

WEEK FIVE: AGING WELL

THE EMUNCTORY FUNCTION

Our bodies and our cellular processes make waste through their normal function --- producing garbage that must be eliminated through emunctory organs, like liver, gallbladder, kidneys.

Liver clears our body of old hormones, neurotransmitters & cholesterol, as well as other toxins or excesses we've been exposed to in our food or environment. Liver transforms these homemade by-products into an incredible fat-soluble substance called bile. Bile is stored in Gallbladder, to be cycled through the gut channel for removal in our stool (with some reabsorption). Kidneys filter our bloodstream for mineral balance, recycle nutrients, eliminating waste and excess, along with water-soluble toxins (neutralized by liver) through our urine.

This waste management is an ongoing necessity for the body, and our health suffers whenever by-products and used materials begin to build up. We commonly associate these as dysfunctions of the liver, gallbladder or kidneys themselves --- manifesting as cholesterol or blood pressure imbalances, gallstones. More recently, science points to how poor elimination pathways impact the entire body ---- from Obesity (fat cells which sequester toxins our bodies can't remove) to Alzheimer's Disease (most amyloid-beta leaves the body via liver).



help your body take out the trash!




our modern toxic load

Our bodies are exposed to an enormous array of environmental toxins, which the liver is working continually to neutralize and eliminate. This long list includes substances like alcohol, caffeine, Rx drugs, supplements or over the counter medicine; fragrances in our detergents and candles; air pollution, pesticides or mold; VOCs found in stain-resistant materials and paints; xeno-estrogens found in plastics; artificial colors, flavors and much more.

To detoxify our bodies safely and methodically, the liver requires a long list of nutritional associates. Certain foods have exceptional liver benefit --- but we support our detoxification pathways best with a varied diet of colorful foods, healthy fats and ample protein.

our liver finds rhythm with:



whole grains, legumes
dark leafy greens, animal products
raw foods, healthy plant oils
colorful foods
animal (or soy) protein
olive oil, avocado

cooked red, orange, yellow & dark green vegetables
alliums, cruciferous
raw foods, colorful foods
whole grains, nuts, seeds
seafood, red meat

fiber + fluids

what's the big deal with bile?

Our liver makes bile --- to eliminate used chemicals, like hormones and neurotransmitters, and spent materials, like cholesterol and red blood cells, from our bloodstream.

Bile flow is crucial to the regulation of our microbiome, cholesterol management, metabolic regulation, fat digestion and absorption of fat-soluble vitamins. Risk factors for sludgy bile include eating a high fat & low fiber diet; reduced stomach acid; poor sleep; heavy alcohol consumption; being male. Bile flow problems are linked to gallstones, and perhaps more significantly --- brain dysfunction and colon cancer.

Bile is stored in our gallbladder and released into the small intestine when we eat foods containing fat.



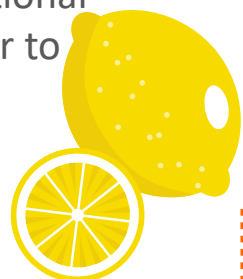
BILE FLOWS WITH:

water consumption
low fat, high fiber diet
bitter greens and other bitter flavors,
as found in teas, spices, lemon zest (& pith)

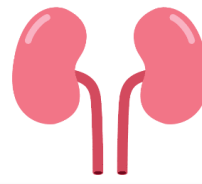


LOW FAT

anyone with Gallbladder concerns should consult with a nutritional practitioner --- whether aiming to limit gallstone formation or to address enzymatic changes due to gallbladder removal.



kidneys



Our kidneys filter an incredible 50 gallons of our fluids every day, balancing our blood chemistry and eliminating waste through our urine. Because of their role in fluid balance, our kidneys control our blood pressure. Because of their role in waste removal, our kidneys are responsible for shedding the body of excess glucose, when our blood sugar is dysregulated.

to support our kidneys, we need to keep our blood sugar balanced and our blood pressure controlled

Important dietary considerations for anyone concerned with kidney health include eating less animal protein, while reducing sugar and salt consumption. Staying adequately hydrated plays a strong role in the prevention of kidney stones.

Kidney health and disease has genetic components and is very individualized. It's important to work with a practitioner who can identify your specific mineral issues (there are 5 types of kidney stones!) to recommend the appropriate dietary therapeutics/identify deficiencies. Treatment plans and nutrition research on kidney disease increasingly favors a plant-based diet, but it is essential to work with a Registered Dietitian-Nutritionist who can advise on your personal dietary requirements.



friends to the liver & kidneys



asparagus delivers a uniquely excellent source of liver antioxidants: glutathione, vitamins c & e, and selenium. high in fiber and flavonoids. fresh picked, lightly steamed is best.



betalain, the deeply red/purple pigment found in beets, stimulates the liver's protective process and relaxes our cardiovascular system. buy these anti-inflammatory and antioxidant gems with their greens still intact! beet greens are a concentrated source of potassium, an essential nutrient for controlling blood pressure.



bountiful in polyphenols, celery has hefty antioxidant and anti-inflammatory benefit - with a particular affinity for stomach and digestive healing. through multiple mechanisms, celery may soothe a hypertensive cardiovascular system. eat the leaves!

highly perishable, may be best to buy fresh, eat raw and cut just before serving.



the cruciferous veggie family delivers highly bio-active, potent anti-cancer nutrients called glucosinolates. the strong sulfuric content of cruciferous is liver-protective, and essential for the appropriate function of our cardiovascular and nervous systems. its enviable concentration of vitamin c, calcium and other vitamins/minerals make this a can't miss category. briefly steamed may offer the most potent punch of anti-cancer nutrients. (should not consume raw if thyroid-sensitive.)

the carotenoids

Red, orange, yellow and dark green foods are pigmented by carotenoids - a colorful nutrient family with direct anti-inflammatory, antioxidant and immune-system benefits. These phytonutrients are most bio-available to the body when they are cooked and require fat for absorption into the bloodstream. Some rich food sources are listed below, but don't overthink it - just try to keep each color in your daily rotation.



LYCOPENE (red)

Cardiovascular Health/Gut Health/Anti-Cancer
cooked & canned tomatoes are exceptionally high, watermelon, pink grapefruit, papaya next best thing!

BETA-CAROTENE (orange)

Anti-Cancer/Vision
carrots, peppers, winter squash, dark leafy greens



LUTEIN/ZEAXANTHIN (yellow)

Cardiovascular Health/Eye Health/Brain Health
dark leafy greens, avocado, eggs, corn, mango

more inflammation tamers

These less-well-known pigments offer a range of anti-inflammatory benefits. These foods and their colorful compounds deserve a consistent spot in the rotation.

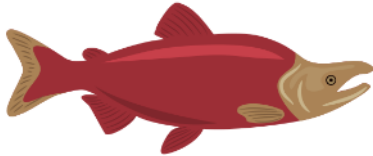
ELLAGITANNIN (rusty red)

Liver Antioxidant Support/Anti-Carcinogen
Reduces Cardio Inflammation
tannic foods like walnuts and pecans,
cranberries & pomegranate



ASTAXANTHIN (marine red)

Blood Vessel Flexibility/Arthritis
Reduces Gastric Inflammation
shrimp, crab, salmon, red algae



Hesperidin/Naringenin

Limits Inflammation/Supports Vein Structure
astringent found in oranges, grapefruit and peppermint
most concentrated in the pith (white layer) of citrus foods



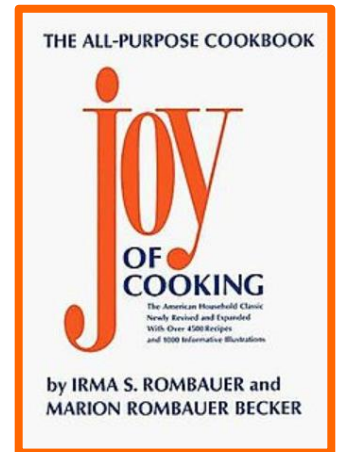
Bromelain

Reduces Inflammatory Signaling/ Blood Vessel Dilation
pineapple!
high in sugar, eat with fiber & protein.
not recommended to supplement.



BRING BACK SOME BASICS

Let's remember the classic side dishes --- braised, stewed and roasted vegetables of all colors. Softened with heat, accented with aromatics like garlic, seasoned with herbs and spices, finished with a little extra virgin olive oil.



braised greens chili tomato soup
sweet potato wedges stuffed peppers deviled eggs
sauteed zucchini stewed tomatoes roasted carrots

GO GLOBAL



Let's celebrate the curries created by different cultures around the world. Rich stews, thickened with the starches of potassium-rich squashes and potatoes --- and delivering color, spice and comfort.

Thai Pumpkin Curry Hungarian Ghoulish
West African Yam Curry Ukranian Borscht
Italian Ragu Caribbean Rundown
Kashmiri Rojan Josh Japanese Sweet Potato Curry

in practice: liver, gallbladder, kidney support



address your
environmental
obstacles

bitter habits
make better bile



<2300
mg/day

watch out
for sodium,
eat more
potassium-rich foods

avocados!
(potatoes!)



eat the rainbow.
everyday.



nitric oxide =
oral microbiome
+ stomach acid
+ nitrate-rich veggies



planks, wall sits, seat leg elevations
= isometrics

diaphragmatic breathing
= twice daily for 10min



blood-pressure beneficial



track your weekly rainbow



Keep a color diary for one week, taking note of which colors you eat consistently --- and which colors never make it into your mouth. Because each pigment represents a different phytonutrient family, we receive a wider range of health benefits when we eat a more colorful array of foods.

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tuesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
wednesday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
thursday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
friday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
saturday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
sunday	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

recipes to get your started

This [Quick Zucchini Saute](#) from Smitten Kitchen is a staple!

Mark Bittman's [Curried Carrot Soup with Coconut](#) is "restaurant-worthy"

Slow-cooker favorite. freezes beautifully: [Chicken Tortilla Soup](#)

A refreshing and cleansing [Celery & Chickpea Soup](#)

[Perfect Jammy Eggs](#) and [Slow-Cooked Cherry Tomatoes](#)

Wonderful [Celery, Date, Almond Salad](#) by Josh McFadden

[Tomato-Braised Chickpeas](#) by Melissa Clark

Tasty [Vegan Sloppy Joes](#) by Minimalist Baker

[Roasted Apples & Brussels Sprouts](#)

[Roasted Beets & Sauteed Beet Greens](#)



[Green Curry Lentil Soup](#)