A Two-Handle Spoon: An Aid For Independent Eating

Greg Shaw  Christine Wright

This paper describes a project in which a two-handle spoon was designed for and tested by individuals who could not feed themselves spoon foods without spilling them because of motor incoordination. Directions for fabricating the spoon are provided.

The two-handle spoon is used with a scoopdish secured with suction cups. A dish with an attached plateguard may also be used. The bowl of the spoon is placed on the plate facing the user, who then grasps both handles and places food onto the spoon by scooping it toward himself. Using two hands to grasp the spoon increases stability (see Figure 1), which reduces uncontrolled movements.

Proper positioning is important for using the spoon well—users should sit with feet supported. Increased stability may also be obtained by providing a cut-out table and by raising the table height so that the user’s arms are abducted more than 60° while resting on the table.

Field Test Study
Sixteen rehabilitation facilities in the United States, Canada, and England participated in a field test of the two-handle spoon. The spoon used in the test was made of urethane rubber with a metal spine that allowed for adjustment of the handles and spoon angle. A metal extension opposite the spoon was used to cut soft foods and move food on the plate for easier scooping.

Eighteen individuals with cerebral palsy from these 16 facilities used the two-handle spoon for a 6-month period. Fifteen of these subjects were under 21 years of age, and 3 were older than 21 years.

The spoon enabled two individuals to eat spoon foods indepen-
For the first time; it improved some aspects of eating, such as posture, in nine individuals; but it did not improve independent eating in seven individuals.

One of the subjects who successfully used the spoon did so while “fixating” to stabilize movements. Fixating is usually an undesirable posture for individuals with cerebral palsy. However, this subject made such gains in eating independence and self-esteem that the evaluator recommended the continued use of the two-handle spoon.

We concluded from the field study that the two-handle spoon affords independent eating for those individuals whose physical condition and abilities are similar to those of the two successful users in this study. They had cerebral palsy, athetoid/spastic and ataxic/spastic type, with little evident asymmetry. The extent of their movement disorder did not prevent them from eating finger foods, using a sandwich holder, or using a cup with two handles.

Although a population large enough to justify manufacturing and distribution of a two-handle spoon was not identified from this study, a custom-made two-handle spoon can be fabricated.

**Materials**

1. Select an appropriate stainless steel Nylon-coated spoon. Size and depth of the spoon is selected after considering the individual’s needs. A shallow spoon with a blunt edge and a wide handle to form the food scraper is preferred. A fork or “spork” (combination spoon/fork) is recommended only after successful use of a spoon.

2. Handles can be made of wood or low-temperature plastic splinting material. The plastic will not be dishwasher proof. If using wood, the strip is 30.5 cm (1 foot) long, 2.5 cm (1 inch) wide, and 1.5 cm (1/2 inch) thick.

3. Two pieces of cylindrical foam padding can be slipped over the handles to increase girth and to cushion for safety.

**Procedure**

To make wooden handles, first sand the strip smooth, round the corners and edges, and seal with nontoxic wax, paint, or varnish. Then affix the utensil to the wooden strip by:

1. Drilling two holes .5 cm (3/16 inch) in diameter and 1 cm (3/8 inch) apart on utensil handle, 5 cm (2 inches) back from the utensil bowl.

2. Drilling matching holes in center of wood strip.

3. Securing the utensil to wood with two 6-32 machine screws, 1.6 cm (5/8 inch) long.

To make plastic handles, laminate utensil handle between two layers of plastic. Ensure that the handle is held snugly, about 5 cm (2 inches) back from utensil bowl. The plastic handle can be formed and angled to accommodate individual hand and wrist positions.

The spoon bowl may be bent to aid scooping and to minimize spilling.

**Acknowledgments**

The two-handle spoon was conceived and developed during a 9-month Stanford University Product Design Master’s Program under the direction of Professor Larry Leifer. Materials and Field Test funding were provided by the Palo Alto Veterans Administration Hospital Rehabilitative Engineering Research and Development Center. Problem identification and assistance in local testing were provided by Maurice LeBlanc of the Rehabilitation Engineering Center, Children’s Hospital at Stanford in Palo Alto, California. Photos were provided by Gayle Curtis.

Appreciation is extended to all those who participated in the development and field testing of the spoon, particularly Lillian and Francisco.