

# The Cost Impact of Convexity on Ostomy Management

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## Abstract

A study was performed in Korea in 2003 to determine the potential for convex skin barriers to provide cost effective outcomes for users currently utilizing flat appliances. Thirty patients were selected at random from 12 major hospitals in the Seoul metropolitan area. Of these, 9 were colostomates, 11 were ileostomates and 10 were urostomates. The average age for the group was 55 years.

Wear time and hourly/daily skin barrier costs for a flat skin barrier was calculated for each patient. Each patient then used two convex skin barriers and the comparative data was obtained. The results of this study showed that use of the convex skin barriers more than doubled the average wear time for colostomates, and more than tripled the wear time for ileostomates and urostomates. This resulted in a projected cost reduction of approximately 34% to 56%.

This mirrors the results of a mail out survey conducted in the UK in 1994 in which the returns from 259 users of convex products were analyzed. The average annual cost reduction ranged from 52% to 62% in one piece users and 28% to 66% for two piece users. The overall results of these two studies are consistent with those from a 1992 study, which led to the adoption by the UK Drug Tariff (July 1993) to provide convex products to end users with problematic stomas.

## Introduction

### Problems Consumers Face With Uneven Stoma Surfaces:

- Odor associated with leaking skin barrier
- Skin erosion and irritation from contact with effluent
- Difficult adherence of skin barriers to denuded skin from such leakage
- Increased costs associated with accessory items
- Increased pouch time changes
- Reduced wear times
- Increased social isolation and individual frustration

### How Consumers Have Addressed These Problems:

- Use of one or many accessory items – e.g. hydrocolloid seals, pastes, sheets, and belts to achieve smooth skin surface
- More frequent flat skin barrier changes
- Reduce mobility to avoid leakages

### Problems With These Practices:

- Expenditure on multiple accessory items is not cost effective
- Expenditure on increased frequency of flat skin barrier changes is not cost effective.
- Over complicates a potentially simple process
- Quality of life is diminished

### Solution To The Problems – Adoption of a Skin Barrier with Incorporated Integrated Convexity:

- Smooths uneven skin surfaces
- Assists with the protrusion of the stoma to allow effluent to enter the pouch and between the skin barrier and skin
- Reduces the daily running costs of an ostomy pouching system

As presented at

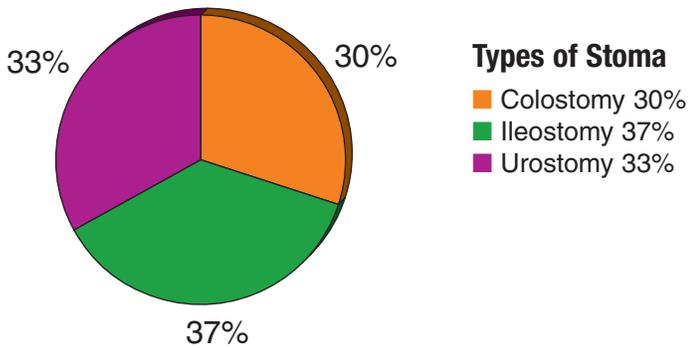
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Attention to Detail. Attention to Life.

## Comparison of Daily Wear Time for Skin Barriers in Korea



### Survey Method:

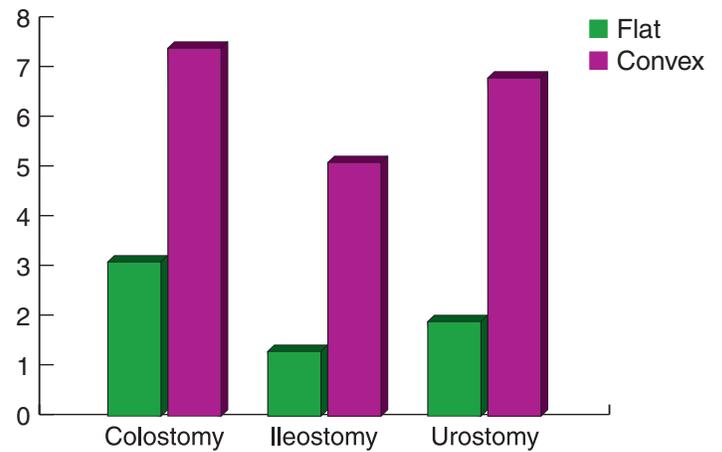
Thirty patients were selected at random from 12 major hospitals in the Seoul metropolitan area. Each patient had been using a two-piece flat skin barrier. Of these, 9 were Colostomates, 11 were Ileostomates and 10 were Urostomates. The average hourly and daily cost for the flat skin barriers was calculated for each patient.

Each patient then used two Hollister convex skin barriers and the hourly/daily cost was then calculated.

### Survey Participant Details:

Average age – 55 Years  
 Using two-piece flat skin barriers  
 30% Colostomates  
 36.7% Ileostomates  
 33.3% Urostomates

## Average Daily Wear Time for Two Piece Skin Barriers in Korea



Average daily wear time with a flat skin barrier for Colostomates was 3.1 days, Ileostomates 1.3 days and Urostomates 1.9 days.

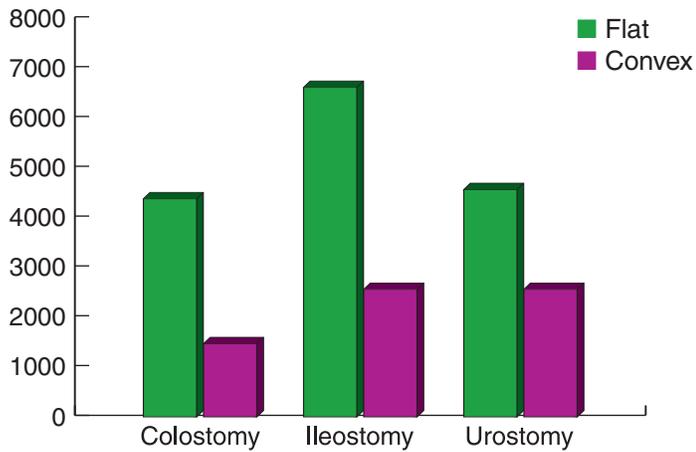
This increased to 7.4 days, 5.1 days and 6.8 days respectively using a convex skin barrier.

### Result:

There was a significant increase in wear time experienced by all ostomates.

There was an increase by 39% by Colostomates, 192% for Ileostomates and 158% for Urostomates.

## Running Costs in Days Comparison (South Korean Won - KRW)



Average daily running cost in South Korean Won (KRW) with a flat skin barrier for Colostomates was 4,379 KRW (\$4.63 USD), Ileostomates 6,615 KRW (\$7.00 USD) and Urostomates 4,564 KRW (\$5.68 USD).

This decreased to 1,471 KRW (\$1.83 USD) 2,561KRW (\$3.90 USD) and 2,561 KRW (\$3.90 USD) respectively using a convex skin barrier.

### Result:

There was a significant decrease in daily running costs per skin barriers experienced by all ostomates.

There was a cost decrease by 66% for Colostmates, 61% for Ileostomates and 44% for Urostomates.



Peri-Stomal Skin Loss



Skin healed within 15 days

## Clinical Case Study Korea

50 year old male  
Permanent Ileostomy (November 2002)  
Office worker  
Generally active

### Problem:

Tipped stoma  
Lack of muscle tone  
Night time leakage & skin break down  
Flat skin barrier and drainable pouch  
Barrier changed because of leakage  
Wear time 26 hours.

### Solution:

Convex skin barrier and drainable pouch

### Outcome:

Wear time 68 hours (62% increase)  
Cost reduction 45%  
Skin healed in 15 days



Cut away profile view of Convexity illustrating depth and gradient.



Integrated Convexity Depth - 4.16mm

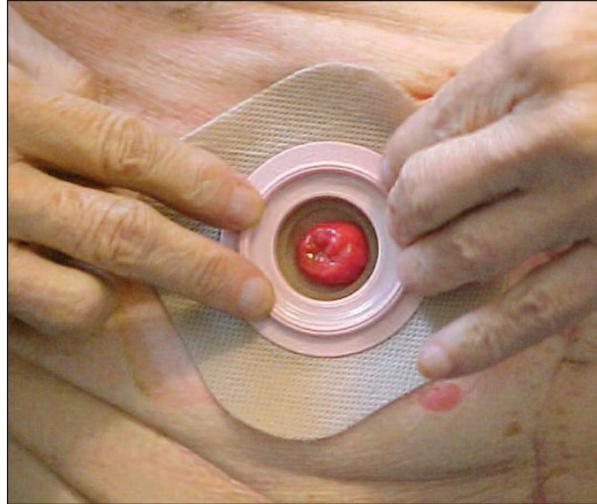
## Indications For Convex Product Management Selection\*:

- Complete or partial retraction
- Loop stomas
- Telescoping stomas
- Peri-stomal dimples, creases or scars
- Flaccid abdomens
- Frequent leakages with flat skin barriers

## Precautions for Convex Product Management\*:

- Peri-stomal varices
- Crohn's ulcers
- Pyoderma gangrenosum
- Muco-cutaneous separation
- Peri-stomal hernia
- Prolapsed stomas

\*Reference: *Making Sense of Convexity* – March 2006, Bourke, Davis, Kittscha, Stott, Dunne, George, Purnell. Hollister Incorporated MRP 907502



Convex skin barrier in position. Note the protrusion of the stoma from the pressure effect.

## Summary and Conclusions

- Convexity can play a major role in increasing the wear time of an ostomy pouching system
- Convexity may appear to be more expensive but the only way to truly measure the cost of a product is to determine the hourly or daily running cost of an ostomy system. Convexity has shown to be extremely cost effective in managing problematic stomas
- The ability to access convex appliances can lead to a better quality of life amongst consumers
- This second study in Korea reflected the same findings as those from a non related exercise performed in the UK which further argues the case for convex pouching systems in cost containment and improving wear time.



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