Tall Stretch Bottle Wand Instructions

Plastic bottles:
Bottle name: Tall Stretch Bottle (plastic)  The bottles are also known as sand bottles, or long neck plastic sand art bottles by other craft venders that retail different types of bottles used for art projects. Where to get them:

1. PrettyCrafty
Cindy (Costa) Hogeback, 1600 Utah Court, Lawrenceburg, Indiana, 47025. Phone 1-812-637-5574, Fax 1-812-637-1172, e-mail info@prettycrafty.net  The bottles are called sand bottles on her website.
2. Dick Blick Art Supplies on line.

All of the following items may be purchased at stores that have craft supplies

Suggested button and bead types:
1 plastic bag of red flat plastic buttons ½ inch diameter = 59 buttons per bag (Actually any ½ inch diameter red button can be used)
1 plastic bag of Translucent Crystal-like size 5 millimeter beads (Any small rounded translucent crystal-like size 5 millimeter bead can be used. There should be about 1.5 ounces of beads/bag).

Bottles that link elevations of lipids with elevations of glucose:

Bottle #1: = Very high blood glucose, very high lipids
Ingredient ratios: ½ bag of 0.5 inch diameter flat red buttons, 2 bags of translucent beads, fill bottle with 100% motor oil to within 1 ½ inches of bottle top

Bottle #2: = Mildly elevated blood glucose, mildly elevated lipids
Ingredient ratios: ½ bag of 0.5 inch flat diameter red buttons, 1 ½ bag of translucent beads, fill bottle with 50% vegetable oil/50% water to within 1 ½ inches of bottle top.

Bottle #3: = Normal blood glucose, mildly elevated lipids
Ingredient ratios: ½ bag of 0.5 inch flat diameter red buttons, ½ bag of translucent beads, fill bottle with 50% vegetable oil/50% water to within 1 ½ inches of bottle top.

Bottles that link relationships of how blood responds when blood glucose outcomes are normal, and when they are elevated.

Bottle #1: Highly elevated blood glucose, normal lipids
Ingredient ratios: ½ bag of 0.5 inch flat diameter red buttons, 2 bags of translucent beads, fill bottle with 25% vegetable oil/75% water to within 1 ½ inches of bottle top.

Bottle #2: Normal blood glucose, normal lipids
Ingredient ratios: ½ bag of 0.5 inch flat diameter red buttons, ½ bag of translucent beads, fill bottle with 25% vegetable oil/75% water to within 1 ½ inches of bottle top.
**TIP:** Do not use round red beads in place of the flat ½ inch diameter red buttons. Round surfaces do not adhere to each other as will flat surfaces in circumstances of increased turbidity/osmolarity, therefore the tool will not help drive home the point of increased likelihood of emboli etc. if rounded beads are used that will not adhere to each other.

**Instructions for tool use:**

**Bottle shape.** The wide base of the bottle simulates the very large blood vessels of the body such as the aorta, vena cava, etc. The smaller curved portion of the bottle represents the small and medium width vessels of the body. When viscous blood tries to pass from large “roomy” cardio vascular spaces to medium, small, and capillary spaces…..the patient can see by the following concepts that real concerns with other health problems significantly heightened.

**Concepts of Lipids and Elevated Blood Glucose Levels:**

**Bottle #1:** Motor oil, Translucent Crystal-like Beads: 2 bags, 1/2 bag 0.5 inch diameter red buttons – is designed to demonstrate to the patient that when lipids are extremely elevated the blood is already too thick…..but you add to that the added viscosity of quite elevated blood glucose levels when the blood cells try to pass from larger vessels into the narrow smaller vessels that the cells may begin to stick together. And the patient will notice that red buttons will bunch and stick together as the thick fluids and many Bi-Cone beads try to all fit in the narrow part of the neck of the tall stretch bottle.

**Bottle #2:** Vegetable oil, Translucent Crystal-like Beads: 1 ½ bags, 1/2 bag 0.5 inch diameter red buttons – is designed to demonstrate that even though the lipids have improved and the blood is a little less thick (vegetable oil vs. motor oil) still, with mildly elevated lipids, high blood glucose levels, the blood is too viscous and the patient is at continued high risks for co-morbidities of heart attack stroke, peripheral vascular disease, etc. The patient will still see that the buttons/beads etc. jam in the neck of the bottle….a little less, but they still stick and jam together if the fluid tries to move too fast through the bottle of the neck.

**Bottle #3:** Vegetable oil, Translucent Crystal-like Beads: ½ bag, 1/2 bag 0.5 inch diameter red buttons. By taking away some of the beads, there are less beads/buttons competing for space in the neck of the bottle when you tip it. Therefore, if the bottle is tipped more slowly, the buttons/beads and vegetable oil move more evenly through the neck of the bottle. Demonstrating the concept to the patient that lowered lipid AND blood glucose levels definitely improve the “fluidness” of the blood by reducing its viscosity and reduces adherence of blood components.

1. **Additional Experiential Component of this Tool:**
   a. Allow the patient to dip their fingers into a small container of each type of oil, and, using a dry paper towel or Kleenex, wipe the oil off following each sampling.
   b. The patient will learn that the thicker the oil, the more residual oil remains on the skin’s surface, even after wiping several times.
   c. The conclusion for the patient to learn: the same experience/feeling, and build up of “oiliness” or “fat layer collection” is occurring on the inside of their blood vessels if the LDL, VLDL cholesterol and triglycerides are high and there is low HDL. There are no “scrapers” cleaning the sides of their blood vessels. The insides of the blood vessels are being serially coated and this leads to plaque formation…..atherosclerosis!

2. By combining the visual with the experiential, the patient now has a better perception of what high lipids are, what they can do, and what the numbers “feel like”.
Concepts of Elevated Blood Glucose Levels:

**Bottle #1:** Water, Bi-Cone Beads: 2 bags, 1/2 bag 0.5 inch diameter red buttons – the surface tension between buttons and the beads competing for space in the narrow neck of the bottle is designed to demonstrate to the patient that when blood glucose is extremely elevated the blood is already too thick. When the blood cells try to pass from larger vessels into the narrow smaller vessels that the cells may begin to stick together. And the patient will notice that red buttons will bunch and stick together as the red buttons and the Bi-Cone beads try to all fit in the narrow part of the neck of the tall stretch bottle.

**Bottle #2:** Water, Bi-Cone Beads: 1/2 bag, 1/2 bag 0.5 inch diameter red buttons – is designed to demonstrate that when there is a balance in the blood stream of blood glucose levels and other blood components, that the cells are and glucose pass smoothly and easily from larger spaces to smaller spaces, thereby lessening the risk of clotting, emboli, peripheral vascular disease, and other co-morbidities associated with diabetes.

1. **Additional Experiential Component of this Tool:**
   a. Allow the patient to dip their finger into each small container of sugar water, and then wipe the fluid off following each sampling. **Remember, the water must be warm so that the sugar in the water will dissolve and become sticky in containers 2 and 3. Also remember to change your solutions with each day that you will use this tool.** Remind your patients not to lick their fingers after dipping them into the samples if you have more than one patient in the learning session. I usually have a moist paper towel handy for the patient to wipe their hands off before going home.
   b. The patient will learn that the thicker the glucose, the more residual “stickiness” remains on the skin’s surface.
   c. Conclusion for the patient to learn: the same experience/feeling, and build up of glazing or “glucose layering”, glucose toxicity, is occurring on the inside of their blood vessels the daily blood glucose is always high and/or the A1c is elevated. This glazing effect damaging all types of the body’s tissues heightening risks of co-morbidities associated with diabetes.

2. By combining the visual with the experiential, the patient now has a better perception of what daily high blood glucose levels above recommended ranges and elevated A1c levels mean and feel like.

*TIP:* The newer Tall Stretch Bottles that may come with a blue cap that screws on. If the bottles that you have purchased come with cork. stoppers, go to a hardware store such as ACE, Coast to Coast where they sell rubber stoppers (take the bottle with you when you go) After you have placed the ingredients for the wands into the bottles as described above, glue the rubber stoppers in place. (Prevents leaking.) I put white rubber crutch tips over the ends of my bottles to give them a nice finished look.....(less likely that stoppers may become dislodged) and it is easier to hang on to them as you are swinging them up and down to move the buttons and beads within the bottle. You know, swinging wand educators can be dangerous!

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