



PRESCRIPTION DOSING DEPENDS ON WEIGHT

ACCURATE WEIGHING EQUIPMENT IS ESSENTIAL

RICE LAKE[®]
WEIGHING SYSTEMS

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Prescription dosing depends on weight

Accurate weighing equipment is essential in good patient care and critical for intake and charting. More than simply a long-standing routine in the clinic or hospital, patient weighing contributes significantly to accurate drug dosing, nutrition needs and fluid balance assessment. When performed inaccurately, wrong weight data can lead to life-threatening dosing errors. Patient care is vulnerable to weight-based errors at three points: when the weight is obtained at the scale, when it is recorded and as it is communicated during clinical care.

Many types of medicines and their dosing deliveries, whether intravenous, oral or other, depend on a patient's weight for efficacy and safety. To combat serious consequences of incorrect weight data, a formal approach to patient weighing should be practiced with weighing equipment capable of helping prevent human errors.

PREVENTION BEGINS WITH PROPER WEIGHING EQUIPMENT THAT IS PRECISE AND DURABLE ENOUGH FOR INSTITUTIONAL USE.

Incorrect weight data can set off a chain reaction of patient care errors that are avoidable once cautionary practices become routine. For example, if an operator unknowingly switches a scale from kilograms to pounds, prescription narcotics, insulin or even anesthesia may be disastrously overprescribed. Facility policies that mandate use of one unit of measure and equipment that features locking units of measure can prevent this potentially fatal mistake.

Additional, unpredictable circumstances like staff shortages or irregular, after-hours admissions are common obstacles to best weighing practices, as well as:

- Taking "intake shortcuts" by estimating patients' weight
- Inaccurate weighing equipment
- Incorrect use of the scale
- Not taring correctly
- Failure to use proper weight resolution, particularly for pediatric patients
- Calculation errors that can occur after accurate weighing (bad math)
- Patient mobility limitations that can affect intake

- Establish procedures for capturing and documenting weighments
- Pharmacy-level reviews of weight-based dosing recommendations
- Use of clinically appropriate, properly functioning equipment for weighing and medication delivery
- Regular cleaning and maintenance of weighing equipment
- Regular calibration of scales using certified weights
- Use of health information technology for transferring data to prevent transposition errors
- Standardize units of measure
- Movement compensation technology for involuntary patient movement on scale



Bariatric, Pediatric and Immunocompromised Patients

There are specific weighing errors that occur for different types of patients. Drug doses for obese patients depend on individual drugs—some drugs require dosing based on ideal weight, yet others require a dose based on ideal weight + (%) actual weight. Pediatric, elderly and immunocompromised patients are even more susceptible to dangers of dosing errors and must be monitored closely for drug tolerances despite correct weight-based dosing.

Prevention Begins with Precision

Dosing errors based on incorrect weight, potentially lethal, can be avoided. Prevention begins with proper weighing equipment that is precise and durable enough for institutional use. Patient scales should also have features that help reduce risks associated with human error, such as movement compensation technology, electronic health record capability and locking units of measure. Rice Lake Weighing Systems offers a complete line of medical weighing products ranging from physician scales to wheelchair, neonatal and bariatric scales that are backed by over 70 years of weighing expertise and superior customer support.

WHEN PERFORMED INACCURATELY,
THE WRONG WEIGHT DATA
CAN LEAD TO LIFE-THREATENING
DOSING ERRORS.





Patient Scale and Calibration Best Practices

Achieve accurate patient weighing by following best practices to safeguard the precision, longevity and performance of your patient scale. Important considerations below will help ensure weighing procedures produce consistent, accurate results.

Scale Setup

- Always refer to the scale model's operation manual for proper scale setup.

Scale Placement

- Place the scale on a level, solid surface, avoiding carpet or other soft flooring.
- Avoid placement in areas where the scale can get wet; also avoid high-humidity areas.

Scale Calibration

- Use certified calibration weights to check the scale's performance and calibrate your scale. Using fitness or other consumer-grade weights produces imprecise calibration samples, therefore patient weight readings will not be accurate enough for safe dosing.
- Use the recommended calibration weight for the capacity of your scale as stated in the operator's manual. Typically, a calibration weight that is 10 percent of the scale's capacity should be used to calibrate the scale. For example, a scale with a capacity of 1,000 lb/450 kg requires 100 lb/50 kg of calibration weight for proper calibration.
- Do not shock load or drop calibration weights onto the scale.
- Always place calibration weights in the center of the scale for calibration.



Choosing the Best Calibration Weights for Patient Scales

NIST-certified calibration weights are the most accurate weights available, ensuring your scale is calibrated properly and ready for the requirements of weighing in medical settings. Never use consumer weights such as barbells or similar items. NIST-certified calibration weights have a manufactured and adjusted tolerance of ± 230 milligrams whereas an uncertified consumer weight has a wide acceptance of tolerances between $\pm 1\%$ and $\pm 7\%$, resulting in a 5-pound weight that may actually weigh between 4.75 and 5.25 pounds. Using a NIST-certified calibration weight will ensure your scale is calibrated correctly and presents accurate weighments for proper patient care.

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