

# STANDARD DEVIATIONS: Dumping the Bag

Greetings,

Leftovers. What are you going to do with those candies that not even the dog will eat? It makes one wonder what some people think when they hand these things out.

Not to be outdone, I'm handing out some treats (along with the worst candies) that you might like or find they leave a bad taste in your head; odds and ends that I like but you can feel free to toss.

The three worst candy choices for Halloween and three things I think interesting:

3) **Raisins**. Seems pretty healthy, yes? They're mostly sugar. Sticky, enamel-adhering, and not very popular, these are a recipe for tooth decay. Show me the kid who hoards these little boxes.

The **first NICU** or "dedicated premature infant station" opened in 1943 at New York's Cornell Hospital. But incubators for neonates go back to the 1890's. They became a craze exploited by Barnum & Bailey, in 1898's London World's Fair, who displayed live preemies as a sideshow "freak-show" spectacle. (The American Journal of Nursing, Vol. 11, No. 10 (Jul., 1911), pp. 791-795), and later at Coney Island and other midways and sideshows across America and Europe.



{Martin Couney, ca 1939. He ran a midway show on Coney Island with preemies, but is acknowledged as a pioneer in neonatology, having treated more than 6,000 babies *The Strange Case of Dr. Couney: How a Mysterious European Showman Saved Thousands of American Babies* (<https://www.penguinrandomhouse.com/books/318587/the-strange-case-of-dr-couney-by-dawn-raffel/9780399175749/>),}

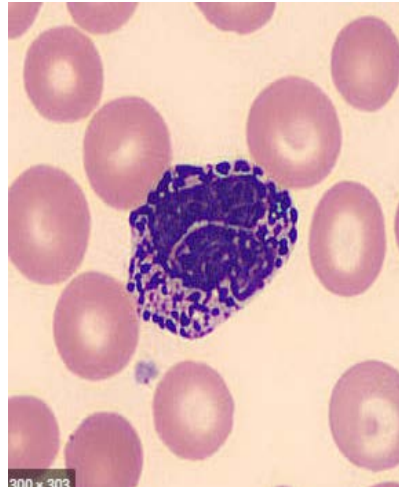
2) **Circus Peanuts**. Their taste has been described as wallboard soaked in banana syrup. The only thing these have in common with peanuts is the shell shape (and that's a stretch). They've been around forever, but so have lice.

Most of us are generalists in our labs, doing work in all disciplines. Some of you are specialized and stay in one place; pushing petri plates, pipetting plasma, or, maybe, punching a piano. One



disorder seems to link those things, sepsis. These patients' samples are seen in every department. Here's a little nougat for everyone.

Ask anybody what **basophils** do and you'll probably get a shrug (or BS). But a group in Seattle (Center for Immunity and Immunotherapies, Seattle Children's Research Institute) is onto something. Their studies (mice) have shown that basophils modulate a cytokine called Tumor Necrosis Factor (TNF) which others have found to be a critical mediator of septic shock in humans. Basophil-derived TNF has a major role in the initial response to bacterial infection by priming macrophages and neutrophils to start cranking out buckets of their own TNF. Who knew?



{*Basophil-derived tumor necrosis factor can enhance survival in a sepsis model in mice.* *Nature Immunology*, Vol 20 Feb. 2019, 129-140.}

1) **Milky Way**. Ha, *JK*, kids. These are near the top of most favorite lists, I just needed to segue into my final oddity, **milk**.

Long thought to be a signature characteristic of mammals, milk production is found in many different animals. Here are two you didn't know about, flamingos and tsetse flies.

Flamingos are one of just a few birds to lactate (male Emperor penguins do, too). The call of a begging chick stimulates prolactin release (human trigger) in both parents. They both produce a bright pink "cottage cheese" chock full of protein, antioxidants, and fat that they feed their young for months. The chick grows pink and the parent turns white. Why? Like baleen whales, flamingos are filter feeders, and their distinctively crooked bills act as elaborate sieves. It takes time for a flamingo chick's straight bill to thicken and bend, and longer still to master the distinct art of panning for food. The milk is made in the throat by cells lining the crop.

Tsetse flies gestate internally and bear live young. Almost the same size as Mom, the newborn is full of a milk spun from the blood meals the mother has taken (which is where the trypanosome parasite gets into the victim). The larva burrow into soil and pupate for 30 days, emerging as adults.



Spiders, cockroaches, beetles, and great white sharks also produce these protein rich milks. The defining condition for a milk is a synthesized or modified substance the offspring depends on for life (almonds and predigested food don't count).



0) **Candy corn.** The sickeningly saccharine blend of sugar, honey, dextrose, and corn syrup that everybody loves to hate, was unsurprisingly rated the number one worst Halloween confectionery. But five states—Iowa, Idaho, North Dakota, New Mexico, and Nevada—purchase it more than any other candy. Different strokes, right?.....we're all unique in our tastes.

Have a great week and be safe,

Bryan

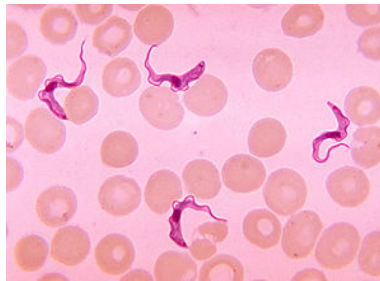
p.s. Tsetse flies transmit African sleeping sickness. There has been a 95% drop in cases over the last two decades and WHO predicts elimination by 2020, but efforts to relocate elephants in Malawi, Africa, is causing an uptick in incidence ([apnews.com/91e0f0ef90c433aafab138c494070e6](https://apnews.com/91e0f0ef90c433aafab138c494070e6)).

The female lactates and gives birth to live young, a larval form encased in a milk sac. Enjoy!





<https://youtu.be/DraEMksjtug> (just click it)



{*Trypanosoma brucei*, the protozoa in African trypanosomiasis, transmitted by tsetse.}

