asked to slightly lift her head or perform a standardized curl-up to activate the rectus abdominis and expose the linea alba gap. The examiner palpates the medial borders of the rectus muscles and estimates the inter-recti distance (IRD) at standardized locations, including above, at, and below the umbilicus. In some studies, a threshold of ≥2 fingerbreadths or approximately ≥2 cm is used for screening, with further classification into mild, moderate, and severe degrees (Chen et al., 2023). Due to its simplicity, low cost, and wide clinical applicability, this method remains one of the most commonly used screening tools in routine practice.

The curl-up test is not only used to identify the presence of DRA but also provides preliminary information on abdominal wall function. During this test, visible midline bulging (doming), groove formation, or uneven tension following rectus contraction may indicate reduced mechanical integrity of the linea alba and impaired load transfer. Compared with static palpation, the curl-up test offers a degree of dynamic assessment, allowing observation of abdominal wall behavior during functional movement and evaluation of linea alba quality based on width, depth, and tactile feedback (Soleimanzadeh et al., 2023). In recent years, some clinical protocols have also incorporated standing observation, cough testing, and midline depth assessment to overcome the limitations of width-only measurements.

However, clinical assessment methods have notable limitations. Finger-width palpation is influenced by examiner finger size, experience, and patient muscle activation, resulting in only moderate inter-rater reliability even with standardized procedures, and limited validity compared to ultrasound. To improve objectivity, some studies recommend using digital calipers, rulers, or tape measures across the midline during curl-up testing. These tools provide greater accuracy than finger palpation and show better correlation with ultrasound measurements (Petronilla et al., 2023).

3.2 Imaging assessment methods

Imaging provides more objective and reproducible measurements for DRA and represents a core method in both research and specialized clinical practice. Among available modalities, two-dimensional B-mode ultrasonography is widely regarded as the reference standard for measuring IRD due to its non-invasive nature, absence of radiation, relatively low cost, and real-time visualization of the rectus muscles and linea alba (Opala-Berdzik et al., 2023). Compared with palpation, ultrasound enables precise measurement of IRD at standardized anatomical landmarks above, at, and below the umbilicus, reducing measurement error. Measurement studies have demonstrated excellent intra- and inter-rater reliability across different positions and muscle states, with intraclass correlation coefficients often exceeding 0.80 (Billis et al., 2025; Espinoza-Bravo et al., 2025).

Moreover, ultrasound allows not only static structural assessment but also dynamic evaluation. Observing IRD changes during curl-up, transversus abdominis activation, breathing maneuvers, or other functional tasks provides insight into linea alba tension regulation, core muscle coordination, and rehabilitation response (Billis et al., 2025; Espinoza-Bravo et al., 2025). This integrated “structure–function” assessment enhances its value in monitoring natural progression and treatment outcomes. Recently, shear wave elastography has been used to quantify tissue stiffness of abdominal muscles and the linea alba, revealing differences between DRA patients and healthy individuals. In addition, novel ultrasound-based classification systems incorporating IRD width and length have been proposed to guide decisions between conservative and surgical treatment (Shen et al., 2024).

Despite its advantages, considerable heterogeneity remains in ultrasound measurement protocols. Variations exist in measurement sites, patient positioning, breathing phase, contraction status, and number of repetitions. Measurement locations may range from a single umbilical point to multiple sites 2-12 cm above and 2-4.5 cm below the umbilicus, which limits comparability across studies and the establishment of unified diagnostic criteria (Figure 2) (Opala-Berdzik et al., 2023). In contrast, CT and MRI provide high-resolution imaging of abdominal wall structures and can detect associated hernias, but due to radiation exposure, cost, and limited accessibility, they are mainly used for preoperative planning or research rather than routine postpartum screening (Du et al., 2025). Therefore, standardizing ultrasound measurement protocols remains a key step toward improving comparability and evidence quality in DRA assessment.