This guide was developed for informational use only and only for people with exocrine pancreatic insufficiency (EPI) due to chronic pancreatitis, pancreatectomy, or other conditions. This guide is not intended to be a substitute for professional medical advice, diagnosis or treatment. This guide was not designed for people with EPI due to cystic fibrosis, who may have very different and specific nutritional needs.
The digestive tract is considered by many to be the front line of good health because it is where nutrients are taken in from the foods that we eat.

While everyone can benefit from a healthy diet, optimizing nutritional intake is especially critical for people living with conditions that affect their gastrointestinal (GI) systems, as their ability to absorb nutrients properly may be compromised.

Along with physical activity and getting enough rest, prioritizing the appropriate diet according to individual needs could be the key to unlocking our healthiest potential.

This nutrition guide was developed mainly for people who have been diagnosed with a little-known GI condition called exocrine pancreatic insufficiency (EPI). The guide provides nutrition tips and easy-to-prepare recipes for helping to improve nutritional intake. It is important to note that this guide was not designed for those with EPI due to cystic fibrosis (CF), who may have very different and specific nutritional needs. Those with EPI due to CF should consult their physician and specialized CF dietitian. If you think you may have EPI but have not been diagnosed by a doctor, be sure to check out the EPI Symptom Questionnaire and use the results to help start a conversation.

As you read through this guide, keep in mind that specific dietary needs may vary based on individual symptoms and other health conditions. Being conscious of your nutrition is just one part of managing EPI so it is critical to actively work with your doctor to help find an overall management plan that is right for you.
Exocrine pancreatic insufficiency (EPI) is a medical condition that occurs when the pancreas isn’t producing enough digestive enzymes – the critical proteins that help your body break down carbohydrates, proteins and fats in your food and convert them into nutrients. Symptoms can include gas, bloating, stomach pain, frequent diarrhea, frequent bowel movements, and unexplained weight loss. Over time, EPI can lead to vitamin deficiency and malnutrition.

Exocrine pancreatic insufficiency (EPI) is associated with certain diseases and conditions that affect the pancreas, such as chronic pancreatitis (inflammation of the pancreas), cystic fibrosis (a disease that affects the lungs and digestive systems), pancreatectomy (surgical removal of all or part of the pancreas), gastrointestinal surgery, pancreatic cancer and diabetes (type I and type IIIC). Some of these diseases you are born with, like cystic fibrosis, while others may occur later in life, as is the case with chronic pancreatitis.

If you are diagnosed with EPI, you should work with a doctor to determine the best way to manage the condition. They will most likely prescribe pancreatic enzyme replacement therapy (PERT), which can help to replace the digestive enzymes that your pancreas isn’t producing anymore. PERTs should be taken as directed with every meal and snack. Your doctor may also direct you to a dietitian, who can work with you to adjust your diet or implement lifestyle modifications, such as avoiding alcohol and stopping smoking.

Symptoms of EPI, such as frequent diarrhea, stomach pain, frequent bowel movements, gas and bloating, can mimic symptoms of other digestive diseases and GI conditions, making EPI a difficult condition to diagnose.

Some people believe that experiencing these types of symptoms regularly may not be serious enough to mention to a doctor, and they can live with the symptoms for years before receiving a diagnosis. In fact, in a 2013 survey* more than 56 percent of those who reported experiencing GI symptoms said that they did not seek out medical attention because they did not believe that their symptoms warranted attention. Letting your doctor know about the symptoms you are experiencing and how often is important because it’s the only way to be sure that you are properly managing your symptoms, whether due to EPI or another GI condition.

* This number only includes study respondents that reported having a primary care physician. AbbVie commissioned Harris Interactive to conduct a national online survey of men and women to assess the general population’s awareness of their GI symptoms, as well as EPI. Survey questions explored the length, severity and impact of their GI symptoms, attitudes about going to a doctor and overall knowledge of their health issues. Results were obtained through online interviews of 2,010 adults ages 18 and older. Interviews took place from August 14 through August 16, 2013. This online survey was not based on a probability sample and therefore, no estimate of theoretical sampling error can be calculated.
For those with EPI, making sure you are getting the vitamins and minerals you need can be tough because your body isn’t absorbing all the nutrients from your food naturally. Here are some helpful nutrition tips.

**EAT A WELL-BALANCED DIET**

While each person is different, monitoring the amount of fat in your diet is important. However, avoiding fat altogether is not usually recommended, as having some fat in your diet is necessary to absorb fat-soluble vitamins (A, D, E, and K) that are essential for overall nutrition. Your diettian can ultimately help you find the right balance of nutrient-rich foods for your diet based on your personal medical history and dietary needs.\(^2\)\(^,\)\(^3\)

If you have EPI due to CF, be sure to speak to your doctor first, as this tip may not be appropriate for your treatment plan.\(^1\)

**STAY HYDRATED**

Getting plenty of fluids throughout the day and avoiding alcohol are important steps in preventing dehydration, which can impact GI symptoms.\(^9\)\(^,\)\(^13\)

**EAT LESS, MORE FREQUENTLY**

The frequency and size of your meals is just as important as sticking to the right foods. Switching to a schedule of five or six “mini meals” a day may help with digestion.\(^14\) If you have EPI due to CF, be sure to speak to your doctor first, as this tip may not be appropriate for your treatment plan.\(^1\)

Suggested fluids: It is recommended that every adult drink at least 8 glasses of fluid every day. Water, decaf coffee, decaf herbal tea, low-fat or skim milk, sports drinks, and soup broth; low salt/sugar fruit and vegetable juices are also good alternatives.

Suggested snacks: Almonds, walnuts, apple slices with peanut butter, fruit salad and non-fat Greek yogurt with berries

Suggested low-fat foods: Oatmeal, whole-wheat bread, fruits and vegetables, skinless chicken or turkey breast and egg whites

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EPI + FOOD
what you need to know!
(continued)

KEEP TRACK OF YOUR GI SYMPTOMS
Observe how your symptoms correspond with what you eat and keep detailed notes on any patterns you notice. It is important to share these findings with your doctor or registered dietitian as doing so can help them identify the cause.

TAKE YOUR PRESCRIBED MEDICATIONS
For some people with EPI, your doctor may prescribe PERTs to help replace the digestive enzymes that your pancreas is no longer producing. If you have been prescribed a PERT, be sure to take the recommended dose along with meals and snacks to help break down the nutrients in your food.2

VITAMINS ARE IMPORTANT
If you have EPI, your doctor may prescribe specific vitamin and mineral supplements.15

AVOID SMOKING
People with EPI should not smoke tobacco as doing so can exacerbate damage to your pancreas and also cause many other complications, such as heart disease and some cancers.10

Some people with EPI may be vitamin deficient: Maintaining proper levels of vitamins A, D, E, and K are typically important for your health; consult with your doctor about whether a vitamin supplement is appropriate.

Suggested ways to keep track of your GI symptoms: Enter observations into a calendar (electronic or print), journal or smartphone app to help inform a discussion with your doctor about your GI symptom patterns.

Suggested ways to help you remember to take your medications: Use a pillbox, which separates your medication into the appropriate daily doses and makes them easy to transport; set an alarm or associate taking your medicines with a daily activity (i.e., making coffee with breakfast).

Suggested tips to help you quit: Stop smoking completely as even occasional slips can be damaging to your lungs, blood vessels and cells; keep a list of reasons for why you are quitting close at hand and review them often; seek professional help from a doctor or support system if needed.

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HEALTHY RECIPES* breakfast

1 NUTTY FRENCH TOAST

Give your French toast a nutty spin with this recipe, which coats the classic dish with heart-healthy almonds. This morning meal packs a good amount of protein and fiber to get you going in the a.m.

makes 2 servings

directions
In a small bowl, mix milk, egg whites, vanilla and maple syrup.
Pulse almonds and cinnamon together in a food processor until coarse and place on a dish.
Dip each slice of bread in egg mixture for 10 seconds per side then coat both sides with the nut mixture.
Coat a pan with nonstick oil spray and heat bread for 3 to 4 minutes per side. Serve with optional fresh fruit and a dollop of nonfat Greek yogurt on the side.

ingredients
1/3 cup unsweetened almond milk
2 egg whites
1 teaspoon vanilla extract
1 teaspoon maple syrup
¼ cup sliced almonds
½ teaspoon ground cinnamon
2 slices whole-grain bread

nutrition info *per slice
180 calories | 9 g protein | 7.5 g total fat (7.5 g saturated fat, 0 g trans fat)
0 mg cholesterol | 19 g carbs | 4 g fiber
5 g sugar | 275 mg sodium

2 ZUCCHINI BANANA WALNUT MUFFINS

Whip up a batch of these delicious gems on the weekend and enjoy them all week long. They’re a tasty mix of sweet banana and nutrient-rich zucchini for a healthy and energizing breakfast.

Makes 9 muffins

directions
Preheat oven to 350°.

In a medium bowl, mix flour, baking powder, salt, cinnamon, nutmeg and walnuts.

In a separate bowl, mix banana and zucchini, egg, maple syrup, vanilla and applesauce.

Pour wet ingredients into dry and combine. Take care not to over-mix—stir no more than 15 to 20 times.

Fill each muffin tin about ¾ of the way. Bake for 25 to 30 minutes, or until a toothpick inserted into the middle of a muffin comes out clean.

Serving suggestions: Top muffin with 1 tablespoon of nut butter, or enjoy with a nonfat yogurt or 3 scrambled egg whites on the side.

ingredients
1¼ cups whole grain flour
2 teaspoons baking powder
½ teaspoon salt
1½ teaspoons ground cinnamon
¾ teaspoon ground nutmeg
1/2 cup walnuts, chopped
½ cup ripe banana puree
½ cup grated zucchini
1 egg
3 tablespoons maple syrup
2 teaspoons vanilla extract
¼ cup unsweetened applesauce

nutrition info *per muffin
148 calories | 4 g protein | 5 g total fat (4.5 g saturated fat, 0.5 g trans fat)
18 mg cholesterol | 19 g carbs | 3 g fiber
7 g sugar | 74 mg sodium

*These are example recipes only and may not be appropriate for those who have or suspect they might have EPI; those with EPI should consult their healthcare professional or dietitian first.
**HEALTHY RECIPES**

**lunch**

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1

**SALMON SALAD**

Tired of tuna salad? Switch to salmon! The super swimmer delivers a different flavor as well as healthy omega-3 fats. You can use fresh or canned (though, sodium will be higher if you reel in the canned variety). The recipe is a snap to make and is delicious served over greens or on whole-grain bread. Dig in.

**makes**

8 servings

**directions**

Preheat the oven to 350°.

Coat the bottom of a glass baking dish with oil spray. Rinse the salmon and pat dry, sprinkle with salt and pepper and place salmon flesh side down in the dish. Bake for 15 to 20 minutes, or until just cooked through.

When the salmon is finished cooking, transfer to a bowl or plate and place it in the fridge to cool. Save the juices from the salmon to put in the salad.

Prepare all other ingredients, and place in a bowl. When the salmon is cooled, break it apart with your fingers and place in the bowl with the prepared ingredients, or chop it with a knife. Add the salmon juices.

*If using canned salmon, combine salmon with all other ingredients.

Mix everything together. Enjoy a hearty serving over a bed of greens or with toasted whole-grain bread.

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2

**CHIPOTLE CHICKEN SALAD**

Not sure what to do with your leftover rotisserie chicken? Whip up this mouthwatering meal. It’s loaded with flavor and fun to serve in fresh and crispy lettuce cups.

**makes**

4 servings

**directions**

In a medium bowl, combine chicken with Greek yogurt. Add the rest of the ingredients to the yogurt and mix well to combine. Add ¼ cup salad to the center of each leaf and enjoy.

*Note: For a spicier salad, add more adobo sauce or a squirt of your favorite hot sauce.*

**nutrition info**

*per serving

148 calories | 13 g protein | 7.5 g total fat (6.5 unsaturated fat, 1 g saturated fat)
| 31 mg cholesterol | 7.5 g carbs | 3 g fiber | 1 g sugar | 32 mg sodium

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**LETTUCE CUPS**

**ingredients**

- 1 pound cooked skinless chicken, finely chopped
- 1 container (8 ounces) nonfat plain Greek yogurt
- 2 tablespoons adobo sauce (from can of chipotle peppers in adobo)
- 2 tablespoons packed fresh cilantro, chopped
- 2 tablespoons chopped scallions (approximately 2)
- 4 tablespoons chopped celery (approximately 1 stalk celery)
- 2 tablespoons finely chopped red onion
- 2 teaspoons lime zest (approximately 1 lime)
- 2 tablespoons lime juice (approximately 1 lime)
- ¼ teaspoon cumin
- ¼ teaspoon chili powder
- ¼ teaspoon salt
- Pepper to taste
- 8 leaves of Bibb or butter lettuce, washed and dried

**nutrition info**

*per 2 chicken lettuce cups

148 calories | 31 g protein | 2 g total fat (2 g unsaturated fat, 0 g saturated fat)
| 83 mg cholesterol | 4 g carbs | 2.5 g total sugar | 1 g fiber | 263 mg sodium

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*These are example recipes only and may not be appropriate for those who have or suspect they might have EPI; those with EPI should consult their healthcare professional or dietitian first.
**HEALTHY RECIPES**

**dinner**

1. **CHICKEN FAJITAS WITH AVOCADO**

   Chicken fajitas are always a crowd-pleaser. This recipe combines flavorful veggies and spices with lean protein and heart-healthy avocado so you can enjoy a satisfying meal that’s gentle on your digestive system.

   **makes**
   
   4 servings

   **directions**

   Preheat the oven to 325˚ to warm tortillas. Lay them out on a sheet pan and set aside. (You can skip this step if you like, or simply microwave them just before assembling.)

   Liberally coat wide skillet with nonstick oil spray and warm over medium-high heat. Add pepper and onion and sauté, stirring frequently, until brown (about 5 minutes).

   Add chicken, garlic, jalapeno and cumin and salt and stir. Sauté until the chicken is cooked through, about 5 minutes.

   Turn off the heat and add cilantro, cherry tomatoes, scallions, salt and pepper and cover the pan. Put tortillas in the oven for 2 to 3 minutes, or microwave for 10 seconds to get them warm and flexible.

   To assemble: Place 2 tortillas on each plate. Add a scoop of chicken-pepper mixture in the middle of each. Top with a few slices of avocado and a squirt of lime juice. Roll them up and enjoy!

   **nutrition info** *per 2 fajitas*

   - 330 calories
   - 28 g protein
   - 10 g fat (8.5 unsaturated, 1.5 saturated)
   - 73 mg cholesterol
   - 34 g carbs
   - 8 g fiber
   - 2 g sugar
   - 300 mg sodium

2. **SHRIMP WITH ROASTED TOMATOES OVER “ZOODLES”**

   This creative dish, with a zesty tomato sauce, nutrient-packed “noodles” and protein-rich shrimp, is sure to satisfy. It’s easy enough to toss together for a quick dinner and fancy enough to make for company.

   **ingredients**

   - 1 pint cherry tomatoes
   - ¼ cup sliced shallots (about 4)
   - Salt and pepper to taste
   - 2 pounds shrimp, peeled and deveined
   - 2 tablespoons chopped garlic
   - 2 tablespoons dry white wine
   - 1 tablespoon balsamic vinegar
   - ¼ teaspoon red pepper flakes (optional)
   - 2 tablespoons loosely packed torn basil
   - 4 cups steamed zucchini noodles, approximately 2 medium zucchini

   **makes**
   
   4 servings

   **directions**

   Preheat oven to 400˚. Place tomatoes and shallots on a sheet pan and coat liberally with nonstick oil spray, salt and pepper. Roast for 15 to 20 minutes until tomatoes are soft and begin to blister and shallots are lightly browned.

   While tomatoes are in the oven, make zucchini noodles. Cut off the ends of the zucchini and julienne using a spiral slicer, julienne peeler or vegetable peeler. (You can peel the zucchini or leave the skin intact.) Wrap the noodle strands in a few layers of paper towels and squeeze to remove some of the moisture. Set aside.

   Prepare the shrimp. Liberally coat a large sauté pan with oil spray and warm over medium heat.

   Add shrimp and cook until pink and opaque, approximately 3 minutes per side. Remove shrimp from pan and set aside. Liberally re-coat the same pan with oil spray and add garlic. Sauté for 1 minute, stirring frequently.

   Remove tomatoes and shallots from oven, and add to skillet with garlic [Be sure to include all juices from baking sheet.] Add wine, vinegar, salt and red pepper flakes, if using. Bring to a boil then reduce to a simmer. Simmer until reduced and thick, stirring frequently and breaking up tomatoes with wooden spoon, approximately 5 to 8 minutes.

   Add zoodles to pan with sauce and shrimp and cook 1 to 2 minutes. (Alternatively, you can gently steam zoodles on the stovetop or in the microwave until tender, divide amongst 4 bowls, then pour sauce and shrimp over each bowl.) Stir in shrimp and basil and remove from heat. Divide zucchini and shrimp among four bowls.

   **nutrition info** *per serving*

   - 210 calories
   - 32 g protein
   - 2.5 g total fat (2.5 g unsaturated, 0 g saturated)
   - 285 mg cholesterol
   - 10 g carbs
   - 4 g sugar
   - 2 g fiber
   - 950 mg sodium
GI HEALTH + EPI
what’s next?

You now have this guide to use as a resource for nutrition tips and sample recipes, but what is the next step?

IF YOU HAVE EPI...

Print out this guide! Even if you’ve already been diagnosed, feel free to utilize the information you’ve learned in this handbook to continue the conversation with your doctor or registered dietitian at your next visit about the importance of maintaining proper nutrition while living with EPI. Be sure to consult with your doctor or dietitian first, before making any changes to your diet.

IF YOU THINK YOU MIGHT HAVE EPI...

Take the EPI Symptom Questionnaire! If you are experiencing uncomfortable GI symptoms regularly and are not sure what is causing them, please take a few moments to complete the below EPI Symptom Questionnaire and remember to print out the results to reference the next time you speak with your doctor. Along with your medical history and a list of your medications, including all vitamins and supplements you take, this brief nine-question survey can be a useful tool to help you have an informed conversation with your doctor.

For more information and resources about EPI, please visit www.identifyEPI.com.

REFERENCES:


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