Orthopaedic and Hand Surgery Partners
We Care

ADAPTIVE DEVICES

Patient Information Brochure

An adaptive device can be considered anything that helps a person perform a task that would be difficult or impossible without the modification(s). Very often, such devices are used by people who have arthritis or other physical changes in their hands. There are countless examples, a few are highlighted in this brochure.

What is arthritis and why does it alter hand function?

In a normal joint, bones have a smooth, glistening surface made of a substance called articular cartilage on their ends which allows one bone to glide easily against an adjacent one. Joints are lubricated by a thin layer of fluid that acts like oil in an engine to keep moving parts working smoothly. When the articular cartilage wears out or is damaged, or when the lubricating fluid is abnormal, joints can become stiff and painful - that's arthritis. There are many types of arthritis, but the basic problem is the same in each: the abnormal joint surfaces don't work properly, and that limits function. In some kinds of arthritis, such as rheumatoid arthritis, the tendons and soft tissues surrounding the involved joints become quite damaged and thus alter hand function, too.

How do adaptive devices help abnormal and arthritic hands?

In the hand, arthritis can make it difficult to use standard implements, utensils and tools, because it may be too difficult to generate enough force or manipulate small objects and moving parts well enough due to pain or lost motion. Sometimes, "birth defects" (congenital anomalies) or traumatic injuries cause damage that may make it difficult to use standard implements. In those situations, using adaptive devices allows one to overcome his or her physical difficulties. A hand therapist often can help with finding, modifying, or fabricating various assistive devices.

Examples of the most commonly used adaptive devices:

- **Pens**: Writing is easier when the grips on pens are wider and softer, with sticky rubber where the pen is gripped. This allows the user to control the pen without having to grip so hard, which decreases the stress on arthritic joints. Other modifications include contouring the pen to the hand or strapping it to the hand.

- **Jar Openers**: Jars are difficult to open for people with arthritis or limited ability to grasp. Some gripping tools make that job easier by helping to get better leverage and can be adjusted to different widths as needed (see Figure 1).

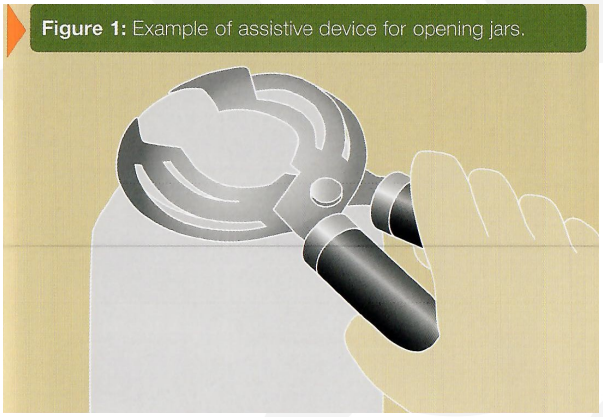

Figure 1: Example of assistive device for opening jars.

- **Rocker Knives**: These devices make it easier to cut food with less effort. The handle allows for grasping with a power grip and avoids sideward pressure on the fingers, instead of

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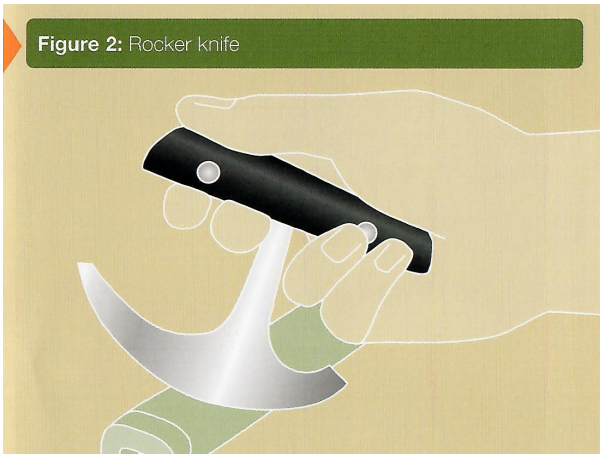
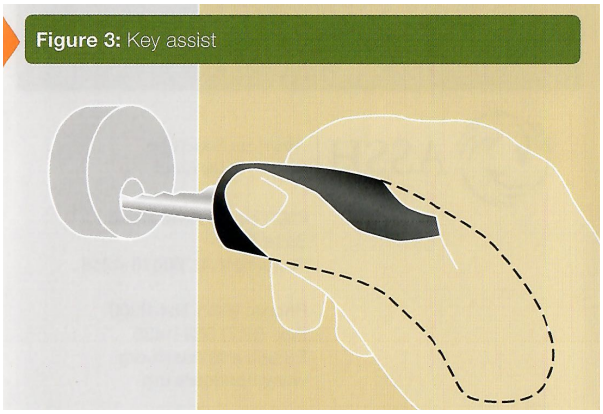
having to apply force with the fingertips when using the knife (see Figure 2).



• **Key Assists**: Key pinch is particularly difficult when there is arthritis in the thumb joints, a very common disorder. Key assists make it easier to turn a key in a lock or the car ignition by providing a longer, thicker handle that is easier to grip and control (see Figure 3).



• **Door-Knobs to Door Levers**: Handle Converters: For patients with almost any hand problem, it can be quite challenging to grip and turn a door knob. Converting a round doorknob to a straight lever-type handle makes it much easier to open doors. Newer construction codes often require such door handles, and there are many commercially available devices to convert round doorknobs to a lever style.

• **Scissors:** Scissors are difficult to open and close when hand dexterity and strength are diminished. Scissors that are spring loaded to open automatically make that task easier, as do rolling scissors.

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