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Professional

Convexity: What do we know about it?

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Learning Objectives

- Understand the genesis of convexity in ostomy patient management
- Discuss the characteristics of convexity
- Describe the assessment of the peristomal area when deciding upon a pouching system fit
- Describe the assessment of the stoma when deciding upon a pouching system fit
- List two types of convex pouching systems

Meet the speaker



Jan Colwell has practiced as a WOC nurse for over 40 years, most recently as the lead WOC APRN in the outpatient stoma clinic. Professional contributions include: past president of the WOCN and FOW-USA, editor of several ostomy textbooks, PI on several research studies, ostomy section editor of the JWOCN and author of multiple peer review articles and book chapters. She feels fortunate to have spent her nursing career making a difference for people with ostomies, they have given her more that she could ever give them! She has recently retired from her nursing practice.



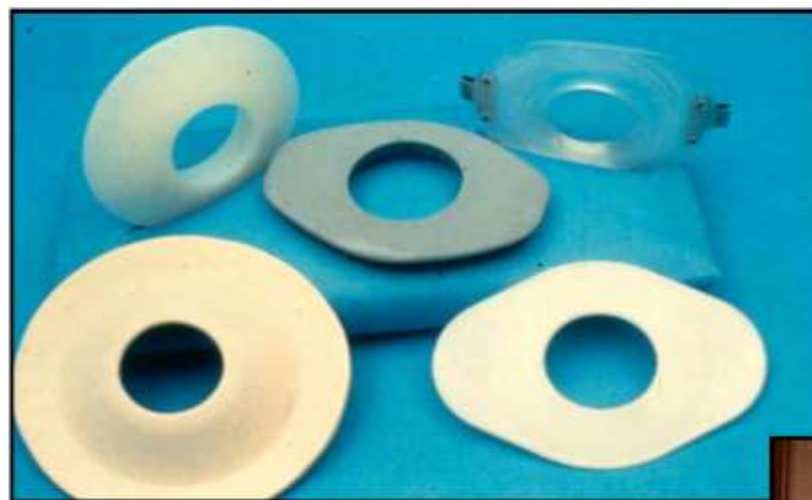
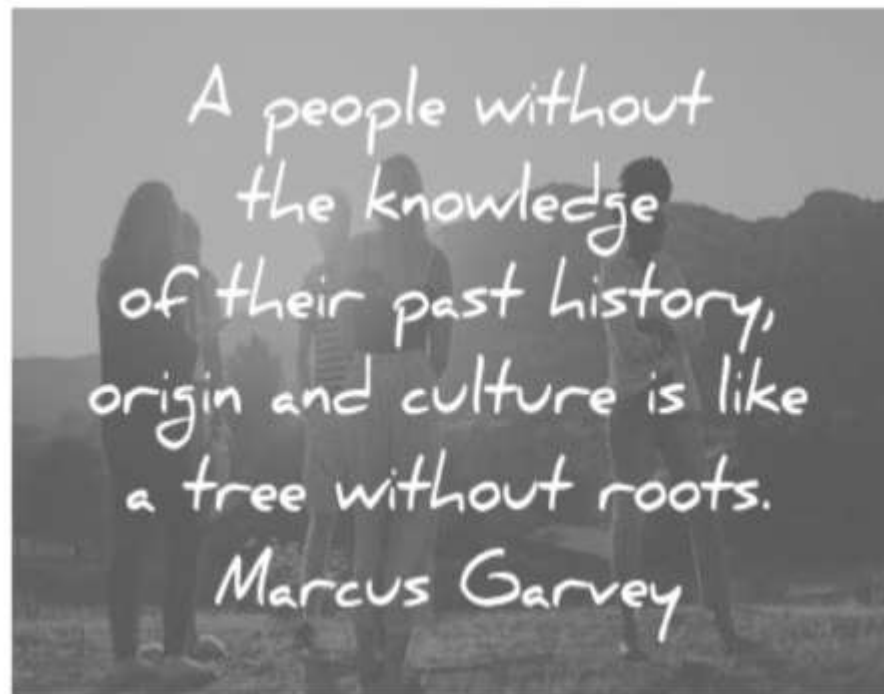
My past practice

- Academic Medical Center: 750 beds
- Inner city location
- Two APRNs in the outpatient ostomy clinic (nurse run)
- Cover: general surgery, colorectal, urology, trauma, gyn-onc, oncology, GI section (IBD)
- Team of 9 WOC nurses (4 APRNs, 3 in graduate school)
- See about 25 clinic patients a week



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Historical look at convexity



Convexity circa 1960

- Materials: rubber, plastic, metal
- Shape
 - Levels of convexity
 - Predetermined openings
- Size
 - Stoma size plus 1/8"
 - Why?
- Belt tabs
- Without an adhesive interface

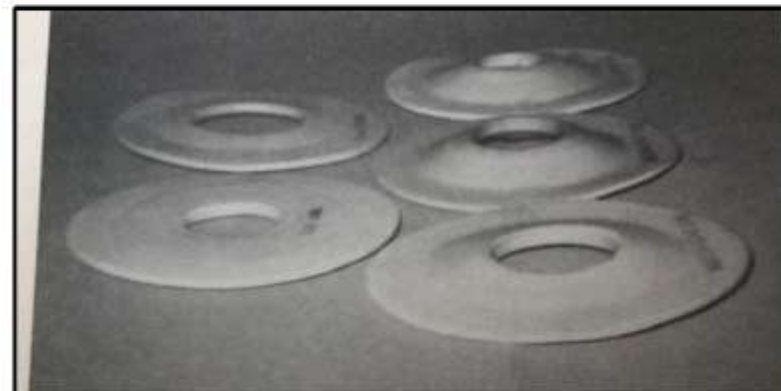


Fig. 41-65

Fig. 41-65. Convexities available in faceplates from Perma-Type: flat, shallow, medium cone, medium convex, and deep.

Fig. 41-66. A variety of faceplates ranging from all flexible to all firm.

Cut to fit?

- Dremel to customize

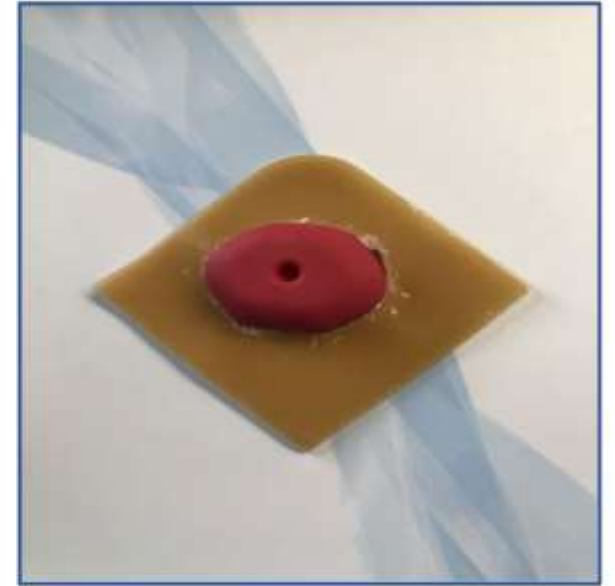
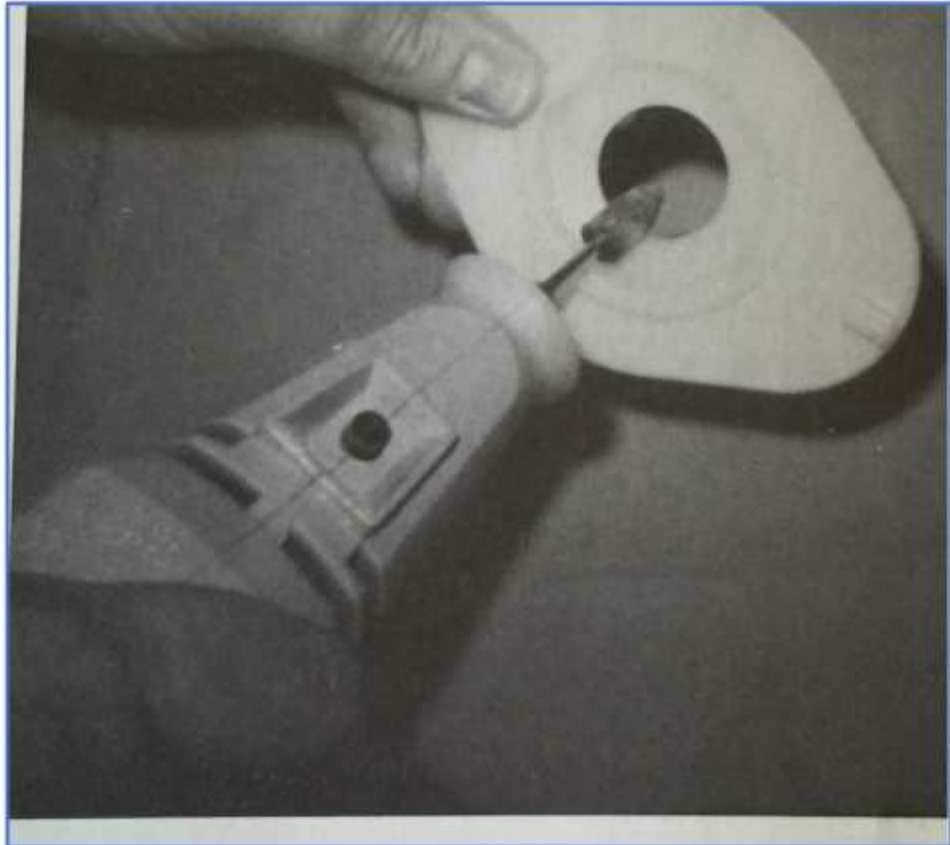


Image from: Broadwell D. Jackson B.,
Principles of Ostomy Care, 1982

Application of reusable equipment

- Convex face plate
- Tracing the adhesive disc/skin barrier



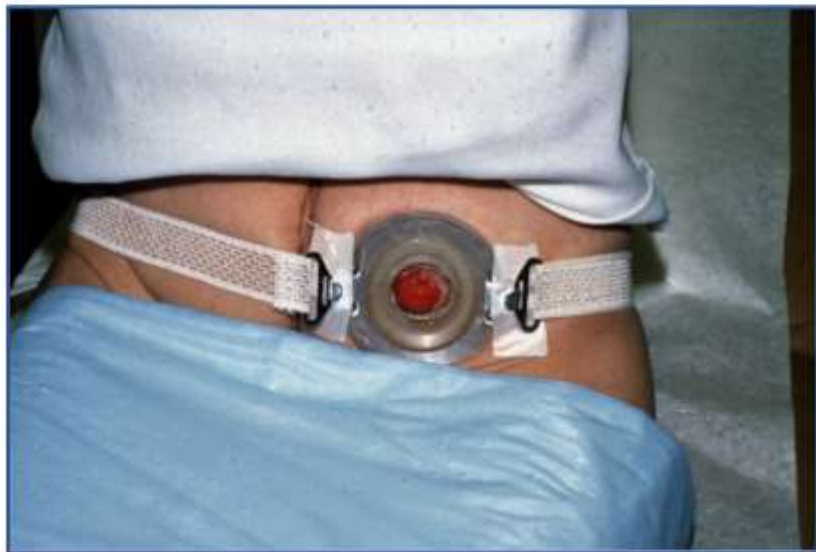
Application of reusable equipment

- Use of Colly Seal
 - Adhesive
 - Skin Barrier
- Cutting the Colly Seal to stoma and faceplate size



Application of faceplate

- Apply “cement”, liquid adhesive
- Apply to back of faceplate
- Apply around stoma
- Tape!
- Belt



Application of pouch

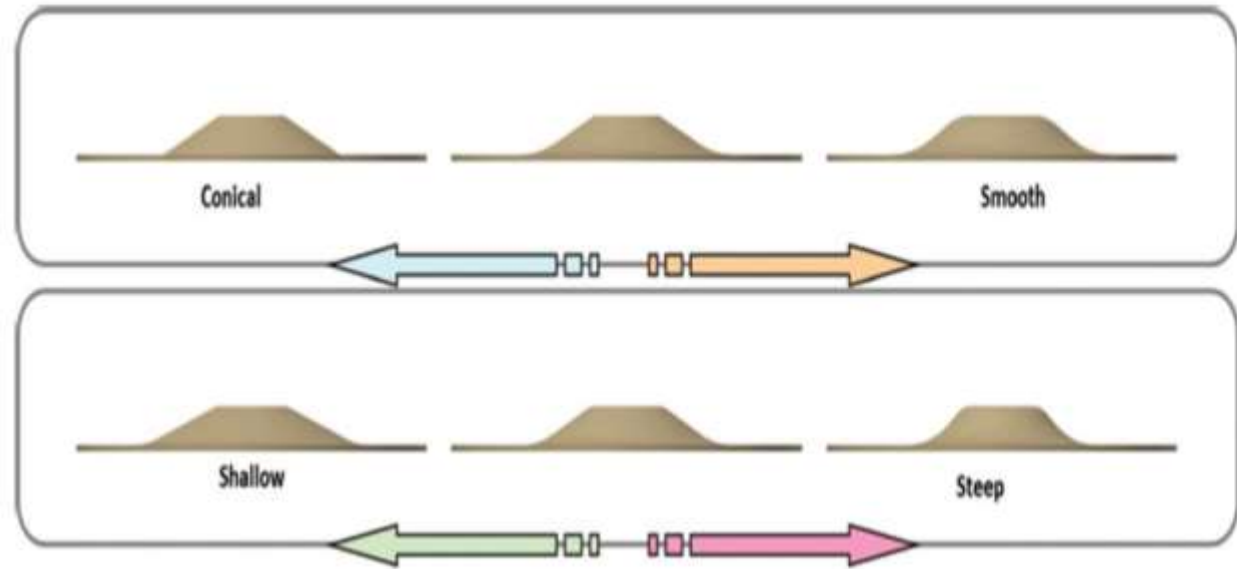
- Stretch pouch over flange on faceplate
- Use of an elastic or rubber ring to hold pouch to faceplate flange



Convexity: Review of literature

• Definitions

- Describes the curvature of the skin barrier that is in direct contact with the peristomal skin¹
- Curved or rounded skin barrier adhesive surface²
 - Minimal amount of curvature
 - Maximum amount of curvature
 - Location next to the stoma vs. outward
 - Flexible versus firm
- Incorporating an outer curvature with respect to the aperture³



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¹Hoefflok, J Kittscha, J; Purnell, P. *WOCN*. 40(5):506-512, 2013 (image)

²Carmel, J, Colwell, J, Goldberg M. *WOCN Core Curriculum: Ostomy Management*, 2021

³Colwell, J, Stola Davis, J et al. Use of a Convex Pauching System in the Postoperative Period: A National Consensus. *Journal of Wound, Ostomy and Continence Nursing*, 2022

Characteristics/definitions of convexity

- Convex product characteristics¹
 - Soft
 - Firm
 - Belt can enhance convexity
 - The effect of convexity can be enhanced when placed close to the stoma base
- Convex product characteristics²
 - Depth
 - Compressibility
 - Flexibility
 - Tension location
 - Slope

¹Hoefloek J, et al. (2017) Use of Convexity in Ostomy Care Results of an International Consensus Meeting. *Journal of Wound Ostomy Continence Nursing*.

²McNichol L, et al (2021) Characteristics of Convex Skin Barriers and Clinical Application: Results of an International Consensus Panel *Journal of Wound, Ostomy and Continence Nursing*:

Pouching principles

- Consistent wear time¹⁻²
 - Pouch seal for a predictable amount of time
 - No leakage between application and removal
- Intact peristomal skin^{1,2}
 - Upon removal intact peristomal skin
- Patient preferences/abilities²
- Accessibility²



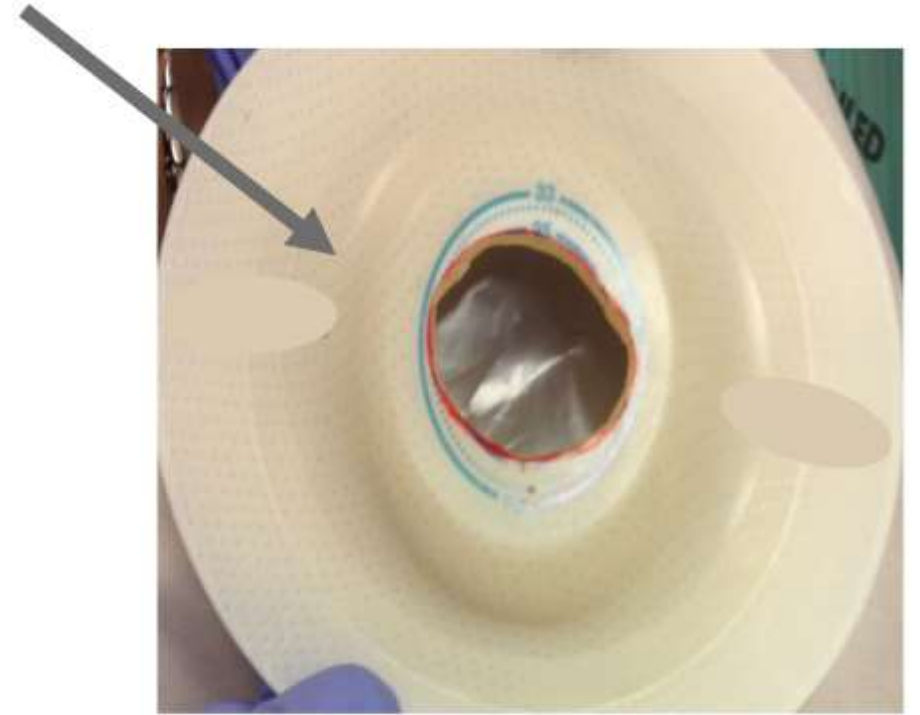
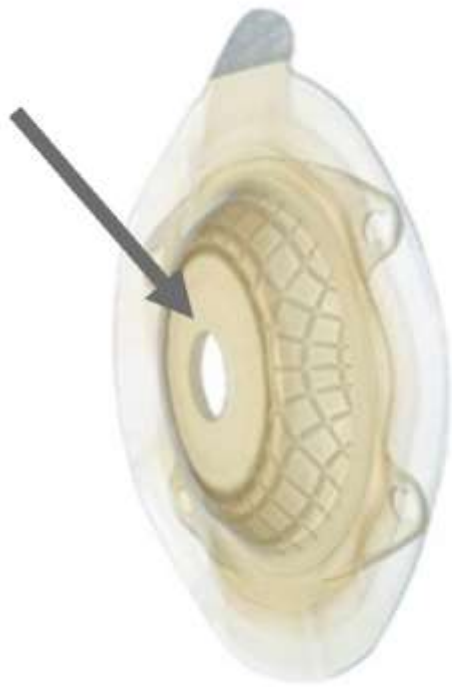
¹Wound Ostomy and Continence Nurses Society, (2017).
Clinical guideline: management of the adult patient with a
fecal or urinary ostomy.

²Colwell, J, Stoa Davis J et al., Use of a Convex Pouching System in the Postoperative Period:
A National Consensus. Journal of Wound, Ostomy and Continence Nursing, 2022

How to achieve no leakage/intact skin

- The fit of the pouching system
 - Matching the skin barrier to the patient
 - Stoma
 - Peristomal shape(s)
- Challenges
 - Changing stoma/peristomal shapes
 - Access to care
 - Educating the patient

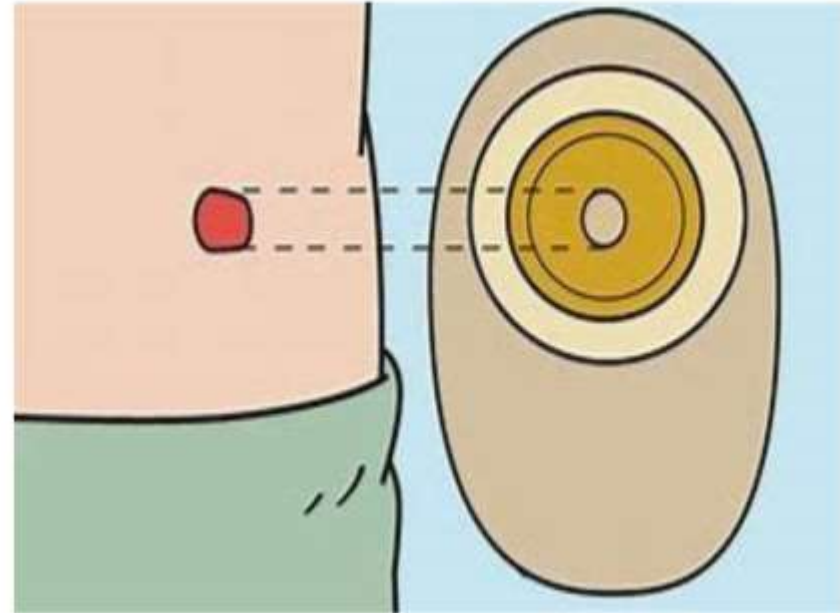




Key to predictable wear time: Seal

Considerations

- Skin barrier is the key
- Provides the pouching system adhesion and peristomal protection
- Match the skin barrier to the
 - Stoma
 - Peristomal skin
 - Patient



Considerations

- Skin barrier opening
 - Fit to the skin stoma junction (mostly)
 - Round
 - Oval
 - Uneven
- Shape
 - Flat
 - Convex

- Goals
 - Choose skin barrier to fit the patient (assess & customize)
 - Stoma
 - Peristomal area
 - Preferences
 - Determine wear time & achieve predictable wear time
 - Educate
 - Follow up

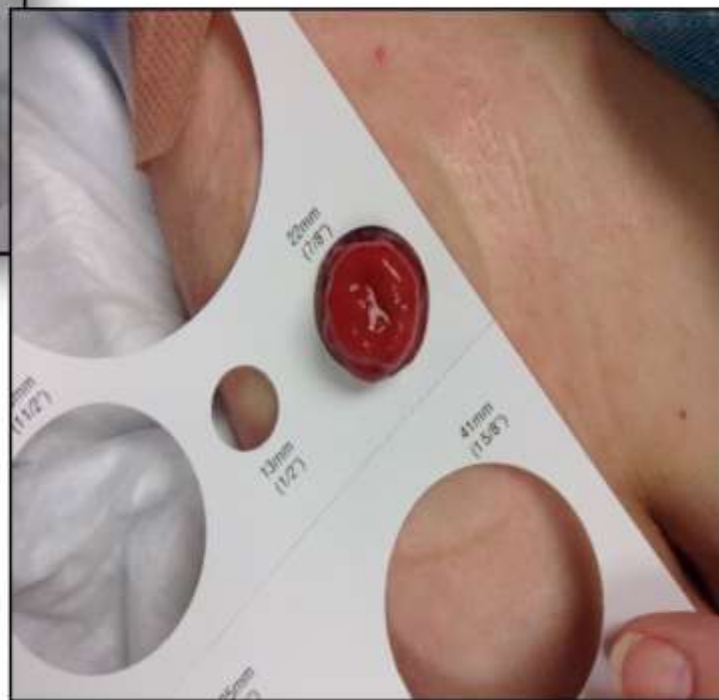


Skin barrier opening



Too Large

Correct Fit



Exceptions....



Fistula at skin surface, cut larger than stoma

Skin barrier shape: Flat vs convex

- Skin barrier shape:
 - Mirror the peristomal area
 - Consider the stoma
 - Protrusion
 - Location of the lumen



Skin barrier shape: Flat vs. convex

- Based upon an assessment
 - Peristomal area
 - Stoma
- Two options
 - Flat
 - Convex
- Use the best product for the patient based upon the assessment
- Don't think that convex is not the product to start with.....



Assessment: Peristomal geography

- Lying
- Standing
- Sitting



Lying



Sitting

Assessment: Peristomal geography



Lying



Sitting

Assessment: Peristomal geography



Sitting

Assessment peristomal geography



- Peristomal Area
 - Flat
 - Bulge
 - Creases
 - Where.....
 - How far out...
 - Uneven



Assessment peristomal geography

- Creases
- Folds
- Deep
- Next to stoma



Assessment guidelines¹

- Assess the peristomal area in a sitting and standing position

Regular, Inward or *Outward* body profile



Assessment guidelines¹

- Assess the peristomal area in a sitting and standing position
- *Superficial creases* or *deep folds*?



Assessment: Stoma

- Stoma
 - Stoma Type
 - End
 - Loop



Assessment: Stoma

- Amount of protrusion
- Location of the lumen



Assessment guidelines¹

Assess the stoma

- Location of the stoma lumen (os)
 - Above skin surface
 - Level with skin surface
 - Below skin surface



Assessment peristomal geography

- Abdominal tone
 - Soft mushy
- Skin Feel
 - Loose (hanging)



Results: Patient assessment guidelines¹



- Assess the peristomal area in a sitting and standing position
- *Soft* or *Firm*?

Assessment: Stoma

- Stoma
 - Output
 - Pasty
 - Watery
 - Combo
 - Flush, to the skin level and stoma high output



Erosion

Skin barrier shape: Flat vs convex

- Skin barrier shape:
 - Mirror the peristomal area
 - Flat = Flat
 - Creases folds uneven areas = Convex
- Stoma protrusion
 - Will the output get over the skin barrier?
 - Is there adequate length?
- Stoma lumen
 - Does it point over the skin barrier
 - Will the stoma output get over the skin barrier?



**Peristomal area + stoma protrusion + lumen location = skin barrier shape
(assessment)**

Skin barrier shape

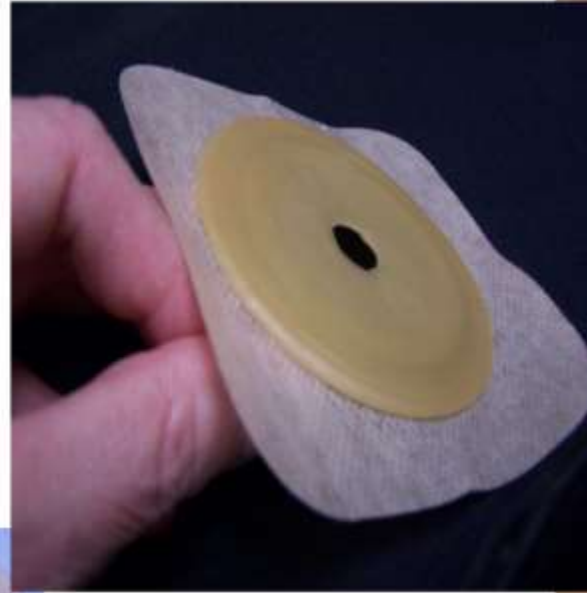
- Peristomal area uneven (creased, dimpled uneven) = convex
- Peristomal area poor tone (mushy) = convex
- Stoma (length) at or below skin level = convex
- Stoma lumen at or below skin = convex



Oh, now it is so easy..... (really?)

Skin barrier shape: Flat

- Peristomal geography = flat
- Stoma lumen in the center
- Stoma length above skin



Post-op use of convexity¹

- Goal: a predictable seal
 - Patient: learning, adjusting
 - Outcome: maybe a mucocutaneous junction separation
 - Management: a m/c separation vs. leaking pouch, denuded skin
- Options: soft, light and flexible convexity



Post-op use of convexity



- End ileostomy
- Medically unresponsive ulcerative colitis
- Sitting position creases
- Stoma lumen tucked under
- Post op
- Convexity (one piece), light with barrier ring
- Watch output



Skin barrier shape

- Convex Choices
 - Soft
 - Firm
 - Light
 - Deep
 - Flexible
 - Location next to the stoma (tight)
 - Location out from the stoma (wide)
- Accessories
 - Belt
 - Barrier rings
 - Flat (slim, regular)
 - Convex

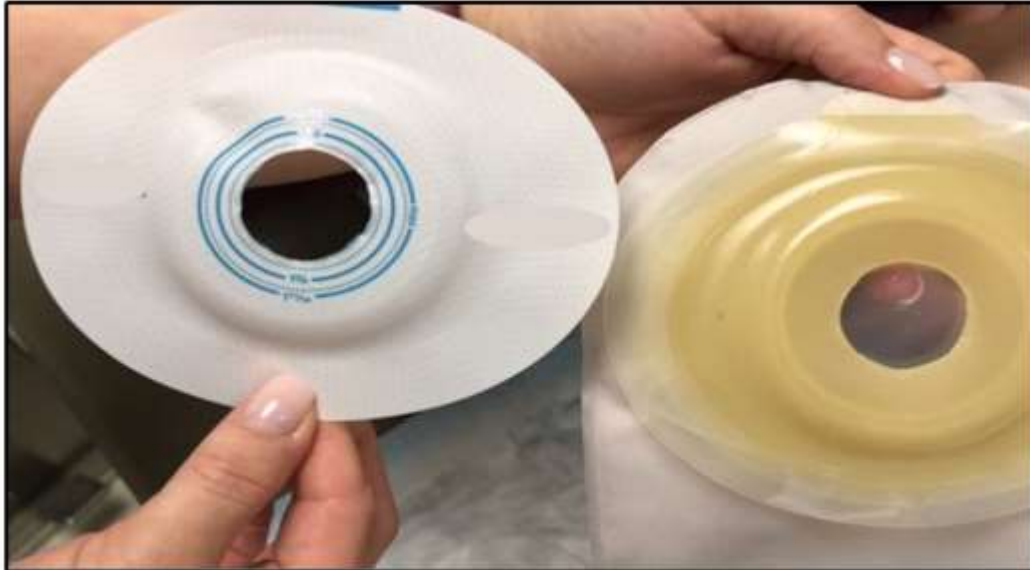


Case Studies



Wider convexity

- Protruding end colostomy
- Lumen in center
- Lateral crease (sitting)
- Use convexity to flatten crease
- Choice: wide, light convexity



Patient with recurrent cervical cancer: Exenteration



Laying

- Both stomas on same plane
- Colostomy
- No belt options
- Weight loss
- Good stoma
- Creases when sitting
- Came in with flat CTF
- Light convexity



Sitting 2.5 wks post op

Leakage, flush Ileostomy



Skin barrier powder/cyanoacrylate/deep convex CTF

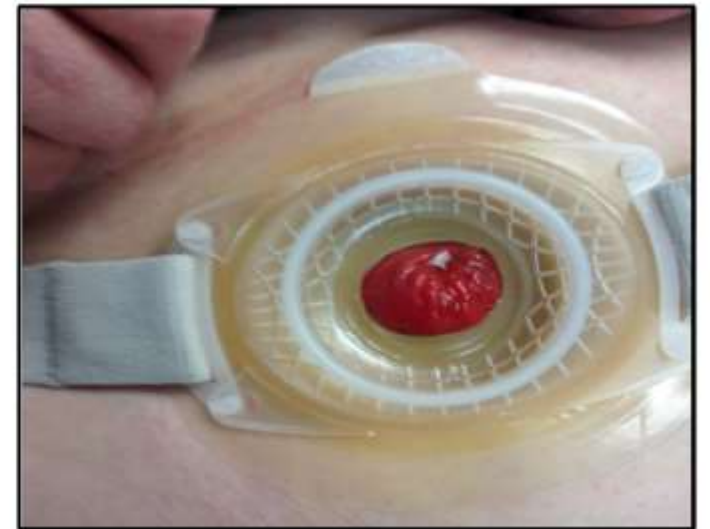


Belt/manage stoma output/ 2 day wear time

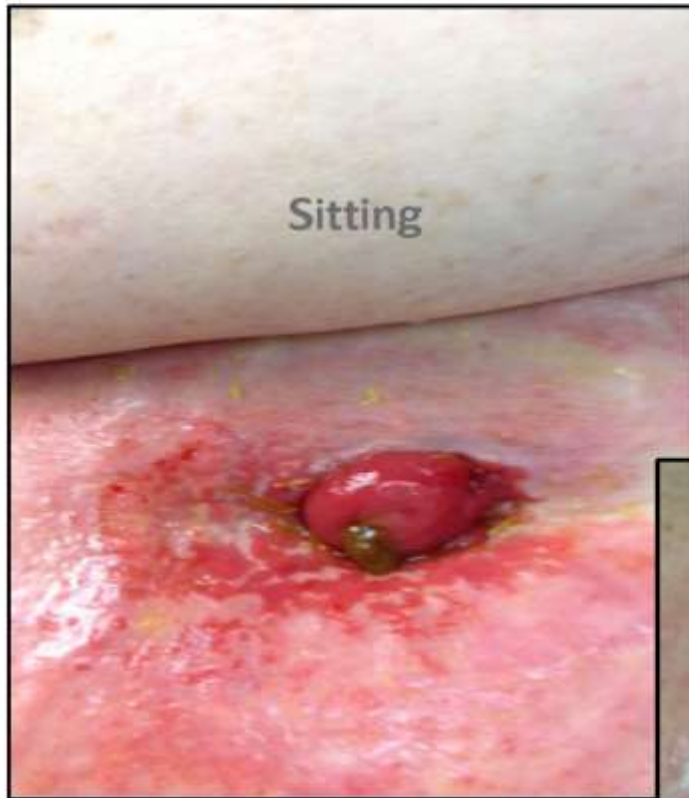


Patient with end ileostomy: Six weeks proctocolectomy

- Stoma lumen at 6 o'clock
- Fit the convexity close to stoma
- Cut skin barrier to stoma size
- Thin barrier ring



Patient w/ crohn's disease s/p colectomy

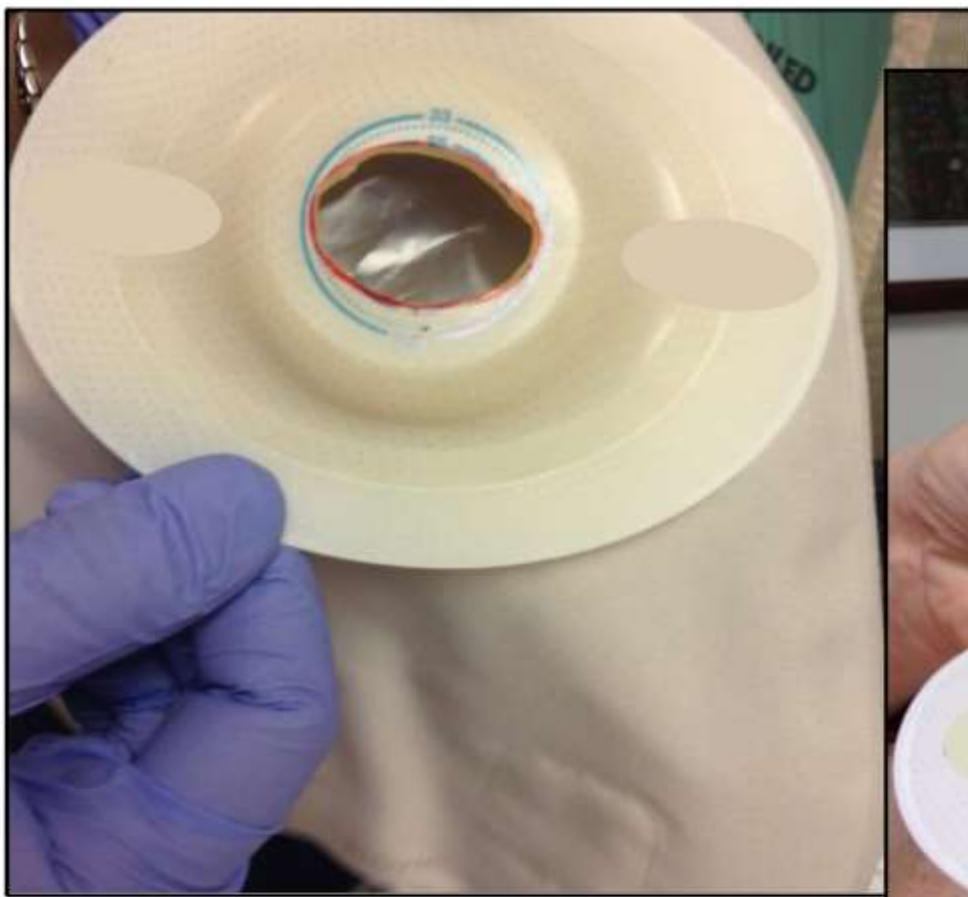


- 4 weeks after surgery
- Pouch seal issues
- Pasty stools
- Flat peristomal area
- Lumen at 7 o'clock
- Seal Issues
- Obese abdomen
- Peristomal dermatitis

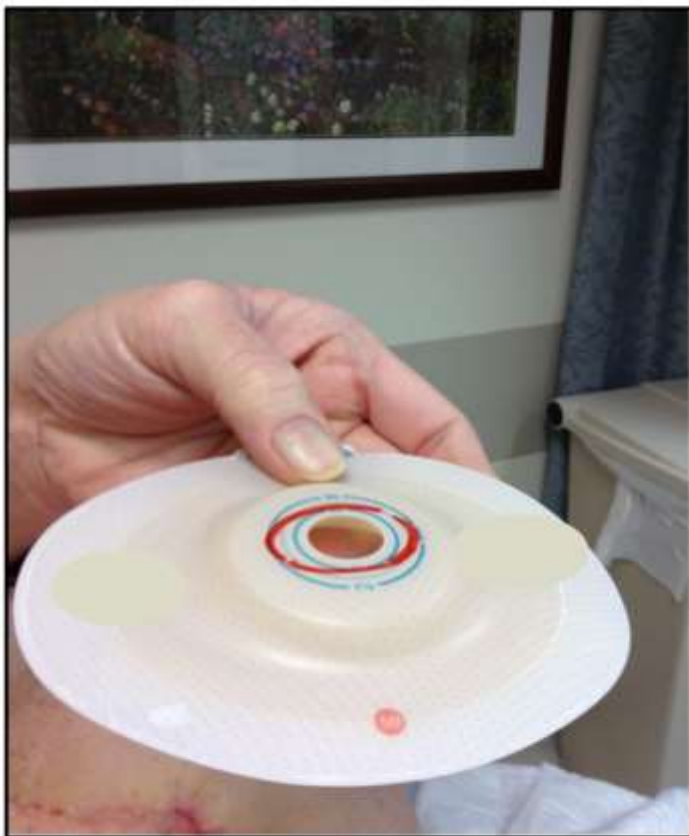
Treat with skin barrier powder



Deep convex CTF with slim barrier ring



Convex deep: Two piece: Visualization



Urostomies

- Soft convexity
- No barrier ring
- Rationale:



Location of the Convexity: In Crease to Flatten

- Stoma in a crease
- Need to flatten the crease
- Wider width of convexity



Location of the convexity: Next to the stoma

- Want convexity close to the stoma and to fill in the dip around the stoma



Location of the convexity

- Where do we want the convexity?
- What problem are we trying to Correct?



Flush stoma puckered
peristomal skin



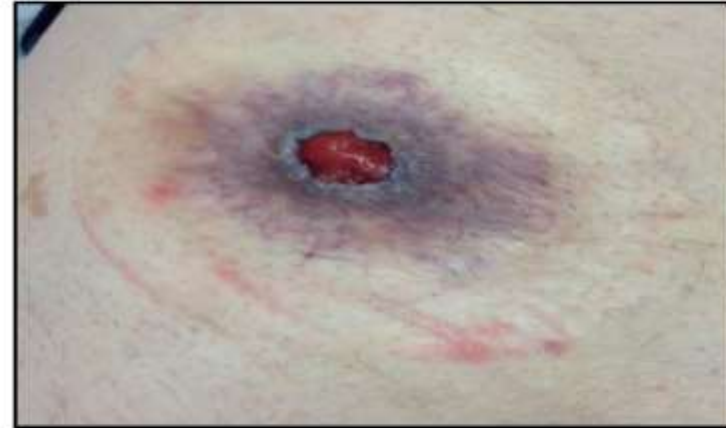
Lumen at the skin level



Stoma located in a deep crease,
crease is long

Contraindications/controversy: Convexity

- When is convexity too much
 - Peristomal varices
- Judgement call
 - Peristomal pyoderma
 - Peristomal hernia



Varices



Peristomal Hernia



Pyoderma

Convexity and accessories

- Accessories (added to make it more useful)
 - Never stand alone
 - Finish or polish off the pouching system
- Barrier rings
- Belt
- Barrier strips



Barrier rings



- Enhance seal and increase wear time
- Fill in uneven areas
- Ileostomy
- Limit to thin/slim rings with convexity (2.5 mm)

Belt

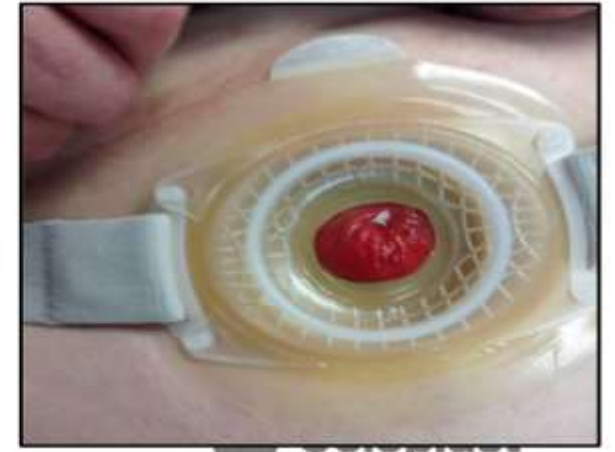


- Snaps onto the flange or pouch
- Provides pressure and stability to the seal
- Enhances the seal
- Convexity: Belt



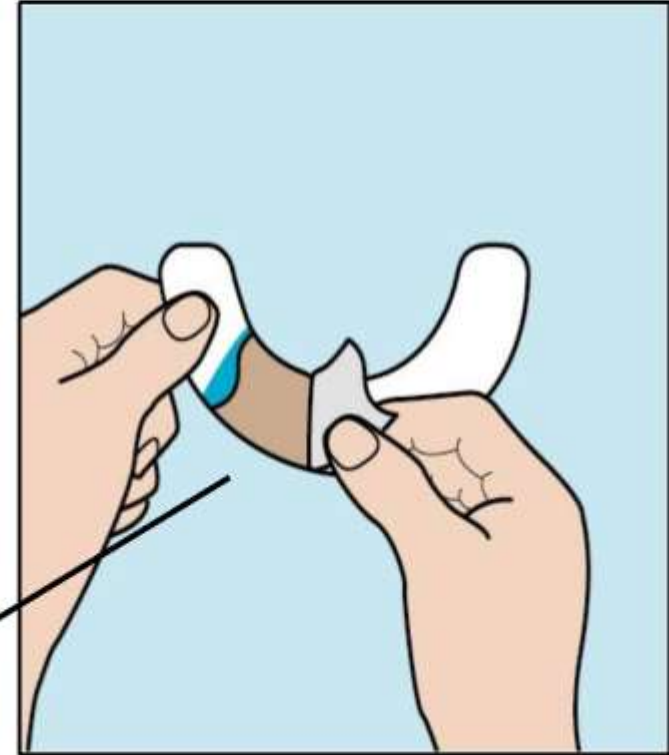
Patient with end ileostomy: Six weeks post-proctocolectomy

- Stoma lumen at 6 o'clock
- Fit the convexity close to stoma
- Cut skin barrier to stoma size
- Thin barrier ring



Barrier strips

- Elastic hydrocolloid
- Enhances outer seal
- Allows for movement



Assessment, assessment, assessment...

- Peristomal geography

- Flat
- Creased
- Soft, mushy

- Skin barrier should mirror
- Flat = flat barrier
- Concave = convex barrier



Assessment, assessment, assessment...

Stoma

- Shape, size
 - Amount of stoma protrusion
 - Location of stoma lumen
 - Type of output
- Size, shape of stoma = size, shape of skin barrier opening
 - Little or no protrusion/stoma lumen at the skin level = consider convexity
 - Type of output = adjust wear time consider barrier rings





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Our mission

Making life easier for people
with intimate healthcare needs

Our values

Closeness... to better understand
Passion... to make a difference
Respect and responsibility... to guide us

Our vision

Setting the global standard
for listening and responding