The Spoon Plate: A Self-Feeding Device

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Self-feeding is the first self-care activity mastered by most people. When severe disabilities render the extremities nonfunctional, the individual is usually restricted to a lifestyle of physical dependence upon someone else for all personal care, including feeding. These individuals often have no cognitive deficits and may be acutely aware of their environment. However, all too often mealtime becomes a survival experience at best with little decision making or control given to the person being fed.

History of Spoon Plate Development. A 16-year-old girl with severe dyskinesia involving her total body requested an occupational therapy evaluation to meet her paramount goal of self-feeding. Her inability to control even gross arm movements had prevented success with other adaptive feeders that were either activated by the upper extremities or designed to dampen dyskinetic motion (1, 4, 6).

A device developed in Denmark (5) combined the features of a spoon and a plate and enabled individuals to select the desired food and take it directly off the specially designed rotating plate. The stainless steel plate was mounted on a gooseneck stand. From that idea a prototype was formed, using a low temperature thermoplastic material and placed on a can to rest at about the level of the patient’s mouth. The patient rapidly demonstrated success with the prototype, and the orthotics department was contacted to make a more permanent device (Figure 1).

Description. The “spoon plate” is a portable device that can be adjusted to the level of the patient’s mouth when set up on table surfaces of varied heights (Figure 2). The plate described here is 25.4 cm (10 inches) in diameter and is made of Kydex®. This material has the advantage of being able to withstand the intense heat of institutional dishwashers, a requirement for use by patients in residential care settings. The Kydex is formed on a mold that has a rim bowled to the approximate depth and length of a spoon. Small ridges divide the plate into four sections to separate different types of food (Figure 3).

The plate is set on a telescoping rod. By using a collar with a set screw to prevent slipping, the height of the rod can be adjusted 8.8 cm (3 1/2 inches) to rest at the level of the patient’s mouth when the height of the table varies. Three types of bases are available. The free-standing base is simply set on the table. Another base with suction cup feet provides more stability. A base with a C-clamp that attaches to the table or lapboard edge is recommended for patients with severe motion disorder.

For long-term use, purchase of these devices is recommended because the time required to construct a definitive mold and fabricate the device may not be practical in most occupational therapy settings. However, temporary devices for trial use can be readily constructed by clinicians. Our prototype plate was formed by draping a round piece of Orthoplast® (or other thermoplastic material) over an inverted dinner plate of the same diameter. The rim was then shaped by hand into a “bowl.” Ridges to serve as dividers may be added by using strips of the same material if self-bonding thermoplastic is used. A simpler and quicker method of simulation is to invert an aluminum pie plate and bend the edge upward to form the “spoon.” Either plate can then be placed on a “lazy susan” base and set on an object of the appropriate height such as a coffee can.

Criteria For Use. There are three parameters to consider when de-
Determining whether a patient is a candidate for use of a "spoon plate."

1. **Oral control:** There must be some degree of jaw, lip, and tongue control in order to take food from the rim of the plate. A trial using the patient's typical diet (pureed, mechanical soft, or regular) is indicated since patients with seemingly significant problems have been surprisingly successful in using the "spoon plate." Among the problems that may interfere with the use of the device are a severe tongue thrust that can prevent intake of food into the mouth; inadequate lip closure that may permit the majority of food to escape down the chin; or a severely retracted jaw that may cause the food to be scraped off the upper teeth and dropped into the lap.

2. **Head and trunk control:** The patient must have sufficient motion and control to reach the plate and then to withdraw from it in order to chew. Minimal lateral movements are also needed to rotate the plate.

3. **Patient motivation, social, and environmental factors:** Since this method of self-feeding is novel and the appearance of the device is unusual, a desire to achieve some measure of independence in self-feeding is a prerequisite. Self-motivation will enable persistence during practice and advocacy when instructing others who will set up the device at mealtime.

**Application.** Individuals with cerebral palsy, high spinal cord injury, and arthrogryposis now use this device. Bilateral upper extremity amputees and possibly others may be candidates to consider. A sandwich holder, or a long straw in a holder, or both, have been included to complete the set-up. Some individuals and their families prefer to reserve the device for use at home or school while continuing with former feeding methods when out in public. Institutional person-
nel must be educated about setting up and cleaning the device. Acceptance is usually gained by making staff aware of the time saved by reducing the number of patients who must be fed. As with most adaptive equipment, it is advisable to have patients practice with occupational therapists and with the family until they are proficient enough to need assistance with setup only before requesting school personnel or institutional staff to use it on a regular basis.

In addition to its use in self-feeding, the "spoon plate" can serve other purposes. For example, it has been used with children with high spinal cord injuries to provide an alternative surface for mouthstick play activities (Figure 4). It has also been adapted with weights to increase the strength and endurance of neck musculature.

Summary
The "spoon plate" has proved an effective device that offers a measure of independence to people who have been unable to feed themselves with their upper extremities or with other available feeding equipment. It provides users with an opportunity to make decisions and to have some control over their environment by being able to select the food they desire and to eat at their own pace. It frees caregivers either to attend to the needs of others or, in the case of a family, to enjoy their own meal and thus allow more typical socialization at mealtime. With this newly found independence, patients may now choose to be in the company of others at meals because they want to be, whereas before they had no choice in the matter.

To obtain information for fabricating the "spoon plate," write Tom Lundsford, C.O., Orthotics Department, 7450 Leeds St., Downey, California 90242.


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Figure 3
"Spoon plate" being used for mouth stick play and neck strengthening (note weights under the toy rabbit)