AN EVALUATION OF TAMPER-RESISTANT PACKAGING:

A METHOD FOR MEASURING TAMPER-EVIDENCE

By

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ABSTRACT

AN EVALUATION OF TAMPER-RESISTANT PACKAGING: A METHOD FOR MEASURING TAMPER-EVIDENCE

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This study uses five different tamper-resistant technologies in the development of a method to test a technology's ability to communicate its condition. The tamper-resistant technologies were presented to consumers in a one-on-one interview, where the consumers were asked if they believed the package was tampered, before and after opening the package.

Tamper-evidence can be defined as the degree to which tampering is apparent to the observer. The results show each tamper-resistant technology tested failed to some degree to communicate its tampered condition. This degree of failure can change depending on the sophistication of the tampering technique and the perception of the consumers.

The reasons that consumers gave for their decisions show that consumers do not know how to use the tamper-resistant technologies. The consumer may look at the correct area of the package, but they do not detect the differences that can prevent them from being killed by a malicious tamperer.

I would like to dedicate this work to the memory

of my Grandfather, Frank A. Rak

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INTRODUCTION

Since the Tylenol tampering in Chicago in 1982, tamper-resistant packaging has become a prominent consideration in the minds of packaging professionals throughout the world. The need for effective tamper-resistant technologies remains important today. Most people are aware of the problems that malicious adulteration can cause. These malicious attempts at tampering have sent packagers racing to their research labs in an effort to implement some type of tamper-resistant technology on their product with a minimal amount of changeover, cost, and time. Should a malicious tamperer decide to strike their product, the packager could stand to lose millions of dollars in revenue, recalls and market share.

The Food and Drug Administration introduced a regulation (21 CFR 211.132) requiring tamper-resistant packaging on over-the-counter drugs soon after the first tampering death in 1982. The preamble of the regulation suggested a number of technologies which, if properly designed and appropriately used, were capable of meeting the requirements for a tamper-resistant technology. These included film wrappers, blister or strip packs, bubble packs, heat shrink bands or wrappers, pouches made

of foil, paper or plastic, bottle mouth inner seals, tape seals, breakable caps, sealed metal tubes or plastic blind-end heat-sealed tubes, sealed cartons, aerosol containers, and metal and composite cans.

These technologies were suggested for use in an effort to stop malicious tampering. Malicious, as defined by Webster, is a deep-seated, often unjustified, innate desire to bring pain and suffering to others; also, the intention or desire to harm another, usually seriously, through doing something unlawful or otherwise unjustified. The regulation is aimed at preventing malicious tampering, not the less harmful, "grazing" types of tampering that occur at points of purchase. A malicious tampering usually requires more time and effort than can be expended standing in a supermarket aisle. Grazing incidents also lack the malicious intent associated with malicious tampering. Usually, there is no innate desire to bring pain and suffering to another person by opening a bag of potato chips to determine if they are burnt.

It is widely accepted that there is a need for tamper-resistant packaging, but what needs to be considered now is how well the tamper-resistant features that have been implemented are communicating their condition. Currently, there are two ways to characterize package tampering and the ability of the package to communicate its condition. The first is

tamper-resistance and the second is tamper-evidence.

Tamper-resistance can be defined as the degree to which it is difficult to tamper and repair a package without leaving evidence. In 1985, Jack Rosette[1] published a method of determining tamper-resistance based on obtaining new or replacement parts for the package being tampered. Tamper-evidence, on the other hand, can be defined as the degree to which tampering is apparent to the observer. In 1989, Lisa Hewartson[2] developed an approach which involved measuring the ability of consumers to detect repairs to a tampered package. These two terms are used somewhat interchangeably, though there are fundamental differences between them, as indicated by the definitions given. Each of the approaches cited offer a means of gathering information regarding the ability of a package to perform in these two areas.

The main goal of this research work is to develop a methodology that can test the tamper-evidence of a package. The packages are tested with the end users, since they are at the most risk of coming into contact with a tampered package. The second goal of this research is to gather the reasons for the decisions that the consumers made while viewing the packages. By doing this, it may be possible to identify the areas where consumers are concentrating their efforts when making their tampered or not tampered decision. The third goal of this research is to evaluate five tamper-resistant

technologies on their ability to communicate their condition using the methodology developed.

The main function of tamper-resistance is to protect, but this protection does not stop with better package design. That is only part of the solution. Unless consumers are aware of the safeguards that are in place and how to use them, the efforts of the makers of the tamper-resistant features are wasted.

LITERATURE REVIEW

History

Tamper-resistant packaging came into national prominence in 1982 when the Tylenol poisonings occurred in Chicago, Illinois. This incident brought to the forefront the need for tamper-resistant packaging for over-the-counter pharmaceuticals and food products. Even before this incident, there were some tamper-resistant features in place, though they were not termed tamper-resistant. The Bureau of Alcohol, Tobacco and Firearms (BATF), in public law 85-859, 72 statute 1358; Title 27 part 19 of the Code of Federal Regulations, requires that a revenue tax stamp appear on alcoholic beverages of 5 wine gallons or less. The stamp was designed to be placed on the closure/neck interface of the bottle so that "the stamp shall be broken when the container is opened, unless the container is one which cannot be used after opening."[3] Though not specifically stated to be a tamper-resistant feature, it does have the basic idea behind tamper-resistance.

This regulation was later redefined by 23 CFR 19.663, "Strip Stamp and Alternative Devices," in which the Bureau of Alcohol, Tobacco and Firearms director approved the use of devices that securely seal the package and

left evidence after initial opening. In 1985, the Bureau designed a new regulation that required all distilled spirit containers with a capacity of one gallon or less to have tamper-resistant devices. This regulation was written because of a congressional decision to eliminate strip stamps, and the industry's desire to maintain tamper-resistance.

Milk products were also covered by a list of recommendations that were not specifically called tamper-resistant, but did provide some protection against tampering. Most of the recommendations made were to protect the product from microbial contamination through the closure system, rather than a malicious attempt at tampering. The U.S. Department of Health, Education and Welfare, in association with the Food and Drug Administration, developed a list of recommendations entitled "Grade A Pasteurized Milk Ordinance (1978 Recommendations.)" Of the recommendations stated, "Capping" may be most closely related to tamper-resistance. This recommendation states that closures used on milk products "shall be designed and applied in such a manner that the pouring lip is protected to at least its largest diameter and with respect to fluid product containers, removal cannot be made without detection."[4] The last portion of the preceding statement is part of the definition of tamper-resistance.

Federal Regulations

In November of 1982, the FDA published the first regulations for tamper-resistant packaging entitled "Tamper-Resistant Packaging Requirements for Certain Over The Counter Human Drug and Cosmetic Products." This regulation established tamper-resistant packaging and labeling requirements for certain O-T-C drug and cosmetic products in response to the seven Extra Strength Tylenol deaths earlier in the year. This action was taken to provide consumers with some protection against future occurrences of tampering. The Food and Drug Administration defines a tamper-resistant package "as one having an indicator or barrier to entry which, if breached or missing, can reasonably be expected to provide visible evidence to consumers that tampering has occurred."[5] The rule further states that "to reduce the likelihood of substitution of a tamper-resistant feature after tampering, the indicator or barrier to entry is required to be distinctive by design or by the use of an identifying characteristic."[6] The regulation (21 CFR 211.132) states that all over the counter human drug products (except dermatologics, dentifrices, insulin and lozenges), cosmetics, liquid oral hygiene products, vaginal products and contact lens solutions and tablets used to make these solutions, be packaged in such a way that they meet the requirements of a tamper-resistant package as stated above.

The Food and Drug Administration has never specified what constitutes a tamper-resistant package, in terms of closures, bottles, bands and the like. Packagers and manufacturers are free to use any packaging system they desire as long as the regulation is met. This has opened the doors to a variety of different package forms. The agency published a list of package forms in FDA Compliance Policy Guides 7132a.17, March 1, 1988, titled "Tamper-Resistant Packaging Requirements for Certain Over-the-Counter (OTC) Human Drug Products," that they feel are capable of meeting the requirements of the regulation if they are properly designed and used in an appropriate manner. The list includes the following:

FILM WRAPPERS: The wrapper must have a distinctive design, and be securely wrapped around the container. The film must be cut or torn for the package to be opened.

BLISTER OR STRIP PACKS: These should be made of either foil or plastic, and each dosage unit is individually sealed. The backing materials should not be easily removable from the blisters.

BUBBLE PACKS: The product is sealed in plastic and mounted in or on a display card. To remove the product, the package must be torn or broken. The backing material should not be readily separated from the plastic.

HEAT SHRINK BANDS OR WRAPPERS: The bands or wrappers should have a distinctive design that is proprietary and different for each product size. The band is shrunk by heat to seal the closure/bottle interface. The band must be torn open or cut to remove the product. It is suggested that a perforated tear strip can enhance tamper resistance.

FOIL, PAPER OR PLASTIC POUCHES: The pouch should have a distinctive logo, and must be torn or cut to remove the product. The end seals of the pouches cannot be separated and resealed without leaving visible evidence of tampering.

BOTTLE MOUTH INNER SEALS: The seal, which can be of paper, foil, thermal plastic, plastic film, polystyrene foam or any combination thereof, is sealed to the mouth of the container under the cap, and must be broken or torn to gain entry to the product. It is suggested that seals applied by heat induction to plastic bottles may offer a higher degree of tamper-resistance than an adhesive based seal.

TAPE SEALS: Tape seals are made of paper or foil with a distinctive design, and are sealed over all carton flaps or a bottle cap. The seal must be broken or torn to gain entry to the container and are acceptable only if they contain a unique feature that makes it apparent that the seals have been removed

and re-applied.

BREAKABLE CAPS: These caps are made of plastic or metal and break away fully when removed or leave part of the cap connected to the container. In other words, the cap or a portion of it must be broken in order to gain entry to the product, and the cap cannot be re-applied in its original state.

SEALED METAL TUBES OR PLASTIC BLIND-END HEAT SEALED TUBES: Both ends of the tube must be sealed for this to be an acceptable tamper-resistant technology. Crimped end tubes are not acceptable. The mouth or blind end of the tube must be punctured for the product to be dispensed.

SEALED CARTONS: Sealed cartons are not acceptable as currently available.

AEROSOL CONTAINERS: These containers are believed to be naturally tamper-resistant because of their design.

CANS (BOTH ALL METAL AND COMPOSITE): Cans are capable of meeting tamper-resistant technology specifications as long as the top and bottom are joined to the walls in such a manner that they cannot be pulled apart and re-assembled without leaving visible evidence.

Consumer Preferences

Consumer preferences play an important part in determining the success or failure of tamper-resistant packaging. What are consumers looking for? What are they looking at? What is important to them? What are they willing to pay? All these questions are important to consider. For pharmaceutical products, the threat of tampering is still a major concern. From Packaging Magazine's 1989 consumer survey, 91.4% of the respondents stated that having tamper-resistant features on pharmaceutical products is important.[7] This figure is down slightly from 1988's 92.1%, but still outdistances other features such as value for the money, convenient to open and convenient to re-seal. Most consumers feel reassured by having tamper-resistant indicators on their food and pharmaceutical products. In 1988, 84% of the respondents to the survey said tamper-resistant packaging was extremely/very important for food products in addition to pharmaceuticals.[8]

Consumers feel that tamper-resistant packaging is important, but are consumers inspecting their packages for signs of tampering? There is a fundamental difference between the two. Over a three year period, there has been a steady increase in the number of consumers who say they are checking their packages for signs of tampering. In 1989, 85.4% of the respondents to Packaging Magazine's survey said they have checked for

signs of tampering, up from 82.1% in 1988 and 78.6% in 1987.[9] This closer inspection of packages has led to an increase in product rejections. In 1989, 50.3% of the respondents rejected a package after inspection, up from 34.0% in 1988 and 31.1% in 1987.[10] One thing that needs to be considered is whether consumers are rejecting these packages because of the tamper-resistant feature being tampered with, or because of some type of manufacturing variation.

When given a chance to respond to which food items should be sold in tamper-resistant packaging, consumers gave some very interesting answers. Over fifty percent of the respondents to Packaging Magazine's 1988 survey said products such as candy, cottage cheese, peanut butter, cereal, meats, cheeses, yogurt, spices and potato chips should be sold in tamper-resistant packages. It is reassuring that consumers feel tamper-resistant packaging is important, and that they are inspecting packages and rejecting what they deem to be bad.

Previous Work

There have been a number of previous studies that have dealt with tamper-resistant packaging. The first in-depth study was done by John Sneden at Michigan State University. For his Master of Science thesis "Testing of Tamper-Resistant Packaging"[11] and the follow-up article in Package Engineering, "Tamper-Resistant Packaging: Is

It Really?"[12] he studied in a survey format, consumer attitudes and perceptions towards tamper-resistant packaging.

His attitude survey, done between November, 1982 and January, 1983 was designed to determine the effect of the Chicago Tylenol poisonings on consumer awareness of tamper-resistant packaging. The questions presented to the consumers dealt with their perceptions of tamper-resistant packaging, and whether or not this form of packaging was necessary or helpful. This section of the study showed that consumers were aware of tamper-resistant packaging, and the importance of it in trying to help the consumer make informed judgements when purchasing products. An interesting point raised was that consumers were very unsure that they could detect a tampered package.

In the second part of his study, Sneden evaluated the performance of eleven different tamper-resistant packages in protecting consumers from malicious adulteration. Two packages of each of the eleven forms were obtained, and one of them was tampered and repaired. Each consumer inspected a group of eleven packages consisting of both tampered and untampered packages. The consumer was asked to tell if the packages had been tampered with, using a one to five scale, one being no, two being not likely, three being don't know, four being most likely and five being yes. Sneden found that most of the

packages seemed to be ineffective at communicating their condition to the consumer. Also, a large percentage of the consumers surveyed showed some doubt as to whether they could determine if a package had been tampered with. How can consumers expect protection if they can't find something wrong?

While Sneden surveyed the consumer to develop his opinion on tamper-resistant packaging, J. L. Rosette took a different approach. In his thesis entitled "Development Of An Index For Rating The Effectiveness Of Tamper-Evident Features,"[13] Rosette felt that a scale or index could be developed that would rate the effectiveness of past, present and future tamper-evident features. He contends that this scale could provide a reasonable basis for determining the effectiveness of deterrents to the act of product tampering. Rosette surveyed manufacturers and users of tamper-evident packaging in his study instead of end users or consumers themselves. Rosette was not greeted warmly by some of those surveyed because of their belief that a set scale for establishing minimum standards of tamper-evidence would result in increased regulation.

Rosette explores the factors involved in product tampering based on the concerns of the packaging industry. There are a number of factors that are included in his ranking system. Factors such as equipment utilized, materials required, feature

visibility, time required, knowledge required and a cost relationship were all factored into his rating index. These criteria were then evaluated by individuals with no knowledge of packaging, others with a basic knowledge of manufacturing, and others with a thorough knowledge of packaging and manufacturing processes to determine a final ranking value.

Rosette believes that manufacturers, consumers and users of tamper-evident packaging, can all benefit from the development of a ranking scale. Being a supplier himself, Rosette "realizes that most suppliers accept the manufacturer's word that such features are effective, without understanding what tests the manufacturer used in establishing that such products are indeed tamper-evident products."[14] By producing a rating scale, all users of tamper-resistant packaging can have a sound basis for comparison and determining effectiveness.

Jack Rosette continued to study tamper-evident packaging for his 1989 Doctor of Philosophy dissertation "Improving The Effectiveness Of Tamper-Evident Packaging."[15] In it Rosette modified the rating index which he developed in his masters thesis. Using this revised rating index and forensic packaging concepts Rosette was able to devise an objective method for determining which tamper-evident packaging features provide the best protection against tampering.

Rosette is convinced that forensic packaging can be a

useful tool in determining the success or failure of a particular package feature. Forensic packaging, as defined by Rosette, is the science of "determining the cause of package failure where the package is suspected of causing a loss resulting in legal action."[16] Forensic itself is defined as belonging to courts of judicature or used in legal proceedings or in public discussions. It appears that forensic packaging can more simply be defined as packaging ideas used in a court of law. Rosette feels that using the concepts represented by forensic packaging would be useful as a development tool for determining the potential success or failure of a tamper-evident packaging feature.

Using his 1985 index, Rosette developed a base score for each of twenty-one different package forms or tamper-evident features. He established the base score as a way of determining the increased effectiveness any change in the tamper-evident feature would have against the standard form. Rosette looked not only at what are considered standard tamper-evident features, but also at some common package forms. Included in his testing were brown paper bags, plastic bags, corrugated boxes, fibre cans, metal cans, plastic pouches and clear plastic tape, as well as most standard tamper-evident features. Rosette then sent out surveys which asked for suggestions for improvements to these package forms. Using these suggestions, Rosette was able to determine improvements

for the features by learning how these features were violated in the first place. These improvements were incorporated (either actually or in the case of conceptual features, through the use of review panels) into the feature and re-tested using the 1985 index to establish a comparison.

Lisa Hewartson in her Masters Thesis, "An Evaluation Of The Overall Effectiveness Of Current Tamper-Resistant Packages,"[17] combined both industry concerns and consumer detection ability to develop an evaluation procedure. She felt that the overall effectiveness of tamper-resistant packaging could be determined, with special emphasis on the consumer detection portion.

In her study, Hewartson presented eight different tamper-resistant package forms to consumers and asked them the question, "have these packages been tampered with?" The consumer would see the package in either its tampered or untampered form, but not both, and he/she was required to answer "yes" or "no". This was a major departure from other studies. In Sneden's study, consumers were allowed to use a ranking scale as explained previously, but in this case, the consumers had to make a "yes" or "no" decision, removing the opportunity for indecisiveness. The package forms she used in her study included a polystyrene membrane seal, a paper neck band, a metal break-away closure, a vacuum button, a blister package, a foil induction seal, a

plastic shrink band and a plastic snap cap. The consumer would view each of the eight forms, one at a time, and answer the previously stated question.

Hewartson found that consumers could correctly assess the condition of a control package, put did very poorly in assessing a tampered package. She also found that a majority of the consumers, when forced to make this tampered/not tampered decision, would look so intently at a package that any little inconsistency they found would be considered tampering. This included such inconsistencies as manufacturing variations, common in all packaging processes.

Hewartson also conducted surveys of packaging professionals, asking them their confidence in the effectiveness of tamper-resistant packaging. She found a definite split between packaging professionals who were confident in tamper-resistant packaging and those that were not. Those packaging professionals not confident about the current technologies were mostly the users of tamper-resistant features. They felt there were serious potential problems if steps were not taken to improve technologies and consumer education. The suppliers of these technologies, on the other hand, felt there were no serious problems with the current state of tamper-resistant packaging.

Current Views

Throughout the literature there is a call to improve tamper-resistant packaging and implement some form of consumer education. Most users of tamper-resistant packaging realize that the current state of tamper-resistance is a time bomb waiting to explode. Researchers are beginning to realize that the average consumer does not know what to look for, or at, when determining whether a package has been tampered with. While most professionals agree that there is a need for consumer education, there have been very few suggestions, if any, as to how to go about educating millions of consumers. There must be an "increased communication between the product's marketers and consumers about what a product should look like on the shelf," according to Melissa Larson, the Senior Editor of Packaging Magazine.[18]

Are the tamper-resistant features in use today effective in insuring that consumers will instantly recognize if something is wrong with the package? "Ideally, a tamper-evident device should function like a red light, to stop the consumer about to buy or open a tampered package," says Walter Stern, President of The Walter Stern Consultancy Ltd.[19] Based on the results of previous studies, this doesn't appear to happen. Are the users and suppliers of tamper-resistant packaging doing everything they can to make sure their features provide

the maximum protection possible?

Most widely publicized tampering incidents to date have involved pharmaceutical products, such as Tylenol, Contac, or most recently, Sudafed. Food processors are just as vulnerable to malicious tampering. Food manufacturers have slowly been implementing tamper-resistant features on their products. The obvious question food producers must ask themselves is which of the available tamper-resistant features would be the most reliable, compatible with, and cost effective for their packaging systems? The food industry has been fortunate in that it has not been subjected to the same scrutiny as the pharmaceutical industry. Instead of a knee-jerk response to a tampering incident, which forced O-T-C Drug manufacturers to comply with a regulation, the food industry has had time to carefully plot a course of action against tampering. They have had a chance to observe the best and the worst tamper-resistant technologies, and improve their packaging accordingly. The "FDA wants to work with industry to: (1) utilize more than one tamper-evident feature per package, (2) phase out weaker tamper-evident technologies, (3) impart uniformity to tamper-evident features within product lines, and (4) adopt product labeling that highlights the tamper-evident features," according to Judy Rice, Associate Editor of Food Processing Magazine.[20] A progressive move toward these goals will help avoid the

problem that befell the pharmaceutical industry during the 1980's.

MATERIALS AND METHODS

Consumer Detection Surveys

A research plan has been developed based upon the results of previous work done in this area, the information gathered using Hewartson's survey tool, and the problems encountered using that survey. Part of the current research plan required that a new survey tool be developed to help improve the information gathering process necessary to determine how well packages communicate their condition to the consumer. (See Appendix A) In the current research plan, each survey was conducted in a one-on-one interview format, where each survey respondent saw each of three packages, in either its tampered or control (untampered) form, in random order to prevent any bias.

Each survey respondent was asked to view the package and answer the question "Do you think this package has been tampered with?" After he/she answered the question with a yes or no response, he/she was asked, "What is the reason for your decision?" By answering this question, the respondents revealed what they were looking at when they made the tampered or not tampered decision. It is important that the subjects are not lead in making their yes or no decision. It is also important to listen

carefully to the subjects to gain as much unprompted information as possible. It is much easier for the subjects to identify reasons for a yes decision than a no decision. For a yes decision, the subjects will usually point out something that leads them to believe the package was tampered. For a no decision, it is more difficult for the respondents to identify what looks right, or not wrong to them. Questioning the subjects will usually lead to some kind of positive statement.

Once the respondents have answered these two questions, they are instructed to open the package, or remove the tamper-resistant feature, and are again asked, "Do you think the package has been tampered with" and, "What is the reason for your decision?" The respondents were asked these questions again after opening the package as a way to test if there is continuing communication between the consumer and the tamper-resistant feature during and after removal.

Next, the survey respondents were asked to rate, on a scale of one to five, if the package indicated to them whether or not it was tampered. A rating of 1 denotes that the tamper-resistant feature did not indicate its condition, a rating of 5 denotes that it did indicate its condition. This question is asked to determine how well the package communicates its condition based on the consumer's perception. These steps are repeated for each of the five tamper-resistant features used in this study.

The five features will be described in detail later.

After all five tamper-resistant features are observed, the survey respondents were then asked if there were any messages on any of the packages telling them what to look for in determining if the package might have been tampered with. This was an attempt to determine what percentage of the people were aware that there are instructions provided to assist them in making a tampered or not tampered decision. If they answered yes to this question they were asked for which packages they used the instructions to make their tampered/not tampered decision. This question was an attempt to quantify not only how many people were aware that instructions are provided for them, but also what percentage of the people actually use those instructions.

The next question in the survey was used to determine the respondent's familiarity with the tamper-resistant features used in this study. The respondents were asked if they have used any products with these tamper-resistant features during the last year. The subjects were asked to respond yes or no to each of the five tamper-resistant features presented.

The last section of the survey form consists of demographic questions of age, sex, and educational background. Each respondent's visual acuity was measured using a near point visual acuity card.

Packages and Technologies Used

Five tamper-resistant features were chosen for use in this study that are representative of those features most common today. Four of the features are on the Food and Drug Administration's list of those tamper-resistant features which if used properly, are capable of meeting the standard for tamper-resistance. These are a film overwrap, a blister package, a foil membrane seal and a plastic shrink band. The fifth feature chosen, the vacuum button, is not on the FDA's list of tamper-resistant technologies, although it is used as such a device on many packages. Three different packages were used to display the five technologies, the shrink band and membrane seal on one package, the plastic overwrap and blister package on the second package, and the vacuum button on the last package.

Package One: Package one is an ibuprofen pain reliever contained in a plastic bottle. The bottle is approximately 2.5 inches tall with the closure in place. The label is approximately 1.0 inch high. The tamper-resistant warning appears on the principal display panel of the label, at the top, and is in approximately 3 point type. Type size was determined by measuring the height of the letters in the warning in inches on an optical comparator and converting to points. It is printed in yellow on a red background and reads "do not use if printed

plastic bottle wrap or printed foil innerseal is broken."

The outer tamper-resistant feature, the shrink band, is made of ethylene vinyl acetate. The band covers the entire body of the bottle, approximately 0.118 inches of the top of the bottle, and none of the bottom. The shrink band is printed with the words "Safety Seal." The words are approximately 6 points in size, and printed red on the clear shrink band. The inner tamper-resistant feature, the membrane seal, is an aluminum foil laminate that is induction sealed to the mouth of the bottle. The foil membrane seal is approximately 0.856 inches in diameter and is printed with the words "Safety Seal" in white on the silver background.

During the course of this research, the company manufacturing the ibuprofen pain reliever changed the container. (See Figure 1.) Both the shrink band and the foil membrane seal were still present on the package, but the bottle dimensions and the closure type were changed.

The new bottle is approximately 3.5 inches tall. The label on the bottle is also larger, now measuring 1.5 inches in height. The tamper-resistant warning retains its place on the primary display panel, but since the label is larger, the print size of the warning is larger, measuring about 4 points. The

warning is still printed in yellow on red and reads, "do not use if printed plastic bottle wrap or printed foil inner seal is broken."

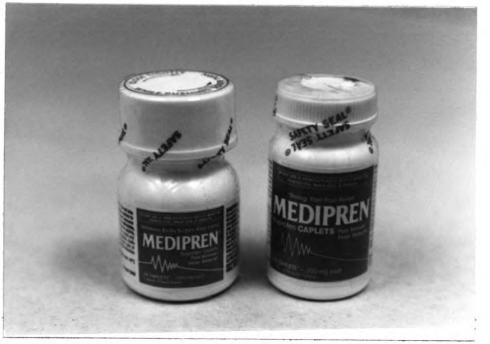

Figure 1 - The Two Types of Bottles
Old bottle on left, new bottle on right

Since the print on the new label is larger than the original bottle, there may be a problem with the difference in legibility between the two bottles. Both bottles were placed in a legibility comparator described by Gitau in his Masters thesis "Legibility Of Child-Resistant Bottle Caps By Two Methods Of Measurement,"[21] as a way to quantify the legibility of the two labels. The number of degrees of rotation

quantifies the "legibility" of the container. Since the new container has larger print, it should take fewer degrees of rotation to be able to read the warning statement. The original container was read at 56 degrees of rotation, while the new container was read at 38 degrees of rotation. As expected, the new container is easier to read than the old container by about 30 percent. Both types of packages were used in this study and a careful record was kept on the number of people who noticed the warning for each type of bottle. The effect of this change in bottles will be treated on page 53.

There was no change in either the outer or inner tamper-resistant feature.

Package Two: The second package contains a sinus medication. The medication comes in a 3.0 X 3.0 X 0.75 inch paperboard box, which is presented to the consumer. The box is a secondary package for the medication upon which the instructions for use, product information, and tamper-resistant warnings are printed. The tamper-resistant warning is printed in red on a white background and is in approximately 5 point type. The tamper-resistant warning points out each of the features used on this package.

The outer tamper-resistant feature is a clear plastic overwrap. The overwrap is a multi-layered structure of polypropylene and polyethylene, upon

which are printed the words "Safety Sealed" in red in approximately 6 point type.

The inner tamper-resistant feature is a push through blister package. The blisters are the primary package for the tablets, with two tablets per blister, six blisters per card and two cards per box. The blister material is a semi-rigid, thermoformed plastic with a foil/paper laminate backing.

Package Three: The third package is a glass bottle with a vacuum button closure. The bottle itself is approximately 6 inches tall, with a 3.5 inch label around the entire bottle. The closure is metal, with a gold finish and green lettering. The company logo is in the center of the cap where the vacuum button is located. Instructions for the use of the vacuum button are printed on the top of the cap in letters that are in 5 point type. Letters that small on a reflective background make the instructions difficult to read. The instructions read "Safety button pops up when original seal is broken" and "Reject if button is up."

Tampering Technique

For this study an effort was made to simulate the environment and tools of a malicious tamperer. The packages were purchased in a number of local stores, usually on the spur of the moment, or when more were

needed for the study. The packages were taken home and tampered with. The tools used were the following: three different pairs of scissors, ranging in size from 5 inches to 0.75 inches in length. An X-Acto knife with a No. 2 blade, a jackknife, a pair of tweezers, scotch tape and Krazy Glue. All these items are readily available in stores. Figures 2 through 8 show the control and tampered packages side by side, the tampered package being on the right. The five tamper-resistant technologies were tampered with as follows:

Shrink Band: The shrink band was cut length-wise down the side of the bottle, along the seam, away from the perforated tear tab, with the X-Acto knife. The shrink band was repaired with two small pieces of scotch tape placed on the inside of the shrink band so it could not be felt from the outside. (See Figure 2.)

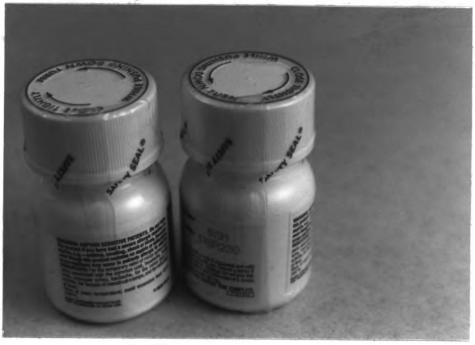

Figure 2 - The Tampered Shrink Band on the Bottle
Untampered package on left, tampered package on right

Membrane Seal: The original membrane seal was removed completely from the bottle. A new disk of foil was cut to the diameter of the bottle mouth from a roll of aluminum foil bought in the store. The smallest scissors were the easiest to use for this. Once the disk had been cut, it was glued in place with the Krazy Glue. (See Figure 3.)

Figure 3 - The Tampered Membrane Seal
Untampered package on left, tampered package on right

Plastic Overwrap: One of the double point end folds was gently pulled apart with a pair of tweezers and the flat edge of a knife. After the blisters had been removed, tampered, and returned to the box, the double point end fold was re-folded and glued in place with Krazy Glue. (See Figure 4.)

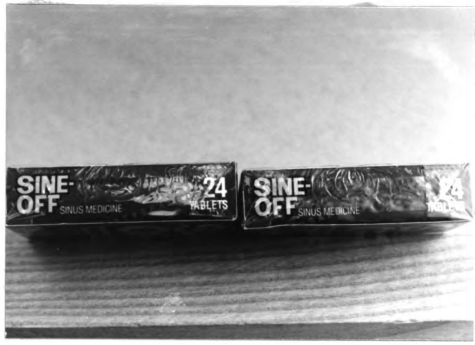

Figure 4 - The Tampered Plastic Overwrap
Untampered package on left, tampered package on right

Blister Package: For this study, the plastic blister was cut instead of the foil backing material as had been the case in previous studies. (See Figures 5. and 6.) Once the blisters were removed from the box, a blister was chosen on the opposite end from where the lot number and expiration date are printed. The blister was cut with the X-Acto knife at the base of the blister (where the plastic meets the foil). The blister was cut along its circumference so that one tablet could be removed. The tablet was replaced and the cut sealed with Krazy Glue.

Figure 5 - The Tampered Blister Package
Untampered package on left, tampered package on right

Figure 6 - Close Up of the Tampered Blister

Vacuum Button: The bottle was opened, releasing the vacuum and causing the button to pop up. The cap was replaced on the bottle and tightened by hand. No effort was made to reestablish the vacuum. (See Figures 7. and 8.)

Figure 7 - Tampered Vacuum Button (View 1)
Untampered package on left, tampered package on right

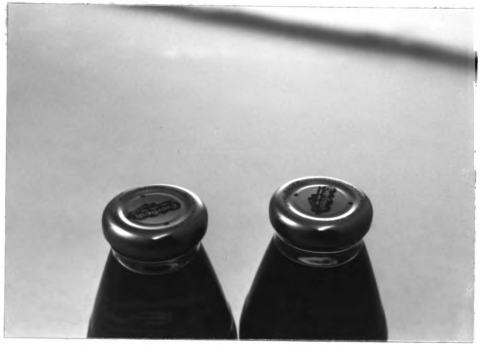

Figure 8 - Tampered Vacuum Button (View 2)
Untampered package on left, tampered package on right

Statistical Design

The statistical design of this experiment was based on the fact that each survey respondent will see all three packages. It is important that the order of presentation of packages is balanced to avoid any possible bias. In this case, X = Package 1, Y = Package 2 and Z = Package 3. Also, t = tampered and c = control. Each package can appear as either tampered or as a control, leading to six possibilities, X_c, Y_c, Z_c, X_t, Y_t or Z_t. Each survey respondent will see three packages, one each of X, Y and Z in either tampered or control form, or any combination thereof. In this case, there

are then eight possible groupings of packages. All three packages are controls, $[X_c\ Y_c\ Z_c]$, all three packages are tampered, $[X_t\ Y_t\ Z_t]$, or any combination of tampered and control packages, which would take like forms-

$[X_t\ Y_c\ Z_c]$; $[X_c\ Y_t\ Z_c]$; $[X_c\ Y_c\ Z_t]$; $[X_t\ Y_t\ Z_c]$;
$[X_t\ Y_c\ Z_t]$ or $[X_c\ Y_t\ Z_t]$.

In each of the above groups, there are six possible orders of presentation of packages. The six possible orders of presentation are $[X_c\ Y_c\ Z_c]$, $[X_c\ Z_c\ Y_c]$, $[Y_c\ X_c\ Z_c]$, $[Y_c\ Z_c\ X_c]$, $[Z_c\ X_c\ Y_c]$ or $[Z_c\ Y_c\ X_c]$. Since there are eight groups, and six possible presentations within each group, there are a total of 48 or 8 X 6 = 48 presentations.

This design is balanced. Each type of package appears 24 times. Also, X_t will appear before Y_t the same number of times that Y_t will appear before X_t, in this case six. This holds true for all the package forms. Two complete replications of this design were run to insure that valid statistical results were obtained. In each replication of this experiment, the order of presentation of each of the 48 possible treatments was randomly assigned and presented to the survey respondents to prevent any bias. See Appendix B for the complete statistical design.

With 48 presentations in the study, replicated twice, there is a total of 96 survey respondents needed to complete the study. These 96 survey respondents must be

representative of the total population, in terms of age and sex breakdown. For this study the age groups were broken down into the following categories: 20-29 years old, 30-44 years old, 45-59 years old, 60-74 years old and 75 years and older. Two different sources were used to obtain information on the breakdown of people in each age group. First was the 1980 United States Census, to get an exact breakdown of the percentages in each age group. Also consulted was "Projections of the Population of the United States by Age, Sex and Race: 1988 to 2080,"[22] issued in January of 1989 by the United States Department of Commerce and the Bureau of the Census, to find any major shifts in population density between 1980 and 1989. The population figures were also broken down according to national, state and local figures to determine if there were any major geographic differences that might affect how the surveys were conducted. Tables 1 through 3 summarize the breakdowns.

Table 1.
National Demographic Figures: 1980 Census

Age Groups	% of Total Pop.	% of Sample	Subjects in Sample
20-29	26.35	25.30	25
30-44	28.00	26.88	27
45-59	22.33	21.44	22
60-74	16.83	16.16	16
75+	6.48	6.22	6
Totals			96

Table 2.
State Demographic Figures: 1980 Census
State of Michigan

Age Groups	% of Total Pop.	% of Sample	Subjects in Sample
20-29	26.94	25.86	26
30-44	27.98	26.86	27
45-59	23.12	22.20	22
60-74	15.91	15.27	15
75+	6.05	5.81	6
Totals			96

Table 3.
Combined County Demographic Figures: 1980 Census
Clinton, Ingham and Eaton Counties

Age Groups	% of Total Pop.	% of Sample	Subjects in Sample
20-29	34.93	33.53	34
30-44	28.46	27.32	27
45-59	18.57	17.83	18
60-74	13.38	12.85	13
75+	4.66	4.47	4
Totals			96

The combined county figures were based on the populations of Clinton, Ingham and Eaton, the counties closest to and around E. Lansing, where the majority of the testing took place.

There is little or no difference between the demographic figures for the nation and the state. For

the county figures, there is an increase in the 20-29 age group, attributable to the fact that Michigan State University is located in this region. Many of the forty thousand students in the university are in the 20-29 age group. Tables 4 through 6 list the projections for 1990.

Table 4.
National Demographic Figures: 1990 Projections[23]

Age Groups	% of Total Pop.	% of Sample	Subjects in Sample
20-29	22.47	21.57	22
30-44	33.70	32.35	32
45-59	20.18	19.37	19
60-74	16.27	15.62	16
75+	7.37	7.08	7
Totals			96

Table 5.
State Demographic Figures: 1990 Projections[24]
State of Michigan

Age Groups	% of Total Pop.	% of Sample	Subjects in Sample
20-29	23.55	22.61	23
30-44	34.11	32.75	33
45-59	20.11	19.31	19
60-74	16.34	15.69	16
75+	5.89	5.65	5
Totals			96

Table 6.
Combined County Demographic Figures: 1990 Projections[25]
Clinton, Ingham and Eaton Counties

Age Groups	% of Total Pop.	% of Sample	Subjects in Sample
20-29	29.14	27.97	28
30-44	36.28	34.83	35
45-59	18.39	17.65	18
60-74	11.73	11.26	11
75+	4.46	4.28	4
Totals			96

Again, there are no statistically significant differences between the national, state and combined county figures for the projected 1990 populations, other than the aforementioned rise in the 20-29 age group due to the location of Michigan State University. The next step is to compare the 1980 Census figures with the 1990 projections to determine any differences. Table 7 shows no statistically significant shifts in age proportion from 1980 to 1990. Since there were no significant shifts, the 1980 census information is used in this analysis because it provides concrete numbers for population and not just a projection. At the time of the design of the experiment, the 1990 census information was not yet available.

Table 7.
Differences Between 1980 Census
and 1990 Projected Sample Size Figures

Age Group	National			State			County		
	1980	1990	DIF	1980	1990	DIF	1980	1990	DIF
20-29	25	22	-3	26	23	-3	34	28	-6
30-44	27	32	+5	27	33	+6	27	35	+8
45-59	22	19	-3	22	19	-3	18	18	NC
60-74	16	16	NC	15	16	+1	13	11	-2
75+	6	7	+1	6	5	-1	4	4	NC

J Score Index

The J Score Index is introduced in W. J. Youden's paper "Index For Rating Diagnostic Tests"[26] for cancer research in 1950. According to Youden, "the ideal diagnostic test should discriminate unerringly between diseased and healthy individuals." This test discriminates between the two possible types of error that occur in diagnostic testing, false positives and false negatives. With false positives, a person is judged to have the disease when in fact he does not. A false negative is exactly the opposite, where a person is judged to be healthy when in fact he does have the disease. The results of diagnostic testing can be tabulated as shown on the following page:

Classified By Test	Individuals	
	Known Diseased	Healthy or Control
Positive	a (correct)	b (false positives)
Negative	c (false negatives)	d (correct)

Figure 9 - Diagnostic Test Rating Table

This index for rating diagnostic tests can be directly translated into a rating index for tamper-resistant packaging. A tampered package can be likened to a diseased patient, while a healthy individual translates to a control package. When presented with the various tamper-resistant packages, it is possible for the consumer to misclassify them; that is, to have false negatives or false positives. A false negative, in this case, would be a failure to detect tampering that was there, while a false positive is a result that indicates tampering being seen in a control package. The results of a consumer's judgements can be tabulated as follows:

Consumer Judgement	Package Condition: Tampered	Package Condition: Control (not tampered)
Tampered	T_t (correct)	NT_t (false positives)
Not Tampered	T_{nt} (false negatives)	NT_{nt} (correct)
Total	$T_t + T_{nt}$	$NT_t + NT_{nt}$

Figure 10 - Tamper Evidence Index Judgement Grid

From the consumer judgements, a J Score can be calculated based on the following equation:

$$J = \frac{Y_t + Y_{nt}}{2} \qquad \text{Equation (1)}$$

Where: Y_t = Ratio of correctness of judgement for the tampered packages:

$$Y_t = \frac{T_t - T_{nt}}{T_t + T_{nt}} \qquad \text{Equation (2)}$$

And: Y_{nt} = Ratio of correctness of judgement for the non-tampered or control packages:

$$Y_{nt} = \frac{NT_{nt} - NT_t}{NT_{nt} + NT_t} \qquad \text{Equation (3)}$$

The J Score can take values ranging from +1, representing 100% correctness, to -1, representing 100%

incorrectness. For a tamper-resistant package to receive a +1 rating, all the subjects that viewed both the tampered and control packages would have to correctly assess the condition of the package. For a -1 J Score, all those who viewed both tampered and control packages would have to incorrectly assess the condition of the package.

Youden used the J Score as a way to compare different diagnostic tests, in order to determine if one was better than the other at making correct classifications; that is, to remove the possibility of false negatives and false positives. At this point in time, there are no other diagnostic tests for determining the correctness of judgements on tampered and non-tampered packages. A J Score can be developed for each tamper-resistant feature to give an overall view of how it performs on the J scale, from -1 to +1. What is more important for this study is the two parts that comprise the J Score, Y_t and Y_{nt}.

Equations Y_t and Y_{nt} can be further defined as follows, based on the Tamper-Evidence Index Judgement Grid seen in Figure 10:

$$Y_t = \frac{T_t - T_{nt}}{T_t + T_{nt}} \qquad \text{Equation (2)}$$

Where: T_t = The number of survey respondents that

identified a tampered package as tampered (a correct judgement)

And: T_{nt} = The number of survey respondents that identified a tampered package as not tampered (an incorrect judgement)

Y_t, or the Tamper-Evidence Ratio for the tampered package is a quantification of the ability of a package to communicate that it has been tampered. Like the J Score Index, it can also take values from +1 to -1.

The same can be said for Y_{nt}:

$$Y_{nt} = \frac{NT_{nt} - NT_t}{NT_{nt} + NT_t} \qquad \text{Equation (3)}$$

Where: NT_{nt} = The number of survey respondents that identified a non tampered package as not tampered (a correct judgement)

And: NT_t = The number of survey respondents that identified a non tampered package as tampered (an incorrect judgement)

Y_{nt}, or the Tamper-Evidence Ratio for the non tampered package is a quantification of the ability of a package to communicate that it has not been tampered. It also can take values ranging from +1 to -1. Both Y_t and Y_{nt} should be high, or close to +1, showing that the survey respondents were capable of identifying control and tampered packages.

Since each survey is conducted in an interview

format, the reasons for the tampered or not tampered decision have been recorded, as stated previously. It has been observed in previous surveys that consumers may guess correctly on tampered packages, but they use the wrong reason for the judgement (or guess). By comparing the decisions with the reasons for those decisions, it is possible to further classify the Y_t and Y_{nt} values. If a respondent who saw a tampered package decided it was tampered, but gave a reason other than the correct reason, this response can be classified differently from a response that correctly determined a tampered package for the correct reason. This reasoning results in a Tamper-Evidence Ratio termed Y'_t that is calculated from the following:

$$Y'_t = \frac{T'_t - T'_{nt}}{T'_t + T'_{nt}} \qquad \text{Equation (4)}$$

Where: T'_t = The number of survey respondents that identified a tampered package as tampered for the correct reason (a correct judgement)

And: T'_{nt} = The number of survey respondents that identified a tampered package as not tampered or identified a tampered package as tampered and gave an incorrect reason (an incorrect judgement)

The same reasoning holds true for the Tamper-Evidence Index, or correctness ratio for the non tampered packages, Y'_{nt}:

$$Y'_{nt} = \frac{NT'_{nt} - NT'_{t}}{NT'_{nt} + NT'_{t}} \qquad \text{Equation (5)}$$

Where: NT'_{nt} = The number of survey respondents that identified a non tampered package as not tampered for the correct reason (a correct judgement)

And: NT'_{t} = The number of survey respondents that identified a non tampered package as tampered or identified a non tampered as not tampered and gave an incorrect reason (an incorrect judgement)

This results in a J' Score Index that is somewhat different than the regular J Score Index:

$$J' = \frac{Y'_{t} + Y'_{nt}}{2} \qquad \text{Equation (6)}$$

Where: Y'_{t} = Tampered Package correctness ratio

And: Y'_{nt} = Control Package correctness ratio

The J' value gives a "truer" representation of how well the package is communicating its condition to a consumer in regards to the consumer making a tampered or not tampered decision.

The J Score Index is approximately normally

distributed, and can be used to make comparisons of tampered packages against non tampered packages, to determine if there are significant differences between them. Also, the J Score Index and the Y indices can be used to compare different tamper-resistant package forms to determine if there are statistically significant differences between the packaging forms and their ability to communicate their condition to the consumer. Since Y_t, Y'_t, Y_{nt}, Y'_{nt}, J, and J' are linear functions of proportions, then standard errors involve formulas for the standard errors of proportions.

Consideration of Confidence Level

This thesis attempts to make decisions about a large population on the basis of small sample information. There is no practical way to survey everyone who has come into contact with a tamper-resistant package. Thus, a sample is used which is representative of the total population, and decisions are based on this sample. Based on the questions being addressed, it is generally useful to make assumptions about the populations involved. These assumptions, which may or may not be true, are backed by the information gathered from the samples taken. These assumptions can lead to possible errors. Based on the results of testing, and the assumptions being made

(called statistical hypotheses), there are two types of error possible. Type I error, where the null hypothesis is rejected when it is true, and Type II error, where the null hypothesis is accepted when it is not true. The level of significance is the maximum probability that a Type I error will occur, which is the most important error of the two types. In practice, levels of significance, or α values of .01, .05 and .10 are used most frequently in applications ranging from statistics courses to experimental designs in industry. When a significance level of .05 is chosen in testing a hypothesis, then there is a 5 percent chance that a Type I error will be committed, or a 5 percent chance that the null hypothesis will be rejected when it is true.

A tamper-resistant package should be able to instantly alert a consumer to the fact that someone else had been inside the package. Ninety five percent confidence is generally accepted as the confidence required to spend money in a given situation, such as material or machinery changes. Tamper-resistant packaging is a special situation though. In this area of packaging, loss of life is an important consideration not generally factored in, when making changes to existing packaging systems.

Suppose that two package designs are being compared as to their ability to convey a tampered

condition. The null hypothesis of no difference in the effectiveness is rejected with a probability α when it is true. For a given sample size, the lower the value of α chosen for the test, the smaller the power is for the test to detect a difference in the effectiveness of the designs to convey a tampered condition. Since failing to detect a difference (producing a false negative) is a serious error, there is reason to use larger α- levels than are traditional. In regard to confidence interval estimation, this suggests confidence levels lower than 90 percent.

Since no dollar value can be placed on a human life, this more liberal confidence level should be used. Seventy five percent confidence should be high enough to consider avoiding loss of life. Granted, considering material costs, changeover costs, and a multitude of other factors, a company should not jump blindly into changing packages. If there is the possibility that this new package form can improve a consumer's ability to detect tampering, or consistently yield higher Y_t values and ultimately save lives, further testing is warranted.

RESULTS

Tamper-resistant packaging was implemented to help consumers make more informed judgements as to the condition of the package, or in short, to protect the consumer against tampering. To do this, the package must be adept at communicating its condition. The burden of communication should not be placed solely on the package though. The user of the package must be able to pick up the subtle changes that a malicious tamperer could make to the package. To best evaluate a feature on its communicative ability, the survey form must include a section that requires a reason for each tampered or not tampered decision that the consumer gives, for each technology viewed. The information gathered here will provide insight as to what is going through the minds of consumers as they make their tampered or not tampered decisions. The methodology developed here provides a way to determine the tamper-evidence of a package, or the degree to which tampering is apparent to the observer. It is not possible to make a definitive statement on which tamper-resistant technology is best at communicating its condition because this methodology tests only the tampering condition discussed here. If the method of tampering is changed, the resulting

values used to make these comparisons would change also, depending on the sophistication of the tampering. This section of the thesis will attempt to bring perspective to the problems being faced by tamper-resistant packaging by viewing the problems in their most broad terms, and working towards a definitive statement based on the results of the surveys conducted.

Use Of Instructions

For the package to successfully communicate its condition, the consumer must be aware of the safeguards that are in place and how to use them. For this study, each tamper-resistant technology was pointed out to the consumer, but they were not told how to use it. By not telling the consumer how to use the technology to detect tampering, no extra information was given to the consumer. Information on how to use each tamper-resistant feature was given by the company producing the product somewhere on each package, whether it was on the back panel in the case of the plastic overwrap and blister package, or right on the cap in the case of the vacuum button. Tables 8 and 9 show the percentage of survey respondents that reported there was a message about how to use the tamper-resistant feature, and if they actually used the message to help them make their tampered or not tampered decision.

Table 8.
Percentage of Survey Respondents Who Reported That The Tamper-Resistant Message Was Present

Package Type	Actual	Percentage
Original SB[1]/ MS[2]	15/60	25.0
Replacement SB / MS	10/36	27.8
Total SB / MS	25/96	26.0
PO[3]/ BP[4]	28/96	29.2
Vacuum Button	42/96	43.8

Table 9.
Percentage of Survey Respondents Who Used The Tamper-Resistant Message

Package Type	Actual	Percentage
Original SB[1]/ MS[2]	5/60	8.3
Replacement SB / MS	5/36	13.8
Total SB / MS	10/96	10.4
PO[3]/ BP[4]	11/96	11.5
Vacuum Button	33/96	34.4

1. Shrink Band
2. Membrane Seal
3. Plastic Overwrap
4. Blister Package

The percentages did not differ significantly between the original and replacement shrink band/membrane seal or the total shrink band/membrane seal and the plastic overwrap/blister package. The vacuum button showed much higher recognition and use, possibly because the message was located right around the vacuum button. If the subject looked at the vacuum button, there was a good chance that he/she would see the tamper-resistant message. As noted previously, the message was printed green on a highly reflective gold background, making it difficult to see, which may explain the lower percentage in the 20/40+ visual acuity category who saw it (Table 10). Putting the message in close proximity to the tamper-resistant feature may improve the actual use of the message, and possibly, better use of the tamper-resistant technology.

Table 10.
Percentage of Survey Respondents Who Saw the Tamper-Resistant Message for the Vacuum Button

Visual Acuity	Total In Group	Number Who Saw Message	Percentage
20/20	58	27	46.6
20/30	20	10	50.0
20/40+	18	5	27.8

Reasons For Consumer's Decisions

The most important information gathered by this work lies in the responses of the consumers as they made their tampered or not tampered decisions. Tables 11 through 15 show the frequency and type of incorrect responses when viewing a tampered package; for those that both correctly and incorrectly judged the condition of the package, for each technology, before and after opening:

Table 11a.
Incorrect Reasons for Correct Judgements
on the Tampered Shrink Band, Before Opening

Frequency	Response
6	Wrinkles, bulges, bubbles (Mfg variation)
1	Part of Shrink band is missing on top
1	Plastic not even on top

Table 11b.
Reasons for Incorrect Judgements on the
Tampered Shrink Band, Before Opening

Frequency	Response
15	No broken seals, no rips tears or reseals
12	Fits snugly around the bottle
2	Hard to tamper and make it look the same
1	Safety Seal messages are intact

Table 11c.
Incorrect Reasons for Correct Judgements
on the Tampered Shrink Band, After Opening

Frequency	Response
1	Whole band came off
1	Looks like glue at tear point

Table 11d.
Reasons for Incorrect Judgements on the
Tampered Shrink Band, After Opening

Frequency	Response
3	Everything is tight and secure
1	Properly sealed
1	Band not removed previously

Table 12a.
Incorrect Reasons for Correct Judgements
on the Tampered Membrane Seal, Before Opening

Frequency	Response
1	Contents could be adulterated
1	Air puffing out seal

Table 12b.
Reasons for Incorrect Judgements on the
Tampered Membrane Seal, Before Opening

Frequency	Response
32	Fully sealed around all edges, no breaks, tight and secure
3	Factory installed
2	Can't remove and replace foil
2	No bulges or wrinkles in foil
1	Seal is air tight

Table 12c.
Incorrect Reasons for Correct Judgements
on the Tampered Membrane Seal, After Opening

Frequency	Response
1	Cotton pushed way down

Table 12d.
Reasons for Incorrect Judgements on the
Tampered Membrane Seal, After Opening

Frequency	Response
11	Glued all the way around
4	Cotton still there, in correctly
3	Came off like it should
2	Came off easy, would accept it
2	Hard to remove seal
1	Looks factory installed
1	No extra glue on lip
1	Same foil used on all packages
1	Foil feels thinner, would accept it
1	Seal is air tight

Table 13a.
Incorrect Reasons for Correct Judgements
on the Tampered Plastic Overwrap, Before Opening

Frequency	Response
1	Not on as tight as it should be
1	Back overlap area is not right
1	Tape on one side

Table 13b.
Reasons for Incorrect Judgements on the
Tampered Plastic Overwrap, Before Opening

Frequency	Response
19	Plastic doesn't look ripped, opened or torn
8	Flaps are sealed tight
4	Letters in "Safety Sealed" would not be aligned if plastic broken
2	Glue still intact
1	Looks brand new off shelf
1	No marks showing tampering

Table 13c.
Incorrect Reasons for Correct Judgements
on the Tampered Plastic Overwrap, After Opening

Frequency	Response
	None

Table 13d.
Reasons for Incorrect Judgements on the
Tampered Plastic Overwrap, After Opening

Frequency	Response
7	Difficult to remove overwrap
6	No rips, holes, breaks, tears or tape
3	Was glued down at ends
2	Came off the way it should
1	Wrap was a fragile covering
1	Overwrap wouldn't fit back on if tampered

Table 14a.
Incorrect Reasons for Correct Judgements
on the Tampered Blister Package, Before Opening

Frequency	Response
4	"Sine-Off" should be up on all pills
1	Foil backing has mark on it

Table 14b.
Reasons for Incorrect Judgements on the
Tampered Blister Package, Before Opening

Frequency	Response
28	Foil backing intact
18	Plastic blister is intact
5	Not open at foil/blister interface
4	Pills sealed in tight, not moving around
4	"Sine-Off" not up on all pills
2	Can't put back together if tampered
1	Lot numbers would not align if tampered

Table 14c.
Incorrect Reasons for Correct Judgements
on the Tampered Blister Package, After Opening

Frequency	Response
2	Some pills came out easier than others
1	Lack of vacuum in blisters
1	No difference in opening the blisters
1	Semi-circle cut around one edge
1	One part of the backing not right
1	"Sine-Off's" should all be up

Table 14d.
Reasons for Incorrect Judgements on the
Tampered Blister Package, After Opening

Frequency	Response
12	Foil backing not broken
10	Pills came out the same as others used
9	Hard to get pills out
9	Blisters not cut or broken
4	No play of pill in blister
3	Not open at blister/foil interface
3	Can't tamper with and repair
2	Pills all the same
1	"Sine-Off's" should all be up

Table 15a.
Incorrect Reasons for Correct Judgements
on the Tampered Vacuum Button, Before Opening

Frequency	Response
3	Should have a shrink band on it
1	No pressure spot
1	Some contents gone from bottle
1	Can see crease in vacuum button
1	Cap should be down farther on neck

Table 15b.
Reasons for Incorrect Judgements on the
Tampered Vacuum Button, Before Opening

Frequency	Response
6	No dings, dents, scratches, leaks on cap
2	No plastic band around cap
2	Seal has not popped up
1	Nothing missing or in bottle
1	Cap is still on
1	There is a little flex in cap

Table 15c.
Incorrect Reasons for Correct Judgements
on the Tampered Vacuum Button, After Opening

Frequency	Response
1	Looks as if lost some fluid
1	Should have plastic band around cap

Table 15d.
Reasons for Incorrect Judgements on the
Tampered Vacuum Button, After Opening

Frequency	Response
3	Heard vacuum release
1	No protection against removing cap
1	Cap same after removing
1	Should be harder to open

For the shrink band technology, most consumers checked to make sure that the band fit snugly and completely around the bottle, and that it had no rips or tears. This careful observation allowed 14 people to notice the tampering before opening the package. Some of the consumers who inspected for the same thing did not notice the tampering. While opening the package improved the rate of detection of tampering for all but one of the tamper-resistant technologies, the improvement with the shrink band was the most significant. The scotch tape placed on the cut seam was very difficult to see while the shrink band was on the bottle, due to the transparency of the tape and the color of the bottle. Once the shrink band was removed though, the tape was easily noticeable because of the differing background that the tape was against. (See Figure 11) This resulted in a marked increase in correct judgements. It seems that with a clear shrink band and a white bottle the probability of detection is hampered. If the bottle and band were of differing colors, say a clear shrink band on a blue or red bottle, detection might be easier.

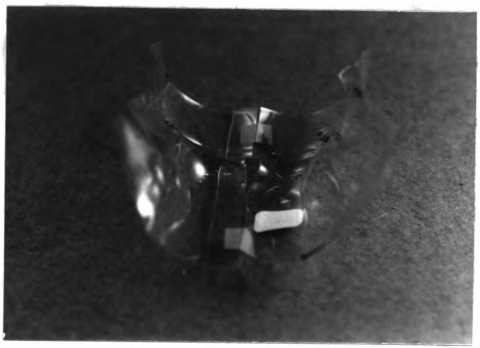

Figure 11 - Tampered Shrink Band Showing Tape

In the case of the membrane seal, one point stood out. Not one survey respondent said that the membrane seal was tampered because the words "Safety Seal" were missing from the foil membrane. Not using such an obvious mode of detection shows incredible ignorance on the part of the consumer. When consumers were asked to judge the membrane seal, most checked to see that it was fully sealed around all edges of the bottle and that there were no breaks or cuts in the foil, as can be seen in Table 12b. When the consumer was asked to completely open the membrane seal, many noticed that the foil did not feel right, or give enough resistance for it not to

have been tampered with. Still, three people said that it came off like it should, and one person said that it was the same foil used on all membrane seals. (See Table 12d.) How can the package be expected to protect the consumer if the consumer does not know how to use the package, or what to look for in determining if the package was tampered? In this case, it seems that consumer education in better use of the membrane seal may be beneficial. However, this cannot be the end-all-and-be-all solution. For example, if the public is educated to look for the words "Safety Seal" on all membrane seals, it is safe to assume that most tampering with common household foil would be detected. However, there is always the possibility that the malicious tamperer may have access to the printed foil and use it instead. Most people in this survey did not notice that the membrane seal had been glued to the bottle (not induction sealed as it normally is); consequently, the method of detection has been taken away from the consumer. In this survey, less than 50 percent of the consumers were correct in their tampering judgement about the membrane seal, even after opening. Opening did help, with detection rising from 12 before opening to 23 after opening. How do you protect the four people that said the membrane seal was not tampered after opening because the cotton was still in the bottle?

Tables 13a and 13b show that most of the people who

checked the plastic overwrap for signs of tampering before opening checked the plastic for rips and tears. They also checked to determine that the plastic overwrap was not broken or open around the corners or at the double point end fold on either edge of the overwrap. The plastic overwrap was tampered by separating the double point end fold on one end of the box so that the box could be opened, the blisters removed, tampered and replaced, the box closed, and then the plastic glued shut. In this regard, consumers were inspecting the correct area of the package. Also, four consumers checked the lettering on the overwrap to make sure that the letters were aligned. Still, only 18 survey respondents, or 37.5 percent of the people noticed the tampering. Opening the plastic overwrap increased tampering detection, raising the percentage to 52.1 percent. Still, this number is too low, especially since most of the consumers were looking at the right area of the package to detect tampering. After opening, the consumers again looked for rips, holes, breaks, tears or tape as signs of tampering (see Table 13d). Seven people based their decision on the ease of opening or removing the overwrap. The material used for this overwrap was relatively strong and tear resistant. Since most consumers based their decision on the condition of the overwrap, one way of improving detection might be to use a more fragile overwrap, one that would tear more easily

and leave more evidence when opened.

The blister package was different from the other tamper-resistant technologies in that there was no improvement in detection after opening. One person in the entire survey group was able to detect the tampering. It's not that the 47 people who missed the tampering did a poor job inspecting the packages. As Table 14b shows, consumers inspected the foil backing to be sure that it was intact. They also looked at the blisters themselves for signs of tampering. This package is a perfect example that consumer education is not the **WHOLE** answer to tamper-resistant packaging's problems. Most of the tampering incidents that have occurred previous to this study have happened to blister packages. The tamperer, in these cases, went through the foil backing to get at the capsule. So there has been some education to this route of entry into the blister package (especially, with the recent Sudafed tampering in Washington.) By changing the route of entry, that education, to look at the foil backing has been neutralized. Many consumers stated that the package performed the way they expected it to, based upon other packages they had used (as can be seen in Table 14d.) Another interesting point raised by the consumer's responses was that some expect complete uniformity of the product in the package. A number of people stated that the words printed on the tablets should all be face up, and it was a sign of tampering if

they were not, as can be seen in Tables 14a, 14b, 14c and 14d. The producers point out that the words are a tamper-resistant feature in that each tablet should be imprinted. It seems that the good intentions of the company have confused a number of people. If this results in returned product, the company would lose money because consumers could become suspicious if they feel that the tamper-resistant feature is on the wrong side of the tablet.

The blister package performed much worse in this study than in previous studies because of the sophistication of the tampering method. This is why a definitive ranking scale for tamper-resistant packaging cannot be developed based on the results of this study. Any change in the tampering technique will have a resulting impact on the detection rates of consumers.

For this study, consumers were best able to tell that the vacuum button was tampered. Those that were wrong in their assessment of tampering did so for varied reasons, as can be seen in Tables 15a and 15b. Only 19 out of 48 consumers were incorrect in their assessment before opening, and after opening there were only 8. Of those that were wrong before opening, 2 people said that there was no indicator, or no way to tell if the vacuum button was tampered before opening. Three consumers said that the vacuum button should have a shrink band on it, showing a familiarity with a different packaging system.

One possible reason that consumers were able to tell that the vacuum button was (or was not) tampered, was that they could use more than just their sense of sight to make their determination. While other tamper-resistant technologies depended mostly on visual inspection, the vacuum button also used the senses of touch and hearing. Consumers could push the top of the cap to determine if the button was up, and they could hear the vacuum (or the lack of it) when removing the cap from the bottle. Again, it is important to point out that this does not mean that the vacuum button is better than the other tamper-resistant technologies. If the method of tampering is changed, this methodology may show that the vacuum button is not as successful at communicating its condition as it appears to be here. What can be said though, is that it appears that if multiple senses are used in making the determination, the probability of detecting tampering may be increased.

Effect of Demographics

The statistical analysis of the research data was done with a view towards using the overall results to evaluate differences between technologies. To use the overall values for each technology with confidence, the different factors that make up the overall values, such as age, visual acuity, sex, and education must be tested to determine any significant contribution from them. Due to the small number of samples in the 60-74 and

75+ age groups, these two groups were combined into the 60+ age group for the statistical testing. The testing was carried out using the Fisher-Irwin exact test for a 2 X 2 contingency table, an explanation of which can be found in most basic statistics texts. Tables 16 and 18 show the two-sided p-values of the tests for each comparison listed. The table values range from 0.0 to 1.0, with a value of 1.0 meaning no significant difference between comparisons and a value of 0.0 meaning the comparison is significantly different. In Table 16, which shows the statistical significance of Y'_t, only correct judgements on the tamper-resistant feature for correct reasons were considered to be correct. All other assessments were considered to be incorrect. For Table 18, which shows the statistical significance of Y_{nt}, only incorrect judgements on the tamper-resistant feature were considered incorrect. If a consumer correctly assessed the condition of the technology but did so for the wrong reason, the answer was still considered correct. Table 18 measures the producer's risk that the consumer will incorrectly identify a good package as being tampered.

Table 16.
Statistical Significance of Y'_t, After Opening
Using the Fisher-Irwin Exact Test

Comparison	SB[1]	MS[2]	PO[3]	BP[4]	VB[5]
Age:					
20-29 vs 30-44	1.000	1.000	0.158	1.000	1.000
20-29 vs 45-59	1.000	1.000	0.057	1.000	0.556
20-29 vs 60+	0.175	0.688	0.089	1.000	0.026
30-44 vs 45-59	0.478	1.000	0.688	1.000	0.600
30-44 vs 60+	0.029	0.670	1.000	0.448	0.116
45-59 vs 60+	0.149	0.670	1.000	1.000	0.356
Sex:					
Male vs Female	0.429	0.777	0.773	1.000	0.442
Visual Acuity:					
20/20 vs 20/30	1.000	0.113	0.146	1.000	0.187
20/20 vs 20/40+	1.000	0.709	0.482	1.000	1.000
20/30 vs 20/40+	1.000	0.060	0.669	1.000	1.000
Education:					
HSG[6] vs SMCLG[7]	0.350	1.000	0.319	1.000	0.949
HSG[6] vs CLGGRD[8]	1.000	0.672	1.000	1.000	1.000
SMCLG vs CLGGRD	1.000	0.313	0.317	1.000	1.000

1. Shrink Band
2. Membrane Seal
3. Plastic Overwrap
4. Blister Package
5. Vacuum Button
6. Some High School and High School Graduate
7. Some College or Business School
8. College Graduate and Beyond

These comparisons are made to identify trends that might signal that one or more of the groups has a significant affect on the outcome of the experiment. Overall, there was no assignable significance present, meaning that no one group was significantly better at identifying tampering than another. There was no group that was consistently worse at detecting tampering over all five technologies viewed. There were, however, some interesting anomalies that appeared. In the case of the tampered shrink band and tampered vacuum button after opening, the 60+ age group was significantly different from all of the other age groups. (See Table 16) This may point to some inability of the 60+ age group to detect tampering. When examining the reasons for the decisions that the 60+ age group made, there were no unorthodox explanations given. In both cases though, the number of incorrect responses from the 60+ age group made up at least half of the total incorrect responses. A contributing factor to this may be the relatively small sample size making up the 60+ age group, with only ten people seeing a tampered shrink band and only nine seeing the tampered vacuum button. Another possibility that may contribute to the inability of the 60+ age group to detect tampering was the declining visual acuity of older people. For the shrink band, 2 of the 4 people in the 60+ age group who incorrectly identified a tampered package had 20/20 vision while the other 2 had 20/40+ vision.

Consulting Table 16, the comparison between the 20/20 visual acuity group and the 20/40+ visual acuity group for the shrink band technology yielded a Fishers significance of 1.00, which is no significant difference. For the vacuum button, one person had 20/20 vision, two had 20/30 vision and one had 20/40+ vision. Table 16 shows that the 20/20 versus the 20/30 comparison yields a 0.187 significance level, showing that the groups were different with a confidence of 81.3. The other two comparisons showed no significance, which leads one to believe that the difference between the 20/20 and 20/30 visual acuity groups can be attributed to random variation due to small sample size.

The same reasoning applies to the apparent difference between the 20-29 age group and the other age groups, with respect to the plastic overwrap. Table 16 shows what appears to be a difference between the age groups stated within the plastic overwrap, but that difference does not appear in any of the other tamper-resistant technologies. Seven people in the 20-29 age group saw the tampered plastic overwrap, and only one person was correct (14.3%) in his/her assessment of the package, as compared with 3 out of 13 (23.1%) for the 30-44 age group, 6 out of 12 (50%) for the 45-59 age group and 8 out of 16 (50%) for the 60+ age group. The two youngest age groups had the most difficulty with this technology. It is safe to assume that the younger ages, with better visual acuity

would be more successful in picking out the tampering, which apparently is not the case in this instance. One possible explanation may be that the older age groups, with somewhat poorer eyesight, may have inspected the plastic overwrap more closely. Another possible explanation may be that in today's fast-paced world, the younger age groups may take less time to inspect the packages as a force of habit. The more time that is spent inspecting the packages, the more likely tampering may be noticed. Table 17 shows the average amount of time taken by each age group to inspect the packages in this study.

Table 17.
Average Time Spent Inspecting All Three Packages

Group	Avg. Time (min)	S.D.	Number in Sample
20-29	17.52	3.89	25
30-44	17.67	6.99	27
45-59	18.09	3.13	22
60+	22.95	7.12	22
Male	18.49	5.75	47
Female	19.36	6.18	49
20/20	17.76	5.48	58
20/30	19.40	4.99	20
20/40+	22.22	7.30	18
HS & HSG[1]	19.01	5.30	11
Some Col[2]	19.61	6.73	28
Coll Grd[3]	18.42	5.71	57

1. Some High School and High School Graduate
2. Some College or Business School
3. College Graduate or Beyond

As the age groups became older and the visual acuity worsened, the length of the inspection became longer. Inspection time was not affected by sex or education level.

Table 18 can be considered as the producer's risk that a consumer will incorrectly identify a control package as tampered. Looking at Table 18, it appears that there is a significant difference between the 60+ age group and the other age groups when determining if a control package is tampered for the plastic overwrap and blister package technologies. What stands out in this case, that did not in the other discussions pertaining to the 60+ age group, is that these technologies were on the same package while the others were not. When looking at the number of 60+ persons to inspect this package, only 6 viewed the control plastic overwrap/blister package combination. Of these 6, 2 people were correct on the plastic overwrap (33.3%) and 3 were correct on the blister package (50%). Table 19 shows the other results. This apparent significance is probably due to the small sample size of the 60+ age group.

Table 18.
Statistical Significance For Y_{nt}, After Opening
Using the Fisher-Irwin Exact Test

Comparison	SB[1]	MS[2]	PO[3]	BP[4]	VB[5]
Age:					
20-29 vs 30-44	1.000	1.000	0.158	1.000	1.000
20-29 vs 45-59	0.090	1.000	1.000	1.000	1.000
20-29 vs 60+	0.040	1.000	0.129	0.035	1.000
30-44 vs 45-59	0.348	1.000	1.000	1.000	1.000
30-44 vs 60+	0.185	1.000	0.122	0.061	1.000
45-59 vs 60+	1.000	1.000	0.036	0.234	1.000
Sex:					
Male vs Female	0.498	1.000	0.740	0.188	1.000
Visual Acuity:					
20/20 vs 20/30	1.000	0.105	1.000	1.000	1.000
20/20 vs 20/40+	1.000	0.257	1.000	0.981	1.000
20/30 vs 20/40+	0.655	1.000	1.000	0.525	1.000
Education:					
HSG[6] vs SMCLG[7]	0.586	1.000	1.000	0.953	0.531
HSG vs CLGGRD[8]	0.150	1.000	1.000	1.000	1.000
SMCLG vs CLGGRD	0.250	0.543	0.278	1.000	0.092

1. Shrink Band
2. Membrane Seal
3. Plastic Overwrap
4. Blister Package
5. Vacuum Button
6. Some High School or High School Graduate
7. Some College or Business School
8. College Graduate or Beyond

Table 19.
Survey Results of Consumer Inspection of the Control Plastic Overwrap and Blister Package

Age Group	Number of People Viewing Package	% Correct Plst Ovwp	% Correct Blst Pkg
20-29	18	77.8	94.4
30-44	14	78.6	92.9
45-59	10	90.0	90.0
60+	6	33.3	50.0

None of the separate groups in the categories considered (age, sex, visual acuity or education) show a tendency towards greater success at judging the condition of a package. As an example, if the 60+ age group was significantly worse at detecting tampering for each of the tamper-resistant technologies, any further statistical analysis should treat each age group separately. For this thesis, since there are no assignable factors to explain the occurrences stated earlier, other than the fact that in some cases the sample size was very small, the overall numbers for each tamper-resistant technology will be used in the following discussions (See Appendix C, Table 30 for overall results).

Before Opening versus After Opening

As important as the tamper-resistant feature is as a deterrent to opening a tampered package, the communication between package and consumer cannot stop there. The

information gathered by the consumer while opening the package can be just as important in preventing tampering related deaths. The survey for this study was designed to allow the survey respondents to open the package, and by doing so, gather information to determine if opening the package had an effect in detecting tampering. As Table 20 shows, opening the package had a significant effect on the consumer in deciding whether the package was tampered or not. In four out of the five technologies, there were significant differences between before and after opening in detection of the tampered package. Opening or removing the tamper-resistant technology did help, with an increase in detection being shown in all but the blister package.

Table 20.
Before Versus After Opening Fishers Significance Values for Each Tamper-Resistant Technology

T-R Feature	Tampered Package	Control Package
Shrink Band	0.000	0.609
Membrane Seal	0.033	0.677
Plastic Overwrap	0.218	0.819
Blister Package	1.000	1.000
Vacuum Button	0.022	0.065

Two tamper-resistant features in Table 20 stand out, the shrink band and the blister package. For the blister package, opening did not have the desired affect of improving tampering detection. This may be a result of

the type of tampering done to this package. In the other four tamper-resistant features, the feature itself was altered in some way. For example, the shrink band was cut and taped together. In the case of the vacuum button, the vacuum was released and the button had popped up. On the blister package, the main feature that people looked at was the foil backing. Since the tampering was done away from the foil, opening the foil did not help in the detection of tampering, thus the 1.000 value for the tampered package. The shrink band was at the opposite end of the scale with a 0.000 significance. The shrink band went from 14 correct tampering detections before opening to 41 correct after opening, an increase of 192.86 percent.

For the control packages, opening had little effect on improving detection except for the vacuum button. For the vacuum button, before opening, 35 survey respondents were correct in their assessment of the control package. After opening, that number rose to 43, an increase of 8, the greatest increase of any of the tamper-resistant features. Consumers are generally able to correctly identify a control package by sight before they open it, so there is not much room for improvement by opening the package. Since all the technologies rely on the sense of sight for the determination of tampering, the technology that uses more senses may have a better chance at improving tampering detection. The vacuum button not only

uses the sense of sight, but also the sense of touch (by pushing on the button to determine if it is up) and the sense of hearing (as the release of the vacuum can be heard upon opening). The same applies for the tampered vacuum button, as explained earlier.

Allowing the survey respondents to open the packages did help improve their tampered/not tampered judgements, but the way in which it was accomplished is not representative of the true use condition of the package. Numerous times when conducting the surveys, the consumer removed a tamper-resistant feature, discarded it, and did not use it again to make the tampered/not tampered decision. Because of the way the survey form was worded, the consumers were asked to again look at the tamper-resistant feature and determine if it was tampered. By forcing the survey respondents to again pick up the tamper-resistant technology and examine it, information was gained that may not have otherwise been gained. This does not mean that opening a tamper-resistant feature would not help to make correct judgements, because it does. The use condition is not simulated closely enough here. In future studies, the true use condition should be better simulated by asking the question "Do you think this package has been tampered with" only once, after the consumer has opened the package.

Tables 21 and 22 show the last group of comparisons made in this study. Each tamper-resistant technology was

compared against the others before and after opening the tampered packages and before and after opening the control packages.

Table 21.
Statistical Significance of Y'_t for Comparisons Between Technologies Using the Fisher-Irwin Exact Test

Comparison	Before Opening	After Opening
Shrink Band vs Membrane Seal	0.8187*	0.0002
Shrink Band vs Plastic Overwrap	0.5146*	0.0008
Shrink Band vs Blister Package	0.0004	0.0000
Shrink Band vs Vacuum Button	0.0038	1.0000*
Membrane Seal vs Plastic Overwrap	0.2708*	0.8380*
Membrane Seal vs Blister Package	0.0018	0.0000
Membrane Seal vs Vacuum Button	0.0009	0.0005
Plastic Overwrap vs Blister Pkg	0.0000	0.0000
Plastic Overwrap vs Vacuum Button	0.0406	0.0020
Blister Package vs Vacuum Button	0.0000	0.0000

Table 22.
Statistical Significance of Y_{nt} for Comparisons Between Technologies Using the Fisher-Irwin Exact Test

Comparison	Before Opening	After Opening
Shrink Band vs Membrane Seal	0.0909	0.0401
Shrink Band vs Plastic Overwrap	0.2243	1.0000
Shrink Band vs Blister Package	1.0000	0.2848
Shrink Band vs Vacuum Button	0.3235	0.0893
Membrane Seal vs Plastic Overwrap	0.0018	0.0221
Membrane Seal vs Blister Package	0.1586	0.4861
Membrane Seal vs Vacuum Button	0.0037	1.0000
Plastic Overwrap vs Blister Pkg	0.1374	0.1902
Plastic Overwrap vs Vacuum Button	1.0000	0.0528
Blister Package vs Vacuum Button	0.2083	0.7401

Table 21 shows that in all but three cases (denoted by an asterisk, before opening) the number of consumers who identified tampering when two technologies were compared was different. In comparing the shrink band and the membrane seal, the difference between the two technologies was 2 detections of tampering. For the comparison between the shrink band and the plastic overwrap, the difference between the two technologies was only 4 detections of tampering. It stands to reason that the membrane seal and plastic overwrap comparison would not be significant either, the difference being 4 detections also. Since the blister package was the least effective in communicating its condition in this study, any comparison made with it would be highly significant. This is useful in determining which technologies are different from each other. It could also be used to determine which technology is best at communicating that it had been tampered before and after opening. The vacuum button was the most successful at communicating its condition before opening; but after opening, the shrink band and vacuum button were equally successful and showed no statistical difference.

Table 22 on the other hand shows which technology did the best job communicating that it was not tampered. All the technologies were much better at communicating the non-tampered (control) condition than the tampered condition. Before opening, the range of correct

assessments was from a low of 34 out of 48 (71%) for the plastic overwrap, to a high of 46 out of 48 (96%) for the membrane seal. One interesting point about Table 23 is that for the tampered package there was always improvement from before to after opening (except for the blister package where there was no change). Such was not the case for the control packages. While three technologies did increase their detection, two technologies, the shrink band and membrane seal, actually decreased. More people observed that the control packages of these two technologies were tampered with after removal of the tamper-resistant feature than before the feature was removed. This may have something to do with the fact that the instructions for these two technologies were the least read (26.04%) and the least used (10.4%). It may also be because of the personality of the consumers surveyed. They may have been naturally distrusting, which could result in returned packages and loss of sales for the producers of products using shrink bands and membrane seals. Again, it is important to note that one cannot say with certainty that one tamper-resistant technology is better than another. If the method of tampering is changed, testing with this methodology will result in different Y'_t and Y_{nt} values. Table 23 shows the overall numerical survey results.

Table 23.
Consumer Survey Results
Overall Results

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	14	40	41	37
Cor/Incor[2]	8	0	2	0
Incor[3]	26	8	5	11
Membr Seal[4]				
Cor/Cor	12	46	23	44
Cor/Incor	2	0	1	1
Incor	34	2	24	3
Plast Ovrp[5]				
Cor/Cor	18	34	25	36
Cor/Incor	3	0	0	0
Incor	27	14	23	12
Blst Pkg[6]				
Cor/Cor	1	41	1	42
Cor/Incor	5	0	7	0
Incor	42	7	40	6
Vac Button[7]				
Cor/Cor	29	35	40	43
Cor/Incor	6	11	2	1
Incor	13	2	6	4

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

CONCLUSIONS

Tamper-Resistant Packaging Fails To Protect Consumers

The purpose of tamper-resistant packaging is to protect the consumer from malicious tampering, which has caused a number of deaths since 1982. The results of the testing done with this methodology shows that tamper-resistant packaging is failing to do so. Tables 24 26, and 28 show the Y'_t, (the correctness ratio of survey respondents that were correct for the correct reason) Y_{nt}, (the correctness ratio for the non tampered package, or the producer's risk) and J' (the overall index for each technology) values and the associated standard errors and percent correct scores for before opening the package. These values are far too low to be able to say that tamper-resistant packaging can protect the consumer. Even under the best circumstances, before opening the package, 40 out of every 100 people would be killed using the technology that performed the best in this survey.

Table 24.
Y'_t Values - Before Opening

T R Feature	Y'_t	S.E.	% Correct
Shrink Band	-0.417	(0.1312)	29.2
Membrane Seal	-0.500	(0.1250)	25.0
Plastic Overwrap	-0.250	(0.1398)	37.5
Blister Package	-0.958	(0.0412)	2.1
Vacuum Button	0.208	(0.1412)	60.4

Table 25.
Y'_t - After Opening

T R Feature	Y'_t	S.E.	% Correct
Shrink Band	0.708	(0.1019)	85.4
Membrane Seal	-0.042	(0.1442)	47.9
Plastic Overwrap	0.042	(0.1442)	52.1
Blister Package	-0.958	(0.0412)	2.1
Vacuum Button	0.667	(0.1076)	83.4

Table 26.
Y_{nt} - Before Opening

T R Feature	Y_{nt}	S.E.	% Correct
Shrink Band	0.667	(0.1076)	83.4
Membrane Seal	0.917	(0.0577)	95.9
Plastic Overwrap	0.417	(0.1312)	70.9
Blister Package	0.708	(0.1019)	85.4
Vacuum Button	0.917	(0.0577)	95.9

Table 27.
Y_{nt} - After Opening

T R Feature	Y_{nt}	S.E.	% Correct
Shrink Band	0.542	(0.1213)	77.1
Membrane Seal	0.875	(0.0699)	93.8
Plastic Overwrap	0.500	(0.1250)	75.0
Blister Package	0.750	(0.0955)	87.5
Vacuum Button	0.833	(0.0798)	91.7

Table 28.
J' - Before Opening

T R Feature	J'	S.E.	% Correct
Shrink Band	0.125	(0.0848)	56.3
Membrane Seal	0.209	(0.0686)	60.5
Plastic Overwrap	0.084	(0.0959)	54.2
Blister Package	-0.125	(0.0548)	43.8
Vacuum Button	0.378	(0.0954)	68.9

Table 29.
J' - After Opening

T R Feature	J'	S.E.	% Correct
Shrink Band	0.625	(0.0792)	81.3
Membrane Seal	0.396	(0.0825)	69.8
Plastic Overwrap	0.271	(0.0954)	63.6
Blister Package	-0.104	(0.0520)	44.8
Vacuum Button	0.730	(0.0693)	86.5

Opening Improved Detection, But Tamper-Resistant Packaging Still Fails To Protect The Consumer

Opening the package improved detection for all but one tamper-resistant technology, but the technologies still failed to protect as many consumers as they should. Fifteen out of every one hundred people being killed by a malicious tamperer is not an acceptable percentage. Tables 25, 27, and 29 show the Y'_t, (the correctness ratio of survey respondents that were correct for the correct reason) Y_{nt}, (the correctness ratio for the non tampered package, or the producer's risk) and J' (the overall index for each technology) values and the associated standard errors and percent correct scores for after opening the package.

Consumers Don't Know How To Use Tamper-Resistant Packaging

Why are the packages failing to communicate their condition to the consumer? From the comments gathered by this study it is apparent that consumers don't know how to use the tamper-resistant technology that is there to protect them. Part of the blame lies with the consumer, part with the tamper-resistant technologies and the companies that produce and use them. Consumers don't look closely enough for the tell-tale signs that can alert them to the dangers they face. The survey respondents look at a membrane seal, say it's there, it's glued down, it must be OK. Not a single person in this

study said the printing on the foil was missing, it must be tampered. Who is at fault for this, the consumers or the producers? The producers and users of tamper-resistant technologies are calling for increased consumer education as a way to improve the effectiveness of tamper-resistant packaging. Consumer education can help, but it is only part of the solution. What more education should a consumer need than the instructions that say "do not use if printed foil seal is missing or broken." The ability to educate the consumer comes with each package, but about 70% of the people choose to ignore the instructions. (See Table 8. on page 54) Are the companies that produce and use the tamper-resistant technologies willing to spend millions of dollars for ads in magazines and newspapers or on radio and television? Would the consumer bother to pay any more attention to them than they do to the instructions on the package? And if they do, then any improvements in the tamper-resistant technologies would require a re-education of the public. Better location of, and easier to read and understand instructions would be beneficial, but there is nothing to say that consumers would use them. Only 34% of the people used the best located instructions on the vacuum button. What can be done about the other two thirds who just expect to be protected?

The tamper-resistant technologies confused the user

many times, preventing an accurate judgement of condition from being made. A tamper-resistant package should leave no doubt in a user's mind that the package has been violated. Producers of tamper-resistant packaging must improve the technologies so that this doubt is removed. Better use of contrasting colors for shrink bands and bottles may improve detection of tampering. Brighter printing on membrane seals that alerts a consumer immediately if it is missing. A fluorescent print that really stands out may improve detection. Once consumers are familiar with this type of print, the fact that it is missing may alert the user to possible dangers. Use of more fragile films for overwraps and blister packages may also improve detection. If these fragile films tear more easily, or are harder to repair when tampered with, they might leave more evidence for the consumer to use in making a decision. More differentiation between vacuum button positions so consumers can more readily determine if the button is up. Also, tamper-resistant technologies should involve the use of more than one sense in determining if the package was tampered. This may have a positive effect on tampering detection.

Method Is Effective At Determining Tamper-Evidence

The method developed here is effective in determining the tamper-evidence of a package. The survey is able to detect differences in consumers perceptions of a package by determining the reasons for the consumer's

decision. When these decisions are analyzed and tested with the statistics as shown in this work, the results and conclusions are logical and support one another. This methodology can be utilized to gather information that can improve tamper-resistant packaging.

One area that has not received any attention is the use of a control point in the tamper-resistant packaging system as a way to prevent product tampering. In all cases of product tampering to date, the package had been bought from a store, taken home by the tamperer, and returned to the store shelf for an unsuspecting consumer to purchase. If the store can be used as a control point, many tamperings could be prevented. If packages are equipped with a magnetic strip or an ink that is demagnetized when purchased, then if the package is purchased again, the consumer would be alerted to the fact that the strip (or ink) has been demagnetized, and the package had been previously purchased. Granted, the concept is not as simple as the explanation, and every store that sells over-the-counter drugs would have to be equipped with a detection device. The cost to implement such a plan could be high.

What has to be considered is what cost (no matter how trivial or expensive) in consumer education, packaging improvements, or system-wide technology improvements can be compared to the cost of a human life. Packaging professionals alone cannot solve the problems

that a lifetime of upbringing and conditioning have caused that prevent a consumer from taking one minute to read package instructions that have been put there for the consumer's safety. This work has identified that the problem is not going to go away by itself, and that only with conscientious efforts by consumers and packaging professionals can this problem be solved.

RECOMMENDATIONS FOR FUTURE RESEARCH

There are a number of subtle changes that can alter the outcome of future studies conducted on tamper-resistant packaging. Many of these changes are natural extensions of the results of this study, and should be looked at in an attempt to even more closely define the problems that face tamper-resistant packaging, and influence the solutions that will eventually end this problem.

One area of recommendation is to develop alternative methods of tampering with the packages used in this work. By developing these alternative methods of tampering and then testing them with consumers, it would be possible to suggest design improvements, based on how the consumers viewed the package and their responses. One suggestion is to reestablish the vacuum in the vacuum button bottles. The vacuum button performed well in this work, but with this slight change, the vacuum button could be rendered as ineffective as the blister package. If new ways of tampering packages are developed that test the ability of the tamper-resistant feature to communicate and also test the ability of the consumer to identify tampering, design ideas to combat the tampering should follow.

A second area of recommendation is to test other

tamper-resistant technologies using this methodology. Foil, paper and plastic pouches, tape seals, breakable caps, sealed metal tubes or plastic blind-end heat sealed tubes, aerosol containers and metal and composite cans are on the FDA's list of tamper-resistant packaging requirements for certain O-T-C human drug products, but left out of this study. They should be tested, as well as any new tamper-resistant technologies that are developed.

A third area for future research is to simulate the use condition more closely to prevent any bias that may result. The after opening questions in this survey were somewhat leading due to the fact that many people do not look at the tamper-resistant feature once it is removed from the package. If a respondent chooses to discard the shrink band without looking at it, then he/she should NOT be prompted to pick it up and look at it again. This will influence the results of the testing by lowering the after opening scores for Y'_t and J', but will in return better simulate the true use condition of the package.

ENDNOTES

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APPENDICES

APPENDIX A

QUESTIONNAIRE

APPENDIX A: QUESTIONNAIRE

School of Packaging
MICHIGAN STATE UNIVERSITY
Tamper Resistant Packaging Study

Instructions for Interviewer

This is a one-on-one survey for which we are forcing a yes or no answer to the question "Do you think this package has been tampered?" The reasons for the decisions are open ended and recording the results depends on your skill and your alertness. Please observe the following rules and suggestions.

1. Share the survey form openly with the subject, but you will mark the decision and write in the reason.

2. Ask the subject to fill in the personal information except visual acuity.

3. You will measure visual acuity using the visual acuity card and write in the result.

4. DO NOT LEAD THE SUBJECT during decision making. The "yes" or "no" must be his own. Listen to his/her comments to get as much unsolicited, unprompted information as you can. Write this information in the reasons for decision section.

5. After the decision is made, continue talking about the package to get additional information about what the subject saw and thought that made him/her decide.

6. We have found that reasons for the "yes" decision are much easier to identify than reasons for the "no" decision. Do your best to find the reasons for both.

7. For "yes" decisions, the subject should mention some feature that looks wrong to him/her. Be sure the feature is clearly identified and that there is a clear statement of what the "wrong" appearance is.

8. For "no" decisions it will probably be necessary to probe the subjects thinking to get a statement of what looks right or "not wrong". Refer to your notes from our training discussions to try to get some kind of positive statement. We are trying to find out what the subjects are thinking about and looking at when they make their decisions, both "yes" and "no".

APPENDIX A (cont'd)

9. During the survey, have different implements out on the table, such as a pair of scissors and a knife that the subject can use to open the package. Be sure to note which ones they do use.

10. When the subject is finished with the tamper resistant technology, push it to the side, but do not remove it from the table until they are completely finished with the survey.

11. For the packages with two levels of tamper resistance, it is important that the subjects decision on the first level of tamper resistance not affect their second level decision. After the subject has answered the part C question for the shrink band and plastic overwrap, point out to them that "I may or may not have tampered with this package. Please tell me if you think the membrane seal (or blister package, depending on which package they are viewing) has been tampered with, without reference to your decision on the shrink band (or plastic overwrap)."

APPENDIX A (cont'd)

School of Packaging
MICHIGAN STATE UNIVERSITY
Tamper Resistant Packaging Study

This survey will take about twenty minutes to complete. Your answers will be kept confidential. We will not take your name or otherwise identify you individually.

We want to find out if packages can reveal to consumers whether or not they have been tampered. This is a test of the package, not of you or whether or not you would buy the product. We only ask your opinion as to the condition of the package. We will give you three packages, one at a time and ask you to decide whether the package was tampered or not. Each of the packages **MAY OR MAY NOT** have been tampered.

Please look carefully at the sample given and decide whether it has been tampered or not. Please follow the instructions of the interviewer as you inspect the packages. Please do not pick, peel, pluck or open the package unless asked to do so by the interviewer.

Package #1 - Shrink Band and Membrane Seal ID#

1. Shrink Band

   A. Do you think the shrink band has been tampered with? Just look at the package. Do not open or otherwise alter it. Assume you are about to use the contents of this package.

   _____No _____Yes (Q1)

   What is the reason for your decision? (Q2)

   B. Now remove the shrink band completely as if you were going to use the contents. Do you now think the shrink band has been tampered with?

   _____No _____Yes (Q3)

   What is the reason for your decision? (Q4)

APPENDIX A (cont'd)

C. On a scale of 1 to 5, did the shrink band indicate to you whether or not it was tampered?

1	2	3	4	5	(Q5)
It did not indicate				It did indicate	

** I may or may not have tampered with the shrink band. Please tell me if you think the membrane seal has been tampered with, without reference to your decision on the shrink band.**

2. Membrane Seal

A. Remove the cap. Do you think the membrane seal over the mouth of the container has been tampered with? Assume you are about to use the contents of this package.

_____No _____Yes (Q6)

What is the reason for your decision? (Q7)

B. Now open the package completely as if you were going to use the contents. Do you now think the membrane seal has been tampered with?

_____No _____Yes (Q8)

What is the reason for your decision? (Q9)

C. On a scale of 1 to 5, did the membrane seal indicate to you whether or not it was tampered?

1	2	3	4	5	(Q10)
It did not indicate				It did indicate	

APPENDIX A (cont'd)

Package #2 - Plastic Overwrap and Blister Package ID#

1. Plastic Overwrap

   A. Do you think the plastic overwrap has been tampered with? Look at the package but do not open or otherwise alter it. Assume you are about to use the contents of this package.

   _____No _____Yes (Q11)

   What is the reason for your decision? (Q12)

   B. Now remove the plastic overwrap completely as if you were going to use the contents. Do you now think the plastic overwrap has been tampered with?

   ____No _____Yes (Q13)

   What is the reason for your decision? (Q14)

   C. On a scale of 1 to 5, did the plastic overwrap indicate to you whether or not it was tampered?

   1 2 3 4 5 (Q15)
   It did not indicate — It did indicate

** I may or may not have tampered with the plastic overwrap. Please tell me if you think the blister package has been tampered with, without reference to your decision on the plastic overwrap.**

2. Blister Package

   A. Do you think the blister package has been tampered with? Look at but do not open or otherwise alter the package. Assume you are about to use the contents of this package.

   _____No _____Yes (Q16)

   What is the reason for your decision? (Q17)

APPENDIX A (cont'd)

B. Now open all the blisters completely as if you were going to use the contents. Do you now think the blister package has been tampered with?

_____No _____Yes (Q18)

What is the reason for your decision? (Q19)

C. On a scale of 1 to 5, did the blisters indicate to you whether or not it was tampered?

1	2	3	4	5	(Q20)
It did not indicate				It did indicate	

Package #3 - Vacuum Button ID#

3. A. Do you think this package has been tampered with? Look at but do not open or otherwise alter the package. Assume you are about to use the contents of this package.

_____No _____Yes (Q21)

What is the reason for your decision? (Q22)

B. Now open the package completely as if you were going to use the contents. Do you now think this package has been tampered ?

_____No _____Yes (Q23)

What is the reason for your decision? (Q24)

APPENDIX A (cont'd)

C. On a scale of 1 to 5, did the vacuum button indicate to you whether or not it was tampered?

1 2 3 4 5 (Q25)
It did not indicate — It did indicate

4. Is there a message on any of the packages telling you what to look for in determining if the package might have been tampered with before now?

_____No _____Yes (Q26)

A. If yes, which packages have such a message? Circle the name(s).

Mediprin Sine-Off Everfresh Juice (Q27)

B. If yes, for which package(s) did you use the message to make your decision?

Mediprin Sine-Off Everfresh Juice (Q28)

Comments:

5. Have you used any products with these tamper resistant features during the last year?

A. Shrink Bands as seen on the Mediprin bottle
_____Yes _____No (Q29)

B. Membrane Seals as seen on the Mediprin bottle
_____Yes _____No (Q30)

C. Plastic Overwraps as seen on the Sine-Off box
_____Yes _____No (Q31)

D. Blister Packages as seen in the Sine-Off box
_____Yes _____No (Q32)

E. Vacuum Buttons as seen on the Everfresh Juice bottle
_____Yes _____No (Q33)

APPENDIX A (cont'd)

Questions about yourself:

6. Age: ___20-29 years ___30-44 years ___45-59 years

___60-74 years ___75 or older (Q34)

7. Sex: _____Male ____Female (Q35)

8. What is the highest level of school you have attained?

___Some high school ___High school graduate (Q36)

___Some college or Business School ___College graduate or beyond

9. Do you normally wear either prescription glasses or contact lenses?

_____No _____Yes (Q37)

If yes, are you wearing them now?

_____No _____Yes (Q38)

10. Visual Acuity: _____ (Q39)

Thank you for participating in this study. Your help is greatly appreciated.

APPENDIX B

STATISTICAL DESIGN

APPENDIX B: STATISITCAL DESIGN

First Replication

1) $X_t\ Y_c\ Z_c$	2) $X_c\ Z_c\ Y_c$	3) $Z_t\ X_c\ Y_t$	4) $X_t\ Y_c\ Z_t$
5) $Z_c\ Y_c\ X_t$	6) $Z_t\ Y_t\ X_t$	7) $Y_c\ Z_t\ X_c$	8) $Y_t\ Z_c\ X_t$
9) $X_c\ Y_t\ Z_t$	10) $X_t\ Z_t\ Y_c$	11) $Z_t\ X_c\ Y_c$	12) $Y_t\ Z_t\ X_c$
13) $X_c\ Y_t\ Z_c$	14) $Y_t\ X_c\ Z_c$	15) $Z_t\ X_t\ Y_t$	16) $Z_c\ X_t\ Y_t$
17) $X_t\ Y_t\ Z_t$	18) $Z_c\ Y_t\ X_t$	19) $Z_c\ Y_t\ X_c$	20) $Y_t\ X_t\ Z_c$
21) $Z_c\ X_t\ Y_c$	22) $Z_t\ X_t\ Y_c$	23) $Y_t\ X_t\ Z_t$	24) $X_c\ Z_c\ Y_t$
25) $Y_t\ X_c\ Z_t$	26) $X_t\ Z_c\ Y_t$	27) $Z_c\ X_c\ Y_c$	28) $X_c\ Y_c\ Z_t$
29) $Z_t\ Y_c\ X_t$	30) $Y_c\ X_c\ Z_t$	31) $X_c\ Y_c\ Z_c$	32) $Y_t\ Z_t\ X_t$
33) $Y_c\ X_t\ Z_t$	34) $Y_c\ Z_t\ X_t$	35) $X_t\ Z_t\ Y_t$	36) $Y_c\ Z_c\ X_c$
37) $Z_t\ Y_c\ X_c$	38) $Z_c\ Y_c\ X_c$	39) $X_t\ Z_c\ Y_c$	40) $X_c\ Z_t\ Y_c$
41) $X_c\ Z_t\ Y_t$	42) $Y_c\ X_t\ Z_c$	43) $Y_c\ X_c\ Z_c$	44) $Y_c\ Z_c\ X_t$
45) $Z_c\ X_c\ Y_t$	46) $Z_t\ Y_t\ X_c$	47) $X_t\ Y_t\ Z_c$	48) $Y_t\ Z_c\ X_c$

Second Replication

49) $Z_t\ Y_c\ X_c$	50) $Z_c\ X_c\ Y_t$	51) $X_c\ Y_t\ Z_t$	52) $Y_t\ X_c\ Z_t$
53) $Z_c\ Y_t\ X_t$	54) $Z_c\ X_t\ Y_t$	55) $X_t\ Z_c\ Y_c$	56) $Z_t\ X_c\ Y_c$
57) $X_c\ Z_t\ Y_c$	58) $Y_c\ Z_c\ X_t$	59) $X_t\ Z_t\ Y_c$	60) $X_c\ Y_c\ Z_c$
61) $Y_c\ X_t\ Z_t$	62) $Z_t\ Y_c\ X_t$	63) $X_t\ Y_c\ Z_c$	64) $Y_t\ Z_t\ X_c$
65) $Y_t\ Z_c\ X_t$	66) $Z_c\ Y_c\ X_t$	67) $X_t\ Y_t\ Z_c$	68) $X_t\ Y_c\ Z_t$
69) $X_c\ Z_c\ Y_t$	70) $Y_c\ X_c\ Z_c$	71) $Z_c\ Y_c\ X_c$	72) $Y_c\ X_c\ Z_t$
73) $Z_c\ Y_t\ X_c$	74) $X_c\ Z_t\ Y_t$	75) $Z_c\ X_c\ Y_c$	76) $X_t\ Z_t\ Y_t$
77) $Y_c\ X_t\ Z_c$	78) $Z_t\ X_c\ Y_t$	79) $Z_t\ X_t\ Y_c$	80) $Z_t\ X_t\ Y_t$
81) $Y_t\ X_c\ Z_c$	82) $Z_c\ X_t\ Y_c$	83) $Y_c\ Z_t\ X_c$	84) $X_t\ Y_t\ Z_t$
85) $X_c\ Y_t\ Z_c$	86) $X_t\ Z_c\ Y_t$	87) $Z_t\ Y_t\ X_c$	88) $Y_c\ Z_t\ X_t$
89) $Y_t\ X_t\ Z_t$	90) $X_c\ Y_c\ Z_t$	91) $Y_t\ Z_t\ X_t$	92) $Y_t\ X_t\ Z_c$
93) $Y_t\ Z_c\ X_c$	94) $X_c\ Z_c\ Y_c$	95) $Z_t\ Y_t\ X_t$	96) $Y_c\ Z_c\ X_c$

APPENDIX C

SURVEY RESULTS

Table 30.
Consumer Survey Results
Overall Results

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	14	40	41	37
Cor/Incor[2]	8	0	2	0
Incor[3]	26	8	5	11
Membr Seal[4]				
Cor/Cor	12	46	23	44
Cor/Incor	2	0	1	1
Incor	34	2	24	3
Plast Ovrp[5]				
Cor/Cor	18	34	25	36
Cor/Incor	3	0	0	0
Incor	27	14	23	12
Blst Pkg[6]				
Cor/Cor	1	41	1	42
Cor/Incor	5	0	7	0
Incor	42	7	40	6
Vac Button[7]				
Cor/Cor	29	35	40	43
Cor/Incor	6	11	2	1
Incor	13	2	6	4

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 31.
Consumer Survey Results
Breakdown By Age - 20-29 Years Old

T-R Tech.	Before Opening Tampered Package	Before Opening Control Package	After Opening Tampered Package	After Opening Control Package
Shrink Band				
Cor/Cor[1]	5	10	13	10
Cor/Incor[2]	3	0	0	0
Incor[3]	7	0	2	0
Membr Seal[4]				
Cor/Cor	3	10	7	9
Cor/Incor	1	0	1	1
Incor	11	0	7	0
Plast Ovrp[5]				
Cor/Cor	1	12	1	14
Cor/Incor	0	0	0	0
Incor	6	6	6	4
Blst Pkg[6]				
Cor/Cor	0	16	0	17
Cor/Incor	0	0	0	0
Incor	7	2	7	1
Vac Button[7]				
Cor/Cor	9	13	11	12
Cor/Incor	1	1	0	1
Incor	1	0	0	1

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 32.
Consumer Survey Results
Breakdown By Age - 30-44 Years Old

T-R Tech.	Before Opening Tampered Package	Before Opening Control Package	After Opening Tampered Package	After Opening Control Package
Shrink Band				
Cor/Cor[1]	3	14	12	13
Cor/Incor[2]	2	0	0	0
Incor[3]	7	1	0	2
Membr Seal[4]				
Cor/Cor	4	14	5	14
Cor/Incor	0	0	0	0
Incor	8	1	7	1
Plast Ovrp[5]				
Cor/Cor	3	11	7	11
Cor/Incor	1	0	0	0
Incor	9	3	6	3
Blst Pkg[6]				
Cor/Cor	1	13	1	13
Cor/Incor	1	0	1	0
Incor	11	1	11	1
Vac Button[7]				
Cor/Cor	7	12	12	12
Cor/Incor	1	1	0	0
Incor	5	1	1	2

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 33.
Consumer Survey Results
Breakdown By Age - 45-59 Years Old

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	5	8	10	7
Cor/Incor[2]	2	0	0	0
Incor[3]	4	3	1	4
Membr Seal[4]				
Cor/Cor	3	11	5	10
Cor/Incor	0	0	0	0
Incor	8	0	6	1
Plast Ovrp[5]				
Cor/Cor	6	9	8	9
Cor/Incor	1	0	0	0
Incor	5	1	4	1
Blst Pkg[6]				
Cor/Cor	0	8	0	9
Cor/Incor	2	0	2	0
Incor	10	2	10	1
Vac Button[7]				
Cor/Cor	8	3	12	7
Cor/Incor	2	4	0	0
Incor	5	0	3	0

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 34.
Consumer Survey Results
Breakdown By Age - 60-74 Years Old

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	1	6	3	6
Cor/Incor[2]	1	0	2	0
Incor[3]	4	4	1	4
Membr Seal[4]				
Cor/Cor	1	9	4	9
Cor/Incor	1	0	0	0
Incor	4	1	2	1
Plast Ovrp[5]				
Cor/Cor	5	2	6	2
Cor/Incor	1	0	0	0
Incor	4	4	4	4
Blst Pkg[6]				
Cor/Cor	0	4	0	3
Cor/Incor	2	0	4	0
Incor	8	2	6	3
Vac Button[7]				
Cor/Cor	4	7	4	9
Cor/Incor	1	2	1	0
Incor	2	0	2	0

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 35.
Consumer Survey Results
Breakdown By Age - 75 Years Old or Older

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	0	2	3	1
Cor/Incor[2]	0	0	0	0
Incor[3]	4	0	1	1
Membr Seal[4]				
Cor/Cor	1	2	2	2
Cor/Incor	0	0	0	0
Incor	3	0	2	0
Plast Ovrp[5]				
Cor/Cor	3	0	3	0
Cor/Incor	0	0	0	0
Incor	3	0	3	0
Blst Pkg[6]				
Cor/Cor	0	0	0	0
Cor/Incor	0	0	0	0
Incor	6	0	6	0
Vac Button[7]				
Cor/Cor	1	0	1	3
Cor/Incor	1	3	1	0
Incor	0	1	0	1

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 36.
Consumer Survey Results
Breakdown By Sex - Male

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	6	23	16	22
Cor/Incor[2]	4	0	0	0
Incor[3]	10	4	4	5
Membr Seal[4]				
Cor/Cor	5	25	9	24
Cor/Incor	1	0	1	1
Incor	14	2	10	2
Plast Ovrp[5]				
Cor/Cor	7	17	11	17
Cor/Incor	2	0	0	0
Incor	14	7	12	7
Blst Pkg[6]				
Cor/Cor	0	22	0	23
Cor/Incor	2	0	4	0
Incor	21	2	19	1
Vac Button[7]				
Cor/Cor	17	15	20	18
Cor/Incor	4	5	2	1
Incor	5	1	4	2

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 37.
Consumer Survey Results
Breakdown By Sex - Female

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	8	17	25	15
Cor/Incor[2]	4	0	2	0
Incor[3]	16	4	1	6
Membr Seal[4]				
Cor/Cor	7	21	14	20
Cor/Incor	1	0	0	0
Incor	20	0	14	1
Plast Ovrp[5]				
Cor/Cor	11	17	14	19
Cor/Incor	1	0	0	0
Incor	13	7	11	5
Blst Pkg[6]				
Cor/Cor	1	19	1	19
Cor/Incor	3	0	3	0
Incor	21	5	21	5
Vac Button[7]				
Cor/Cor	12	20	20	25
Cor/Incor	2	6	0	0
Incor	8	1	2	2

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 38.
Consumer Survey Results
Breakdown By Visual Acuity - 20/20

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	10	22	28	21
Cor/Incor[2]	5	0	1	0
Incor[3]	17	4	3	5
Membr Seal[4]				
Cor/Cor	9	26	16	25
Cor/Incor	1	0	1	1
Incor	22	0	15	0
Plast Ovrp[5]				
Cor/Cor	8	23	10	25
Cor/Incor	2	0	0	0
Incor	15	10	15	8
Blst Pkg[6]				
Cor/Cor	1	29	1	30
Cor/Incor	2	0	4	0
Incor	22	4	20	3
Vac Button[7]				
Cor/Cor	17	27	24	28
Cor/Incor	3	3	0	1
Incor	7	1	3	2

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 39.
Consumer Survey Results
Breakdown By Visual Acuity - 20/30

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	1	11	6	10
Cor/Incor[2]	2	0	0	0
Incor[3]	4	2	1	3
Membr Seal[4]				
Cor/Cor	0	11	1	11
Cor/Incor	0	0	0	0
Incor	7	2	6	2
Plast Ovrp[5]				
Cor/Cor	4	6	8	6
Cor/Incor	0	0	0	0
Incor	7	3	3	3
Blst Pkg[6]				
Cor/Cor	0	6	0	8
Cor/Incor	1	0	1	0
Incor	10	3	10	1
Vac Button[7]				
Cor/Cor	7	5	9	6
Cor/Incor	2	2	1	0
Incor	4	0	3	1

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 40.
Consumer Survey Results
Breakdown By Visual Acuity - 20/40+

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	3	7	7	6
Cor/Incor[2]	1	0	1	0
Incor[3]	5	2	1	3
Membr Seal[4]				
Cor/Cor	3	9	6	8
Cor/Incor	1	0	0	0
Incor	5	0	3	1
Plast Ovrp[5]				
Cor/Cor	6	5	7	5
Cor/Incor	1	0	0	0
Incor	5	1	5	1
Blst Pkg[6]				
Cor/Cor	0	6	0	4
Cor/Incor	2	0	2	0
Incor	10	0	10	2
Vac Button[7]				
Cor/Cor	5	3	7	9
Cor/Incor	1	6	1	0
Incor	2	1	0	1

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 41.
Consumer Survey Results
Breakdown By Education Level
Some High School or High School Graduate

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	1	2	6	2
Cor/Incor[2]	2	0	1	0
Incor[3]	4	2	0	2
Membr Seal[4]				
Cor/Cor	0	3	4	4
Cor/Incor	0	0	0	0
Incor	7	1	3	0
Plast Ovrp[5]				
Cor/Cor	2	4	2	4
Cor/Incor	0	0	0	0
Incor	4	1	4	1
Blst Pkg[6]				
Cor/Cor	0	3	0	4
Cor/Incor	0	0	0	0
Incor	6	2	6	1
Vac Button[7]				
Cor/Cor	2	3	2	8
Cor/Incor	0	4	0	0
Incor	1	1	1	0

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 42.
Consumer Survey Results
Breakdown By Education Level
Some College or Business School

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	4	14	13	11
Cor/Incor[2]	3	0	0	0
Incor[3]	6	2	0	5
Membr Seal[4]				
Cor/Cor	6	16	8	14
Cor/Incor	2	0	1	0
Incor	5	0	4	2
Plast Ovrp[5]				
Cor/Cor	8	9	9	10
Cor/Incor	0	0	0	0
Incor	5	7	4	6
Blst Pkg[6]				
Cor/Cor	0	14	0	15
Cor/Incor	3	0	3	0
Incor	10	2	10	1
Vac Button[7]				
Cor/Cor	7	10	14	10
Cor/Incor	3	3	1	0
Incor	6	0	1	3

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 43.
Consumer Survey Results
Breakdown By Education Level
College Graduate or Beyond

T-R Tech.	Before Opening		After Opening	
	Tampered Package	Control Package	Tampered Package	Control Package
Shrink Band				
Cor/Cor[1]	9	24	22	24
Cor/Incor[2]	3	0	1	0
Incor[3]	16	4	5	4
Membr Seal[4]				
Cor/Cor	6	27	11	26
Cor/Incor	0	0	0	1
Incor	22	1	17	1
Plast Ovrp[5]				
Cor/Cor	8	21	14	22
Cor/Incor	3	0	0	0
Incor	18	6	15	5
Blst Pkg[6]				
Cor/Cor	1	24	1	23
Cor/Incor	2	0	4	0
Incor	26	3	24	4
Vac Button[7]				
Cor/Cor	20	22	24	25
Cor/Incor	3	4	1	1
Incor	6	1	4	1

1. Correct for Correct Reason
2. Correct for Incorrect Reason
3. Incorrect
4. Membrane Seal
5. Plastic Overwrap
6. Blister Package
7. Vacuum Button

APPENDIX C (cont'd)

Table 44.
Shrink Band
Y_t & Y'_t Values and Standard Errors

Breakdown:	Before Opening Y_t (S.E.)	Before Opening Y'_t (S.E.)	After Opening Y_t (S.E.)	After Opening Y'_t (S.E.)
Overall	-0.083 (0.1438)	-0.417 (0.1312)	0.792 (0.0882)	0.708 (0.1019)
Age				
20-29	0.067 (0.2576)	-0.333 (0.2434)	0.733 (0.1755)	0.733 (0.1755)
30-44	-0.167 (0.2846)	-0.500 (0.2500)	1.000 (0.0000)	1.000 (0.0000)
45-59	0.273 (0.2901)	-0.091 (0.3003)	0.818 (0.1734)	0.818 (0.1734)
60-74	-0.333 (0.3849)	-0.667 (0.3043)	0.667 (0.3043)	0.000 (0.4082)
75+	-1.000 (0.0000)	-1.000 (0.0000)	0.500 (0.4330)	0.500 (0.4330)
Sex				
Male	0.000 (0.2236)	-0.400 (0.2049)	0.600 (0.1789)	0.600 (0.1789)
Female	-0.143 (0.1870)	-0.429 (0.1707)	0.929 (0.0701)	0.786 (0.1169)
Vis Acuty[1]				
20/20	-0.063 (0.1764)	-0.375 (0.1639)	0.813 (0.1031)	0.750 (0.1169)
20/30	-0.143 (0.3741)	-0.714 (0.2645)	0.714 (0.2645)	0.714 (0.2645)
20/40+	-0.111 (0.3313)	-0.333 (0.3143)	0.778 (0.2095)	0.556 (0.2772)
Education				
HS & HSG[2]	-0.143 (0.3741)	-0.714 (0.2645)	1.000 (0.0000)	0.714 (0.2645)
Some Col[3]	0.077 (0.2765)	-0.385 (0.2560)	1.000 (0.0000)	1.000 (0.0000)
Col Grad[4]	-0.143 (0.1870)	-0.357 (0.1765)	0.643 (0.1448)	0.571 (0.1551)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 45.
Shrink Band
Y_{nt} & Y'_{nt} Values and Standard Errors

Breakdown:	Before Opening Y_{nt} (S.E.)	Before Opening Y'_{nt} (S.E.)	After Opening Y_{nt} (S.E.)	After Opening Y'_{nt} (S.E.)
Overall	0.667 (0.1076)	0.667 (0.1076)	0.542 (0.1213)	0.542 (0.1213)
Age				
20-29	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)
30-44	0.867 (0.1288)	0.867 (0.1288)	0.733 (0.1755)	0.733 (0.1755)
45-59	0.455 (0.2686)	0.455 (0.2686)	0.273 (0.2901)	0.273 (0.2901)
60-74	0.200 (0.3098)	0.200 (0.3098)	0.200 (0.3098)	0.200 (0.3098)
75+	1.000 (0.0000)	1.000 (0.0000)	0.000 (0.7071)	0.000 (0.7071)
Sex				
Male	0.704 (0.1367)	0.704 (0.1367)	0.630 (0.1495)	0.630 (0.1495)
Female	0.619 (0.1714)	0.619 (0.1714)	0.429 (0.1972)	0.429 (0.1972)
Vis Acuty[1]				
20/20	0.692 (0.1415)	0.692 (0.1415)	0.615 (0.1546)	0.615 (0.1546)
20/30	0.692 (0.2001)	0.692 (0.2001)	0.539 (0.2337)	0.539 (0.2337)
20/40+	0.556 (0.2772)	0.556 (0.2772)	0.333 (0.3143)	0.333 (0.3143)
Education				
HS & HSG[2]	0.000 (0.5000)	0.000 (0.5000)	0.000 (0.5000)	0.000 (0.5000)
Some Col[3]	0.750 (0.1654)	0.750 (0.1654)	0.375 (0.2318)	0.375 (0.2318)
Col Grad[4]	0.714 (0.1323)	0.714 (0.1323)	0.714 (0.1323)	0.714 (0.1323)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 46.
Shrink Band
J & J' Values and Standard Errors

Breakdown:	Before Opening J (S.E.)	Before Opening J' (S.E.)	After Opening J (S.E.)	After Opening J' (S.E.)
Overall	0.292 (0.0900)	0.125 (0.0848)	0.667 (0.0749)	0.625 (0.0792)
Age				
20-29	0.533 (0.1289)	0.334 (0.1217)	0.867 (0.0878)	0.867 (0.0878)
30-44	0.350 (0.1562)	0.184 (0.1404)	0.867 (0.0878)	0.867 (0.0878)
45-59	0.364 (0.1975)	0.182 (0.2012)	0.546 (0.1688)	0.546 (0.1688)
60-74	-0.067 (0.2470)	-0.234 (0.2170)	0.434 (0.2170)	0.100 (0.2563)
75+	0.000 (0.0000)	0.000 (0.0000)	0.250 (0.4146)	0.250 (0.4146)
Sex				
Male	0.352 (0.1311)	0.152 (0.1233)	0.615 (0.0136)	0.615 (0.0136)
Female	0.238 (0.1265)	0.095 (0.1208)	0.679 (0.1044)	0.608 (0.1145)
Vis Acuty[1]				
20/20	0.315 (0.1131)	0.159 (0.1082)	0.714 (0.0933)	0.683 (0.0970)
20/30	0.275 (0.2121)	-0.011 (0.1658)	0.627 (0.1766)	0.627 (0.1766)
20/40+	0.223 (0.2159)	0.112 (0.2095)	0.556 (0.1889)	0.445 (0.2095)
Education				
HS & HSG[2]	-0.072 (0.3122)	-0.357 (0.2828)	0.500 (0.2500)	0.357 (0.2828)
Some Col[3]	0.414 (0.1609)	0.183 (0.1523)	0.688 (0.1159)	0.688 (0.1159)
Col Grad[4]	0.286 (0.1145)	0.179 (0.1105)	0.679 (0.0980)	0.643 (0.1020)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 47.
Membrane Seal
Y_t & Y'_t Values and Standard Errors

Breakdown:	Before Opening Y_t (S.E.)	Before Opening Y'_t (S.E.)	After Opening Y_t (S.E.)	After Opening Y'_t (S.E.)
Overall	-0.417 (0.1312)	-0.500 (0.1250)	0.000 (0.1443)	-0.042 (0.1442)
Age				
20-29	-0.467 (0.2284)	-0.600 (0.2066)	0.067 (0.2576)	-0.067 (0.2576)
30-44	-0.333 (0.2722)	-0.333 (0.2722)	-0.167 (0.2846)	-0.167 (0.2846)
45-59	-0.455 (0.2686)	-0.455 (0.2686)	-0.091 (0.3003)	-0.091 (0.3003)
60-74	-0.333 (0.3849)	-0.667 (0.3043)	0.333 (0.3849)	0.333 (0.3849)
75+	-0.500 (0.4330)	-0.500 (0.4330)	0.000 (0.5000)	0.000 (0.5000)
Sex				
Male	-0.400 (0.2049)	-0.500 (0.1936)	0.000 (0.2236)	-0.100 (0.2225)
Female	-0.429 (0.1707)	-0.500 (0.1637)	0.000 (0.1890)	0.000 (0.1890)
Vis Acuty[1]				
20/20	-0.375 (0.1639)	-0.438 (0.1590)	0.063 (0.1764)	0.000 (0.1768)
20/30	-1.000 (0.0000)	-1.000 (0.0000)	-0.714 (0.2645)	-0.714 (0.2645)
20/40+	-0.111 (0.3313)	-0.333 (0.3143)	0.333 (0.3143)	0.333 (0.3143)
Education				
HS & HSG[2]	-1.000 (0.0000)	-1.000 (0.0000)	0.143 (0.3741)	0.143 (0.3741)
Some Col[3]	0.231 (0.2699)	-0.077 (0.2765)	0.385 (0.2560)	0.231 (0.2699)
Col Grad[4]	-0.571 (0.1551)	-0.571 (0.1551)	-0.214 (0.1846)	-0.214 (0.1846)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 48.
Membrane Seal
Y_{nt} & Y'_{nt} Values and Standard Errors

Breakdown:	Before Opening Y_{nt} (S.E.)	Before Opening Y'_{nt} (S.E.)	After Opening Y_{nt} (S.E.)	After Opening Y'_{nt} (S.E.)
Overall	0.917 (0.0577)	0.917 (0.0577)	0.875 (0.0699)	0.833 (0.0798)
Age				
20-29	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)	0.800 (0.1897)
30-44	0.867 (0.1288)	0.867 (0.1288)	0.867 (0.1288)	0.867 (0.1288)
45-59	1.000 (0.0000)	1.000 (0.0000)	0.818 (0.1734)	0.818 (0.1734)
60-74	0.800 (0.1897)	0.800 (0.1897)	0.800 (0.1897)	0.800 (0.1897)
75+	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)
Sex				
Male	0.852 (0.1008)	0.852 (0.1008)	0.852 (0.1008)	0.778 (0.1210)
Female	1.000 (0.0000)	1.000 (0.0000)	0.905 (0.0929)	0.905 (0.0929)
Vis Acuty[1]				
20/20	1.000 (0.0000)	1.000 (0.0000)	1.000 (0.0000)	0.923 (0.0754)
20/30	0.692 (0.2001)	0.692 (0.2001)	0.692 (0.2001)	0.692 (0.2001)
20/40+	1.000 (0.0000)	1.000 (0.0000)	0.778 (0.2095)	0.778 (0.2095)
Education				
HS & HSG[2]	0.500 (0.4330)	0.500 (0.4330)	1.000 (0.0000)	1.000 (0.0000)
Some Col[3]	1.000 (0.0000)	1.000 (0.0000)	0.750 (0.1654)	0.750 (0.1654)
Col Grad[4]	0.929 (0.0701)	0.929 (0.0701)	0.929 (0.0701)	0.857 (0.0937)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 49.
Membrane Seal
J & J' Values and Standard Errors

Breakdown:	Before Opening J (S.E.)	Before Opening J' (S.E.)	After Opening J (S.E.)	After Opening J' (S.E.)
Overall	0.250 (0.0714)	0.209 (0.0686)	0.438 (0.0800)	0.396 (0.0825)
Age				
20-29	0.267 (0.1142)	0.200 (0.1033)	0.534 (0.1288)	0.367 (0.1600)
30-44	0.267 (0.1503)	0.267 (0.1503)	0.350 (0.1562)	0.350 (0.1562)
45-59	0.273 (0.1343)	0.273 (0.1343)	0.364 (0.1732)	0.364 (0.1732)
60-74	0.234 (0.2145)	0.067 (0.1792)	0.567 (0.2145)	0.567 (0.2145)
75+	0.250 (0.2165)	0.250 (0.2165)	0.500 (0.2500)	0.500 (0.2500)
Sex				
Male	0.226 (0.1140)	0.176 (0.1091)	0.426 (0.1225)	0.339 (0.1269)
Female	0.286 (0.0854)	0.250 (0.0818)	0.453 (0.1054)	0.453 (0.1054)
Vis Acuty[1]				
20/20	0.313 (0.0819)	0.281 (0.0795)	0.532 (0.0882)	0.462 (0.0959)
20/30	-0.154 (0.1001)	-0.154 (0.1001)	-0.011 (0.1658)	-0.011 (0.1658)
20/40+	0.445 (0.1656)	0.334 (0.1571)	0.556 (0.1889)	0.556 (0.1889)
Education				
HS & HSG[2]	-0.250 (0.2165)	-0.250 (0.2165)	0.643 (0.1870)	0.643 (0.1870)
Some Col[3]	0.616 (0.1349)	0.462 (0.1383)	0.568 (0.1523)	0.491 (0.1581)
Col Grad[4]	0.179 (0.0849)	0.179 (0.0849)	0.715 (0.0985)	0.322 (0.1044)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 50.
Plastic Overwrap
Y_t & Y'_t Values and Standard Errors

Breakdown:	Before Opening Y_t (S.E.)	Before Opening Y'_t (S.E.)	After Opening Y_t (S.E.)	After Opening Y'_t (S.E.)
Overall	-0.125 (0.1432)	-0.250 (0.1398)	0.042 (0.1442)	0.042 (0.1442)
Age				
20-29	-0.714 (0.2645)	-0.714 (0.2645)	-0.714 (0.2645)	-0.714 (0.2645)
30-44	-0.385 (0.2560)	-0.538 (0.2337)	0.077 (0.2765)	0.077 (0.2765)
45-59	0.167 (0.2846)	0.000 (0.2887)	0.333 (0.2722)	0.333 (0.2722)
60-74	0.200 (0.3098)	0.000 (0.3162)	0.200 (0.3098)	0.200 (0.3098)
75+	0.000 (0.4082)	0.000 (0.4082)	0.000 (0.4082)	0.000 (0.4082)
Sex				
Male	-0.217 (0.2035)	-0.391 (0.1919)	-0.043 (0.2083)	-0.043 (0.2083)
Female	-0.040 (0.1998)	-0.120 (0.1986)	0.120 (0.1986)	0.120 (0.1986)
Vis Acuty[1]				
20/20	-0.200 (0.1960)	-0.360 (0.1866)	-0.200 (0.1960)	-0.200 (0.1960)
20/30	-0.273 (0.2901)	-0.273 (0.2901)	0.455 (0.2686)	0.455 (0.2686)
20/40+	0.167 (0.2846)	0.000 (0.2887)	0.167 (0.2846)	0.167 (0.2846)
Education				
HS & HSG[2]	-0.333 (0.3849)	-0.333 (0.3849)	-0.333 (0.3849)	-0.333 (0.3849)
Some Col[3]	0.231 (0.2699)	0.231 (0.2699)	0.385 (0.2560)	0.385 (0.2560)
Col Grad[4]	-0.241 (0.1802)	-0.448 (0.1660)	-0.034 (0.1856)	-0.034 (0.1856)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 51.
Plastic Overwrap
Y_{nt} & Y'_{nt} Values and Standard Errors

Breakdown:	Before Opening Y_{nt} (S.E.)	Before Opening Y'_{nt} (S.E.)	After Opening Y_{nt} (S.E.)	After Opening Y'_{nt} (S.E.)
Overall	0.417 (0.1312)	0.417 (0.1312)	0.500 (0.1250)	0.500 (0.1250)
Age				
20-29	0.333 (0.2222)	0.333 (0.2222)	0.556 (0.1960)	0.556 (0.1960)
30-44	0.571 (0.2193)	0.571 (0.2193)	0.571 (0.2193)	0.571 (0.2193)
45-59	0.800 (0.1897)	0.800 (0.1897)	0.800 (0.1897)	0.800 (0.1897)
60-74	-0.333 (0.3849)	-0.333 (0.3849)	-0.333 (0.3849)	-0.333 (0.3849)
75+	0.000 (0.0000)	0.000 (0.0000)	0.000 (0.0000)	0.000 (0.0000)
Sex				
Male	0.417 (0.1856)	0.417 (0.1856)	0.417 (0.1856)	0.417 (0.1856)
Female	0.417 (0.1856)	0.417 (0.1856)	0.583 (0.1658)	0.583 (0.1658)
Vis Acuity[1]				
20/20	0.394 (0.1600)	0.394 (0.1600)	0.515 (0.1492)	0.515 (0.1492)
20/30	0.333 (0.3143)	0.333 (0.3143)	0.333 (0.3143)	0.333 (0.3143)
20/40+	0.667 (0.3043)	0.667 (0.3043)	0.667 (0.3043)	0.667 (0.3043)
Education				
HS & HSG[2]	0.600 (0.3578)	0.600 (0.3578)	0.600 (0.3578)	0.600 (0.3578)
Some Col[3]	0.125 (0.2480)	0.125 (0.2480)	0.250 (0.2421)	0.250 (0.2421)
Col Grad[4]	0.555 (0.1600)	0.555 (0.1600)	0.630 (0.1495)	0.630 (0.1495)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 52.
Plastic Overwrap
J & J' Values and Standard Errors

Breakdown:	Before Opening J (S.E.)	Before Opening J' (S.E.)	After Opening J (S.E.)	After Opening J' (S.E.)
Overall	0.146 (0.0970)	0.084 (0.0959)	0.271 (0.0954)	0.271 (0.0954)
Age				
20-29	-0.191 (0.1726)	-0.191 (0.1726)	-0.079 (0.1591)	-0.079 (0.1591)
30-44	0.093 (0.1685)	0.017 (0.1603)	0.324 (0.1764)	0.324 (0.1764)
45-59	0.484 (0.1712)	0.400 (0.1726)	0.567 (0.1658)	0.567 (0.1658)
60-74	-0.067 (0.2470)	-0.167 (0.2490)	-0.067 (0.2470)	-0.067 (0.2470)
75+	0.000 (0.2041)	0.000 (0.2041)	0.000 (0.2041)	0.000 (0.2041)
Sex				
Male	0.100 (0.1378)	0.013 (0.1334)	0.187 (0.1393)	0.187 (0.1393)
Female	0.189 (0.1364)	0.149 (0.1360)	0.352 (0.1296)	0.352 (0.1296)
Vis Acuty[1]				
20/20	0.097 (0.1265)	0.017 (0.1229)	0.158 (0.1233)	0.158 (0.1233)
20/30	0.030 (0.2138)	0.030 (0.2138)	0.394 (0.2066)	0.394 (0.2066)
20/40+	0.417 (0.2083)	0.334 (0.2095)	0.417 (0.2083)	0.417 (0.2083)
Education				
HS & HSG[2]	0.134 (0.2627)	0.134 (0.2627)	0.134 (0.2627)	0.134 (0.2627)
Some Col[3]	0.178 (0.1833)	0.178 (0.1833)	0.318 (0.1761)	0.318 (0.1761)
Col Grad[4]	0.157 (0.1204)	0.054 (0.1153)	0.298 (0.1192)	0.298 (0.1192)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 53.
Blister Package
Y_t & Y'_t Values and Standard Errors

Breakdown:	Before Opening Y_t (S.E.)	Before Opening Y'_t (S.E.)	After Opening Y_t (S.E.)	After Opening Y'_t (S.E.)
Overall	-0.750 (0.0955)	-0.958 (0.0412)	-0.667 (0.1076)	-0.958 (0.0412)
Age				
20-29	-1.000 (0.0000)	-1.000 (0.0000)	-1.000 (0.0000)	-1.000 (0.0000)
30-44	-0.692 (0.2001)	-0.846 (0.1478)	-0.692 (0.2001)	-0.846 (0.1478)
45-59	-0.667 (0.2152)	-1.000 (0.0000)	-0.667 (0.2152)	-1.000 (0.0000)
60-74	-0.600 (0.2530)	-1.000 (0.0000)	-0.200 (0.3098)	-1.000 (0.0000)
75+	-1.000 (0.0000)	-1.000 (0.0000)	-1.000 (0.0000)	-1.000 (0.0000)
Sex				
Male	-0.826 (0.1175)	-1.000 (0.0000)	-0.652 (0.1581)	-1.000 (0.0000)
Female	-0.680 (0.1466)	-0.920 (0.0784)	-0.680 (0.1466)	-0.920 (0.0784)
Vis Acuty[1]				
20/20	-0.760 (0.1300)	-0.920 (0.0784)	-0.600 (0.1600)	-0.920 (0.0784)
20/30	-0.818 (0.1734)	-1.000 (0.0000)	-0.818 (0.1734)	-1.000 (0.0000)
20/40+	-0.667 (0.2152)	-1.000 (0.0000)	-0.667 (0.2152)	-1.000 (0.0000)
Education				
HS & HSG[2]	-1.000 (0.0000)	-1.000 (0.0000)	-1.000 (0.0000)	-1.000 (0.0000)
Some Col[3]	-0.538 (0.2337)	-1.000 (0.0000)	-0.538 (0.2337)	-1.000 (0.0000)
Col Grad[4]	-0.793 (0.1131)	-0.931 (0.0678)	-0.655 (0.1403)	-0.931 (0.0678)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 54.
Blister Package
Y_{nt} & Y'_{nt} Values and Standard Errors

Breakdown:	Before Opening Y_{nt} (S.E.)	Before Opening Y'_{nt} (S.E.)	After Opening Y_{nt} (S.E.)	After Opening Y'_{nt} (S.E.)
Overall	0.708 (0.1019)	0.708 (0.1019)	0.750 (0.0955)	0.750 (0.0955)
Age				
20-29	0.778 (0.1481)	0.778 (0.1481)	0.889 (0.1080)	0.889 (0.1080)
30-44	0.857 (0.1377)	0.857 (0.1377)	0.857 (0.1377)	0.857 (0.1377)
45-59	0.600 (0.2530)	0.600 (0.2530)	0.900 (0.1897)	0.900 (0.1897)
60-74	0.333 (0.3849)	0.333 (0.3849)	0.000 (0.4082)	0.000 (0.4082)
75+	0.000 (0.0000)	0.000 (0.0000)	0.000 (0.0000)	0.000 (0.0000)
Sex				
Male	0.833 (0.1128)	0.833 (0.1128)	0.917 (0.0816)	0.917 (0.0816)
Female	0.583 (0.1658)	0.583 (0.1658)	0.583 (0.1658)	0.583 (0.1658)
Vis Acuty[1]				
20/20	0.758 (0.1136)	0.758 (0.1136)	0.818 (0.1001)	0.818 (0.1001)
20/30	0.333 (0.3143)	0.333 (0.3143)	0.778 (0.2095)	0.778 (0.2095)
20/40+	1.000 (0.0000)	1.000 (0.0000)	0.333 (0.3849)	0.333 (0.3849)
Education				
HS & HSG[2]	0.200 (0.4382)	0.200 (0.4382)	0.600 (0.3578)	0.600 (0.3578)
Some Col[3]	0.750 (0.1654)	0.750 (0.1654)	0.875 (0.1210)	0.875 (0.1210)
Col Grad[4]	0.778 (0.1210)	0.778 (0.1210)	0.704 (0.1367)	0.704 (0.1367)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 55.
Blister Package
J & J' Values and Standard Errors

Breakdown:	Before Opening J (S.E.)	Before Opening J' (S.E.)	After Opening J (S.E.)	After Opening J' (S.E.)
Overall	-0.021 (0.0700)	-0.125 (0.0548)	0.042 (0.0721)	-0.104 (0.0520)
Age				
20-29	-0.111 (0.0741)	-0.111 (0.0741)	-0.056 (0.0540)	-0.056 (0.0540)
30-44	0.083 (0.1212)	0.006 (0.1010)	0.083 (0.1212)	0.006 (0.1010)
45-59	-0.034 (0.1661)	-0.200 (0.1265)	0.117 (0.1435)	-0.050 (0.0949)
60-74	-0.134 (0.2302)	-0.334 (0.1924)	-0.100 (0.2563)	-0.500 (0.2042)
75+	-0.500 (0.0000)	-0.500 (0.0000)	-0.500 (0.0000)	-0.500 (0.0000)
Sex				
Male	0.004 (0.0819)	-0.084 (0.0566)	0.133 (0.0889)	-0.042 (0.0412)
Female	-0.049 (0.1109)	-0.169 (0.0917)	-0.049 (0.1109)	-0.169 (0.0917)
Vis Acuty[1]				
20/20	-0.001 (0.0860)	-0.081 (0.0686)	0.109 (0.0943)	-0.051 (0.0632)
20/30	-0.243 (0.1794)	-0.334 (0.1571)	-0.020 (0.1360)	-0.111 (0.1048)
20/40+	0.167 (0.1076)	0.000 (0.0000)	-0.167 (0.2205)	-0.334 (0.1924)
Education				
HS & HSG[2]	-0.400 (0.2191)	-0.400 (0.2191)	-0.200 (0.1789)	-0.200 (0.1789)
Some Col[3]	0.106 (0.1432)	-0.125 (0.0825)	0.169 (0.1319)	-0.063 (0.0605)
Col Grad[4]	-0.008 (0.0831)	-0.077 (0.0693)	0.025 (0.0980)	-0.114 (0.0762)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 56.
Vacuum Button
Y_t & Y'_t Values and Standard Errors

Breakdown:	Before Opening Y_t (S.E.)	Before Opening Y'_t (S.E.)	After Opening Y_t (S.E.)	After Opening Y'_t (S.E.)
Overall	0.458 (0.1283)	0.208 (0.1412)	0.750 (0.0955)	0.667 (0.1076)
Age				
20-29	0.818 (0.1734)	0.636 (0.2326)	1.000 (0.0000)	1.000 (0.0000)
30-44	0.231 (0.2699)	0.077 (0.2765)	0.846 (0.1478)	0.846 (0.1478)
45-59	0.333 (0.2434)	0.067 (0.2576)	0.600 (0.2066)	0.600 (0.2066)
60-74	0.429 (0.3415)	0.143 (0.3741)	0.429 (0.3415)	0.143 (0.3741)
75+	1.000 (0.0000)	0.000 (0.7071)	1.000 (0.0000)	0.000 (0.7071)
Sex				
Male	0.615 (0.1546)	0.308 (0.1866)	0.692 (0.1415)	0.538 (0.1653)
Female	0.273 (0.2051)	0.091 (0.2123)	0.818 (0.1226)	0.818 (0.1226)
Vis Acuity[1]				
20/20	0.481 (0.1687)	0.259 (0.1859)	0.778 (0.1210)	0.778 (0.1210)
20/30	0.385 (0.2560)	0.077 (0.2765)	0.538 (0.2337)	0.385 (0.2560)
20/40+	0.500 (0.3062)	0.250 (0.3423)	1.000 (0.0000)	0.750 (0.2339)
Education				
HS & HSG[2]	0.333 (0.5443)	0.333 (0.5443)	0.333 (0.5443)	0.333 (0.5443)
Some Col[3]	0.250 (0.2421)	-0.125 (0.2480)	0.875 (0.1210)	0.750 (0.1654)
Col Grad[4]	0.586 (0.1504)	0.379 (0.1718)	0.724 (0.1281)	0.655 (0.1403)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 57.
Vacuum Button
Y_{nt} & Y'_{nt} Values and Standard Errors

Breakdown:	Before Opening Y_{nt} (S.E.)	Before Opening Y'_{nt} (S.E.)	After Opening Y_{nt} (S.E.)	After Opening Y'_{nt} (S.E.)
Overall	0.917 (0.0577)	0.458 (0.1283)	0.833 (0.0798)	0.792 (0.0882)
Age				
20-29	1.000 (0.0000)	0.857 (0.1377)	0.857 (0.1377)	0.714 (0.1870)
30-44	0.857 (0.1377)	0.714 (0.1870)	0.714 (0.1870)	0.714 (0.1870)
45-59	1.000 (0.0000)	-0.143 (0.3741)	1.000 (0.0000)	1.000 (0.0000)
60-74	1.000 (0.0000)	0.556 (0.2772)	1.000 (0.0000)	1.000 (0.0000)
75+	0.500 (0.4330)	-1.000 (0.0000)	0.500 (0.4330)	0.500 (0.4330)
Sex				
Male	0.905 (0.0929)	0.429 (0.1972)	0.810 (0.1281)	0.714 (0.1527)
Female	0.926 (0.0727)	0.481 (0.1687)	0.852 (0.1008)	0.852 (0.1008)
Vis Acuty[1]				
20/20	0.935 (0.0635)	0.697 (0.1204)	0.871 (0.0882)	0.806 (0.1062)
20/30	1.000 (0.0000)	0.429 (0.3415)	0.714 (0.2645)	0.714 (0.2645)
20/40+	0.800 (0.1897)	-0.400 (0.2898)	0.800 (0.1897)	0.800 (0.1897)
Education				
HS & HSG[2]	0.750 (0.2339)	-0.250 (0.3423)	1.000 (0.0000)	1.000 (0.0000)
Some Col[3]	1.000 (0.0000)	0.538 (0.2337)	0.538 (0.2337)	0.538 (0.2337)
Col Grad[4]	0.926 (0.0727)	0.630 (0.1495)	0.926 (0.0727)	0.852 (0.1008)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX C (cont'd)

Table 58.
Vacuum Button
J & J' Values and Standard Errors

Breakdown:	Before Opening J (S.E.)	Before Opening J' (S.E.)	After Opening J (S.E.)	After Opening J' (S.E.)
Overall	0.688 (0.0700)	0.378 (0.0954)	0.792 (0.0624)	0.730 (0.0693)
Age				
20-29	0.909 (0.0867)	0.610 (0.1349)	0.929 (0.0688)	0.857 (0.0935)
30-44	0.544 (0.1513)	0.396 (0.1667)	0.780 (0.1192)	0.780 (0.1192)
45-59	0.667 (0.1217)	-0.038 (0.2272)	0.800 (0.1033)	0.800 (0.1033)
60-74	0.715 (0.1707)	0.350 (0.2328)	0.715 (0.1707)	0.572 (0.1871)
75+	0.750 (0.2165)	-0.500 (0.3536)	0.750 (0.2165)	0.250 (0.4146)
Sex				
Male	0.760 (0.0906)	0.369 (0.1356)	0.751 (0.0954)	0.626 (0.1122)
Female	0.599 (0.1086)	0.286 (0.1356)	0.835 (0.0794)	0.835 (0.0794)
Vis Acuty[1]				
20/20	0.708 (0.0900)	0.478 (0.1105)	0.825 (0.0748)	0.792 (0.0806)
20/30	0.693 (0.1280)	0.253 (0.2198)	0.626 (0.1766)	0.550 (0.1841)
20/40+	0.650 (0.1800)	-0.075 (0.2243)	0.900 (0.0949)	0.775 (0.1506)
Education				
HS & HSG[2]	0.542 (0.2963)	0.042 (0.3216)	0.667 (0.2722)	0.667 (0.2722)
Some Col[3]	0.625 (0.1210)	0.207 (0.1706)	0.707 (0.1319)	0.644 (0.1432)
Col Grad[4]	0.756 (0.0837)	0.505 (0.1140)	0.825 (0.0735)	0.754 (0.0860)

1. Visual Acuity
2. Some High School and High School Graduate
3. Some College or Business School
4. College Graduate or Beyond

APPENDIX D

INDIVIDUAL SURVEY RESPONSES

APPENDIX D: INDIVIDUAL SURVEY RESPONSES

Survey No. - 001 Form - X_t Y_c Z_c Time - 33 min
X ID - 6L4 Y ID - 1A1 Z ID - 1K5

(Q1) Yes
(Q2) Bulge at top, Part of top of S.B. is missing (at cap)
(Q3) Yes
(Q4) Looks like glue at tear point
(Q5) 5
(Q6) No
(Q7) No bulges, Foil "up" like a vacuum seal
(Q8) Yes (used knife to open)
(Q9) Some glue visible on back side of foil
(Q10) 3
(Q11) Yes
(Q12) One side not as clear as the other(seal area) pos. glue
(Q13) Yes (used knife to open)
(Q14) One side harder to open than other, Looks like pos. glue
(Q15) 4
(Q16) No
(Q17) No signs of damage or violation, some pills up some down
(Q18) Yes
(Q19) Different "duller" color in the corner of the blisters
(Q20) 4
(Q21) No
(Q22) No air bubbles in juice when tilt/shake package
(Q23) No
(Q24) Heard "pop" when opening
(Q25) 5
(Q26) No - Did not look for instructions, was being told what to look at, usually do look
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) Some high school
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 002 Form - X_c Z_c Y_c Time - 15 min
X ID - 5G2 Y ID - 2B1 Z ID - 2L5

(Q1) No
(Q2) Perforated seal not broken, hard to cut plastic
(Q3) No
(Q4) No cuts in plastic, does not pull apart
(Q5) 5
(Q6) No
(Q7) Foil plastic interface not frayed or loose
(Q8) No (used knife to open)
(Q9) Seal difficult to get off
(Q10) 4
(Q11) Yes
(Q12) Looks like tape on edge flaps, wrap is really loose
(Q13) Yes
(Q14) Looks like some adhesive on end flaps
(Q15) 2
(Q16) No
(Q17) No pinholes, foil sealed to the plastic
(Q18) No
(Q19) No "funky" rips, all pills popped out cleanly
(Q20) 4
(Q21) No
(Q22) Button is down (depressed)
(Q23) No
(Q24) Heard "pop" sound that broke seal
(Q25) 3
(Q26) Yes - did not look at, but knew they were there
(Q27) Mediprin, Sine-Off
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) Some college or business school
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 003 Form - Z_t X_c Y_t Time - 13 min
X ID - 4F2 Y ID - 5D3 Z ID - 7E6

(Q1) No
(Q2) No separation of the band, seems to be in one piece
(Q3) No
(Q4) Normal opening, tough to pull it off
(Q5) 4
(Q6) No
(Q7) Firmly sealed to the top of the container
(Q8) Yes (used knife to open)
(Q9) Contents pushed all the way down
(Q10) 3
(Q11) Yes
(Q12) Does not look like a normal seal, Lt side not folded in normal fashion
(Q13) Yes (used knife to open)
(Q14) Overwrap deformed, not in regular configuration
(Q15) 5
(Q16) Yes
(Q17) Foil in back looks depressed, "Sine-Off" should be up on all the pills.
(Q18) Yes
(Q19) Lack of vacuum in the blisters
(Q20) 4
(Q21) No
(Q22) Nothing missing or in the bottle
(Q23) Yes
(Q24) Opened much too easily
(Q25) 1
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 004 Form - X_t Y_c Z_t Time - 28 min
X ID - 4T4 Y ID - 3C1 Z ID - 6D6

(Q1) No
(Q2) No broken seals or broken around lid
(Q3) Yes
(Q4) Two pieces of tape holding cut seam together
(Q5) 3
(Q6) No
(Q7) Looks sealed around all of the edges
(Q8) No (used knife to open)
(Q9) Glued all the way around
(Q10) 5
(Q11) No
(Q12) Sealed all the way around
(Q13) No (used knife to open)
(Q14) Whole seam still intact
(Q15) 4
(Q16) No
(Q17) Foil glued all the way around each individual blister
(Q18) No
(Q19) Glue still holding around the sides of the blisters
(Q20) 5
(Q21) Yes
(Q22) Seal broken, button not down
(Q23) Yes
(Q24) Seal broken, button not down
(Q25) 5
(Q26) No - Did not look for any
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 005 Form - Z_c Y_c X_t Time - 20 min
X ID - 6V4 Y ID - 4D1 Z ID - 3M5

(Q1) Yes
(Q2) A mark on shrink band (not related to tampering)
(Q3) Yes
(Q4) Tape on shrink band holding it together
(Q5) 3
(Q6) No
(Q7) Fully sealed around the edges
(Q8) Yes
(Q9) Too easy to open - question the material used
(Q10) 4
(Q11) No
(Q12) Looks well wrapped, looks like other packages have seen
(Q13) No
(Q14) End flaps look like they were machine done, like other packages have seen
(Q15) 3
(Q16) No
(Q17) No added foreign substances, looks fine "intact"
(Q18) No
(Q19) Hard time opening the blisters, pushing out the pills
(Q20) 5
(Q21) No
(Q22) Vacuum button not up
(Q23) No
(Q24) Heard the "pop" of opening
(Q25) 5
(Q26) No - Assuming that there probably is a message, did not use in decision
(Q27) -
(Q28) -
(Q29) No
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 006 Form - Z_t Y_t X_t Time - 14 min
X ID - 5U4 Y ID - 7F3 Z ID - 5C6

(Q1) No
(Q2) No rips or tears, not loose
(Q3) Yes
(Q4) Tape holding together shrink band
(Q5) 4
(Q6) No
(Q7) Foil glued down all around, if saw another could compare
(Q8) No
(Q9) Glue still intact after opening
(Q10) 5
(Q11) No
(Q12) Plastic doesn't look ripped, glue still intact
(Q13) No
(Q14) Difficult to remove overwrap
(Q15) 5
(Q16) No
(Q17) Don't see any openings or tears or rips
(Q18) No
(Q19) Foil glued down, hard to get pills out
(Q20) 5
(Q21) Yes
(Q22) Button is up
(Q23) Yes
(Q24) Did not hear vacuum
(Q25) 4
(Q26) No - Did not see any
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/60

APPENDIX D (cont'd)

Survey No. - 007 Form - Y_c Z_t X_c Time - 15 min
X ID - 6H2 Y ID - 7G1 Z ID - 4B6

(Q1) No
(Q2) No breaks in writing or plastic, no cuts
(Q3) No
(Q4) No splits or holes in plastic
(Q5) 4
(Q6) No
(Q7) No holes or cuts in foil, no loose edges
(Q8) No (knife used to open)
(Q9) Cotton still in, hard to take out(not easy to remove) No holes
(Q10) 5
(Q11) No
(Q12) No breaks in wrapper, box not deformed, broken, crushed
(Q13) No
(Q14) Don't see anything different, no break in writing on overwrap
(Q15) 5
(Q16) No
(Q17) No break in writing, no splits in plastic or foil, no bent up edges
(Q18) No
(Q19) No holes in plastic where/might of been hidden by pills
(Q20) 3
(Q21) Yes
(Q22) Can push the button down, normally can not when vacuum is established
(Q23) Yes
(Q24) Came off easy, no "pop" when opening
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) No
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 008 Form - Y_t Z_c X_t Time - 20 min
X ID - 2R4 Y ID - 3L3 Z ID - 4N5

(Q1) No
(Q2) Fits snugly around the bottle, all perforations are together
(Q3) Yes
(Q4) Tape holding together seal
(Q5) 5
(Q6) No
(Q7) No break in seal, foil still intact
(Q8) No (used knife to open)
(Q9) Evenly sealed all around, if shrink band was on would not have qualms about foil seal
(Q10) 3
(Q11) No
(Q12) Everything is still sealed/glued, no evidence of cuts in cellophane
(Q13) Yes
(Q14) One side different from the other 1 glued 1 pressed
(Q15) 3
(Q16) No
(Q17) Not open at blister/foil interface, no breakage of foil
(Q18) No
(Q19) Did not see anything different, did think there was less air in some of the blisters
(Q20) 2
(Q21) No
(Q22) Vacuum is still there, Missing seal?
(Q23) Yes
(Q24) "Pop" not as loud as usual
(Q25) 1
(Q26) No - Didn't look for any, don't usually
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 009 Form - X_c Y_t Z_t Time - 15 min
X ID - 1C2 Y ID - 5N3 Z ID - 3A6

(Q1) No
(Q2) No holes
(Q3) No
(Q4) No holes, nothing out of the ordinary
(Q5) 1
(Q6) No
(Q7) No holes
(Q8) No (screwdriver used to open)
(Q9) No holes, looks normal
(Q10) 1
(Q11) No
(Q12) No holes, no rips, looks brand new off shelf, would buy off shelf
(Q13) No (used screwdriver to open)
(Q14) No rips, no holes
(Q15) 1
(Q16) Yes
(Q17) Foil backing has mark on it (not related to tampering) like a slash
(Q18) Yes
(Q19) (looked at pills. not blisters) No difference in opening, would not take back
(Q20) 3
(Q21) Yes
(Q22) Button not pushed in
(Q23) Yes
(Q24) No vacuum released
(Q25) 5
(Q26) No, did not look, but probably never do
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 010 Form - X_t Z_t Y_c Time - 23 min
X ID - 5K4 Y ID - 5E1 Z ID - 2Z6

(Q1) Yes
(Q2) Piece of tape
(Q3) Yes
(Q4) Piece of tape holding band together, band pretty loose
(Q5) 5
(Q6) Yes
(Q7) Two little holes in foil
(Q8) Yes (knife used to open)
(Q9) Two little holes in foil
(Q10) 3
(Q11) Yes
(Q12) Looks like someone opened and reglued shut (very unsure)
(Q13) Yes
(Q14) Wrapping very loose, dent in box
(Q15) 1
(Q16) No
(Q17) No puncture holes or broken seals
(Q18) No
(Q19) Used about the same amount of force to remove/push pill through foil
(Q20) 1
(Q21) Yes
(Q22) Button is up, vacuum seal broken
(Q23) Yes
(Q24) No "pop" when opening
(Q25) 5
(Q26) No - Does not normally look for instructions, would look if noticed something was wrong
(Q27) -
(Q28) -
(Q29) No
(Q30) No
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) Some college or business school
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 011 Form - Z_t X_c Y_c Time - 27 min
X ID - 3E2 Y ID - 6F1 Z ID - 1Y6

(Q1) No
(Q2) Seal is pretty good, appears to be intact, would have bought off shelf
(Q3) No
(Q4) Was intact
(Q5) 3
(Q6) No
(Q7) No markings, no peel points, seal looks intact
(Q8) No (used knife to open)
(Q9) Glue is tightly adhering, still have a good seal
(Q10) 2
(Q11) No
(Q12) Tight seal on endflaps
(Q13) No
(Q14) Seal does not look cloudy as if there was glue there
(Q15) 1
(Q16) No
(Q17) No cuts or tears in foil or plastic
(Q18) Yes (knife used to slit foil backing)
(Q19) One set of pills came out easier than the others
(Q20) 4
(Q21) Yes
(Q22) The button is up
(Q23) Yes
(Q24) Did not "pop"
(Q25) 4
(Q26) Yes
(Q27) Mediprin Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 012 Form - Y_t Z_t X_c Time - 20 min
X ID - 2D2 Y ID - 6P3 Z ID - 9X6

(Q1) Yes
(Q2) Plastic does not cover the bottom and top, hanging piece on top
(Q3) Yes
(Q4) Plastic did not cover the bottom and top, hanging piece on top (pull tab)
(Q5) 4
(Q6) No
(Q7) Don't see anything that would frighten into saying it was tampered
(Q8) No (knife used to open)
(Q9) No cuts
(Q10) 1
(Q11) No
(Q12) Does not look opened or altered
(Q13) Yes
(Q14) Flap/end looks different from the other
(Q15) 2
(Q16) No
(Q17) No signs of foil breakage, no pulling apart at foil plastic interface
(Q18) No
(Q19) Don't see how could separate plastic/foil interface - No play of pill in blister
(Q20) 3
(Q21) Yes
(Q22) Button is up
(Q23) Yes
(Q24) No vacuum
(Q25) 5
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 013 Form - X_c Y_t Z_c Time - 42 min
X ID - 2N2 Y ID - 4C3 Z ID - 5P5

(Q1) No
(Q2) Letters on seal not astray, in place, question some spots where the band is curled or bubbled
(Q3) Yes (scissors & knife used to open)
(Q4) Seam is not smooth after removal like rest of shrink band
(Q5) 4
(Q6) No
(Q7) Everything is nice and smooth, no indications of opening, no marks
(Q8) No (knife used to open)
(Q9) One area was easy to come off, all the foil came off one section of the bottle mouth
(Q10) 4
(Q11) Yes
(Q12) Lt side not sealed as tightly as the right side
(Q13) Yes
(Q14) Left side loose ends
(Q15) 4
(Q16) No
(Q17) Foil has no openings, no breaks in foil, smooth
(Q18) No
(Q19) Foil seals were ok, blisters had no cuts or loose ends where part of it was loose
(Q20) 4
(Q21) No
(Q22) Everything looks smooth and even, whole cap, no punctures
(Q23) Yes
(Q24) Came off too smooth, no effort to open, "usually need two sledghammers and a crowbar to open"
(Q25) 4
(Q26) No - Did not see any, said there could be
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 75 or older
(Q35) Male
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/50

APPENDIX D (cont'd)

Survey No. - 014 Form - Y_t X_c Z_c Time - 17 min
X ID - 8K2 Y ID - 6E3 Z ID - 6Q5

(Q1) No
(Q2) Sealed all around the neck of the bottle
(Q3) No
(Q4) On tight, tightly secured
(Q5) 5
(Q6) No
(Q7) Sealed on tight
(Q8) No (scissors used to open)
(Q9) Sealed on tightly all around
(Q10) 5
(Q11) Yes
(Q12) Lt side not as smooth as usual, opened at seal
(Q13) Yes
(Q14) Looks like Lt side was glued over
(Q15) 5
(Q16) No
(Q17) Sealed in tight, pills are not moving around
(Q18) No
(Q19) Sealed tightly
(Q20) 5
(Q21) No
(Q22) Can't tell unless you open, will hear vacuum when opened
(Q23) No
(Q24) Heard "popping" noise
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) No
(Q32) Yes
(Q33) Yes
(Q34) 75 or older
(Q35) Female
(Q36) Some high school
(Q37) Yes
(Q38) No
(Q39) 20/50

APPENDIX D (cont'd)

Survey No. - 015 Form - Z_t X_t Y_t Time - 27 min
X ID - 4J4 Y ID - 4M3 Z ID - 8W6

(Q1) No
(Q2) Taping has not been broken in any way
(Q3) No (knife used to open)
(Q4) Seemed to have been properly sealed, major operation to seal like factory
(Q5) 5
(Q6) No
(Q7) Looks factory installed
(Q8) No (knife used to open)
(Q9) Membrane seal looked factory installed
(Q10) 5
(Q11) No
(Q12) No break, looks factory installed
(Q13) No (knife used to open - looked at box)
(Q14) Based on overwrap & condition of box, looks factory installed, no breaks
(Q15) 5
(Q16) No
(Q17) Sine-Off on some, not others, would printing be on plastic, plastic not broken
(Q18) No
(Q19) From pressure used to push pills out, foil had not been broken on any
(Q20) 5
(Q21) Yes
(Q22) There is no pressure spot, some contents gone, no way to tell by observing
(Q23) Yes
(Q24) Could easily be tampered with, somebody has opened it it lost some of its fluid
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 75 or older
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) No
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 016 Form - Z_c X_t Y_t Time - 30 min
X ID - 3S4 Y ID - 2K3 Z ID - 7R5

(Q1) No
(Q2) Plastic around cap undisturbed, no signs of cuts or tears
(Q3) Yes (knife used to open)
(Q4) Scotch tape holding band together
(Q5) 3
(Q6) No
(Q7) Appears undisturbed, sealed all around
(Q8) No (knife used to open)
(Q9) Cotton folded as if went in that way, no one has put it in
(Q10) 5
(Q11) No
(Q12) Covering undisturbed, flaps are sealed tight
(Q13) No (knife used to open)
(Q14) Seemed sealed fragile covering, would if it had been tampered with
(Q15) 4
(Q16) No
(Q17) Everything is tight, secure, backing intact
(Q18) No
(Q19) In removing, obvious first to remove from the blisters
(Q20) 5
(Q21) No
(Q22) No indications on metal cover of it being pried up, seems to be tight, cap not loose
(Q23) No
(Q24) Heard the vacuum pop
(Q25) 5
(Q26) No - Did not have reading glasses on
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 75 or older
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/200

APPENDIX D (cont'd)

Survey No. - 017 Form - X_t Y_t Z_t Time - 25 min
X ID - 2G4 Y ID - 2A3 Z ID - 7V6

(Q1) No
(Q2) Plastic seal is intact, there is a piece that was put on later
(Q3) Yes
(Q4) Because of the little pieces of tape holding it together
(Q5) 5
(Q6) Yes
(Q7) The edge looks like someone might have tried to take it off
(Q8) Yes
(Q9) Came off easier than usually do, don't know if that's a sign
(Q10) 5
(Q11) No
(Q12) No indication it has been broken anyplace
(Q13) No
(Q14) Probably would not have looked again, didn't see anything to think otherwise
(Q15) 5
(Q16) No
(Q17) Don't look as if tampered
(Q18) No
(Q19) Saw no indication of it
(Q20) 5
(Q21) Yes
(Q22) Pushed button, got flexure, button was up
(Q23) Yes
(Q24) Came off too easy, no reason why anyone could not have opened before me
(Q25) 5
(Q26) No - might have looked closer if buying
(Q27) -
(Q28) -
(Q29) No
(Q30) No
(Q31) Yes
(Q32) No
(Q33) No
(Q34) 75 or older
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 018 Form - Z_c Y_t X_t Time - 23 min
X ID - 7W4 Y ID - 9H3 Z ID - 8S5

(Q1) No
(Q2) Tightly sealed, not loose, would have to tear section out
(Q3) Yes
(Q4) Been taped together, came apart
(Q5) 5
(Q6) No
(Q7) Can't take off clean so you can put it back on
(Q8) Yes
(Q9) Foil does not come off the lip of the container as easily as it did
(Q10) 5
(Q11) Yes
(Q12) Loose ends, Lt side might have been opened
(Q13) Yes
(Q14) Lt flap was open, might have used a different glue to seal
(Q15) 5
(Q16) No
(Q17) Foil backing would be damaged if pills taken out
(Q18) No
(Q19) Came out the way others used have come out
(Q20) 5
(Q21) Yes
(Q22) Missing seal? grove in glass protruded from underneath cap
(Q23) No
(Q24) Heard vacuum pop
(Q25) 4
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 75 or older
(Q35) Female
(Q36) Some high school
(Q37) Yes
(Q38) Yes
(Q39) 20/50

APPENDIX D (cont'd)

Survey No. - 019 Form - Z_c Y_t X_c Time - 35 min
X ID - 7J2 Y ID - 3B3 Z ID - 9T5

(Q1) Yes
(Q2) Top should be completely covered by plastic (was "flicking" upturned pull tab)
(Q3) Yes (knife/scissors used to open)
(Q4) Film was too flexible, should be tighter than was
(Q5) 4
(Q6) No
(Q7) Seal is whole
(Q8) No
(Q9) Counted 24 pills, tough opening seal
(Q10) 1
(Q11) Yes
(Q12) Lt side flap is loose
(Q13) Yes
(Q14) Loose flap (Lt), ill fitting
(Q15) 3
(Q16) Yes
(Q17) Don't see the word "Sine-Off" on all the pills
(Q18) Yes
(Q19) "Sine-Off" are not all up
(Q20) 5
(Q21) No
(Q22) Pushing down on lid to determine if it was tampered
(Q23) No
(Q24) Heard "pop" of vacuum
(Q25) 5
(Q26) No - Would look back to see
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 020 Form - Y_t X_t Z_c Time - 24 min
X ID - 8X4 Y ID - 1T3 Z ID - 6Z5

(Q1) No
(Q2) Everything tight and secure, plastic all the way around bottle, question no plastic on top
(Q3) No
(Q4) Everything was tight and secure
(Q5) 4
(Q6) No
(Q7) Glued securely, no marks, mentioned might be possible to remove foil and replace with new one
(Q8) No
(Q9) Cotton still there, looks ok
(Q10) 3
(Q11) No
(Q12) No loose edges, no ripped material, no frays, everything tight and secure
(Q13) No
(Q14) Nothing missing, came off way should, nothing loose
(Q15) 4
(Q16) No
(Q17) Plastic coating intact, no evidence of rips in foil
(Q18) No
(Q19) No physical evidence of rips or breaks
(Q20) 5
(Q21) No
(Q22) No evidence on glass
(Q23) No
(Q24) Saw warning after opening, feels that vacuum button not a tamper resistant feature
(Q25) 2
(Q26) Yes
(Q27) Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 021 Form - Z_c X_t Y_c Time - 18 min
X ID - 9Y4 Y ID - 5P1 Z ID - 1A5

(Q1) Yes
(Q2) Can see slit with some tape on it
(Q3) Yes
(Q4) Band has been taped together
(Q5) 5
(Q6) No
(Q7) Can't put foil back on that perfect
(Q8) No
(Q9) Foil still glued down, original glue seal
(Q10) 3
(Q11) No
(Q12) Overwrap is fully intact, price tag on one side, folds were aligned
(Q13) No (scissors used to open)
(Q14) Overwrap is fully intact, folds were aligned
(Q15) 5
(Q16) No
(Q17) Still have original printing, no holes in foil seals
(Q18) No
(Q19) Pills came out with same consistency
(Q20) 5
(Q21) No
(Q22) Button has not popped up
(Q23) No
(Q24) Button popped up after opening
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Sine-Off Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 022 Form - Z_t X_t Y_c Time - 20 min
X ID - 1Z4 Y ID - 6Q1 Z ID - 3K6

(Q1) No
(Q2) No holes, everything is snug around the top & bottom
(Q3) Yes
(Q4) There is tape there, should probably not be there
(Q5) 3
(Q6) No
(Q7) Not wrinkled, firmly sealed to bottle all around, would not have looked that closely
(Q8) No
(Q9) Not wrinkled, firmly sealed, no appearance of tampering
(Q10) 1
(Q11) No
(Q12) No holes, does not look reglued, everything is smooth
(Q13) No
(Q14) No evidence of opening and resealing
(Q15) 1
(Q16) No
(Q17) No holes in back or front, plastic is smooth, no evidence of pushing pill through foil to wrinkle blister, would confidently use
(Q18) No
(Q19) None opened easily, if were opened it is hard to replace foil
(Q20) 1
(Q21) Yes
(Q22) The button is up, would not buy
(Q23) Yes
(Q24) Did not feel vacuum when opening
(Q25) 5
(Q26) No - Did not look, knows there are messages, does not look for them
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) High school graduate
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 023 Form - Y_t X_t Z_t Time - 15 min
X ID - 1F4 Y ID - 8G3 Z ID - 5T6

(Q1) Yes
(Q2) Wrinkles at bottom where it might have been pulled apart and resealed
(Q3) Yes
(Q4) Has been taped together in two places
(Q5) 5
(Q6) No
(Q7) Looks not pulled apart, looks factory condition, even seal
(Q8) No (scissors used to open)
(Q9) Even seal, no extra glue on lip
(Q10) 5
(Q11) Yes
(Q12) Gap in overwrap, not sealed tight like other side wrinkled
(Q13) Yes
(Q14) One side looks resealed
(Q15) 4
(Q16) No
(Q17) Seals have not been broken, question the writing not being up on all the pills
(Q18) No
(Q19) Nothing looks altered (was looking at the pills especially)
(Q20) 4
(Q21) Yes
(Q22) Because button is up
(Q23) Yes
(Q24) Button was up
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) No
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 024 Form - X_c Z_c Y_t Time - 15 min
X ID - 1M2 Y ID - 8R3 Z ID - 3W5

(Q1) No
(Q2) No breaks in plastic, still folded down on top
(Q3) No
(Q4) Came off in one piece
(Q5) 4
(Q6) No
(Q7) No punctures, looks convex
(Q8) No
(Q9) Hard to open
(Q10) 4
(Q11) No
(Q12) Plastic not broken
(Q13) No
(Q14) No tears in plastic other than the one I made, in one piece
(Q15) 4
(Q16) No
(Q17) Foil hasn't been punctured, plastic has same shape
(Q18) No
(Q19) All came out in the same manner
(Q20) 5
(Q21) No
(Q22) Safety button not up
(Q23) No
(Q24) Made vacuum noise
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 025 Form - Y_t X_c Z_t Time - 20 min
X ID - 4Q2 Y ID - 1J3 Z ID - 4S6

(Q1) No
(Q2) Appears to be intact, overlapped top and bottom edges of container
(Q3) No
(Q4) No indications of holes or discontinuities, was intact
(Q5) 1
(Q6) No
(Q7) No openings, edges are sealed tightly, would have to remove and replace to tamper with
(Q8) No
(Q9) No edges pulled away as I was pushing on it, no holes
(Q10) 1
(Q11) No
(Q12) Visually seems intact, not opened, endflaps and corners sealed
(Q13) No
(Q14) As tugging and pulling did not see any evidence of opening, had difficulty opening
(Q15) 2
(Q16) No
(Q17) Nothing touched on foil side, no holes perforations in the plastic, why not names on all pills
(Q18) No
(Q19) Could look underneath foil and see nothing unusual, pills all the same
(Q20) 1
(Q21) No
(Q22) No leaks from cap, no dings/dents or leaks
(Q23) Yes
(Q24) Button not dished in, no indications other than that
(Q25) 5
(Q26) Yes
(Q27) Sine-Off Everfresh Juice
(Q28) Everfresh Juice (unfamiliar w/ vac but, but tried to use instructions)
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) No
(Q34) 45-59
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 026 Form - X_t Z_c Y_t Time - 17 min
X ID - 8N4 Y ID - 9S3 Z ID - 4X5

(Q1) Yes
(Q2) Bumps on bottom and top of shrink band
(Q3) Yes
(Q4) Came off awfully easy as compared to others have used
(Q5) 5
(Q6) No
(Q7) On pretty secure, no edges up
(Q8) No
(Q9) Hard to get off
(Q10) 1
(Q11) No
(Q12) Says safety seal, if broken letters would be goofed up (rt edge bothered her)
(Q13) No
(Q14) Came off difficultly
(Q15) 1
(Q16) No
(Q17) Foil is really difficult to get off, nothing looks torn
(Q18) No
(Q19) Lettering was perfect, completely sealed, had trouble getting pills out
(Q20) 1
(Q21) No
(Q22) No nicks in finish
(Q23) No
(Q24) Heard "pop" sound like it was sealed
(Q25) 1
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Sine-Off Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) High School graduate
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 027 Form - Z_c X_c Y_c Time - 18 min
X ID - 9L2 Y ID - 1K1 Z ID - 5Y5

(Q1) No
(Q2) No tears, does not seem to have, looks sealed
(Q3) No
(Q4) Seems to be whole, no tears or punctures
(Q5) 5
(Q6) No
(Q7) Looks sealed tightly, no holes
(Q8) No (knife used to open)
(Q9) Was hard to open, no signs of trespassing
(Q10) 5
(Q11) No
(Q12) Looks taped up out of a machine, looks too perfect
(Q13) No
(Q14) Was hard to open
(Q15) 5
(Q16) No
(Q17) Looks sealed, looking at foil, tightly sealed
(Q18) No
(Q19) Seemed tightly sealed, no holes in plastic
(Q20) 5
(Q21) No
(Q22) Button usually pops up when open, would not use if button did not pop
(Q23) No
(Q24) Seal popped, heard vacuum
(Q25) 5
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) No
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 028 Form - X_c Y_c Z_t Time - 19 min
X ID - 5R2 Y ID - 2L1 Z ID - 3R6

(Q1) No
(Q2) Seems to be intact, would see some sign of alteration
(Q3) No
(Q4) If tampered would be loose or some sign, especially where necked down
(Q5) 4
(Q6) No
(Q7) Looks like it would be if not tampered, lack of seeing something that indicates has been tampered, no glue or signs of removal
(Q8) No (knife used to open)
(Q9) Was uniformly held all around did not see any signs of tampering
(Q10) 4
(Q11) No
(Q12) Would expect to see something loose, looking mainly at endflaps
(Q13) No
(Q14) Was looking for something that said tampering, nothing there, was wary of one endflap
(Q15) 3
(Q16) No
(Q17) Looking for something wrong, sign of foil being peeled away or small slit in blister
(Q18) No
(Q19) Still seems ok, did not see any of the above
(Q20) 4
(Q21) Yes
(Q22) Expect to see button "sucked in," was not
(Q23) Yes
(Q24) Cap came off pretty easy as compared to past
(Q25) 2
(Q26) No - did not notice
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 029 Form - Z_t Y_c X_t Time - 18 min
X ID - 9P4 Y ID - 3M1 Z ID - 2Q6

(Q1) No
(Q2) Appearance of plastic shows not torn or removed and replaced
(Q3) No
(Q4) Appearance of plastic shows not removed prior to his removing it
(Q5) 1
(Q6) No
(Q7) No breaks in foil membrane, looks as it was installed
(Q8) No (knife used to open)
(Q9) Adhesive on lip was in place holding foil
(Q10) 1
(Q11) Yes
(Q12) Rt flap appearance looks opened and reglued
(Q13) Yes (knife used to open)
(Q14) Plastic looks opened and reglued
(Q15) 5
(Q16) No
(Q17) No tears or markings in plastic, pressure sealed
(Q18) No
(Q19) Difficulty removing pills with pressure, did not see any tears/removal of material of bottom (foil)
(Q20) 1
(Q21) No
(Q22) Don't see scratches or marks showing forced entry, no protection against twisting off cap to gain entry
(Q23) No
(Q24) Same as (Q22)
(Q25) 3
(Q26) No - Did not observe any
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 030 Form - Y_c X_c Z_t Time - 23 min
X ID - 3P2 Y ID - 4N1 Z ID - 1P6

(Q1) No
(Q2) No indications of tampering, nothing unusual about way wrap removed and put back on, no indications of
(Q3) Yes
(Q4) Looks like glue at tear point
(Q5) 5
(Q6) No
(Q7) Can't see anything, can't peel without breaking, won't peel clean
(Q8) No (knife used to open)
(Q9) Same as (Q7)
(Q10) 1
(Q11) Yes
(Q12) Can't see any holes, Lt flap looks opened and resealed with something hot
(Q13) Yes
(Q14) Same as (Q12)
(Q15) 3
(Q16) No
(Q17) Can't see any pinholes, no breaks in foil
(Q18) No
(Q19) Can't see any breaks, did not see anything in plastic
(Q20) 1
(Q21) Yes
(Q22) Feel/see crease in vacuum button
(Q23) No
(Q24) Heard vacuum
(Q25) 3
(Q26) Yes
(Q27) Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 031 Form - X_c Y_c Z_c Time - 17 min
X ID - 6S2 Y ID - 7R1 Z ID - 2B5

(Q1) No
(Q2) Everything still snug, not broken at perforation
(Q3) No
(Q4) Difficulty of removing
(Q5) 5
(Q6) No
(Q7) No visible, edge seal still intact
(Q8) No (knife used to open)
(Q9) Still intact, difficult to open, will normally press to test
(Q10) 5
(Q11) No
(Q12) Everything intact, no cracks or tears in plastic
(Q13) No (knife used to open)
(Q14) No physical evidence of cracks or tears in plastic
(Q15) 5
(Q16) Yes
(Q17) Not all the pills have "Sine-Off" on them
(Q18) No
(Q19) Pills in upside down, package hard to open
(Q20) 5
(Q21) No
(Q22) Everything seems tight, button hasn't popped up
(Q23) No
(Q24) Vacuum had not been broken
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) High School graduate
(Q37) Yes
(Q38) No
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 032 Form - Y_t Z_t X_t Time - 15 min
X ID - 2A4 Y ID - 2U3 Z ID - 8F6

(Q1) No
(Q2) Nice and tight around bottle
(Q3) No
(Q4) Was nice and tight (was worried about needles)
(Q5) 5
(Q6) No
(Q7) Foil is tightly closed/sealed to container
(Q8) No
(Q9) Still tightly sealed
(Q10) 5
(Q11) No
(Q12) Plastic not open, no tears or cuts
(Q13) No
(Q14) Was so darn hard to open
(Q15) 5
(Q16) No
(Q17) Nice and secure in plastic
(Q18) No
(Q19) Hard to open, just trying to get them out
(Q20) 5
(Q21) No
(Q22) Not really sure, looking at button
(Q23) No
(Q24) Heard vacuum when opening
(Q25) 1
(Q26) Yes
(Q27) Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 033 Form - Y_c X_t Z_t Time - 19 min
X ID - 3B4 Y ID - 8S1 Z ID - 9G6

(Q1) No
(Q2) Snug to bottle, is difficult to get back on
(Q3) Yes
(Q4) Little connectors, pieces of tape
(Q5) 4
(Q6) No
(Q7) Looks very neat and exact, straight, no frays
(Q8) Yes (knife used to open)
(Q9) Material is too lightweight, should be heavier
(Q10) 5
(Q11) No
(Q12) Price sticker over seal, doesn't look resealed
(Q13) No
(Q14) The side she opened was difficult to get undone
(Q15) 3
(Q16) Yes
(Q17) "Sine-Off" not up on all the pills
(Q18) No
(Q19) All opened with same degree of ease, any tampering would have been done before sealing
(Q20) 2
(Q21) No
(Q22) It looks right, no plastic wrap around cap, it looks full, liquid at right level
(Q23) Yes
(Q24) No vacuum noise
(Q25) 5
(Q26) No - Did not look for any
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) Some high school
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 034 Form - Y_c Z_t X_t Time - 20 min
X ID - 4C4 Y ID - 9T1 Z ID - 1H6

(Q1) Yes
(Q2) Not even on top, not coming around completely on bottom plastic missing?
(Q3) Yes
(Q4) Ripped straight down on edge, shouldn't do that
(Q5) 4
(Q6) No
(Q7) Is sealed around edge, no dents in foil
(Q8) No
(Q9) Didn't feel like it, came off like it should
(Q10) 5
(Q11) No
(Q12) No splits in plastic anywhere that would signify being open
(Q13) No
(Q14) Nothing showing that it had been tampered
(Q15) 4
(Q16) Yes
(Q17) Dents in two of the blisters (side by side) Sine-Off not all up
(Q18) No
(Q19) Foil doesn't look tampered, question "specks" on pills
(Q20) 3
(Q21) Yes
(Q22) Doesn't have plastic band, button should be a little higher
(Q23) Yes
(Q24) Cap came off way too easy, no pop sound
(Q25) 5
(Q26) Yes - suspects they all did, did not look for on Mediprin and Sine-Off
(Q27) Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) Some college or business school
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 035 Form - X_t Z_t Y_t Time - 17 min
X ID - 5D4 Y ID - 3V3 Z ID - 2J6

(Q1) No
(Q2) No place where shrink band was sealed again
(Q3) No (Scissors used to open)
(Q4) Don't see how could be tampered with, Looking for seams not tight
(Q5) 2
(Q6) No
(Q7) Does not look abnormal, uniform seal, not loose, no bubbles
(Q8) No (knife used to open)
(Q9) It opened like it was supposed to, no alarm bells
(Q10) 1
(Q11) No
(Q12) All sealed up, says safety sealed, looking for a bad seam, something askew
(Q13) No
(Q14) Took a while to get off, should be easier to get off if tampered with
(Q15) 2
(Q16) No
(Q17) Numbers imprinted on side (lot no.) numbers would not line up as neatly if tampered
(Q18) No
(Q19) They all seamed to open the same, some seemed a little tighter
(Q20) 3
(Q21) No
(Q22) Seal is not popped up
(Q23) Yes
(Q24) Did not hear vacuum
(Q25) 5
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) No
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 036 Form - Y_c Z_c X_c Time - 14 min
X ID - 4Z2 Y ID - 8B1 Z ID - 3C5

(Q1) No
(Q2) Seems intact, question rumpled nature near bottom
(Q3) No
(Q4) Removal took effort, tampered would be easier to remove
(Q5) 1
(Q6) No
(Q7) No perforations or marks
(Q8) No (Screwdriver used to open)
(Q9) Cotton is still on top of product, cotton usually near top
(Q10) 1
(Q11) No
(Q12) Shrink wrap is firmly in place, price tag still on ends not opened, "safety sealed" still in proper place
(Q13) No
(Q14) Difficult to remove
(Q15) 1
(Q16) No
(Q17) Seems to be intact, plastic coating no punctures, no perforations or punctures in foil
(Q18) No
(Q19) Opened like ones opened previously
(Q20) 1
(Q21) No
(Q22) Cap is still down
(Q23) No
(Q24) Heard cap pop, vacuum seal not broken
(Q25) 1
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) No
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 037 Form - Z_t Y_c X_c Time - 15 min
X ID - 1W2 Y ID - 7A1 Z ID - 6N6

(Q1) No
(Q2) No motion, seal seems intact
(Q3) No
(Q4) Seal intact, acted as expected it would
(Q5) 3
(Q6) No
(Q7) Seems secure, vacuum inside, all edges glued down
(Q8) No (knife used to open)
(Q9) Came off as expected
(Q10) 4
(Q11) No
(Q12) Plastic wrap intact, no major discrepancies, all tabs glued down, no signs of opening, looks like one find on shelf
(Q13) No (knife used to open)
(Q14) Opened like a regular package
(Q15) 4
(Q16) No
(Q17) Blister packages intact, edges are sealed, foil unpunctured
(Q18) No
(Q19) Acted like other blisters, opened correctly
(Q20) 5
(Q21) Yes
(Q22) Vacuum button not compressed down
(Q23) Yes
(Q24) Button not down
(Q25) 5
(Q26) No - that he noted, there might have been
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 038 Form - Z_c Y_c X_c Time - 15 min
X ID - 8U2 Y ID - 6Z1 Z ID - 4D5

(Q1) No
(Q2) Band is tight and fairly smooth
(Q3) No
(Q4) Hard and tight, hard to pull off
(Q5) 4
(Q6) No
(Q7) Really flat and smooth, even around edge
(Q8) No (knife used to open)
(Q9) Really tight, hard to open
(Q10) 4
(Q11) Yes
(Q12) One side seal was messier than the other (rt side)
(Q13) Yes
(Q14) Was really sticky, hard to open
(Q15) 3
(Q16) No
(Q17) No holes in foil, foil looks tight along edges
(Q18) No
(Q19) Wasn't too hard or too easy to open, never assumes anything has been tampered with
(Q20) 1
(Q21) No
(Q22) The button would be up higher if tampered
(Q23) No
(Q24) Heard noise on opening
(Q25) 4
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) No
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) Some college or business school
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 039 Form - X_t Z_c Y_c Time - 19 min
X ID - 6E4 Y ID - 5Y1 Z ID - 5E5

(Q1) No
(Q2) Completely sealed all around, questioned some of the bottom, noticed split
(Q3) Yes
(Q4) Two small pieces of tape
(Q5) 1
(Q6) No
(Q7) Looks like a complete seal
(Q8) Yes
(Q9) Seal came off very easy
(Q10) 1
(Q11) No
(Q12) Looks sealed, plastic hasn't been retaped
(Q13) No
(Q14) Factory sealed, not altered
(Q15) 3
(Q16) No
(Q17) No distinguishing marks to indicate opening, looking primarily on circular parts of foil and edge
(Q18) No
(Q19) Each packet sealed, none opened easier
(Q20) 5
(Q21) No
(Q22) Safety button not popped up
(Q23) No
(Q24) Can hear pop of vacuum seal
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Sine-Off Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 040 Form - X_c Z_t Y_c Time - 13 min
X ID - 3Y2 Y ID - 4X1 Z ID - 5M6

(Q1) No
(Q2) Does not appear torn, looks like other ones
(Q3) No
(Q4) Opened like normally should, looking at perforations
(Q5) 1
(Q6) No
(Q7) Securely attached
(Q8) No (knife used to open)
(Q9) Was securely attached
(Q10) 1
(Q11) No
(Q12) Safety seal is intact, wrap is glued
(Q13) No (knife used to open)
(Q14) No loose edges, material tore apart, was securely attached to package
(Q15) 1
(Q16) No
(Q17) Appears to be completely sealed, Sine-Offs not all up
(Q18) No
(Q19) Opened as normally should, compared to others used
(Q20) 1
(Q21) Yes
(Q22) Safety button is up
(Q23) Yes
(Q24) Safety button is up
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 041 Form - X_c Z_t Y_t Time - 15 min
X ID - 9V2 Y ID - 5X3 Z ID - 4L6

(Q1) No
(Q2) Plastic is edges all around, perforations unbroken
(Q3) No
(Q4) When pulled off shows marks of stress, did not pull all the way down perforations
(Q5) 5
(Q6) No
(Q7) Foil is sealed around all edges, says "safety sealed", not stretched, looks normal enough
(Q8) No
(Q9) Had tough time getting in, was intact
(Q10) 5
(Q11) Yes
(Q12) End sealings are not similar
(Q13) Yes (knife used to open)
(Q14) All edges completely sealed on one side, not on the other
(Q15) 4
(Q16) No
(Q17) Not perforated in any areas that contain the drugs
(Q18) No
(Q19) When opening, hard to remove, unequal removal force
(Q20) 3
(Q21) Yes
(Q22) Button should be down, on normal would not happen
(Q23) Yes
(Q24) Button was up
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 042 Form - Y_c X_t Z_c Time - 12 min
X ID - 7F4 Y ID - 3W1 Z ID - 9J5

(Q1) Yes
(Q2) Looks like has been taped together, not as tight as should be
(Q3) Yes
(Q4) There is tape on it
(Q5) 5
(Q6) No
(Q7) No pinholes, is on tight
(Q8) No
(Q9) Looked normal, has cotton, same foil as used on all packages
(Q10) 5
(Q11) Yes
(Q12) Looks like tape underneath bookstore price tag
(Q13) No (knife used to open)
(Q14) Not tape now that price tag is gone
(Q15) 3
(Q16) No
(Q17) No punctures in foil or plastic - would make sure that all Sine-Offs faced up if making product
(Q18) No
(Q19) No holes in plastic part
(Q20) 5
(Q21) No
(Q22) Can't push top down
(Q23) No
(Q24) Gave sound as it had not been opened
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) No
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 043 Form - Y_c X_c Z_c Time - 19 min
X ID - 2X2 Y ID - 2V1 Z ID - 8H5

(Q1) No
(Q2) Tight, odd bubbles from machining, says safety seal on it
(Q3) No
(Q4) Not unusual from others used
(Q5) 1
(Q6) No
(Q7) Tight seal, says safety sealed, perfectly centered, no breaks in it
(Q8) No (knife used to open)
(Q9) Nothing unusual, did not fall away when removed
(Q10) 1
(Q11) No
(Q12) No breaks, glued, says safety sealed around it, original price tag across opening
(Q13) No
(Q14) Same as (Q12), question dent/scuff on box
(Q15) 3
(Q16) No
(Q17) No breaks in plastic or foil, print continuous across foil, random up/down of Sine-Off words on pills
(Q18) No
(Q19) Nothing unusual, no difficult/easy than others opened nothing unusual about way came out
(Q20) 2
(Q21) No
(Q22) Button is not up
(Q23) No
(Q24) Button popped up
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 044 Form - Y_c Z_c X_t Time - 18 min
X ID - 8G4 Y ID - 1U1 Z ID - 7G5

(Q1) Yes
(Q2) Looks like cut with 2 pieces of tape on it
(Q3) Yes
(Q4) Comes off harder than that, with tape and cut
(Q5) 5
(Q6) Yes
(Q7) One side isn't as smooth as the rest of the lip
(Q8) Yes
(Q9) Usually membrane seal stays on lip of container, came off this time
(Q10) 4
(Q11) Yes
(Q12) Buckle in plastic in corner
(Q13) Yes (knife used to open)
(Q14) At fold, looks like tape
(Q15) 4
(Q16) No
(Q17) No holes or tears in package plastic around pills and foil
(Q18) Yes
(Q19) Has used product in past, ripped way off perforations, pills came out too easily
(Q20) 5
(Q21) No
(Q22) Says vacuum button will pop up when opened, button was not up
(Q23) Yes
(Q24) Did not sound like a vacuum button, sounded like a click-lock
(Q25) 1
(Q26) Yes
(Q27) Mediprin Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 045 Form - Z_c X_c Y_t Time - 20 min
X ID - 7T2 Y ID - 4W3 Z ID - 6F5

(Q1) No
(Q2) Tight around top and bottom, perforations intact, tight around bottle
(Q3) No
(Q4) Same as (Q2)
(Q5) 5
(Q6) No
(Q7) Tight around edges, no punctures
(Q8) No (knife used to open)
(Q9) Glued down, hard to peel off
(Q10) 5
(Q11) No
(Q12) Ends are down, not loose on package, no tears
(Q13) No
(Q14) Was glued down at ends
(Q15) 5
(Q16) No
(Q17) No punctures or tears in foil, edges are flat and sealed together, not pulled apart plastic is against foil
(Q18) No
(Q19) Same as (Q17), question some clear/foggy areas on front of blister
(Q20) 3
(Q21) No
(Q22) Button is flat, cap is tight
(Q23) No
(Q24) It did pop when opened
(Q25) 4
(Q26) Yes
(Q27) Sine-Off
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 046 Form - Z_t Y_t X_c Time - 25 min
X ID - 4J2 Y ID - 4F3 Z ID - 8Q6

(Q1) No
(Q2) (Question bubble in shrink band) Everything looks fine Safety seal is intact
(Q3) No
(Q4) Seemed normal as compared to ones used before
(Q5) 1
(Q6) No
(Q7) Seems sealed evenly
(Q8) No (scissors used to open)
(Q9) Seemed sealed when taking off, removing
(Q10) 1
(Q11) No
(Q12) Seal is sealed, no openings, totally around the box
(Q13) No
(Q14) Seal was sealed at endflaps
(Q15) 1
(Q16) No
(Q17) Everything is sealed, no holes or slits
(Q18) No
(Q19) All pills came out equally the same
(Q20) 1
(Q21) No
(Q22) Full, nothing dribbling down the side, cap is on
(Q23) Yes
(Q24) Cap not on tight, just kinda came off
(Q25) 1
(Q26) Yes
(Q27) Mediprin Everfresh Juice
(Q28) Mediprin Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) No
(Q34) 30-44
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 047 Form - X_t Y_t Z_c Time - 15 min
X ID - 4M4 Y ID - 8A3 Z ID - 7N5

(Q1) Yes
(Q2) Cut all the way down side with pieces of tape
(Q3) Yes
(Q4) Came off too easy
(Q5) 5
(Q6) No
(Q7) Still looks in place, would not have analyzed that closely, question foil not going all the way to edge
(Q8) Yes
(Q9) Opened too easy, usually have to push harder
(Q10) 4
(Q11) No
(Q12) Looks intact, question cut in plastic (overlap of wrap in back)
(Q13) No
(Q14) Came off like other wrappers used
(Q15) 1
(Q16) No
(Q17) Pills look funny, everything looks intact, no marks, looking at foil for holes
(Q18) No
(Q19) They came out easy, but don't appear to have been tampered with
(Q20) 2
(Q21) No
(Q22) The little button is not popped up
(Q23) No
(Q24) Little button popped up on opening
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Mediprin Sine-Off Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) High school graduate
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 048 Form - Y_t Z_c X_c Time - 24 min
X ID - 1F2 Y ID - 3E3 Z ID - 8P5

(Q1) No
(Q2) It seems intact, doubt some double striping, is not a piece of tape
(Q3) No
(Q4) No proof of tampering, did not tear down perforations
(Q5) 4
(Q6) No
(Q7) Seems indented evenly, no evidence of being wrinkled, edges seem to be down
(Q8) No (knife used to open)
(Q9) Seemed to be glued down evenly
(Q10) 4
(Q11) No
(Q12) No breaks in plastic seal
(Q13) No (knife used to open)
(Q14) One side looks resealed, glue holding pieces together was not strong
(Q15) 2
(Q16) No
(Q17) Seals seem intact, no breaks in are large enough for pill to be removed
(Q18) Yes
(Q19) Regular semi-circle cut along edge, might have been cut and smoothed back (not related to tampering - happened when pushed the pill out)
(Q20) 4
(Q21) No
(Q22) Button is dished down in center
(Q23) No
(Q24) Could hear vacuum in bottle when released
(Q25) 5
(Q26) Yes
(Q27) Sine-Off Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 049 Form - Z_t Y_c X_c Time - 20 min
X ID - 3H2 Y ID - 4G1 Z ID - 1S6

(Q1) No
(Q2) Wrap around throat seems to be intact
(Q3) No
(Q4) Unscrewed hard, had question about bottom of S.B.
(Q5) 1
(Q6) No
(Q7) Looks very intact, looking for loose edges, loose glue, has not been bothered
(Q8) No (knife used to open)
(Q9) Looks very different after opening
(Q10) 1
(Q11) Yes
(Q12) Plastic overwrap seems to have been cut at seem part
(Q13) Yes
(Q14) Has been cut
(Q15) 5
(Q16) No
(Q17) Can't see anything broken or loose
(Q18) No
(Q19) All pills seemed to come out the same
(Q20) 1
(Q21) Yes
(Q22) Should be a plastic cover on top
(Q23) Yes
(Q24) Should be a seal over it
(Q25) 4
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Male
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 050 Form - Z_c X_c Y_t Time - 22 min
X ID - 9E2 Y ID - 2D3 Z ID - 3J5

(Q1) No
(Q2) No breaks or tears, if had been tampered with would not have symmetry
(Q3) No (knife used to open)
(Q4) Same as before, all one piece, would not be sealed over top and bottom if tampered
(Q5) 5
(Q6) No
(Q7) Very solid and secure, has been vacuum tested
(Q8) No (knife used to open)
(Q9) Was solid all around, no rupturing or piercing
(Q10) 5
(Q11) Yes
(Q12) Loose and not pulled up solid, with a machine would be much tighter, Lt. side wrap is loose all the way
(Q13) No
(Q14) When opened loose parts were sealed, glue was ok
(Q15) 2
(Q16) No
(Q17) From packaging standpoint are fine, no cuts in foil, question that "Sine-Off" was not up on all the pills
(Q18) No
(Q19) Everything was very taught, pills were all the same, don't understand mixed up/down pills
(Q20) 5
(Q21) No
(Q22) Top is not up (read instructions out loud)
(Q23) No
(Q24) Top was down, can push it now, had vacuum in it
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Male
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/50

APPENDIX D (cont'd)

Survey No. - 051 Form - X_c Y_t Z_t Time - 21 min
X ID - 7C2 Y ID - 7Z3 Z ID - 3U6

(Q1) No
(Q2) No signs of opening, looks good and tight
(Q3) No (knife used to open)
(Q4) Looks like a pretty good seal, had trouble getting it off
(Q5) 1
(Q6) No
(Q7) Looks good and tight around mouth
(Q8) Yes (knife used to open)
(Q9) Cotton is a little askew
(Q10) 1
(Q11) Yes
(Q12) Rt. side seems to be resealed, looks funny
(Q13) Yes
(Q14) Came off kinda easy, plastic sealed over again
(Q15) 3
(Q16) Yes
(Q17) Sine-Offs not all facing up, felt something that might have been resealed on plastic side middle blisters
(Q18) Yes (scissors used to open)
(Q19) Some came out a little easier than the others
(Q20) 1
(Q21) No
(Q22) Cap looks nice and snug
(Q23) Yes
(Q24) Should make unsealing noise, did not make it
(Q25) 3
(Q26) No - did not read any of it
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) Some college or business school
(Q37) Yes - for reading
(Q38) No
(Q39) 20/50

APPENDIX D (cont'd)

Survey No. - 052 Form - Y_t X_c Z_t Time - 16 min
X ID - 5A2 Y ID - 9B3 Z ID - 7P6

(Q1) Yes
(Q2) Not even on top, irregular spot along side
(Q3) Yes
(Q4) Top was not all covered
(Q5) 5
(Q6) No
(Q7) Looks like its on pretty tight looking at edges, good fit
(Q8) No (knife used to open)
(Q9) Looks pretty good, did not look tampered, edges good fit
(Q10) 1
(Q11) Yes
(Q12) Plastic wrap is not on as tight as it should be
(Q13) Yes
(Q14) Looks like glue on one of the endflaps, came off too easy
(Q15) 5
(Q16) Yes
(Q17) "Sine-Offs" should all be up
(Q18) Yes
(Q19) Usually harder to open, these opened pretty easily
(Q20) 4
(Q21) Yes
(Q22) Button middle is up
(Q23) Yes
(Q24) Didn't pop, no noise
(Q25) 5
(Q26) No - must examine closely for a message
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 053 Form - Z_c Y_t X_t Time - 45 min
X ID - 3L4 Y ID - 1C3 Z ID - 1G5

(Q1) No
(Q2) The S.B. seal seems to be intact, all the safety seal messages are intact
(Q3) Yes
(Q4) Scotch tape, yet I could not see that against the white bottle with the printing
(Q5) 1-before removal 5-after removal
(Q6) No
(Q7) Don't see any obvious openings into it, it is depressed
(Q8) No
(Q9) Cotton is there, don't see anything unusual, took a little effort to break the seal
(Q10) 5
(Q11) No
(Q12) Plastic wrap has safety seal marked, can't see that it has been broken, printing makes me look more closely, price sticker over edge
(Q13) Yes
(Q14) Big difference in seal from one side to the other, first thought "machine didn't do a good job" hospital experience sees things in general not good Q.C.
(Q15) 3
(Q16) Yes
(Q17) Looks like a little crack on corner blister at the base of one pack
(Q18) Yes
(Q19) Still because of cracked blister at base
(Q20) 4
(Q21) No
(Q22) Can't tell w/out trying top, can feel dimple, looks still depressed
(Q23) No
(Q24) Heard whoosh, therefore seal not broken, dimple popped up as a canning person would look for that
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 054 Form - Z_c X_t Y_t Time - 16 min
X ID - 5N4 Y ID - 6Y3 Z ID - 4K5

(Q1) Yes
(Q2) Appears to be reattached with tape
(Q3) Yes (knife used to open)
(Q4) Was not continuous
(Q5) 1
(Q6) No
(Q7) Could not tell from lid
(Q8) Yes
(Q9) Ease of opening, lack of secure attachment
(Q10) 3
(Q11) No
(Q12) Secure appearance of the sealing
(Q13) No (knife used to open)
(Q14) Still appears whole
(Q15) 1
(Q16) No
(Q17) No indication of separation of plastic from aluminum
(Q18) No
(Q19) Resistance of pushing medication out
(Q20) 2
(Q21) No
(Q22) Tightness of lid
(Q23) No
(Q24) Heard sound/feel upon opening vacuum
(Q25) 5
(Q26) No - did not read that closely
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 055 Form - X_t Z_c Y_c Time - 24 min
X ID - 9H4 Y ID - 9C1 Z ID - 6M5

(Q1) No
(Q2) Seal is not below top of cap
(Q3) Yes
(Q4) Whole thing came off, wasn't just a shrink band
(Q5) 5
(Q6) No
(Q7) Looks fastened down all around
(Q8) Yes
(Q9) Seal came off very easy, not fastened down on edges, when looked at looked ok
(Q10) 4
(Q11) No
(Q12) Don't see any breaks in plastic, would be first one to have opened and not realize it had been tampered
(Q13) No (knife used to open)
(Q14) Too hard to get off, box bothers her, looks like a gap at endflap, paperboard looks torn
(Q15) 5
(Q16) Yes
(Q17) The writing is not up on all the pills
(Q18) Yes
(Q19) The plastic should be tighter, closer to the pill, usually need a knife to break
(Q20) 5
(Q21) No
(Q22) Button is not popped up
(Q23) No
(Q24) Popped up when opened, can smell it now
(Q25) 5
(Q26) Yes
(Q27) Sine-Off Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) No
(Q32) No
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 056 Form - Z_t X_c Y_c Time - 25 min
X ID - 3G2 Y ID - 3F1 Z ID - 4V6

(Q1) Yes
(Q2) Would like to see more packages to compare, has doubts about seal, does not like overlap area on band
(Q3) Yes
(Q4) New ones look so neat, this one looks botched
(Q5) 3
(Q6) Yes
(Q7) Does not fit top with a good clean seal, overlaps the outside on one side
(Q8) No (knife used to open)
(Q9) The fit was too tight, was too secure, could not get hold of the edge to pull up, could not push through with thumb
(Q10) 5
(Q11) No
(Q12) It seems to be pretty good fit all around, overlaps are still sealed
(Q13) No
(Q14) Could not see any loose overlaps, is a soft material that tears easy
(Q15) 4
(Q16) No
(Q17) Everything is fit pretty good all around, question why some pills are up and some are down
(Q18) No
(Q19) They all seemed to come out with the same effort
(Q20) 4
(Q21) Yes
(Q22) Cover should be indented, not raised, the middle part of the cover
(Q23) No
(Q24) Cover remained same after opening, his theory is that if something has been tampered with it will change its form
(Q25) 3
(Q26) Yes - did not read until opening
(Q27) Sine-Off
(Q28) -
(Q29) No
(Q30) No
(Q31) No
(Q32) Yes
(Q33) No
(Q34) 60-74
(Q35) Male
(Q36) High school graduate
(Q37) Yes
(Q39) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 057 Form - X_c Z_t Y_c Time - 15 min
X ID - 6B2 Y ID - 6J1 Z ID - 2T6

(Q1) No
(Q2) Seems to be completely intact
(Q3) No
(Q4) Shrink band was in place up to the point where he opened it (S.B. was not removed, tore it while removing cap)
(Q5) 5
(Q6) No
(Q7) Cap turned without being pressed down, seal intact, appears to be fit as it would be machined on
(Q8) No (knife used to open)
(Q9) Had to use a knife to get into it
(Q10) 5
(Q11) No
(Q12) Plastic coating seems to be intact
(Q13) No
(Q14) Appears to be solid when removed
(Q15) 3
(Q16) No
(Q17) Foil backing and blister connection are intact, poor machine work pills are half up half down
(Q18) No (knife used to open)
(Q19) They popped out normally
(Q20) 4
(Q21) Yes
(Q22) Button pops
(Q23) Yes
(Q24) No pressure
(Q25) 5
(Q26) No - if there were he did not notice
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 058 Form - Y_c Z_c X_t Time - 15 min
X ID - 1J4 Y ID - 2E1 Z ID - 2H5

(Q1) No
(Q2) Has safety seal plastic all around it, is on there pretty good
(Q3) Yes
(Q4) Can see tape
(Q5) 1
(Q6) Yes
(Q7) Easily fell through when tapped top
(Q8) Yes
(Q9) Easily fell through when tapped top, too easy to open
(Q10) 1
(Q11) No
(Q12) Sealed all the way around
(Q13) No
(Q14) Had to break seals
(Q15) 5
(Q16) No
(Q17) They're sealed nicely, plastic around each one, foil not messed up, some pills are not face up
(Q18) No
(Q19) Dented the plastic of them all, still unsure about pill facing
(Q20) 5
(Q21) No
(Q22) Button is still in
(Q23) No
(Q24) Broke seal
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Mediprin Sine-Off Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) Some college or business school
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 059 Form - X_t Z_t Y_c Time - 16 min
X ID - 2K4 Y ID - 5H1 Z ID - 9R6

(Q1) No
(Q2) All the lines are still dotted, everything lines up, is tight on the package
(Q3) Yes
(Q4) Slit with two pieces of tape
(Q5) 3
(Q6) No
(Q7) Looks sealed, is not dented or bent, is solid
(Q8) Yes
(Q9) Opened too easy
(Q10) 1
(Q11) Yes
(Q12) Not folded straight or even, and it has the price sticker over it
(Q13) No
(Q14) It didn't come off as easy as thought it would
(Q15) 3
(Q16) No
(Q17) Not dented, the sides are not peeled away, the edges are not peeled, the plastic not popped
(Q18) No
(Q19) They worked like expected, like they worked before, nothing different
(Q20) 5
(Q21) Yes
(Q22) The button looks popped up already, no indent
(Q23) Yes
(Q24) Didn't go pop, didn't pop up
(Q25) 4
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Mediprin Sine-Off Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) No
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 060 Form - X_c Y_c Z_c Time - 16 min
X ID - 8D2 Y ID - 1D1 Z ID - 5L5

(Q1) No
(Q2) No tears or holes
(Q3) No
(Q4) Came off like it should
(Q5) 1
(Q6) No
(Q7) No punctures, looks like its still on tight
(Q8) No
(Q9) It was on tight, sealed good
(Q10) 1
(Q11) Yes
(Q12) Looks like a piece of tape on right side endflap
(Q13) Yes
(Q14) Looks like a piece of tape on it, does not go all the way around
(Q15) 5
(Q16) No
(Q17) No place where it was opened, no tape, looking for something to be loose, some of the pills are upside down
(Q18) No
(Q19) They all came out the same, they all ripped the same, none of them were hard
(Q20) 2
(Q21) No
(Q22) The button is down
(Q23) Yes
(Q24) The button didn't really pop up
(Q25) 5
(Q26) Yes
(Q27) Mediprin Everfresh Juice
(Q28) Mediprin Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) Some college or business school
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 061 Form - Y_c X_t Z_t Time - 23 min
X ID - 6P4 Y ID - 3Q1 Z ID - 5W6

(Q1) Yes
(Q2) Does not look professional, there are rips bulges & blisters, not standard on top, pulled to side
(Q3) Yes
(Q4) Very simple to get off, not durable, taped together
(Q5) 5
(Q6) Yes
(Q7) Contents could be adulterated, something else in bottle
(Q8) Yes
(Q9) Cotton pushed way down
(Q10) 5
(Q11) No
(Q12) Was going to say yes at first but sealing is intact, words are together through back seam, price still on
(Q13) No (knife used to open)
(Q14) It looked intact, hard to take off
(Q15) 2
(Q16) Yes
(Q17) The names are not uniform, they should all be showing face up
(Q18) No
(Q19) Very difficult to get out, plastic was tough, tougher than other packages
(Q20) 3
(Q21) Yes
(Q22) Safety button has popped up
(Q23) Yes
(Q24) No pop, pressure at a minimum
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 20-29
(Q35) Male
(Q36) Some college or business school
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 062 Form - Z_t Y_c X_t Time - 20 min
X ID - 9S4 Y ID - 2P1 Z ID - 6X6

(Q1) Yes
(Q2) When undone it changes shape, there is tape, top isn't covered, can feel opening, should be solid
(Q3) Yes
(Q4) Been cut along seal and tape has been put there
(Q5) 5
(Q6) Yes
(Q7) Not sealed, usually a little bulge in top
(Q8) Yes
(Q9) No resistance to pushing, usually is a lot
(Q10) 5
(Q11) No
(Q12) The overwrap is smooth, only folded once, no extra glue, pretty obvious to be resealed (like envelope), nice and symmetrical, no bunching
(Q13) No (scissors used to open)
(Q14) Seemed to be a good seal, would not be suspicious, must tear to get in (tries to undo end)
(Q15) 5
(Q16) No
(Q17) Some are printed up/down, don't know how can get back together, not pried apart, no holes
(Q18) No
(Q19) Difficulty in getting in, disintegrating, csn't put back together, only thing unchanged is lot # and exp. date, everything else is chewed up
(Q20) 5
(Q21) No
(Q22) Can't tell by looking at it, no holes in lid, things that screw down not bent, no bends in metal, no dents, nice and smooth, no scratches
(Q23) Yes
(Q24) Top did not move any, can usually see it move
(Q25) 1
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Sine-Off
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q39) No
(Q39) 20/50

APPENDIX D (cont'd)

Survey No. - 063 Form - X_t Y_c Z_c Time - 12 min
X ID - 8R4 Y ID - 1N1 Z ID - 9Q5

(Q1) Yes
(Q2) Indentation on one side is different from the other
(Q3) Yes
(Q4) Tape, marks on end, slit
(Q5) 3
(Q6) Yes
(Q7) Liner is opened
(Q8) Yes
(Q9) No induction seal, liner should be bonded, diameter of liner more than dia. of bottle
(Q10) 5
(Q11) No
(Q12) Clear plastic film, don't notice anything, not a shrink, looked for instructions, looked at endflaps
(Q13) Yes
(Q14) Seal on back (seam) doesn't seem to be machine applied, not uniform
(Q15) 4
(Q16) No
(Q17) Tablets hard to tamper with, don't see anything different with blisters, different color tablet
(Q18) No
(Q19) Didn't seem to be opened
(Q20) 5
(Q21) Yes
(Q22) Usually have a shrink band on cap, is missing
(Q23) No
(Q24) Had vacuum, cap popped
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off
(Q28) Mediprin
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 064 Form - Y_t Z_t X_c Time - 18 min
X ID - 6L2 Y ID - 8K3 Z ID - 7Y6

(Q1) Yes
(Q2) Bubbles in bottom of shrink band, usually shrink the whole way
(Q3) Yes
(Q4) Difficult to get into, but no reason to change mind from above
(Q5) 3
(Q6) No
(Q7) Looks ok, little thing, just part of removal, cap pulled it
(Q8) No
(Q9) Seemed typical of others opened
(Q10) 4
(Q11) Yes
(Q12) One endflap is flat, the other is not as tight, has been opened and redone, probably would not have noticed if had taken from shelf, things inside not loose
(Q13) Yes
(Q14) Looks like extra glue on endflap
(Q15) 5
(Q16) No
(Q17) Don't know why Sine-Off not on all pills, looking for disruptions on foil pinholes or pricks
(Q18) No
(Q19) Seemed to open the same, anyone with right tools could tamper with
(Q20) 5
(Q21) Yes
(Q22) Button should be down
(Q23) Yes
(Q24) Too easy to open, read reject if button is up
(Q25) 5
(Q26) Yes - confirmed decision
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 065 Form - Y_t Z_c X_t Time - 20 min
X ID - 7Q4 Y ID - 7J3 Z ID - 1R5

(Q1) Yes
(Q2) Shrink band is cracked down side, might have been pried open, broken all the way down
(Q3) Yes
(Q4) Together with scotch tape, missed it all together
(Q5) 5
(Q6) Yes
(Q7) Not sealed all around, looks too wrinkled, others look perfect
(Q8) Yes
(Q9) Seal not attached to top of bottle, visually was tampered with
(Q10) 5
(Q11) No
(Q12) Seals all seam to be sealed, no slots or cuts in edge, may be scotch tape on endflap
(Q13) Yes (knife used to open)
(Q14) Difference in seal from one end to the other, one glued one heat sealed difference could be tampered
(Q15) 1
(Q16) No
(Q17) Don't see any intrusions into bubbles, backs are solid untampered with, edges not pried or open that can see
(Q18) No
(Q19) No reason to change mind, hard to get out, no variation
(Q20) 1
(Q21) No
(Q22) Button is down, no intrusion button would be up, everything around it does not look wrong
(Q23) No
(Q24) Opened easier than anticipated, but had vacuum sound
(Q25) 1
(Q26) No - never looked
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 066 Form - Z_c Y_c X_t Time - 20 min
X ID - 1T4 Y ID - 9M1 Z ID - 2S5

(Q1) Yes
(Q2) Part of seal is broken on top, looks like sealed not transparent
(Q3) Yes
(Q4) Has tape on slit in two place
(Q5) 3
(Q6) Yes
(Q7) Mark on membrane seal not characteristic of seal
(Q8) Yes (knife used to open)
(Q9) It peeled off too smoothly, no resistance compared to others used
(Q10) 2
(Q11) No
(Q12) Completely sealed, no stress marks on plastic
(Q13) No (knife used to open)
(Q14) Completely sealed, had to use knife to tear off
(Q15) 5
(Q16) No
(Q17) No tear on foil backing, no pinholes on blisters
(Q18) No
(Q19) Tablets were hard to take out, would be hard to tamper with and leave no evidence
(Q20) 5
(Q21) No
(Q22) This type of cap when opened will be bulged
(Q23) No
(Q24) Made that sound, vacuum was released
(Q25) 4
(Q26) No - Probably do but did not read it
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/80

APPENDIX D (cont'd)

Survey No. - 067 Form - X_t Y_t Z_c Time - 17 min
X ID - 2U4 Y ID - 6H3 Z ID - 3T5

(Q1) No
(Q2) Too darn hard to glue back together and make it look the same
(Q3) Yes
(Q4) A piece of tape on shrink band did not see
(Q5) 1
(Q6) No
(Q7) If creative could have, can't see where its been tampered with, can't see where ripped open and resealed
(Q8) No
(Q9) Same as (Q7), can't see where messed with
(Q10) 5
(Q11) No
(Q12) If picked up off shelf would say no, curious about center of one edgeflap might be tape
(Q13) No
(Q14) Band that might have been tape is the seam
(Q15) 3
(Q16) No
(Q17) Very hard to tamper with and put back together, foil on back and tablets, wonder why some say Sine-Off
(Q18) No
(Q19) Too darn hard to open up, how would you tamper and put back together
(Q20) 5
(Q21) No
(Q22) The button hasn't popped up
(Q23) No
(Q24) Top popped up when opened heard and saw
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) No
(Q34) 30-44
(Q35) Female
(Q36) High School graduate
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 068 Form - X_t Y_c Z_t Time - 19 min
X ID - 3V4 Y ID - 8L1 Z ID - 8Z6

(Q1) No
(Q2) Shrink banding on both top and bottom, could not slide up over small neck
(Q3) Yes
(Q4) Missed the tape
(Q5) 1
(Q6) No
(Q7) Even seal, can see crease around seal
(Q8) No
(Q9) Seal stayed, awfully thin seal may have cut a piece of foil
(Q10) 1
(Q11) No
(Q12) Price tag over one of the ends, ends have good seal, no breaks in cellophane
(Q13) No
(Q14) Everything looks like single construction, no differences in sealing
(Q15) 1
(Q16) No
(Q17) Blisters are intact, seal on backing is good
(Q18) No
(Q19) Still a good seal, came out way expected to, no ease of one than the others
(Q20) 1
(Q21) No
(Q22) A little bit of flex, seal looks fine
(Q23) Yes
(Q24) Didn't pop, button didn't come up
(Q25) 3
(Q26) Yes
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) No
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 069 Form - X_c Z_c Y_t Time - 19 min
X ID - 5K2 Y ID - 5G3 Z ID - 4U5

(Q1) No
(Q2) Don't see any discontinuities or breaks, perforations are intact not picked at, printing is still intact
(Q3) No
(Q4) See break, but assume its manufacturing seal area same as (Q2)
(Q5) 3
(Q6) No
(Q7) Says safety seal print on, to take off would have to tear or replace with something that does not say safety sealed, no appearance of being lifted up
(Q8) No (knife used to open)
(Q9) Seal area looks intact, no foreign adhesive
(Q10) 4
(Q11) Yes
(Q12) Comparing seals on each end the other has a white haze and clear area, printing has been rubbed away at glue area
(Q13) Yes
(Q14) More of the same (Q12), pulled up and reglued, other end pulled apart easy
(Q15) 4
(Q16) No
(Q17) Don't see any pinholes in blisters, no evidence seal area has been pulled apart, no holes in foil
(Q18) No
(Q19) When taking out did not find any previous tears or lips, uniform color and print of tablets
(Q20) 4
(Q21) No
(Q22) Expect a depression, not much of one but still feels indented
(Q23) No
(Q24) Heard the vacuum, button popped up
(Q25) 3
(Q26) Yes
(Q27) Mediprin Sine-Off
(Q28) Mediprin Sine-Off
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) No
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 070 Form - Y_c X_c Z_c Time - 19 min
X ID - 7M2 Y ID - 7K1 Z ID - 5U5

(Q1) No
(Q2) Shrink band is nice and tight, unwrinkled, overlapped on top of bottle, writing is intact
(Q3) No
(Q4) Perforated portion came off as should, became unperforated
(Q5) 3
(Q6) No
(Q7) Sealing area around top lip is sealed against foil, don't see any holes in safety seal
(Q8) No (knife used to open)
(Q9) Left part of membrane seal on seal area, foil tore irregularly, did not show previous tear that would tear along again
(Q10) 4
(Q11) No
(Q12) Endflaps look undisturbed, writing along box is intact
(Q13) No
(Q14) Hard to open end panel, fit quite snugly
(Q15) 4
(Q16) No
(Q17) Perforations are intact, backing not turned up anyplace, blisters are well formed, don't look tampered with
(Q18) No
(Q19) None came out easily, as pushed out was breaking surface in back
(Q20) 5
(Q21) No
(Q22) Only way to check is to pop open, when opened button should pop up, non deformed areas in cap
(Q23) No
(Q24) Center of cap popped up, heard ping showing good seal
(Q25) 2
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 071 Form - Z_c Y_c X_c Time - 17 min
X ID - 242 Y ID - 8V1 Z ID - 6W5

(Q1) No
(Q2) Seam is not cut, is complete on side of bottle top to bottom
(Q3) No (knife used to open)
(Q4) Hard to remove, band is in pieces
(Q5) 5
(Q6) No
(Q7) Is very good, nothing happened when try to rub, side not broken
(Q8) No
(Q9) It was hard to open, destroyed the seal
(Q10) 5
(Q11) No
(Q12) The endflaps are glued on both sides, safety seal words are not torn apart
(Q13) No
(Q14) Difficult to open, when open should stay together
(Q15) 5
(Q16) Yes
(Q17) The words Sine-Off do not appear on all the pills
(Q18) Yes (knife used to open)
(Q19) The pills should all be face up, would not use if they were not
(Q20) 4
(Q21) No
(Q22) Button is down
(Q23) No
(Q24) Heard the click, was not open before
(Q25) 5
(Q26) No - Did not look
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 072 Form - Y_c X_c Z_t Time - 17 min
X ID - 8N2 Y ID - 5S1 Z ID - 5F6

(Q1) Yes
(Q2) Scratch and break in seal
(Q3) Yes
(Q4) Scratch and break in seal
(Q5) 4
(Q6) No
(Q7) No apparent visual flaws, not resealed, repairs punctures
(Q8) No (knife used to open)
(Q9) Same as (Q7)
(Q10) 4
(Q11) No
(Q12) Can't see anything, broken seals slots holes things under sticker
(Q13) No
(Q14) Same as (Q12)
(Q15) 2
(Q16) No
(Q17) Don't see any evidence of tampering, cuts peels injections in foil or plastic
(Q18) No
(Q19) No visible damage on pills, no indications of opening, difficult to get out too much paper in laminate
(Q20) 4
(Q21) Yes
(Q22) Button is up
(Q23) Yes
(Q24) No significant vacuum
(Q25) 5
(Q26) Yes
(Q27) Mediprin Everfresh Juice
(Q28) Mediprin Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 073 Form - Z_c Y_t X_c Time - 32 min
X ID - 3S2 Y ID - 3P3 Z ID - 7X5

(Q1) No
(Q2) Look for imperfections, printing is there, looks fine, does not say what safety seal should say
(Q3) No
(Q4) Notice discoloration - adhesive? don't notice anything that gives pause, looking for signs that shrink band was not on correctly
(Q5) 2
(Q6) Yes
(Q7) Looking for pull tab, no lip to help opening, looks cut, can't believe give no way to help open
(Q8) Yes
(Q9) Same as (Q7), looked irregular
(Q10) 1
(Q11) No
(Q12) Don't see any imperfections, safety sealed printed consecutively, endflap is slightly sloppy
(Q13) Yes
(Q14) Have doubts, warning does not tell how letters should look, doesn't like the way lettering looks on endflaps pieced back together
(Q15) 1
(Q16) No
(Q17) Why do some say Sine-Off, would have to open to make sure all pills said Sine-Off, looking for tears and signs seals have been broken
(Q18) No
(Q19) Printing on pills does not seem uniform, should print on both sides, if a TE feature, why leave a doubt, challenging to open, instinct says nothing seems wrong
(Q20) 5
(Q21) No
(Q22) Would have to open it to get better idea, listen for sound, problem with wording on cap
(Q23) No
(Q24) Heard pop supposed to hear
(Q25) 3
(Q26) Yes - tried to use in each case
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) Mediprin Sine-Off Everfresh Juice
(Q29) Yes (Q34) 30-44 (Q35) Male
(Q30) Yes (Q36) College graduate or beyond
(Q31) Yes (Q37) No
(Q32) Yes (Q38) -
(Q33) Yes (Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 074 Form - X_c Z_t Y_t Time - 18 min
X ID - 1Q2 Y ID - 9L3 Z ID - 4E6

(Q1) No
(Q2) No breaks in seal
(Q3) No
(Q4) Was hard to get off
(Q5) 4
(Q6) No
(Q7) Was on secure
(Q8) No (knife used to open)
(Q9) Was sealed tight, was hard to open
(Q10) 5
(Q11) Yes
(Q12) One end is not professionally sealed, wrinkled, torn, when compared sides, not the same
(Q13) Yes
(Q14) Seems like glue on one end that is not on the other
(Q15) 3
(Q16) No
(Q17) Sealed too tightly, looks neat, can't put back together
(Q18) No (knife used to open)
(Q19) Too hard to get open, were well sealed, no way to disguise the way packaging rips
(Q20) 5
(Q21) Yes
(Q22) Safety seal seems to be up
(Q23) Yes
(Q24) Was opened before, not on tight, button was up
(Q25) 2
(Q26) Yes - May not have used in normal situations
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) No
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 075 Form - Z_c X_c Y_c Time - 15 min
X ID - 9P2 Y ID - 7U1 Z ID - 8Y5

(Q1) Yes
(Q2) S.B. does not cover top completely, would pass it up
(Q3) Yes
(Q4) Still feel that the top needs to be covered
(Q5) 4
(Q6) No
(Q7) Doesn't show any evidence, seal still in place
(Q8) No
(Q9) Was difficult to open, didn't look like it
(Q10) 5
(Q11) No
(Q12) Looks intact, no evidence, no rips, not open, sides come off
(Q13) No (knife used to open)
(Q14) Same as (Q12), seemed pretty secure
(Q15) 4
(Q16) No
(Q17) No evidence, looks sealed and secure
(Q18) No
(Q19) Difficult to open, seemed secure, no evidence of scuffing
(Q20) 5
(Q21) No
(Q22) No evidence of being tampered, no scuff marks, in pristine condition, wouldn't bet life on it, need to open
(Q23) No
(Q24) Heard the click
(Q25) 3
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 076 Form - X_t Z_t Y_t Time - 18 min
X ID - 6Y4 Y ID - 2N3 Z ID - 3D6

(Q1) No
(Q2) Looks like edge that's loose all the way up, not broken around top, more likely to be problem than around bottle
(Q3) Yes
(Q4) See tape hadn't noticed on other packages or shrink bands used before
(Q5) 5
(Q6) No
(Q7) Looks like others have used, edges flat, no holes or tears, seems sealed all around
(Q8) No
(Q9) Appears to be same as most others have used, didn't see anything unusual
(Q10) 5
(Q11) Yes
(Q12) Rip, looks as if something has been taped
(Q13) Yes
(Q14) Still a rip in cellophane, but no tape (very unsure)
(Q15) 3
(Q16) No
(Q17) Looks o.k., some up/down, no holes or tears, looks sealed around edges, bubbles smooth
(Q18) No
(Q19) All opened normally, no problems with seals
(Q20) 5
(Q21) Yes
(Q22) Button feels like its up too high, shouldn't make "pop" sound
(Q23) Yes
(Q24) No "pop" or "swoosh"
(Q25) 5
(Q26) No - did not notice
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes (Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 077 Form - Y_c X_t Z_c Time - 18 min
X ID - 5X4 Y ID - 4R1 Z ID - 9Z5

(Q1) Yes
(Q2) Line down seam, looks like scotch tape
(Q3) Yes
(Q4) Piece of scotch tape on it, appeared to be previously opened, would take it
(Q5) 3
(Q6) No
(Q7) No evidence, other than normal, sealed all around, not wrinkled
(Q8) No
(Q9) Came off easy, but would accept
(Q10) 2
(Q11) No
(Q12) A little suspicious, but would use, suspicious of line on back but letters match up, don't see how could get at product
(Q13) No (knife used to open)
(Q14) Looks like a heat seal, does not look suspicious where 2 pieces went together
(Q15) 5
(Q16) No
(Q17) See nothing suspicious like cuts in plastic or material peeled apart
(Q18) No
(Q19) Saw nothing suspicious, thought one was but stuck nail through backing
(Q20) 5
(Q21) No
(Q22) Cap is down
(Q23) No
(Q24) Cap popped when opened
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) No
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 078 Form - Z_t X_c Y_t Time - 20 min
X ID - 4T2 Y ID - 1M3 Z ID - 9A6

(Q1) No
(Q2) Has wrinkles, shrink band does not slip on/off easily (tried to pull off) would pick if others had wrinkles
(Q3) No
(Q4) Zip thing was still intact, only way to tamper is around bottom
(Q5) 1
(Q6) No
(Q7) Air tightness of seal
(Q8) No
(Q9) The way I opened it couldn't peel, no visible punctures
(Q10) 1
(Q11) Yes
(Q12) Looks like flap was glued shut, don't think they use glue
(Q13) Yes
(Q14) Still because of glue on endflap
(Q15) 5
(Q16) No
(Q17) Can't see anything wrong with seal, no punctures or discoloration
(Q18) No
(Q19) Would not think so, one was disfigured and came out easier
(Q20) 1
(Q21) Yes
(Q22) Sitting at the top of the threads, looks like it could be screwed down more, If pulled off shelf would never know
(Q23) No
(Q24) Couldn't tell, should be harder to open
(Q25) 4
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 079 Form - Z_t X_t Y_c Time - 12 min
X ID - 4W4 Y ID - 6T1 Z ID - 1B6

(Q1) No
(Q2) No evidence of package being ripped or resealed, S.B. is tight
(Q3) Yes
(Q4) Piece of tape, looks cut and resealed
(Q5) 1
(Q6) No
(Q7) Cap didn't pop off easily, appears closed tightly, is sealed tight
(Q8) Yes
(Q9) Came off too easily
(Q10) 5
(Q11) Yes
(Q12) Looks like tape underneath endflap
(Q13) No
(Q14) Couldn't find tape or glue marks
(Q15) 3
(Q16) No
(Q17) No slice marks, seal looks tight
(Q18) No
(Q19) All tops had to push in, a degree of effort to get out
(Q20) 5
(Q21) Yes
(Q22) Seal is popped at top
(Q23) Yes
(Q24) Easy to open, seal didn't pop
(Q25) 5
(Q26) Yes
(Q27) Sine-Off
(Q28) Sine-Off
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 080 Form - Z_t X_t Y_t Time - 14 min
X ID - 7Z4 Y ID - 4Q3 Z ID - 2C6

(Q1) Yes
(Q2) Can't get back on this tightly, has been slashed and retaped, bottom was somewhat rippled
(Q3) Yes
(Q4) Can see tape, was taped back together
(Q5) 5
(Q6) No
(Q7) Appears to be tight on bottle mouth
(Q8) No
(Q9) Curious, foil feels thinner than usual, can't tell by visual inspection
(Q10) 3
(Q11) No
(Q12) Looks tight, don't see any tape
(Q13) No
(Q14) Looks intact, looking for tape, don't see anything
(Q15) 1
(Q16) No
(Q17) Looks in perfect condition, no torn foil, no lighter weight foil
(Q18) No
(Q19) Can't imagine how can get in without it showing, can't glue backing back down to same degree as factory
(Q20) 5
(Q21) Yes
(Q22) Button has already popped
(Q23) Yes
(Q24) Opened too easily, doesn't close well
(Q25) 5
(Q26) Yes - Knew they were there did not read them
(Q27) Mediprin Sine-Off Everfresh Juice
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 081 Form - Y_t X_c Z_c Time - 18 min
X ID - 7W2 Y ID - 5A3 Z ID - 4E5

(Q1) No
(Q2) Question that should be shrunk around the bottom of the container, does not looked altered
(Q3) No
(Q4) Did not see any breaks in seal, hard to get off
(Q5) 3
(Q6) No
(Q7) Don't see anything peeled up, no glue, slight bend where somebody might have pulled it up
(Q8) No (knife used to open)
(Q9) Don't see any loose parts or regluing, was hard to open
(Q10) 3
(Q11) Yes
(Q12) Would not have picked up difference in endflaps in store, looks reglued, not as flat
(Q13) No
(Q14) Could get into, was hard to open, but looks different, reglued
(Q15) 2
(Q16) No
(Q17) Don't see any unusual bending, glue or cut marks, both sides look the same, no indication of tampering
(Q18) No
(Q19) Didn't see anything different, all opened with the same resistance, none of them seems different, no peeling on side, no indications
(Q20) 5
(Q21) No
(Q22) "Reject if up," button is not up
(Q23) No
(Q24) Button change is minor
(Q25) 1
(Q26) Yes - Tried to use, was not a strong indicator
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 082 Form - Z_c X_t Y_c Time - 12 min
X ID - 9B4 Y ID - 5B1 Z ID - 1B5

(Q1) Yes
(Q2) Not tight at bottle around bottom (bubble MV)
(Q3) Yes
(Q4) Came off too easy
(Q5) 4
(Q6) Yes
(Q7) Usually foil is down over edge of bottle, is not in this case
(Q8) Yes
(Q9) Can never pop them with fingernail, too easy to open
(Q10) 4
(Q11) No
(Q12) Feels tight on box, professionally packaged
(Q13) No (screwdriver used to open)
(Q14) Was difficult to get off
(Q15) 5
(Q16) No
(Q17) Looks sealed, no cracks or punctures
(Q18) No
(Q19) There was resistance when trying to pop pills out, pretty difficult
(Q20) 5
(Q21) No
(Q22) The center is down, when popped will be up, feels tight
(Q23) No
(Q24) The button popped up, made noise
(Q25) 5
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) No
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 083 Form - Y_c Z_t X_c Time - 15 min
X ID - 9Y2 Y ID - 4A1 Z ID - 1L6

(Q1) No
(Q2) Doesn't look like it, everything intact, words are together, top fits to bottle
(Q3) Yes
(Q4) Looks like its in 2 parts, should be in one piece
(Q5) 2
(Q6) No
(Q7) It's on secure, doesn't look glued or taped or punctured
(Q8) No (knife used to open)
(Q9) No residue of glue, no holes, couldn't get off easily
(Q10) 5
(Q11) No
(Q12) Don't see any breakage in seal, no punctures, no slits, no openings or holes
(Q13) No (knife used to open)
(Q14) Same as (Q12) no holes, no appearance of tampering
(Q15) 3
(Q16) No
(Q17) No punctures, no tears, no holes, is sealed
(Q18) No
(Q19) They were all sealed, visually could see nothing to suspect
(Q20) 4
(Q21) No
(Q22) Read "Safety button..." does not appear to be popped up
(Q23) Yes
(Q24) Seal - no vacuum, no sound, no seal, opened easy
(Q25) 1
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 084 Form - X_t Y_t Z_t Time - 14 min
X ID - 3E4 Y ID - 4Z3 Z ID - 1L6

(Q1) Yes
(Q2) Looks like cut down side
(Q3) Yes
(Q4) Taped together, can see where slit
(Q5) 5
(Q6) Yes
(Q7) Paper liner was glued to seal, ripped off part of foil seal
(Q8) Yes
(Q9) Same as (Q7)
(Q10) 3
(Q11) Yes
(Q12) Difference in look of seal on both sides, one looks glued
(Q13) Yes
(Q14) Marked difference between sides in glue
(Q15) 5
(Q16) No
(Q17) Can't see any bubbles, no difference in blisters, can't see anything on back, all Sine-Offs were not up
(Q18) No
(Q19) All popped out O.K.
(Q20) 1
(Q21) Yes
(Q22) Pop top is up
(Q23) Yes
(Q24) Opened so easy
(Q25) 5
(Q26) No - Did not read packages
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 085 Form - X_c Y_t Z_c Time - 14 min
X ID - 6V2 Y ID - 1W3 Z ID - 6G5

(Q1) No
(Q2) S.B. is intact, bubble on end looks more like a production than a tamper
(Q3) No
(Q4) Worked like supposed to, no punctures
(Q5) 5
(Q6) No
(Q7) Looks intact, no punctures or marks
(Q8) No (knife used to open)
(Q9) Was sealed all around edge, was intact, no punctures
(Q10) 5
(Q11) No
(Q12) Doesn't seem to be any tears rips or punctures
(Q13) Yes
(Q14) Could have been, glue on one end not on the other, could be reglued
(Q15) 4
(Q16) No
(Q17) Blisters intact, no punctures
(Q18) No
(Q19) Seemed solid and intact, worked like they should
(Q20) 5
(Q21) No
(Q22) Top pops up when opened, still depressed, no leaks
(Q23) No
(Q24) Top popped up, fresh seal, worked like supposed to
(Q25) 5
(Q26) Yes
(Q27) Sine-Off
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 086 Form - X_t Z_c Y_t Time - 16 min
X ID - 4F4 Y ID - 7T3 Z ID - 3D5

(Q1) Yes
(Q2) Looks like section of S.B. has been pried at bottom and top
(Q3) Yes
(Q4) Was easy to get off at bottom
(Q5) 3
(Q6) Yes
(Q7) Looks powdery and crinkled, should be smooth, looks inside out
(Q8) Yes (knife used to open)
(Q9) Usually stuck to edge, top lip isn't smooth
(Q10) 5
(Q11) Yes
(Q12) Looks like glue inside one edge flap
(Q13) Yes
(Q14) Flap was glued to the end of the box
(Q15) 5
(Q16) No
(Q17) No markings on foil where tablets come out, plastic isn't pulled apart
(Q18) No
(Q19) Quite tight, were intact, same as (Q17)
(Q20) 1
(Q21) No
(Q22) Cap looks to be at right spot on neck, has not been dented
(Q23) No
(Q24) Had vacuum, heard pop
(Q25) 1
(Q26) No - Never noticed
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 45-59
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 087 Form - Z_t Y_t X_c Time - 14 min
X ID - 5U2 Y ID - 8U3 Z ID - 2M6

(Q1) No
(Q2) Appearance, look for visible alterations of S.B.
(Q3) No
(Q4) The way it came off was not out of the ordinary
(Q5) 1
(Q6) No
(Q7) Can't be, has resistance, is normal
(Q8) No (knife used to open)
(Q9) It came off normally
(Q10) 1
(Q11) Yes
(Q12) Back of package overlap does not seem right. May be overly cautious
(Q13) No
(Q14) Design was to have overlap
(Q15) 1
(Q16) No
(Q17) Can't see any marks, solid not cut
(Q18) Yes
(Q19) One part of backing did not feel right, would not have used that pill
(Q20) 5
(Q21) Yes
(Q22) Vacuum is broken
(Q23) Yes
(Q24) Once seal is broken, end of it
(Q25) 5
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) No
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 088 Form - Y_c Z_t X_t Time - 12 min
X ID - 6H4 Y ID - 2Y1 Z ID - 6G6

(Q1) Yes
(Q2) Split down side and taped together
(Q3) Yes
(Q4) Tape is attached where taped together
(Q5) 4
(Q6) Yes
(Q7) Can see where glued back down, can see some glue
(Q8) Yes
(Q9) Place where it looked like it was glued back down came unglued
(Q10) 2
(Q11) Yes
(Q12) Plastic looks resealed on edge flap, looks bizarre
(Q13) Yes (knife used to open)
(Q14) Possibly, was not symmetrically folded, looks broken into and resealed
(Q15) 1
(Q16) No
(Q17) No loose edges or puncture marks in paper backing or plastic
(Q18) No
(Q19) Difficult to open
(Q20) 4
(Q21) Yes
(Q22) Vacuum seal has been broken, can see and feel
(Q23) Yes
(Q24) No vacuum seal
(Q25) 5
(Q26) Yes
(Q27) Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 089 Form - Y_t X_t Z_t Time - 12 min
X ID - 8A6 Y ID - 9V3 Z ID - 3N6

(Q1) No
(Q2) S.B. shows that is in place, would be difficult to tamper and reshrink
(Q3) Yes
(Q4) Saw piece of tape - it is tampered
(Q5) 5
(Q6) No
(Q7) Seems to be air tight
(Q8) No
(Q9) Same as (Q7), nothing to indicate otherwise
(Q10) 5
(Q11) Yes
(Q12) Appears to be tape on one side, looks opened
(Q13) Yes (knife used to open)
(Q14) Appears that one side was opened and resealed
(Q15) 5
(Q16) No
(Q17) No breaks in packaging, looks properly sealed
(Q18) No
(Q19) Same as (Q17), when breaking pills out nothing to change mind
(Q20) 1
(Q21) No
(Q22) No indications, no visible seal to help decide
(Q23) Yes
(Q24) No vacuum
(Q25) 5
(Q26) No - Do not recall
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 090 Form - X_c Y_c Z_t Time - 16 min
X ID - 8X2 Y ID - 3Z1 Z ID - 4P6

(Q1) No
(Q2) The tightness of S.B. around the cap, looks tampered at bottom, not as tight, no problem with container at that point
(Q3) No
(Q4) Was a clean swipe down perforated edge, nothing falling off as a result of removal, S.B. is intact, no holes
(Q5) 5
(Q6) No
(Q7) Appears sealed tight on all edges, no holes or spaces, looks sealed
(Q8) No (knife used to open)
(Q9) Had to use knife to get in, was a resistance, seal still on rim, same as (Q7)
(Q10) 5
(Q11) No
(Q12) Wrap Doesn't completely encloses package, sealed on all sides, nothing missing or loose
(Q13) No
(Q14) One corner where plastic looks like it had worn away, a machine defect
(Q15) 4
(Q16) No
(Q17) Everything tight, nothing loose or broken on either side, perforations intact
(Q18) No
(Q19) Too difficult to get out, were very secure
(Q20) 5
(Q21) No
(Q22) Usually the button looks depressed, catches on glass and lid don't look squeezed or twisted, even on threads
(Q23) Yes
(Q24) Too easy, not enough resistance
(Q25) 5
(Q26) Yes
(Q27) Mediprin Sine-Off
(Q28) Mediprin Sine-Off
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 091 Form - Y_t Z_t X_t Time - 22 min
X ID - 2D4 Y ID - 3Y3 Z ID - 8J6

(Q1) No
(Q2) Does not look like it has been undone, shrunk the way it was put on
(Q3) Yes
(Q4) Two pieces of tape
(Q5) 5
(Q6) Yes
(Q7) Seems like air in there puffing out seal
(Q8) Yes
(Q9) Didn't seem to pull off quite right, usually can't pull off
(Q10) 4
(Q11) No
(Q12) No extra markings on plastic, doesn't show anything
(Q13) Yes
(Q14) One side looks resealed
(Q15) 5
(Q16) No
(Q17) Question Sine-Offs not being all up, looking for something different from one to the other
(Q18) No
(Q19) Printing not all up causes concern, foil had not been altered
(Q20) 4
(Q21) Yes
(Q22) The seal is not sealed (pushed button)
(Q23) Yes
(Q24) Top was not tightly sealed
(Q25) 5
(Q26) No - didn't read for it
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/40

APPENDIX D (cont'd)

Survey No. - 092 Form - Y_t X_t Z_c Time - 14 min
X ID - 1C4 Y ID - 5R3 Z ID - 5F5

(Q1) No
(Q2) Indentation around neck of bottle, doesn't show tampering
(Q3) Yes
(Q4) Seam of shrink band was tampered and put back in place with tape
(Q5) 5
(Q6) No
(Q7) Sealed on top
(Q8) No
(Q9) No indication that it was not done at factory, was sealed
(Q10) 1
(Q11) Yes
(Q12) Discoloration on one end of the box, different glue or sealant
(Q13) Yes
(Q14) Same as (Q12)
(Q15) 5
(Q16) No
(Q17) No indications of bubbles open or being pulled away, not used
(Q18) No
(Q19) Way opened, none came out easily, paper was not removed
(Q20) 1
(Q21) No
(Q22) Indentation, is sealed, is correct
(Q23) No
(Q24) When got air seal was broken, button is up
(Q25) 3
(Q26) Yes
(Q27) Sine-Off Everfresh Juice
(Q28) Everfresh Juice
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) Some college or business school
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 093 Form - Y_t Z_c X_c Time - 16 min
X ID - 1Z2 Y ID - 2X3 Z ID - 8J5

(Q1) Yes
(Q2) Area on bottom where loose (MV) No S.B. covering bottom, might be slid off and on
(Q3) Yes
(Q4) Same as (Q2)
(Q5) 5
(Q6) No
(Q7) Is secure on lip of container
(Q8) No
(Q9) Seal still staying on lip
(Q10) 1
(Q11) No
(Q12) No slits, no indications has been opened
(Q13) No
(Q14) Opened easy, but no indications, maybe too thin
(Q15) 5
(Q16) No
(Q17) See writing on some tablets, each blister is still intact
(Q18) No
(Q19) All seemed to open the same
(Q20) 5
(Q21) No
(Q22) Presume that there needs to be plastic around the cap
(Q23) No
(Q24) Was a seal, heard pop
(Q25) 5
(Q26) Yes
(Q27) Mediprin
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) No
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) Some high school
(Q37) Yes
(Q38) Yes
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 094 Form - X_c Z_c Y_c Time - 15 min
X ID - 3B2 Y ID - 1X1 Z ID - 7H5

(Q1) No
(Q2) Really tight around neck, concerned about bottom (MV)
(Q3) No
(Q4) Was on tight
(Q5) 1
(Q6) No
(Q7) Sealed down pretty good all around
(Q8) No
(Q9) Pushed in hard, was sealed all around
(Q10) 1
(Q11) Yes
(Q12) Not on real tight, seems loose
(Q13) Yes
(Q14) Seems like a lot of glue on one side, reglued
(Q15) 3
(Q16) Yes
(Q17) Pills do not all have name on them, some flakiness on pills, foil back looks good
(Q18) Yes
(Q19) Pills don't look right, some pills came out too easy
(Q20) 5
(Q21) No
(Q22) Button not popped up
(Q23) No
(Q24) Heard pop
(Q25) 1
(Q26) Yes
(Q27) Mediprin Sine-Off
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 60-74
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/30

APPENDIX D (cont'd)

Survey No. - 095 Form - Z_t Y_t X_t Time - 13 min
X ID - 5G4 Y ID - 6S3 Z ID - 9K6

(Q1) No
(Q2) No tears or openings in safety seal
(Q3) Yes
(Q4) Piece of scotch tape, looked at 3 times on first question did not see till opened it
(Q5) 3
(Q6) No
(Q7) Seems to be sealed
(Q8) No
(Q9) Did have some resistance when pushed, gave easily though
(Q10) 4
(Q11) No
(Q12) No openings in plastic
(Q13) No
(Q14) Could find no openings, had trouble opening
(Q15) 5
(Q16) No
(Q17) Don't see any cracks or openings in front or back
(Q18) No
(Q19) All seemed to push out the same, no openings
(Q20) 5
(Q21) Yes
(Q22) Does not have plastic around outside top
(Q23) No
(Q24) Heard seal break when opened
(Q25) 1
(Q26) Yes - looked at after decision was made
(Q27) Sine-Off
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Male
(Q36) College graduate or beyond
(Q37) No
(Q38) -
(Q39) 20/20

APPENDIX D (cont'd)

Survey No. - 096 Form - Y_c Z_c X_c Time - 15 min
X ID - 2A2 Y ID - 9W1 Z ID - 2C5

(Q1) No
(Q2) S.B. continues to be shrunk, perforations still intact, would be hard to open, seam is intact
(Q3) No
(Q4) Everything intact except where torn at perforation
(Q5) 5
(Q6) No
(Q7) Appears intact, no holes, its adhered to top, covers whole top
(Q8) No
(Q9) Would be obvious if tampered, looking for tears holes, being loose around edges
(Q10) 4
(Q11) No
(Q12) Overwrap is intact, sides are still sealed
(Q13) No (knife used to open)
(Q14) It was difficult to open even with knife
(Q15) 4
(Q16) No
(Q17) Backing is still intact, seal is sealed, blisters are intact
(Q18) No
(Q19) No way to hide a tear, blister is strong, hard to hide tampering, can't peel off at corner assures not tampered with
(Q20) 5
(Q21) No
(Q22) Button is recessed, has not popped out, vacuum still intact, glass intact, no leaking glass or top
(Q23) No
(Q24) Can push button now that opened, couldn't tell by visual inspection
(Q25) 3
(Q26) No
(Q27) -
(Q28) -
(Q29) Yes
(Q30) Yes
(Q31) Yes
(Q32) Yes
(Q33) Yes
(Q34) 30-44
(Q35) Female
(Q36) College graduate or beyond
(Q37) Yes
(Q38) Yes
(Q39) 20/20

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