



TABLE OF CONTENTS

Introduction

Ease of Use Products & Packaging	4
Intuitive Design Applied Research Institute & Dr. Fain	5
Partnership	6
High-Level Considerations: Issues & Recommendations	7

SELECTED COMPONENTS of Sealed Trays & Cards

Overview	8
Blister Packs	9
Clamshells	20
Sealed Trays & Tubs	32
Cards & Ties	39

Index

Contributors	46
Copyright & Trademark Notice	46
Disclaimers	47
Photo Attributes	48
References & Suggested Readings	49

INTRODUCTION

In the United States, arthritis is the #1 cause of disability, affecting nearly 60 million adults and hundreds of thousands of children. This complex disease can cause chronic, debilitating pain — and make daily activities difficult to do — while also impacting physical and social wellness and mental health. People of all ages, races and sexes live with arthritis.

Arthritis symptoms include pain, stiffness, swelling and diminished range of motion in joints. Symptoms vary, from mild to severe, and may come and go, getting progressively worse over time. Arthritis can also cause permanent joint damage, often leading to immobility. In addition, arthritis can affect the heart, lungs, kidneys, eyes, skin and other organs.

For almost eight decades, the Arthritis Foundation has led the way in supporting people with arthritis and their caregivers. As the largest nonprofit organization focused on arthritis and related conditions, we’ve played a key role in the development of groundbreaking arthritis treatments — and have successfully advocated for policies and laws that make health care more accessible and affordable for arthritis patients.

We also create life-changing resources that help patients take control of their disease. And we nurture a vibrant, caring community where they can connect with others and know they’re not alone.



Adobe Stock | #171183868 | Extended License

EASE OF USE PRODUCTS AND PACKAGING

The Arthritis Foundation’s Ease of Use Certification program recognizes products and packaging that have been tested, approved and certified as easy to use for people who live with arthritis and chronic pain.

Consumer products and packaging are often not designed to meet the needs of those challenged by arthritis and chronic pain. When easy-to-use designs are implemented, products and packages are made easier to use for the arthritis community, which means they are easier to use by everyone.

Each product and package considered for Ease of Use is first independently tested by the Intuitive Design Applied Research Institute (IDARI). Upon receiving a favorable review, they are then eligible to license the Ease of Use Certified seal, which may be incorporated in all marketing initiatives as a shelf differentiator, in both retail and e-commerce, as well as become part of the Arthritis Foundation’s Ease of Use annual marketing strategy.



Did You Know?
72% of consumers said they would switch brands if a product/package was certified as Ease of Use Certified. - Nielsen Ease of Use Survey 2016

Both the consumer and corporate sectors are gaining great value in updated designs of products and packages that are easy to use. Carrying the seal, brands like Pilot® Pen, Nexium, Advil®, Duracell®, IMAK®, SafeStep and others are seeing sales that outpace their competition. Many brands use the seal in presentations and buyer meetings, along with marketing in print, digital and television.

People living with arthritis and chronic pain also make shopping decisions when they see the item has been certified as easy to use. Easier to use designs are easier for everyone, whether living with chronic pain or not, and often become a shelf differentiator.

“I trust all products that are labeled Ease of Use. My absolute favorite that I use the most is the Advil® Easy Open Arthritis Cap. I’ve had arthritis for almost 20 years, and I’ve always struggled to open a medicine bottle cap. Advil made it so much easier. My second favorite is the Ezy Dose® Pill Organizer. This helps me organize my meds and have easier access to them, despite any pain I may have in my hands. I’m grateful for the partnerships the Arthritis Foundation has made to create products that make life easier with arthritis.”

–Ashley Nicole, autoimmune health coach and master trainer, diagnosed with rheumatoid arthritis at age 27

Intuitive Design Applied Research Institute

The Intuitive Design Applied Research Institute (IDARI), assists in identifying user needs and scientifically evaluating consumer product and packaging solutions. IDARI offers many research and evaluation services, specializing in objectively measuring human performance that delivers key insights. This, in turn, drives innovation — especially for the needs, aspirations and latent demands of consumers dealing with arthritis, chronic pain and other functional limitations.

IDARI serves as the official consumer product Ease of Use test lab for the Arthritis Foundation. A favorable evaluation by IDARI qualifies the manufacturer for inclusion in the Arthritis Foundation’s Ease of Use Certification program.

Dr. Brad Fain, IDARI founder and Georgia Tech Regents’ Researcher, has more than three decades of experience researching human factors engineering and design. From Ease of Use evaluation and universal design studies to ethnographic research and consumer product design, Dr. Fain founded IDARI to conduct usability and accessibility testing for the Arthritis Foundation and other entities across the globe. At Georgia Tech, his research has spanned projects for the U.S. Department of Defense to manufacturers of critical health systems. He established the Accessibility Evaluation Facility at Georgia Tech, which performs objective accessibility evaluations of workplace information technology for both industry and government customers. Learn more about Dr. Fain and his research at idarinstitute.com.



Dr. Brad Fain



Adobe Stock | #421259374 | Extended License

PARTNERSHIP

The Arthritis Foundation is the largest nonprofit organization dedicated to the prevention, control and cure of America’s No. 1 cause of disability. The Arthritis Foundation champions the fight to conquer arthritis through life-changing science, resources, advocacy and community connections. Taking diversity, equity and inclusion very seriously, the Arthritis Foundation strives to empower all people with arthritis to live a better lifestyle and remove barriers that limit quality of life. As the leading expert in Ease of Use design certification, the Arthritis Foundation helps generate more than \$100 million in annual sales of products and packages carrying the Ease of Use seal.

Target is one of America’s leading retailers and an iconic brand with a single purpose: to help all families discover the joy of everyday life. Diversity, equity and inclusion are part of Target’s core values, shaping culture and driving business. At the heart of this endeavor is the Owned Brand Product Design & Packaging organization. This team designs and engineers products and packaging for an industry-leading portfolio of over 45 Target-owned brands. Inclusive design and accessibility improvements have been long-term goals of this team. Target collaborates with external partners to advance their owned brands portfolio with exclusive designs only found at Target.

This collaborative partnership is driving innovation on product and package designs. The mutual goal is to provide products and packages that are easier to use for people living with arthritis and chronic pain, plus other consumers who are also looking for easy-to-use items. Together, we want to help all families discover the joy of everyday life, driving innovation that leads to life-changing satisfaction.

This Ease of Use Design Guide provides the first guidelines developed in the United States, offering resources for engineers and designers in the requirements definition and design development stage. Our collaboration is leading the way in design accessibility.

This innovative partnership of the Arthritis Foundation, Target and IDARI has been a collaborative effort of industry experts in the Ease of Use design space — with Target funding the research and contributing to the illustrations, photographs and graphic design of these guidelines.



© 2024. Certain packaging configurations and the following trademarks are owned by Target Brands, Inc.: BULLSEYE Trademark of Target Brands, Inc.

HIGH-LEVEL CONSIDERATIONS: ISSUES AND RECOMMENDATIONS

Common Issues and High-Level Recommendations

Packaged items are too heavy. People with arthritis can have difficulty holding and transporting heavy items. Items over 5.0 pounds can be difficult to carry with one hand. If items exceed 5.0 pounds, consider adding design elements to facilitate a two-handed hold. Items over 10.0 pounds can be difficult to carry regardless of handle placement.

The linear force required is too high. People with arthritis can experience pain when asked to apply a linear force to a design element. Consider requiring less than 3.0 pounds of linear force for design elements meant to be operated with a single finger or designed to be pinched between two fingers. Consider requiring less than 5.0 pounds of force for design elements that are to be operated by multiple fingers or a palm press.

The rotational force requirement is too high. People with arthritis may have difficulty rotating design elements, such as twist off closures. The amount of force a user can apply to a rotating design element will depend on multiple factors, such as the diameter, height, coefficient of friction and the knurling pattern of the element. Small-diameter and large-diameter rotating design elements can be particularly difficult to operate. Avoid design element shapes or knurling patterns that directly apply pressure to finger joints during rotation.

Users become fatigued after prolonged usage. Users with arthritis may become fatigued when using products that must be held or actuated repeatedly over a prolonged period. When designing the product for extended use, reduce the number of individual actions required and minimize the amount of effort required for each action.

Use of the product causes joints to be placed in an uncomfortable position or posture. Some products require users to articulate their joints in an uncomfortable position. Whenever possible, design the product to maintain a neutral position of the wrist joint. Do not require users to extend their arms above shoulder height.

Use of the product causes painful pressure across finger joints. Ridges, bumps and other small-radius protrusions along the graspable area of the product can increase pressure along painful finger joints. Ensure that all graspable areas are designed to distribute the load across the entire grasp point so that pressure is not concentrated on individual finger joints.

Use of the product requires an excessive grip span. Some users with arthritis have increasingly diminishing grip strength once the grip span exceeds 2.5 to 3.0 inches. Design graspable items that require user strength to not require excessive grip span.

The product requires the use of a tool. Users with arthritis are more likely to injure themselves if interacting with the product requires a sharp instrument like scissors or a knife. Consider not requiring the use of a tool to open or interact with the product.

The product requires simultaneous actions. Some users with arthritis have difficulty performing two actions at the same time, such as rotating and pinching a closure. If the use of the product requires multiple actions, design the product in a way that those actions can be performed sequentially.

Sharp edges cause pain. Sharp edges can create a hazard or may be uncomfortable if users are required to apply force to the edge. Consider rolling metal edges or finishing plastic edges with a dull surface.

OVERVIEW

Sealed trays are a category of packaging that combines a flexible film component with a rigid or semi rigid tray or backer card. This is a popular form of packaging because it provides the strength and durability of a fully rigid structure with the low cost and transparency of semi-rigid film.

Cards and ties are a category of packaging consisting of a rigid card with a product directly attached to the card. The card is used to display product information, claims and graphics. Products are directly attached to the card with a tie mechanism to bind the product to the card. These ties can be metal, plastic or fiber materials.

This guide focuses on high-volume sealed trays, cards and ties used in the United States in the early 2020s. This is part of a series of guides covering rigid bottles and bases, rigid components, films and pouches, sealed trays and cards, and boxes and bags. This guide starts with a review of the high-level issues and recommendations across all packaging. Following this section, the guide discusses optimum design guidelines, common issues and recommendations for sealed trays, cards and ties.

BLISTER PACKS

Blister packs are a category of packaging used for a wide range of products, including small items like medication and durable ones like kitchen tools and knives. They consist of a plastic or metal sheet that is thermoformed or pressure formed to make a cavity or “blister” to hold the product. This sheet is attached to a rigid or semi-rigid sheet to seal the cavity. The rigid or semi-rigid sheet can be a thin layer of metal, plastic or pulp. The rigid or semi-rigid sheet will often contain product information and graphics. A punch or hole can be added to the sealing sheet for vertical hanging, or the blister pack can be contained in a box. The plastic sheet can be attached to the rigid sheet with an adhesive, mechanical feature, heat weld or ultrasonic weld. Foil blister packs are commonly packaged inside a box or pouch.

Examples of Blister Packs



TRAP BLISTER PACKS

Trap blister packs are a sub-segment of blister packs. With this format, the blister is “trapped” with a card that folds over the thermoformed sheet, sealing it on both sides. Typically, the card is a paperboard of pulp material suitable for printing. This format provides additional space for marketing the product and completely encloses the product. This is commonly used for high-theft items, such as electronics, or dangerous items like a knife blade.

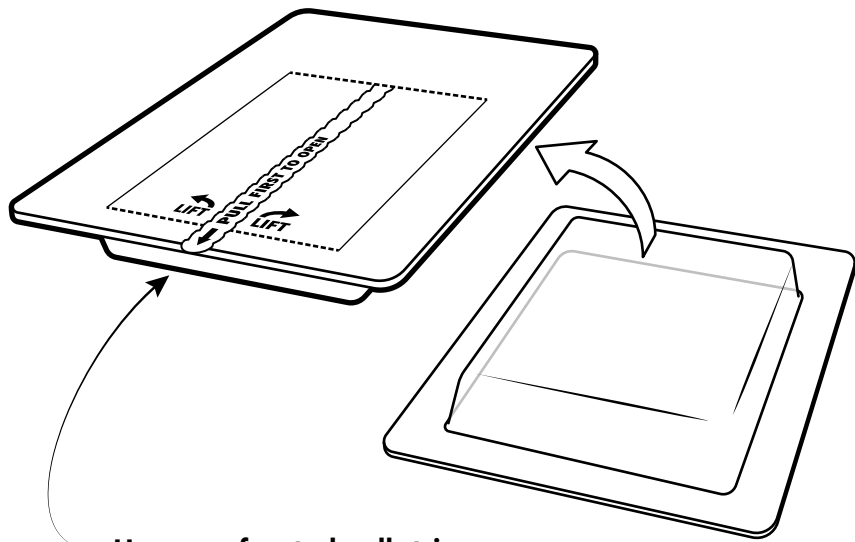
Examples of Trap Blister Packs



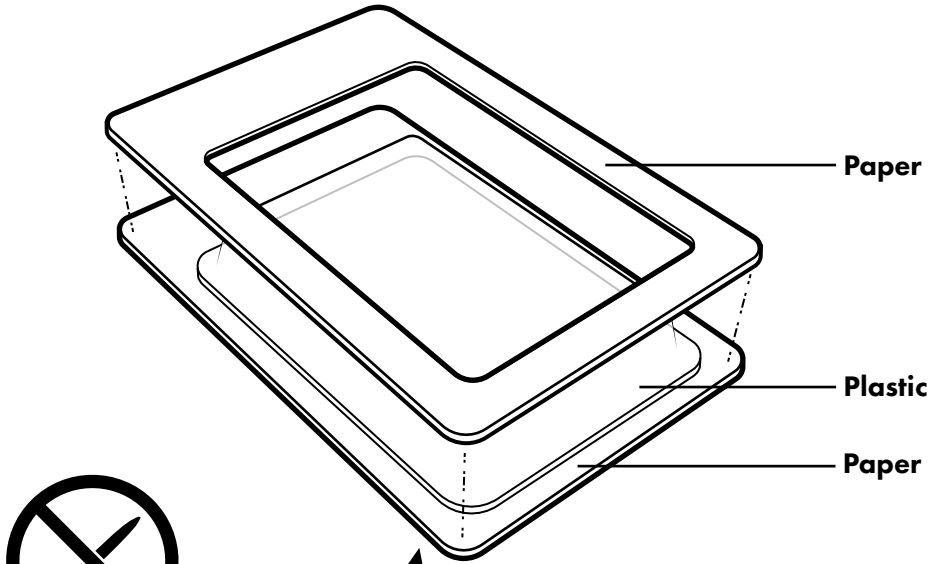
Optimum Blister Pack Design Guidelines

Recommendation Highlights

- **Provide a clear indication of how to open the packaging**
- **Ensure critical instructions are readable after opening the packaging**
- **Do not require the use of a tool**
 - Use a trap blister pack style
 - Use a perforated pull strip with a sufficiently sized pull tab or grasp point
 - Use a bend and break feature
- **Avoid sharp edges**
- **Do not require excessive force**



Use a perforated pull strip with clear instructions that are readable after opening

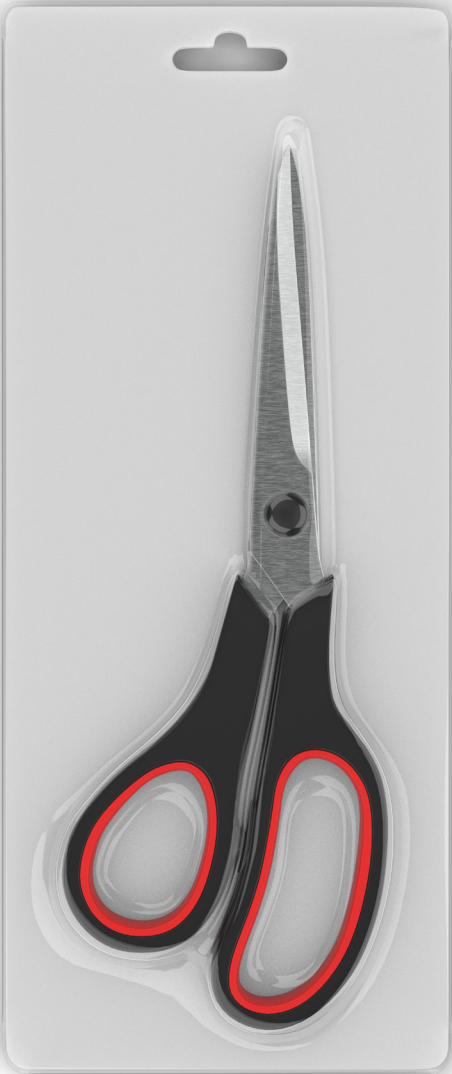


Do not require the use of a tool

Use a trap blister pack style

BLISTER PACK ISSUES

Blister packs that require the use of a tool to open the pack are particularly difficult to open and should be avoided if possible. Heat-sealed blister packs must be cut open if built-in opening features, such as a perforated pull strip, are not used. Use of a tool, such as a knife or scissors, by someone with limited grip, strength and fine motor control could result in an injury. Often users are unclear as to how the blister pack should be opened. Half-shell blister packs, where the open blister pack is sealed on the back side by a foil or card seal, can be easier to open if the force required to separate the blister shell from the backing is low or if it is easily penetrated. Trap blister packs can also be easier to open if the blister shell is easy to separate from the enclosing card.



1. The blister pack is not easily opened.

- 1.1. The blister pack requires the use of a tool.
- 1.2. The method of opening the blister pack is not clear.
- 1.3. The force required to open the blister pack is too high.
- 1.4. Once opened, the blister pack is difficult to pull apart to remove the product.
- 1.5. The force required to push the product through a seal is too high.

2. The product is difficult to remove from the blister pack.

- 2.1. The blister pack fails to secure remaining products.
- 2.2. Critical instructions are discarded, damaged or obscured after opening.
- 2.3. The opened blister pack has sharp edges.

1.1 The blister pack requires the use of a tool.

Detailed Description: Some blister packs do not have an obvious method of opening the packaging and removing the contents. Users are expected to tear the packaging or cut the packaging using a tool without the benefit of affordances or instructions. Users may fail to recognize how to open the packaging or may select suboptimal opening procedures. Users may use a tool in an unsafe manner or may be injured while opening the packaging.

Populations Impacted: Limited strength, limited grip, limited range of motion, limited fine motor control

Potential Solutions: *Do not require the use of a tool.* Blister packs that require puncturing or cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the blister pack. If appropriate, provide a perforated feature with a pull tab, allowing consumers to access the packaging safely.

Provide instructions for properly using any tools required to open the packaging. Tools should not be required to open blister packs. If a tool is required, provide detailed instructions on how to open the packaging with a tool to minimize potential injury. The instructions should highlight the risk of using a sharp tool to open the packaging and demonstrate safe tool handling procedures.

Provide any necessary tools required to open the packaging directly on the packaging or attached to the packaging. If a tool is required to open the blister pack, consider providing a safe tool directly on the packaging to facilitate opening the packaging. For example, the packaging could provide an instrument to puncture and cut the blister pack without exposing the consumer to the cutting surface of the tool.

Avoid using a fully-sealed blister pack. Avoid using heat, glue or other methods of completely sealing the seams of a blister pack. Fully sealed blister packs can be exceedingly difficult to open safely. If seams are sealed, provide adequate grasp points and minimize the amount of force required to separate the two sealed packaging components.

Consider using a trap blister pack as an alternative to a fully sealed blister pack. With this format, the blister is “trapped” with a card that folds over the thermoformed sheet, sealing it on both sides. Typically, the card is a paperboard of pulp material suitable for printing. Consumers may find it easier to tear or rip the paper portion of the packaging as opposed to using a tool to cut into the plastic portion of the packaging. Perforated paper pull tabs can be used to increase the ease of opening of the packaging.

Consider using a perforated pull tab to open the blister pack. Providing a pull tab attached to a perforated strip can provide a means of accessing the blister pack without the use of a tool. The pull tab should be sufficiently sized to support a key pinch grip and should require no more than 3.0 pounds of force to fully open the blister pack.

Consider adding a bend and break feature to the blister pack packaging. Some packages feature one of more flat surfaces that can be bent around a perforated seal. Bending away the seal causes the bent component of the packaging to break away allowing, access to the package contents.

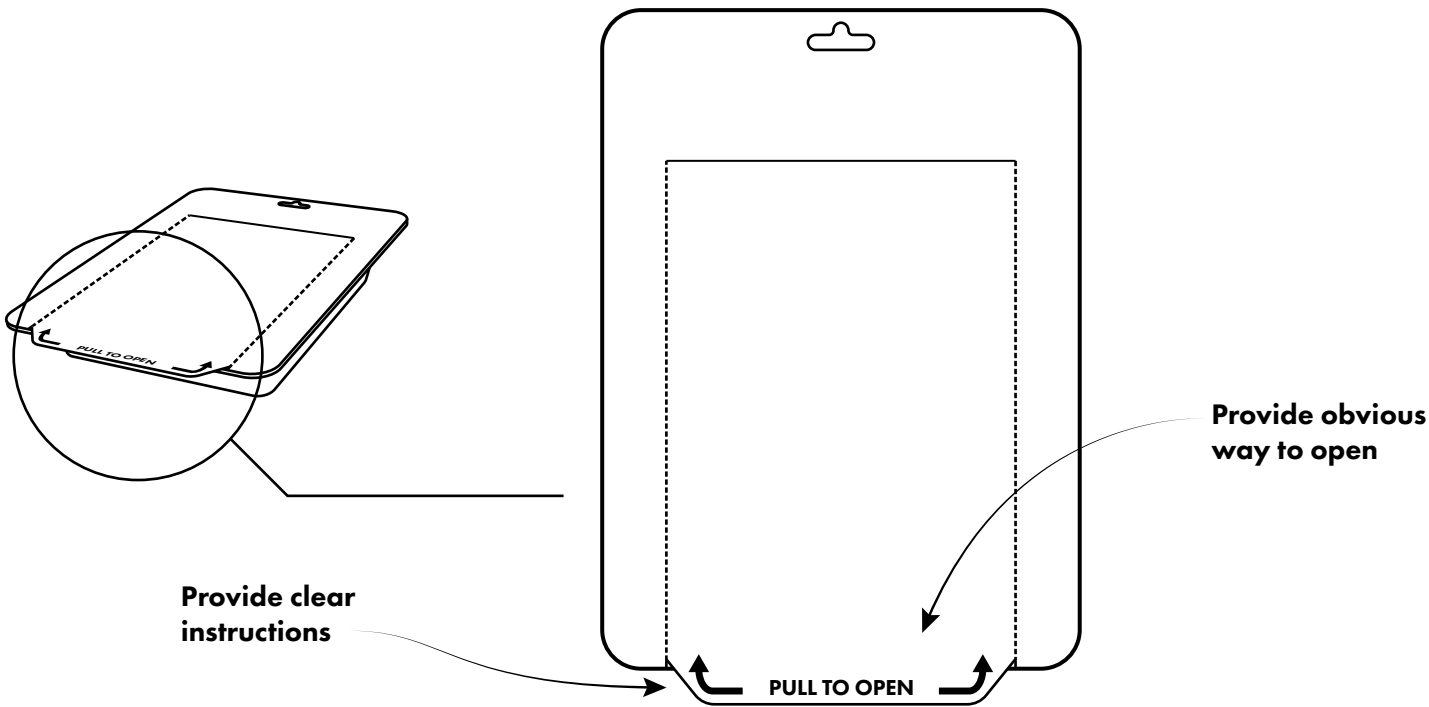
1.2 The method of opening the blister pack is not clear.

Detailed Description: Packaging labels that do not provide clear instructions for opening can lead to unsafe improvisation when the method of opening the packaging is not immediately obvious to the consumer. Consumers are more likely to use unsafe methods of opening the packaging, such as using a knife or scissors, when clear instructions are not provided.

Populations Impacted: Limited strength

Potential Solutions: *Provide detailed directions for the safe opening of the blister pack.* Instructions for the safe opening of the blister pack should be provided on the packaging in a high-contrast, easy-to-read font. The instructions should indicate the point of opening, any required tool usage and safety instructions for handling the tool while opening the packaging. The consumer should be informed of risks associated with using a tool in an unsafe manner.

Provide an obvious affordance for opening the package. Providing an obvious way to open the package, such as providing a perforated strip or a hand opening to facilitate pulling the blister pack apart, can help orient consumers to the intended method of opening.

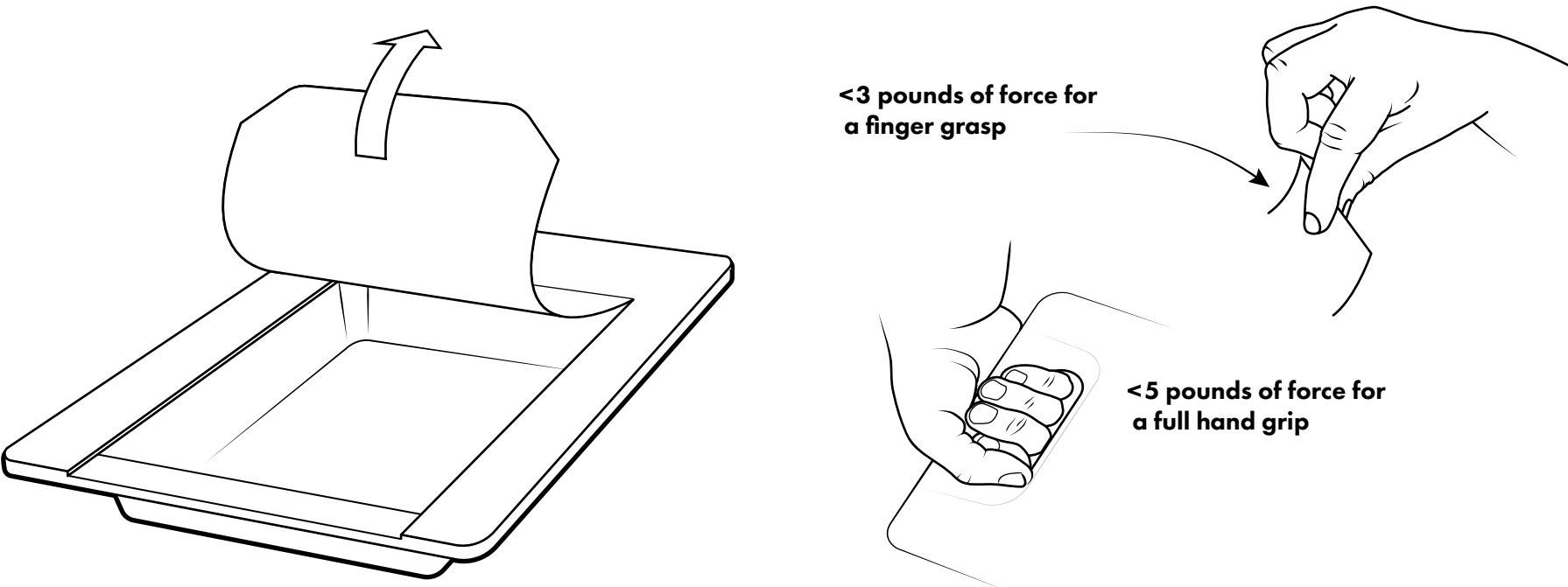


1.3 The force required to open the blister pack is too high.

Detailed Description: Blister packs may require excessive force to open. Tearing or ripping plastic can be extremely difficult. The consumer may be limited in the amount of force they can apply to the packaging by the grip method. Consumers will be able to apply less force using a finger grip, such as a key pinch grip, as opposed to a full hand grip.

Populations Impacted: Limited strength, limited grip strength

Potential Solutions: *Limit the amount of force required to open the blister pack.* Require no more than 3.0 pounds of force to open the blister pack when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to open the blister pack.



1.4 Once opened, the blister pack is difficult to pull apart to remove the product.

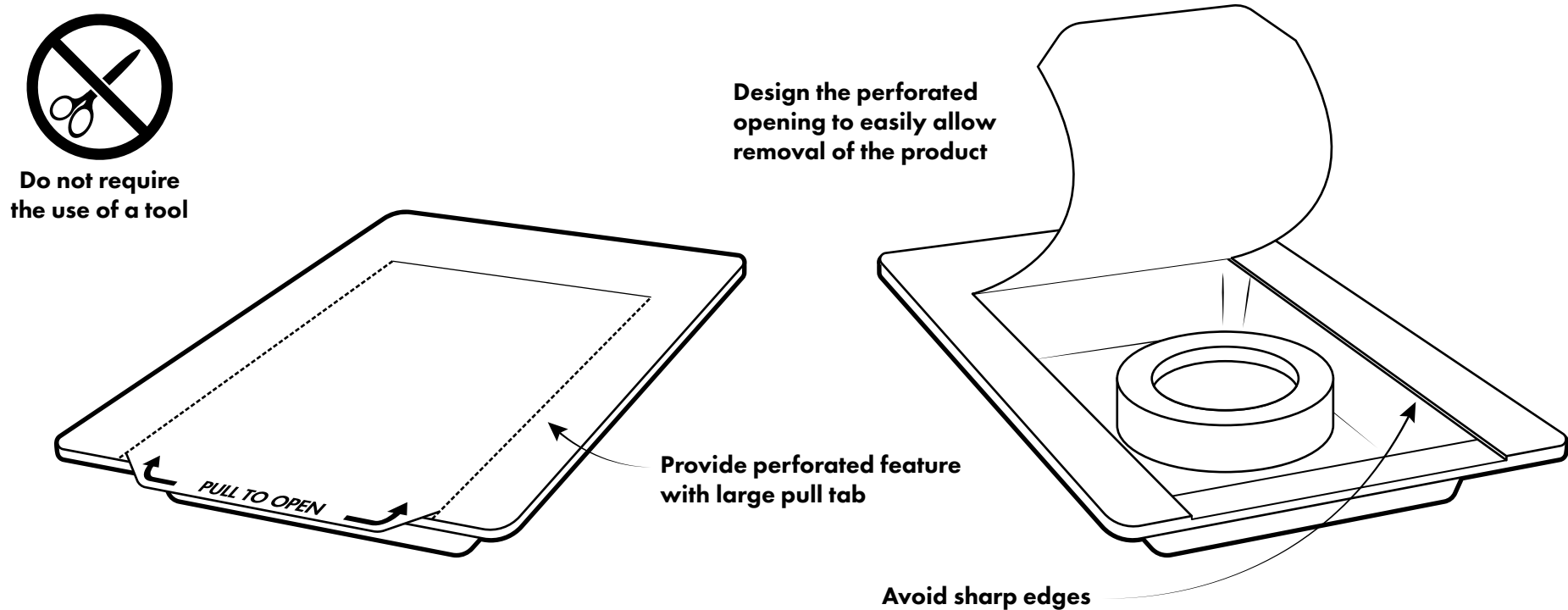
Detailed Description: Cutting the blister pack or pulling a perforated strip may not fully open the blister pack. Force may be required to pull apart the pack or to extract the product from the pack. Consumers with limited strength may not be able to apply sufficient force to access the product.

Populations Impacted: Limited strength, limited grip, limited fine motor control

Potential Solutions: Ensure the product is removable after perforated strip removal. Design the perforated strip or other opening feature so that the product is fully removable after opening. Design the perforated strip to run the entire length of the blister pack so that it separates easily after removing the strip.

Avoid sharp edges. Cutting the blister pack may create sharp edges. Reaching into the opening of the cut blister pack or attempting to manually widen the hole may cause injury. Avoid blister pack designs that create sharp edges when opened.

Do not require the use of a tool. Blister packs that require puncturing or cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the blister pack. If appropriate, provide a perforated feature with a pull tab allowing consumers to access the packaging safely.



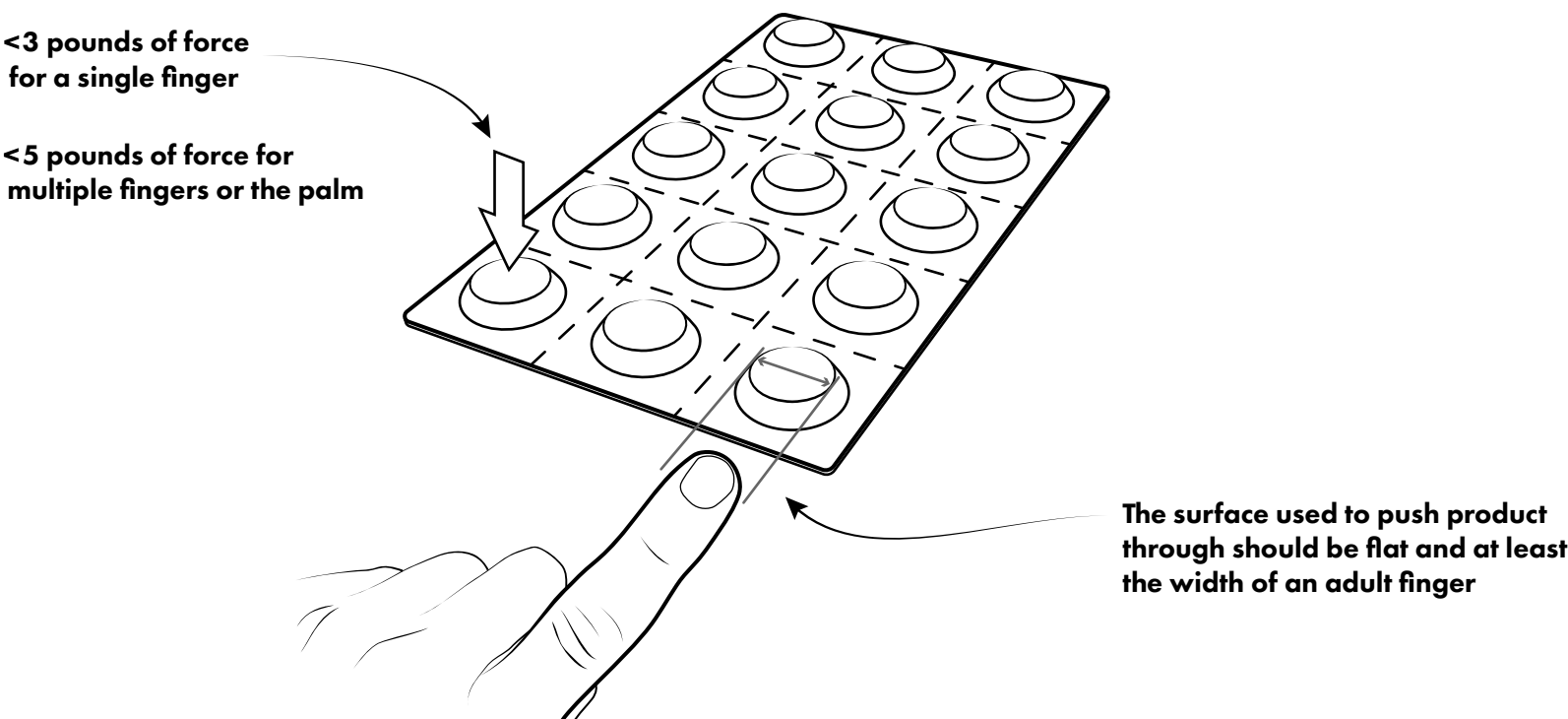
1.5 The force required to push the product through a seal is too high.

Detailed Description: Some blister packs may be opened by pushing a product through a foil, plastic or paper seal.

Populations Impacted: Limited strength, limited grip

Potential Solutions: Provide a stable surface to apply pressure to the product while breaking the seal. Products that are enclosed with a seal should provide a flat surface for applying pressure to the product to enable pushing the product through the seal. The surface should be at least the size of an adult finger pad.

Minimize the amount of force required to break the seal. The amount of force required to break the seal should be no more than 3.0 pounds when pressed with a finger and no more than 5.0 pounds when pressed with multiple fingers or the palm.



2.1 The blister pack fails to secure remaining products.

Detailed Description: Once opened, the blister pack may not adequately secure the remaining products in the pack. The packaging materials may become damaged in opening if a tool is required. Products that are designed to be consumed or used in conjunction with cooking or hygiene activities may become contaminated.

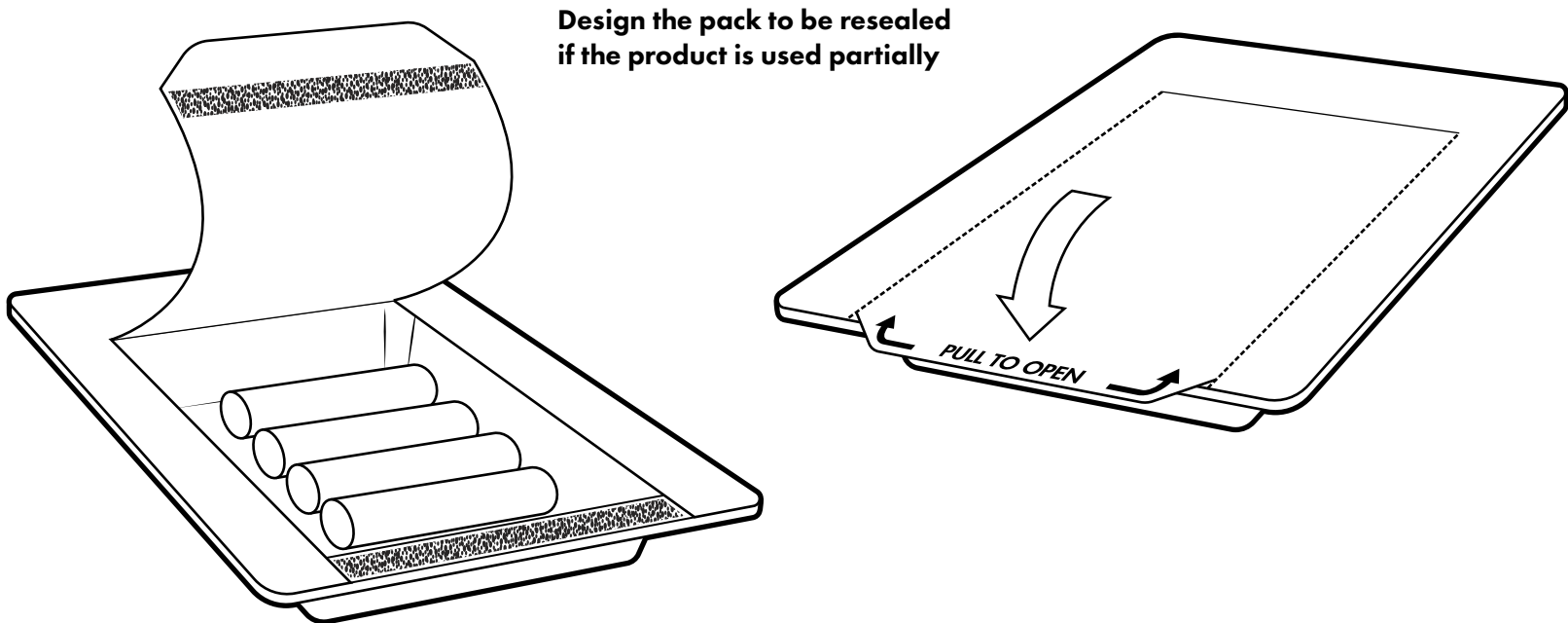
Populations Impacted: Limited fine motor control

Potential Solutions: *Design resealable blister packs.* Opening a difficult-to-open blister pack may cause damage to the packaging so that the packaging is no longer suitable for holding the product. If the product is designed to be used gradually or partially, design the blister pack in such a way that it can be resealed to protect the remaining product.

Do not require the use of a tool. Blister packs that require puncturing or cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the blister pack. If appropriate, provide a perforated feature with a pull tab allowing consumers to access the packaging safely.



Do not require the use of a tool



2.2 Critical instructions are discarded, damaged or obscured after opening.

Detailed Description: Some blister packs require the use of a tool or require the consumer to tear the packaging to access the content. Instructions or critical labels may become damaged.

Populations Impacted: Limited fine motor control

Potential Solutions: *Design the blister pack method of opening so that critical instructions are not damaged during opening.* Place critical instructions and labels away from areas that are likely to be damaged during the opening of the blister pack.

Minimize loss of critical instructions. Do not place critical instructions and labels on sections of the packaging that are likely to be quickly discarded when opening the blister pack.

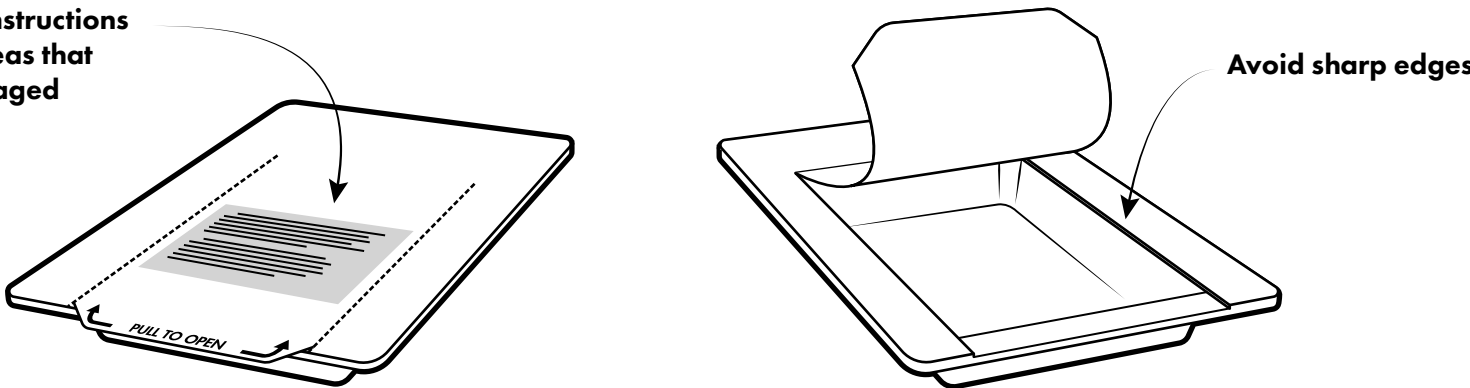
2.3 The opened blister pack has sharp edges.

Detailed Description: Sharp edges produced during manufacturing or created while attempting to open the packaging can be hazardous. Users with arthritis or users with poor fine motor control may injure themselves while trying to apply sufficient force to open the blister pack if a sharp edge is present.

Populations Impacted: Limited fine motor control

Potential Solutions: *Avoid sharp edges.* Users with arthritis should not be required to interact with products or product components that have a sharp edge. Sharp edges may be produced when the packaging is opened. Sharp edges may be produced when manufacturing the product if hard plastic edges are not eliminated. Avoid sharp edges when possible.

Place critical instructions away from areas that might be damaged



CLAMSHELLS

Clamshells are a type of packaging with a thermoformed base and top. The two components are formed with a single sheet containing a hinge to permanently fix the top to the base. The top can be secured to the base with an adhesive, mechanical feature, heat weld or ultrasonic weld.

Examples of Clamshells

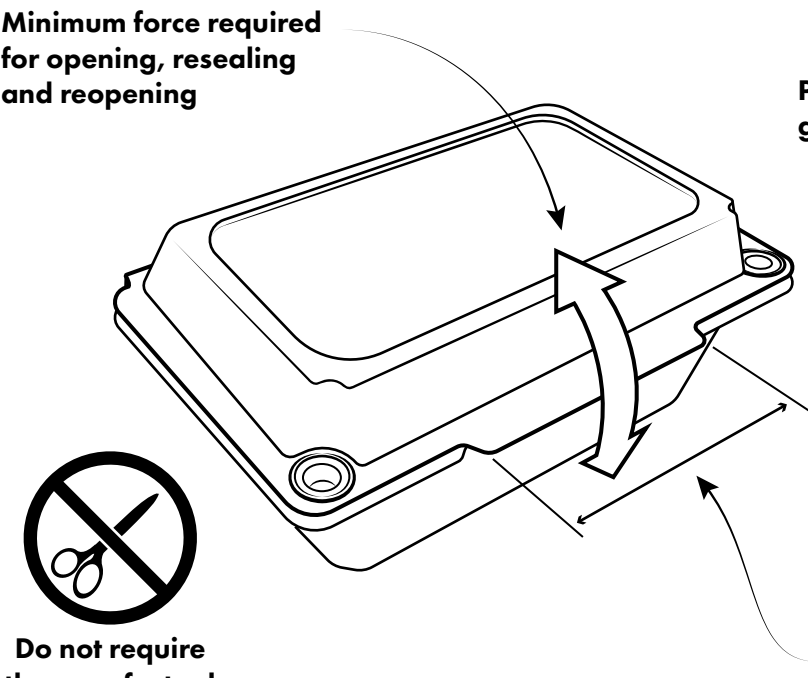


Optimum Clamshell Design Guidelines

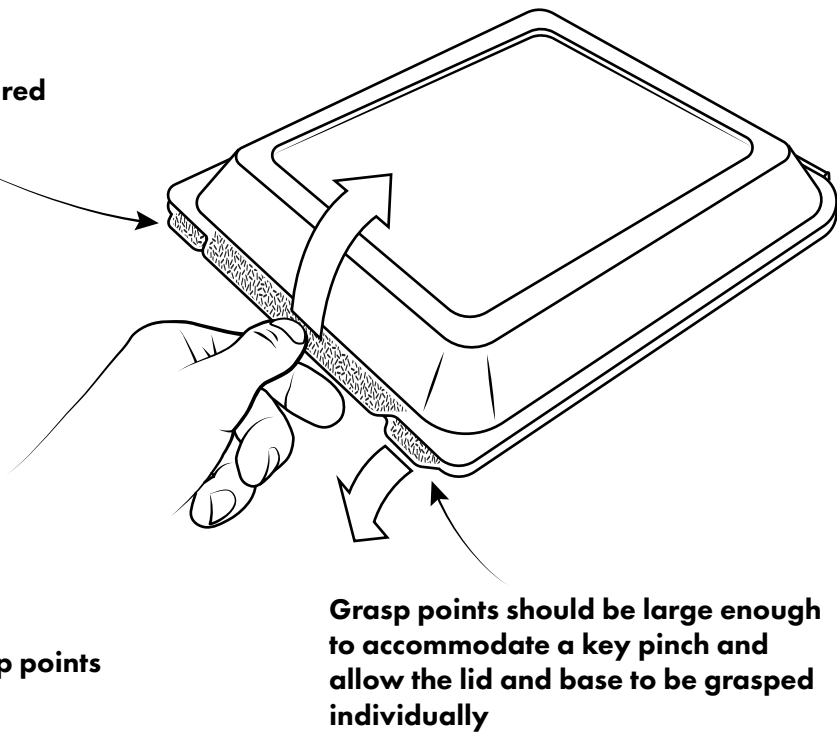
Recommendation Highlights

- **No tools required**
- **Low opening force**
- **Appropriately sized grasp points**
- **Retention features are provided**
- **Minimum force required to reseal and reopen**
- **Resealing does not require precise alignment**
- **External seals are easy to break**

Minimum force required for opening, resealing and reopening



Provide textured grasp points



CLAMSHELL ISSUES

The packaging can be extremely difficult to open if opening requires the use of a tool. Use of a tool, such as a knife or scissors, by someone with limited grip, strength and fine motor control, could result in an injury. The amount of force required to separate the top from the bottom of the clamshell may exceed the functional capabilities of some users with arthritis. Opening features, such as pull tabs, can be difficult to grasp, and the pull force may be too high.

1. The clamshell is not easily opened.

- 1.1. The clamshell requires the use of a tool.
- 1.2. The method of opening the clamshell is not clear.
- 1.3. The force required to open the clamshell is too high.
- 1.4. The clamshell lid and base grasp points are too small.
- 1.5. Opening the clamshell dislodges the products.

2. The product is difficult to reseal once opened.

- 2.1. The clamshell does not seal properly.
- 2.2. Once resealed, the clamshell is difficult to reopen.

3. The pouch is difficult to transport.

- 3.1. The clamshell packaging fails to secure remaining products.
- 3.2. Critical instructions are discarded, damaged or obscured after opening.



Adobe Stock | #547638674 | Extended License

1.1 The clamshell requires the use of a tool.

Detailed Description: Some clamshells do not have an obvious method of opening the packaging and removing the contents. Users are expected to tear a seal or cut the packaging using a tool without the benefit of affordances or instructions. Users may fail to recognize how to open the packaging or may select suboptimal opening procedures. Users may use a tool in an unsafe manner or may be injured while opening the packaging.

Populations Impacted: Limited strength, limited grip, limited range of motion, limited fine motor control

Potential Solutions: *Do not require the use of a tool.* Clamshells that require cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the clamshell. If appropriate, provide a perforated feature with a pull tab allowing consumers to access the packaging safely.

Provide instructions for properly using any tools required to open the packaging. Tools should not be required to open clamshells. If a tool is required, provide detailed instructions on how to open the packaging with a tool to minimize potential injury. The instructions should highlight the risk of using a sharp tool to open the packaging and demonstrate safe tool handling procedures.

Provide any necessary tools required to open the packaging directly on the packaging or attached to the packaging. If a tool is required to open the clamshell, consider providing a safe tool directly on the packaging to facilitate opening the packaging. For example, the packaging could provide an instrument to cut the seal without exposing the consumer to the cutting surface of the tool.

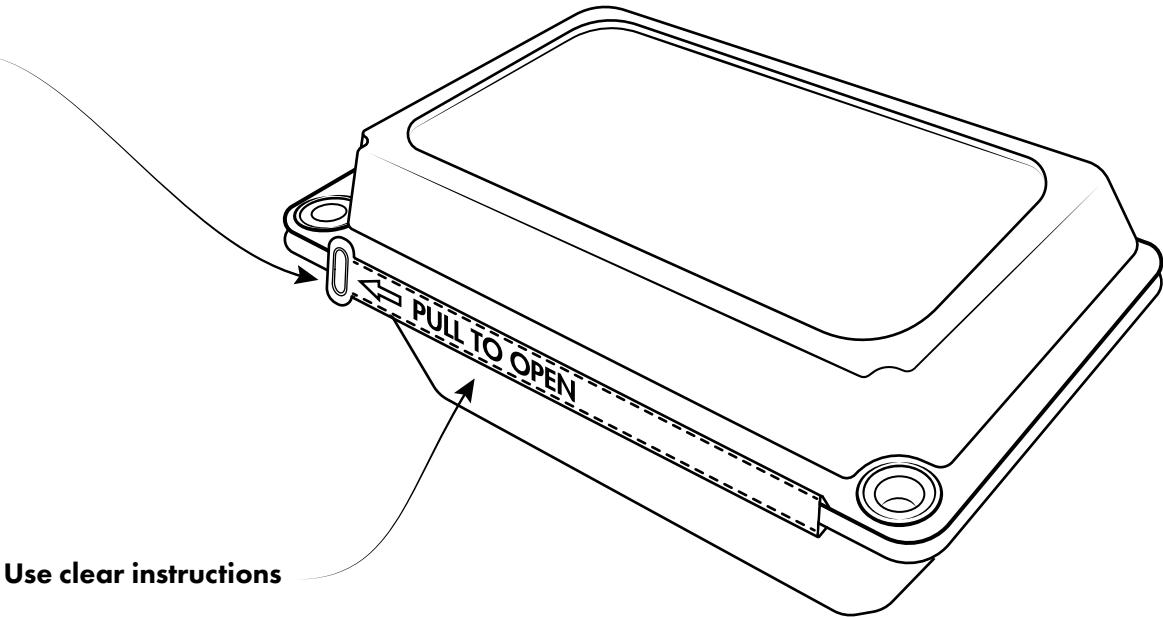
Avoid using a fully sealed clamshell. Avoid using heat, glue or other methods of completely sealing the seams of a clamshell package. Fully sealed clamshells can be exceedingly difficult to open safely. Consider using secondary packaging, such as an easy-to-remove wrap, if a complete seal is required to preserve the packaging contents.

Consider using a perforated pull tab to open the clamshell. Providing a pull tab attached to a perforated strip can provide a means of accessing the clamshell without the use of a tool. The pull tab should be sufficiently sized to support a key pinch grip and should require no more than 3.0 pounds of force to fully open the clamshell.

Pull tabs should be large enough for a key grip and require less than 3 pounds of force



Key grip



Use clear instructions

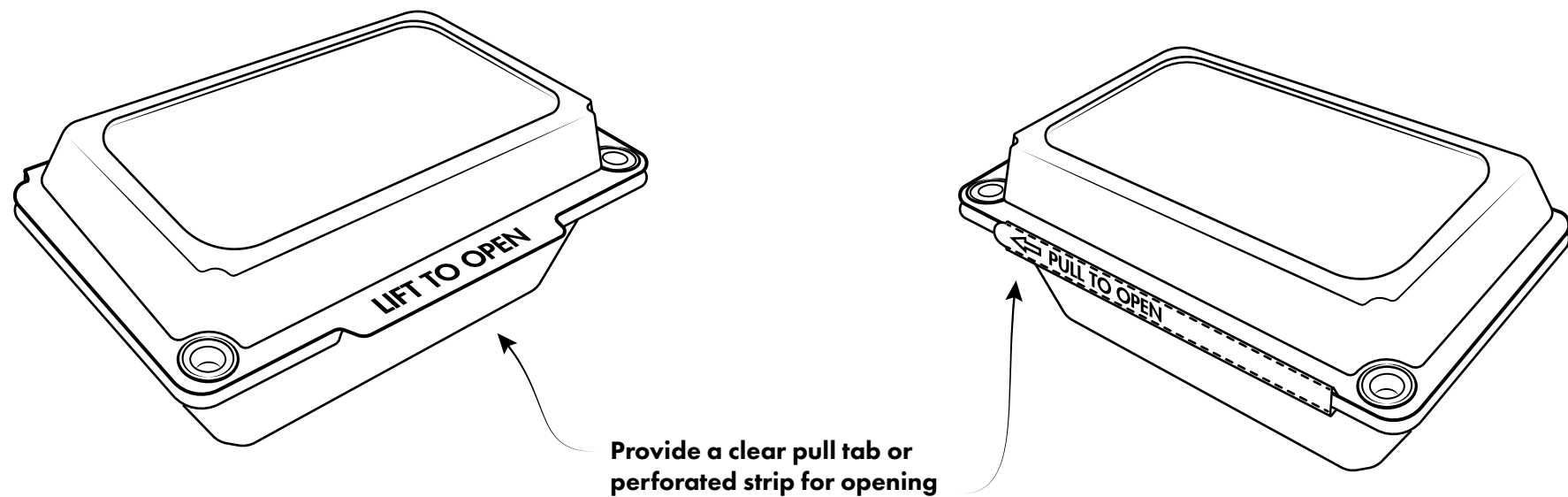
1.2 The method of opening the clamshell is not clear.

Detailed Description: Packaging labels that do not provide clear instructions for opening can lead to unsafe improvisation when the method of opening the packaging is not immediately obvious to the consumer. Consumers are more likely to use unsafe methods of opening the packaging, such as using a knife or scissors, when clear instructions are not provided.

Populations Impacted: Limited fine motor control

Potential Solutions: *Provide detailed directions for the safe opening of the clamshell.* Instructions for the safe opening of the clamshell should be provided on the packaging in a high-contrast, easy-to-read font. The instructions should indicate the point of opening, any required tool usage and safety instructions for handling the tool while opening the packaging. The consumer should be informed of risks associated with using a tool in an unsafe manner.

Provide an obvious affordance for opening the package. Providing an obvious way to open the package, such as providing a perforated strip or a hand opening to facilitate pulling the clamshell apart, can help orient consumers to the intended method of opening.

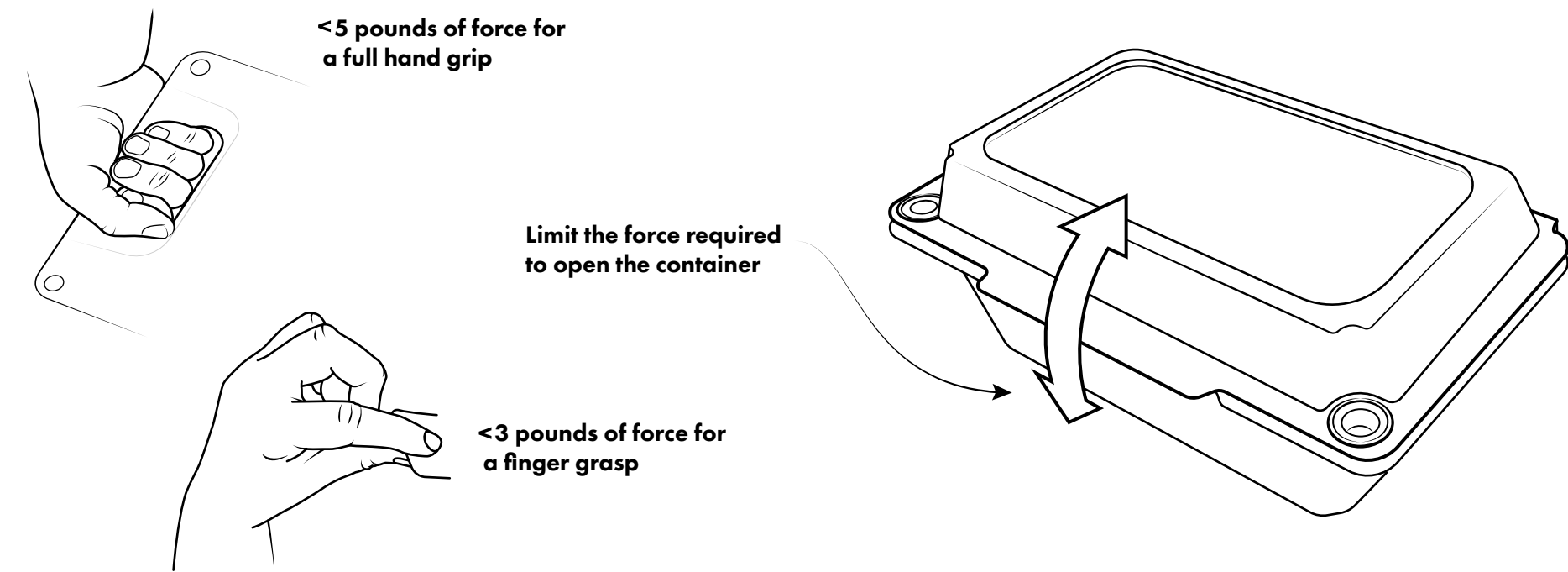


1.3 The force required to open the clamshell is too high.

Detailed Description: Clamshell packaging may require excessive force to open. Tearing or ripping plastic can be extremely difficult. The consumer may be limited in the amount of force they can apply to the packaging by the grip method. Consumers will be able to apply less force using a finger grip, such as a key pinch grip, as opposed to a full hand grip.

Populations Impacted: Limited strength, limited grip

Potential Solutions: *Limit the amount of force required to open the clamshell.* Require no more than 3.0 pounds of force to open the clamshell when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to open the clamshell.



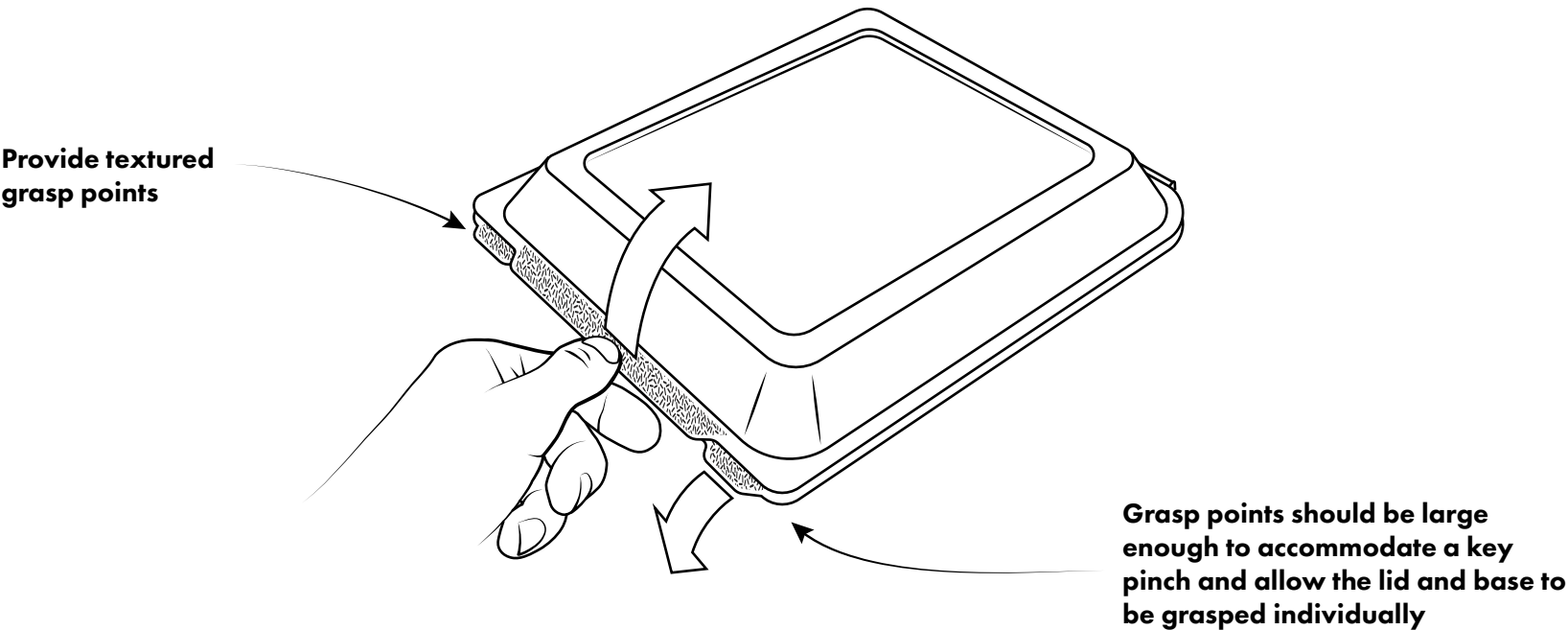
1.4 The clamshell lid and base grasp points are too small.

Detailed Description: Some clamshell packages with a lid and base configuration require a user to grasp the lid and base simultaneously to separate the lid from the base. If grasp points on the lid and base are too small, users with arthritis may have difficulty securely holding the grasp points with sufficient strength to separate the lid from the base.

Populations Impacted: Limited grip, limited fine motor control

Potential Solutions: *Provide a textured grasp point.* All grasp points should be sufficiently textured to reduce slippage while grasping. Alternatively, the grasp points could be coated with a high coefficient of friction coating to reduce finger slippage.

Provide sufficiently sized grasp points. All grasp points should be sized to accommodate a key pinch. The grasp points should extend beyond the package lip and be separated so that the lip and base grasp points can be individually grasped.



1.5 Opening the clamshell dislodges the products.

Detailed Description: Users may accidentally dislodge products while attempting to open difficult-to-open clamshell packaging. Users may hold the packaging in unexpected orientations while attempting to open the packaging, causing products to be dislodged as the clamshell is opened. Products may become dislodged due to unexpected movement because the clamshell requires excessive force to open.

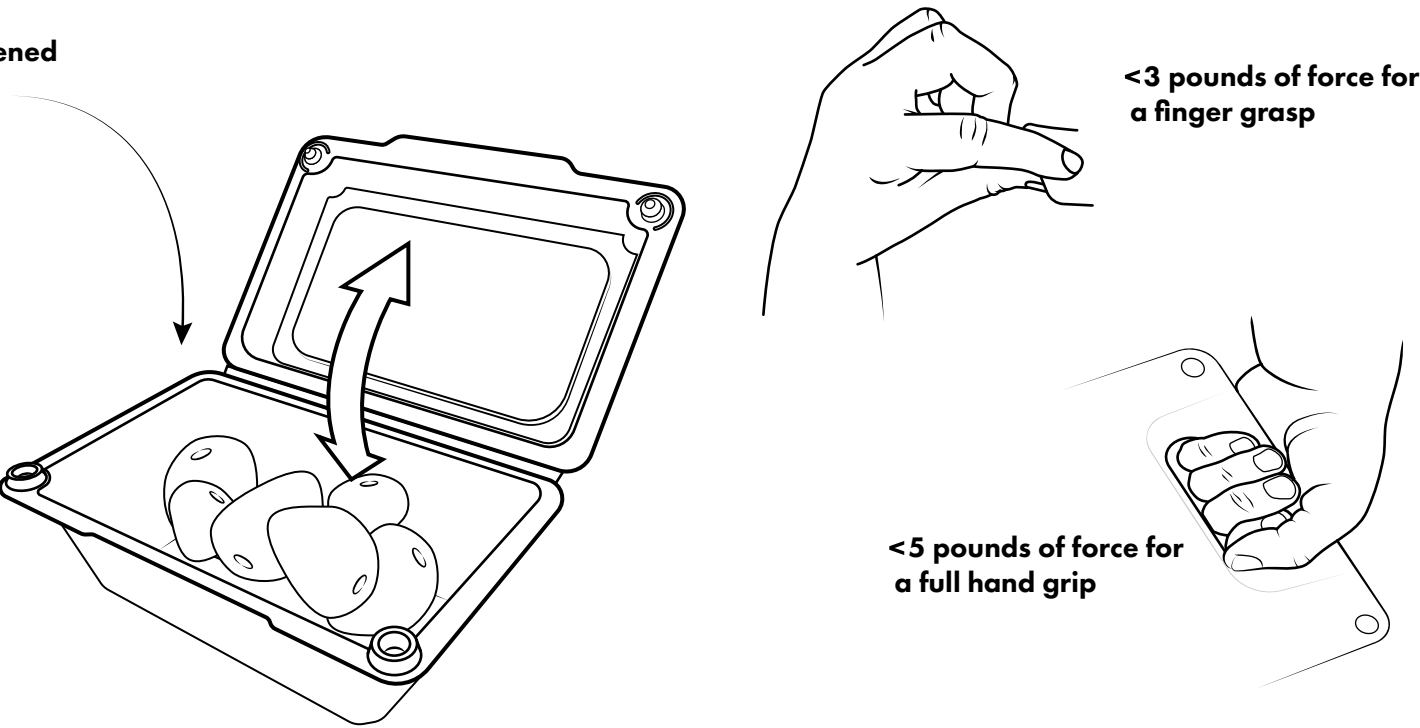
Populations Impacted: Limited fine motor control

Potential Solutions: *Secure products inside the packaging.* Consider securing the products inside the packaging to minimize spillage.

Limit the amount of force required to open the clamshell. Require no more than 3.0 pounds of force to open the clamshell when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to open the clamshell.

Design the package to be easily opened in the proper orientation. Ensure that the clamshell packaging is easy to open in the orientation that best preserves the product. The internal structure of the clamshell should be designed so that the product is not easily dislodged during opening in a method intended by the manufacturer.

Design clamshell to be opened in proper orientation and keep product contained



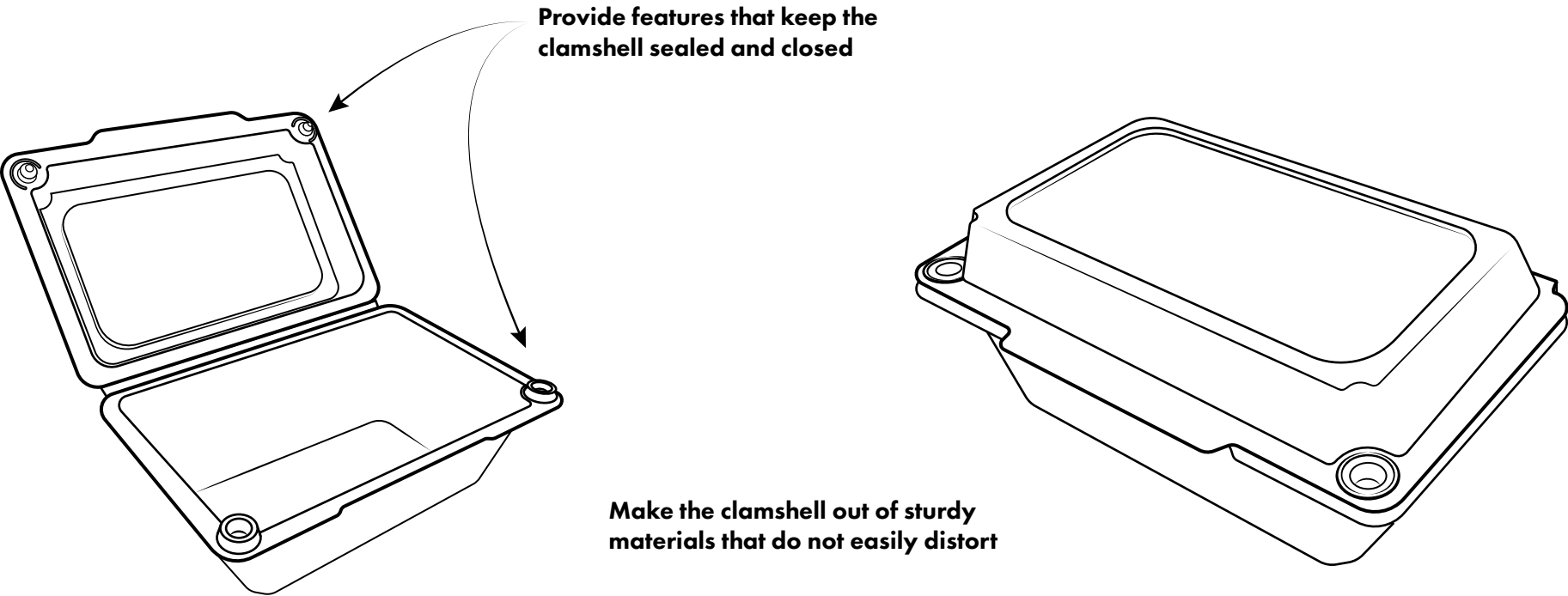
2.1 The clamshell does not seal properly.

Detailed Description: Some clamshell packaging does not easily reseal after being opened. Retaining features, such as channels or buttons built into the packaging, can help keep the clamshell packaging closed when stored after opening. Flimsy materials may make it difficult to close the packaging properly due to distortion of the packaging or failure to align the retaining features.

Populations Impacted: Limited fine motor control

Potential Solutions: *Provide retaining features.* Retaining buttons or interlocking seam channels can help the clamshell packaging remain sufficiently sealed while stored. The degree of seal provided should be commensurate with the degree of protection required.

Provide sturdy materials. The clamshell packaging should not easily distort. This is especially important when the packaging’s shape must be maintained near the retaining features for the clamshell to seal properly. It is also important that the packaging be sufficiently rigid so that the retaining features are properly aligned during closure.



2.2 Once resealed, the clamshell is difficult to reopen.

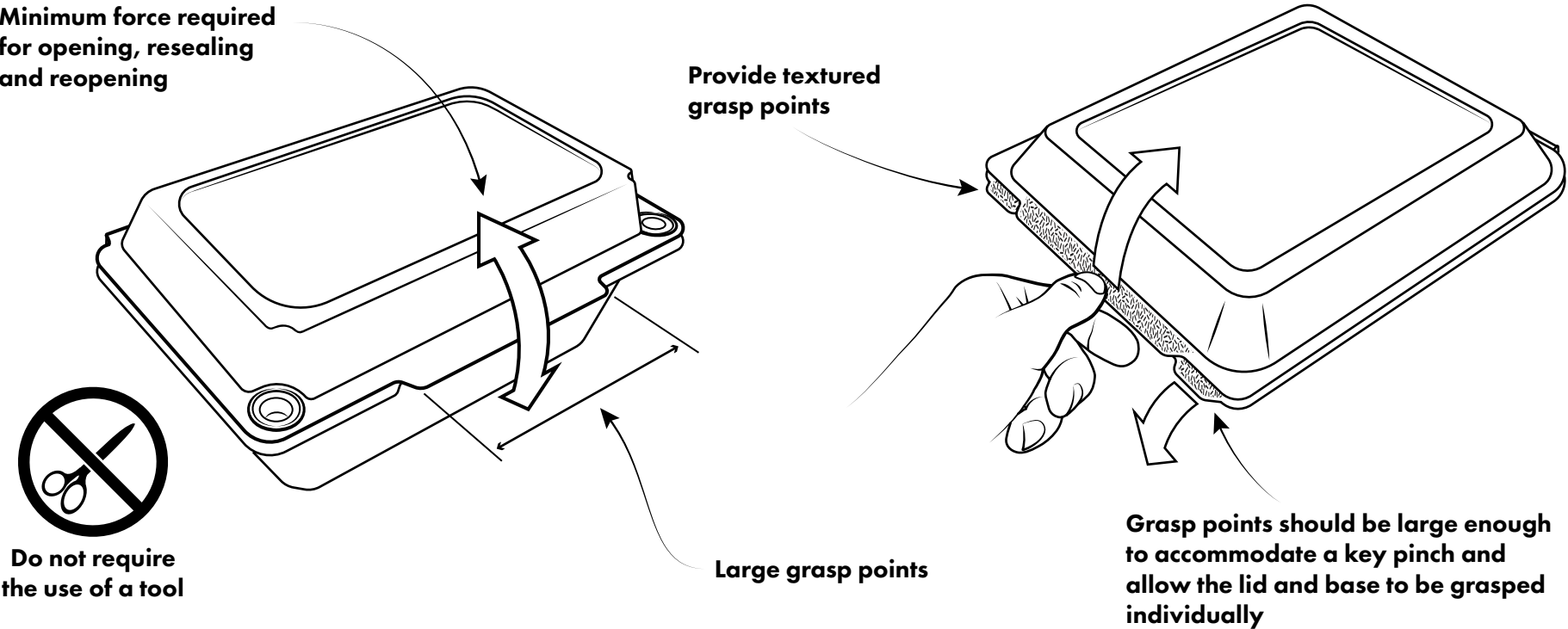
Detailed Description: Clamshell packaging may require excessive force to open once resealed. Consumers will be able to apply less force using a finger grip, such as a key pinch grip, as opposed to a full hand grip. Consumers may have difficulty grasping small or slippery grasp points designed to be used to separate the clamshell components.

Populations Impacted: Limited strength, limited grip

Potential Solutions: *Provide a textured grasp point.* All grasp points should be sufficiently textured to reduce slippage while grasping. Alternatively, the grasp points could be coated with a high coefficient of friction coating to reduce finger slippage.

Provide sufficiently sized grasp points. All grasp points should be sized to accommodate a key pinch. The grasp points should extend beyond the package lip and be separated so that the lip and base grasp points can be individually grasped.

Limit the amount of force required to open the clamshell. Require no more than 3.0 pounds of force to open the clamshell when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to open the clamshell.



3.1 The clamshell packaging fails to secure remaining products.

Detailed Description: Opening the clamshell packaging may damage the consumer's ability to reseal the packaging. Cuts, tears or rips in the packaging may compromise the packaging’s ability to protect remaining products from accidental loss or contamination.

Populations Impacted: Limited fine motor control

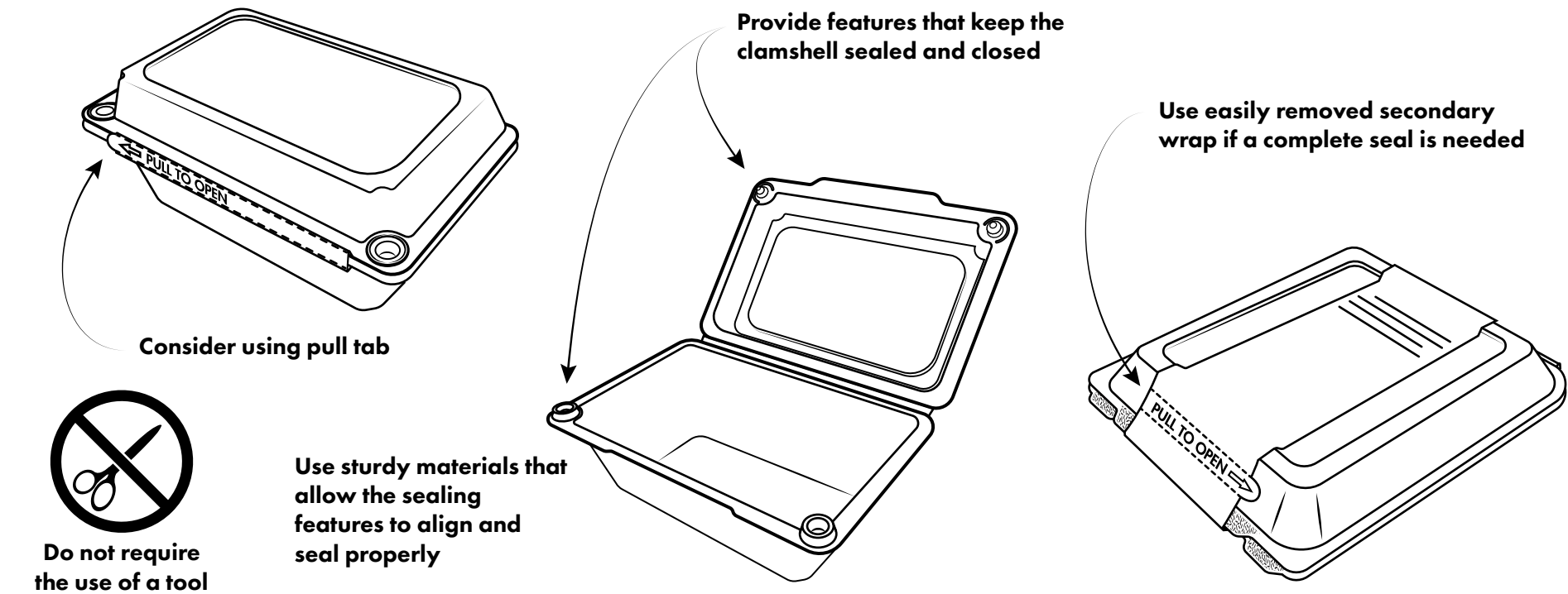
Potential Solutions: *Do not require the use of a tool.* Clamshells that require cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the clamshell. If appropriate, provide a perforated feature with a pull tab, allowing consumers to access the packaging safely.

Avoid using a fully sealed clamshell. Avoid using heat, glue or other methods of completely sealing the seams of a clamshell package. Fully sealed clamshells can be exceedingly difficult to open safely. Consider using secondary packaging, such as an easy-to-remove wrap, if a complete seal is required to preserve the packaging contents.

Consider using a perforated pull tab to open the clamshell. Providing a pull tab attached to a perforated strip can provide a way to access the clamshell without a tool. The pull tab should be sufficiently sized to support a key pinch grip and should require no more than 3.0 pounds of force to fully open the clamshell.

Provide retaining features. Retaining buttons, or interlocking seam channels, can help the clamshell packaging remain sufficiently sealed while stored. The degree of seal provided should be commensurate with the degree of protection required.

Provide sturdy materials. The clamshell packaging should not easily distort. This is especially important when the packaging’s shape must be maintained near the retaining features for the clamshell to seal properly. It is also important that the packaging be sufficiently rigid so that the retaining features are properly aligned during closure.



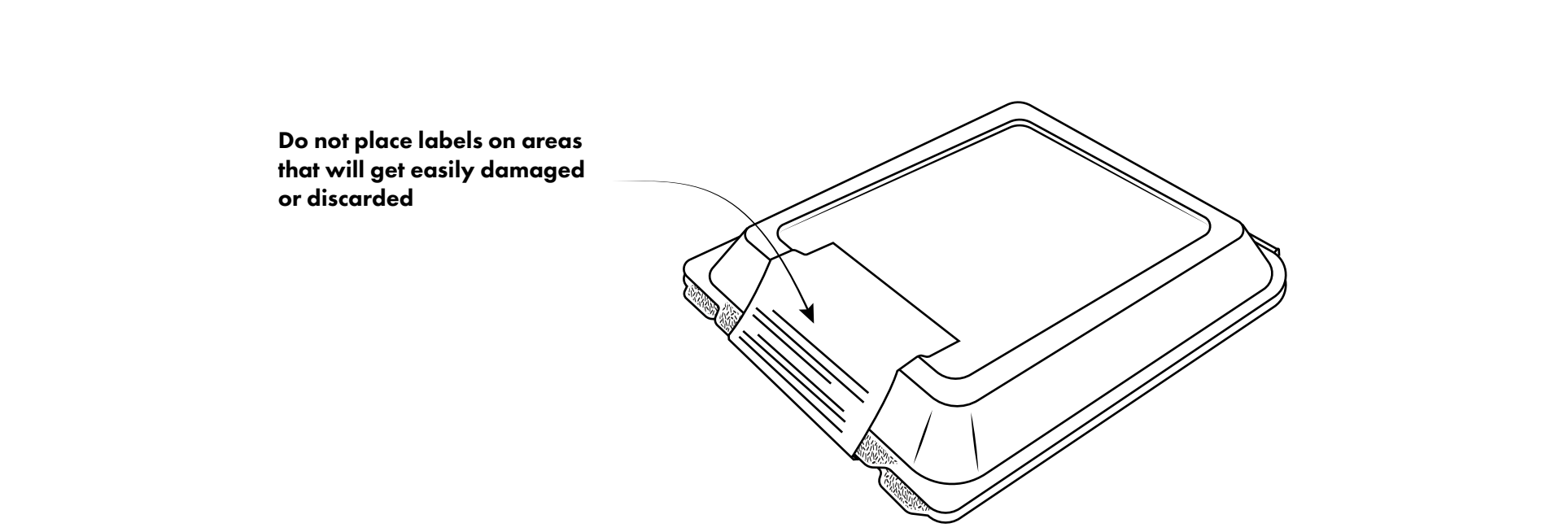
3.2 Critical instructions are discarded, damaged or obscured after opening.

Detailed Description: Some clamshell packaging requires the use of a tool or requires the consumer to tear the packaging to access the content. Instructions or critical labels may become damaged.

Populations Impacted: Limited fine motor control

Potential Solutions: *Design a clamshell packaging method of opening, so that critical instructions are not damaged during opening.* Place critical instructions and labels away from areas likely to be damaged during the clamshell packaging opening.

Minimize loss of critical instructions. Do not place critical instructions and labels on sections of the packaging that are likely to be quickly discarded when opening the clamshell packaging.



SEALED TRAYS & TUBS

Sealed trays and tubs are a type of packaging with a molded or thermoformed base and a lid made from flexible sheet material. Many clamshells and rigid tubs and trays with lids are transitioning to this format because the flexible sheets use less material than fully-rigid lids, saving cost and improving sustainability metrics. Plus, the flexible sheet materials can be printed with graphics.

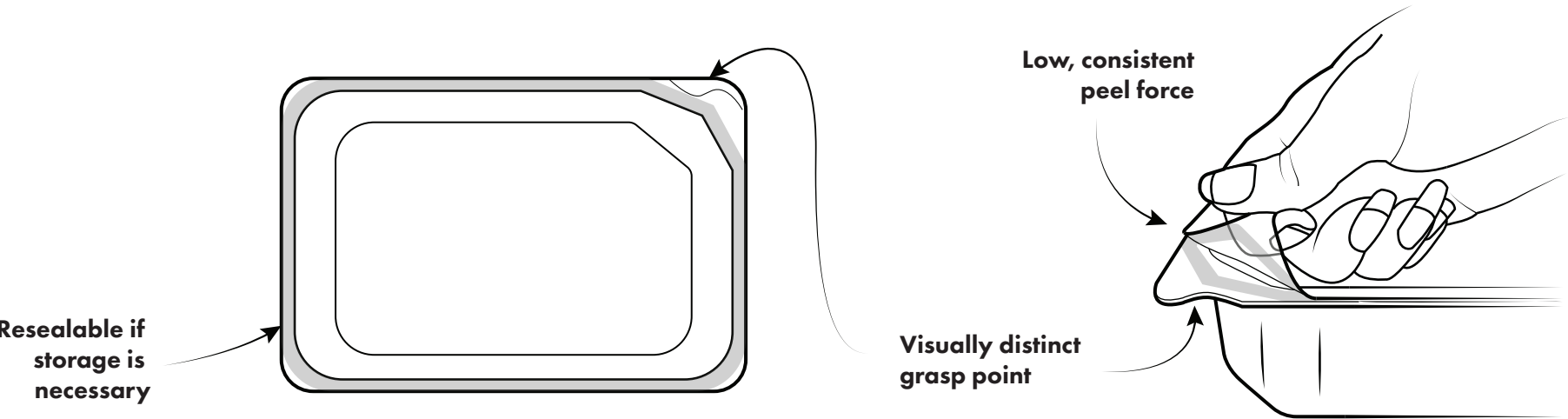
Examples of Sealed Trays & Tubs



Optimum Sealed Trays & Tubs Design Guidelines

Recommendation Highlights

- **No required tools**
- **Resealable if storage is necessary**
- **Visually distinct grasp point**
- **Sufficiently sized grasp point**
- **Opening instructions provided**
- **Low peel force**
- **Consistent peel force**
- **Film or membrane removed in one continuous action**
- **Opening instructions**
- **Tear strip opening feature**



SEALED TRAYS & TUBS ISSUES

The packaging can be difficult to open if opening requires the use of a tool. Use of a tool, such as a knife or scissors, by someone with limited grip, strength and fine motor control, could result in an injury. The amount of force required to peel the seal from thtop of the tray or tub may exceed the functional capabilities of some users with arthritis. Opening features, such as pull tabs, can be difficult to grasp, and the pull force may be too high.

1. The sealed tray or tub is not easily opened.

- 1.1. The sealed tray or tub requires the use of a tool.
- 1.2. The method of opening the sealed tray or tub is not clear.
- 1.3. The force required to open the sealed tray or tub is too high.
- 1.4. The sealed tray or tub lid and base grasp points require too much force.
- 1.5. Opening the sealed tray or tub dislodges the products.

2. The product is difficult to reseal once opened.

- 2.1. The opened tray or tub does not seal properly.
- 2.2. Once the resealed tray or tub is difficult to reopen.

3. The sealed tray or tub is damaged after opening.

- 3.1. The sealed tray or tub packaging fails to secure remaining products.
- 3.2. Critical instructions are discarded, damaged or obscured after opening.



Adobe Stock | #45613536 | Extended License

1.1 The sealed tray or tub requires the use of a tool.

Detailed Description: Some sealed trays or tubs do not have an obvious method of opening the packaging and removing the contents. Users are expected to tear a seal or cut the packaging using a tool without the benefit of affordances or instructions. Users may fail to recognize how to open the packaging or may select suboptimal opening procedures. Users may use a tool in an unsafe manner or may be injured while opening the packaging.

Populations Impacted: Limited strength, limited grip, limited range of motion, limited fine motor control

Potential Solutions: *Do not require the use of a tool.* Sealed trays or tubs that require cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the packaging. If appropriate, provide a grasp point with an easy-to-peel opening feature, allowing consumers to access the packaging safely.

Provide instructions for properly using any tools required to open the packaging. Tools should not be required to open sealed trays or tubs. If a tool is required, provide detailed instructions on how to open the packaging with a tool to minimize potential injury. The instructions should highlight the risk of using a sharp tool to open the packaging and demonstrate safe tool handling procedures.

Consider using a grasp point and an easy-to-peel feature. Providing a grasp point, attached to an easy-to-peel film or membrane, can provide a means of accessing the sealed tray or tub without the use of a tool. The grasp point should be sufficiently sized to support a key pinch grip and should require no more than 3.0 pounds of force to fully open the sealed tray or tub.

Ensure the film or membrane can be completely removed in one action. Design the film or membrane to be completely removed from the tub or tray in one continuous motion. The force required to remove the film or membrane should be consistent throughout the movement. Consumers should not be required to place their fingers inside the tray or tub to remove the film or membrane.

1.2 The method of opening the sealed tray or tub is not clear.

Detailed Description: Packaging labels that do not provide clear instructions for opening can lead to unsafe improvisation when the method of opening the packaging is not immediately obvious to the consumer. Consumers are more likely to use unsafe methods of opening the packaging, such as using a knife or scissors, when clear instructions are not provided.

Populations Impacted: Limited fine motor control

Potential Solutions: *Provide detailed directions for the safe opening of the sealed tray or tub.* Instructions for the safe opening of the sealed tray or tub should be provided on the packaging in a high-contrast, easy-to-read font. The instructions should indicate the point of opening, any required tool usage and safety instructions for handling the tool while opening the packaging. The consumer should be informed of risks associated with using a tool in an unsafe manner.

Provide an obvious affordance for opening the package. Provide an obvious way to open the package, such as designing a visually distinct grasp point to facilitate removing the film or membrane from the tray or tub.

1.3 The force required to open the sealed tray or tub is too high.

Detailed Description: The removal of the film or membrane from the sealed tray or tub may require excessive force. Tearing or ripping plastic can be extremely difficult. The consumer may be limited in the amount of force they can apply to the packaging by the grip method. Consumers will be able to apply less force using a finger grip, such as a key pinch grip, as opposed to a full hand grip.

Populations Impacted: Limited strength, limited grip

Potential Solutions: *Limit the amount of force required to open the sealed tray or tub.* Require no more than 3.0 pounds of force to open the sealed tray or tub when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to access the package content.

1.4 The sealed tray or tub lid and base grasp points require too much force.

Detailed Description: Some sealed trays or tubs require a user to grasp a grasp point while holding the tub or tray to peel the film or membrane off the packaging. If the grasp points on the film and base are too small, users with arthritis may have difficulty securely holding the grasp points with sufficient strength to separate the film from the base.

Populations Impacted: Limited strength, limited grip

Potential Solutions: *Provide a textured grasp point.* All grasp points should be sufficiently textured to reduce slippage while grasping. Alternatively, the grasp points could be coated with a high coefficient of friction coating to reduce finger slippage.

Provide sufficiently sized grasp points. All grasp points should be sized to accommodate a key pinch. The grasp points should extend beyond the package lip and be separated so that the film and base grasp points can be individually grasped.

1.5 Opening the sealed tray or tub dislodges the products.

Detailed Description: Users may accidentally dislodge products while attempting to open difficult-to-open tub or tray packaging. Users may hold the packaging in unexpected orientations while attempting to open the packaging, causing products to be dislodged as the tub or tray is opened. Products may become dislodged due to unexpected movement because the tub or tray requires excessive force to open.

Populations Impacted: Limited fine motor control

Potential Solutions: *Secure products inside the packaging.* Consider securing the products inside the packaging to minimize spillage.

Limit the amount of force required to open the tub or tray. Require no more than 3.0 pounds of force to open the tub or tray when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to open the tub or tray.

Design the package to be easily opened in the proper orientation. Ensure that the tub or tray packaging is easy to open in the orientation that best preserves the product. The internal structure of the tub or tray should be designed so that the product is not easily dislodged during opening in a method intended by the manufacturer.

2.1 The opened tray or tub does not seal properly.

Detailed Description: If a product is designed to be incrementally used or stored after opening, the packaging should be resealable to avoid contamination. Some tub or tray packaging does not easily reseal after being opened. Retaining features built into the packaging can help keep the tub or tray packaging closed when stored after opening. Flimsy materials may make it difficult to close the packaging properly due to distortion of the packaging or failure to align the retaining features.

Populations Impacted: Limited strength, limited grip, limited fine motor control

Potential Solutions: *Provide retaining features.* Retaining buttons or other features can help the tub or tray packaging remain sufficiently sealed while stored. The degree of seal provided should be commensurate with the degree of protection required.

Provide sturdy materials. The tub or tray packaging should not easily distort. This is especially important when the packaging’s shape must be maintained near the retaining features for the tub or tray to seal properly. It is also important that the packaging be sufficiently rigid so that the retaining features are properly aligned during closure.

2.2 Once resealed, the sealed tray or tub is difficult to reopen.

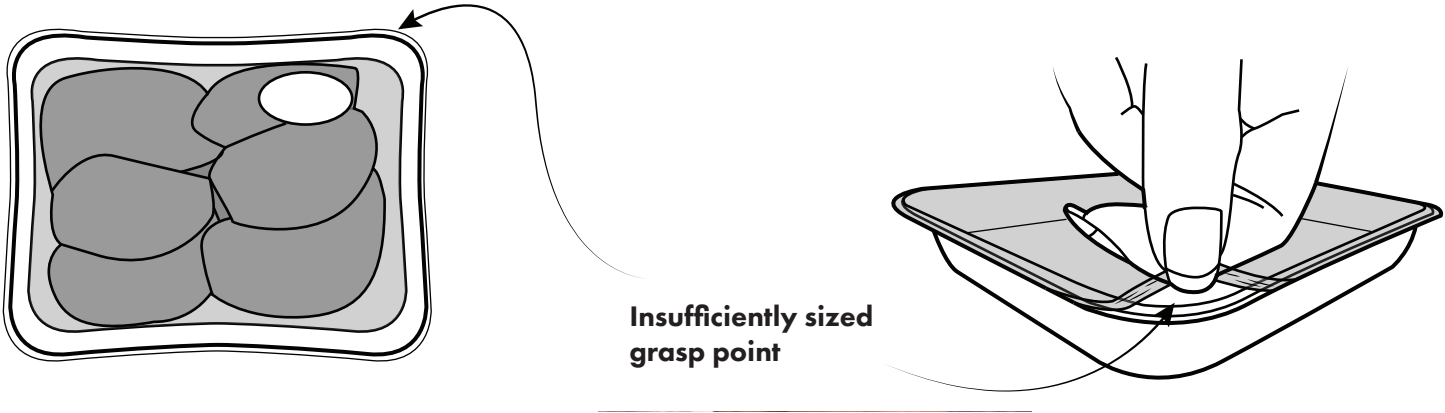
Detailed Description: Tub or tray packaging may require excessive force to open once resealed. Consumers will be able to apply less force using a finger grip, such as a key pinch grip, as opposed to a full hand grip. Consumers may have difficulty grasping small or slippery grasp points designed to be used to separate the tub or tray components.

Populations Impacted: Limited strength, limited grip, limited fine motor control

Potential Solutions: *Provide a textured grasp point.* All grasp points should be sufficiently textured to reduce slippage while grasping. Alternatively, the grasp points could be coated with a high coefficient of friction coating to reduce finger slippage.

Provide sufficiently sized grasp points. All grasp points should be sized to accommodate a key pinch. The grasp points should extend beyond the package lip and be separated so that the film and base grasp points can be individually grasped.

Limit the amount of force required to open the tub or tray. Require no more than 3.0 pounds of force to open the tub or tray when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to open the tub or tray.



3.1 The sealed tray or tub packaging fails to secure remaining products.

Detailed Description: Opening the tray or tub packaging may hinder the consumer’s ability to reseal the packaging. Cuts, tears or rips in the packaging may compromise the packaging’s ability to protect remaining products from accidental loss or contamination.

Populations Impacted: Limited fine motor control

Potential Solutions: *Do not require the use of a tool.* Sealed trays or tubs that require cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the tray or tub.

Provide retaining features. Retaining buttons or other retaining features can help the tray or tub packaging remain sufficiently sealed while stored. The degree of seal provided should be commensurate with the degree of protection required.

Provide sturdy materials. The tray or tub packaging should not easily distort. This is especially important when the packaging’s shape must be maintained near the retaining features for the tray or tub to seal properly. It is also important that the packaging be sufficiently rigid so that the retaining features are properly aligned during closure.

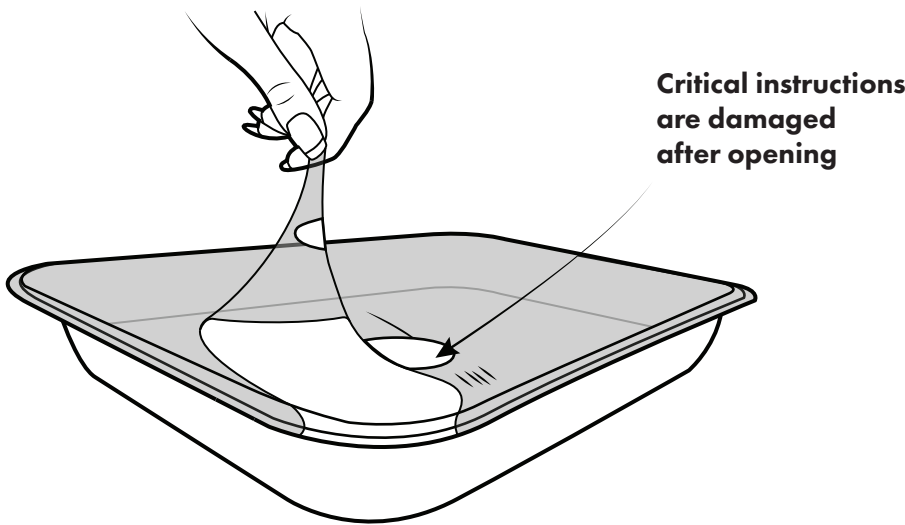
3.2 Critical instructions are discarded, damaged or obscured after opening.

Detailed Description: Some sealed tray or tub packaging requires a tool for the consumer to tear the packaging to access the content. Instructions or critical labels may become damaged.

Populations Impacted: Limited fine motor control

Potential Solutions: *Design sealed tray or tub packaging methods of opening so that critical instructions are not damaged during opening.* Place critical instructions and labels away from areas that are likely to be damaged during the opening of the tray or tub packaging.

Minimize loss of critical instructions. Do not place critical instructions and labels on sections of the packaging that are likely to be quickly discarded when opening the tray or tub packaging.



CARDS & TIES

Cards and ties are a category of packaging consisting of a rigid card with a product directly attached to the card. The card is used to display product information, claims and graphics. The card can be replaced with a box with a large window. Products are directly attached to the card with a tie mechanism to bind the product to the card. These ties can be metal, plastic or fiber materials.

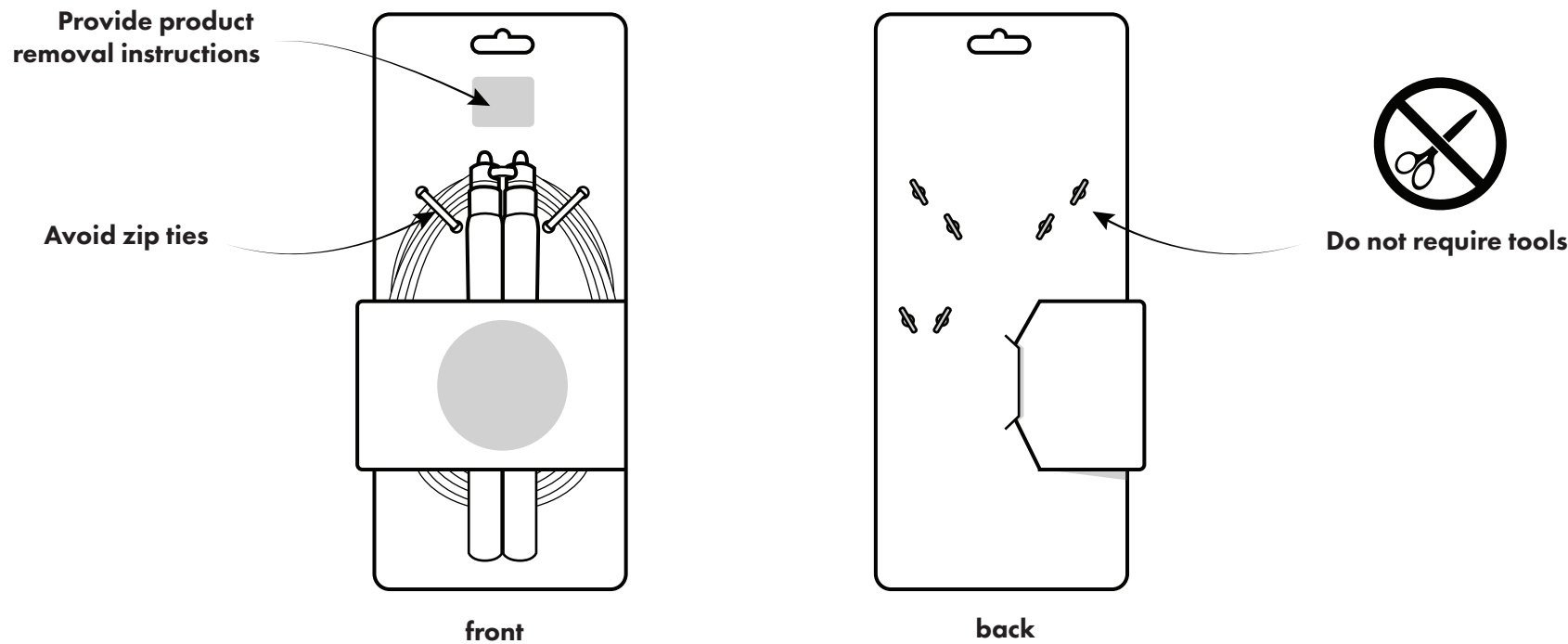
Examples of Cards & Ties



Optimum Cards & Ties Design Guidelines

Recommendation Highlights

- **Do not require tools**
- **Avoid zip ties**
- **Do not require fine motor control**
- **Provide product removal instructions**



CARDS & TIES ISSUES

The packaging can be extremely difficult to open if opening requires the use of a tool. Use of a tool, such as a knife or scissors, by someone with limited grip, strength and fine motor control, could result in an injury. Packaging that features zip ties to secure the product to the packaging should be avoided. Users with arthritis may have difficulty with repetitive motions if there are too many twist ties or if the twist ties require excessive unwinding.

1. The product is not easily removed from the packaging.

- 1.1. Removing the product requires a tool.
- 1.2. The method of removing the product is not clear.
- 1.3. Removing the product damages the product.
- 1.4. The outer packaging is difficult to remove.

2. For products secured by a twist tie, the twist tie is not easily located.

- 2.1. The twist tie is obscured by the packaging.
- 2.2. The twist direction is not easily determined.

3. Removal of the product requires excessive fine motor control.

- 3.1. The twist tie is too small.
- 3.2. The twist tie requires too many twists to open the packaging.



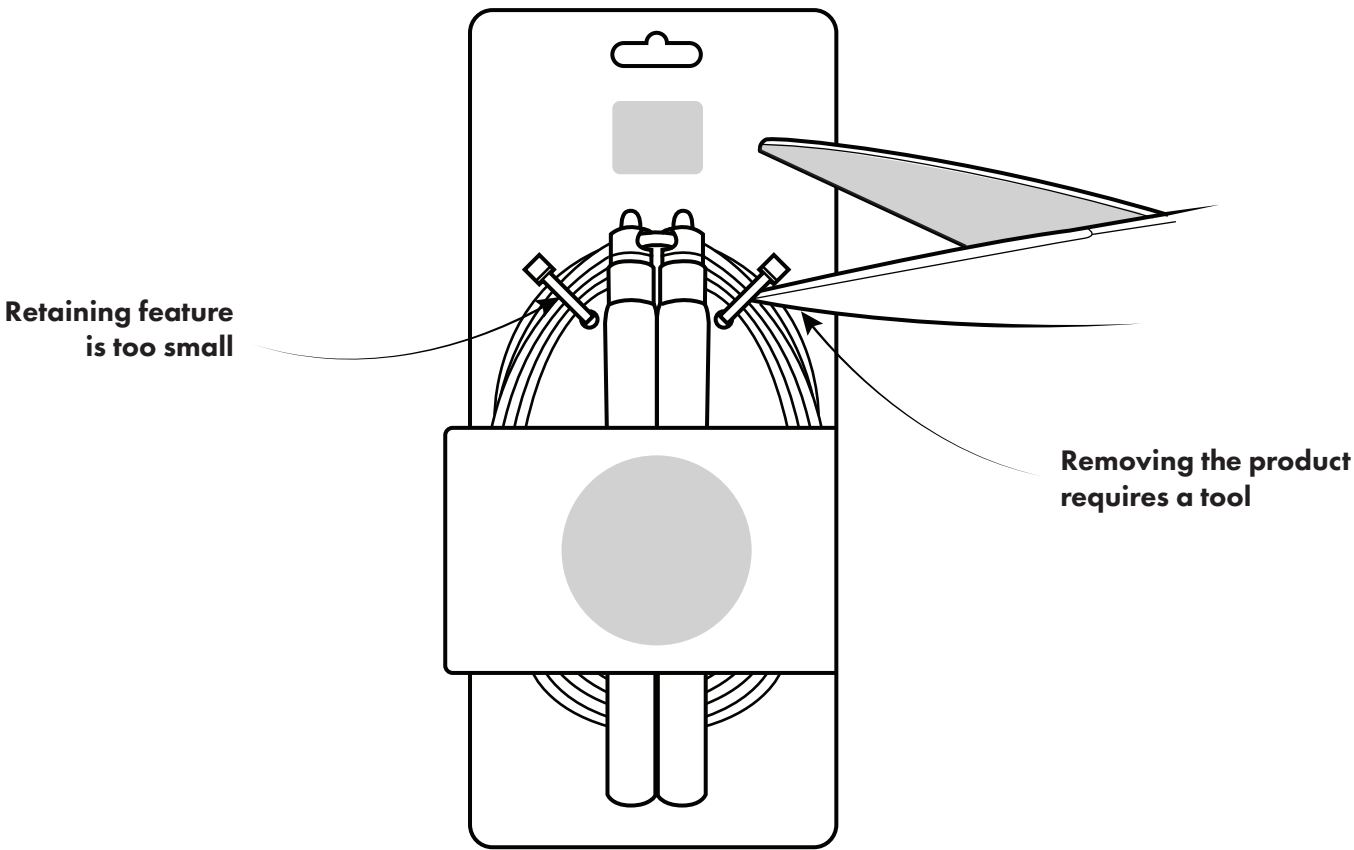
1.1 Removing the product requires a tool.

Detailed Description: Some cards and ties packaging solutions do not have an obvious method of opening the packaging and removing the contents. Users are expected to cut a tie or cut the packaging using a tool without the benefit of affordances or instructions. Users may fail to recognize how to open the packaging or may select suboptimal opening procedures. Users may use a tool in an unsafe manner or may be injured while opening the packaging.

Populations Impacted: Limited strength, limited grip, limited range of motion, limited fine motor control

Potential Solutions: *Do not require the use of a tool.* Cards and ties that require cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the packaging.

Provide instructions for properly using any tools required to open the packaging. Tools should not be required to open cards and ties packaging. If a tool is required, provide detailed instructions on how to open the packaging with a tool to minimize potential injury. The instructions should highlight the risk of using a sharp tool to open the packaging and demonstrate safe tool handling procedures.



1.2 The method of removing the product is not clear.

Detailed Description: Packaging labeling that does not provide clear instructions for opening can lead to unsafe improvisation when the method of opening the packaging is not immediately obvious to the consumer. Consumers are more likely to use unsafe methods of opening the packaging, such as using a knife or scissors, when clear instructions are not provided.

Populations Impacted: Limited fine motor control

Potential Solutions: *Provide detailed directions for the safe opening of the card and tie packaging.* Instructions for the safe opening of the card and tie packaging should be provided on the packaging in a high-contrast, easy-to-read font. The instructions should indicate to the point of opening, any required tool usage and safety instructions for handling the tool while opening the packaging. The consumer should be informed of risks associated with using a tool in an unsafe manner.

Provide an obvious affordance for opening the package. Provide an obvious way to open the package, such as designing an easily located twist tie.

1.3 Removing the product damages the product.

Detailed Description: Using a tool to cut ties or tearing the product from the packaging might damage the product. A user applying excessive force to the packaging may break or scratch the product. The product may become contaminated while attempting to free the product from the packaging.

Populations Impacted: Limited fine motor control

Potential Solutions: *Do not require the use of a tool.* Cards and ties that require cutting with a tool can pose a potential hazard for users with arthritis. Do not require a knife or scissors to open the packaging.

Limit the amount of force required to separate the product from the packaging. Require no more than 3.0 pounds of force to remove the product when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to remove the product.

1.4 The outer packaging is difficult to remove.

Detailed Description: Users may have difficulty removing the outer packaging of a card if the card obscures or encloses the tie. The amount of force required may exceed the user’s functional abilities. The user might have difficulty grasping the card and applying sufficient force to tear or open the card.

Populations Impacted: Limited strength, limited grip, limited fine motor control

Potential Solutions: *Limit the amount of force required to separate, tear or open the card.* Require no more than 3.0 pounds of force to remove the product when an adequate finger grasp point is provided and the user can utilize a key pinch grip to securely grasp the grasp point. If a full hand grip is possible, require no more than 5.0 pounds of force to remove the product.

Do not obscure the tie. Do not require that the card be ripped or opened in order to access the tie release design feature.

2.1 The twist tie is obscured by the packaging.

Detailed Description: The user may have difficulty finding the method of releasing the tie if the release design feature is obscured by layers of packaging.

Populations Impacted: Limited fine motor control

Potential Solutions: *Do not obscure the tie.* Do not require that the card be ripped or opened in order to access the tie release design feature.

Provide instructions for releasing the tie. If the tie is obscured by the packaging, give written instructions on how to access the tie to release the product.

2.2 The twist direction is not easily determined.

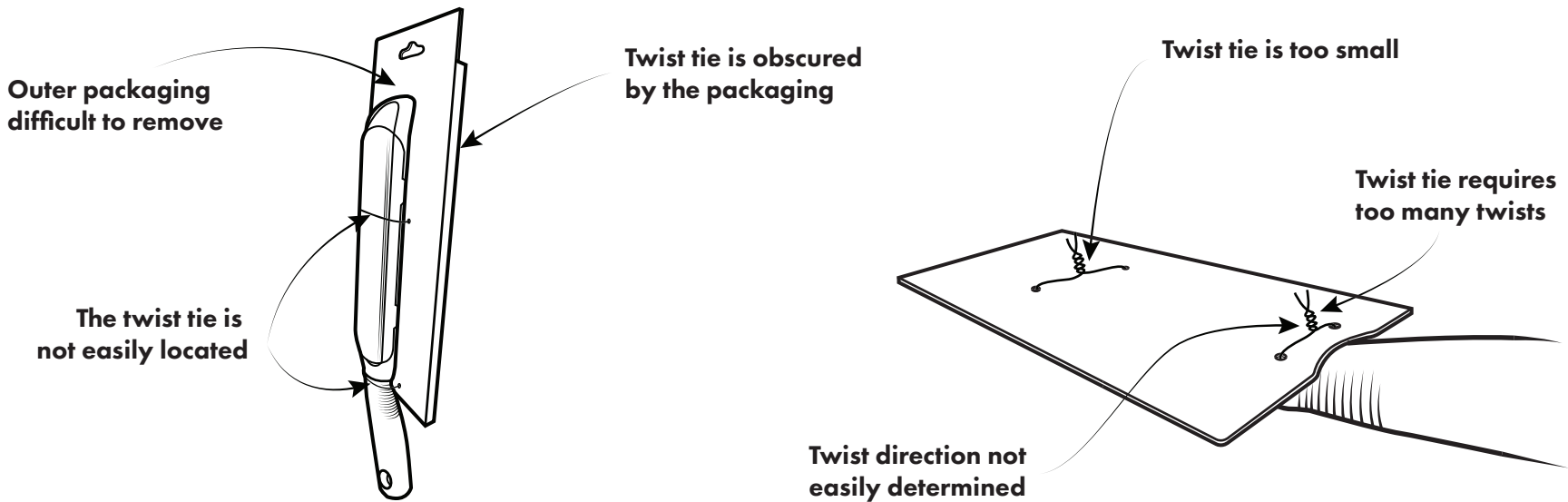
Detailed Description: If the twist tie is tightly wound or is too small, it may be difficult to determine the appropriate direction of travel necessary to release it. The user may inadvertently tighten the tie instead of loosening it, causing additional difficulty in accessing the product.

Populations Impacted: Limited fine motor control

Potential Solutions: *Provide graspable ends of the tie.* Provide graspable end points for the tie. The graspable ends should be sufficiently sized to support a full finger grip.

Provide a tie of a sufficient diameter. A larger diameter tie may make it easier for a user to determine the direction of winding the tie.

Provide a tie that contrasts with the packaging. A sharp contrast between the tie and the surrounding packaging can help users locate the tie and determine the appropriate direction of travel. Ensure that the tie contrasts with the packaging at the tie attachment point.



3.1 The twist tie is too small.

Detailed Description: The twist tie should be long enough to be easy to locate. The user should be able to easily discern the direction of winding visually. Graspable ends should be provided to support a full finger grasp while unwinding the tie.

Populations Impacted: Limited grip, limited fine motor control

Potential Solutions: *Provide graspable ends of the tie.* Provide graspable end points for the tie. The graspable ends should be sufficiently sized to support a full finger grip.

Provide a tie of a sufficient diameter. A larger diameter tie may make it easier for a user to determine which direction to unwind the tie.

Provide a loose winding. A loose winding may assist users in determining the direction of winding.

3.2 The twist tie requires too many twists to open the packaging.

Detailed Description: Repetitive actions, such as twists of a twist tie, may be difficult for some users with arthritis. Limit the number of repetitions required to access the product.

Populations Impacted: Limited range of motion, limited fine motor control

Potential Solutions: *Limit the number of twist ties that secure the product.* Repetitive actions can be painful. Limit the number of twist ties that attach the product to the card.

Limit the number of twists required for each twist tie. Do not require excessive twisting motions to release the product from the card.

Contributors

Intuitive Design Applied Research Institute

Dr. Brad Fain, Intuitive Design Applied Research Institute Founder and Georgia Tech Regents’ Researcher

Target Corporation

Michael Habig, Senior Designer

Jasmine Kent, Designer

Mark Kuhn, Senior Business Partner

Ryan McCoy, Director Packaging Design & Innovation

Nicholas Resop, Senior Packaging Specialist

Arthritis Foundation

Deborah Gokie, Vice President Consumer Health and Ease of Use

Kelley Graham, Sr. Director of Content, Creative & Brand

Anthony Williams, Sr. Writer & Editor

Copyright & Trademark Notice

©2024 Intuitive Design Applied Research Institute, LLC, Arthritis Foundation and Target Brands, Inc. All rights reserved.

Certain packaging configurations and the following trademarks are owned by Target Brands, Inc.: Bullseye logo, Up & Up, Good & Gather, Embark, Wild Fable, Figmint, Favorite Day, Boots & Barkley, Everspring, Smartly, Goodfellow & Co, Kindfull.

Arthritis Foundation®, Ease of Use® and Ease of Use Certified® are registered trademarks of the Arthritis Foundation.

Disclaimers

The Ease of Use Rigid Packaging Guide (“Guide”) is provided for general informational and illustrative purposes related to the development of ease of use consumer products and packaging. As indicated throughout the document, “potential” solutions are presented for various ease of use problems. These potential solutions, including the associated graphics, are presented for illustrative and general educational purposes, and may not cover all potential solutions or even the best potential solutions. Various factors not covered in the Guide may influence selection of alternate or modified solutions than those presented here. Other limitations regarding the sufficiency and/or suitability of the potential solutions not expressly identified may also exist. The design of specific consumer products and/or packaging inspired by the Guide should be validated, tested and verified as safe and suitable for their intended purpose by a qualified party or program, such as Intuitive Design Applied Research Institute, LLC, and the Arthritis Foundation’s Ease of Use Certification. A PARTY USING THE GUIDE TO DEVELOP CONSUMER PRODUCTS AND PACKAGING IS HEREBY NOTIFIED OF THESE AND OTHER LIMITATIONS, ACKNOWLEDGES THE LIMITED EDUCATIONAL AND ILLUSTRATIVE PURPOSE OF THE GUIDE, ACKNOWLEDGES THAT ADDITIONAL VALIDATION, TESTING AND VERIFICATION ARE REQUIRED FOR ANY SOLUTIONS INSPIRED BY THE GUIDE, AND PROCEEDS WITH IMPLEMENTING ANY OR ALL OF THE POTENTIAL SOLUTIONS, ALL AT ITS SOLE RISK. NO WARRANTIES, EXPRESS OR IMPLIED, ARE PROVIDED WITH THE GUIDE OR ITS POTENTIAL SOLUTIONS.

The graphics, illustrations, designs, and images presented in the Guide are provided for illustrative and educational purposes. Any similarities to existing products or packaging designs are merely coincidental and unintentional. No suggestion, license, or right to use, implement, or modify the depicted designs is provided by the illustrative and educational representations in the Guide.

The potential solutions described throughout the Guide may be covered or otherwise subject to various proprietary rights held by third parties in the US and other jurisdictions throughout the world. Inclusion of the potential solutions in the Guide does not provide a warranty, express or implied, that the potential solutions, or variations thereof, are free of third party proprietary rights. Additionally, the potential solutions may be prohibited or otherwise restricted by various laws, regulations, or other consumer product and packaging rules applicable in various jurisdictions. A PARTY USING THE GUIDE IS HEREBY NOTIFIED THAT THE POTENTIAL SOLUTIONS MAY BE PROHIBITED, RESTRICTED, OR OTHERWISE SUBJECT TO THIRD PARTY PROPRIETARY RIGHTS OR LEGAL REGULATION, ACKNOWLEDGES THEIR SOLE RESPONSIBILITY TO ENSURE THE ABILITY TO PRACTICE THE POTENTIAL SOLUTIONS WITHIN PARTICULAR JURISDICTIONS, AND PROCEEDS WITH IMPLEMENTING ANY OR ALL OF THE POTENTIAL SOLUTIONS, ALL AT ITS SOLE RISK.

Subject to the above disclaimers, a party is permitted to use the Guide to experiment, implement, modify, and practice the concepts and potential solutions, or variations thereof, outlined in the Guide. Consumer products and packaging produced, based on the Guide, are not, by virtue of having used the Guide, considered certified and are not permitted to use the Arthritis Foundation’s Ease of Use Certification. Separate certification under the Ease of Use Certification program is required. Additionally, no rights or permissions are granted to use any of the logos, brand names, or other marks included in the Guide. No right to reproduce, distribute, host on a website, create derivative works of, or modify the Guide, in whole or in part, is provided without the express written consent of the copyright holders.

Films & Pouches Attributes

Cover Row 1 - left to right

Adobe Stock | #239615214 | Extended License

Adobe Stock | #437695721 | Extended License

Adobe Stock | #615811000 | Extended License

Cover Row 2 - left to right

Adobe Stock | #401728768 | Extended License

Adobe Stock | #298435493 | Extended License

Adobe Stock | #329803176 | Extended License

Page 2 - Adobe Stock | #171183868 | Extended License

Page 4 - Adobe Stock | #421259374 | Extended License

Page 12 - Adobe Stock | #297648050| Extended License (Blister Packs)

Page 22 - Adobe Stock | #547638674 | Extended License (Clamshell)

Page 34 - Adobe Stock |#235613536 | Extended License (Sealed Trays)

Page 41 - Adobe Stock | #528753752 | Extended License (Cards and Ties)

References & Suggested Readings

Arditi, A. (1992). Making Text Legible Designing for People with Partial Sight. Print legibility and partial sight - lighthouse international.

Berns, T. (1981). The Handling of Consumer Packaging. Applied Ergonomics Publication, 12(3), 153-161.

Buultjens, M., Aitken, S., Ravenscroft, J., & Carey, K. (1999). Size counts: The significance of size, font and style of print for readers with low vision sitting examinations. British Journal of Visual Impairment, 17(1), 5–10.

Carrol, T. J., Trautman, R. L., Collingwood, H. (1974). Standards for production of reading materials for the blind and visually handicapped. National Accreditation Council for Agencies Serving the Blind and Visually Handicapped.

Cushman, W.H., & Rosenberg, D. J. (1991). Human factors in product design. Elsevier.

Great Britain Department of Trade and Industry Robert Feeney Associates & University of Nottingham Product Safety and Testing Group (2003). Research into the forces required to open paper and sheet plastic packaging: experiments results and statistics in detail. Dept. of Trade and Industry.

Fain, B. (n.d.). Food Packaging Design Accessibility Guidelines. Arthritis Australia. https://arthritisaustralia.com.au/wordpress/wp-content/uploads/2018/01/Food-Packaging-Design-Accessibility-Guidelines_Arthritis-Australia.pdf

Gaster, L., & Clark, C. (1995). pp. 7-12. In A guide to providing alternate formats. essay, Distributed by ERIC Clearinghouse.

Haigh, R. (1993). The ageing process: A challenge for design. Applied Ergonomics, 24(1), 9–14.

Kanis, H. (1993). Operation of controls on consumer products by physically impaired users. Human Factors, 35(2), 305-328.

Kitchel, E., Evans, W. (1999). Student survey of large print. Louisville, KY: American Printing House for the Blind: pp. 1-27.

Langley, J., Janson, R., Wearn J., & Yoxall, A. (2005). ‘Inclusive’ Design for Containers: Improving Openabilty. Packaging Technology Science, 18, 285-293.

Pirkl, J. J. (1994). Transgenerational design: Products for an aging population. Van Nostrand Reinhold.

Rubin, G.S. & Legge, G.E. (1989). Psychophysics of reading: The role of contrast in reading. VII. Comprehension in normal and low vision VII. Clinical Vision Sciences, 4, 51-60.

Silver, N.C. & Braun, C.C. (1993). Perceived readability of warning labels with varied font sizes and styles. Safety Science, 16, 615-625.

Steinfeld, E., & Mullick, A. (1990). Universal Design: The Case of the Hand. Innovation, Fall, 27-29.

U.S. Access Board. (n.d.). <https://www.access-board.gov/ict/>

Vanderheiden, G. (1997). Design for people with functional limitations due to disability, aging, or circumstances. In G. Salvendy (Ed.), Handbook of Human Factors and Ergonomics (pp. 2010-2052). New York: John Wiley & Sons.

Voorbij, A.I.M., & Steenbekkers, L.P.A. (2002). The twisting force of aged consumers when opening a jar. Applied Ergonomics, 32,105-109.

Wogalter, M.S., Conzola, V.C., & Smith-Jackson, T.L. (2002). Research-based guidelines for warning design and evaluation. Applied Ergonomics, 33, 219-230.

