

# Managing Pre-diabetes

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## Try the following to reverse elevated blood sugar and prevent diabetes:

- **Weight:** Obtaining and maintaining ideal weight.
- **Exercise and movement:** Regular exercise and movement push blood sugar into the muscle and reduces the need for insulin, and the ability of insulin to do its job well is improved. Once insulin goes up to try and store the extra blood sugar, inflammation is increased, which stimulates the progression of many diseases, including diabetes.
- **Nutrition:**
  - A Mediterranean diet is low in red meat, dairy, and sugar and high in fruits, vegetables, grains, olive oil, fish, and fiber.
  - A low glycemic index/load diet is also important. See [handout](http://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/outreach/im/handout_glycemic_index_patient.pdf) at [http://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/outreach/im/handout\\_glycemic\\_index\\_patient.pdf](http://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/outreach/im/handout_glycemic_index_patient.pdf).
  - Eating a handful (not a can full) of nuts daily has been found to benefit individuals with prediabetes. Pistachios have shown particular benefit,<sup>1</sup> but all types of nuts are useful. Be careful not to eat too many, as they are also full of calories and eating too many can cause weight gain.
- **Stress management:** When we are under stress, our body releases cortisol to mobilize energy sources (sugar) so we can fight or flee. If you are under a lot of stress, consider working with one of our psychologists or taking a mindfulness course. You may also find this [handout useful on learning to meditate](https://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/outreach/im/module_meditation_patient.pdf): [https://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/outreach/im/module\\_meditation\\_patient.pdf](https://www.fammed.wisc.edu/sites/default/files//webfm-uploads/documents/outreach/im/module_meditation_patient.pdf)
- **Medications:** Metformin has been found to reduce the progression to diabetes by about 28%. This pales in comparison to weight management, exercise, and nutrition, which reduces the progression by almost 60%.<sup>2</sup>
- **Supplements (these nutrients can be found in the Mediterranean diet):** The research has found that the following are important to help lower blood sugar, enhance insulin sensitivity, and protect the nervous system from the effects of diabetes.
  - **Soluble fiber** reduces cholesterol, helps with weight loss (makes us feel full), and slows the absorption of sugar into the bloodstream.<sup>3</sup> It is also helpful in maintaining a healthy mucous layer along the GI track and promotes bowel regularity. The following are all good sources of soluble fiber:
    - Psyllium (*Metamucil*) is available in many forms (powder, capsules, wafers). The recommended dose is ½ to 1 tsp in juice or water before meals or 1 tbsp daily.
    - Ground flax seed: Buy this in the seed form, which stores well. Using a coffee grinder, grind a weeks' worth and store it in the refrigerator. (Once flax seed is ground, the oils are released and it spoils quickly.) Use 1 tbsp on food twice daily. Ground flax seed can be sprinkled over salads and

mixed in smoothies. Flax is a good source of fiber and omega-3 fatty acids.

- *Citrucel* (methyl cellulose): The recommended dose is 1 tbsp in 8 oz of water or juice twice daily.
  - Guar gum: 5 to 10 g a day, or ½ to 1 tsp in juice or water before each meal three times a day. You can get this through Amazon.com inexpensively (\$2.50 for 8 oz).
  - Oat bran/oatmeal: Consider a bowl of this with fruit each morning.
  - The best source of fiber is through the consumption of multicolored vegetables and fruits. You also ingest insoluble fiber in these foods, which is important for health.
- **Fish oil** helps with insulin sensitivity and reduces inflammation.<sup>4</sup> The dose is 1000 mg of EPA + DHA daily.
  - **Magnesium** is needed for insulin function and helps insulin bring sugar into the cell, improving insulin sensitivity.<sup>5</sup> The dose is 300 to 500 mg at bedtime. Magnesium glycinate or chelated magnesium causes the least amount of diarrhea. However, if you would like more regular bowel movements, consider magnesium gluconate or oxide.
  - **Pycnogenol (maritime pine bark extract)**: A recent study found that this plant reduces many risk factors associated with prediabetes, including waist circumference, blood pressure, cholesterol levels, and blood sugar.<sup>6</sup> The dose is 50 mg three times a day. If you have a hard time remembering to take it three times daily, take 100 mg in the morning and 50 mg in the evening.

## References

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6. [Belcaro G, Cornelli U, Luzzi R, et al. Pycnogenol\(R\) supplementation improves health risk factors in subjects with metabolic syndrome. \*Phytother Res\*. 2013;27\(10\):1572-1578.](#)