

## TYRAMINE and MAOI Information

Tyramines are derivatives of the amino acid, tyrosine and are present in some foods and medications (Table 1). Normally, tyramines are inactivated by the enzyme Monoamine Oxidase (MAO) in the liver and intestines. Some substances such as the herb Hypericum (St John's Wort) inhibit MAO (MAOI) and prevent the normal metabolism of tyramines. When tyramines accumulate in the bloodstream, a temporary rise in blood pressure associated with sweating, nausea, headache or other symptoms may result. In the rare event that you experience unusual symptoms discontinue use of any herbal formula that contains Hypericum and contact your health professional.

The risk is dose dependent, and increases with the use of two or more high tyramine containing foods and/or medications taken during any 8-hour period. A sample worst-case scenario would be someone taking Hypericum for 3+ weeks, using Sudafed in the morning and eating a lunch of Camembert cheese, salami, and red wine.

Individuals who suffer from migraines are also advised to strictly control their intake of tyramine containing foods. While studies are not yet decisive, there seems to be a strong correlation between tyramine-based foods and the incidence of migraine headaches (within sample groups of migraine sufferers).

Limiting foods and avoiding medications containing tyramines is essential for the individual taking Hypericum and may be helpful for migraine sufferers.

### Foods and Medications to avoid while using MAOI Inhibitors (including St. Johns Wort) or if suffering from migraines

Category	Examples
<b>Smelly/strong Cheeses</b>	Bleu, Brie, Roquefort, Camembert, New York Cheddar, Colby, Edam, Emmenthaler, Gouda, Gruyere, Provolone...
<b>High Yeast Alcohol</b>	Ale, beer, Chablis, red wine, port, sherry wine, (containing sulfites).
<b>Broad Beans</b>	Favas, Limas, Romano, and Italian Beans
<b>Brewers Yeast</b>	A protein & Vitamin B supplement in smoothies, protein drinks, popcorn
<b>Fermented Foods</b>	Pickles, Sauerkraut, Tempeh, Miso
<b>Sulfured Dried Fruits</b>	Sulfur Dioxide gas is used as a preservative to treat commercial dried fruit. Natural food stores have unsulfured dried fruit that is safe to eat.
<b>Grapes</b>	Red grapes and juice from red grapes (white grapes; white wine is ok)
<b>Preserved Meats/Fish</b>	Pickled, salted, smoked, nitrite preserved meats such as herring, anchovies, shrimp paste, sausage, salami, and fish eggs.
<b>Cough Medications</b>	Containing Dextromethorphan or Guaifenesin
<b>Cold/Flu, Cough, Allergy</b>	Medications containing Pseudoephedrine (Sudafed, other trade names)
<b>Epinephrine</b>	In Lidocaine dental anesthesia (request Carbocaine without epinephrine)
<b>MAOI</b>	Deprenyl, Marplan, Marsilid, Matulane, Eutonyl, Nardil, Ritalin and other amphetamines, Eldepryl, Parnate. Tryptamines (e.g., Ecstasy ...)
<b>Herbal Medicines</b>	Ephedra: Some herb formulas taken for allergy, cold/flu, asthma, contain Ephedrine