Aunt Cathy’s Guide to Nutrition:

A Poem to Help Remember the
Highest Copper
Food Sources

And some thoughts about
Managing Wilson’s Disease

"Sources of Dietary Copper" Mnemonic:

Mary had a little lamb
and oysters in a copper pan.
She soaked some pinto beans a lot, her
pipes add copper to the water.
At supper she made broiled liver
garnished with an almond sliver.
Of copper foods she ate so many
she had to change her name to "Penny."

The point of this little poem is that it is hard to memorize all the individual foods that are high in copper, but the poem identifies some food groups to keep an eye on by naming an example of each of those food groups. [I wrote this poem to solve my own nutrient memorization problems in 1991, and … hey! I still remember it! ]

The poem can be helpful in identifying healthy and nutritious copper-rich food groups to eat a good amount of (for most folks.)

It can also serve exactly the opposite function for people with Wilson’s Disease. In this rare condition, people can absorb copper from food and beverages, but they cannot get rid of it normally. Over time, the excess copper can build up and cause very serious injury, especially to the liver and nervous system.
So, here’s how to interpret the poem:

Of meats, lamb tends to be the highest, and liver from all animals is generous in copper. (And of these, lamb liver is really high. Luckily, it is pretty easy to avoid lamb liver!)

Of seafood, the mollusks are highest (oysters, clams, etc.) They are much higher than fin fish.

Nuts (e.g. almonds), beans (like pinto beans), seeds and the germ of grains have a generous amount of copper. The way to think about them is that they are the group of foods (or parts of foods) that would ordinarily be able to turn into “Baby Plants.”

These are very healthy foods for most people, but not for people with Wilson’s Disease. However, leaving them out can reduces our intake of magnesium and chromium and some other nutrients, so people with Wilson’s Disease will want to work with a dietitian/nutritionist who can guide you toward other foods to provide these critical nutrients and/or assist with identifying appropriate supplementation.

Cooking with copper pans or other implements and running water through copper pipes can add copper to your food. It’s easy to pick non-copper cookware, but copper pipes are very commonly around, and for most people (i.e. people without Wilson’s Disease) they are more healthy than many other pipe materials. [And of course, lead pipes aren’t good for ANYBODY!]

One way that may help to lower exposure from pipes is to let the tap run for a while to try to remove some of the water that has been sitting there in contact with the pipe. This is not necessary for water that will not be taken into the body as beverages or through cooking. (If you are concerned about wasting water, you can collect it to water plants, wash socks or put it in the doggie dish.)

Another more effective solution is a “Reverse Osmosis” water treatment system for the drinking and cooking water. However, not all types of water treatment products or systems remove significant copper, so you need to ask about this detail.

They can also be fairly expensive. You could ask your insurance company if the water system could be covered as medically necessary if your physician orders it.

The “change her name to Penny” line is so that after getting through the whole poem I could still remember what nutrient I was looking at. Pennies are copper colored.
Some Additional Issues for People with Wilson’s Disease:

Limiting dietary copper will not be sufficient to protect you from copper build-up. It is just one of the necessary tools. Your doctors will have other tools to use as well, such as medications to do “chelation therapy” … a treatment to remove excess copper from your body. Triethylenetetramine or D-penicillamine are medications of this kind. Providing generous supplemental oral zinc can also be useful, as it competes with dietary copper for absorption. For some people liver transplant is necessary.

Another nutrition issue that appears to be helpful for people with Wilson’s Disese is providing generous antioxidants. These include vitamins E and C, and the colorful pigments in fruits and vegetables (a class of plant chemicals … “phytochemicals” … that can provide even greater antioxidant protection than vitamins E and C.) Recent research suggests that the need for generous antioxidant protection is higher in people with Wilson’s Disease, as it is demonstrated to be in people with many types of metabolism problems, like diabetes or hemochromatosis.

Some investigation with certain B vitamins, like vitamin B1 (thiamin) are being evaluated as possibly of use in decreasing the increased risk of liver cancer sometimes seen in Wilson’s Disease. Some particular lipid metabolism issues are also emerging involving “HDL” (High Density Lipoproteins) --- the so-called “Good Kind” of cholesterol.

However, even though excess copper is dangerous for you, copper is still an essential nutrient. Allowing copper DEFICIENCY to develop is also very injurious. Your health care professionals will need to monitor your copper status to be sure that you are safe from excessive copper, but not deficient in copper!

For everyone, assuring an adequate intake of ALL nutrients is very important. For example, maintaining a blood vitamin D level of 40-50 mg/dL is associated with decreased risk of cancer in general, and it is a factor in risk and treatment of liver cancer, which is a particular risk in Wilson’s Disease. For more information on the antioxidants, magnesium and chromium, omega -3 fats and vitamin D, please see:

“My Current Top Five Easy Ways to Improve Your Family’s Nutrition”
(subject to change at any moment! )

Your health care professionals will help you determine which approach(es) will be best for you. [As always, my papers are NOT intended to take the place of careful management of this dangerous and complex condition by your physicians. They are just an attempt to help your care-givers sort through the nutrition end of this problem to facilitate your overall control of the disease.]
Here are a few of the most recent references that I found in the scientific literature:


