

Taking the Sugar Out

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WE ARE WHAT WE EAT

- FATS
 - Made of 3 Fatty Acids of varying lengths and Saturation
 - PROTEINS
 - All made of 20 different Amino Acids
 - CARBOHYDRATES
 - All made from combinations of $C_6 H_{12} O_6$
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Some common sugar sources and how much sugar is in them

• Fructose	100%
• Dextrose	91.5%
• Sucrose	100%
• Brown Sugar	92.2%
• 42DE Corn Syrup	26.6%
• Tapioca Syrup 42DE	27.0%
• HFCS -Sweet Corn Syrup	78.0%
• Invert Sugar / syrup	76.5%
• L90 Inulin Syrup	9.5%
• Honey	76.0%
• Molasses	67.0%
• Corn Syrup Solids 42DE	38.4%



The type of sugar you use matters

- To help counteract lower sugar effects
 - For soft cookies use Fructose or Corn Syrup or Inulin syrup
 - For crisp or dry cookies use a 42DE Corn Syrup
- Lowering the sugar to meet a particular market desire
 - To keep up the quality add more fat than flour
 - Keeps it rich, preserves the rich eating quality
- Use a high intensity sweetener



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- **To make it a healthier product overall?**
 - **Raising the fiber, more whole grains, more protein**



To make the product less sweet, plain and simple

- It's simple take some sugar out and split it between the flour, fat and water.
- This is a way to make something less expensive
- Less shelf life too for some products

INGREDIENT	ORIGINAL	REDUCED SUGAR
SUGAR	20%	12%
FLOUR	30%	34%
FAT	10%	13%
WATER	10%	11%

To get a lower sugar number on the label?

- **What do you replace the sugar with and keep the quality?**
 - **What is the expected quality?**
- **Probably don't want to raise the fat to maintain quality.**



IMPROVING THE BITE

- Raise the volume to open up the grain
 - Change the type of flour – Cake Flour or flour with more bleach on it
 - No bleach allowed – a better quality of pastry flour – has better protein
- Add egg or egg white to give it the structure to keep the grain open
 - May have to increase your leavening.



To get a lower sugar number on the label?

- Do the same things as making a product less sweet.
- Replace the sugar with fat and flour
- Replace the sugars with corn syrup as in a baked bar
 - Watch your bake
 - Too much bake will make it hard
 - Use a blend of HFCS and regular Corn Syrup



To make it a healthier product overall?

- Doing it for health
 - Help play a part in lowering ones A1C
 - Lower the glycemic index of the food
- Challenge of lowering calories
 - Make them better Calories



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 - **Lowers GI with complex carbs**



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 - **Contributes to tenderness**



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- **Lentils? –Texture, Protein and Fiber**



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- Lentils? –Texture, Protein and Fiber
- **And many others**



Sample: High end Crisp Chocolate Chip Cookie

- Facts Panel says 10g on 26g serving – almost 40% sugar
- Ingredient Declaration is
 - Flour 28%
 - **Milk Chocolate –c50% Sugar** 27% =
13.5%
 - **SUGAR** 15%
 - Fat 12%
 - Nuts 6%
 - **BROWN SUGAR** 5%
 - (sugar, invert sugar, molasses)
 - Minor ingredients and water 7%



- **Questions**