Nutrition 21 (2005) 14–19

www.elsevier.com/locate/nut

Applied nutritional investigation

Food choices of tactile defensive children

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Manuscript received September 23, 2003; accepted July 28, 2004.

Abstract

Objective: We explored whether tactile defensive children have picky eating habits because fussy or picky eaters are a general problem to parents and different health professionals.

Methods: Children ($n = 62$) of both sexes, ages 3 to 10 y, were assigned to an experimental tactile defensive (TD) group ($n = 29$) or a control non-TD group ($n = 33$). A questionnaire on eating habits was compiled and given to parents for completion during personal interviews (children were screened with a checklist and evaluated for tactile defensiveness with the Winnie Dunn Caregiver profile questionnaire).

Results: This research confirmed that the eating habits and food choices of TD and non-TD children differ significantly. TD children had a fair to poor appetite. They hesitated to eat unfamiliar foods, did not eat at other people's houses, and refused certain foods because of the smell and temperature. They also had a problem eating vegetables. They often gagged and/or bit their inner lips and cheeks. The results showed a definite difference in the limited selection of foods that TD children chose and a pronounced aversion toward textures or consistencies, smells, and temperatures of food as compared with integrated children.

Conclusions: Fussy or picky eaters should be evaluated more widely than to treat only the feeding problem. Tactile or oral defensiveness can be treated. This report underlines the team approach of health professionals.

Keywords: Eating habits of children; Food choices of children; Food questionnaire; Food textures; Fussy eaters; Oral defensiveness; Picky eaters; Sensory defensiveness; Tactile defensiveness; Texture of foods

Introduction

Some children refuse to eat certain foods. This behavior often brings a lot of tension to relationships between parents and children. Mothers of these children often feel embarrassed when their children refuse some food while dining with friends. Mothers also may feel reluctant to seek advice, because they are often blamed for the child's eating behavior. Children who eat only a small variety of food are described as "fussy eaters" [1,2].

It has been found that when fussy eaters are referred to occupational therapists, they are often diagnosed with tactile defensiveness. Fussy eaters also dislike certain food textures, and referral to speech therapists has shown sensitivity in the mouth that improves with therapy [3]. Occupational and speech therapists are aware that children with sensory defensiveness and, more specifically, tactile defensiveness have different eating habits and dislikes in food. The food likes and dislikes of these children have been neither researched nor described in detail previously.

Children's food preferences are the major determinants of their food intake. Historically, Davis reported in 1928 that children could self-regulate their dietary intake when provided with a choice of healthy foods. Story and Brown [1] in 1987 pointed out that Davis's findings were from studies in which children were exposed to a limited variety of foods, namely primary fresh, unprocessed, unseasoned, and simply prepared foods that contained no mixtures or combinations of sugars, syrups, or other sweeteners. Birch et al. [2] showed that children respond to the energy density

This study was supported by a 2000 Purity Research Award, the South African Institute for Sensory Integration, Fresenius Kabi, South Africa.

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0899-9007/05/$ – see front matter
doi:10.1016/j.nut.2004.09.004

of food and regulate their intake of individual meals. Thompson [4] reported that the total energy needs of a toddler (5000 kJ) can be met without breakfast or dinner and without necessarily meeting other nutrient needs.

Tactile defensiveness is an overreaction to the experiences of touch [5] or an observable aversion or negative behavior in response to certain types of sensory stimuli that most people experience as inoffensive [6] or it could be a withdrawal response [7]. Ayres first described tactile defensiveness in 1964 [8] and in 1979 [9] stated that touching and being touched are important for the infant for feeding, because touch sensations help the infant to suck and later to chew and swallow food. Infants with poorly functioning tactile systems may have difficulty sucking and subsequently may not enjoy the texture of solid food. Tactile perception develops gradually after birth [10].

Oral defensiveness is an avoidance of certain textures of food and irritation with activities using the mouth in general. The patterns of avoidance are unique to each individual, and some individuals will avoid soft foods, whereas others will avoid foods with rough textures [5].

Sensory defensiveness refers to a more general problem of the tactile and other sensory systems [10]. Sensory defensiveness may block development of the gastrointestinal tract and the immune system; in school-age children, there is a close association among sensory defensiveness, allergies, and asthma [11,12].

Sensory integration dysfunction describes a person who has difficulty with the processing of sensory input. Input comes from three basic senses (touch, movement, and position) combined with input from the auditory and visual senses. These children are unable to have appropriate and effective adaptive responses to these inputs. For example, if a child is swinging on a swing and feels sick, an appropriate response is to jump off the swing or stop swinging. If a child's brain does not register that excessive movement can produce nausea, the child may stay on the swing too long and vomit [13].

Occurrence

DeGangi and Greenspan [14] found that 6% to 17% of babies have tactile defensiveness and that 64% to 86% of children who have difficult temperaments also have tactile defensiveness. Possibly 15% or more of the total population have sensory defensiveness, including tactile defensiveness [14].

The synchrony of suck, swallow, and breathe is a critical component of the oral motor mechanism [15]. After birth, an infants' mouth exhibits the most organized sensory integrative and neuromotor behaviors. The perioral region responds to tactile stimuli at 7 wk of gestation. The suck and swallow patterns are established at 15 to 18 wk of gestation. This contributes to a normal infant's ability to find the breast and suck effectively. Tactile stimulus to the mouth or face area initiates response toward the stimulus, whereas tactile stimulus to most parts of the newborn's body results in a withdrawal or protective response [15].

Food choices of a child

Birch [16] found that children eat what they like and leave the rest. Preschool children also may not accept foods that touched each other on the plate or may refuse broken crackers [17]. Preferences for sweet taste, possibly for salt taste, and the sour and bitter tastes are unlearned [16]. There is limited evidence of a genetic effect on food preferences, but there are genetic differences in taste sensitivity and the response to basic tastes [16].

Fussy eaters

Children often have fussy or picky eating behaviors, some for only short periods and some for an extended period [18], and have a very limited food choice [1]. Pelchat [18] stated that *picky eating* describes a number of related but separate feeding problems, e.g., unwillingness to try novel foods, eating only a limited range of foods, and eating insufficient quantities of food for adequate nutrition. It should be noted that parents' perceptions play a role in whether they regard their children as fussy eaters.

Super tasters and super smellers

Breakey [19] investigated hyperkinetic children and found that these children had a supersensitivity to texture, temperature change, and taste, so that a new food placed in the mouth produced a reaction in the child similar to that of scratching on a blackboard in someone with supersensitive hearing. Some children are also sensitive to food prepared and/or stored in aluminum and/or cardboard.

Materials and methods

We investigated whether tactile defensive children differ significantly from non-tactile defensive children in their choice of food and aversion to certain textures of foods and whether they could be classified as fussy or picky eaters.

Exclusion criteria

Children who received any intervention from a dietitian, those who received longer than 3 mo of intervention by an occupational or speech therapist, those who had autism [21–23], Down's syndrome [24–27], or cerebral palsy [28,29], and those who were receiving nasogastric feeding [30] were excluded.