



In Search of the Dessert Stomach

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"Finish your spinach."

"I'm stuuuffed."

"Too bad you won't have room for dessert - ice cream with gummy bears." "Awww. I still have lots of room in my dessert stomach."

Confronted by the sensation of fullness but still craving dessert, what hopeful child has not invented the two-stomach explanation? The phenomenon is not limited to children. Adults, too, often find room for dessert (although perhaps not for gummy bears) when the prospect of more spinach would find them full. A thorough review of the relevant literature failed to disclose any serious work on this important paradox. This study proposes a theory and presents data supporting an explanation for the dessert stomach phenomenon.

Although medical X-rays and endoscopic procedures will occasionally uncover unusual out-pouchings from the stomach - "diverticula" - the finding is so rare that it could not be used to explain the vast numbers who firmly believe that they have an accessory "dessert" stomach. A moment's reflection, however, on how and when x-rays are taken and endoscopic examinations performed provides the obvious explanation. X-ray examinations and endoscopy are always performed when the patient has not eaten - has "fasted" - for a number of hours. The dessert stomach might well "appear" only under the influence of fullness accompanied by a neurohumoural or hormonal response to the word "dessert" heard during an appropriate interval of heightened sweetness arousal. Of course, the response need not be (indeed, probably is not) an actual outpouching or appearance of an accessory organ. A general relaxation of the smooth muscles in the wall of the stomach would

achieve the same outcome: increased capacity at the critical moment. This is the theory we tested.

Healthy volunteers were lured into the study through a newspaper ad promising "fulfillment beyond your wildest dreams." The response was overwhelming. The investigators devised a questionnaire to weed out those who did not take dessert seriously, but even so could only take 10 out of the 232 fully qualified volunteers. Those chosen were warned that if they did not submit to the study protocol, there were plenty more to take their place. Each individual was interviewed to determine their favorite foods and desserts and their most loathed foods.

The basic study design was simple. Each volunteer first swallowed a microminiaturized ultrasound emitter/transducer and pressure sensor (in a large gelatin capsule) that continuously radioed data regarding stomach volume and pressure to an external receiver. The data were "fed" in real time to a computer that recorded and displayed everything.

The volunteer was then stuffed to capacity - the point at which a suggestion of "another bite" was met with a sweaty brow, a fearful expression, and a lunge for the ever-handly emesis basin. At this point the principal investigator said in a soothing voice, "But don't you have room for dessert? It's your favorite: (fill in the blank with whatever the volunteer loved)." The dessert item was then presented to the volunteer for verification, inspection, and consumption (if he or she so desired). All the time we're checking the data. When we were through collecting data, the volunteer was force-fed a little syrup of ipecac (this was the only hard part, sometimes requiring the assistance of several of our research assistants) to induce truly awesome vomiting so we could retrieve the transducer (these little guys are worth \$15,595 a pop and we didn't want to wait around for retrieving it the other way). We had originally planned to repeat the experiment with each volunteer, naming one of their "loathed" foods instead of their favorite dessert at the critical moment, but none of them ever came back. So our data must be seen as incomplete.

Figures 1 and 2 present data for each of the ten subjects showing the pressure in the stomach and stomach volume immediately before and just after the favorite dessert was named. Eight of the ten subjects experienced a sudden decrease in stomach pressure and an increase in stomach volume when dessert was an-

nounced. Two subjects were non-responders, showing no significant changes in stomach pressure or volume (more about this below). Figure 3 presents a typical time-pressure curve from one of the better subjects showing internal pressure and volume before eating, during the meal, at the point of fullness, after mentioning dessert, and when the ipecac became effective.

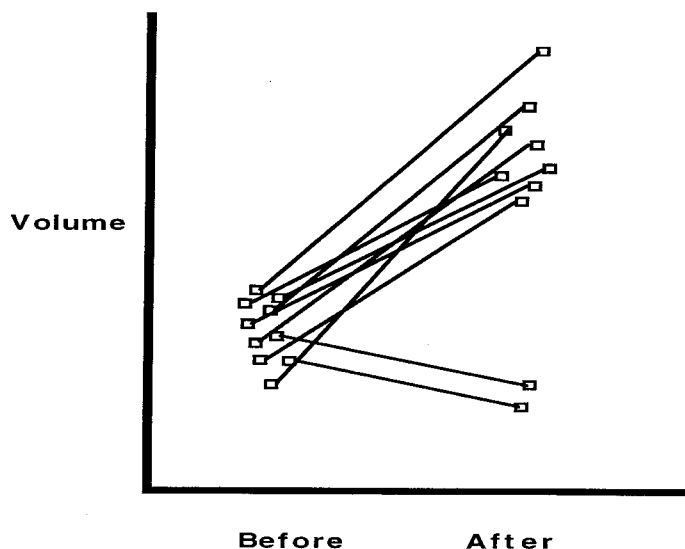


Figure 1. Stomach volume in 10 subjects immediately before and after mentioning their favorite dessert.

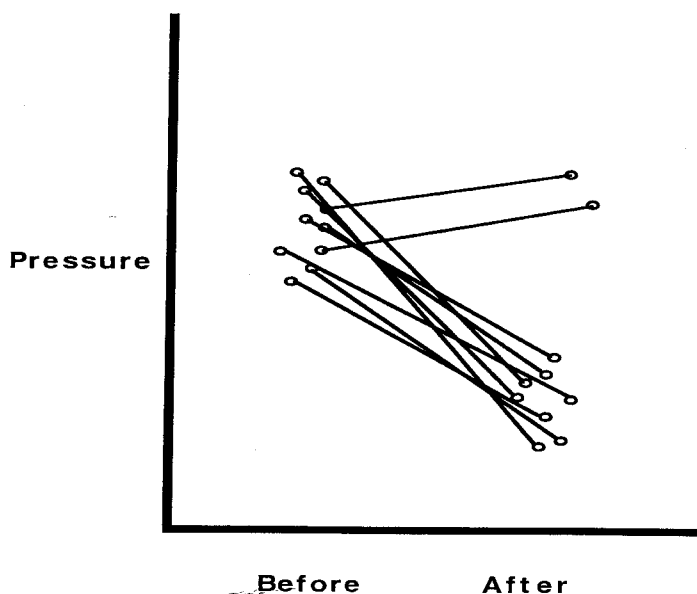


Figure 2. Stomach pressure in 10 subjects immediately before and after mentioning their favorite dessert.

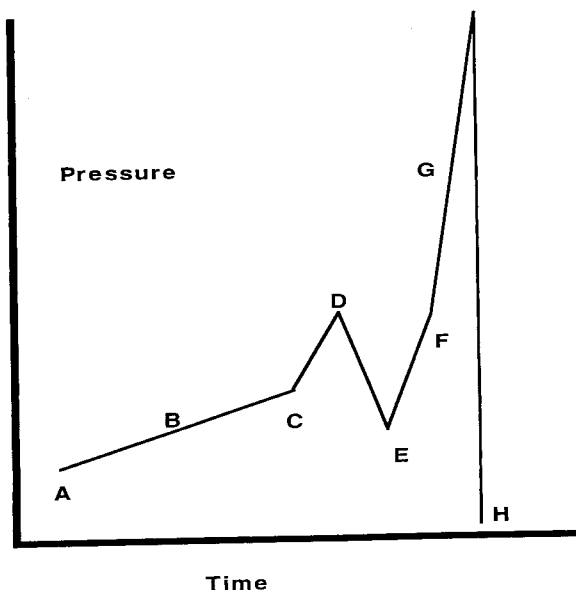


Figure 3. Typical time-pressure curve measured at time
 A — before eating
 B — during meal
 C — first point of fullness
 D — dessert named
 E — begin dessert consumption
 F — ipecac administered
 G — during vomiting
 H — transducer recovered

While not actually documenting a dessert stomach, we have discovered the explanation for the phenomenon: mentioning a favorite dessert causes the stom-

ach to expand and pressure to fall in most individuals. We have not discovered the mechanism, but can assume that further research will document the particular neurohumoral or hormonal substance that creates the effect, where it comes from, where it goes, what part of the brain controls it, which patients experience the greatest and least effects.

Then there are the two non-responders who demonstrated slight decreases in volume and increases in pressure, exactly the opposite of the other subjects. One of these individuals turns out to be a disgustingly thin fitness nut who eats moderately and avoids desserts. The second appeared normal but is on a blood pressure pill. The experience of these two outliers suggests many additional research questions: is this a learned behavior? Does exercise affect it? Would other special groups have distinctive response patterns (e.g., the overweight, the anorexic, the bulimic)? Might some drugs block the effect?

There are years of work ahead. Maybe even a productive academic career.

Acknowledgment: This research would not have been possible without the insistence of my daughter, Clara, whose tireless confidence that she was right about the dessert stomach kept me going.



A new product—unfortunately—is Joseph Labs' (Hollywood, Calif.) cologne and conditioner for the breast. It's the 'only kind of cologne of its kind in the world' and comes in a flavor (mint frappe) or a floral scent (huneysuckle!). The package is 'designed to excite and titillate.' The product, Consent, furthermore 'does away with the disagreeable taste of perfume.'

Sex-Object

Since there is no conventional word, we propose that the term "sex-object" be defined as: any object (living or dead, natural or artificial) that frequently evokes in an animal a response that is similar or identical to an individual of the opposite sex. A sex-object presumably is a source of some "sex-stimulus" (visual, tactile, olfactory, sonic, etc.) that excites some receptors to initiate unconditioned or conditioned reflexes that are components of sexual behavior.

Ed. Now we know what the fuss is all about