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Clara M. Davis and the wisdom of letting children choose their own diets

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In June of 1939, a petite Chicago pediatrician strode to the dais of Montréal's Windsor hotel and recounted to those attending the CMA's 70th annual meeting the results of what is likely the world's longest, most detailed and most ambitious dietary experiment.

Clara Marie Davis's Montréal description of what she titled "The self-selection of diets by young children" was destined to become both a *CMAJ* citation classic and a fountainhead of argument, discussion and reinterpretation for everyone hoping to untangle the modern gnarl where children's appetites, food choices and health collide. What Davis claimed to have found changed the world of child feeding — but her research seems now to have come to an ever-more-confused state.

Composed in the direct and muscular literary style characteristic of her writing, the CMA speech, and a subsequent paper published in *CMAJ*,¹ laid out to the world medical community what happens when you, as she would characterize her efforts elsewhere, let "children do for themselves."

Doing for themselves specifically meant permitting newly weaned infants to choose how much or how little to eat of 33 available foodstuffs. As she emphasized to her Quebec audience, no adult was allowed even to hint to the children what might be a proper choice or portion amount. "The nurses' orders were to sit quietly by, spoon in hand, and make no motion," she said.

What was breathtaking about the experiment was not simply this conceit (so innocent were these young subjects of what constituted food that initially some hungry infants would chew on "a clean spoon, dishes, the edge of the tray, or a piece of paper on it"), but its duration and its execution.

Davis convinced unmarried teenage mothers and widows who could no longer support their families to place their infants in what amounted to an eating-experiment orphanage set up in Chicago. An eventual total of 15 children participated; the 2 boys who were studied the longest were followed over a 4 1/2-year period: that is to say, the amount of every single thing eaten or spilled at every single meal over the first 4 1/2 years of their eating life was assiduously recorded. To this was added records of changes in height and weight, the nature of bowel movements, and regular bone radiographs and blood tests. Davis reported that the experiment had generated somewhere between 36 000 and 37 500 (she was inconsistent on the figure) daily food records.

Why do such an extraordinary thing?

The *CMAJ* article¹ only hints at what Davis more explicitly expresses elsewhere. In the early part of the 20th century, a

nutritional battleground had opened up between science-infatuated pediatricians and remarkably recalcitrant and apparently unscientific children. Armed with growing evidence from the newly emerging field of nutrition, doctors began prescribing with bank teller–like precision what and when and how much a child should eat in order to be healthy.

Children quite often responded to doctor-ordered proper diets by shutting down and refusing to eat anything. One physician of the period² (p. 6) estimated that 50%– 90% of visits to pediatricians' offices involved mothers who were frantic about their children's refusals to eat — a condition then called anorexia.

On their part, at least some doctors responded to the children's hunger strikes by declaring war on children's aberrant appetites and eating patterns. For instance, Alan Brown, co-creator of Pablum and head of pediatrics at Toronto's The Hospital for Sick Children (popularly known as Sick Kids), advised mothers in the 1926 edition of his best-selling book on child-rearing, *The Normal Child: Its Care and Feeding* (p. ix),³ to put children on what was literally a starvation diet until they submitted to eat doctor-sanctioned meals.

Accordingly, Davis devised the experiment to let children do for themselves because she suspected that children's bodies instinctively “knew best” what the individual child should eat. Her intellectual model, a view that would later be called “the wisdom of the body,” likened a child's instinctive appetite to the way various autonomic body systems effortlessly adjust themselves to compensate for external challenges — think of sweating on a hot day, and breathing faster when you start to run.

Initially, it seemed that this conceit didn't apply to Davis's test children and their food preferences. None of the eat-what-and-how-much-of-what-you-want infants had the same diet on any given day, week or month. “Every diet differed from every other diet, 15 different patterns of taste being presented, and not one diet was the predominantly cereal-and-milk diet, with smaller supplements of fruit, eggs and meat, that is commonly thought proper for this age,” she told her Montréal audience.

Yet, she and others later saw that the infants' fanatical heterodoxy turned into what appeared to be 15 uniformly well-nourished, healthy children.

How could eating drastically different diets achieve uniform health and nutritional balance? Body wisdom was the only likely explanation Davis concluded. “Such successful juggling and balancing of the more than 30 nutritional essentials that exist in mixed and different proportions in the foods from which they must be derived suggests at once the existence of some innate, automatic mechanism for its accomplishment.”

Did this mean that parents could simply ignore the brutal advice of the Dr. Browns of the world?

Yes and no, said Davis. Yes, there was “not a scintilla of support” for the notion that a baby should not follow his or her own tastes when it came to food choice: baby, not doctor, knew best. But she cautioned her audience that she clearly recognized “a trick” in her experiment. The foods she offered the children were varied, but all were generally thought to be healthy. Their intrinsic goodness meant that it would have been difficult for her small charges to veer too far from the nutritional straight-and-narrow.

“Errors the children's appetites must have made — they are inherent in any trial-and-error method — but the errors with such a food list were too trivial and too easily compensated for to be of importance or even to be detected.” The key thing was to provide healthy food and let children eat as much or as little of it as they wanted.

“The results of the experiment, then: Leave the selection of the foods to be made available to young children in the hands of their elders, where everyone has always known it belongs,” she told her peers in Montréal.

While an interesting double-hinged interpretation of her results, it was, Davis recognized, more a comforting argument

than a true demonstration of the limitations of baby body wisdom. She did not present her little ones with a foolproof diet, just a not-intrinsically-foolish one.

It is actually beyond easy to imagine how Davis's orphans could have eaten themselves sick with healthy foods. Had one or more chosen only meat, fish and eggs, within short order they would likely have come down with scurvy. Had another been a fanatical vegan and eaten only fruits and vegetables, there is a good likelihood that he or she would have experienced a vitamin B₁₂ deficiency and megaloblastic anemia.

Thus, the issue, really, was the extent to which an inner nutrition-seeking mechanism might lead children through the maze of choices they actually would face in the modern, eating world. What would happen, for example, if you offered the children not the Paleolithic diet of the Davis orphanage, but one where today's processed foodstuffs — think of a Big Mac mush, a slurry of Snickers and cola galore — were also on the menu?

Davis considered this and was not sure — particularly when confronted with the baroque ways her children constructed individual healthy diets out of a plethora of nutritious foods. To resolve the question, she told her Montréal audience she had decided to conduct just such a processed-food versus natural-food experiment. But alas, it was not to be: “The depression dashed this hope,” she laconically remarked, after a lack of funding forced the original experiment itself to end in 1931.

Even without an answer to the ultimate modern wisdom-of-the-body question, Davis's findings changed baby– doctor relations forever. Relying in considerable measure on the 1939 *CMAJ* paper,¹ pediatricians across North America began to alter their prescriptive ways, alternatively recommending that babies choose their own diets, within reason. The leader in this was the world's most famous baby doctor, Benjamin Spock. For decades, in his immensely influential *Baby and Child Care*,⁴ he devoted 10 illustration-rich pages to the Davis experiment and its message to mothers that liberalism in infant feeding wasn't just easier on the nerves, it was Nature's way. A mother, he wrote,

... can trust an unspoiled child's appetite to choose a wholesome diet if she serves him a reasonable variety and balance of those natural and unrefined foods which he himself enjoys eating at present [Dr. Spock's emphasis] ... even more importantly, it means that she doesn't have to worry when he develops a temporary dislike of a vegetable [page 218].⁴

And so, Davis's research was once Spock-certified. But where, you might ask, does it stand today?

“Ever more confusing” might be the simplest answer. The reality is that whereas her great experiment might have allowed 20th-century doctors to tell mothers not to worry if their children adopted eccentric eating patterns, in the 21st century we all worry that children don't know when to stop eating. In many ways it looks as if the auxiliary experiment Davis didn't conduct is more relevant to our lives than the grand one that she did.

Still, one wonders, might there be in her voluminous food records some indications as to how children's bodies chose their way toward a nutritional heaven? Could we dissect their healthy diets to estimate how they might have fared with a less healthy one?

The answer is that we can't, because the *Self-Selection of Diets* paper¹ — the *CMAJ* citation classic, the only true summation of Davis's work — is in many ways an embarrassment. What Davis did was to *tell* what she found. There are absolutely no graphs, no charts, no individual breakdowns of any sorts for any of the children. It's a summary paper of an Everest of data with next-to-no data in it.

It's not that she never published statistics; a 1928 paper,⁵ which she wrote when only 3 children were in the experiment for about a year, includes several graphics. But 3 boys is less an experiment than an extended anecdote.

Why, then, you may ask, is the *CMAJ* article such an empty plate? Davis never said, but my theory is that what Clara

Marie Davis wasn't telling her Montréal audience was that she had been overwhelmed by the immensity of her data set.

Boxes, boxes, and ever more boxes must have piled up with food charts — and as they did, Davis must have thought she was drowning in a food-record ocean. Imagine trying to deal with all this information before the advent of the computer and the birth of the miraculous self-correcting spreadsheet; imagine, as well, being, not a university professor with graduate students at hand, but a working pediatrician in the middle of the Depression, and you see the data dilemma of Clara Davis.

Well, you might say, that was then; now is the age of data management, sifting and farming. Surely, one could take those records, enter them into a computer and ask a slew of the questions that Davis never did. Are there male/female differences, seasonal shifts reflecting food freshness, connections to growth spurts and, most importantly, an indication of how much choice a body really does have when it comes to choosing a nutritious diet?

That, regrettably, is never to be. As far as I have been able to determine, sometime between 1959 (when Davis died) and 2000, all of those boxes of data from her experiment were pitched.

What remains, as a summation of the world's longest, most detailed, most ambitious food experiment, is the skeletal *CMAJ* paper¹ — itself largely a construct of assertions without evidence. What remains, as the title of my proposed book suggests, is a rumour in nutrition.

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Figure. Diner's choice. Photo by: D. McCuaig



Figure
Photo by: B. Sibbald

Footnotes

Stephen Strauss is writing a book on this subject, tentatively titled *Rumour in Nutrition: The Story of Clara Davis and the Search for a Natural Human Diet*.

This article has been peer reviewed.

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