



Focus on Stress & Mental Wellness

HIGHLIGHTS FROM THE ITC INSIGHTS 2024 CONSUMER SUPPLEMENT SURVEY

Len Monheit, CEO, Industry Transparency Center



HEALTH CONCERNS

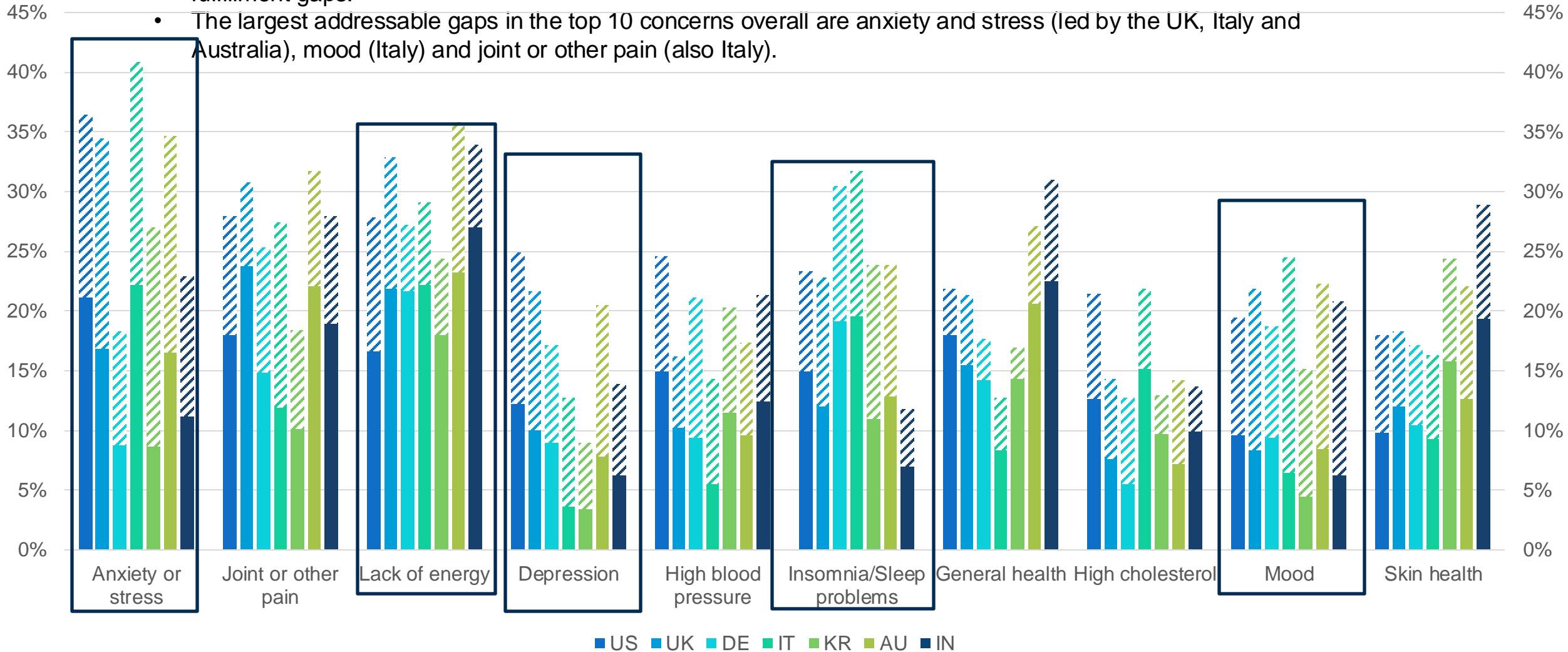
Deep dive into supplement user health concerns
and which ones they take supplements for

HEALTH CONCERNS AND WHAT THEY TAKE SUPPLEMENTS FOR



Key Insight:

- Mental health related concerns continue to see some of the highest reporting levels as well as some of the largest fulfillment gaps.
- The largest addressable gaps in the top 10 concerns overall are anxiety and stress (led by the UK, Italy and Australia), mood (Italy) and joint or other pain (also Italy).



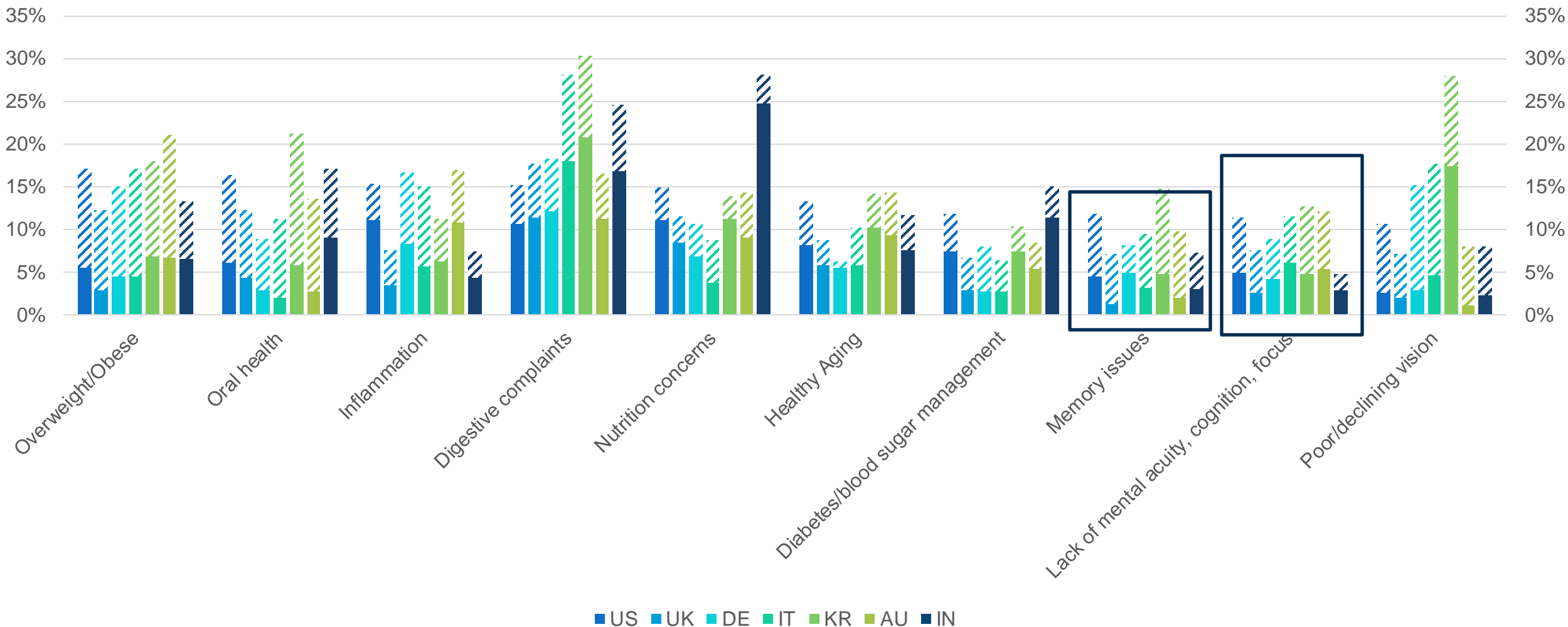
Note: US n=1061, UK n=526, DE n=525, IT n=526, KR n=533, AU n=508, IN n=519. Results shown for top 10 health concerns. Question: "Which of the following health conditions or concerns currently impact or impacted you within the past year?" Entire bar represents total reporting, solid bar represents using supplements for that concern and cross hatch bar represents fulfillment gap.

HEALTH CONCERNS AND WHAT THEY TAKE SUPPLEMENTS FOR – NEXT 10



Key Insights:

- Vision concerns continue to be one of the top concerns for those in South Korea.
- Indian respondents over-index for both digestive and nutrition concerns, although with generally small fulfillment gaps.



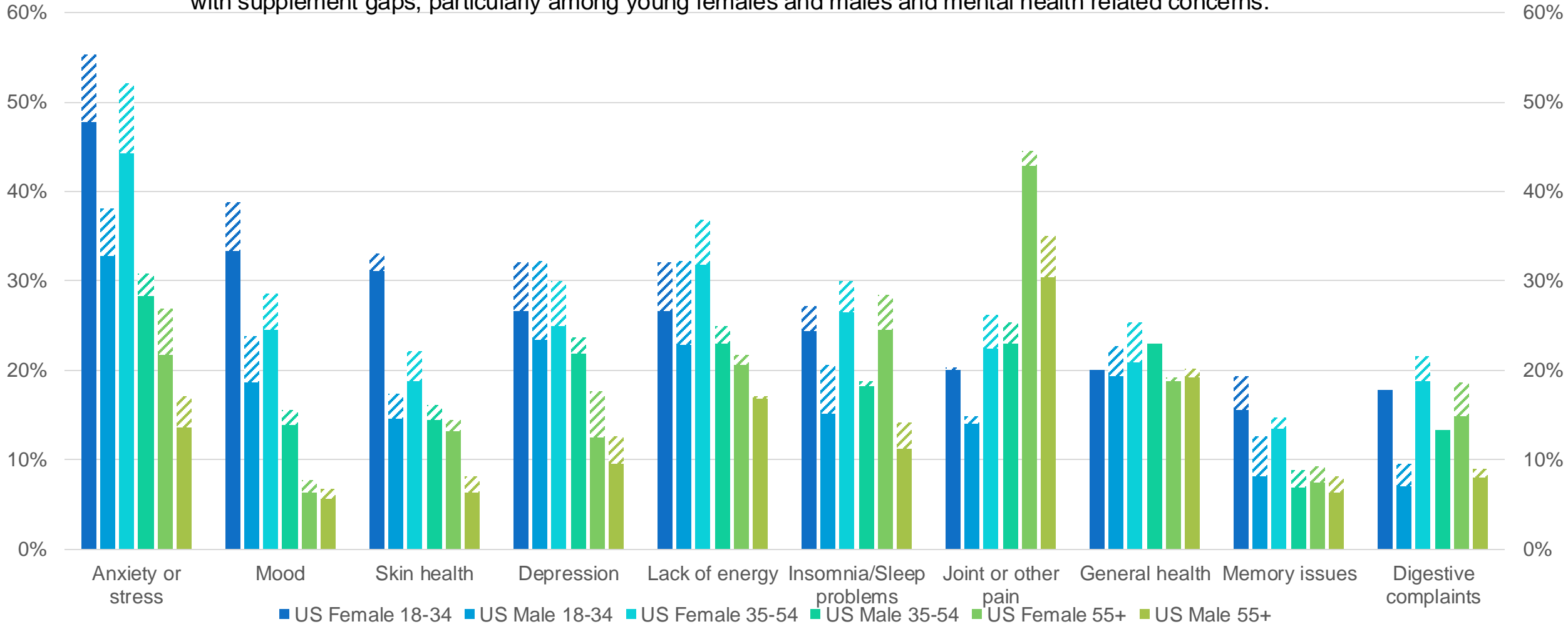
Note: US n=1061, UK n=526, DE n=525, IT n=526, KR n=533, AU n=508, IN n=519. Results shown for top 11-20 health concerns. Question: "Which of the following health conditions or concerns currently impact or impacted you within the past year?" Entire bar represents total reporting, solid bar represents using supplements for that concern and cross hatch bar represents fulfillment gap.

WILLING TO TAKE SUPPLEMENTS TO ADDRESS CONCERNS: US, AGE & GENDER



Key Insight:

- Overall the gaps between reporting a concern and a willingness to take a supplement is smaller than the manage currently with supplement gaps, particularly among young females and males and mental health related concerns.



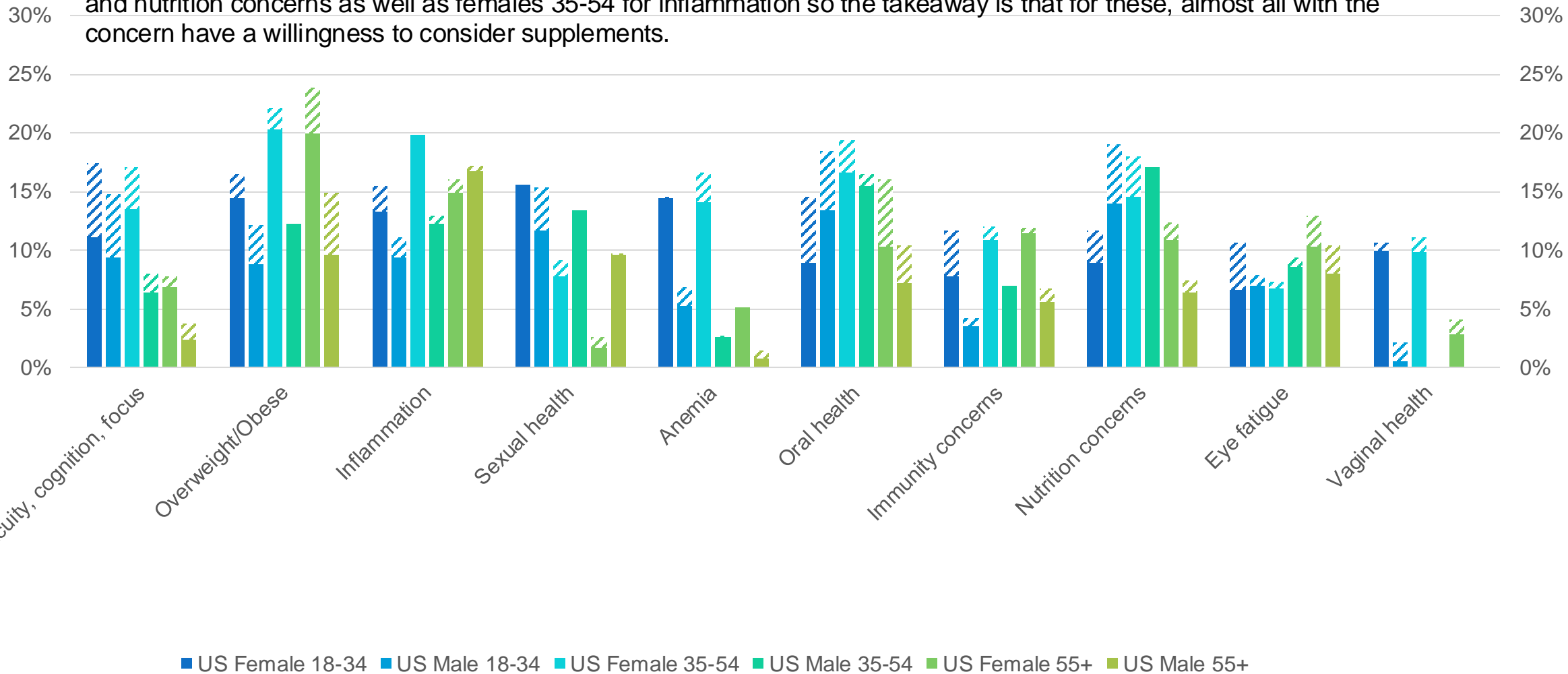
Note: US Female 18-35 n=103, US Male 18-35 n=189, US Female 35-54 n=217, US Male 35-54 n=224, US Female 55+ n=193, US Male 55+ n=134. Question: **“Would you consider supplements for any of the following health concerns?”** Results shown for top 10 health concerns. Question: “Which of the following health conditions or concerns currently impact or impacted you within the past year?” Entire bar represents total reporting, solid bar represents a willingness to use supplements for that concern, smaller hatch indicates willingness to fulfill.

WILLING TO TAKE SUPPLEMENTS TO ADDRESS CONCERNS: US, AGE & GENDER – NEXT 10



Key Insight:

- We have some gaps of zero or near zero here, males 35-54 for obesity, sexual health (along with females 18-34 there) and nutrition concerns as well as females 35-54 for inflammation so the takeaway is that for these, almost all with the concern have a willingness to consider supplements.



■ US Female 18-34 ■ US Male 18-34 ■ US Female 35-54 ■ US Male 35-54 ■ US Female 55+ ■ US Male 55+

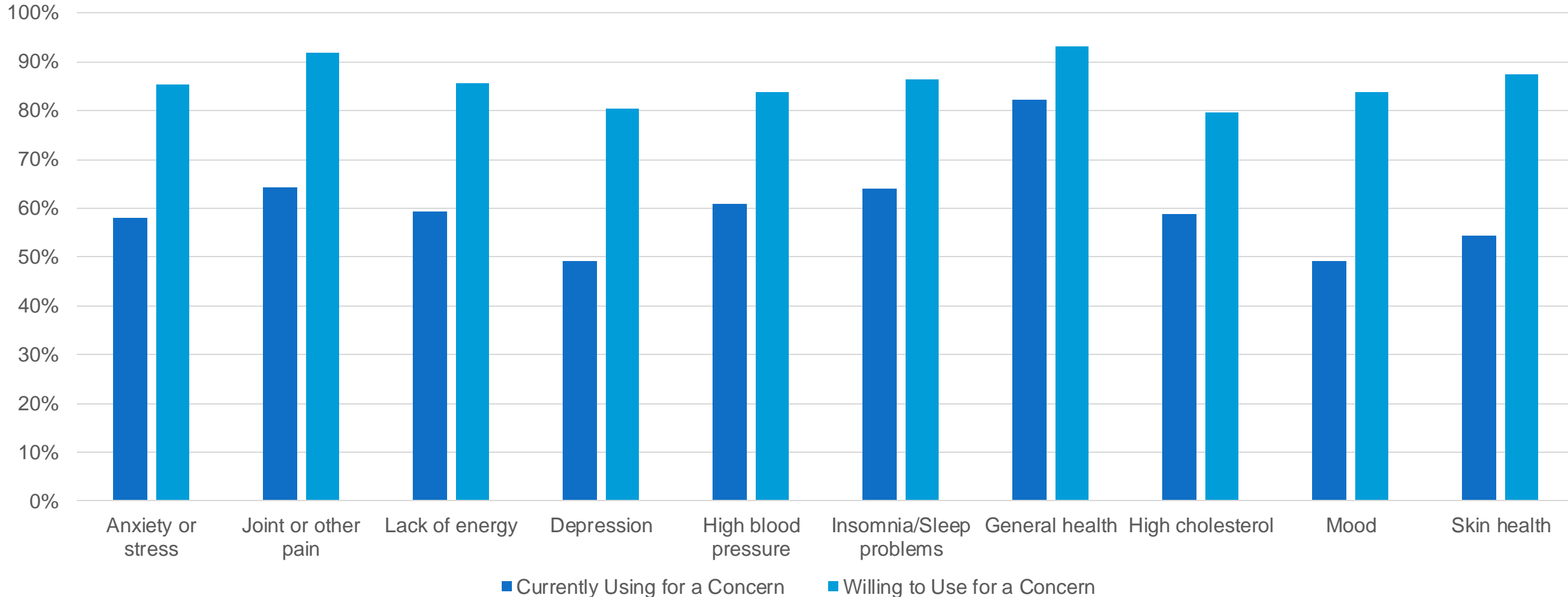
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HEALTH CONCERNS: CURRENTLY USING VS WILLING TO USE



Key Insight:

- Mental health related concerns make up arguably over half of the top 10 health concerns reported by US consumers, each presenting potential opportunities for addressing with supplements as seen by the large gaps in supplement use for a concern and a willingness to use for these concerns.

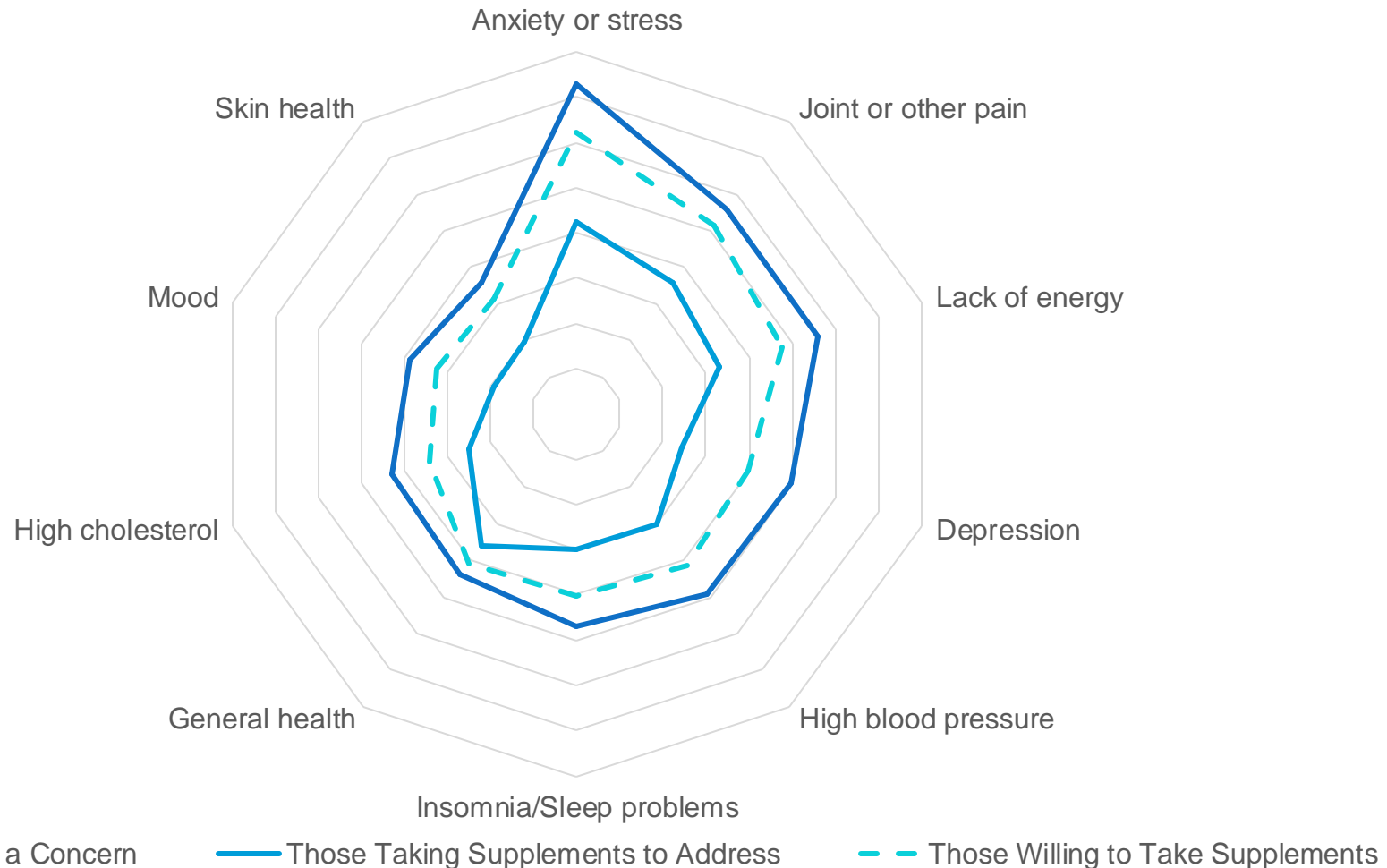


HEALTH CONCERNS: US, TOP 10



Key Insight:

- Each of the top 10 health concerns among US consumers show a higher response rate for a willingness to treat with supplements than the current supplement treatment rates.

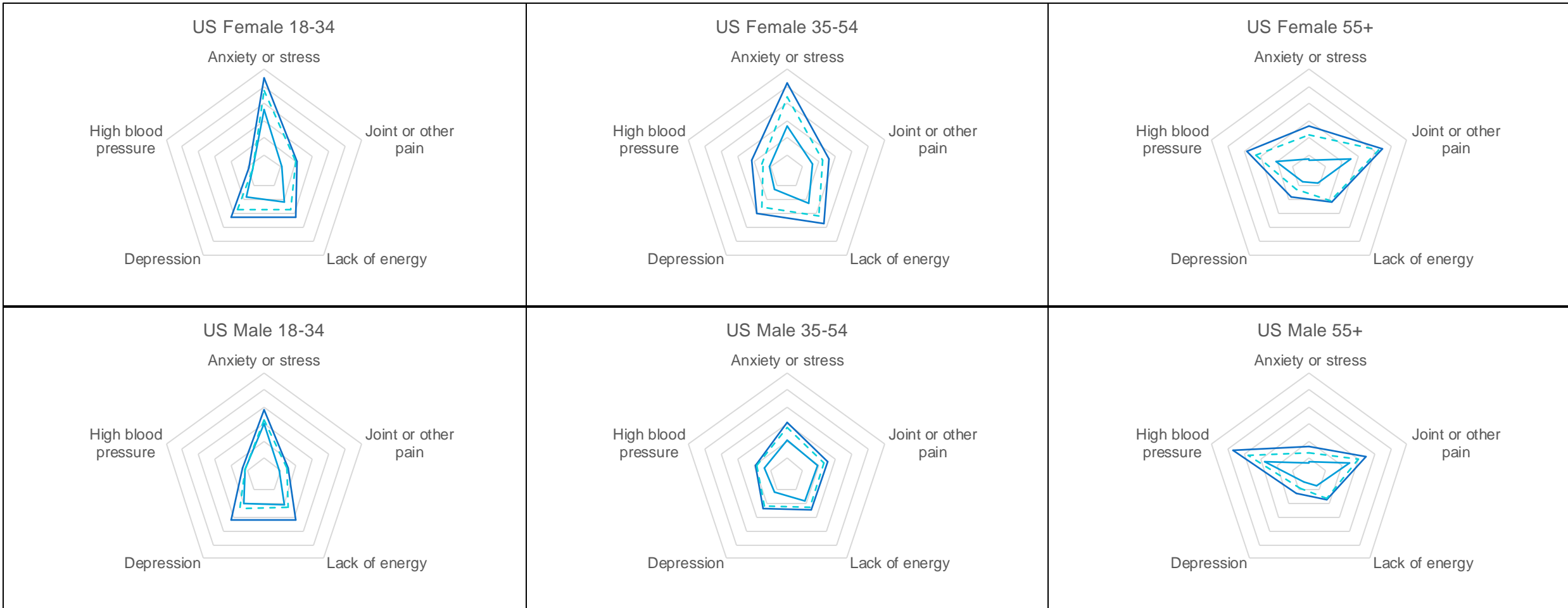


HEALTH CONCERNS: US AGE & GENDER, SUPPLEMENT TREATMENT AND WILLINGNESS TO TREAT



Key Insight:

- Mental health related concerns are heavily driven by younger females, with their response rates for anxiety or stress (the overall number one US health concern) nearly double that of those over 55.



— Those With a Concern — Those Taking Supplements to Address - - - Those Willing to Take Supplements

Note: US Female 18-34 n=103, US Male 18-34 n=189, US Female 35-54 n=217, US Male 35-54 n=224, US Female 55+ n=193, US Male 55+ n=134.

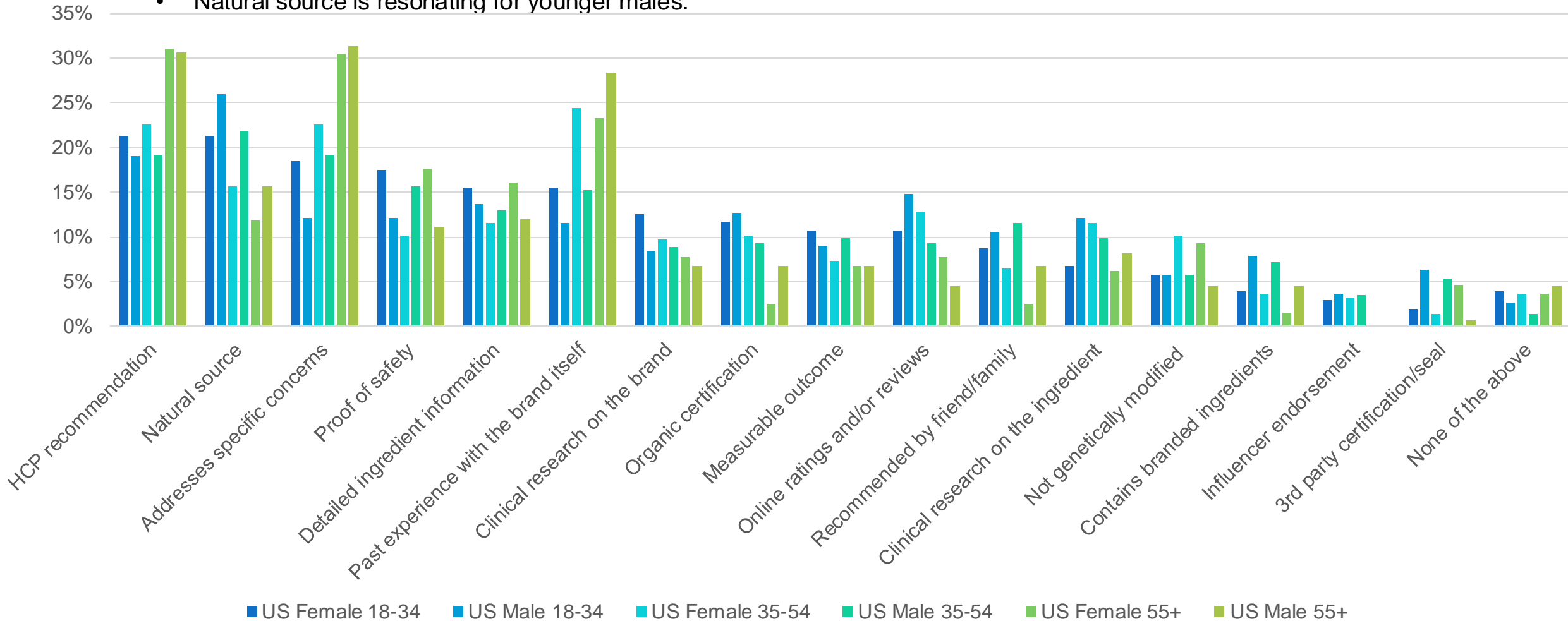
Question: "Would you consider supplements for any of the following health concerns?" Top 5 US health concerns based on reporting rate.

ATTRIBUTES INFLUENCING PURCHASE: US, AGE & GENDER

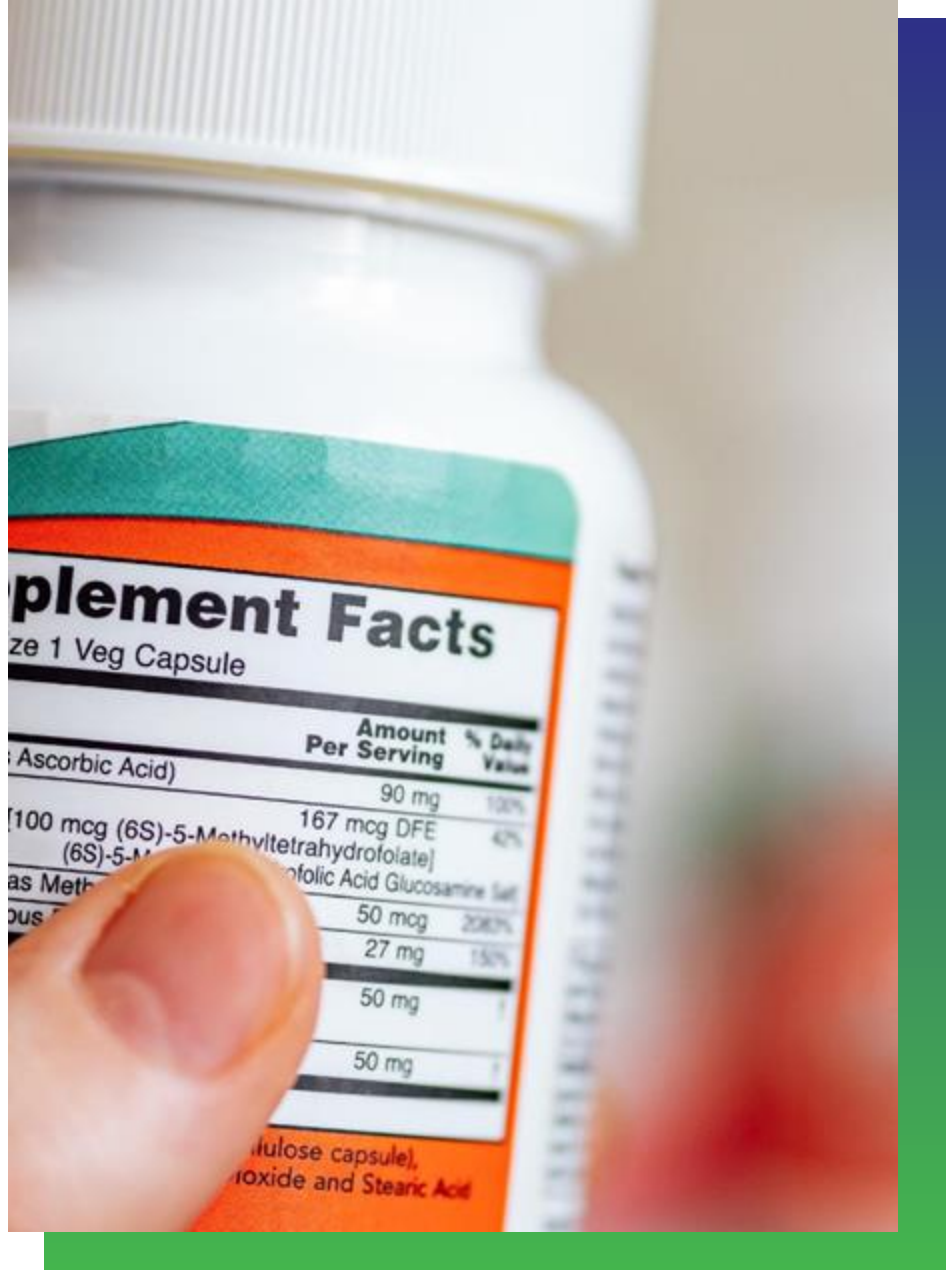


Key Insight:

- A recommendation from a health care professional, addressing a specific concern and past experience with the brand all skew older in the US with noticeably higher response rates from those over 55.
- Natural source is resonating for younger males.



Note: US Female 18-34 n=103, US Male 18-34 n=189, US Female 35-54 n=217, US Male 35-54 n=224, US Female 55+ n=193, US Male 55+ n=134. Question: "What are the most important attributes you look for when purchasing supplements?"



VALUES

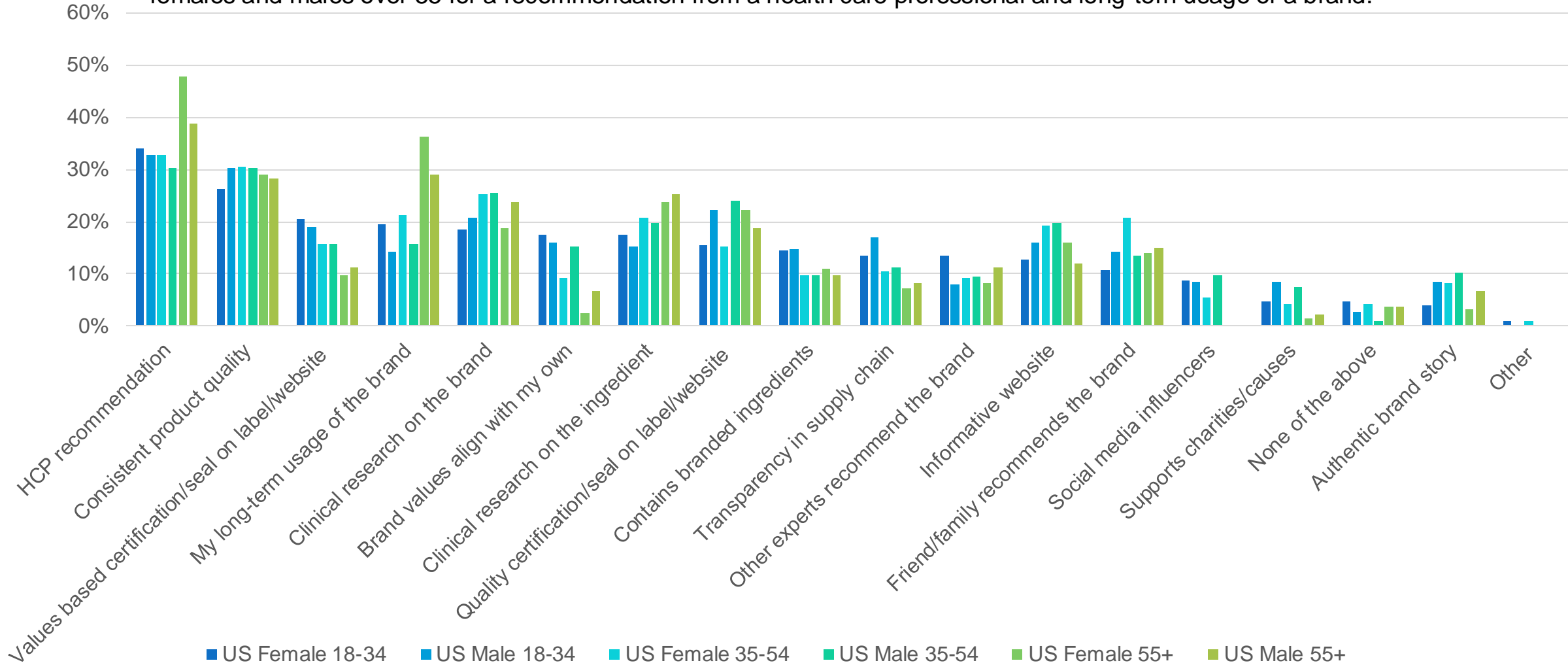
Trust & Transparency

TRUST: US, AGE & GENDER



Key Insight:

- Age & gender responses are relatively even across the board from US respondents, with noticeable over-indexing from females and males over 55 for a recommendation from a health care professional and long-term usage of a brand.



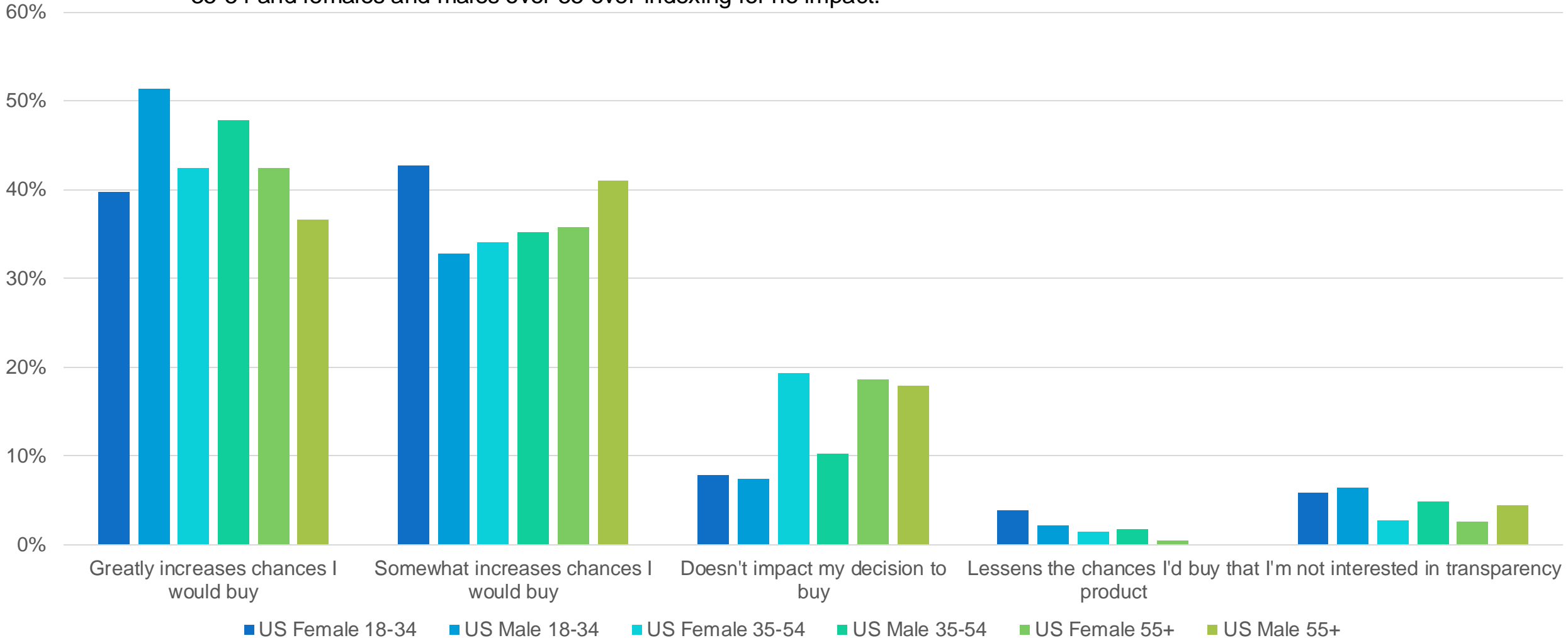
Note: US Female 18-34 n=103, US Male 18-34 n=189, US Female 35-54 n=217, US Male 35-54 n=224, US Female 55+ n=193, US Male 55+ n=134. Question: "What characteristics most encourage you to trust a supplement brand?"

TRANSPARENCY PURCHASE INFLUENCE: US, AGE & GENDER



Key Insights:

- US responses have females and males 18-34 standing out more in the two positively influencing responses, with males 35-54 and females and males over 55 over-indexing for no impact.



Note: US Female 18-34 n=103, US Male 18-34 n=189, US Female 35-54 n=217, US Male 35-54 n=224, US Female 55+ n=193, US Male 55+ n=134. Question: "How likely are you to purchase supplements from a manufacturer that provides transparency information on its label or website?"

QUESTIONS?

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#itcinsights



AI and Data Integration in Nutraceutical R&D

➤ **Efficient Data Analysis:**

- AI manages and analyzes vast, complex datasets related to medicinal plants.
- Identifies hidden patterns, bioactive properties, and potential therapeutic applications.

➤ **Integration of Diverse Data Sources:**

- AI integrates data from various sources, including ancient medicinal texts, modern research, and genomic databases.
- Cross-references historical knowledge with contemporary scientific findings to uncover novel plant compounds.

➤ **Acceleration of Discovery:**

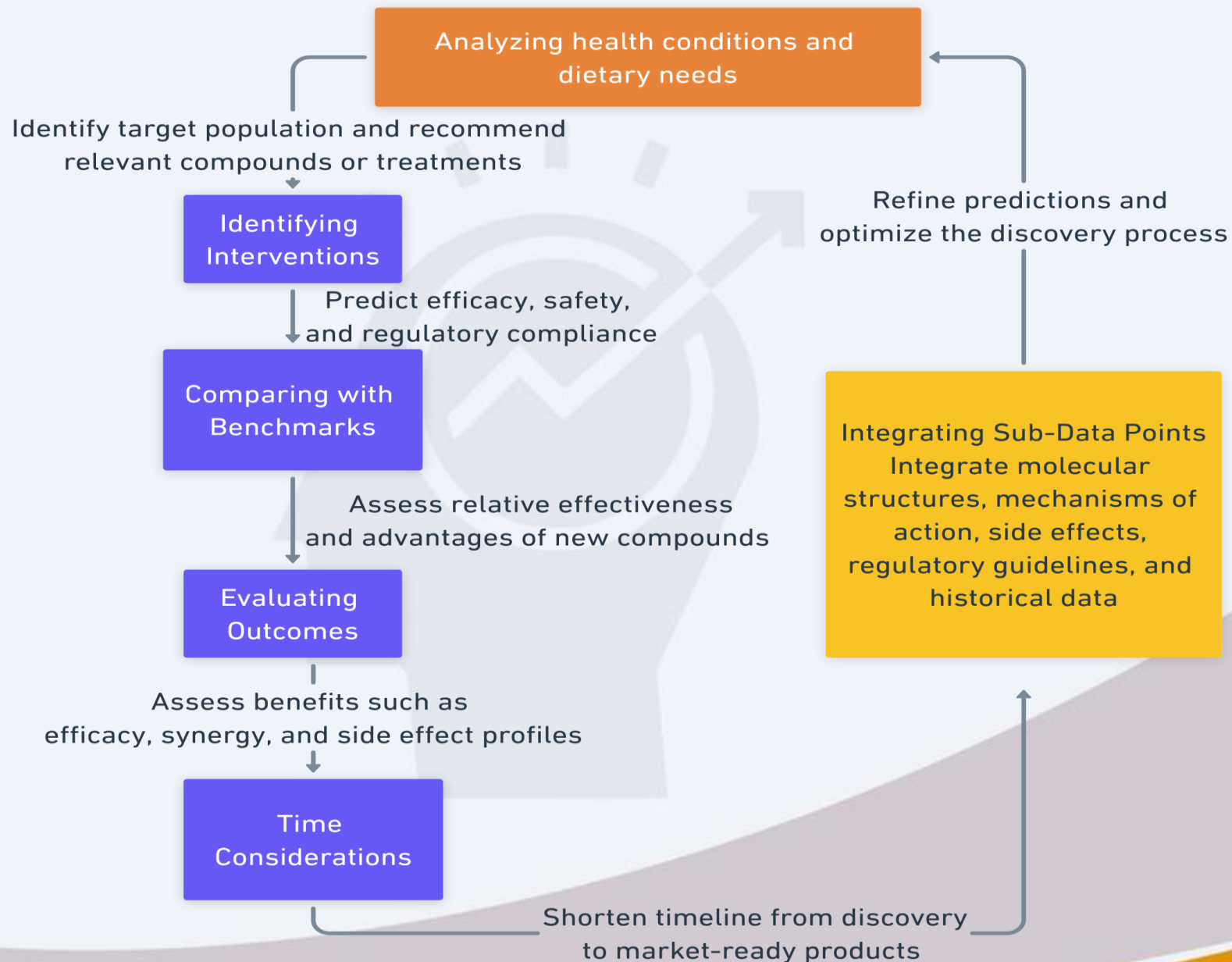
- AI accelerates the discovery process, revealing synergistic effects and new avenues for nutraceutical development.
- Leverages both traditional wisdom and cutting-edge science to enhance research efficiency.

Innovating Phytopharmaceuticals- Enhanced Drug Development

Streamlining Regulatory Compliance

- **Ensuring Alignment with Regulations:**
 - AI ensures that discovered compounds comply with current regulatory standards and guidelines.
 - Analyzes regulatory requirements and historical approval data to predict potential compliance issues.
- **Facilitating Faster Approvals:**
 - AI identifies compounds with a higher likelihood of meeting safety and efficacy criteria.
 - Reduces the time and resources needed for regulatory review by focusing on compounds with fewer safety concerns.
- **Enhancing Product Quality and Safety:**
 - Proactive AI-driven compliance checks accelerate the path to market for new nutraceuticals.
 - Contributes to the overall quality and safety of the products being developed

AI role as Catalyst



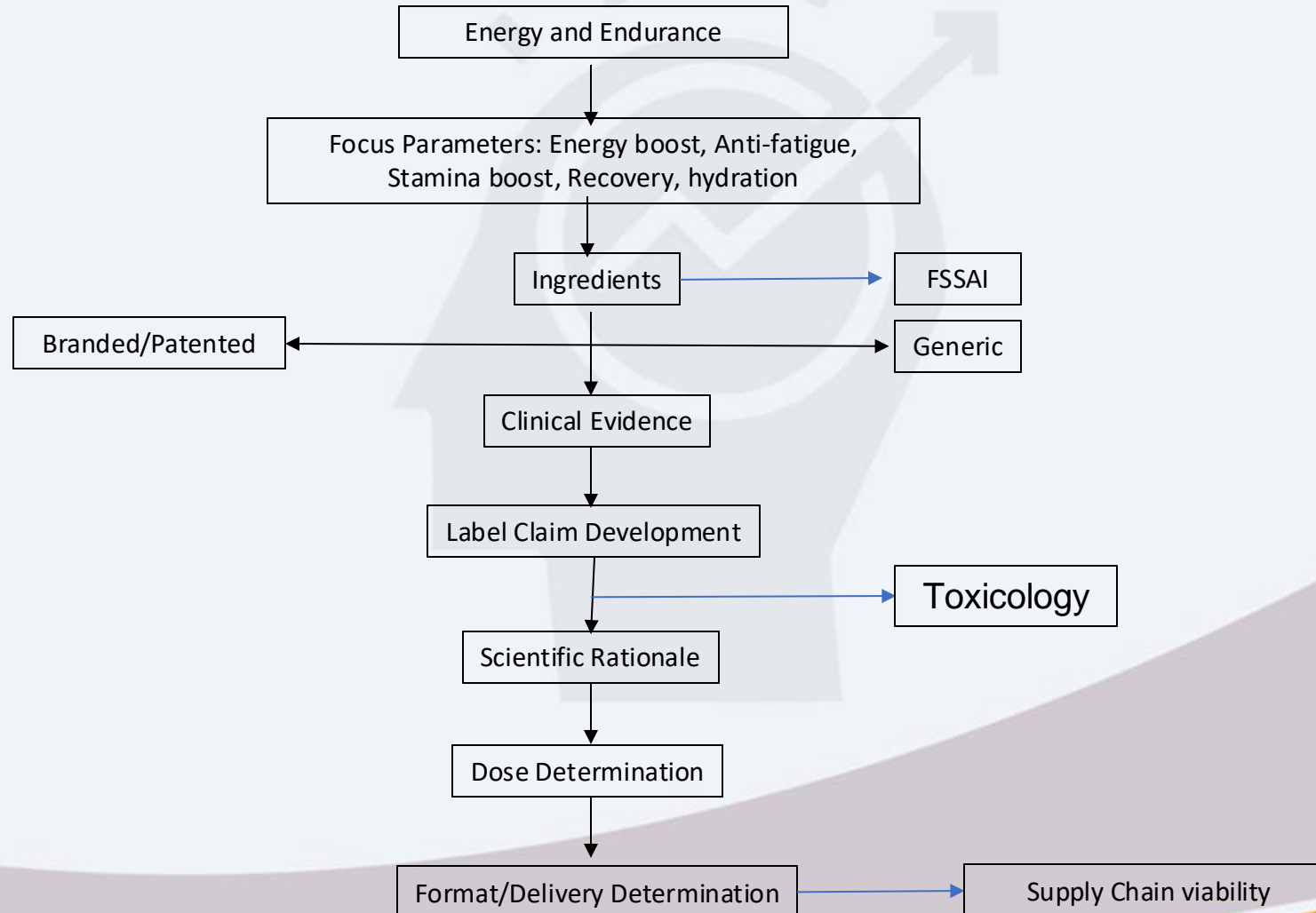
nutrify
today



Energy

AI Filtration Funnel

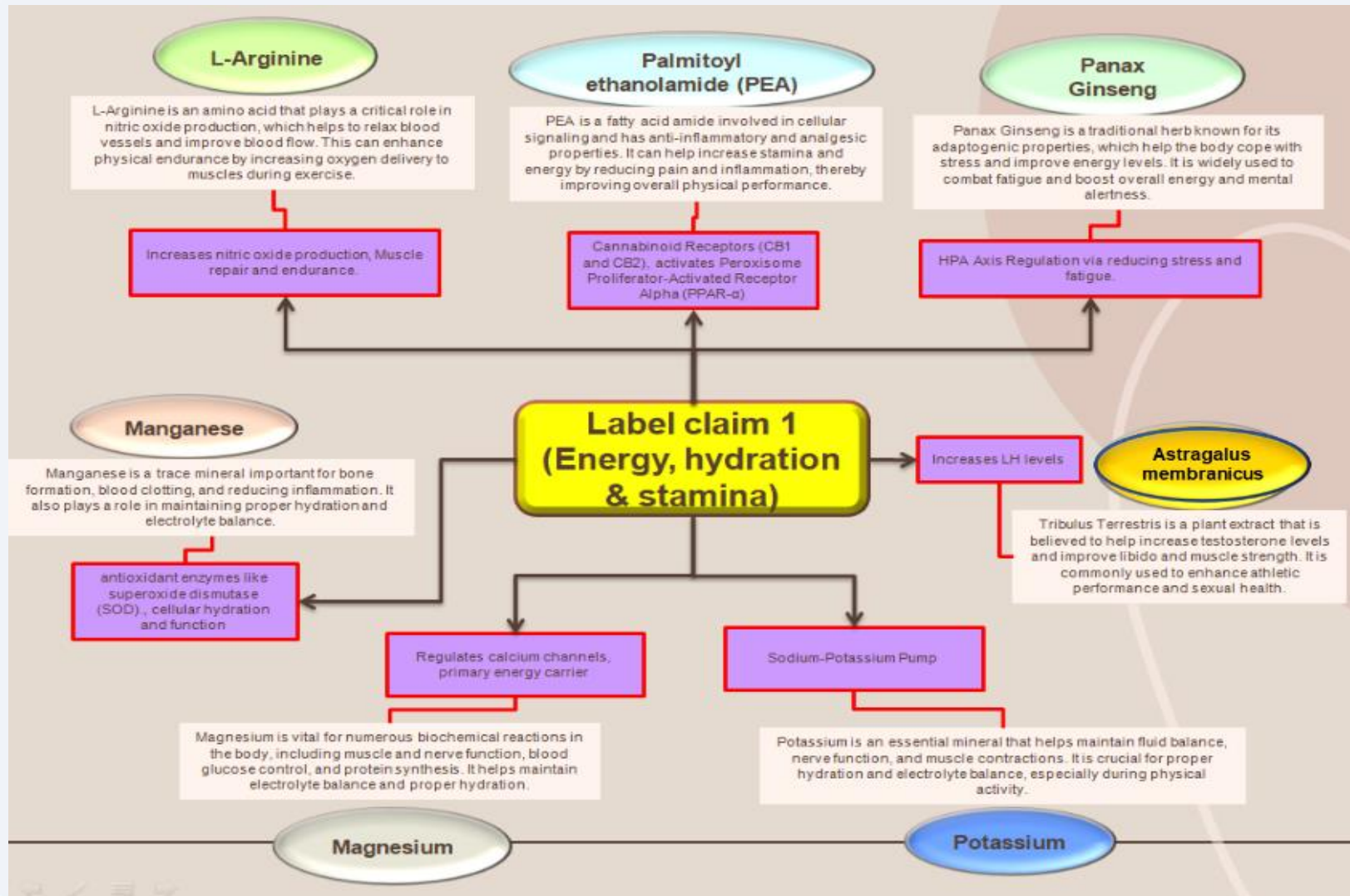
Prompt shared with NutrifyGenie: Energy, Endurance, Fatigue, Exercise performance, Stamina and Hydration



Label Claim

Label Claim 1					
Ingredient	Dose	Benefit Area	Rationale	Synergy	Links
L-Arginine	1900mg	Endurance	L-Arginine is an amino acid that plays a critical role in nitric oxide production, which helps to relax blood vessels and improve blood flow. This can enhance physical endurance by increasing oxygen delivery to muscles during exercise.	L-Arginine, PEA, Panax Ginseng, Tribulus Terrestris, Potassium, and Magnesium collectively enhance physical performance and overall well-being. L-Arginine promotes improved blood flow and oxygen delivery to muscles, enhancing physical endurance during exercise. PEA reduces inflammation and pain, supporting stamina and energy levels, which aids in quicker muscle recovery post-exercise. Panax Ginseng's adaptogenic properties combat fatigue and stress, boosting energy and mental alertness. Tribulus Terrestris enhances testosterone levels, benefiting both athletic performance and sexual health. Sodium, Potassium and magnesium maintains fluid balance and electrolyte function crucial for hydration during exercise, while Magnesium alone also supports muscle and nerve function, aiding in optimal performance and recovery. Together, these nutrients and herbal extracts provide a comprehensive approach to supporting physical endurance, muscle recovery, and overall vitality.	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7282262/
Palmitoyl ethanolamide	60mg	Stamina, Energy, Pain	PEA is a fatty acid amide involved in cellular signaling and has anti-inflammatory and analgesic properties. It can help increase stamina and energy by reducing pain and inflammation, thereby improving overall physical performance. As per studies, PEA supplementation may aid in muscle recovery from repeat bouts of exercise performed within a short duration by reducing myoglobin and lactate concentration.		https://www.mdpi.com/2072-6643/12/3/596
Panax Ginseng (std.Ginsenosides)	200mg	Fatigue/Energy	Panax Ginseng is a traditional herb known for its adaptogenic properties, which help the body cope with stress and improve energy levels. It is widely used to combat fatigue and boost overall energy and mental alertness. Panax ginseng's ability to lower fatigue likely involves a combination of antioxidant effects, enhancement of cellular resilience to stress, and modulation of neurotransmitter systems, ultimately supporting improved energy levels and reduced perception of fatigue in individuals with idiopathic chronic fatigue.		https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0061271
Astragalus membranicus	150mg	Testosterone boost	Astragalus membranicus is a plant extract that is believed to help increase testosterone levels and improve libido and muscle strength. It is commonly used to enhance athletic performance and sexual health.		https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5102849/
Sodium	1000mg	Hydration/ Helps to balance electrolytes	Sodium is an essential mineral that helps maintain fluid balance. It is crucial for proper hydration and electrolyte balance, especially during physical activity.		https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3629193/
Potassium	1900mg	Hydration/ Helps to balance electrolytes	Potassium is an essential mineral that helps maintain fluid balance, nerve function, and muscle contractions. It is crucial for proper hydration and electrolyte balance, especially during physical activity.		https://pubmed.ncbi.nlm.nih.gov/34578811/
Magnesium	345mg	Hydration/ Helps to balance electrolytes	Magnesium is vital for numerous biochemical reactions in the body, including muscle and nerve function, blood glucose control, and protein synthesis. It helps maintain electrolyte balance and proper hydration.		https://pubmed.ncbi.nlm.nih.gov/34578811/
Format: Powder					
Dosage: OD					
Claims: Support Muscular Endurance Helps to balance electrolytes					
Toxicology/ Cautions: L-Arginine should be cautiously taken with antihypertensive medications and antiviral medications for herpes simplex. Palmitoyl Ethanolamide (PEA) should be cautiously taken with mood-modulating medications, including antidepressants and anti-anxiety drugs. Avoid combining these. Panax Ginseng should be cautiously taken with anticoagulants due to increased bleeding risk and with antidiabetic medications because it may affect blood sugar levels. Avoid use with these. Tribulus Terrestris should be cautiously taken with hormonal therapies and birth control, and with diabetes and hypertension medications due to potential effects on blood sugar and blood pressure. Avoid use with these medications.					

Mechanism of Action



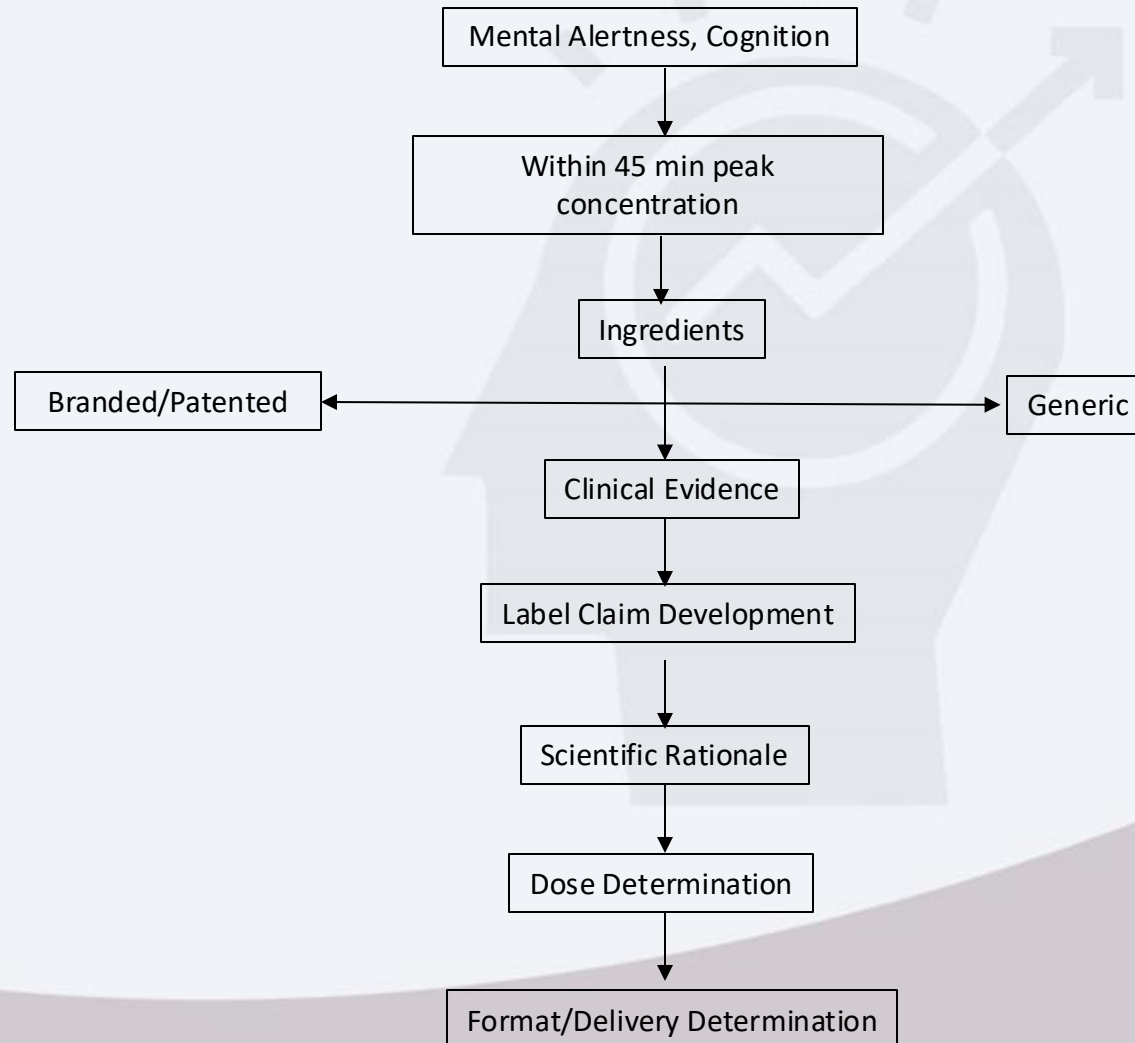
** formula and diagrams are modified/edited for public presentation. It should not be used for actual formulation.



Mental Alertness/ Cognition

AI Filtration Funnel

Prompt shared with NutrifyGenie: Focus, Mental Alertness, 45 min, Caffeine pathway, Dopamine, Adenosine receptors, Norepinephrine, Cognition



Label Claim

Label Claim 1					
Ingredient	Dose	Benefit Area	Rationale	Synergy	Links
Methyliberine	250mg	Alertness	<p>Similar to Caffeine: Methyliberine is structurally similar to caffeine and is believed to share some mechanisms of action.</p> <p>Adenosine Receptor Interaction: Like caffeine, methyliberine might interact with adenosine receptors to counteract their inhibitory effects, resulting in increased alertness and mental energy.</p> <p>Neurotransmitter Regulation: Methyliberine might influence the release and activity of other neurotransmitters, such as dopamine and norepinephrine, contributing to its stimulatory effects.</p>	<p>Methyliberine, structurally similar to caffeine, works synergistically with it by interacting with adenosine receptors to promote mental alertness and counteract fatigue. This dual action enhances wakefulness and extends the stimulatory effects of caffeine. Both compounds also regulate neurotransmitters like dopamine and norepinephrine, which play essential roles in cognitive function, mood, and motivation.</p>	<p>Sheng YY, Xiang J, Wang ZS, Jin J, Wang YQ, Li QS, Li D, Fang ZT, Lu JL, Ye JH, Liang YR. Theacrine from Camellia Kucha and its health beneficial effects. Frontiers in nutrition. 2020 Dec 17;7:321 https://www.frontiersin.org/articles/10.3389/fnut.2020.596823/full#:~:text=Chang%20(a%20willd%20tea%20plant,detected%20in%20Camellia%20sinensis%20var https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9145663/ https://innp.bmj.com/content/75/12/1672</p>
Mucuna pruriens	300mg	Cognition,Alertness	<p>"Dopamine is a neurotransmitter that plays a crucial role in the brain's reward and pleasure pathways. It is involved in regulating mood, motivation, and feelings of pleasure. While dopamine itself is not a mood enhancer, its activity in the brain can have an impact on mood regulation.</p> <p>The seed pods of the Velvet Bean plant contain 3.6 – 4.3% L-dopa (levodopa). Levodopa is the precursor of dopamine and can bypass the need for peripheral decarboxylation. While Mucuna pruriens does not directly inhibit peripheral decarboxylase, the presence of levodopa in the plant can enhance dopamine synthesis in the brain.</p> <p>The rapid onset of action and longer on time without concomitant increase in dyskinesias on mucuna seed powder formulation suggest that this natural source of L-dopa might possess advantages over conventional L-dopa preparations"</p>	<p>Additionally, the presence of L-Dopa in Mucuna pruriens supports dopamine synthesis in the brain, further amplifying cognitive performance and mental clarity. This natural dopamine precursor enhances focus and motivation without the common side effects associated with synthetic dopamine enhancers. The combination of methyliberine, caffeine, and L-Dopa from Mucuna pruriens offers a powerful synergy for improving mental alertness, cognitive function, and sustained energy levels. Furthermore, Palmitoylethanolamide (PEA) adds a neuroprotective layer by modulating the Cell Danger Response, helping to stabilize mood and improve overall cognitive health.</p>	<p>https://movementdisorders.onlinelibrary.wiley.com/doi/epdf/10.1002/mdc3.12082 https://pubmed.ncbi.nlm.nih.gov/12126656/</p>
Velvet bean extract	1000mg	Cognition,Alertness	<p>Velvet bean extract active is converted into L-Dopa through a process called tyrosine hydroxylation. This conversion is catalyzed by the enzyme tyrosine hydroxylase, which adds a hydroxyl group to the tyrosine molecule. L-Dopa, produced from tyrosine, is further converted into dopamine through a process called decarboxylation. This conversion is facilitated by the enzyme aromatic L-amino acid decarboxylase (AADC), which removes a carboxyl group from L-Dopa, resulting in the formation of dopamine.</p>		
PEA	100mg	Cognition	<p>Palmitoylethanolamide (PEA) plays a vital role in mood regulation. PEA's ability to modulate the Cell Danger Response (CDR) and its neuroprotective effects contribute to its mood-enhancing properties.</p>		<p>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8157570/</p>

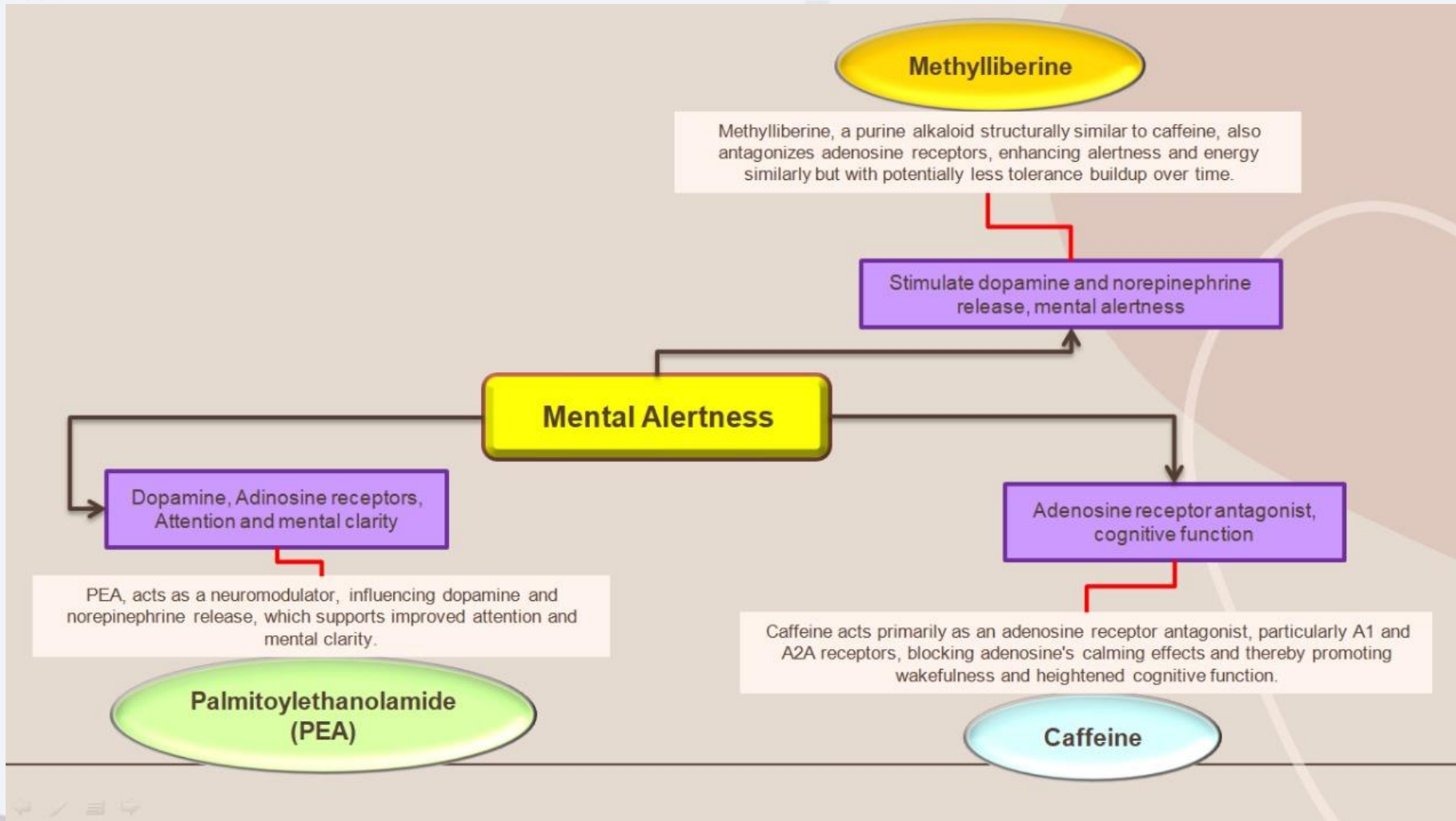
Format: Capsule

Dose: Not More than 2 in a day

Claims:
 Supports Cognitive Performance
 Helps increase energy levels
 Helps to enhance mood and attention

Toxicology/ Cautions:
 Combining mucuna with MAOIs (e.g., phenelzine, selegiline, tranylcypromine) may lead to elevated heart rate, increased blood pressure, seizures, or nervousness.
 Concurrent use with methylidopa may result in excessive blood pressure reduction, leading to dizziness or fainting.
 As mucuna contains levodopa, combining it with prescription levodopa may heighten the risk of side effects such as nausea, dizziness, or involuntary movements.
 Co-administration with guanethidine may further lower blood pressure beyond optimal levels.
 Mucuna may lower blood sugar, requiring careful glucose monitoring when used alongside antidiabetic medications.

Mechanism of Action



** formula and diagrams are modified/edited for public presentation. It should not be used for actual formulation.