



FIBER: POWERING YOUR HEALTH FROM WITHIN

Leah Groppo, MS, RD, CDCES, BC-ADM



My perspective: who am I?

- Dietitian focused in diabetes education
- My lens is helping people gain sustainable changes and work through barriers

March is National Nutrition Month

National Nutrition Month Events



RD Lunch and Learn: March 26th
12-1 PM, Zoom (see QR Code)



Want to recognize an RD? Fill out this form:
[Registered Dietitian Recognition](#)



Objectives



EXPLORE THE
DIFFERENT TYPES OF
FIBER



BENEFITS TO EATING
FIBER



MAKE IT PRACTICAL



LEAVE WITH AN
ACTION ITEM

Definition of dietary fiber

“the nondigestible, by human digestive enzymes, carbohydrates and lignin that are intact and intrinsic in plants” National Academy of Sciences Food and Nutrition Board



2 main types of fiber

Soluble and Insoluble



Types of fiber: Soluble fiber

- Water soluble, dissolves into water
 - Delay gastric emptying
 - Increase the time it takes to move through the digestive tract
 - Lipid lowering
 - Decrease glucose absorption
 - Absorbing sponge



Food highlight: β -glucan found in oat and barley foods, for example, reduce serum cholesterol and improve glycemic control



Ways to add more soluble fiber

- Add oatmeal, barley, chia seeds, nuts, beans and lentils, apples and blueberries, plantains, berries, broccoli

Soluble sources

FOOD	SOLUBLE FIBER (g)	INSOLUBLE FIBER (g)	TOTAL DIETARY FIBER (g)
Cereals			
Psyllium husk, 10g	7.1	0.9	8
Benefit, 3/4 cup	2.8	2.2	5.0
Oat bran, cooked, 3/4 cup	2.2	1.8	4.0
Oatmeal, dry, 1/3 cup	1.4	1.3	2.7
Brown rice, cooked, 1/2 cup	1.3	0	1.3
Flax seed, 10g	1.2	1	2.2
Vegetables			
Green plantain, 100g	5.8	0.2	6.0
Artichoke, medium, cooked	4.7	1.8	6.5
Lima beans, cooked, 1/2 cup	3.5	3.0	6.5
Kidney beans, cooked, 1/2 cup	2.9	2.9	5.8
Brussels sprouts, 1/2 cup	2.0	1.3	3.3
Squash, winter, cooked	1.9	1.4	3.3
Asparagus, cooked, 1/2 cup	1.7	1.1	2.8
Broccoli, cooked	1.2	1.2	2.4
Onions, cooked, 1/2 cup cooked	1.2	0.8	2.0
Carrots, cooked, 1/2 cup	1.1	0.9	2.0
Fruits			
Blackberries, 1/2 cup	3.1	0.7	3.8
Orange, medium	2.6	1.8	4.4
Grapefruit, medium	2.4	0.6	3.0
Apricots, fresh, 4 medium	1.8	1.7	3.5
Mango, fresh, 1/2 small	1.7	1.2	2.9
Prunes, dried, 3 medium	1.0	0.7	1.7

Types of fiber: Insoluble fiber

- Not soluble in water
- Speed up transit time (help with bowel movements/regularity)
- Increase fecal bulk



Insoluble fiber

- Whole wheat products (especially wheat bran), quinoa, brown rice, legumes, leafy greens like kale, almonds, walnuts, seeds, avocados, and fruits with edible skins like pears and apples



Insoluble Sources

FOOD	INSOLUBLE FIBER (g)	SOLUBLE FIBER (g)	TOTAL DIETARY FIBER (g)
Cereals			
Bitter melon, 100g	13.5	3.1	16.6
Wheat bran, 1/2 cup	11.3	1.0	12.3
Barley, cooked, 1/2 cup	3.3	0.9	4.2
Wheat germ, 3 tbsp	3.2	0.7	3.9
Wholegrain bread, 1 slice	2.8	0.1	2.9
Millet, cooked, 1/2 cup	2.7	0.6	3.3
Bulgur, cooked, 1/2 cup	2.4	0.5	2.9
Popcorn, 3 cups	2.3	0	2.3
Flaxseeds, 1 tbsp	2.2	1.1	3.3
Oatmeal, 1 cup	2.0	1.8	3.8
Rye bread, 1 slice	1.9	0.8	2.7
Rolled oats, cooked, 3/4 cup	1.7	1.3	3
Oat flakes, 1 cup	1.6	1.5	3.1
Whole wheat bread, 1 slice	1.6	0.3	1.9
Pumpernickel bread, 1 slice	1.5	1.2	1.7
Whole wheat, 1 slice	1.2	0.3	1.5
Vegetables			
Field beans, cooked, 100g	9.3	2.1	11.4
Broad beans, cooked, 100g	7.3	0.8	8.3
Lentils, cooked, 1/2 cup	7	1	8
Pinto beans, cooked, 1/2 cup	5.5	1.9	7.4
Chickpeas, cooked, 1/2 cup	4.9	1.3	6.2
Parsnips, cooked, 1 cup	4.0	0.4	4.4
White beans, cooked, 1/2 cup	3.8	0.4	4.2
Black beans, cooked, 1/2 cup	3.7	2.4	6.1
Spinach, cooked, 100g	3.5	0.6	4.1
Green peas, cooked, 2/3 cup	3.3	0.6	3.9
Turnip, cooked, 1/2 cup	3.1	1.7	4.8
Okra, cooked, 1/2 cup	3.1	1.0	4.0

Insoluble Sources

Soybeans, cooked, 1/2 cup	2.8	2.3	5.1
Sweet potatoes, 1/2 cup	2.4	1.4	3.8
Potato with skin, medium	1.7	1.2	2.9
Zucchini, cooked, 1/2 cup	1.4	1.1	2.5
Squash, summer, cooked, 1/2 cup	1.2	1.1	2.3
Lima beans, cooked, 1/2 cup	1.2	0.2	1.4
Cabbage, green, cooked, 1/2 cup	1.0	0.8	1.8
Fruits			
Apple, medium	4.2	1.5	5.7
Raspberries, 1/2 cup	3.8	0.4	4.2
Figs, 3 small	3.0	2.3	5.3
Kiwi, large	2.4	0.7	3.1
Mango, medium	2.2	1.5	3.7
Banana, 7 <u>inch</u>	2.1	0.7	2.8
Pear, 1 small	1.8	1.1	2.9
Strawberries, 3/4 cup	1.5	0.9	2.4



Stalk more insoluble fiber and pod and pea soluble

Plant cell wall >95% dietary fiber



Does it matter where the fiber comes from?

- Aim for whole foods first
- Aim for less pulverized options

How much should I eat?

- Women should aim for about 25 grams of fiber per day, while men should target about 38 grams, or 14 grams for every 1,000 calories
- Pregnancy 25g (ACOG guidelines)

Adequate Intake (AI) for Fiber⁴:

Life Stage Group	Men	Women
31-50 years	38 grams	25 grams
51-70 years	30 grams	21 grams
71+ years	30 grams	21 grams

REFERENCES

1. Institute of Medicine, Food and Nutrition Board. Dietary Reference Intakes for Energy, Carbohydrates, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. Washington, DC: National Academy Press, 2005. <https://www.nap.edu/read/10490/chapter/1>. Accessed November 19, 2019.
2. Dahl WJ, Stewart ML. Position of the Academy of Nutrition and Dietetics: health implications of dietary fiber. *Journal of the Academy of Nutrition and Dietetics*. 2015 Nov 1;115(11):1861-70.
3. Nielsen SJ, Trak-Fellermeier MA, Joshipura K. The Association between Dietary Fiber Intake and CRP levels, US Adults, 2007–2010. *The FASEB Journal*. 2017 Apr;31(1_supplement):648-B.
4. FoodData Central. U.S. Department of Agriculture. <https://fdc.nal.usda.gov/>. Accessed November 19, 2019.

Why focus on fiber?

- Heart health
- Glucose regulation
- Reducing inflammation
- Gut health
- May help with cancer prevention

Heart health/Lipids

- β -glucan, for example found in barley and oats has been shown to reduce serum cholesterol
- Soluble fibers can bind up some fat blocking the fat from forming a micelle to cross from the intestine into the blood stream

Blood glucose

- Idea that not all grams of carbs are created equal
- Think about steel cut oatmeal vs quick cooking oats
- Soluble fiber helps to decrease and to slow glucose absorption into the blood

Lowering inflammation

- Fiber feeding gut bacteria that help
- Fiber broken down in the large intestine
 - short-chain fatty acid (SCFA), butyric acid, acetic acid and propionic acid
 - Feeding cells in the colon
- “Butyric acid produced in the intestine by butyric acid-producing bacteria (BAPB) is known to suppress excessive inflammatory response and may prevent chronic disease development.”



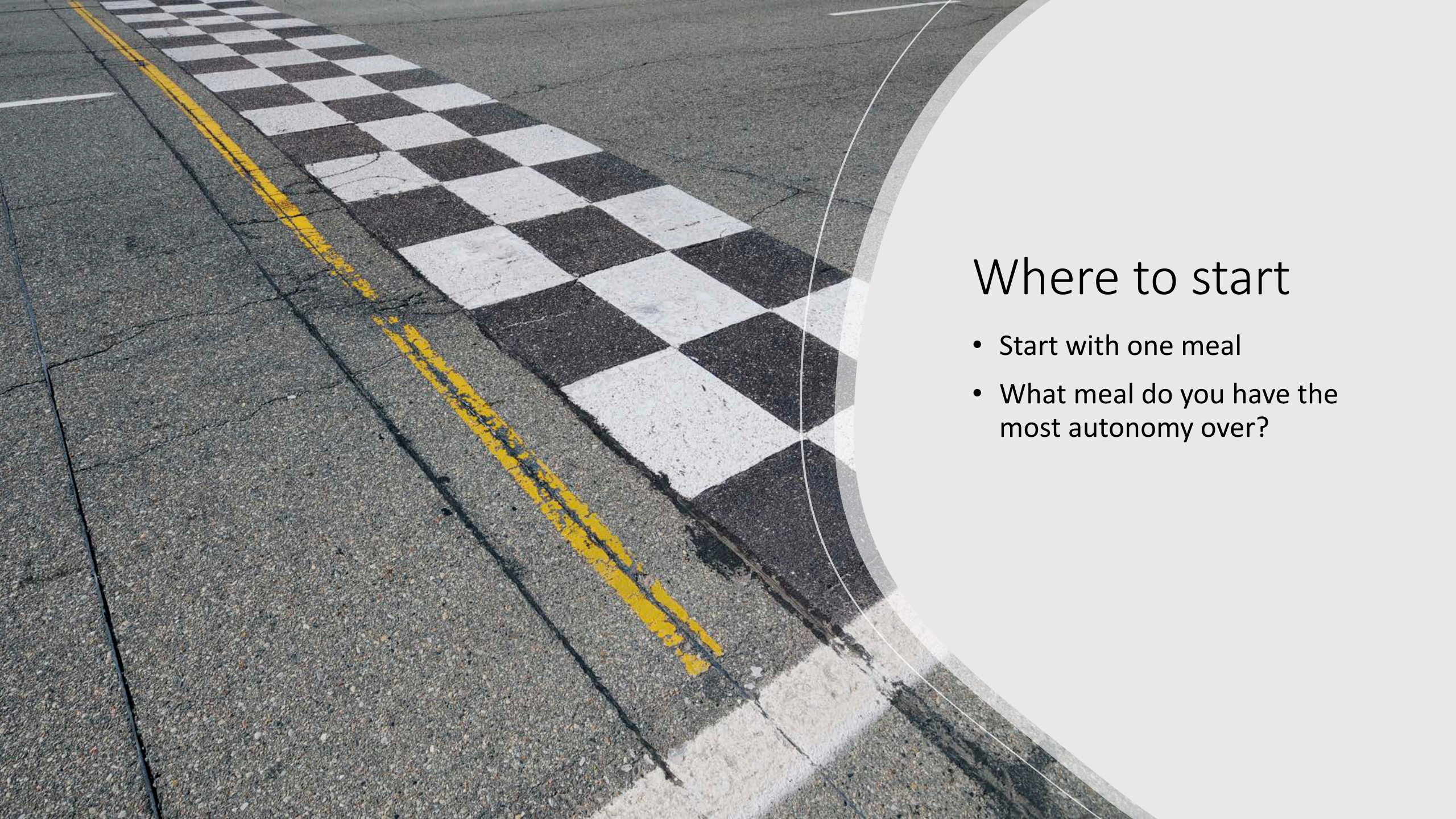
Most importantly - fiber foods or plant foods are delicious!

- Food is community
- Food is nourishment
- Food is pleasure and enjoyment
- Food is full of memories
- Think about what food means to you!



How do we meet our fiber goals

- 25g about 8g per meal OR 6g if you have a snack as well
- 30g 10g per meal OR 7.5g for meals and 1 snack
- Start slow
- Add color
- Think about your veggies, legumes and whole grains



Where to start

- Start with one meal
- What meal do you have the most autonomy over?

The background of the image is a dense, chaotic arrangement of 3D-rendered numbers and symbols in various shades of yellow and gold. The characters are scattered across the entire frame, creating a textured, almost abstract pattern. The lighting on the characters gives them a sense of depth and volume.

Examples for
numbers people

Breakfast ideas

- Breakfast 1 whole wheat toast (3g) with ½ an avocado (5g of fiber), 1 egg (0g) TOTAL: 8g
- Oat bran 1/3 cup dry 7g with milk or yogurt and berries ½ cup (2g) TOTAL: 9g
- 2 eggs, 1 cup of nopales/cactus (5g), 2 corn tortillas (4g) TOTAL: 9g
- Double fiber English muffin (8g), 1 egg, 1 slice of cheese, meat if you want and you can add some spinach or other veggies (2g) TOTAL 10g
- Flour tortilla 10 inch (1g), 1 egg, sweet potato hash ½ cup (3g), bell peppers (2g) OR you can use a high fiber tortilla (which can be a lot higher) TOTAL: 6g

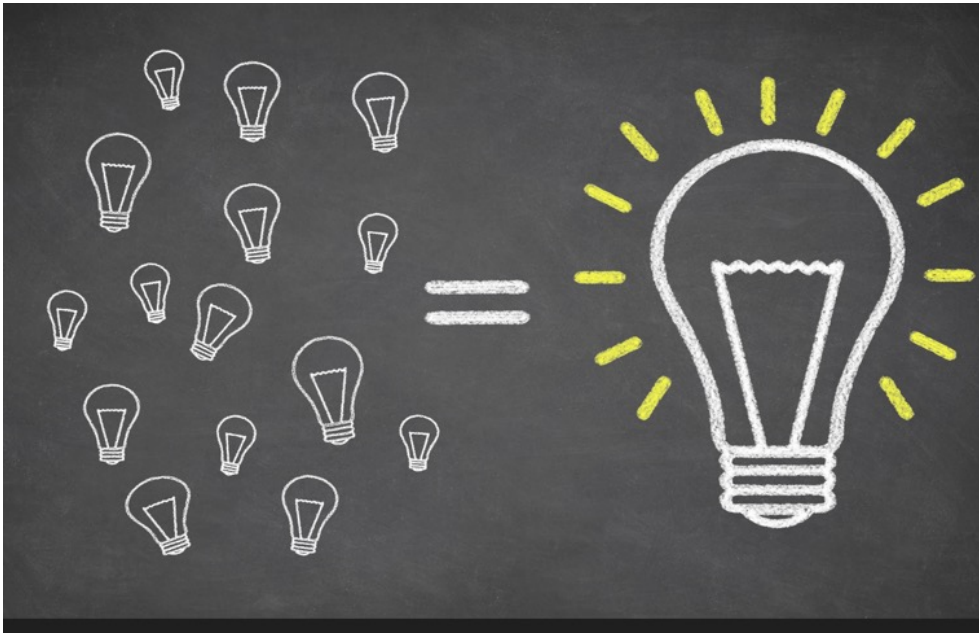
Snack ideas

- ¼ cup almonds (4g), apple medium (4.5g) TOTAL 8.5g
- Roasted chickpeas ½ cup TOTAL 8g
- Corn chips 1 oz (1g) and guacamole 2 oz (3g) TOTAL 4g
- Whole grain crackers 10 (3g), 2 oz of cheese TOTAL 3g

Lunch or dinner

- Mushroom and lentil bolognese sauce (10g), 1 cup pasta (2g), cheese, side salad (2g) TOTAL 14g
- 2 stuffed bell pepper with rice and meat (10g), 1 pear medium (6g) TOTAL: 16g
- Stir fried veggies 2 cups (10g), meat or plant based protein, brown rice 1 cup (3.5g) TOTAL 13.5g
- 1 cup snow peas (4.5g), 4oz of salmon with miso, 1 cup of white rice (.6g) TOTAL 5.1g or with brown rice TOTAL 8g

Bigger picture



- We find fiber in plants so find ways to increase your plant consumption
- Not too focused on numbers



Stuck with your change?

- Give yourself advice
- Think about something you would like to change
- Start small
- Empathy gap

Don't get paralyzed
in perfection





SMART goal setting:

Is your goal specific?

Is your goal measurable?

Do you have an action plan?

Is your goal realistic?

Do you have a time limit?

What to do?

- YOU know what is best
- Your goal that YOU create
- Ask yourself *what I can I start today or tomorrow*

Example Goal

- I will add $\frac{1}{2}$ cup of beans or lentils to one meal 3 days per week
- I will add 1 piece of fruit into my snack 4 days per week for the next month
- I will add $\frac{1}{4}$ cup of nuts to a snack when I am hungry at 3pm.
- **Think through your goal and what it takes to accomplish it**

Thank you for your time!