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GLYCEMIC RESPONSE AND CALCIUM

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In our dietary recommendations we suggest the avoidance of fruit juices for some metabolic types. Many clients have asked our reason for doing so. Primarily, calcium influences and reflects insulin secretion. When the calcium-to-magnesium ratio is elevated (greater than 12) it indicates increased insulin levels. Some foods stimulate insulin response and therefore affect tissue calcium levels. Many foods have been classified according to their effect upon stimulating insulin release and are categorized by their glycemic index. Fruit juices have a high glycemic index and contribute to increased tissue calcium levels. Any food with a high glycemic index will contribute to hypoglycemia due to insulin stimulation. Whole fruits do not have as great of a glycemic response as their juices. Foods that have been found to have a high glycemic response include: potatoes, spaghetti, rice, sucrose, dextrose, dried lentils, pureed apples, white melons, grapes, oranges, strawberries, over-ripe bananas (those with dark spots), cornflakes, and carrot juice.

All of the above foods can contribute to hypoglycemia due to their insulin-stimulating and calcium-raising effects. Any other factor that raises calcium can also be considered to have this effect. Thus we also suggest the avoidance of dairy products, which are not only high in calcium but also fat. Avocados and coconuts are also high in fat. Therefore, we can see that dairy foods (milk and cheeses) as well as some fruits can contribute to hypoglycemia. Even though in the past, juices have been used to control hypoglycemic symptoms by producing a quick rise in blood sugar, they will also result in a sharp drop in blood sugar. The effect is the same as eating candy, which was once recommended for the control of hypoglycemia, and was found only to worsen the condition.

A study reported in the "**American Journal of Clinical Nutrition**" showed that foods with high phytic acid content reduced the glycemic response of foods. But when the phytic acid was removed and calcium was added, the glycemic response increased tremendously. This supports our research in that phytic acid lowers calcium retention and thus decreases insulin stimulation.

Vitamin D also enhances insulin release and are both synergistic to each other. Insulin increases the blood levels of vitamin D metabolites, and vitamin D increases the blood levels of insulin.

Other hormones influence insulin release due to a similar synergism. PTH and anabolic adrenal cortical hormones as well as estrogen, increase insulin secretion.

Minerals that increase insulin release include calcium and copper.

Being aware of the factors that influence insulin release is important in lowering tissue

calcium levels thereby increasing the metabolic rate and energy production. As an example, insulin antagonizes the thyroid. So we can see that it is imperative to reduce insulin and calcium levels in order to improve thyroid function. This becomes very important if the patient is trying to lose weight. Any food nutrient that increases tissue calcium levels in turn increases insulin release and contributes to the storage -- rather than the burning of fats. High serum insulin levels are commonly found in individuals with adult onset diabetes. This is also why most juvenile diabetics with a low insulin production or secretion are usually very thin. Excess insulin also contributes to atherosclerosis due to increased serum cholesterol and triglyceride levels.

