



communicating Food for Health

For Heart Attack Prevention, is Diet More Important than Statins?

If elevated low density lipoprotein cholesterol (LDL-C) levels were the only source of cholesterol deposited in the artery wall, then high doses of potent statins should be reversing (rather than reducing) the build-up of atherosclerotic plaques, largely eliminating deaths from coronary heart disease (CAD). Sadly the number one cause of death in Americans taking statins to lower their elevated LDL-C to prevent heart attacks is still heart attacks!

Yes, statin drugs are very effective for reducing high LDL-C levels, and they do slow the progression of cholesterol-filled plaques. However, they rarely reverse the build-up of cholesterol in the artery wall. More importantly, statin drugs alone do not come close to eliminating the risk of heart attacks and most strokes despite impressive reductions in LDL-C levels. Research now shows that other lipoproteins besides LDL particles can and do carry

cholesterol from the blood into the artery wall, promoting the growth of cholesterol-filled plaques and CAD. These lipoproteins are neither LDL-C or high density lipoprotein cholesterol (HDL-C), but rather consist of the cholesterol-rich remnants of triglyceride-rich lipoproteins produced by the liver (VLDL) and the small intestine (chylomicrons)(1). Both genetic factors and dietary factors influence the amount of these triglyceride-rich lipoproteins produced and also the amount of cholesterol-rich remnant particles derived from each of them in the blood. Fat and cholesterol-rich meals can dramatically increase the production of chylomicrons and lead to greater amounts of cholesterol-rich chylomicron remnants in the blood for several hours after each fat-rich meal (2).

Dr. Borge Nordestgaard's recent study followed nearly 12,000 people with established CAD in Denmark and found

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November '13

Professional Member Edition

Research

Dr. James J. Kenney explores heart attack and statin research.

Practitioner Tips

Teach lessons about insulin resistance through games.

Client and Consumer Education

Handouts: Recipes and Cooking Tips

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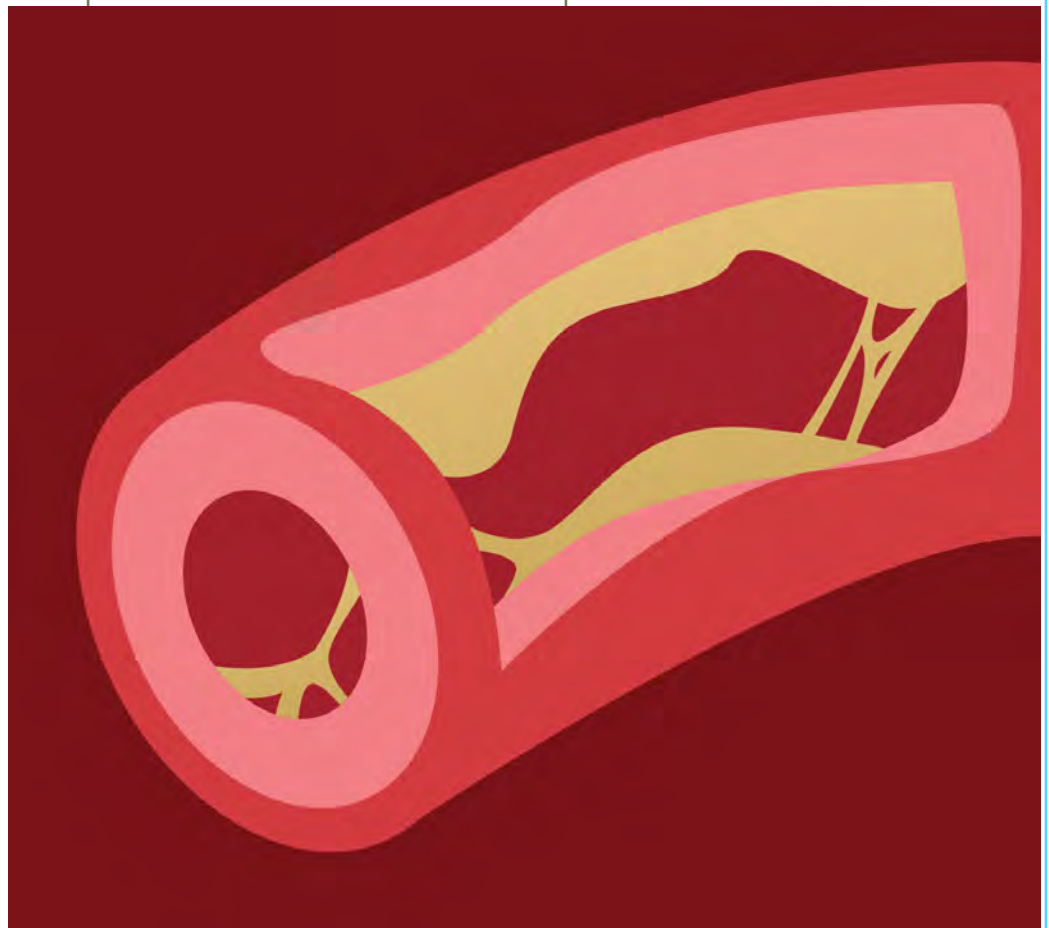
Of course, we now know HDL-C particles can actually become proinflammatory and proatherogenic "bad" HDL particles.

that each 1 mmol (38.7 mg/dl) increase in non-fasting remnant cholesterol caused 2.8 times greater risk of a CAD event that was independent of HDL-C levels. The increased causal risk of CAD from elevated cholesterol remnant particles appeared much stronger than for changes in either LDL-C or HDL-C levels (3). Most doctors (MDs) now check only fasting blood lipids and focus largely on LDL-C and HDL-C to assess their patient's future CAD risk. This was based on the simplistic notion that it was only the LDL-C particles delivering cholesterol to the artery wall, making it the "bad" cholesterol, while the HDL-C particles were removing the cholesterol from the artery wall and bringing it back to the liver, making their cholesterol content "good". Of course, we now know HDL-C particles can actually become proinflammatory and proatherogenic "bad" HDL particles, perhaps partly in response to biochemical changes in the HDL particles

triggered in part by chylomicrons and other remnant cholesterol particles in the blood.

Chylomicrons and their cholesterol-rich remnants remain in the blood for several hours after each fat-rich meal and likely play a major role in promoting inflammation (by increasing IL-6 & CRP), thrombosis (by activating clotting factor VII), and atherosclerosis (by delivering more cholesterol-rich remnant particles to the ar-

tery wall). The fact that damage to the endothelium (inside "skin" of the artery wall) as evidenced by reduced flow mediated dilation (FMD) occurs to a much greater extent after a single fat-rich meal than after a meal high in carbohydrate points to the fact that pathological changes must be occurring in the artery wall in response to fat and cholesterol-rich particles coming from the intestines (4). Indeed, this reduced FMD is likely the



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Reducing LDL-C levels with statin drugs alone is insufficient for stopping and reversing CAD and preventing most heart attacks and strokes.

main reason why many people with angina tend to experience far more chest pain after a large, fat-rich meal than they do after a meal high in carbohydrate-rich plant foods. The only legitimate debate is not whether LDL-C or other cholesterol-rich remnant particles promote atherosclerosis and increase the risk of CAD, but rather which is more atherogenic. Clearly both LDL-C and other remnant lipoprotein particles deliver cholesterol to the artery wall and promote foam cell formation and atherosclerosis. Unlike LDL-C particles (which must first be oxidized), remnant cholesterol particles are readily taken up by scavenger receptors of macrophages in the cell wall to form foam cells (5,6). Increasing evidence suggests that damage to the artery wall from cholesterol-rich remnant particles appears to be at least as important as either fasting LDL-C or HDL-C levels for predicting future CAD events.

It should be noted that diets high in refined carbohydrates (particularly large amounts of refined sugars) combined with inactivity can contribute to a marked increase in the liver's production of VLDL particles because the liver converts some of the excess carbohy-

drate (especially fructose) into triglyceride. This leads to more triglyceride-rich VLDL particles being released into the blood, which then degrade into cholesterol-rich remnant particles and eventually also LDL particles. This is particularly true in people who are genetically prone to develop insulin resistance and type 2 diabetes and who experience significant increases in fasting triglyceride levels as visceral fat stores accumulate.

Bottom Line: Reducing LDL-C levels with statin drugs alone is insufficient for stopping and reversing CAD and preventing most heart attacks and strokes. A diet low in fat, salt, cholesterol, and refined carbohydrates coupled with increased activity and loss of excess weight may also be necessary to stop and reverse CAD in part by reducing remnant cholesterol levels in the blood.

By James J. Kenney, PhD, FACN

Sources:

1. Mark Nordestgradd BG, Freiberg JJ. Clinical relevance of nonfasting and postprandial hypertriglyceride and remnant cholesterol. *Curr Vasc Pharm.* 2011;9:281-6

2. Mark Cesar TB, et al. High cholesterol intake modifies chylomicron metabolism in normolipidemic young men. *J Nutr* 2006;136:971-6

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5. Mark Zilversmit DB. A proposal linking atherogenesis to the interaction of endothelial lipoprotein and triglyceride-rich lipoproteins. *Circ Res.* 1973;33:633-8

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Insulin Resistance Dodgeball

For this activity, you will need a basket or tub, foam balls or bean bags in two distinct color sets, a blindfold for each participant, and a space that is safe to use for flying objects (i.e. without delicate, easily breakable items).

Divide participants into two even teams. Give each team one set of the balls/bean bags. Each team should have a different color set. Explain that this activity involves them throwing their balls/bean bags into a central basket. The projectiles represent glucose, one of the body's main energy sources, the basket represents the body, and the players represent insulin, which transports glucose into the body's cells. (Whether or not you explain the symbolism at the beginning is up to you -- you can lay it all out right away or use it as a

great "reveal" during your subsequent discussions).

Teams will have one minute to throw as many of their balls into the basket as they can. Once the time is up, the round will end. The team with the most balls in the basket wins. Pretty straightforward, right? What's happening here is a representation of typical body function. Participants are acting out the regular role of insulin – transporting glucose into the body's cells.

Have teams return to their starting spots, and pass out the blindfolds. Explain that this time they are going to do the same thing, only blindfolded. Have everyone assist each other in putting on blindfolds, checking to make sure that it isn't easy to peek. Repeat the activity for one minute, then tally the number of balls in the basket. Explain that the number of balls in the basket is

much lower this time, with many more balls lying discarded around the room. Tally points, announce a winner, and have participants return to their seats.

Once everyone is sitting down, discuss the concept of insulin resistance and its relationship to diabetes. Have participants volunteer their guesses about the game they just played and its connection to insulin resistance. Explain the connection to insulin resistance and answer any questions that may arise.

This presentation idea is an excerpt from our brand-new educational program, [The 12 Lessons of Diabetes](#). This program follows the same format as the other fantastic [12 Lessons packages](#) and is chock-full of insight from a wide variety of health and nutrition professionals.

Communicating Food for Health
By Food and Health Communications, Inc.
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Lighten Up Your Holiday Baking



Light Pumpkin Pie

Serves: 8 | Serving Size: 1/8 pie

1 Pillsbury Ready Pie Crust
16 ounce can pumpkin
1/2 cup nonfat egg substitute or egg whites
1/3 cup sugar
1 and 1/2 cups evaporated skim milk
2 tsp pumpkin pie spice

Preheat your oven to 350 degrees Fahrenheit. Put your crust into a pie pan, crimping the edges if you like that look.

Mix the rest of the ingredients in a medium bowl and pour them into the crust. Bake until a knife inserted in the center comes out clean and free of pumpkin goo, about 45 minutes.

Refrigerate until ready to serve.

Chef's Tips:

I like to serve each wedge with a dollop of fat-free whipped cream and a few slices of candied ginger.

Cooking Lesson:

Be careful with your ingredients -- check to make sure you picked up pure canned pumpkin, not pre-made pumpkin pie filling. The latter doesn't taste very good and is full of sugar. Plus, it would totally throw off the flavor profile of this dish!

Nutrition Lesson:

The sodium content in a single serving of this pie higher than most other recipes because of the presence of canned food and a processed crust. Check the labels and choose the option with the lowest sodium.

Nutrition Facts	
Serving Size	
Servings Per Batch 8	
Amount Per Serving	
Calories 177	Calories from Fat 53
% Daily Value *	
Total Fat 6g	9%
Saturated Fat 2g	9%
Trans Fat 0g	
Cholesterol 1mg	0%
Sodium 281mg	11%
Total Carbohydrate 26g	8%
Dietary Fiber 2g	9%
Sugars 13g	
Protein 5g	10%
Vitamin A 190%	• Vitamin C 5%
Calcium 8%	• Iron 11%
* Percent Daily Values are based on a 2,000 calorie diet. Your daily values may be higher or lower depending on your calorie needs.	

BROUGHT TO YOU BY:

Turkey with Potatoes, Green Beans, & Stuffing



- 1 turkey breast (5 to 5 and 1/2 lbs)
- 1 medium white onion
- 2 stalks celery, cut in half
- Vegetable cooking spray
- 1 and 1/2 tablespoons of each of the following: lemon pepper seasoning, onion powder, garlic powder, and poultry seasoning
- 1/2 teaspoon paprika
- 1 browning bag

Remove and discard the skin from the turkey breast. Rinse the breast and pat it dry with a paper towel. Place the onion and celery into the breast cavity. Spray it all over with cooking spray. Combine the lemon-pepper seasoning, onion powder, garlic powder, poultry seasoning, and paprika in a bowl, then sprinkle over the turkey breast. Place in a browning bag that has been prepared according to package directions, then put the bag in a shallow baking pan and put it into the oven to bake at 325° F for 1 hour, or until the meat thermometer registers 170° F. Transfer the breast to a serving platter and let it stand for 15 minutes before carving into thin slices.

- 1 cup chopped onion
- 1 cup sliced mushrooms
- 1 cup brown rice, uncooked
- 1 teaspoon vegetable oil
- 2 cups chicken broth
- 1 small tart red apple, cored & chopped
- 3 Tbsp chopped pecans
- 1 teaspoon poultry seasoning

Preheat oven to 350° F. Heat a large Dutch oven over medium-high

heat. Add the oil and sauté the onions and mushrooms until golden, about 3 minutes. Add the rest of the ingredients, bring to a boil, cover and bake in the oven until rice has absorbed the liquid, about 30 minutes. Remove from oven, allow to stand for about 5 minutes and then fluff with a fork.

- 16 ounces frozen green beans
- 1/2 teaspoon vegetable oil
- 1/4 cup chopped fresh cranberries
- 2 tablespoons chopped walnuts
- 1 tablespoon honey

Place green beans in a medium casserole dish and microwave on high until heated through and tender, about 6 minutes. Meanwhile, heat a small nonstick skillet over medium-high heat and add the oil. Cook the cranberries and walnuts briefly until the cranberries are tender. Toss in the green beans and honey. Serve hot.

- 2 lbs baking potatoes, peeled
- 1/4 to 3/4 cup skim milk
- 1 Tbsp trans-free margarine
- 1/2 teaspoon garlic powder
- Black pepper to taste

Cut potatoes into chunks and place in a large pot. Cover them with water, bring to a boil and cook until soft, about 20 minutes. Drain water and place pot back on the stove. Mash potatoes then add the rest of the ingredients. Reheat potatoes; serve hot.

See nutrition facts for this tasty holiday meal at <http://foodandhealth.com/recipes.php?id=1123>

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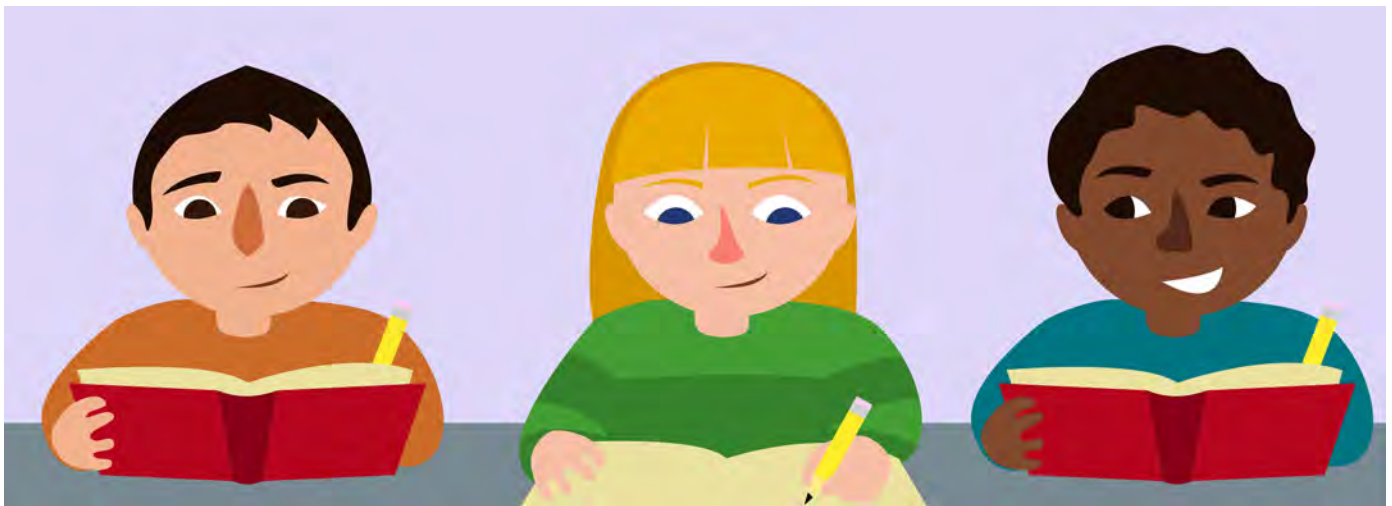
Top Tips for Food Logging

It's easy to keep a food log these days. Recording what you eat and drink, as well as how active you are, are all vital to maintaining a healthy lifestyle.

Here are tips for writing in your food log:

- Include ALL the food and beverages that you consumed that day.
 - This means writing down that a handful of nuts, cookie after lunch, schmear of mayo on your sandwich, whipped cream in your coffee, etc.
- Record everything right before or right after eating. Include the times of all meals and snacks.
 - Writing down the timing of your meals can help you zero in on patterns of behavior and take steps to correct bad habits.
- Keep your food log handy. Filling it in should be a simple task that doesn't take a lot of time.
- Jot down your hunger and fullness levels at every eating experience.
 - Use a scale of 1-10 (1 very hungry, 5 neutral, 10 not hungry).
 - This will allow you to get in touch with your feelings while fending off mindless eating and drinking.
 - Plus, you might just find a pattern you weren't expecting.
- Review your food log at the end of the day.
 - A daily review will help to create awareness of your habits.
 - For example, you can see where you may have overeaten or initially not eaten enough, only to binge later.

By Victoria Shanta Retelny, RD, LDN, author of [The Essential Guide to Healthy Healing Foods](#).



BROUGHT TO YOU BY:

Type 2 Diabetes Quiz

Answer the questions below to test your knowledge of type 2 diabetes:

1. True or false? It is easy to tell if you have recently developed type 2 diabetes.

2. Name 2 risk factors for type 2 diabetes.

3. True or false? You have no control over any of the risk factors for type 2 diabetes.

4. Circle five common symptoms of type 2 diabetes:

- increased thirst
- increased urination
- insomnia
- blurred vision
- loss of hearing
- lack of energy
- more frequent infections

5. Fill in the blanks: Type 2 diabetes is characterized by fasting _____

_____ levels that are too high. ("Too high" means greater than or equal to 126 mg/dl on 2 occasions).

6. Pick the best answer to complete the following sentence. By age 75, 1 in 5 Americans will have type 2 diabetes. Diagnoses of type 2 diabetes have been _____ since 1990.

- a) on the rise
- b) about the same
- c) going down

7. If you have insulin resistance, why do you need to be concerned about your health, even when your blood sugar levels remain normal?

- a) you have a greater risk of heart disease
- b) you are more likely to develop type 2 diabetes
- c) both a and b

8. How do you know if you have insulin resistance?

- a) you take a test
- b) you are overweight or sedentary
- c) you have type 2 diabetes
- d) both b and c



Answers:

1. False. The symptoms for type 2 diabetes come on slowly and appear to be part of normal aging.

2. Answers can include: age, family history of type 2 diabetes, prior history of gestational diabetes, being overweight or obese, impaired glucose tolerance and/or insulin resistance, physical

inactivity, consumption of a high-fat, high-sugar, refined carbohydrate diet.

3. False - you have control of the lifestyle risk factors for diabetes, especially as they relate to weight, diet, and exercise.

4. Increased thirst, increased urination, blurred vision, lack of energy, more frequent infections

5. blood sugar

6. a) on the rise

7. c) both a & b

8. d) both b & c

BROUGHT TO YOU BY:

Holiday Traditions Your Family Will Love

Every family has traditional holiday foods that show up on the table year after year. Instead of using the holidays as an excuse for high-fat, high-calorie feasting, use these five easy tips to remake your holiday favorites with good health in mind.

Holiday Tip #1: Control Portions

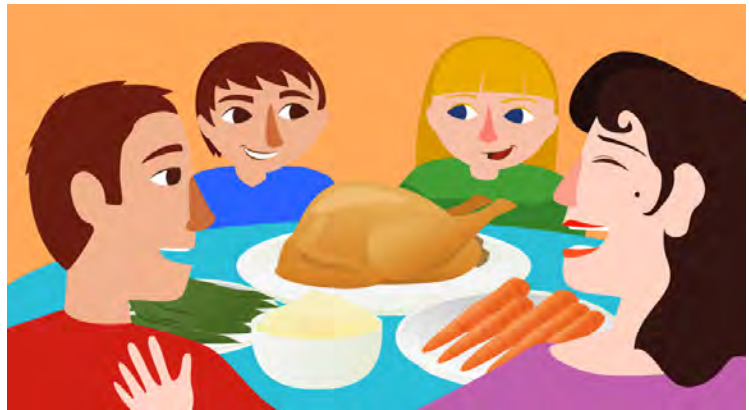
Set the holiday table with your family's heirloom china. This will help you automatically downsize portion sizes, because until the late 1960's, dinner plates were 9 inches or so in diameter. Today's plates have an average diameter of 12 inches. No one will notice a decrease in portion sizes when you use smaller plates and glasses. Cut Grandma's luscious Christmas cake into 18 servings, portion your favorite holiday cookie recipe to make 4 dozen smaller cookies instead of 3 dozen larger ones, cut fudge into 1"x1" pieces, and use 4-ounce glasses for your favorite sparkling punch.

Holiday Tip #2: Double Up on Vegetables

Serve vitamin-packed, lower carbohydrate vegetables like asparagus, Brussels sprouts, or broccoli in large bowls. Put higher calorie mashed potatoes and winter squashes in smaller bowls. Place a smaller serving spoon in the bowls with potatoes or winter squash and your family and guests will automatically – and unknowingly – serve themselves smaller portions (1). Instead of meatballs and cheese logs, feature vegetable appetizers like marinated mushrooms, tomato bruschetta, roasted asparagus, stuffed tomatoes, etc.

Holiday Tip #3: Give Healthful Gifts

Give homemade gifts that are packed with healthful ingredients. Bake breads that fea-



ture hearty whole grains, bring a basket of luscious fresh fruit instead of a box of candy as a hostess gift, or tie a bow around a bag of mixed nuts instead of cookies.

Holiday Tip #4: Lighten Up

Lighten up favorite recipes. Use fat-free evaporated skim milk instead of cream in custard pies and sauces, boost flavor in casseroles with spices and seasonings instead of butter or salt, and bake foods instead of frying them. No one will notice the changes!

Holiday Tip #5: Make Fruit the Star

Give colorful fruit a starring role. Serve fresh sliced berries for a holiday breakfast, include colorful chunks of fresh fruit such as pineapple, mango, kiwi, and red grapes on bamboo skewers for a holiday buffet; offer nibbles of dates and grapes instead of cheese and crackers, etc.

By Lynn Grieger, RD, CDE, CPT

Source:

1. Ice cream illusions bowls, spoons, and self-served portion sizes. Wansink B, van Ittersum K, Painter JE. *AM J Prev Med.* 2006 Sep;31(3):240-3.

BROUGHT TO YOU BY:

Do You Have an Efficient Kitchen?

10 Ways to Test Kitchen Efficiency:

Place a check mark next to each statement that is true in your kitchen...

1. _____ Do you clean your refrigerator on a weekly basis? It's best to do this when you return from a grocery run. Seriously, take the time to clean and organize your fridge.
 - * Discard old food.
 - * Prep fruits and veggies for easy consumption.
 - * Mix beverages as needed.
2. _____ Are your cutting boards easily accessible and in good condition?
3. _____ Do you have a variety of sharp knives that are easy to find and use?
4. _____ How is your stock of cooking utensils? Do you have adequate spoons, ladles, spatulas, etc?
5. _____ Do you have enough pots and pans? Can you find the lids?
6. _____ Are your microwave-safe containers organized and easy to find?
7. _____ Do you have enough storage containers and bags? (These will make storing "planned overs" and packing healthful lunches a breeze)!
8. _____ Do you have the equipment you need in order to make your job easier? This could be...
 - * Microwave
 - * Toaster oven
 - * Food processor and/or blender

- * Rice cooker
- * Stand mixer or hand mixer

9. _____ Is your freezer clean with relatively new foods? Or is it packed and messy? An organized freezer makes your job much easier.

10. _____ Do you have enough room to work on your counters?

Give yourself a point for every item checked...

1-3 points: You've got some work to do.

4-6 points: Good start! Try our tips.

7-10 points: You have an efficient kitchen!



For Fast Meals, Keep These on Hand:

Dry:

- Pasta and pasta sauce
- Rice
- Oil and vinegar
- Spices, herbs, seasonings
- Whole grain bread and cereals
- Canned beans and soups
- Tuna

Refrigerated:

- Skim milk
- Fat-free yogurt and sour cream
- Orange juice
- Fruit and vegetables
- Parmesan cheese
- Trans fat-free margarine

Frozen:

- Frozen veggie assortments
- Veggie burgers
- Nuts and seeds

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