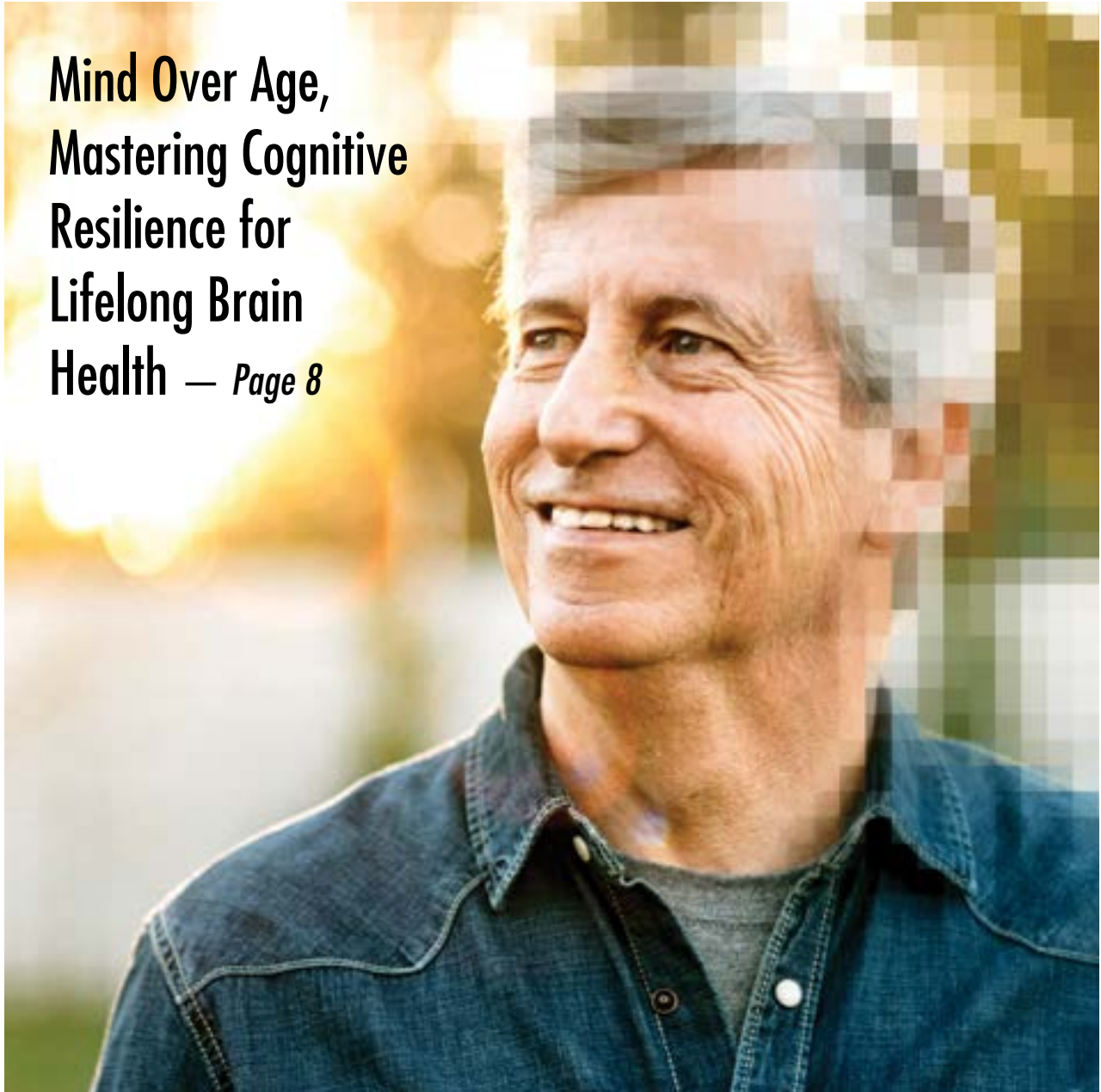


INFUSING

BONDED BY BLOOD | SUMMER 2024

LIFE

**Mind Over Age,
Mastering Cognitive
Resilience for
Lifelong Brain
Health — *Page 8***



Unlocking the
Gut's Secrets

Embracing the
Micro Learning

Mind
Over Age



WE'RE IN THIS TOGETHER.

Sunday 2:16 pm

Jogging in the park
with his girlfriend

Ben, living with
hemophilia A

Not an actual patient

Let's make today brilliant.

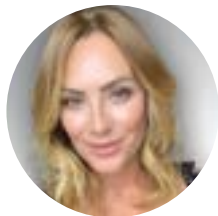
Takeda is here to support you throughout your journey and help you embrace life's possibilities. Our focus on factor treatments and educational programs, and our dedication to the bleeding disorders community, remain unchanged. And our commitment to patients, inspired by our vision for a bleed-free world, is stronger than ever.

bleedingdisorders.com



FROM THE EDITOR

As the summer sun warms our days and we find ourselves enjoying longer evenings with family and friends, it's the perfect time to reflect on our well-being and the small steps we can take to improve it.



With warm regards,
—Kelle Carthey, RN
Editor

This season often brings a delightful mix of relaxation and activity, from beach trips and barbecues to playful afternoons with the kids. It's a time to make lasting memories and embrace the vibrant energy that summer naturally provides.

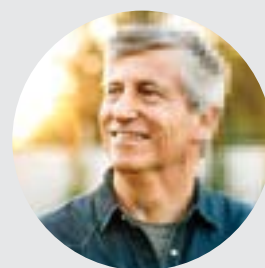
In this issue, we're diving into the fascinating world of gut health, uncovering how our digestive system influences not just our physical health but also our mental well-being. As you explore these articles, you'll find practical tips to help you and your loved ones maintain a happy and healthy gut, which is crucial for overall vitality.

We are also excited to introduce our feature article, "Mind Over Age," which delves into mastering cognitive resilience for lifelong brain health. As we journey through life, preserving our cognitive health becomes increasingly important. This article offers insightful strategies on how

lifestyle habits, dietary choices, and targeted interventions can significantly bolster brain health. From the brain-boosting diet to mental stimulation and stress management, you'll find comprehensive advice to keep your mind sharp and resilient against age-related decline.

Speaking of kids, summer is also an excellent opportunity to engage them in fun, educational activities. Whether it's through micro-learning adventures that pique their curiosity or simply involving them in preparing delicious, gut-friendly meals, there are countless ways to make this season both enjoyable and enriching.

Thank you for being part of our community. We hope this newsletter brings you valuable insights and a bit of inspiration to enhance your summer days. Here's to a season filled with health, happiness, and plenty of sunshine! ☀️



INFUSING LIFE

Summer 2024

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ASK US!

Call or email us with any questions you have about sports, life, relationships or your managing your medical condition and we will lend our expertise to help you in any possible way.

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Your Pathway to Immune Health, Mental Wellness, and Overall Vitality

Ah, the gut — that mysterious, yet crucial cornerstone of our well-being. It's not just a digestion powerhouse; it's a hub of connections, influencing everything from our immune system to our mental health. In this edition of our wellness newsletter, we're diving deep into the gut, exploring its pivotal role in our overall health and offering insights into how you can optimize it naturally. So, grab a cuppa, settle in, and let's unravel the mysteries of gut health together.

More Than Just Digestion: Unveiling the Intricacies of Gut Health

Welcome to the heart of our discussion, where we peel back the layers of the gut's influence beyond the realm of digestion. Prepare to be amazed as we uncover the profound connections between gut health, immune function, and mental well-being, painting a vivid portrait of the intricate interplay within our bodies.

The Gut: A Bastion of Immune Vigilance

Picture this: your gut isn't just a passive bystander in the saga of immune defense; it's the commander-in-chief, orchestrating a symphony of responses to keep you safe from invaders. How does it wield such power, you ask? Well, it all comes down to the gut microbiota — the trillions of microorganisms that call your gut home.

1 Microbial Militia: Within the depths of your gut reside armies of bacteria, fungi, and viruses, collectively known as the gut microbiota. These microscopic warriors aren't just freeloaders; they're integral players in immune surveillance. They stand guard, patrolling the gut lining, and swiftly neutralizing any threats that dare to breach its defenses.

2 Immunomodulation: Here's where things get fascinating. The gut microbiota doesn't just fend off pathogens; it also fine-tunes the immune system's response, ensuring a delicate balance between defense and tolerance. Through intricate signaling pathways, gut microbes educate immune cells, teaching them to distinguish friend from foe and mounting appropriate responses when needed.

3 Barrier Integrity: Imagine your gut lining as a fortress wall, shielding your body from harmful invaders. The gut microbiota plays a pivotal role in maintaining the integrity of this barrier, sealing off any chinks and preventing pathogens from infiltrating into the bloodstream. When this barrier is compromised, as seen in conditions like leaky gut syndrome, the immune system goes into over-

drive, triggering inflammation and wreaking havoc throughout the body.

The Gut-Brain Axis: Where Gut Health Meets Mental Wellness

In the midst of unraveling the mysteries of gut health, it's imperative to recognize its profound impact on cognitive function and mental acuity. The gut-brain axis, a complex communication network linking the gut and the brain, serves as a conduit for bidirectional signaling, influencing not only our mood but also our cognitive clarity. Surprisingly, a significant portion of the body's serotonin, a neurotransmitter crucial for regulating mood and emotions, is synthesized in the gut. This underscores the intimate relationship between gut health and mental wellness, as imbalances in gut microbiota composition have been implicated in mood disorders like depression and anxiety. By nurturing our gut with wholesome foods and probiotic supplements, we're not just supporting our digestive system; we're also nurturing our cognitive faculties, promoting sharper focus, enhanced memory, and emotional resilience.

Furthermore, emerging research highlights the role of gut health in maintaining cognitive function and mental acuity. The gut microbiota's influence extends beyond the realms of digestion and immune defense, reaching into the domains of memory, learning, and attention. A flourishing gut ecosystem, enriched with diverse microbial species, has been associated with improved cognitive performance and reduced risk of cognitive decline. Con-



versely, disturbances in gut microbiota composition, often resulting from poor dietary choices or antibiotic use, have been linked to cognitive impairments and neurodegenerative diseases like Alzheimer's. Therefore, prioritizing gut health isn't just about staving off digestive discomfort; it's about safeguarding our cognitive prowess and preserving mental clarity throughout the lifespan.

As we embark on the journey of gut enlightenment, let's not overlook the profound implications it holds for our cognitive well-being. By fostering a symbiotic relationship with our gut microbiota through dietary interventions, probiotic supplementation, and stress management techniques, we're not only nurturing our bodies but also nurturing our minds. So, as we raise a toast to the gut as our unsung hero in the quest for wellness, let's also celebrate its role as a guardian of cognitive vitality, guiding us towards a future filled with clarity, resilience, and mental flourishing.

Cultivating Gut Bliss: Nature's Bounty and Supplements

Now that we've shed light on the gut's multifaceted role, let's explore how you can befriend your gut and keep it humming along merrily. Here's the lowdown on natural strategies and supplements for gut health:

1 Fiber-Rich Fare: Think of fiber as the VIP pass for your gut microbiota. It's their favorite feast! Load up on fruits, veggies, whole grains, legumes, and nuts to fuel your gut buddies and keep the microbial community thriving.

2 Fermented Foods: Sauerkraut, kimchi, yogurt, kefir — these tangy delights are brimming with probiotics, the friendly bacteria that bolster gut health. Incorporate fermented foods into your diet for a probiotic punch that'll have your gut singing with joy.

Continued on page 14



The Modern Solution to Knowledge in Today's Fast-Paced World

In the era of instant gratification and relentless busyness, the traditional model of learning — long lectures, extensive textbooks, and hours of study — can feel daunting and impractical. However, amidst this chaotic landscape, a powerful educational trend has emerged: micro learning. Defined by its bite-sized, easily digestible format, micro learning offers a solution perfectly tailored to the demands of our modern culture. In this comprehensive guide, we'll explore the concept of micro learning, its myriad benefits for learners of all ages, and provide detailed examples of how to integrate micro learning into your daily routine through podcasts, games, and other resources.

Understanding Micro Learning

At its core, micro learning is an educational approach that delivers small, focused units of learning content.

These bite-sized modules are designed to be consumed in short bursts, typically ranging from a few minutes to no more than 15-20 minutes. Unlike traditional long-form learning, micro learning is characterized by its brevity, accessibility, and efficiency.

Benefits of Micro Learning:

- 1 Flexibility:** Micro learning fits seamlessly into busy schedules, allowing learners to engage with educational content whenever and wherever they choose.
- 2 Retention:** By breaking down complex topics into digestible chunks, micro learning enhances information retention and comprehension.



3 Engagement: Short, focused learning sessions are more engaging and less overwhelming than traditional lengthy lectures, fostering a positive learning experience.

4 Accessibility: With the proliferation of digital platforms and mobile devices, micro learning resources are readily available to learners of all backgrounds and demographics.

Micro Learning in Today's Culture

In today's fast-paced world, where time is a scarce commodity and attention spans are dwindling, the demand for efficient, on-the-go learning solutions has never been higher. Micro learning, with its bite-sized format, perfectly aligns with the needs of modern learners. Whether it's mastering a new skill, keeping up with industry trends, or simply satisfying curiosity, micro learning offers a practical and effective means of acquiring knowledge in manageable increments. It caters to the diverse needs of learners across all age groups and backgrounds, from professionals seeking career

advancement to students supplementing their classroom education.

Integrating Micro Learning into Daily Life

Where to start: Podcasts What is a Podcast?

At its core, a podcast is an audio program that you can listen to anytime, anywhere. Whether you're commuting to work, hitting the gym, or relaxing at home, podcasts offer a convenient way to learn, be entertained, and stay informed. From educational content to captivating storytelling, there's a podcast for every interest and passion.

How to Find Podcasts?

Finding podcasts tailored to your interests is easier than ever. You can explore podcast directories like Apple Podcasts, Spotify, Google Podcasts, or Stitcher, where you'll find an extensive library of shows covering a myriad of topics. Additionally, many podcasts have their own websites or social media pages where you can discover new episodes and engage with the community.

How to Listen?

Once you've found a podcast that piques your interest, listening is as simple as pressing play. Most podcast apps allow you to download episodes for offline listening, making it convenient for those times when you're without internet access. Whether you prefer to listen on your smartphone, tablet, or computer, the choice is yours.

Here are some crowd favorites you might enjoy:

1 The Daily Boost: Hosted by Scott Smith, this podcast offers daily motivation and personal development tips in short, bite-sized episodes, perfect for a quick dose of inspiration during your morning commute or coffee break.

2 Stuff You Should Know: Delve into fascinating topics ranging from science and history to pop culture and technology with this popular podcast hosted by Josh and Chuck. Each episode explores a different subject in an engaging and informative manner, making it ideal for learning on-the-go.

3 TED Talks Daily: Feed your curiosity and expand your horizons with TED Talks Daily, featuring inspiring talks from some of the world's leading thinkers and innovators. Whether you're interested in science, technology, or personal development, there's something for everyone in this thought-provoking podcast series.

Mobile Apps:

1 Duolingo: Learn a new language in just a few minutes a day with Duolingo's interactive, gamified lessons. Whether you're a beginner or looking to brush up on your language skills, Duolingo offers a fun and effective way to learn on-the-go.

2 Elevate: Elevate is a brain training app that offers personalized daily workouts designed to improve your cognitive skills, including memory, focus, and processing speed. With short, engaging exercises, Elevate makes it easy to incorporate micro learning into your daily routine.

Continued on page 12





Mind

A g e

Mastering Cognitive
Resilience for Lifelong
Brain Health

In the journey of aging gracefully, preserving cognitive health emerges as a paramount concern. As the years advance, it's natural to worry about memory lapses, slower mental processing, and the risk of neurodegenerative diseases like Alzheimer's and dementia. However, there's encouraging evidence that adopting certain lifestyle habits, dietary choices, and targeted interventions can significantly bolster brain health, promoting sharper cognition and potentially staving off age-related decline.

The Mindful Lifestyle Approach

Before delving into dietary specifics and targeted interventions, it's essential to underscore the significance of a holistic approach to cognitive well-being. Lifestyle factors play a pivotal role in shaping brain health throughout our lives and can profoundly impact cognitive resilience as we age. Here are some key lifestyle strategies for maintaining and enhancing cognitive function:

1 Regular Exercise: Physical activity isn't just beneficial for the body; it's also a potent ally for the brain. Engaging in aerobic exercises like walking, jogging, swimming, or cycling enhances blood flow to the brain, stimulates the release of neurotrophic factors that support neuronal growth, and promotes neuroplasticity, the brain's ability to adapt and rewire itself.

2 Mental Stimulation: Just like muscles, the brain thrives on challenges and stimulation. Engage in activities that require mental effort and novelty, such as puzzles, crosswords, learning a new language or instrument, or pursuing hobbies that demand cognitive engagement.

3 Quality Sleep: Adequate sleep is vital for cognitive function and emotional well-being. Prioritize good sleep hygiene practices, such as maintaining a consistent sleep schedule, creating a conducive sleep environment, and practicing relaxation techniques before bedtime.

4 Stress Management: Chronic stress can take a toll on cognitive health, impairing memory, and executive function. Incorporate stress-reducing practices like mindfulness meditation, deep breathing exercises, yoga, or spending time in nature to promote mental resilience.

5 Social Connections: Human connection is integral to brain health. Cultivate meaningful relationships, participate in social activities, and stay connected with friends, family, and community to support cognitive vitality.

The Brain-Boosting Diet

Diet plays a pivotal role in shaping brain health, influencing factors such as inflammation, oxidative stress, neurotransmitter function, and neuronal connectivity. Incorporating nutrient-rich foods that nourish the brain while avoiding or minimizing those that promote cognitive decline is key to maintaining optimal cognitive function throughout life.

Foods That Benefit Brain Health:

1 Fatty Fish: Rich in omega-3 fatty acids, particularly EPA and DHA, fatty fish like salmon, mackerel, and sardines offer potent anti-inflammatory and neuroprotective benefits. Aim for at least two servings of fatty fish per week to support brain health.

2 Leafy Greens: Dark, leafy greens such as spinach, kale, and Swiss chard are packed with vitamins, minerals, and antioxidants like vitamin K, folate, and lutein, which support cognitive function and help reduce the risk of cognitive decline.

3 Berries: Berries, especially blueberries, are renowned for their high levels of antioxidants, including flavonoids and anthocyanins, which have been shown to improve memory, cognition, and neuroplasticity.

4 Nuts and Seeds: Almonds, walnuts, flaxseeds, and chia seeds are rich sources of healthy fats, vitamins, minerals, and antioxidants that support brain health and may help reduce the risk of cognitive decline.

“Lifestyle factors play a pivotal role in shaping brain health throughout our lives and can profoundly impact cognitive resilience as we age.”

5 Whole Grains: Whole grains like oats, quinoa, and brown rice provide a steady source of energy for the brain and are rich in fiber, vitamins, and minerals that support cognitive function and protect against age-related cognitive decline.

Foods to Limit or Avoid:

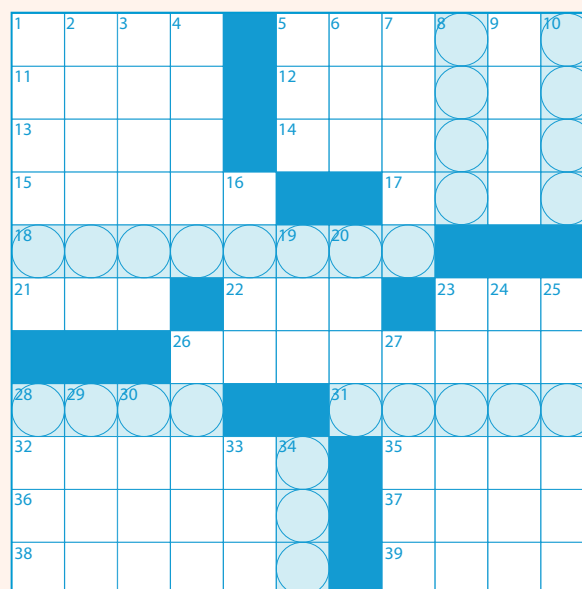
1 Processed Foods: Highly processed foods high in refined sugars, unhealthy fats, and additives have been linked to cognitive impairment and an increased risk of neurodegenerative diseases. Minimize consumption of processed snacks, sugary beverages, and fast food.

2 Trans Fats: Trans fats, commonly found in margarine, processed baked goods, and fried foods, have been associated with inflammation and cognitive decline. Opt for healthier fats like olive oil, avocado, and nuts instead.

Continued on page 13

CAN YOU SOLVE **FOR A DIFFERENT** **HEMOPHILIA A** **TREATMENT?**

Test your HEMLIBRA knowledge



ACROSS

1. Wine barrel
5. Deep fissures
11. Mideast gulf port
12. District
13. Ripped
14. Familiar with
15. Mean
17. Roost
18. The #1 prescribed prophylaxis for people with hemophilia A without factor VIII inhibitors*

*According to IQVIA claims data (various insurance plan types) from September 2021–August 2022 (refreshed November 2022), accounting for prophylaxis use in the US.

21. Calendar divs.
22. Regret
23. Banquet hosts (abbr.)
26. International travel necessity
28. Check out the ____ treated bleeds data with HEMLIBRA
31. Number of dosing options HEMLIBRA offers

32. Small hole in lace cloth
35. Central Plains tribe
36. Melodic
37. Towering
38. Reduce
39. Spanish cheers

DOWN

1. Memorable, as an earworm
2. Devotee
3. Medical fluids
4. Prepare to propose, perhaps
5. PC's "brain"
6. Owns
7. Concert venue
8. See Medication Guide or talk to your doctor about potential ____ effects
9. Winter hrs. in Denver and El Paso
10. HEMLIBRA is the only prophylactic treatment offered this way under the skin

16. Pre-Euro currency in Italy
19. Subway alternative
20. Relax
23. Human
24. New Orleans cuisine
25. Mentally prepares
26. Collared shirts
27. Instagram post
28. Ardent enthusiasm
29. Brontë heroine Jane
30. Old Portuguese coins
33. Opposite of WNW

34. More than ____ thousand patients have been treated with HEMLIBRA worldwide†

† Number of people with hemophilia A treated as of October 2021.

SOLUTIONS

Across: 1. cask, 5. chasms, 11. Aden, 12. panish, 13. tore, 14. used to, 15. cruel, 17. nest, 18. HEMLIBRA, 21. yrs, 22. rue, 23. M.C.s, 26. passport, 28. zero, 31. three, 32. eyelid, 35. O'roo, 36. anore, 37. tall, 38. lessen, 39. oles
Down: 1. catchy, 2. adorn, 3. sear, 4. kneel, 5. CPU, 6. has, 7. arena, 8. side, 9. MSTs, 10. shot, 16. lira, 19. bus, 20. rest, 23. mortal, 24. Creole, 25. steels, 26. polos, 27. photo, 28. zeal, 29. Eyre, 30. Reis, 33. ESE, 34. ten

Discover more at HEMLIBRA.com/answers

INDICATION & IMPORTANT SAFETY INFORMATION

What is HEMLIBRA?

HEMLIBRA is a prescription medicine used for routine prophylaxis to prevent or reduce the frequency of bleeding episodes in adults and children, ages newborn and older, with hemophilia A with or without factor VIII inhibitors.

What is the most important information I should know about HEMLIBRA?

HEMLIBRA increases the potential for your blood to clot. People who use activated prothrombin complex concentrate (aPCC; Feiba®) to treat breakthrough bleeds while taking HEMLIBRA may be at risk of serious side effects related to blood clots.

These serious side effects include:

- **Thrombotic microangiopathy (TMA)**, a condition involving blood clots and injury to small blood vessels that may cause harm to your kidneys, brain, and other organs
- **Blood clots (thrombotic events)**, which may form in blood vessels in your arm, leg, lung, or head

Please see Brief Summary of Medication Guide on following page for Important Safety Information, including **Serious Side Effects**.



Medication Guide
HEMLIBRA® (hem-lee-bruh)
(emicizumab-kxwh)
injection, for subcutaneous use

What is the most important information I should know about HEMLIBRA?

HEMLIBRA increases the potential for your blood to clot. Carefully follow your healthcare provider's instructions regarding when to use an on-demand bypassing agent or factor VIII (FVIII) and the recommended dose and schedule to use for breakthrough bleed treatment.

HEMLIBRA may cause the following serious side effects when used with activated prothrombin complex concentrate (aPCC; FEIBA®), including:

- **Thrombotic microangiopathy (TMA).** This is a condition involving blood clots and injury to small blood vessels that may cause harm to your kidneys, brain, and other organs. Get medical help right away if you have any of the following signs or symptoms during or after treatment with HEMLIBRA:
 - confusion
 - weakness
 - swelling of arms and legs
 - yellowing of skin and eyes
 - stomach (abdomen) or back pain
 - nausea or vomiting
 - feeling sick
 - decreased urination
- **Blood clots (thrombotic events).** Blood clots may form in blood vessels in your arm, leg, lung, or head. Get medical help right away if you have any of these signs or symptoms of blood clots during or after treatment with HEMLIBRA:
 - swelling in arms or legs
 - pain or redness in your arms or legs
 - shortness of breath
 - chest pain or tightness
 - fast heart rate
 - cough up blood
 - feel faint
 - headache
 - numbness in your face
 - eye pain or swelling
 - trouble seeing

If aPCC (FEIBA®) is needed, talk to your healthcare provider in case you feel you need more than 100 U/kg of aPCC (FEIBA®) total.

Your body may make antibodies against HEMLIBRA, which may stop HEMLIBRA from working properly. Contact your healthcare provider immediately if you notice that HEMLIBRA has stopped working for you (eg, increase in bleeds).

See “What are the possible side effects of HEMLIBRA?” for more information about side effects.

What is HEMLIBRA?

HEMLIBRA is a prescription medicine used for routine prophylaxis to prevent or reduce the frequency of bleeding episodes in adults and children, ages newborn and older, with hemophilia A with or without factor VIII inhibitors.

Hemophilia A is a bleeding condition people can be born with where a missing or faulty blood clotting factor (factor VIII) prevents blood from clotting normally.

HEMLIBRA is a therapeutic antibody that bridges clotting factors to help your blood clot.

Before using HEMLIBRA, tell your healthcare provider about all of your medical conditions, including if you:

- are pregnant or plan to become pregnant. It is not known if HEMLIBRA may harm your unborn baby. Females who are able to become pregnant should use birth control (contraception) during treatment with HEMLIBRA.
- are breastfeeding or plan to breastfeed. It is not known if HEMLIBRA passes into your breast milk.

Tell your healthcare provider about all the medicines you take, including prescription medicines, over-the-counter medicines, vitamins, or herbal supplements. Keep a list of them to show your healthcare provider and pharmacist when you get a new medicine.

How should I use HEMLIBRA?

See the detailed “Instructions for Use” that comes with your HEMLIBRA for information on how to prepare and inject a dose of HEMLIBRA, and how to properly throw away (dispose of) used needles and syringes.

- Use HEMLIBRA exactly as prescribed by your healthcare provider.
- **Stop (discontinue) prophylactic use of bypassing agents the day before starting HEMLIBRA prophylaxis.**
- **You may continue prophylactic use of FVIII for the first week of HEMLIBRA prophylaxis.**
- HEMLIBRA is given as an injection under your skin (subcutaneous injection) by you or a caregiver.

- Your healthcare provider should show you or your caregiver how to prepare, measure, and inject your dose of HEMLIBRA before you inject yourself for the first time.
- Do not attempt to inject yourself or another person unless you have been taught how to do so by a healthcare provider.
- Your healthcare provider will prescribe your dose based on your weight. If your weight changes, tell your healthcare provider.
- You will receive HEMLIBRA 1 time a week for the first four weeks. Then you will receive a maintenance dose as prescribed by your healthcare provider.
- If you miss a dose of HEMLIBRA on your scheduled day, you should give the dose as soon as you remember. You must give the missed dose as soon as possible before the next scheduled dose, and then continue with your normal dosing schedule.
- **Do not** give two doses on the same day to make up for a missed dose.
- HEMLIBRA may interfere with laboratory tests that measure how well your blood is clotting and may cause a false reading. Talk to your healthcare provider about how this may affect your care.

What are the possible side effects of HEMLIBRA?

- See “What is the most important information I should know about HEMLIBRA?”

The most common side effects of HEMLIBRA include:

- redness, tenderness, warmth, or itching at the site of injection
- headache
- joint pain

These are not all of the possible side effects of HEMLIBRA.

Call your doctor for medical advice about side effects. You may report side effects to FDA at 1-800-FDA-1088.

How should I store HEMLIBRA?

- Store HEMLIBRA in the refrigerator at 36°F to 46°F (2°C to 8°C). Do not freeze.
- Store HEMLIBRA in the original carton to protect the vials from light.
- Do not shake HEMLIBRA.
- If needed, unopened vials of HEMLIBRA can be stored out of the refrigerator and then returned to the refrigerator. HEMLIBRA should not be stored out of the refrigerator for more than a total of 7 days or at a temperature greater than 86°F (30°C).
- After HEMLIBRA is transferred from the vial to the syringe, HEMLIBRA should be used right away.
- Throw away (dispose of) any unused HEMLIBRA left in the vial.

Keep HEMLIBRA and all medicines out of the reach of children.

General information about the safe and effective use of HEMLIBRA.

Medicines are sometimes prescribed for purposes other than those listed in a Medication Guide. Do not use HEMLIBRA for a condition for which it was not prescribed. Do not give HEMLIBRA to other people, even if they have the same symptoms that you have. It may harm them. You can ask your pharmacist or healthcare provider for information about HEMLIBRA that is written for health professionals.

What are the ingredients in HEMLIBRA?

Active ingredient: emicizumab-kxwh

Inactive ingredients: L-arginine, L-histidine, poloxamer 188, and L-aspartic acid.

Manufactured by: Genentech, Inc., A Member of the Roche Group,
1 DNA Way, South San Francisco, CA 94080-4990
U.S. License No. 1048

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For more information, go to www.HEMLIBRA.com or call 1-866-HEMLIBRA.
This Medication Guide has been approved by the U.S. Food and Drug Administration
Revised: 03/2023



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3 QuizUp: Challenge yourself with trivia quizzes on a wide range of topics, from history and science to pop culture and sports. With thousands of questions and real-time multiplayer competitions, QuizUp is a fun and addictive way to test your knowledge and learn something new every day.

Micro Learning for Kids

Educational Entertainment

For children, podcasts offer a valuable opportunity to learn while being entertained. Whether it's exploring the wonders of science, diving into history's mysteries, or embarking on imaginative adventures, podcasts ignite curiosity and spark a love of learning in young minds. With age-appropriate content readily available, parents can encourage their children to explore new topics and expand their horizons through the magic of audio storytelling.

Enhancing Learning Outcomes

Integrating micro learning into children's daily routines can have a profound impact on their academic performance and cognitive development. By breaking down complex concepts into digestible nuggets of information, micro learning makes learning more accessible and engaging for young learners. Whether it's practicing math facts, learning new vocabulary, or exploring scientific principles, micro learning empowers children to take control of their education and become lifelong learners.

Micro Learning Podcasts for Kids

1 Wow in the World: Hosted by Guy Raz and Mindy Thomas, this podcast explores fascinating science and technology topics in an entertaining and educational way. Each episode dives into a different subject, from space exploration to the inner workings of the human body, making it perfect for curious young minds.

2 Brains On!: Produced by American Public Media, Brains On! is a science podcast for kids that answers intriguing questions about the world around us. With lively hosts and engaging storytelling, this podcast covers a wide range of topics, including animals, technology, and the environment.

3 But Why: A Podcast for Curious Kids: In this podcast, children's questions drive the content. Hosted by Jane Lindholm, But Why invites kids to submit their questions about the world, which are then explored and answered in each episode. From "Why do we dream?" to "Why do we have different time zones?" this podcast encourages curiosity and critical thinking.

Micro Learning Apps for Kids

1 ABCmouse: ABCmouse is an award-winning early learning program that offers a comprehensive curriculum for children ages 2-8. With interactive games, activities, and educational videos, ABCmouse covers a wide range of subjects, including math, reading, science, and art. Its bite-sized lessons make it easy for young learners to engage with educational content in short bursts.

"In today's fast-paced world, where time is a scarce commodity and attention spans are dwindling, the demand for efficient, on-the-go learning solutions has never been higher."

2 PBS Kids Games: The PBS Kids Games app features a variety of educational games and activities based on popular PBS Kids shows. From literacy and math games to puzzles and creativity activities, this app offers a fun and interactive way for kids to learn and explore.

3 Sesame Street: Elmo Loves 123s: Developed by Sesame Workshop, Elmo Loves 123s is an educational app designed to help preschoolers learn numbers and counting skills. With engaging games, videos, and activities featuring beloved Sesame Street characters, this app makes learning math fun and accessible for young children.

These examples demonstrate how micro learning podcasts and apps can provide valuable educational content for kids in short, engaging formats, helping them learn and explore the world around them in fun and interactive ways.

Conclusion

In a world where time is a precious commodity and information overload is a constant challenge, micro learning offers a beacon of hope for learners seeking to expand their knowledge in a fast, efficient, and engaging manner. Whether it's listening to a podcast during your daily commute, completing a quick language lesson on your lunch break, or challenging yourself with a trivia quiz before bed, micro learning empowers you to take control of your learning journey and unlock your full potential, one bite-sized lesson at a time. So why wait? Embrace the power of micro learning today and embark on a journey of continuous growth and discovery. 🌟

3 Excessive Alcohol: While moderate alcohol consumption may have some cardiovascular benefits, excessive or chronic alcohol intake can impair cognitive function and increase the risk of dementia. Practice moderation and limit alcohol consumption to reduce cognitive risk.

4 Highly Refined Carbohydrates: Refined carbohydrates like white bread, pasta, and sugary cereals can cause spikes and crashes in blood sugar levels, contributing to inflammation and oxidative stress in the brain. Choose whole, unprocessed carbohydrates instead.

Insulin Resistance in the Brain: Understanding Type 3 Diabetes

Emerging research has shed light on the role of insulin resistance in the brain, a phenomenon often referred to as “type 3 diabetes.” Insulin, a hormone produced by the pancreas, plays a crucial role in regulating blood sugar levels and facilitating glucose uptake by cells, including neurons in the brain. However, when cells become resistant to insulin’s effects, glucose uptake is impaired, leading to metabolic dysfunction and neuronal damage.

Insulin resistance in the brain has been implicated in the pathogenesis of neurodegenerative diseases such as Alzheimer’s disease, where abnormal protein aggregates like amyloid-beta and tau disrupt insulin signaling and impair neuronal function. Moreover, insulin resistance exacerbates

inflammation, oxidative stress, and mitochondrial dysfunction, further contributing to neurodegeneration.

Strategies to Combat Insulin Resistance in the Brain:


1 Maintain Healthy Blood Sugar Levels: Adopt a diet rich in whole, unprocessed foods that promote stable blood sugar levels, such as fiber-rich vegetables, fruits, legumes, and whole grains. Minimize consumption of refined sugars and carbohydrates that can cause spikes in blood sugar.

2 Regular Physical Activity: Exercise improves insulin sensitivity and glucose metabolism in the brain, reducing the risk of insulin resistance and cognitive decline. Aim for a combination of aerobic and resistance exercises to maximize brain health benefits.

3 Intermittent Fasting: Intermittent fasting has been shown to enhance insulin sensitivity, promote autophagy (cellular repair), and protect against neurodegenerative diseases. Experiment with intermittent fasting protocols like time-restricted eating or alternate-day fasting under the guidance of a healthcare professional.

4 Supplements for Brain Health: Certain supplements may help mitigate insulin resistance and support brain function. Examples include:

- **Omega-3 Fatty Acids:** Fish oil supplements rich in EPA and DHA have been shown to improve insulin sensitivity and reduce inflammation in the brain.




“It’s never too late to start prioritizing brain health and nurturing the most precious organ in your body — your mind.”

- **Curcumin:** The active compound in turmeric, curcumin, exhibits potent anti-inflammatory and neuroprotective properties, potentially mitigating insulin resistance and cognitive decline.
- **Alpha-Lipoic Acid:** A powerful antioxidant, alpha-lipoic acid has been shown to improve insulin sensitivity, reduce oxidative stress, and enhance mitochondrial function in the brain.
- **Berberine:** Derived from plants, berberine has been shown to improve glucose metabolism, reduce inflammation, and protect against neurodegeneration by targeting insulin resistance pathways.

As always check in with your medical professionals when starting a new supplement routine.

Conclusion

In conclusion, safeguarding cognitive health and preventing age-related decline requires a multifaceted approach encompassing lifestyle modifications, dietary interventions, and targeted strategies to address underlying metabolic dysregulation like insulin resistance. By adopting a brain-healthy lifestyle, incorporating nutrient-rich foods, and leveraging evidence-based interventions, individuals can promote cognitive resilience, enhance brain function, and potentially reduce the risk of neurodegenerative diseases, thereby optimizing quality of life as they age. Remember, it’s never too late to start prioritizing brain health and nurturing the most precious organ in your body — your mind. 

3 Prebiotic Power: Prebiotics are like the fairy godmothers of the gut microbiota, nourishing them and fostering their growth. Embrace foods rich in prebiotic fibers, such as garlic, onions, leeks, and asparagus, to pamper your gut bugs and ensure they flourish.

4 Omega-3 Fatty Acids: Found in fatty fish, flaxseeds, and walnuts, omega-3 fatty acids boast anti-inflammatory properties that benefit both gut and brain health. Add these omega-3-rich foods to your diet to soothe gut inflammation and promote a harmonious gut environment.

5 Probiotic Supplements: Sometimes, our gut could use an extra dose of reinforcements, especially after rounds

of antibiotics or during periods of high stress. Probiotic supplements come to the rescue, delivering a concentrated army of beneficial bacteria to fortify your gut defenses.

6 Digestive Enzymes: If you often experience digestive woes like bloating or gas, digestive enzyme supplements can lend a helping hand. These enzymes aid in breaking down food more efficiently, easing the burden on your digestive system and promoting gut comfort.


Closing Thoughts:
Embrace the Gut,
Embrace Vitality

As we draw the curtains on our exploration of gut health's far-reaching effects, one thing becomes abundantly clear: the



gut is a powerhouse of influence, shaping our immune resilience, mental well-being, and overall vitality. By fostering a harmonious relationship with your gut microbiota through nourishing foods, mindful practices, and gut-friendly supplements, you're not just investing in your health — you're unlocking the keys to a vibrant, thriving life.

So, let's raise a toast to the gut — our unsung hero in the quest for wellness. May we continue to honor its wisdom, heed its cues, and embark on a journey of gut enlightenment that transcends mere digestion. Here's to the gut — may it forever reign supreme as the guardian of our health and the harbinger of our well-being! 🍷



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► **Pharmacokinetics** is the study of the activity of drugs in the body over a period of time.

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