



# DIET IN WILSON DISEASE

## (General Guidelines)

Wilson disease is an inherited disorder characterised by deposition of excess copper in Liver, Eyes, Kidneys and Brain. This condition is treated by drugs and low copper diet. Copper helps in development of healthy nerve, bones, collagen and skin pigment melanin

Copper usually absorbed from foods and excess copper is excreted through bile (a substance produced by liver). In Wilson disease defective gene affects this mechanism and excessive copper gets accumulated and damages various organs.

**Strict diet with low copper** is advised as almost all food has copper and zero copper diet is not feasible. Studies show a strict copper restricted regimen to be followed in the first year of treatment, thereafter a little relaxation with proper medications works well with most of the patients.

### **It is important to watch water which is being consumed because:**

- Usually municipal water is safe but copper pipes are not.
- Copper less than 100 micrograms/ltr is the cut off.
- Use bottled de-mineralised/filtered water.
- Mineralised water is unsafe

### **Important points to remember**

- No cooking in copper utensils
- Milk is very low in copper
- Bio-availability of copper from vegetarian sources less, compared to non-veg diet
- No alcohol please
- Always check food labels
- Over the counter dietary supplements can be dangerous

### **How much copper required**

- Most regular diets provide 2 mg copper per day
- Our aim is 1 mg per day
- Boiling food, eg beans, reduces copper content by almost 50%
- Processing foods, eg, wheat-maida, reduces almost 70% of copper

## Copper is found in high quantity in the following food items:

High copper diets	High copper foods	High copper vegetables	High copper fruits	High copper beverages
<ul style="list-style-type: none"> <li>• Lamb</li> <li>• Pork</li> <li>• Organ meats- liver, kidney, brain</li> <li>• Shell fish- lobster, crabs</li> <li>• Soya products</li> <li>• Mushrooms</li> </ul>	<ul style="list-style-type: none"> <li>• Dried fruits (badam, kaju, coconut, til, groundnut)</li> <li>• Cocoa and its products</li> <li>• Dried beans</li> <li>• All dals (moong dal is an exception)</li> <li>• Whole cereals, like whole wheat flour, bajra, nachni etc</li> </ul>	<ul style="list-style-type: none"> <li>• Radish</li> <li>• Beetroot</li> <li>• Padwal</li> <li>• Parwar</li> <li>• Kamalkakdi</li> <li>• Celery leaves</li> <li>• Safed kaddu</li> <li>• Onion stalks (pyas kali)</li> <li>• Shingara (fresh)</li> <li>• Betel leaves</li> </ul>	<ul style="list-style-type: none"> <li>• Grapes</li> <li>• Litchi</li> <li>• Malta</li> <li>• Orange</li> <li>• Prunes</li> <li>• Ripe papaya</li> <li>• Pear</li> <li>• Pomegranate</li> <li>• Custard apple</li> <li>• Bael fruit (Bel)</li> </ul>	<ul style="list-style-type: none"> <li>• Instant beverages – Maltova, horlicks</li> <li>• Soya milk</li> <li>• Coconut water</li> <li>• Cocktails of juices/vegetables</li> <li>• Canned beer</li> </ul>

## Recipes for low copper diet

### I. Moongdal Pakoras

- Soak moong dal for 4-6 hours
- Grind coarsely
- Add little ginger, salt to taste, small amount of coriander
- Deep fry or make small balls, put on a greased plate and grill in a microwave

### II. Chicken dumplings/momos

- Make soft dough with rice flour
- Make chicken kheema, as per your taste
- Make small balls of cooked kheema, fill them up in the rice dough, and make small stuffed balls or whatever shape u like
- Steam them, dumplings/momos are ready
- For vegetarians, make the stuffing with low copper vegetables

### III. Honeydew Juice

- Make muskmelon juice
- Add a pinch of salt
- Sugar to taste
- Serve chilled or with ice

### IV. Few more recipes which are low in copper are:

• <b>Paneer bhurji</b>	• <b>Egg Bhurji</b>
• <b>Veg pulao, with vegetables allowed</b>	• <b>Lauki koftas (less potatoes)</b>
• <b>Milkshakes</b>	• <b>Aam panha</b>

### Important Instructions:

- Moderation is the key
- Taking medications and following a proper diet is essential to lead a normal life
- Regular checkups with the doctor and dietician