Ara's Microbiome-Nurturing Smoothie



focused on a diverse range of plants that are high in fiber and other beneficial compounds like polyphenols.

Formulated with evidence-based ingredients,

INGREDIENTS

½ cup frozen wild blueberries1

1/4 cup blackberries²

½ avocado³



1 cup spinach⁴



(the greener, the better)⁵

1 unripe banana



2 tablespoons flaxseeds⁸

1 handful broccoli sprouts⁷

½ cup frozen cauliflower⁶



2 tablespoons hemp hearts9



2 tablespoons cacao nibs¹⁰ Filtered water or almond milk (based on



Pro tip: Store produce that tends to go bad quickly, such as berries and broccoli sprouts, in a glass container with a paper towel at the bottom to soak up any excess moisture.

desired thickness and dietary preferences)¹¹

ARA'S NOTES ¹ Wild blueberries contain more fiber and polyphenols than

² The most abundant polyphenol in blackberries is cyanidin-3-O-glucoside, which is a type of anthocyanin—the compound

cultivated blueberries.

- responsible for the deep blue/purple color of these berries. Anthocyanins are known for their anti-inflammatory, antioxidant, and antidiabetic effects.
- ³ Half an avocado has 4.5g of fiber. 70% of this fiber content is insoluble fiber, which can be fermented by your gut microbes to produce beneficial metabolites for the body. ⁴ Spinach is rich in folate (vitamin B9)—a single serving of spinach (2 cups) contains 49% of the recommended daily
- intake. Folate is important for many metabolic processes in the body, including synthesis of DNA. For any birthing parents out there, folate is also critical during pregnancy for development of the neural tube. ⁵ Unripe bananas have high resistant starch content (a type of

carbohydrate that doesn't get digested in the small intestine

- and functions like a fiber) and are lower in sugar than ripe bananas. ⁶ Cauliflower is loaded with several essential nutrients vitamin A, several B vitamins, vitamin C, calcium, iron, and phosphorus.
- sulforaphane than mature broccoli. ⁸ Flaxseed is an incredibly nutritious functional food—it's a great source of alpha-linolenic acid, high quality protein, soluble fiber, phenolic compounds, and lignans. Gut bacteria

can convert lignans into secondary metabolites with

potent antioxidant properties. They can have up to 100x more

⁷ Broccoli sprouts contain sulforaphane, a natural plant

compound derived from cruciferous vegetables that has

⁹ Hemp hearts are rich in essential fatty acids (omega-6 and omega-3) and they're a great source of protein, containing each of the nine essential amino acids your body can't produce on its own.

¹⁰ Cacao is high in certain polyphenols, such as flavanols,

which undergo extensive metabolism by bacteria in your colon

after ingestion and are thought to benefit heart and metabolic

therapeutic potential, including modulation of the gut-brain

¹¹ I typically put this to the kiddo test: would you like your smoothie with a spoon or straw today? If you're using almond milk, look for one without emulsifiers or sweeteners.

1. Ahmed, F. A., & Ali, R. F. (2013). Bioactive compounds and

cauliflower. BioMed research international, 2013, 367819.

composition and potential health effects. Critical reviews in

antioxidant activity of fresh and processed white

2. Dreher, M. L., & Davenport, A. J. (2013). Hass avocado

food science and nutrition, 53(7), 738–750. https://

3. Jaramillo Flores M. E. (2019). Cocoa Flavanols: Natural

https://doi.org/10.1155/2013/367819

doi.org/10.1080/10408398.2011.556759

Agents with Attenuating Effects on Metabolic Syndrome

axis.

health.

REFERENCES

Risk Factors. Nutrients, 11(4), 751. https://doi.org/10.3390/ <u>nu11040751</u> 4. Kajla, P., Sharma, A., & Sood, D. R. (2015). Flaxseed—a potential functional food source. Journal of food science and technology, 52(4), 1857–1871. https://doi.org/10.1007/ <u>s13197-014-1293-y</u>

5. Kalt, W., Cassidy, A., Howard, L. R., Krikorian, R., Stull, A. J.,

Advances in nutrition (Bethesda, Md.), 11(2), 224–236.

Tremblay, F., & Zamora-Ros, R. (2020). Recent Research on

the Health Benefits of Blueberries and Their Anthocyanins.

https://doi.org/10.1093/advances/nmz065 6. Llorach, R., Espín, J. C., Tomás-Barberán, F. A., & Ferreres, F. (2003). Valorization of cauliflower (Brassica oleracea L. var. botrytis) by-products as a source of antioxidant phenolics. Journal of agricultural and food chemistry, 51(8), 2181-

2187. https://doi.org/10.1021/jf021056a

Lucarelli, D., Luben, R., Grace, P. B., Mawson, D. H., Tym, A., Wierzbicki, A., Khaw, K. T., Schroeter, H., & Kuhnle, G. G. C. (2018). Evaluation at scale of microbiome-derived metabolites as biomarker of flavan-3-ol intake in epidemiological studies. Scientific reports, 8(1), 9859. https://doi.org/10.1038/s41598-018-28333-w

7. Ottaviani, J. I., Fong, R., Kimball, J., Ensunsa, J. L., Britten, A.,

- 8. Rahman, S., Mathew, S., Nair, P., Ramadan, W. S., & Vazhappilly, C. G. (2021). Health benefits of cyanidin-3glucoside as a potent modulator of Nrf2-mediated oxidative stress. Inflammopharmacology, 29(4), 907-923. https:// doi.org/10.1007/s10787-021-00799-7 9. Roberts, J. L., & Moreau, R. (2016). Functional properties of
- bioactives. Food & function, 7(8), 3337-3353. https:// doi.org/10.1039/c6fo00051g 10. Singh, B., Singh, J. P., Kaur, A., & Singh, N. (2016). Bioactive compounds in banana and their associated health benefits - A review. Food chemistry, 206, 1-11. https://

doi.org/10.1016/j.foodchem.2016.03.033

spinach (Spinacia oleracea L.) phytochemicals and