



Good Things Don't Always Come in Small Packages

Comprehensive Care of Patients With Class 3 Obesity: An Integrative Review

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ABSTRACT

The epidemic of obesity and morbid obesity is straining the American health care system's ability to provide quality patient care. Patients with Class 3 (also referred to as morbid or severe) obesity require specialized equipment, unique approaches in the delivery of care, and understanding of the biopsychosocial pathophysiologic mechanisms underlying their condition. This article defines Class 3 obesity, its pathophysiology, and discusses issues that arise when providing quality care of these individuals including safe patient handling, right-sized equipment, and empathetic interpersonal care. We also discuss skin and wound care issues associated with Class 3 obesity.

KEY WORDS: Adverse childhood experiences, Bariatric, Class 3 obesity, Morbid obesity.

INTRODUCTION

Class 3 obesity, formerly known as morbid or severe obesity¹ (body mass index [BMI] ≥ 40 kg/m²), and obesity adversely affect American health care to a degree not seen in modern times. Not only are they increasing in prevalence, obesity and morbid obesity challenge health care systems because affected patients are associated with serious care issues across the spectrum of interventions. The aims of this article are to: (1) describe obesity and morbid (Class 3 or severe) obesity definitions and their associated epidemiology, (2) explain factors associated with the development of Class 3 obesity including adverse childhood experiences (ACEs), and (3) review critical nursing care issues in comprehensive care of these patients including safe patient handling, right-sized equipment, and selected care challenges including skin and wound care issues.

Defining Obesity and Morbid Obesity

Obesity is a multifactorial disease of metabolism that is lifelong, progressive, degenerative, and life-threatening.² It has been called the most prevalent, fatal, chronic, and relapsing disease of the 21st century. Until the onslaught of COVID-19, obesity was identified as the main pandemic affecting global health.³ The health care system is now challenged by an intersection of 2 major public health challenges: COVID-19 and obesity with severe negative consequences for those with Class 3 obesity.⁴ Described as a medical condition wherein excess body fat accumulates to the extent that it adversely affects health,^{5,6} obesity is a substantial public health crisis in the United States and internationally.⁷ For the first

time in recorded history, 65% of world's population lives in nations where overweight and obesity kill more people than underweight.⁶ The only exceptions are sub-Saharan Africa and Asia.^{5,6}

Obesity and severe obesity may be diagnosed using various measurements such as waist-hip ratio and body fat percentage; though BMI remains the most commonly measure in clinical practice.¹ Developed in the 19th century by a Belgian statistician, BMI (also called the Quetelet Index) is an estimator for body fat, where BMI = kilograms of weight/height in meters squared.⁸ Multiple sites available on the internet provide a BMI calculator requiring height and weight. Estimates suggest that 1 in 2 Americans will be obese by 2030 and 1 in 4 will have Class 3 obesity. The estimated prevalence of obesity will be higher than 50% in 29 states, and no less than 35% in any state.⁹ These statistics translate to an approximately 170 million obese or severely obese Americans in the near future.

To provide a comprehensive overview of bariatric care and skin/wound issues, we conducted an integrative literature review of the MEDLINE, CINAHL, and PsycINFO databases using key terms "morbid obesity" and "care challenges." The MEDLINE search years 2015 to 2022, identified 448 English-language articles. When "skin" was added, the article total was 9. For the same time frame, "obesity," "care challenges," and "skin" yielded 17 articles.

Within CINAHL, the terms "morbid obesity" and "care challenges" yielded 241 articles for 2015 to 2022. When "skin" was included, the total was 5. For "obesity" and "care challenges" for the same time frame, 453 articles were identified. With "skin" added the articles identified decreased to 12.

For PsycINFO, "morbid obesity" and "care challenges" for 2015 to 2022 yielded 25 articles. With "skin added" as a search term, no articles were identified. Other salient earlier articles were used for background information when needed. This review is based on 79 elements.

Formal Definitions of Obesity and Class 3 (Morbid) Obesity

The World Health Organization classifies obesity using the following categories: (1) overweight (preobese) BMI 25 to

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29.9 kg/m²; (2) Class 1 obesity BMI 30 to 34.9 kg/m²; (3) Class 2 BMI 35.0 to 39.9; and (4) Class 3 (morbid obesity) BMI more than 40 kg/m².⁶ The Centers for Disease Control and Prevention (CDC) uses slightly different terminology: BMI ranges for Class 1 obesity are 30 to less than 35 kg/m²; Class 2 obesity BMI ranges from 35 to less than 40 kg/m²; and Class 3 BMI (extreme or severely obese) comprises all persons with a BMI more than 40 kg/m².¹

The surgical literature uses different classifications for severe obesity.^{1,10} Specifically, while the broader category of severe obesity applies to all individuals with a BMI of more than 40 kg/m², patients with a BMI of 40 to 50 kg/m² are classified as morbidly obese, and those with a BMI of more than 50 kg/m² are classified as having super-obesity.¹⁰ To put weight issues in a more simplistic perspective, the categories represent the following approximate pounds over normal weight: overweight 35 lb, obese 80 lb, severely obese 142 lb, super-obese 205 lb, and super-super-obese greater than 235 lb.¹¹ This article uses the CDC definition of Class 3 obesity.

Adiposity, Obesity, and Bariatrics: Alternative Perspectives

Perspectives and attitudes toward obesity and its manifestations are evolving.¹² The American Medical Association voted in 2013 to consider obesity as a treatable disease even though up to 70% of adult patients with obesity go undiagnosed using this conceptual framework.¹³ Class 3 obesity seriously hampers health-related quality of life (QOL), particularly in the domain of physical functions such as walking and hygiene.^{14,15}

Conversely, some researchers and health care providers consider obesity as a physical sign rather than a disease.¹⁶⁻¹⁹ This perspective has been criticized as encouraging health care providers to label obesity as a biomedical phenomenon rather than a somatic inscription of life experience.¹⁶ The American Association of Clinical Endocrinologists and the American College of Endocrinology proposed a new name for obesity: adiposity-based chronic disease. These societies suggest that the new description is superior to a disease model because it enables health care providers to focus on the pathophysiologic influences of excess adiposity.¹⁷ Whatever the view, the increasing prevalence of obesity and Class 3 obesity is a current health care crisis and all health care providers must be knowledgeable of this conditions and its management.

Epidemiology and Financial Impact of Obesity and Morbid Obesity

More than two-thirds of adults living in the United States are classified as overweight or obese, more than one-third (42.4%) are classified as obese, and all 50 states have an obesity prevalence of 20% or more.^{11,18-20} The prevalence of obesity is higher in women. Obesity-related conditions include heart disease, stroke, type 2 diabetes mellitus, and multiple types of cancer. Overweight and obesity are associated with 1 in 5 deaths in US adults.^{7,11} Estimated medical costs of obesity in the United States in 2012 were over \$190 billion.²¹ Medical costs for obese people were \$1429 higher than medical costs for healthy weight persons in 2008.¹¹ More recently, the increased differential costs are even more profound. Findings from a study published in 2021 indicated that average care costs were 100% higher for obese patients with obesity than for nonobese patients and 233.6% higher for Class 3 obese patients.²² Collective health care costs related to obesity account for 21% of total national health care spending in the United States.²³

Ethnicity/race also influences obesity rates; 49.6% of non-Hispanic Blacks are obese, 44.8% of Hispanics are obese, 42.6% of non-Hispanic Whites are obese, and 17.4% of non-Hispanic Asians are obese. Socioeconomic also influences the likelihood of being obese; adults with lower income and less educated women have higher rates of obesity compared with adults with higher incomes and women with higher educational levels.^{11,18}

Etiology of Obesity and Class 3 Obesity

The etiology of obesity is complex; its cause may be simplistically described as an imbalance between energy intake and output,²⁴ but we assert that additional factors significantly impact the likelihood of developing obesity. For example, some researchers have described an obesogenic environment that acts as a barrier to weight loss; elements of this environment include limited access to areas for exercise that also may be unsafe and crowded.^{25,26} Additional factors include constitutional factors such as race, sex and age, along with cultural factors; socioeconomic status; dietary habits; and metabolic issues such as pregnancy/menopause.²⁷

Obesity and Class 3 obesity are considered a metabolic disease when excessive adiposity rises to levels that the endocrine system begins to function in a manner that promotes additional weight gain and hinders weight loss.²⁸ Findings from an observational cohort study of 1.3 million adults found that being overweight or obese was linked to cardiovascular disease precursors, elevated blood pressure, elevated triglycerides, low high-density lipoprotein cholesterol, and prediabetes.²⁰

Notably, hunger is not the critical problem leading to obesity.¹⁶ The desire to eat is variable for persons who are obese; while this desire is uncontrollable in some persons with Class 3 obesity, it is minor in others. This lack of correlation between obesity and the desire to eat attests to the substantial psychoactive benefits of food other than fulfilling a desire to eat.¹⁶

Pathophysiology of Class 3 Obesity

The principal pathophysiologic factors leading to obesity and Class 3 obesity are excessive caloric intake, physical inactivity, and genetic susceptibility. However, development and maintenance of obesity involves central neurophysiologic pathophysiologic mechanisms. These processes include changes in the brain, neuroendocrine hormones, and hormones affecting the gut. Brain regulatory processes in reward, motivation, and learning/memory are altered supporting excessive eating habits. Neuroendocrine substances affect the brainstem, altering dopamine pathways and gut hormones like leptin and insulin. Appetite is generated promoting increased desire for food.²⁸

Psychopathology of Class 3 Obesity: Adverse Childhood Experiences

An emerging body of research indicates that early stressors cause long-term physiological changes in brain circuits and body systems.²⁹⁻³² These stressors affect genetic status via epigenetic effects on the telomere (a structure at the end of the chromosome) resulting in earlier aging and chronic illness development later in the child's life.³² An analogy is the human blueprint (genetics) versus the capacity to carry out the blueprint (epigenetics). Adverse childhood experiences include emotional, physical or sexual abuse, physical and emotional neglect, household substance abuse, mental illness, incarcerated family members, parental separation/divorce, and the mother being treated violently.³³ A 10-question ACE

questionnaire is available at: <https://www.ncjfcj.org/sites/default/files/Finding%20Your%20ACE%20Score.pdf>.

Research suggests that an ACE questionnaire score >4 increases the risk of multiple adverse health consequences in adults including obesity and Class 3 obesity. From an ACE perspective, obesity may provide emotional protection. In addition, significant weight loss may be perceived as sexually or physically threatening.^{16,33}

Research in the area of ACEs further suggests that childhood adversity and its negative adult health effects can be reversed. Positive interventions (including simple listening) can assist with healing and promote positive physiological changes. The trauma-informed care movement has been grounded in ACE science and interventions and can augment resilience.^{34,35} Therefore, when obtaining a health history, we recommend that nurses and other clinicians should not be reluctant to ask these tough questions in their history taking. Rather, our experience suggests patients are likely to answer honestly; indeed, we have observed that it is not unusual for patients to comment, "You are the only person who has ever asked me this."

Richardson and colleagues³⁶ conducted a longitudinal analysis of participants from a Longitudinal Study of Adolescent Health 1996-2009 based in the United States (N = 10,774). They found a significantly higher risk of Class 3 obesity in nonminority females and males who experienced sexual and physical abuse in childhood.

The pathophysiologic mechanisms linking ACEs such as abuse during childhood are not entirely understood.³⁷ The effect on DNA methylation at a genetic level and modification of the human genome (genetic blueprint) is an epigenetic effect (changes in an organism caused by modification of gene *expression* rather than changes in the genetic code itself). Methylation of DNA is the biochemical process that turns genes off or on (eg, like a light switch dimmer). A study of 96 maltreated children found evidence of DNA methylation that increased the risk for several cancers.³²

Comorbid Conditions Linked to Class 3 Obesity

More than 40 comorbidities have been linked to Class 3 obesity.^{7,38-41} They include metabolic syndrome, type 2 diabetes mellitus, hypertension, dyslipidemia, coronary heart disease, osteoarthritis, stroke, gastroesophageal reflux disease, depression, nonalcoholic fatty liver disease, infertility in females, erectile dysfunction, gallbladder disease, obstructive sleep apnea, and asthma. Of particular interest to WOC nurses, obesity is associated with pelvic floor dysfunction resulting in constipation, and fecal and urinary incontinence.¹⁵ Factors modulating the effects of obesity on these comorbid conditions are severity of obesity, age of onset, amount of central obesity, sex, and level of cardiorespiratory fitness.⁷

Obesity is also associated with impaired health-related QOL. Research suggests that BMI is an independent risk factor for QOL.¹⁴ Bottone and colleagues¹⁴ conducted a survey design of 60,000 older adults living in 10 states; multivariate analysis found that morbid obesity was the strongest correlate with lower QOL scores.

COMPREHENSIVE CARE FOR THE PATIENT WITH CLASS 3 OBESITY

Caring for patients with Class 3 obesity requires attention to multiple components such as physical assessment, identification of risk factors including ACEs, safe patient handling, use

of correct equipment, skin protection, and attention to interpersonal relationships. A recent scoping review noted a paucity of high-quality evidence informing care of these individuals.³⁹ Existing research tends to focus on selection and use of appropriate equipment along with caregiver education regarding aspects of patient care. We located a second scoping review that found that safe and effective care of patients with Class 3 obesity substantially increases nursing and challenging nurses' safety if training or staffing needs are not met.⁴²

Assessment

The assessment of patients with Class 3 obesity requires attention to more than measures of body mass or adiposity; it also requires scrutiny of genetic, sociocultural, socioeconomic, and environmental factors contributing to obesity.^{3,43,44} Clinicians can assess genetic background via a genogram or pedigree. In addition, they should perform a thorough patient history that includes queries about past or current physical, emotional, and/or sexual abuse. Patients are not likely to volunteer information about abuse unless they are directly asked. The history also includes questions about selected medications that tend to increase body weight such as anticonvulsants, antidepressants, antidiabetics, antihypertensives, mood stabilizers, and oral corticosteroids.^{38,43,45} We also recommend employing reflective approaches when obtaining a health history.¹⁶ Reflective techniques include asking patients *their* perspectives on obesity using the following questions: Why (not how) do you think people get fat? How old were you when you first began putting on weight? Why do you think it was then and not a few years later or earlier? Sometimes people who lose a lot of weight regain it all back, if not more. Why do you think that happens? What are the *advantages* of being overweight?

Comprehensive patient assessment also involves physical assessment: Vital signs, weight, height, BMI, waist circumference, and joint function with a special focus on weight bearing joints are needed. Behavioral assessment typically includes dietary intake, inquiry about foods and drinks chosen, when they were eaten, and emotions at the time. Psychological assessment involves assessing personal life satisfaction, social support, and psychosocial distress.⁴¹

Patient care challenges for Class 3 obese persons are so substantial that an A-B-C-D mnemonic has been developed to assist with organization of care: Airways, Breathing, Backs, Bias, Circulation, Decubitus ulcers (pressure injuries), Drugs, Diagnostics, Diet, and Durable Medical Equipment.⁴⁶ Given this complexity, we assert that hospital admission processes should target care of the Class 3 obese person from the beginning via admission bundles. An admission bundle incorporates alerts to administration, critical departments (pharmacy, physical therapy, occupational therapy, and radiology) and alerts in the electronic medical record for any special considerations such as specialized equipment and adequately trained staff to meet the patient's needs.

The consequences of substandard care for Class 3 obese patients are serious. Frequent challenges seen in patients with Class 3 obesity are impaired mobility and joint function, lack of appropriate equipment, environmental constraints, inadequate staffing levels, and underlying patient health status.⁴⁷ Additional research and innovation in care is needed to address these care needs.

Gardner⁴⁸ identified the following education and training needs for staff caring for patients with class 3 obesity: (1) sensitivity training and teamwork, (2) bariatric equipment access,

and (3) acknowledging the need for assist devices if lifting more than 35 lb (a National Institute of Occupational Safety and Health recommendation). As an example of the challenges of caring for this patient population, one leg of a 350-lb patient weighs around 65 lb and a large pannus may weigh as much as 75 lb. Our clinical experience suggests that the patient's knowledge of challenges and solutions related to turning and positioning, transfers and mobilization, and personal hygiene is substantial. Therefore, we strongly recommend asking the patient about the best way to provide for these needs. This approach empowers patients, lets them know that caregivers want what is best for them, and enhances their likelihood to adhere to their overall care plan.

Turning/Repositioning: "Silent Factors"

Hanna and colleagues⁴⁹ examined factors affecting nurses' ability to turn patients every 2 hours to prevent pressure injuries in a cross-sectional study of 429 participants. They examined "silent factors" linked to successful turning: (1) time on task (time to gather workers), (2) physical burden (patient body weight/mass), and (3) technology such as ventilators, and complexity of care such as the need for isolation. They found that body weight/mass, along with the patient's mental status and care complexity, were critical factors. For patients above 300 lb, nurses needed at least one extra caregiver to reposition the patient. Thus, units cannot generate staff levels based on patient numbers alone; patients' weights have to be considered. The clinical relevance of these factors was reflected in another study that found that nurses were 2.6 times more likely to attend to patients' needs when coworkers were available.⁴⁹

In addition to adequate staffing, repositioning helpers should be available that allows larger patients to turn easier and with less help.⁴⁷⁻⁵⁰ Care providers should also consider shear, friction, and microclimate issues. Synthetic silk-like fabrics rather than cotton or cotton-blend fabrics can reduce shear and friction and are associated with a lower incidence of pressure injuries compared with 100% cotton sheets.⁵⁰

Bariatric Equipment

The availability of appropriate bariatric equipment is essential when caring for patients with Class 3 obesity. A cross-sectional study of 97 hospital discharge planners in Pennsylvania and Arkansas indicated difficulties locating nursing homes that can admit Class 3 obese hospitalized patients. Nursing homes with equipment concerns were 7 times more likely to report patient size as a barrier to admission.⁵¹ Findings from a study of 360 nursing home administrators also indicated sparsity of bariatric equipment and barriers to admitting morbidly obese patients.⁵² Similarly, a cross-sectional survey of 132 clinical nurse managers published in 2021 showed that most important barriers to quality care for obese patients were lack of equipment (75%), staff (65%), and training (58%).⁵³ We assert that safe, size-appropriate equipment must be available for use in all health care facilities, including beds, stretchers, chairs, commodes, operating room tables, and floor-mounted toilets.

Bed Size and BMI

Wiggerman and colleagues⁵⁴ analyzed how much space individuals require to turn from supine to side-lying based on BMI. The sample comprised 47 participants with BMIs ranging from 20 to 76 kg/m²; purposive sampling was used to ensure 5 males and 5 females were selected for each BMI

TABLE 1.
Obesity by Racial Populations

Percentage	Race
17.4%	Non-Hispanic Asians
42.6%	Non-Hispanic Whites
44.8%	Hispanics
49.6%	Non-Hispanic Blacks

category. Findings indicate that BMI is a reliable predictor of space required to turn from supine to side-lying (Table 1). The implications of these findings indicated that a standard 91-cm (36-in)-wide hospital bed provides insufficient space for a patient with a BMI of more than 35 to be turned in either direction without lateral repositioning, and patients with a BMI of more than 45 would have insufficient space to be turned at all. We therefore recommend that all patients with a BMI of more than 45 must be placed on a wider bed regardless of mobility.

Evidence concerning the placement of multiple medical devices is lacking. Nevertheless, we have observed that invasive devices such as urinary catheters and electrocardiogram leads may precipitate skin damage even in unusual places given skin folds and shifting body weight.

Interpersonal Care and Humane Clinician Approaches

Puhl and Brownell⁵⁵ reported findings of a meta-analysis that examined discrimination and bias in health care settings based on weight. They found evidence that some health care professionals held negative attitudes toward obese patients. They also found that patients living with obesity often felt disrespected, dismissed, and experienced distress regarding comments made about their weight by health care providers.⁴⁰ Nicolau and colleagues⁵⁶ evaluated the nursing care of obese and severely obese individuals using a qualitative (focus group) methodology. They identified 2 themes during data analysis, teamwork: in search of qualified care and seeking interdisciplinarity. They observed that nurses act as the "articulator" (the persons who define clinical care, establish, and maintain optimal client relationships).

Compassionate care for obese persons has gained recognition as an imperative for health care. A major medical center developed the RESPECT model as an approach to improved care.^{43,57} The letters correspond to critical components where R indicates rapport grounded in courtesy, considerate communication, and behavior. The letter E indicates environments that are effectively safe and comfortable for bariatric patients, the letter S stands for safety of patients and staff, the letter P indicates patient privacy and dignity. The letter E indicates encouragement of patients to set realistic goals and the letter C indicates caring and compassion without victim blaming. Finally, the letter T indicates use of tact in interacting with patients, families, and others involved professionals. Research also demonstrates the interdisciplinary nature of the need for RESPECT when caring for persons with Class 3 obesity. Toft and colleagues⁵⁸ performed a qualitative (phenomenological) study on obese persons engaging in physical therapy. Patient respondents indicated a feeling of aversion being around others watching them exercise, and inferred an attitude that failure is shameful during therapy sessions.

Benefield¹² stated that preconceived beliefs and inadequate skills in the care needs of obese persons challenge effective



Figure 1. Intertriginous dermatitis.

management of obesity in primary and acute care settings. We assert that care providers should analyze their own value systems for inherent biases, change attitudes, and seek to improve care processes that ensure care for Class 3 obesity patients is respectful, evidence-based, and preserves privacy and dignity. In addition, we assert that all team members, and especially the patient, must be involved in decision-making when caring for persons who are obese.⁵⁹

SKIN AND WOUND CARE IN PATIENTS WITH CLASS 3 OBESITY

Class 3 obese patients are also at risk for multiple skin and wound care issues. These include irritant dermatitis (Figure 1), skin and surgical site infections, cellulitis, necrotizing fasciitis (including Fournier's gangrene), intertriginous dermatitis (intertrigo, Figure 2), erythrasma (not a fungal but bacterial infection), acanthosis nigricans (Figure 3), venous insufficiency/lymphedema (Figure 4), and lipedema. Abdominal elephantiasis



Figure 2. Intertrigo.



Figure 3. Acanthosis nigricans. Creative Commons: By Madhero88, <http://www.dermnet.com/Acanthosis-Nigricans/picture/22985>, CC BY-SA 3.0, <https://commons.wikimedia.org/w/index.php?curid=9710451> (used with permission).

is challenging dermatosis in patients with Class 3 obesity⁶⁰ (Figures 5-7). Buried penis may occur depending on how adipose is distributed (Figure 8). For a more detailed discussion of these conditions, see Beitz.⁶¹ This article targets necrotizing fasciitis (Fournier's gangrene), acanthosis nigricans, abdominal elephantiasis, buried penis syndrome, pressure injury prevention, and preventive skin care, especially perineal skin care when multiple skin folds and a large pannus hinder access (Figures 9 and 10).

Limited evidence suggests that infrared skin thermometry can help establish underlying skin diagnoses.⁶² A handheld laser thermometer has a 1-spot temperature data point. Some models have up to 307,000 temperature points allowing the skin to be visible on the photo to be measured all at the same time with a color reading indicating normal, abnormal warmth, and abnormal coolness.⁶³

Necrotizing Fasciitis

Necrotizing fasciitis is a potentially devastating skin infection; this article focuses on necrotizing fasciitis of the perineal region (Fournier's gangrene). First named in 1883 by Jean Alfred Fournier, the condition was described 119 years earlier in 1764 by Baurienne.⁶⁴ The risk of developing Fournier's gangrene has been linked to obesity and particularly Class 3 obesity due to excess body moisture found in deep skin folds and under a large overlying abdominal pannus, particularly when accompanied by diabetes mellitus.^{65,66} Fournier's gangrene is a medical emergency managed by wide surgical resection and



Figure 4. Lymphedema.

debridement; the degree of surgical resection is determined by the spread of the infection. Prevention is the primary focus of WOC nursing care of the patient with Class 3 obesity, based on a structured skin regimen that involves exposing and cleansing deep skin folds, along with maneuvers to allow the skin to dry. Given the association of childhood sexual abuse with severe obesity, perineal care interventions must be enacted in a sensitive manner to avoid triggers and to enable the patient control treatments to the degree possible.⁶⁷

Acanthosis Nigricans

Acanthosis nigricans is a skin condition characterized by areas of dark, velvety discoloration in body folds and creases. The lesions may itch and have an odor (Figure 3). This dermatosis most commonly occurs in the armpits, groin, and neck. Obesity and



Figure 5. Abdominal elephantiasis with grade 5 pannus. In grade 5 pannus the bottom half to two-thirds is more pink/red, irritated, and firmer in texture due to the constant shear and friction the pannus will encounter with the patient walking. This can be easily managed by continued moisturizing of the bottom half to two-thirds of the pannus.



Figure 6. Abdominal elephantiasis. The pannus is exposed to substantial shear and friction, especially if the patient is ambulatory. For the most severely obese patients, a pannus this size might weigh 75 lb making it difficult to get completely around the circumference. The skin is often dry and crusty allowing for multiple mini cracks or fissures developing. With the high flora of the bariatric skin, seeping can occur. If the skin is moisturized, the situation can be corrected.

diabetes often coexist (a combination sometimes referred to as “diabesity”), and acanthosis nigricans is a subtle sign of glucose intolerance. Acanthosis nigricans is often accompanied by acrochordons (skin tags) typically found in high friction areas.⁶⁸

Abdominal Elephantiasis

Class 3 morbid obesity is usually associated with some degree of abdominal pannus development. Based on weight gained, the pannus will cover parts of the patient’s body creating skin folds that impairs evaporation of water from the skin surface.



Figure 7. Abdominal elephantiasis (close perspective). In the enlarged picture dry and crusty skin is evident. With simple movement pulling skin areas, multiple mini cracks or fissures result in seepage and crusting. The skin can be gently cleansed with a pH-balanced, no-rinse cleanser and moisturized so the skin can be corrected.



Figure 8. Buried penis syndrome.

A grading scale is used to rank the appearance of an abdominal pannus⁶⁹ (Table 2). Colonization of the skin with coliform microorganisms can lead to chronic skin infections and development of abdominal elephantiasis.⁷⁰ Localized lymphedema with superimposed bacterial infections (usually staphylococcal or streptococcal infections of the abdominal wall) promotes recurrence and chronicity. Abdominal elephantiasis (Figures 5-7) presents as abdominal wall swelling, thickening, erythema, and pain. Purulent drainage may occur. The thickened skin and nonpitting edema due to accumulation of lymph fluid, fibroblasts, adipocytes, and macrophages are characteristic of the condition. Abdominal elephantiasis therapy is almost always complex and long term.^{60,70}

Acquired Buried Penis Syndrome

Adult acquired buried penis syndrome is a medical condition in which the penis is either partially or fully buried beneath the skin or subcutaneous fat of the scrotum or abdomen. In adults, it is most commonly caused by morbid (Class 3) obesity.⁷¹ The penis appears to have retreated into the scrotum, and may appear as a turtle's head retracting into its shell. In addition to its characteristic appearance, a buried penis may create lower urinary tract symptoms such as weak urinary stream and postvoid dribbling. A buried penis also creates psychological



Figure 9. Multiple skin folds.



Figure 10. Pannus covering the perineum. Photos: Property of Karen Lou Kennedy-Evans and used with permission of patients (except for photo of acanthosis nigricans, which is used with permission within Creative Commons—see attribution).

challenges, along with sexual dysfunction.^{72,73} Placement of an indwelling urinary catheter is challenging, particularly in the uncircumcised male. Catheterization usually requires 1 to 2 staff to caregivers to gently but firmly press down on the skin and adipose surrounding the penile shaft, which causes the penis to become more visible. Another staff member will meticulously cleanse the skin of the penile shaft, adjacent skin and glans penis, followed by catheterization. Good lighting or a head lamp is helpful for urinary catheterization because it frees both arms for skin preparation and catheterization.

Pressure Injuries and Class 3 Obesity

Pressure injuries are a serious risk for Class 3 obesity persons; this risk may rise as BMI increases. The risk is especially prominent over bony prominences such as the sacrum and heels.⁶¹ Critically ill patients with Class 3 obesity are especially at risk.⁷⁴ The WOC nurse should assess obese patients for pressure points in atypical locations (not located over a bony prominence) such as skin folds in the back, lower extremities, and hips, particularly when they are seated in chairs that are too narrow for their waist and hip circumferences.⁷⁵

Evidence related to pressure injury prevention in patients with Class 3 obesity is limited. Cowdell and Ridley⁴⁷ conducted a literature review of skin hygiene care for bariatric patients. They identified 3 broad recommendations for pressure injury prevention: (1) the need for “aggressive” preventive skin care; (2) the need to involve the patient and seek their insights and experience with routine skin care; and (3) the need to place care in advance while avoiding rushing through or avoiding care due to the challenges of the patient's body habitus.

Evidence pertaining to maintaining hygiene and odor management for persons with Class 3 obesity is sparse or absent. We have found that appropriate equipment is important including “no step” showers, long-handled brushes, handheld shower heads, and shower seating. Toileting is also a special need; the toilet should be anchored to the floor (not the wall). Ideally, a toilet riser device with handrails should be made available. We also find that disposable cleansing wipes are helpful as they cleanse better and are less irritating than toilet tissue. Patients with Class 3 obesity are often younger, and menstruation presents a hygienic challenge for women.

TABLE 2.
Recommended Bed Widths Based on Patient Mobility and BMI (m/kg²)^a

Bed Width	Patient Can Self-Position (BMI)	Patient Is Dependent (BMI)
91 cm (36 in)	Up to 45	Up to 35
102 cm (40 in)	Up to 55	Up to 40
127 cm (50 in)	>55	>40

^aFrom Wiggerman et al.⁵⁴

In addition, management of odor in skin folds can be enhanced with use of silver-based wicking materials (eg, Inter-Dry Ag, Coloplast, Minneapolis, Minnesota) applied to skin folds (Figure 9). Class 3 obesity may also result in full coverage of the penis requiring extra care when cleansing the penis and scrotum⁷¹ (Figure 8).

To optimize prevention, patient education should focus on critical nursing care points including skin folds, pannus management, and perigenital care. Skin fold management is critical for prevention as there is a risk for moisture-associated skin damage.^{76,77} Skin folds (including the pannus) (Table 3) should be regularly cleansed, dried, and protected from pressing against adjacent skin. These goals can be achieved with no-rinse products such as premoistened cloths and wicking materials to remove excess moisture as described earlier in this article. We recommend against using cornstarch as a drying agent. We have also observed the need to visualize deep skin folds to ensure prompt removal of inadvertently retained articles such as pieces of food, washcloths, or related articles that serve as a source of irritation, infection, or pressure point. We assert that skin fold care should include measurement of the depth of skin folds, and ranking depth to alert other care providers to the need for attention to these highly vulnerable areas of the skin (Table 4). We have observed that skin-to-skin contact can be prevented with use of “propping” devices. Honest, respectful communication about toileting, bathing, and hygiene issues is critical for optimal prevention.^{23,78}

Hales and colleagues⁷⁹ conducted an ethnography (qualitative research method that examines the small or larger cultures of human activity) in an 18-bed intensive care unit in New Zealand using a social constructivist framework. They found that patients and providers created social realities via shared experiences and identified 2 themes: physical challenges and language challenges. The physical challenges theme focused on the effects of body habitus; for example, respondents consistently stated that chairs and commodes were too small, along with impaired function of motorized components of the hospital bed. Additional physical limitations included inability to fit in the computerized tomography scanner device. The language theme focused on absence of mutually acceptable terms for

TABLE 3.
Grading Scale for Abdominal Pannus^a

Grade Description
1. Covers pubic hairline but not entire mons
2. Extends to cover entire mons pubic
3. Extends to cover upper thigh
4. Extends to mid-thigh
5. Extends to knee and beyond

^aFrom National Heart, Lung, and Blood Institute.⁶⁹

TABLE 4.
Kennedy Method for Measuring Skin Folds

Rationale: Why measure skin folds?
<ol style="list-style-type: none"> 1. It provides additional information about body habitus. 2. It aids caregivers in providing more information about areas at risk for skin breakdown. 3. It aids caregivers in anticipation of what skin folds might be at risk for objects to be lost.
Approach:
<i>Skin-on-skin contact</i>
<ol style="list-style-type: none"> 1. Lift up skin fold. 2. Place a disposable measuring device (eg, paper tape measure) at the depth of the skin fold. 3. Release the skin fold. 4. Determine the last number you can no longer see. 5. Document that number. Example: 8 cm
<i>Skinfold plus overhang:</i>
<ol style="list-style-type: none"> 6. Use a headlight or visually look straight down onto the skin fold from a 90° angle and determine the last measurement you no longer can see on the disposable measuring device. 7. Document that number after the skin-on-skin number. Example: 8/10.3 cm.
<i>What does this information tell you?</i>
<ol style="list-style-type: none"> 1. The skin fold is 10.3-cm long and the skin-on-skin part of the skin fold is 8. This would then be a 10.3-cm long skin fold with 8 cm or 77.7% skin fold with skin-on-skin contact.
Note: Alternative method for measuring: If a disposable measuring device is not available, use your longest finger (which you have premeasured in cm) to assess depth of the skin fold.
<i>Kennedy grade for skin folds</i>
Grade 1: 0-5 cm
Grade 2: 5.1-10 cm
Grade 3: 10.1-15 cm
Grade 4: 15.1-20 cm
Grade 5: 20.1-25 cm
Grade 6: 25.1-30 cm
Grade 7: 30.1-35 cm
Grade 8: 35.1-40 cm
Grade 9: 40.1-45 cm
Grade 10: 45.1-50 cm or greater
<i>Why a grading system?</i>
<ol style="list-style-type: none"> 1. The grading system provides a common language. 2. Consistency in reporting data is promoted. 3. Help is provided in understanding what small, medium, and large objectively mean. 4. Knowing how many skin folds a patient has and what are the different grades enables nursing leaders to be better able to assign caregivers and determine required time for care. (Example: An individual with 7 skin folds ranging from grades 3 to 7 would take more nursing time than an individual with 7 skin folds ranging from grades 1 to 5.) 5. The grading system allows administration to understand what type of gloves the caregivers would need to adequately take care of the individual as well as offer protection for the caregiver. Example: For skin folds grade 2 or less, safe care for the patient and protection for the caregiver is possible with regular length gloves. Individuals with skin folds of grade 3 or higher require extra-long gloves to adequately protect not only the caregiver from patients' organisms but also the individual from caregivers' organisms.

describing the body habitus and care needs of obese patients; for example, both patients and providers described using the term “obese versus fat.” However, patient respondents found use of the term “morbidly obese” pejorative. One described the term as “like hammering a nail in the coffin.” The evolution of descriptive and nonpejorative terms we selected to use in this article is also influenced by the desire to use descriptive but nonpejorative terms to describe categories of obesity.

SUMMARY

Obesity has been called the most prevalent, fatal, chronic, and relapsing disease of the current century.^{2,78} This article focuses on patients living with Class 3 obesity and describes its epidemiology and pathophysiology, contributing factors including newer psychological and epigenetic influences. Comprehensive care focuses on multiple issues including skin and wound challenges and those related to safe humane care were delineated. Health care clinicians should reflect upon and develop insights into improved care for Class 3 obesity patients.

REFERENCES

- Centers for Disease Control and Prevention. Defining adult overweight and obesity. <https://www.cdc.gov>. Accessed March 30, 2023.
- Hedley AA, Ogren CL, Johnson CL, Carroll MD, Curtin LR, Flegal KM. Prevalence of overweight and obesity among US children, adolescents, and adults, 1999-2002. *JAMA*. 2004;291(23):2847-2850.
- Morais AHA, Passos TS, de Lima Vale SH, da Silva Maia JK, Maciel BLL. Obesity and the increased risk for COVID 19: mechanisms and nutritional management. *Nutr Res Rev*. 2021;34(2):209-221. doi:10.1017/S095442242000027x.
- Suresh S, Siddiqui M, Ghanimeh MA, et al. Association of obesity with illness severity in hospitalized patients with COVID-19: a retrospective cohort study. *Obes Res Clin Pract*. 2021;15(2):172-175. doi:10.1016/j.orcp.2021.02.006.
- World Health Organization. Obesity. <https://www.who.int/topics/obesity/en>. Accessed March 30, 2023.
- World Health Organization. Obesity and overweight. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>. Accessed March 30, 2023.
- Hamdy O. Obesity: practice essentials, background, pathophysiology. <https://emedicine.medscape.com/article/123702-overview#showall>. Published March 2, 2018. Accessed March 5, 2018.
- Quetelet LAJ. *Antropometrie ou Mesure des Differences Facultes de l'homme*. Brussels, Belgium: Musquardt; 1871.
- Ward ZJ, Bleich SN, Cradock AL, et al. Projected U.S. state-level prevalence of adult obesity and severe obesity. *N Engl J Med*. 2019;381(25):2440-2450. doi:10.1056/NEJMJA1909301.
- Leykin Y, Pellis T, Del Mestro E, Marzano B, Franti G, Brodsky JB. Anesthetic management of morbidly obese and super morbidly obese patients. Undergoing bariatric operations: hospital course and outcomes. *Obes Surg*. 2006;16(12):1563-1569. doi:10.1381/096089206779319491.
- Centers for Disease Control and Prevention. Adult obesity facts. <https://www.cdc.gov/obesity/data/adult.html>. Accessed March 30, 2023.
- Benefield A. Adiposity: a formidable challenge in acute and critical care. *AACN Adv Crit Care*. 2017;28(3):251-253.
- Ma J, Xiao L, Safford RS. Under-diagnosis of obesity in adults in U.S. outpatient settings. *Arch Intern Med*. 2009;169(3):313-314.
- Bottone FG, Hawkins K, Musich S, et al. The relationship between body mass index and quality of life in community-living adults living in the United States. *J Nutr Aging*. 2013;17(6):495-501.
- Brusciano L, Schiattarella A, De Franciscis P, et al. Prevalence of pelvic floor dysfunction and impact on their quality of life in epidemiological evaluation of bariatric patients. *Bariatric Surg Pract Patient Care*. 2021;16(1):15-20.
- Felitti V, Jakstis K, Pepper V, Ray A. Obesity: problem, solution, or both? *Pern J*. 2010;14(1):24-30.
- McCall B. Adiposity-based chronic disease: a new name for obesity? *Medscape Medical News*. December 29, 2016.
- Centers for Disease Control and Prevention. Adult obesity prevalence maps. <https://www.cdc.gov/obesity/data/prevalence-maps.html>. Accessed March 30, 2023.
- Smigelski-Theiss R, Gampong M, Kurasaki J. Weight bias and psychosocial implications for acute care of patients with obesity. *AACN Adv Crit Care*. 2017;28(3):254-262.
- Nichols GA, Horberg M, Koebnick C, et al. Cardiometabolic risk factors among 1.3 million adults with overweight or obesity but not diabetes in 10 geographically diverse regions of the United States, 2012-2013. *Prev Chronic Dis*. 2017;14:E22.
- Cawley J, Meyerhoefer C. The medical care costs of obesity: an instrumental variables approach. *J Health Econ*. 2012;31(1):219-230.
- Cawley J, Biener A, Meyerhoefer C, et al. Direct medical costs of obesity in the United States and the most populous states. *J Manag Care Spec Pharm*. 2021;27(3):354-366.
- Davis KM, Sekula LK. Stigmatization of overweight and obese women during forensic examinations. *J Forensic Nurs*. 2018;14(3):162-166.
- World Health Organization. *Technical Report Series 894: Obesity: Preventing and Managing the Global Epidemic*. Geneva, Switzerland: World Health Organization; 2000. [http://whqlibdoc.who.int/trs/who_trs_894_\(part1\).pdf](http://whqlibdoc.who.int/trs/who_trs_894_(part1).pdf). Accessed March 30, 2023.
- Hu M, Lawrence K, Bodkin M, Kwok R, Engel LS, Sandler DP. Neighborhood deprivation, obesity, and diabetes in residents of the US Gulf Coast. *Am J Epidemiol*. 2021;190(2):295-304.
- Powell P, Spears K, Rebori M. *What Is Obesogenic Environment? Fact Sheet-10-11*. Reno, NV: University of Nevada Cooperative Extension; 2010. <https://www.unce.unr.edu/publications/files/hn/2010/fs1011.pdf>. Accessed August 14, 2018.
- Caleyachetty R, Stafford M, Cooper R, et al. Exposure to multiple childhood social risk factors and adult body mass index trajectories from ages 20 to 64 years. *Eur J Public Health*. 2021;31(2):385-390.
- Zhang Y, Liu J, Yao J, et al. Obesity: pathophysiology and intervention. *Nutrients*. 2014;6(11):5153-5183.
- Bick J, Nelson CA. Early adverse experiences and the developing brain. *Neuropsychopharmacology*. 2016;41(1):177-196.
- Bryan R, Beitz J. Connections among biologic embedding of childhood adversity, adult chronic illness, and wound care: a review of the literature. *Wound Manag Prev*. 2019;65(10):18-28.
- Bryan R, Beitz JM. Critical connections among embedding of childhood adversity and adult chronic gastrointestinal and genitourinary disorders: a review of the literature. *Wound Manag Prev*. 2021;67(11):33-47.
- Yang B, Zhang H, Ge W, et al. Child abuse and epigenetic mechanisms of disease risk. *Am J Prev Med*. 2013;44(2):101-107.
- Anda RF, Elitti V, Bremner JD, et al. The enduring effects of abuse and related adverse experiences in childhood. A convergence of evidence from neurobiology and epidemiology. *Eur Arch Psychiatry Clin Neurosci*. 2006;256(3):174-186.
- Crandall A, Broadbent E, Stanfill M, et al. The influence of adverse and advantageous childhood experiences during adolescence on young adult health. *Child Abuse Negl*. 2020;108:104644. doi:10.1016/j.chiabu.2020.104644.
- Leitch L. Action steps using ACEs and trauma-informed care: a resilience model. *Health Justice*. 2017;5(1):5. doi:10.1186/s40352-017-0050-5.
- Richardson A, Dietz W, Gordon-Larsen P. The association between childhood sexual and physical abuse with incident adult severe obesity across 13 years of the National Longitudinal Study of Adolescent Health. *Pediatr Obes*. 2014;9(5):351-361.
- Mustillo SA, Li M, Morton P, Ferraro KF. Early origins of body mass in later life: examining childhood risks and adult pathways. *J Health Soc Behav*. 2021;62(2):152-169. doi:10.1177/00221465211005419.
- Davis C. Caring for adult patients with obesity in primary care. *American Nurse Today*. 2021;16(10):15-18.
- Ewens B, Kemp V, Towell-Barnard A, Whitehead L. The nursing care of people with Class III obesity in an acute care setting: a scoping review. *BMC Nurs*. 2022;21(1):33. doi:10.1186/s12912-021-00760-7.
- Holsworth C, Gallagher S. Managing care of critically ill bariatric patients. *AACN Adv Crit Care*. 2017;28(3):275-283.
- Petcu A. Comprehensive care for bariatric surgery patients. *AACN Adv Crit Care*. 2017;28(3):263-274.
- Huang SL, Cheng H, Duffield C, Denney-Wilson E. The relationship between patient obesity and nursing workload: an integrative review. *J Clin Nurs*. 2021;30(13/14):1810-1825. doi:10.1111/jocn.15679.
- Budd G, Peterson JA. The obesity epidemic, part 2: nursing assessment and intervention. *Am J Nurs*. 2015;115(1):38-46.
- Midgely J. Osteoarthritis and obesity: conservative management, multi-morbidity, surgery, and the implications of restricted access to knee or hip replacement: a literature review. *Int J Orthop Trauma Nurs*. 2021;40:100840. doi:10.1016/j.ijotn.2020.100840.
- Beitz J. Pharmacological impact of medications on wound healing and wound generation: how drugs can "break bad". *Ostomy Wound Manag*. 2017;63(3):18-35.
- Berrios LA. The ABCDs of managing morbidly obese patients in intensive care units. *Crit Care Nurs*. 2016;36(5):17-26.

47. Cowdell F, Radley K. What do we know about skin-hygiene care for patients with bariatric needs? Implications for nursing practice. *J Adv Nurs*. 2014;70(3):543-552.
48. Gardner LA. Caring for class III obese patients: addressing facility and equipment deficiencies will improve care. *Am J Nurs*. 2013;113(11):66-70.
49. Hanna DR, Paraszczuk AM, Duffy M, DiFiore LA. Learning about turning: report of a mailed survey of nurses' work to reposition patients. *Medsurg Nurs*. 2016;25(4):219-223.
50. National Pressure Ulcer Advisory Panel, European Pressure Ulcer Advisory Panel, and Pan Pacific Pressure Injury Alliance. *Prevention and Treatment of Pressure Ulcers/Injuries: Clinical practice Guideline*. In: Haesler E, ed. Osborne Park: Australia: Cambridge Media: 2019.
51. Bradway C, Felix HC, Whitfield T, Li X. Barriers in transitioning patients with severe obesity from hospitals to nursing homes. *West J Nurs Res*. 2017;39(8):1151-1168.
52. Felix HC, Bradway C, Ali M, Li X. Nursing home perspectives on the admission of morbidly obese patients from hospitals to nursing homes. *J Appl Gerontol*. 2016;35(3):286-302.
53. Dockrell S, Hurley G. Moving and handling of bariatric patients: a survey of clinical nurse managers. *J Res Nurs*. 2021;26(3):194-204.
54. Wiggerman N, Smith K, Kumpar D. What bed size does a patient need? The relationship between body mass index and space required to turn in bed. *Nurs Res*. 2017;66(6):483-489.
55. Puhl R, Brownell KD. Bias, discrimination, and obesity. *Obes Res*. 2001;9(12):788-805.
56. Nicolau IR, Santo FH, David FM. Teamwork: in search of qualified care for the obese. *J Nurs UFPE Online*. 2017;11(1):152-159.
57. Bejciy-Spring SM. R-E-S-P-E-C-T: a model for the sensitive treatment of the bariatric patient. *Bariatr Nurs Surg Patient Care*. 2008;3(1):47-56.
58. Toft BS, Galvin K, Nielsen C, Uhrenfeldt L. Being with others during physical activity: experiences of well-being among adults with severe obesity. *Physiother Theory Pract*. 2022;38(8):1003-1015.
59. Beitz J. Attitude isn't the only thing, it's everything: humanistic care of the bariatric patient using Donabedian's perspective on quality of care. *Ostomy Wound Manage*. 2018;64(1):12-17.
60. Kohli R, Argento V, Amoateng-Adjepong Y. Case report: obesity-associated abdominal elephantiasis. *Case Rep Med*. 2013;2013:626739.
61. Beitz J. Providing quality skin and wound care for the bariatric patient: an overview of clinical challenges. *Ostomy Wound Manage*. 2014;60(1):12-21.
62. Sibbald RG, Mufti A, Armstrong DG. Infrared skin thermometry: an underutilized cost-effective tool for routine wound care practice and patient high-risk diabetic foot self-monitoring. *Adv Skin Wound Care*. 2015;28(1):37-44.
63. Kennedy-Evans KL, Vargo D, Ritter L, Adams D, Koerner S, Duell E. Early skin temperature characteristics of the Kennedy Lesion (Kennedy Terminal Ulcer). *Wound Manag Prev*. 2023;69(1):14-24.
64. Pais VM. Fournier gangrene. <https://emedicine.medscape.com/article/2028899-print>. Published June 3, 2021. Accessed September 5, 2022.
65. Schulz SA. Necrotizing fasciitis. <https://emedicine.medscape.com/article/2051157-overview>. Accessed November 8, 2018.
66. Schwartz RA. Dermatologic manifestations of necrotizing fasciitis. <https://emedicine.medscape.com/article/1054438-overview>. Accessed November 18, 2018.
67. Gorfinkel J, Perlow E, MacDonald S. The trauma-informed genital and gynecologic examination. *CMAJ*. 2021;193(28):E1090.
68. Yosipovitch G, DeVore A, Down A. Obesity and the skin: skin physiology and skin manifestations of obesity. *J Am Acad Dermatol*. 2007;56(6):901-920.
69. National Heart, Lung, and Blood Institute. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults. <http://www.nhlbi.nih.gov/guidelines/obesity/ob-home.htm>. Accessed March 5, 2018.
70. Fife C, Farrow W, Hebert AA, et al. Skin and wound care in lymphedema patients. A taxonomy, primer, and literature review. *Adv Skin Wound Care*. 2017;30(7):305-318.
71. Cohen PR. Adult acquired buried penis: a hidden problem in obese men. *Cureus*. 2021;12(2):e13067. doi:10.7759/cureus.13067.
72. Ho TS, Gelman J. Evaluation and management of adult acquired buried penis syndrome. *Transl Androl Urol*. 2018;7(4):618-627.
73. Martin M. Buried penis: causes, complications, and treatment. ro.co/health-guide/buried-penis/. Published May 22, 2022. Accessed April 13, 2023.
74. Alvarez O, Brindle CT, Langemo D, et al. The VCU pressure ulcer summit: the search for a clearer understanding and more precise clinical definition of the unavoidable pressure injury. *J Wound Ostomy Continence Nurs*. 2016;43(5):455-463.
75. Ciabattini M, Ward AC, Preston AM. Caring for atypical wounds in patients with severe obesity: a case series. *J Wound Ostomy Continence Nurs*. 2023;50(1):78-83.
76. Gray M, Black JM, Baharestani M, et al. Moisture-associated skin damage. Overview and pathophysiology. *J Wound Ostomy Continence Nurs*. 2011;38(3):233-241.
77. Gray M, Bliss DZ, McNichol L. Moisture-associated skin damage expanding and updating practice based on the newest ICD-10-CM codes. *J Wound Ostomy Continence Nurs*. 2022;49(2):143-151.
78. Blackett A, Gallagher S, Dugan S, et al. Caring for persons with bariatric health care issues—a primer for the WOC nurse. *J Wound Ostomy Continence Nurs*. 2011;38(2):133-140.
79. Hales C, Coombs M, de Vries K. The challenges in caring for morbidly obese patients in intensive care: a focused ethnographic study. *Aust Crit Care*. 2018;31(1):37-41.

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