

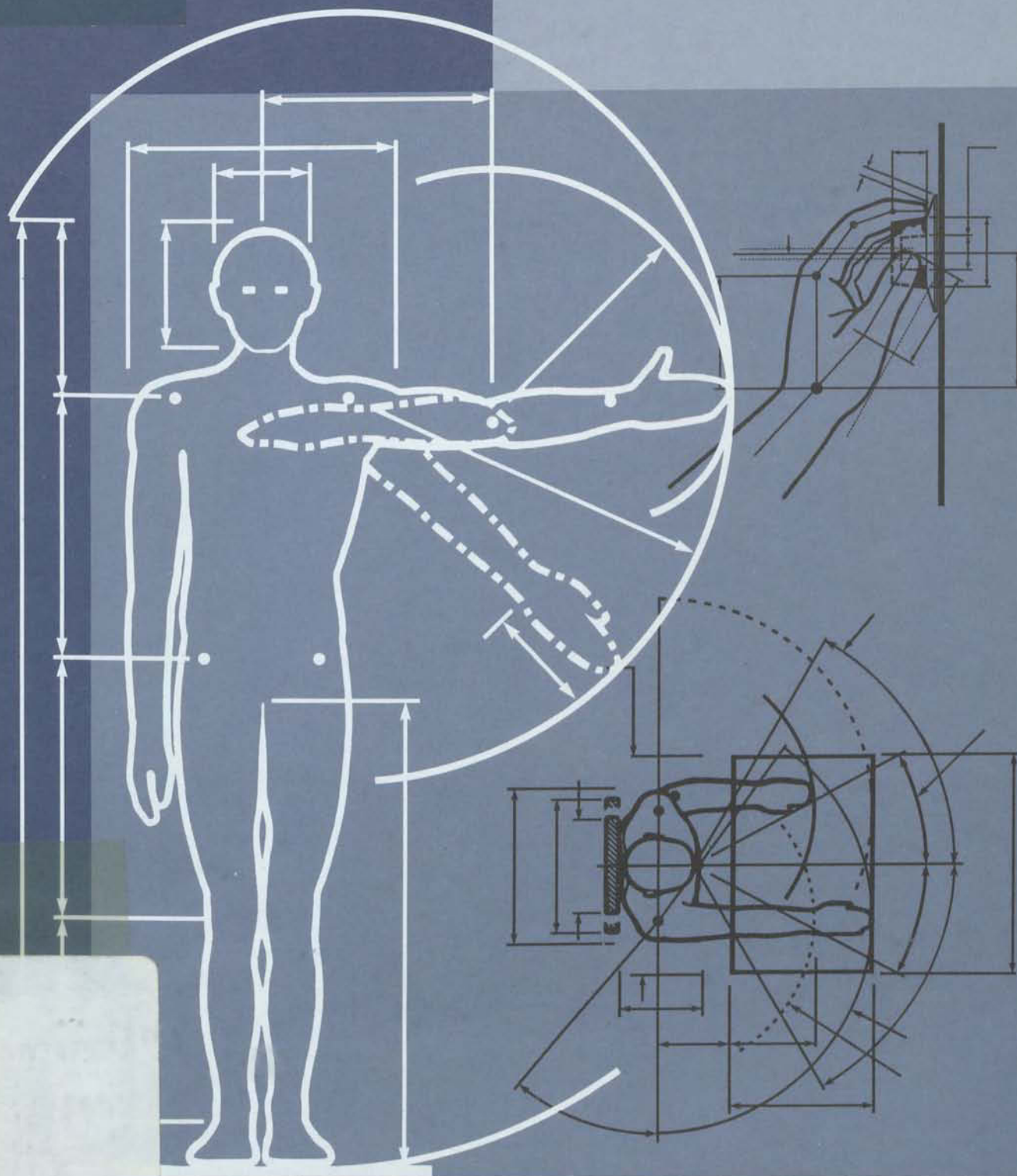
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Consommation et
Affaires commerciales
Canada

Product Safety and Our Aging Society

Design Considerations for
Manufacturers and Designers



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Consumer and Corporate Affairs
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*Canadian Manufacturers of Chemical Specialties
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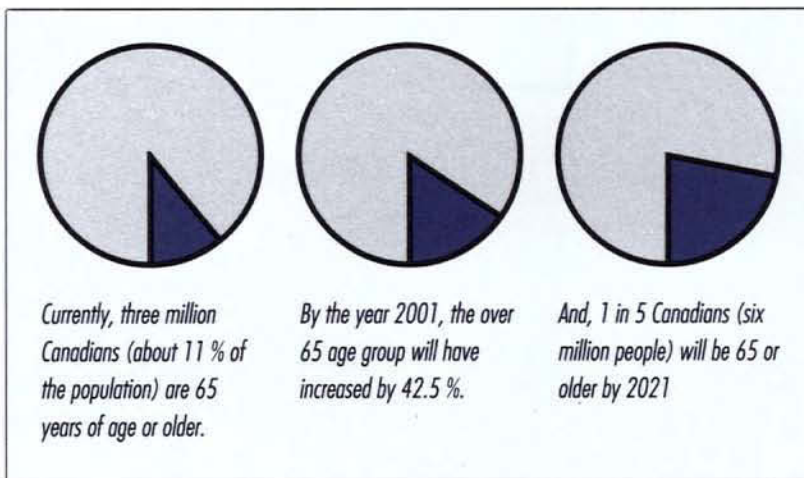
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Canadian Society Is Rapidly Changing

As the baby boomers continue to dominate the demographic landscape, one conclusion is inescapable: our population is aging. For the first time in our history there will be more seniors than youth.

Currently, three million Canadians (about 11 percent of the population) are 65 years of age or older. By the year 2001, the over 65 age group will have increased

by 42.5 percent. And, one in five Canadians (six million people) will be 65 or older by 2021.



Canada's aging population will have a lot of clout at the cash register. Canadians 55 years of age and older are very discriminating purchasers. They are the most affluent, active and influential demographic group. As well, this group tends to be very

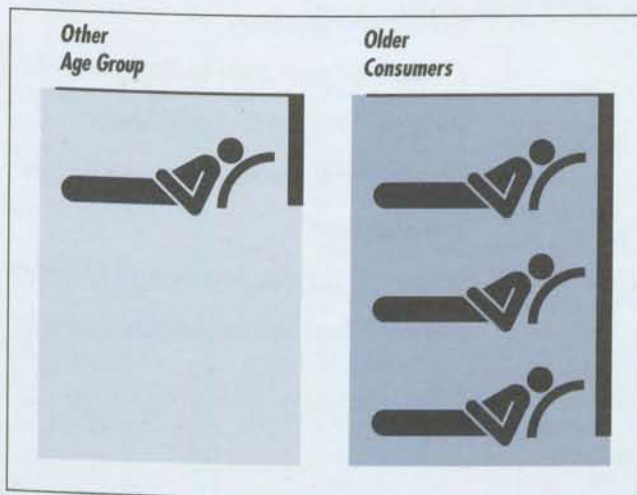
loyal to brands and to manufacturers and will often be repeat purchasers.

Changing Demographics of Canadians 65 years of age or older

Severe injuries and fatalities involving the use of consumer products occur at a higher rate among the over 65 segment than within any other group in our society. Currently, the rate of accidental death and injury leading to hospitalization is about three times higher for older consumers than for other age groups. In 1988, over 3,000 fatalities and 67,300 injuries requiring hospitalization occurred in Canada (Statistics Canada, Morbidity and Mortality Data, 1988) among people 65 years and older.

The cost of injuries to people, to our medical plan and to industry and society at large is staggering: in 1985 the total cost of injuries amounted to 1.9 billion dollars in direct and indirect costs for senior citizens alone. These costs are expected to increase as our population continues to age.

The natural process of aging includes changes in characteristics and abilities.



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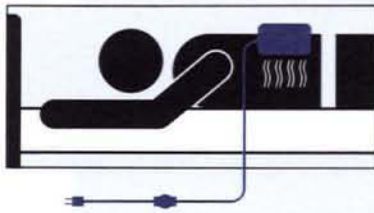
Furthermore, we all change at different rates and in different ways. The challenge facing designers and manufacturers is to develop products that help people compensate as gracefully as possible for changes in abilities. In turn, the benefits to our society as a whole are significant. Products that allow older people to live at home clearly provide a better quality of life, psychological health and independence. Improved product designs which allow more seniors to live at home will also reduce the burden on the health care

system to provide care for our older citizens.

Furthermore, redesigned products will be more convenient and easier for everyone to use. And, this may result in increased product share.

The following pages provide a few suggestions for product redesign to help designers and manufacturers provide useful and user-friendly products which our entire society will appreciate and benefit from.

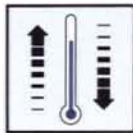
Electric Heating Pads



Injuries

Third degree burns can be caused by heating pads left on legs, arms or backs too long at a very high temperature. Often the heating pads are used in conjunction with pain reducing drugs. This combination can lead to drowsiness and insensitivity to excess heat.

Age-Related Characteristics



Aging reduces our sensitivity to temperature changes.

Design Opportunities

- ◆ *A built-in heat sensor could eliminate many of these burns.*
- ◆ *Heat sensitive controls could automatically turn off the heating pad at a certain temperature.*
- ◆ *A warning device could be incorporated to ring or buzz when a specified temperature is reached or after a certain length of time.*
- ◆ *Sensors at the skin interface could detect excessive heat and automatically turn it off.*

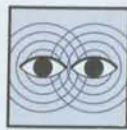
Step Stools



Injuries

Most step stool injuries are caused when people lose their balance and fall.

Age-Related Characteristics



Older adults are more likely to have vision and depth perception problems, making it difficult for them to judge where to put their feet when climbing up or down a step stool. And, poor depth perception can make it hard to judge distances when reaching for something in a high place.



A general decline in equilibrium may make it more difficult to maintain and recover balance on the stool.

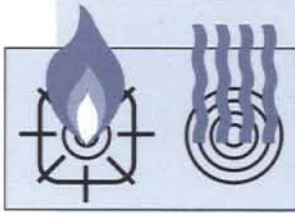


General limitations in movement may make climbing up and down the stool more difficult.

Design Opportunities

- ◆ *Stools with wider bases can help increase overall stability.*
- ◆ *Wider steps can help make climbing up and down easier.*
- ◆ *A support railing will make people feel more secure while using the stool. The railing could extend past the steps and encircle the top of the step stool.*
- ◆ *A step stool system could be included in the design of a kitchen.*
- ◆ *A step system in the same colour as the cabinets could wheel directly into the kitchen system as a module. The base of the step system could provide storage space.*
- ◆ *A contrasting slip-resistant strip at the edge of each step would make it easier to distinguish one step from another.*

Ovens and Stoves



Injuries

Clothing can easily ignite when someone reaches for controls behind the burners.

Cooking food forgotten on the stove can catch fire. By the time it is discovered, people can be overcome by smoke.

Gas can escape through a leaky gas connector or partially open burner. If the odor goes unnoticed or disregarded and someone attempts to light the pilot light, there can be an explosion.

People can be asphyxiated by inhaling gas. The odor of gas can go unnoticed.

People can fall over an open oven door while preparing food.

Age-Related Characteristics



Our sense of smell is less acute after the age of 60.



Because many seniors use sleeping pills, drowsiness can result in an accident.



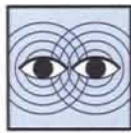
Our motor skill slow down as we age making responses slower and less accurate.



Arthritis and other debilitating health problems make it very difficult for older people to reach burner controls at the back of stoves.



Cognitive reasoning can be more difficult for older people and changes in memory function can lead to injury.



As people age their vision becomes less acute and it may be more difficult to read numbers on dials.

Design Opportunities

- ◆ *Back burners can be elevated to reduce the risk of contact with the front burners.*
- ◆ *Controls should be easy to identify with large labels clearly marked Front Right, Front Left, Back Right, and Back Left.*
- ◆ *A non-glare glass stove top surface is preferable.*
- ◆ *An automatic shutoff on burners will reduce the risk of fire.*
- ◆ *Thermal induction stovetops or flush-counter stovetops are less likely to burn or ignite clothing.*
- ◆ *A range or hood attached gas detector could sound an alarm to warn of a gas leak.*
- ◆ *An "oven-on" warning light could alert people to an open and hot oven door.*
- ◆ *Raising the height of ovens will keep the door in view and make it easier to get food in and out of the oven.*

Hot Water Faucets



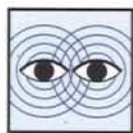
Injuries

Many people instinctively grab the water taps or faucet to stop a fall in the tub or shower. When the hot water tap or faucet is grabbed it can be turned up, resulting in scalds and burns.

Sometimes people mistake the hot water faucet for the cold water faucet and vice versa.

Sudden water pressure changes can cause scalds.

Age-Related Characteristics



Older people may have more difficulty seeing the shower or tub controls because of poor eyesight.



Poor balance can increase the likelihood of this type of bathroom accident.

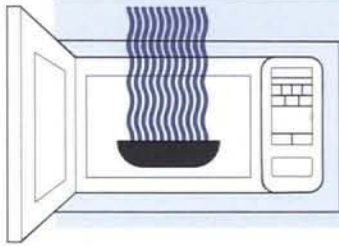


Slower reaction time and decreased flexibility can make getting out of the tub or shower more difficult which can make scalds or burns more likely.

Design Opportunities

- ◆ *Large, clear labels help to distinguish between the hot and cold controls.*
- ◆ *Controls should be easy to grip and turn.*
- ◆ *Standardizing the location and layout for controls as well as the direction of operation can help to eliminate confusion about which tap is for hot water and which is for cold water.*
- ◆ *Shower should have hot water safety stops which can be set by the person showering to control the water temperature.*
- ◆ *Grab bars for the tub and shower near the taps would provide a secure place to hold on to and would discourage people from grabbing at the controls when slipping.*

Microwave Ovens



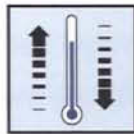
Injuries

Scalds or serious burns can occur because of the unique cooking features of microwave ovens. These hazards are often not recognized because the operating instructions and safety procedures are not clearly written.

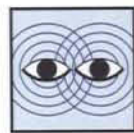
Design Opportunities

- ◆ *For easy use, controls and displays should be large, clearly labelled and well-lit.*
- ◆ *Instruction manuals should feature large print and be written in plain language.*

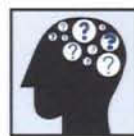
Age-Related Characteristics



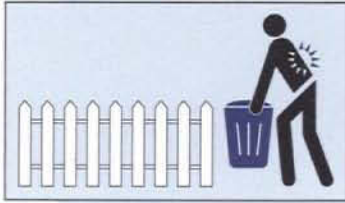
Slower reaction time and less sensitivity to heat can result in severe burns.



Reduced vision and increased sensitivity to glare may make it more difficult to read microwave controls, especially if they have digital displays.



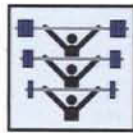
The rate of functional illiteracy among older Canadians is 45 percent. Difficulty in reading and understanding microwave instructions can increase the risk of burn injuries.



Injuries

Lifting and carrying laundry baskets or waste containers often involves altered posture, blocked vision or a shift in the centre of gravity, any of which can cause strains, sprains, or falls.

Age-Related Characteristics



A general decline in strength may make it more difficult to lift and hold waste containers and laundry baskets.

Design Opportunities

- ◆ *The type and location of grips could be altered so that fine grasping is not required and so that the weight could be supported by the arms — not the hands.*
- ◆ *the shape of the waste container or basket can be designed so that carrying it does not shift the centre of gravity forward. Weight could be distributed closer to the body on the sides.*
- ◆ *Lightweight material can be used to manufacture waste containers and laundry baskets.*
- ◆ *Wheels, such as those used on suitcases, can be used on laundry baskets and waste containers.*

As our economy moves to a more global focus, the opportunities to market Canadian products throughout the world will expand. As the market grows, so does the need for innovation in product design and manufacturing. There is a need, as well, to create products that will appeal to a wide demographic group — the concepts that work for older people may be strongly appealing to all members of society. This will undoubtedly lead to increased consumer product satisfaction.

To take advantage of these changes in the marketplace, designers and manufacturers need a competitive edge. And, consumers need to know about these important changes and improvements. One clear way to gain consumer confidence is to include seniors in the testing and marketing of new products. Besides providing better products, there is enormous potential for increasing public awareness about older peoples' needs and from that comes the opportunity to generate a tremendous amount of goodwill. And that's good for all of us !

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