

Activity Analysis: Iron a Pair of Pants

Area of Occupation:

The activity is to ironing a pair of pants. It is classified as one of the Instrumental Activities of Daily Living (IADLs) outlined in the Occupational Therapy Practice Framework (OTPF). It comes under the home establishment and management section, which describes “including maintaining and repairing personal possessions (clothing and household items)” (AOTA, 2008). The Activity Demands, detailed within this Activity Analysis, show that even what some may regard as a relatively ordinary IADL can involve complex sensory-motor skills, orientation, and hazard awareness. In addition, the act of ironing can have quite strong cultural meanings such as being a measure of personal competence to cope with daily life, and even as a supportive action showing devotion to one’s spouse.

Performance Skills for the Activity:

Motor & Praxis Skills	Standing, bending, reaching, holding, walking, lifting, (board) balancing, anticipating (e.g. or iron’s weight), manipulating, correcting, and adjusting
Sensory Perceptual Skills	Orientation, monitoring the effects of ironing, smelling (as possible feedback of singeing), sight, timing
Emotional Regulation Skills	Managing pain (contact with hot iron), recovering from error (ironing in an incorrect crease or dropping iron)
Cognitive Skills	Sequencing, judging sufficient action that job is complete, understanding settings on iron, organizing (e.g. more delicate fabrics first, while iron is warming)

Communication Skills	None required in the activity
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Activity Demands

This activity begins with the client standing facing a two-door laundry closet. The ironing board is stored in the closet, between the dryer and the wall. The iron is stored in the cupboard on a shelf. Pants are in a basket in the room where ironing will take place.

Objects and Properties

The ironing board weighs 8 lbs, requires two hands to lift and move, and is awkward to move because of its 5-foot length. The iron is quite dense and weighs about 3 lbs. The iron is potentially dangerous due to a) being heated, b) being heavy, and c) requiring electricity.

Electrical connection brings the additional hazard of the cord.

Space Demands

Due to the board's length, to stand next to it requires a freely accessible area of at least 6 ft by 4 ft.

Social Demands

The social demands of the activity are virtually nil. However, the connotations associated with ironing are vast. Some people may consider it women's work. Others may associate it with military careers.

Required actions, performance skills, and body functions

In this activity, it appeared that hardly any muscle group or range of motion was left out. Toes, knees, hips, elbows, fingers extended and flexed; feet underwent dorsiflexion and plantar flexion; arms and fingers adducted and abducted, toes, too. Rotation was important. This activity is very complex. The steps, performance skills, and body movements follow.

Steps	Performance Skill	Body Movements
Assembling Equipment	Open Closet Door	<p>Client flexes left elbow to about 135°. Extends and abducts fingers of left hand. Flexes left fingers and thumb to grasp knob. Flex left elbow to 90° in coordination with flexion of the shoulder to complete a horizontal abduction away from the midline with sufficient force to open door clasp – about 2 lbs.</p> <p>At the same time, client takes one and a half steps back diagonally. Client lets go of the handle, by extending fingers, thus loosening grasp. Left elbow extends and arm drops back to the client's side.</p>
	Take out ironing board	<p>Stepping forward, at the same angle and distance of the step the client just stepped back, puts the client in front of the open closet with abdomen facing dryer. Client places feet, rotates to the left, bends forward about 35°, extends both elbows to 180°, rotates shoulders minimally to comfortable level. Client partially supinates hands while adducting arms and abducting fingers, positioning hands to grasp the ironing board. By flexing fingers, client grasps and holds ironing board.</p> <p>The client lifts the board a few inches off ground by elevating both arms. The client rotates at the waist and slides the ironing board out of slot, past door. Rotating, the client turns to face 180° away from dryer. (If necessary, client widens angle of elbow to depress the arms, while still holding ironing board,</p>

		and rests the bottom of the board on floor.
Take ironing board to next room		Carries the board to the desired location for the ironing. (Depending on the client's strength and agility this may be a straightforward or complex activity. In the actual environment used for this activity, it is approximately 10 feet.) Eventually the board is brought to be resting vertically--typically at the end that bears the insulated ironing rest--while the client balances it.
Set up ironing board		This activity requires a complex coordination of actions to release a clasp from the underside of the board to let the ironing board legs extend and fall to the ground, while turning the top surface of the ironing board to be horizontal. When the legs are in position, the legs should lock in place. This requires holding the aforementioned clasp until the legs are in the right position to lock. Confirming that the lock is properly in place before letting go of the ironing board is important to avoid the ironing board collapsing.
Go back to closet and get iron from shelf		Lifting the iron from the shelf, which is approximately 4.5 ft high. The iron typically weighs 3 lbs. Carrying the iron to the ironing board may be straightforward if the client has enough strength to hold it in one hand. Typically the second hand is used to carry the coiled cord. If the client has any impairment, in walking or carrying, for

		example, this activity may need significant adaptation.
Turn on the iron	Return to ironing board	Place the iron upright on the insulated ironing board rest Straighten cord, grasp plug, bend, usually by flexing at knees and leaning forward, and insert plug into the wall socket.
	Plug in iron	Check the heat setting for the iron. Requires visual acuity and manual dexterity if adjustment is required.
Ironing praxis	Pick up and arrange pants on ironing board. Wait until iron heats up.	While waiting for the iron to warm up to its operating temperature, pick up pants and arrange them on the ironing board. This can be a surprisingly complex task because there can be many different approaches, and the client has to develop their own. It demands attention, sequencing, judgment, and occasionally problem solving. It also requires physical maneuvering.
	Use iron to flatten creases	Extend arm (typically the client's dominant arm) to grasp the iron by its handle, lift iron by elevating the hand, pronate hand to rotate the iron through 90° until horizontal, lower iron onto the creased surface, abduct and adduct the forearm so that the hot surface covers the creased portion of the pants. When sufficiently flattened, return the iron to the base by lifting the arm and supinating the hand so that the iron is vertical, lower the iron to the insulated base.
	Manipulate trousers to next	This action needs visual selection of the next portion of creased area to be flattened. This involves visual acuity, but

	position	also judgment of what constitutes sufficiently pressed, and therefore represents a complex decision process.
Put away clothes	Hang pants from hanger	The ironed item needs to be put away in an orderly fashion in order not to undermine the intent of ironing as a process to remove creases. The action is to pick up the pair of pants by the bottom of the legs, aligning the freshly creased seams, holding both legs in one hand and passing them through the opening of a hanger until the weight of trouser on each side of the hanger bar is approximately equal.
	Place in clothes closet	
Unplug iron	Pull plug from wall socket	Ambulate to the wall socket, bend sufficiently that an extended arm can reach and grasp the plug. Withdraw arm and pull the plug from the wall socket. Drop the plug. Wait until the iron cools. (Better to do this by time rather than touching the iron to test the temperature, typically the client multitasks undertaking some other small domestic chore)
	Wait until iron cools	
Store equipment	Coil cord.	These activities are effectively the opposite of those required to assemble the equipment.
	Replace iron in closet.	
	Collapse ironing board	
	Return ironing board to closet	

Processing Skills

Although the activity is a basic IADL, it requires significant processing to be performed well. Due to both the need to reach the desired standard and to handle the potential hazard that a hot iron poses, the task has strong demands on attention. Although there is flexibility in the sequence, there is an additional demand to perform a coordinated set of actions, such as ironing the front and back of each trouser leg. The action has all manner of potential problems and error conditions: while not very skilled one may easily iron in an incorrect crease; in extreme one may burn oneself by touching the iron or the ironing board may unexpectedly collapse (due to inadequate set up). The most crucial aspects of memory involved may be in remembering to unplug the iron when finished. Within the activity itself there are multiple short-term memory needs such as: remembering the location of the electric cord; remembering that the iron is hot; remembering to replace the iron on the heat-proof stand. What exactly constitutes a well ironed pair of pants is also quite variable, and so requires both judgment and assessment.

Communication and Environmental Interaction Skills

Apart from interacting with the equipment and space described above, there is no communication or environmental skill required. Ironing is essentially a solitary non-social activity.

Grading the Activities

One of the best ways to make this activity easier is to leave the iron out and assembled. It can also be adjusted to a height whereby the client can iron sitting down. It would also be helpful to discuss with client longer-term goals. Perhaps acquiring more low-iron clothing, which may be touched up with an iron if the client feels it is required.

Since there are many steps in this activity, by using backward chaining, the client can work from touching up low-iron clothing items, to full ironing at a seated level, to standing, to actually taking out the ironing board.

Reference

American Occupational Therapy Association. (2008) Occupational therapy practice framework: Domain and process (2nd ed.). *American Journal of Occupational Therapy*, 62. 625-683.