Research is starting to show a dramatic link between fructose, high fructose corn syrups, and health issues. Links to diabetes, fatty liver transformation and hypertension are very clear. Fructose is metabolized by the liver primarily, leading to elevated uric acid levels, lower nitric oxide (helps control blood pressure) and ends up increasing end products like free fatty acids, dangerous LDL cholesterol and high triglycerides. This leads to more fatty acids from the liver into muscle, and reduced insulin sensitivity which causes type 2 diabetes.

High amounts of fructose are as bad for your body as alcohol. Either one will create the classic "beer belly" called visceral adiposity, reflecting insulin resistance and metabolic syndrome. It's really concerning how much fructose corn syrups are in soft drinks and juices which is leading to excessive childhood obesity. Our children are getting the same damage as drinking beers!

Fructose does not help with appetite, it may actually make you even more hungry. It'll never satisfy your appetite and you'll find yourself eating even more unfortunately.

Fructose and high fructose corn syrups are found in so many foods.

Energy drinks and sport drinks

Infant formula

Fruit juices - cranberry-grape juice has 37 grams sugar per 8 oz!

12 oz. orange soda contains about 52 grams of sugar, half is fructose.

Only two cans a day for a week equals a pound of fat or 3,500 cal

Breakfast cereals

Granola bars

Sugared yogurts

Also remember that table sugar, or sucrose, is 50% glucose and 50% fructose)

#### References:

http://www.ncbi.nlm.nih.gov/pubmed/19403641

Fructose and metabolic syndrome without family history of diabetes.

http://www.ncbi.nlm.nih.gov/pubmed/18395287

Fructose and liver disease.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2673878/

Fructose sweetened vs glucose sweetened on visceral adipose and lipids.

http://www.youtube.com/watch?v=dBnniua6-oM

Great lecture on Sugar: The Bitter Truth by Dr. Robert Lustig, MD UCSF

http://www.diabetesincontrol.com/index.php?option=com\_content&view=article&id=4486 More information on Sugars and fructose

http://www.dietaryfiberfood.com/sugar-content.php

Tables of sugar content in foods.

Try to shoot for 25 grams of fructose a day or less. In reality you'll still end up with at least twice that amount because it's so prevalent in so many prepared foods. Less is better of course, and <u>moderation</u> is usually the key to controlling.

A better way to control your grams of fructose is eat whole foods, whole fruits instead of processed juices. You'll still get the benefit of the fruit, vitamins, fiber, etc but less concentrated sugar exposure. The list below may help you count.

| Fruit                       | Serving Size         | Grams of Fructose |
|-----------------------------|----------------------|-------------------|
| Limes                       | 1 medium             | 0                 |
| Lemons                      | 1 medium             | 0.6               |
| Cranberries                 | 1 cup                | 0.7               |
| Passion fruit               | 1 medium             | 0.9               |
| Prune                       | 1 medium             | 1.2               |
| Apricot                     | 1 medium             | 1.3               |
| Guava                       | 2 medium             | 2.2               |
| Date (Deglet<br>Noor style) | 1 medium             | 2.6               |
| Cantaloupe                  | 1/8 of med.<br>melon | 2.8               |
| Raspberries                 | 1 cup                | 3.0               |
| Clementine                  | 1 medium             | 3.4               |
| Kiwifruit                   | 1 medium             | 3.4               |
| Blackberries                | 1 cup                | 3.5               |
| Star fruit                  | 1 medium             | 3.6               |

| Cherries, sweet               | 10                       | 3.8  |
|-------------------------------|--------------------------|------|
| Strawberries                  | 1 cup                    | 3.8  |
| Cherries, sour                | 1 cup                    | 4.0  |
| Pineapple                     | 1 slice<br>(3.5" x .75") | 4.0  |
| Grapefruit, pink or red       | 1/2 medium               | 4.3  |
| Boysenberries                 | 1 cup                    | 4.6  |
| Tangerine/<br>mandarin orange | 1 medium                 | 4.8  |
| Nectarine                     | 1 medium                 | 5.4  |
| Peach                         | 1 medium                 | 5.9  |
| Orange (navel)                | 1 medium                 | 6.1  |
| Papaya                        | 1/2 medium               | 6.3  |
| Honeydew                      | 1/8 of med.<br>melon     | 6.7  |
| Banana                        | 1 medium                 | 7.1  |
| Blueberries                   | 1 cup                    | 7.4  |
| Date (Medjool)                | 1 medium                 | 7.7  |
| Apple (composite)             | 1 medium                 | 9.5  |
| Persimmon                     | 1 medium                 | 10.6 |
| Watermelon                    | 1/16 med. melon          | 11.3 |
| Pear                          | 1 medium                 | 11.8 |
|                               |                          |      |

| Raisins                         | 1/4 cup    | 12.3 |
|---------------------------------|------------|------|
| Grapes, seedless (green or red) | 1 cup      | 12.4 |
| Mango                           | 1/2 medium | 16.2 |
| Apricots, dried                 | 1 cup      | 16.4 |
| Figs, dried                     | 1 cup      | 23.0 |