Cardiovascular disease (CVD) is the biggest cause of death in women worldwide, responsible for over one-third (35%) of deaths.¹ Despite this huge prevalence, CVD in women remains “understudied, under-recognised, under-diagnosed, and under-treated”, according to a Lancet Commission. Women are also under-represented in CVD clinical trials, even today.²



Such gender data gaps exist not just for CVD but across almost the entire spectrum of human health conditions. In the US, it became mandatory to include women in clinical trials as late as 1993. Before then, scientists simply did not know how pharmaceutical and nutraceutical ingredients reacted in women's bodies.

“Historically, the medical system's approach has been more of a patriarchal investigation into the human body, with data and results stemming from male-only testing and trials,” said Deeptha Khanna, chief business leader of personal health and executive vice-president at electronic and tech company Royal Philips, at the 2023 World Economic Forum. *“[...] This gender bias in medicine puts women at risk. There's a sizeable gap in the understanding of what we know about the female body.”*³

The nutraceutical industry has also been guilty of adopting the “shrink it and pink it” strategy – making products smaller and

using pink packaging to attract female consumers – but is starting, slowly, to recognise this is no longer acceptable.⁴



READ MORE: Why ‘shrink it and pink it’ will no longer cut it (click image)

Lynda Doyle is president of nutrition consultancy Avant Nutrition and a board member of Women in Nutraceuticals, an industry association working to increase the representation of women in scientific cohorts (among other diversity and inclusion issues).⁵

"Historically, a lot of the research has been done on men, but men and women perform differently," Doyle said. "They have different metabolisms and different body structure, and it's really important to have studies done on female cohorts because that's the only way to really understand what's going to work well for a woman versus just trying to translate benefits [from men to women]."

She has noticed a growing interest among supplement companies in developing products both for women-specific health issues and general women's formulation work.

"Of course, the whole flow from prenatal to postnatal, PMS [pre-menstrual syndrome] to menopause is [important] but it really goes beyond those specific women's needs to more general needs: women's microbiome, for instance, or women handling stress differently, or cognition."



Sports nutrition for women

Performance and sports nutrition for women is a particular area requiring greater research, Doyle said.

A 2022 special edition review on nutrition for female athletes outlined key issues in this field, such as how menstrual cycle hormones can impact fluid and electrolyte balance, thus changing a woman's fluid and electrolyte requirements during sport, and knowledge gaps in underfuelling and low energy availability in women.⁶

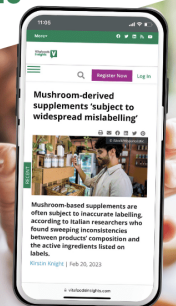
It also looked at specific interventions, such as the effects of sodium bicarbonate supplementation for improving high-intensity exercise capacity and supplements that may be beneficial to support training and performance in elite female footballers.

According to Doyle, a recognition of these sex-specific differences is *"starting to drive the science"* but there is *"a long way to go and a lot of work to do"*.

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Menopause

FOR many years an ignored and taboo topic, menopause is finally beginning to be acknowledged by industry and wider society.

In the UK, health and supplement retailer Holland & Barrett has trained over 4,000 menopause advisors and offers free menopause consultations,⁷ while the UK government recently considered amending the Equality Act to protect the rights of women experiencing menopause. (The proposal was rejected on the grounds it could discriminate against men).⁸

According to some estimates, there are around 48 symptoms associated with pre-menopause, perimenopause, menopause, and post-menopause, including insomnia, brain fog, skin problems, low

mood, thinning hair, hot flushes, heart palpitations, and bladder weakness.



Many women must manage these symptoms while remaining functional in their personal and professional lives.

"Whereas 20 years ago, people were hitting the menopause at a time in their life when perhaps their children had left home or

when they weren't working, [...] these days there is a generation of women going through the menopause who might still have quite young children at home, parents they are caring for, and be in a high-powered job," said consultant dietitian Sophie Medlin in an industry webinar. *"Women are hitting the menopause at time when perhaps there is a peak in pressures they are under."*⁹

Menopause and nutrition

According to Medlin, there are no specific diet recommendations for the menopause – *"it is just general healthy eating advice, to the best of our knowledge at this time, and that means plenty of fruit and vegetables and sources of wholegrains"*. However, women should eat sufficient protein to counter

sarcopenia, which commonly affects women around this age and can have implications for weight-bearing and heart health, she added. The UK's National Health Service (NHS) also tells women to ensure a sufficient intake of calcium and vitamin D by eating leafy greens and dairy products, to protect against osteoporosis.¹⁰

Nevertheless, many women do turn to supplements or functional food and drink products to alleviate symptoms. Recent years have seen a rise in so-called plant-based hormone replacement therapy (HRT), also known as compounded bioidentical hormone replacement therapy (cBHRT).¹¹

Soy, red clover, sage, and black cohosh are examples of plant-

derived phytohormones,¹² and proponents say these are bio-identical alternatives that are safer than conventional HRT because they are derived from nature.

However, the NHS and British Menopause Society do not recommend plant-based phytohormones because there is no evidence for their efficacy



READ More: Using botanical phytohormones to manage menopause

or safety and because many claims for the benefits of cBHRT have been largely extrapolated from studies of conventional, regulated HRT.¹³ In the US, cBHRT is not regulated by the Food and Drug Administration (FDA) and products are not tested for quality, purity, or potency.¹⁴

Harnessing the gut microbiome

Another field of emerging research is the use of probiotics to improve menopause symptoms via the gut microbiome.

In one small randomised, double-blind, and placebo-controlled study, perimenopausal and postmenopausal women took a multispecies probiotic containing eight live strains – *Bifidobacterium lactis* W52, *Lactobacillus brevis* W63, *Lactobacillus casei* W56, *Lactococcus lactis* W19, *Lactococcus lactis* W58, *Lactobacillus acidophilus* W37, *Bifidobacterium bifidum* W23, and *Lactobacillus salivarius* W2 – and followed a no-wheat diet for five weeks.¹⁵



The researchers concluded that the probiotics affected follicle-stimulating hormone levels in perimenopausal women and represented a non-invasive strategy to impact hormonal homeostasis.

However, a 2022 review concluded that while some research suggests the menopause is associated with a lower gut microbiome diversity and a shift toward greater similarity to the male gut microbiome, overall, there is very little research in this field and many knowledge gaps remain.¹⁶

Product development: One size may not fit all

Some startups, both B2B and B2C, are developing ingredients and products to help menopause symptoms. Spanish brand Domma makes a range of whole food supplements targeting common menopause symptoms based on fruit, vegetable, and root “superfoods” such as baobab, red and black maca,

blueberries, shatavari, and ashwagandha. The brand notes that its products complement hormone replacement therapies but are not a substitute for them.

Hormonal changes during the perimenopause can impact blood glucose levels.¹⁷ US-based company Uplifting Results Labs therefore filed a patent for a daily nutrition

formulation that can be used in powders, snacks, drinks, and capsules for people with diabetes, menopause, and cardiovascular disease. Published in 2022, the patent describes a formulation aimed at reducing blood sugar levels through a blend of dairy proteins, plant-based proteins, and fibres, such as green banana resistant starch, maize resistant starch, oat beta-glucan, and corn resistant dextrin.¹⁸

The range of menopause symptoms is so wide that it may be more effective for companies to develop symptom-specific products rather than a generic menopause supplement.

Medlin said: “The thing that companies need to work on is



speaking to their target audience and understanding what symptoms they are looking to manage. There are really good targeted nutrients or botanical actives companies can use [...] that could make a massive difference [to specific symptoms]. But when they make a blanket menopause product for everybody, that's when companies miss the mark.”



‘Menohype’: Helping or hurting women?

The relatively recent appearance of menopause-specific products on the market has led to some claims that companies are trying to cash in on women’s health problems and prompted accusations of “menowashing”¹⁹

“

These days there is a generation of women going through the menopause who might still have quite young children at home, parents they are caring for, and be in a high-powered job.”

Sophie Medlin, consultant dietitian at CityDietitians

However, Claire Lowson, consultant at brand strategy

agency Propaganda and head of its age division, believes that companies are rightly responding to the rise in interest in this female health condition.²⁰

“My argument is that we encourage more brands to market more products and services to help more women. [...] The change we’re seeing, with brands finally starting to take notice and get involved, is essential to building the female health market we need.”



In some cases, brands are damned if they do and damned if they don’t, Lowson noted. Clothes retailer Primark faced derision after it launched a Menopause Collection of sweat-wicking nightwear aimed at alleviating hot flushes and night sweats.²¹ However, the publicity, headlines, and products – bad and good – contribute to building awareness and growing the

category, she argued.

Julian Kynaston, founder at Propaganda Agency, added: *“We need the hype – to build the new purpose-driven market women’s health requires. It needs to be sensationalised, flooded, front of mind, and dynamic for products to innovate, try – and fail – and for the good stuff to surface. This is how markets form.”*



Beauty from within

BEAUTY-FROM-WITHIN ingestibles, also known as nutricosmetics, seek to improve skin, hair, and nail health from the inside-out rather than taking a superficial approach with topical creams, lotions, and serums.

Although improving physical appearance is not a health concern, growing numbers



of women are taking a holistic approach to health and wellness – both physically and emotionally – and this is benefiting the beauty-from-within category. Beauty-from-within products are seen as a way to boost self-confidence and self-esteem, thus improving holistic wellbeing.

"[...] Consumers want to enable not only mental but also physical health through the beauty category," said market insights company Kantar.²²

Hyaluronic acid, collagen, omega-3, the vitamins C, D, and E, and antioxidants are just some of the most popular ingredients used in nutricosmetic products.

Samantha Williams is CEO and founder of Bomimo Nutrition, a UK company that makes functional supplements to support women's hormonal health in the menopause. Williams founded the company after going through menopause in her early forties and, for her, including a beauty-from-within ingredient was important for customer (and her own) holistic wellbeing.

"I felt passionately about including collagen in the product because when I looked at myself in the mirror, I looked gaunt, my hair was thin, my nails were weakened. [...] As our oestrogen depletes,



we lose collagen and that loss can be quite rapid. That's why we suddenly feel like we are ageing," she said.²³

Collagen is a hugely popular beauty-from-within supplement. Nutrition Business Journal (NBJ) began tracking collagen use for skin, hair, and nail health in the US in 2018, when it sat at around \$115 million. By 2025, NBJ estimates US sales will grow to \$220 million.²⁴

Consumer interest in collagen has even sparked other ingredient suppliers to tap into the trend through association. Research suggests that resveratrol, a

polyphenol present in high concentrations in red grapes and berries, can contribute to an increase in the concentration of type III collagen and stimulate type I and II collagen production.²⁵ Many brands using resveratrol market their products as “collagen boosters”.

However, the scientific jury is still out regarding the efficacy of collagen supplements for skin health.

Medlin said: *“We see a lot of marketing about collagen [...] and there is some small trial data suggesting that taking animal collagen in supplements may help women’s reported skin quality but it’s not good quality, trial-level yet. [...] We just don’t have the quality data to justify the way they are being widely recommended today.”*



The medicalisation of beauty

Scientific advances are also propelling the beauty-from-within category forward. The emergence of genetic sequencing and wearable devices, as well as advances in diagnostics, have created “a swell of excitement” around concepts such as precision medicine and customised healthcare – and this will have big implications for beauty, according to Mintel analyst and senior director Sarah Jindal.²⁶

Just as a better understanding of the gut microbiome is spurring innovation in personalised nutrition, personalised skincare brands are harnessing growing scientific research into the skin microbiome.

In the UK, the Skin Trust Club (owned by life science group DeepVerge) has developed a home skin microbiome testing kit. After receiving a sample, it carries out genome sequencing to identify the skin’s characteristics and then recommends

skincare products and routines that suit the consumer’s unique skin microbiome.

Givaudan Active Beauty, the active cosmetic ingredients business of Givaudan’s fragrance division, says it has developed an instant microbiome analysis and profiling system that will pave the way towards personalised beauty products.²⁷

“The medicalisation of beauty is leading to more demand for proof behind claims, creating value through ingredient-led products and driving the market for synthetic products that replicate natural ingredients with demonstrated efficacy,” said Jindal.



Spotlight on **polycystic ovary syndrome**



POLYCYSTIC ovary syndrome (PCOS) is a condition in which the ovaries produce abnormal quantities of androgens. A common cause of infertility, it is associated with an increased risk of metabolic syndrome, hyperinsulinaemia, oxidative stress, inflammation, cardiovascular disease, and cancer.²⁸



There is no cure for PCOS but symptoms can be managed, including through nutrition. One scientific review found that myo- and D-chiro-inositols were the most

effective in improving fertility and restoring ovulatory capacity and menstrual regularity.²⁹ It also noted that combinations of vitamin D and probiotics, vitamin E, and coenzyme Q10 demonstrated promising results in reducing hyperandrogenism, while combinations of either probiotics and selenium or vitamin E and omega 3 improved inflammatory status and antioxidant capacity.

Although PCOS affects women around the world, it is estimated that Asian women are particularly impacted, and certain ethnicities more than others.

One clinical study found that the risk of PCOS was higher for South Asian women than for Chinese and Filipina women.³⁰ Indian health diagnostic company Metropolis carried out a survey and found that, out of 27,411 samples taken, 17.6% of Indian women showed a hormonal associated risk with PCOS, while 25.88% of women in east India were affected.³¹



Harnessing Ayurvedic botanicals for PCOS

This has led to several Indian brands developing products to specifically alleviate symptoms of PCOS, many of which use Ayurvedic botanicals.

"Indian consumers have a strong preference for natural ingredients, which

can be attributed to Ayurvedic closeness and trust in natural and organic ingredients, such as ashwagandha, ginger,



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kesar, and turmeric,” wrote a Future Market Insights analyst.³²

Indian nutraceutical brand OZiva makes HerBalance for PCOS, a botanical-based powder to be added to shakes or water that contains nine standardised herbal extracts, including chasteberry (*Vitex agnus-castus*), gokhru (*tribulus terrestris*), shatavari (*asparagus racemosus*), and ashoka (*saraca asoca*). The brand says the product can help balance testosterone and oestrogen levels in 45 to 60 days.³³

Karnataka-headquartered AndMe, a brand of Merhaki Foods and Nutrition, makes a PCOS drink that blends Ayurvedic herbs such as garcinia cambogia (*Garcinia gummi-gutta*), lodhra (*symplocos racemosa*), and ashwagandha with chromium to manage blood sugar levels, and other nutrients. It also markets nutrient “bundles” to manage the various symptoms of PCOS, such as a biotin-based supplement for hair loss.

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Spotlight on endometriosis

ENDOMETRIOSIS is a chronic disease where tissue similar to the lining of the uterus grows outside the uterus, and it affects around one in 10 women and girls globally, according to the World Health Organization (WHO). Its symptoms can be debilitating and include severe pain during periods, sexual intercourse, and bowel movements as well as chronic pelvic pain, abdominal bloating, nausea, and fatigue. Sufferers can also experience depression and anxiety.³⁴

Dietary supplements can be a useful complementary treatment for endometriosis, according to one 2022

review that highlighted omega-3 and alpha-lipoic acid as improving endometriosis-associated pain. Magnesium, curcumin, resveratrol, and epigallocatechin gallate (EGCG) have also been found to be beneficial in animal studies.³⁵

Cannabinoids show therapeutic potential

As scientists' understanding of the body's endocannabinoid system (ECS) grows, cannabinoids have been identified as a potentially promising active ingredients for endometriosis.

The ECS is made up of a network of chemical signals and cellular receptors that are densely packed throughout the brain and body,³⁶ and it plays an important role in both normal physiological functions and in some inflammatory disorders, including endometriosis.³⁷

To stimulate the ECS receptors, the human body produces endocannabinoids, molecules that have a structural similarity to those found in the cannabis plant, known as phytocannabinoids. Both endocannabinoids and phytocannabinoids have anti-inflammatory, anti-nociceptive [pain-reducing], and anti-proliferative properties that may prove beneficial for endometriosis management, wrote the authors of a 2022 review.

Knowledge gaps exist

Important questions remained unanswered – whether cannabinoids are capable of being a mainstream therapy



for endometriosis and if/how they would impact fertility – and further research is needed but the field is promising.

“The current knowledge and scientific evidence available [to] date suggest that cannabinoid compounds have therapeutic potential for various diseases including endometriosis,” concluded the authors of the review.

“With the growing establishment of cannabis-dedicated research institutes, we can anticipate that the knowledge gap that exists today will be closed in the near future and provide clear ideas on the therapeutic potential of cannabinoids in endometriosis and other disorders.”

Commercialising cannabinoids for endometriosis

Companies and researchers are already investing in the field. Scientists from the Milton S. Hershey Medical Center in the US are currently carrying out a randomised, double-blind, placebo-controlled study to

determine the effectiveness of low-dose and high-dose cannabidiol on managing endometriosis-related pain, but results have not yet been published.³⁸

Israeli startup Gynica is developing cannabinoid-based solutions for gynaecological treatments, such as endometriosis. The company’s R&D efforts are based on the fact that, for example, endometriosis sufferers have lower levels of CB1, one of the major cannabinoid receptors, in the endometrial tissue.

“These findings suggest that the endocannabinoid system significantly contributes to mechanisms underlying both the peripheral innervation of abnormal endometrial growths as well as the pain associated with endometriosis,” said Gynica. *“This evidence provides the basis for a novel approach to the development of new, effective cannabinoid-based treatments.”*³⁹

Gynica is currently conducting a pre-

clinical trial to identify the most efficacious formulations but says cannabinoid-based suppositories, patches, and creams could be potential product formats.

Nevertheless, regulatory obstacles must also be surmounted. In the US, the FDA ruled in January 2023 that existing regulatory frameworks for foods and supplements were not appropriate for cannabidiol (CBD) – one of the main cannabinoids in the cannabis plant – and that it would work with the Congress to regulate CBD products.⁴⁰



Vitafoods Insights Webinar Series



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Key takeaways



- **Women's health is not just about periods, pregnancy, and menopause. Women's bodies have different nutritional requirements to ensure optimal bone and joint health, digestive health, immunity, and more.**
- **Brands should invest in research and include women in cohorts to create women-specific products for general health conditions, addressing this significant white space.**
- **Targeting the gut microbiome for menopause relief or the endocannabinoid system for endometriosis are promising areas of research but research is still in its infancy and more studies are needed.**
- **Menopause is associated with up to 48 symptoms and not all women will experience all of them. Brands may wish to develop symptom-specific products rather than a generic, one-size-fits-all menopause product.**
- **Interest in beauty-from-within products is growing as consumers seek science-backed, targeted solutions. With the right positioning, these products fit into the wider macro-trend for holistic health.**
- **Conditions such as PCOS and endometriosis may seem niche but they affect millions of women who are often frustrated by the lack of efficacious pharmacological treatments, turning to supplements as a result.**
- **Many Indian women trust and seek out botanical ingredients that are traditionally used in Ayurvedic medicine. Ashwagandha, shatavari, and chasteberry are examples.**





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