

CAN WE IMPROVE THE SUBCUTANEOUS IMMUNOGLOBULIN INFUSION EXPERIENCE FOR PATIENTS?

Melody Bullock MS,BSN,BS,RN,CRNI,IgCN

BACKGROUND & AIMS

Site reactions have been the bane of existence for patients on subcutaneous infusions of immunoglobulins. Regardless of the training process, patients may not experience optimization of their infusion in the time allotted for nurse education and supervision. Because numerous changes in the process and ancillary supplies may be required, resolving infusion issues can make the experience for the nurse, patient, and pharmacist cumbersome and frustrating. Site reactions from subcutaneous infusion are caused by pressure that increases as fluid is placed in the subcutaneous tissue either too fast, too shallow, or in too large a volume for the area. It is influenced by the rate of the infusion, the length of the needle(s) used, and the number of sites related to the total volume of the immunoglobulin. Site reactions have not been categorized by any type of measurement device, leaving the definition and description too variable and the extent of any possible tissue damage to interpretation.

METHODS

Clinicians have responded to this conundrum by composing a site reaction grade scale, fashioned after the Infusion Nurse Society infiltration grade scale, using common terminology for adverse events. Nurses, pharmacists, and immunologists collaborated using the three phases of scale development and validation published by *Frontiers in Public Health* (2018). Phase I consisted of item development and identification. Fifty-three respondents to a one-minute questionnaire elicited feedback from one immunologist, two specialty pharmacists, and fifty nurses. Nineteen were comfortable with subcutaneous immunoglobulin training and assessment.

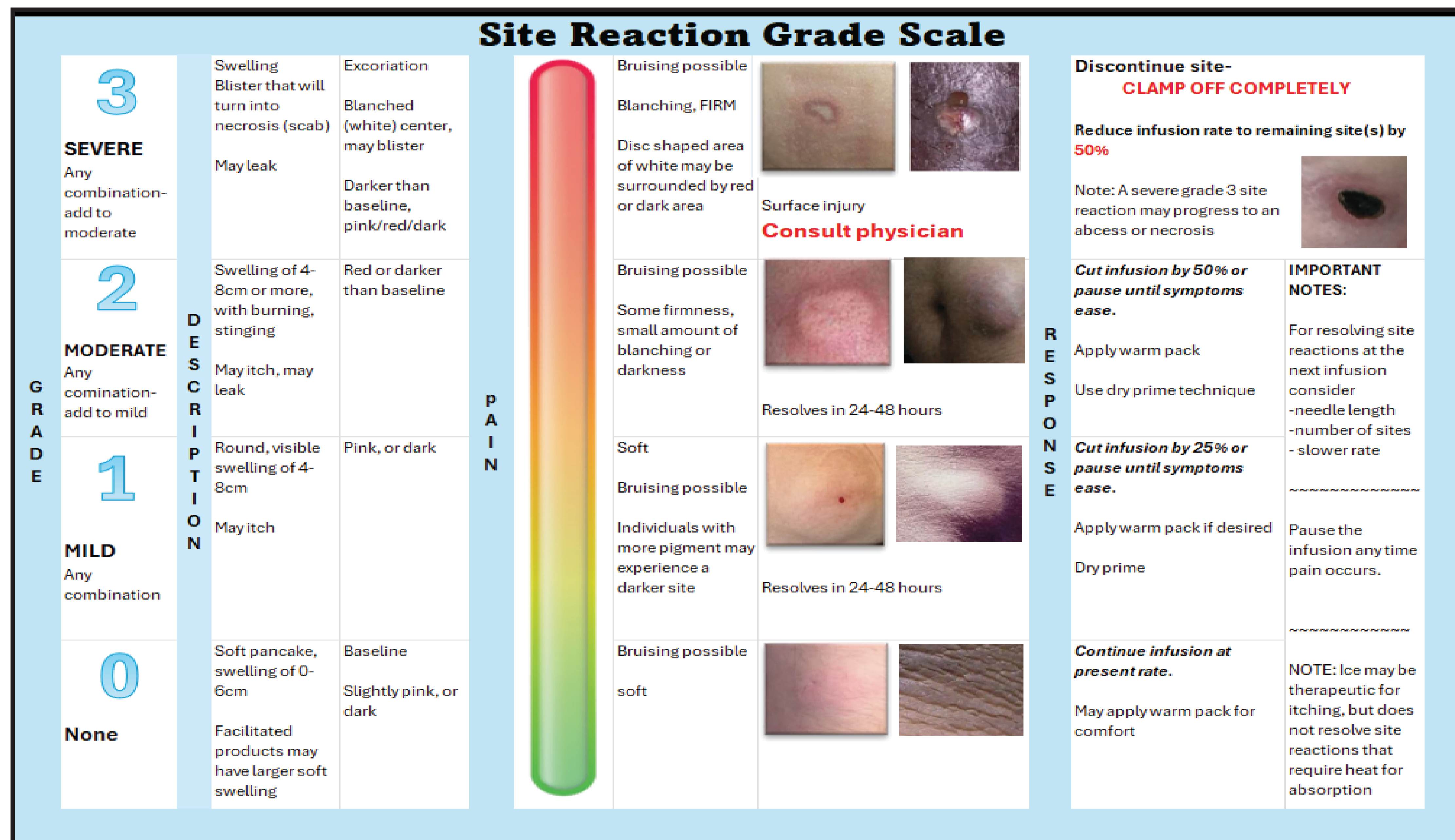


Figure 1. Site Reaction Grade Scale

After changes were made, an expert nurse panel convened to discuss the scale and make recommendations. Reviewing a docket of over 25 pictures of site reactions, a comparison was made to discover agreement among the levels of site reactions pictured and recommendations. A follow-up survey was then completed based on the changes. This fulfilled Phase II: pretesting, sampling, item reduction, and extraction.

Phase III tested dimensionality, reliability, and validity. A broader outreach of medical professionals was solicited to examine if changes were needed to the scale.

RESULTS

Collaboration among global healthcare providers is vital to the success of a project of this magnitude. Given the relatively new return of subcutaneous infusion to the medical arena, it is important that a variety of people are able to participate in the survey process. The involvement of infusion experts throughout the world could improve the grade scale and add different descriptive words and pictures due to cultural and linguistic differences. Please use the QR code to participate.

SURVEY:



CONCLUSION

The subcutaneous Site Reaction Grade Scale could be very beneficial to physicians, pharmacists, nurses, and ultimately to patients. Adequate communication between all involved in the subcutaneous infusion process can help prevent disfiguring injury resulting from subcutaneous infusion site reactions, thereby improving patient outcomes. Yes, we can make it better!

References:
Badenes-Ribera L, Silver N, and Pedrolí E. Editorial: Scale Development and Score Validation. *Frontiers in Psychology*. April 2020.Vol 11.(799). Doi: 10.3389/fpsyg.1010.00799
Boateng G, Neilands T, Frongillo E, Melgar-Quinonez H, Young S. Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer. *Frontiers in Public Health*. June 2018.Vol 6(140). Doi:10.3389/pubh.2018.00149
Morgado F, Meireles J, et al. Scale development: ten main limitations and recommendations to improve future research practices. *Psicologia: Reflexao e Critica*. (2017) 30:3. Doi: 10.1186/s41155-016-0057-1

Phase	Changes Incorporated into the Scale
1	Grade levels decided from 1-4
1	Grade levels changed to 0-3
1	Important terms and descriptions
1	Visual descriptions presented
1	Determination of swelling sizes
1	Determination of where leaking occurs
1	Inclusion of blanching and firmness
2	Moved a descriptive from grade 1 to 2
2	Added leak to grade 2
2	Changed two pictures on the scale
2	Pain scale pictorial changed
2	Added dry prime technique
2	Baker Wong pain scale added
3	Note added about use of ice
2	Addition of pictorials with dark skin
3	Baker Wong pain scale extracted
3	Facilitated swelling added
4	New pain scale added

Figure 2. List of changes incorporated into the grade scale.

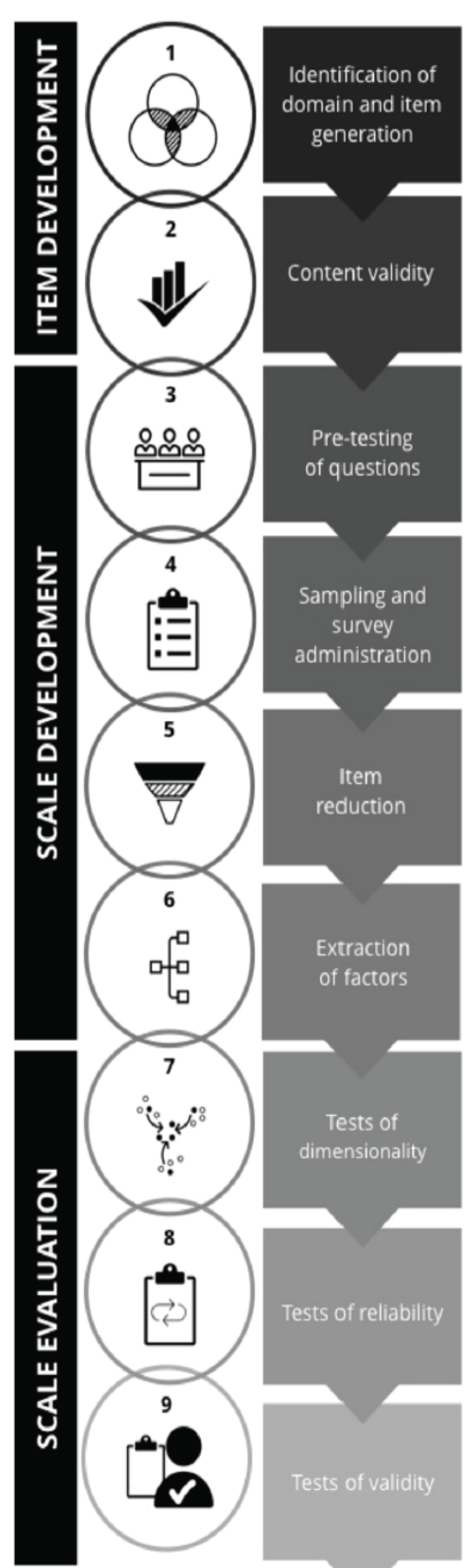


Figure 3: Grade Scale development - *Frontiers in Psychology*, 2020



INNOVATIVE HEALTH SCIENCES LLC
1108 Kings Highway, Suite #4 Chester, NY 10918 USA
+1-855-680-0630 | www.innohealthsci.com